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THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

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AND

NORMAN GERALD HORNER, M.A., M.B.

VOLUME II, 1921.

JULY TO DECEMBER.

173 029
20/7/22

London:

PRINTED AND PUBLISHED AT THE OFFICE OF THE BRITISH MEDICAL ASSOCIATION,
429, STRAND, W.C.

KEY TO DATES AND PAGES.

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Printed and Published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

LONDON: SATURDAY, JULY 2ND, 1921.

Observations
ON
THE PRINCIPLE OF REPEATED MEDICATION FOR CURING INFECTIONS.

BY

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ENCOURAGING results are now being reported in the treatment of various parasitic infections -spirochaetes, intestinal amoebae, Plasmodia, Leishmaniae, Piroplasmodidae, trypanosomes, skin parasites, and even Bilharziae and Filariae. Some years ago all our efforts seemed to be aimed at finding, if possible, some agent which would extirpate the invaders after a single dose, or, at the most, after a few doses; but we are now observing that the medication must be repeated much more often than we had supposed. Even to-day, however, the number of doses which may be required to produce complete cure remains a very open question, and is discussed only in the light of empirical results, which are often few and not too decisive. It is high time, therefore, to examine the theoretical principles upon which repeated medication may be or should be given.

The best known case is that of malaria. It has been recognized for centuries that cinchona bark or its derivatives will generally reduce an attack or a relapse of malarial fever in a few days, but nothing definite has been laid down as to how long the drug should be continued. When I went to India in 1881 the practice was to give the patient about 30 grains of quinine daily (sometimes much less) while the fever persisted and for three days afterwards, and then to discharge him to duty as "cured." I protested against this custom in the *Indian Medical Gazette* for February, 1896, and advised at least one fortnight's treatment in hospital. Later I increased this period to three weeks, but when I myself was infected in 1897 I thought still better of it and took 10 grains of quinine daily for four months; I did not have a relapse. In my lectures, and in my book, *The Prevention of Malaria* (1910) I recommended four months', and suggested even six months', continuous treatment. Early in the present century the Indian military authorities ordered six weeks' treatment, with good results. During the war practice varied greatly, the duration of treatment being abbreviated by military exigencies on one hand and prolonged by the issue of prophylactic quinine on the other hand. A period of two months was laid down in 1917 by the War Office at my suggestion (see the War Office publication, *Observations on Malaria*, 1919) for men invalided home. When Sir Alfred Keogh established a number of special malaria hospitals in the United Kingdom early in 1917 many experiments were commenced with a view to producing complete and early cure (Ibid.), but the results were most disappointing, and relapses occurred in large percentages of the cases after trial of many lines of treatment—intravenous and intramuscular injections of quinine, heroic oral doses, combined methods, quinine with arsenic, etc., kharsivan, and several nostrums which had been commended in medical literature—though, of course, all the lines of quinine medication caused great improvement while they were being given, except perhaps in very rare cases. Thirty grains of quinine daily for three weeks were followed, after stoppage, by relapses in a large percentage of the cases. Even treatments commencing with 100 grains a day and continued for nearly a month in smaller doses gave no guarantee of permanent cure, though they seemed to yield slightly better results on the average than did the lower scales of dosage. On the other hand, only 8 grains daily in four doses appeared to be as effective in reducing fever and parasites, as estimated by careful countings (T. Gardner). But 5 grains daily failed to prevent relapses —even while being taken; and without any quinine at all the patients remained heavily infected and generally became more and more anaemic. We concluded, therefore, that 8 grains daily or more sufficed almost invariably to improve the cases greatly while being taken, but failed to cure them completely even after six weeks' administration or more. There is much other literature to the same effect. What is the explanation?

By far the most probable theory to account for relapses in malaria is the one described in my book, and studied by D. Thomson and myself.[1] According to this theory the parasites continue to breed in the blood by the known method from the moment of infection until the last of them has died out; but their numbers are always varying greatly. A normal man of 10 stone (64.7 kilograms) weight contains (by one estimate) about 3,000,000 cubic millimetres of blood, and, allowing 5,000,000 red corpuscles per cubic millimetre, he should have 15,000,000,000,000 red corpuscles. We estimated that the lowest number of asexual mild tertian parasites able to cause fever was about 100 per cubic millimetre, or 300,000,000 altogether, with a much higher figure for malignant tertian (our cases were old infections). When there is considerable or high fever, the numbers range from about 5,000 to 300,000 per cubic millimetre; but in a fatal case in Mauritius, in 1908, I estimated that the parasites must have numbered over a million million. Between the relapses—that is, when there is no fever—the parasites often become too few to be found at all in the small quantity of blood examined (say, 1 c.mm.); but even if there be only one parasite per cubic millimetre, that would mean that there might be 3,000,000 in the body altogether. Thomson often succeeded, however, in finding very small numbers per cubic millimetre even when there was no fever, and these numbers generally increased two or three days before another relapse of fever. Similar variations in numbers of pathogenic organisms are found in other diseases; but, of course, there are certain species of parasites, such as Ascaris, Uncinaria, Filaria, Bilharzia, which, according to our present knowledge, are not capable of multiplying inside the body, except by fresh arrivals from without.

What causes variations in the numbers of those parasites which can multiply within the body? Why do they not always maintain a fixed population? I presume either that the host's resistance varies or that an overcrowding of the parasite population produces substances injurious to themselves. Perhaps the latter hypothesis may explain the limitation of the parasite population when it has reached a very high figure; but the resistance-hypothesis seems necessary to explain the entire extirpation of the invaders, which certainly often occurs without treatment in many diseases, such as malaria and relapsing fever, for example. There may also be some biological law which limits the numbers of non-sexual cell divisions. However this may be, there is much evidence to suggest that unfavourable climatic conditions, fatigue, starvation,

excess, or concurrent illness, tend to precipitate relapses—at least in malaria. The picture most of us have formed is that while the infection continues there is a constant struggle, with varying fortunes to either side, between the invaders and the opposing forces of the host; and that in hosts who survive the invaders are finally mastered, though, perhaps, not until years have elapsed. There is, I believe, a general mathematical theory that during any constant struggle between opposing forces (for example, between stream and wind) a wave condition of alternating success or failure for either side is produced. The alternating "rallies and relapses" seen in so many diseases, including malaria, seem to suggest this class of phenomena.

Principles of Treatment.

By our treatment, then, we are called upon to help the patient in his fight. We may attempt this either by trying to assist his natural powers of resistance, or by attacking his enemies by specific medication. Many people write as if the former process is the proper one: but unfortunately we really do not know how to assist natural powers of resistance. Keeping patients at rest, "feeding them up," giving them tonics, etc., sound very well, but the patients too often continue to relapse just as before. We have little real evidence to show that people who are in the best of health at the moment of infection suffer less severely when they are invaded by some parasitic infection than do people who have previously been in poor health—rather the converse, in fact. Certainly I think that rest and good feeding help patients to overcome the illness due to parasites. But that is another point; we must not confuse the illness caused by parasites with the parasites themselves; and a patient who is better able to resist the effects of the parasitic invasion does not necessarily possess greater natural power of extirpating the invasion. We are too prone to confuse these two issues. Indeed, experience tends to show that the healthy, vigorous, full-blooded young man is more likely to suffer from very acute attacks than are less healthy people. The obstinacy of infections probably depends chiefly upon unknown natural qualities in the blood or tissues, favourable or unfavourable to the invaders.

However this may be, the clinician is always driven to try some parasiticidal drug if one be known. If we class specific serums in this category, and possess them for a given kind of infection, we use them for this purpose; but if not, we have to fall back upon other agents which have been empirically recommended, sometimes after great general experience, such as quinine for malaria or ipecacuanha for amoebic dysentery. But the question at issue is, How exactly are we to use such drugs?

Apparently most people have usually thought that a few very large doses may be able to destroy all the invaders at a blow—hence heroic doses both of quinine and of ipecacuanha. But are we so sure of this? There are reasons for thinking that the patient's body is so affronted by the massive dose that it endeavours to cast it forth at once. The studies "On Quinine in Animal Tissues," by W. Ramsden, I. J. Lipkin, and E. Whitley, published some years ago,[2] certainly do seem to suggest that a heroic dose of quinine put straight into the blood is cast out by it almost at once, while a much more moderate dose is likely to remain there longer and to do its work on the Plasmodia. Several biologists to whom I have mooted the matter are inclined to agree with me in this. The patient's blood and tissues are obliged, so to speak, to protect themselves against any foreign chemical agents as much as against invading parasites. When suddenly subjected to a great dose of something, they adopt the usual course and get rid of it as soon as they can, not being aware that the dose was intended to help them—to speak metaphorically. According to this hypothesis, then, a large dose may possibly be cast out so rapidly that in the end actually a smaller amount of it may reach the parasites to poison them than if a small and more easily tolerated dose had been given to begin with. Probably this accounts for the little difference between the effects of small and of large doses which we observed during the war in the home hospitals. Where we find little difference between the results of, say, 10 grains a day and 100 grains a day, we suspect that there has been some fallacy in the arguments which led to the adoption of the larger medication.

But another point must now be remembered. Whatever dose be given, are we sure that it will reach all the parasites in the body simultaneously? Perhaps so in certain cases, as in those of parasites which live in open sites, such as the skin and intestines, and are easily attacked by drugs—though even these cannot always be destroyed at once. But how can we expect to obtain such a decisive result in the case of millions of organisms capable of constant reproduction and occupying more recondite positions in the body? We must disabuse ourselves of the notion that the parasites in a host are like fish in a bowl, which can be destroyed all together by mixing a single dose of poison with the water. They must be much more like the enemy on a battlefield many of whom will escape in their trenches and dug-outs the most violent barrage; and, as I for one have always thought and taught, there must be many recesses and backwaters of the circulatien which, possibly, no medication bearable by the host can reach. This has been ably suggested and perhaps proved by the chemical work just mentioned—especially by I. J. Lipkin's paper. According to it, quinine is concentrated in the suprarenals, kidneys, and spleen; cast out quickly from the lymphatic glands and the blood; and destroyed by the liver and the muscles. If so, even in the quickly moving circulation, large numbers of the Plasmodia are likely to escape any dose that we can give—especially in view of the fact that a stasis of them often occurs in certain capillaries. Lastly, if we lift the quinine-barrage for a long enough interval the enemy will immediately begin to bring up reinforcements in the form of fresh generations of spores and make good what reduction we had previously succeeded in effecting.

Single-Dose Reduction Rate.

Put in this way, these considerations appear simple enough, but many fail to realize them in practice. Suppose, for example, that 30 grains of quinine reduce the Plasmodia to one-half; then, in order to reduce 1,000 million of them to one we must probably repeat this dose, not twice nor thrice, but thirty times; and even after this we must continue to repeat it, say, four times in order to make nearly sure of destroying the last remaining Plasmodium and its spores. For if P be the original number of a parasite population, and p the number remaining after a course of treatment, and if $\frac{a}{b}$ be a fraction which represents what I call the "single-dose reduction rate"—so that after this single dose $p = \frac{a}{b} P$; then, if we can reduce p still further by giving a succession of n similar doses, all of which have the same effect, we should expect that ultimately

$$p = \left(\frac{a}{b}\right)^n P.$$

Hence, taking logarithms of both sides, we have

$$n = \frac{\log. P - \log. p}{\log. b - \log. a},$$

where, of course, P is greater than p and b greater than a.

The following table will help the reader to compute without logarithms the number of doses which should be required on this hypothesis to reduce P to p, when both are expressed as powers of 10. Suppose that also $b = 10$ and $a = 9, 8, 7, \ldots$ in succession; so that Row A of the table gives single-dose reduction rates varying from 0.9 to 0.1. Next let $P = 10$ and $p = 1$; then Row B will be the corresponding values of n calculated from the equation $n = \frac{1}{1 - \log. a}$, where n is the number of doses required to reduce 10 parasites to 1.

Table.

A = 0.90, 0.80, 0.70, 0.60, 0.50, 0.40, 0.30, 0.20, 0.10.

B = 21.85, 10.32, 6.46, 4.52, 3.32, 2.51, 1.91, 1.43, 1.00.

In order to obtain from this table the number of doses needed to reduce P to p (given in powers of 10), we have only to multiply the figures in Row B by the difference between the numbers of zeros in P and p respectively. For example, if a single dose reduces the parasite population from 1,000,000,000 to 800,000,000, then 10.32 doses should reduce it to 100,000,000, or one-tenth, and 9×10.32, or 93 doses say, should reduce it to 1. But this will not extirpate the infection entirely, for we must still destroy the *last* Plasmodium. The chances against doing so by a

[2] H. W. Acton and H. King (*Biochemical Journal*, xv, i, 1921) have recently criticised the method of Ramsden and Lipkin and find that it fails to yield 30 to 40 per cent. of the quinine added to samples; but this should not greatly impair their comparative results mentioned above.

single additional dose will be 5 to 1, for a reduction-rate of 0.8 (= 4/5), because in such case only 1 out of 5 parasites is destroyed by the single dose. Hence I suggest reduction to another one-tenth at least, which means another ten or eleven doses; but even this by no means quite exhausts the chances of survival which the last of the invaders may possess.

Such calculations are useful, because they help to define and classify our ideas; but no one imagines that the same dose will always have exactly the same effect. Many causes of which we have little knowledge, such as indigestion, fatigue, etc., may diminish the effect from day to day; others, especially the parasiticidal bodies generated by the patient himself, are likely to increase the effect. On studying again the work of D. Thomson and myself already referred to, together with some additional statistics which he obtained, I think that in malaria cases (mostly *P. falciparum*) in England, daily doses of 30 grains of quinine give each a reduction rate of 0.8 or a little less (say 0.75). The fall in the number of parasites was, however, often much greater immediately after a smart attack of fever associated with many parasites, which I attribute to the stimulation of the patients' own antibodies by the attack and not to any change in the dosage of quinine (since we usually gave the same dose throughout). I presume that as cases advance into the second year of infection and longer, these antibodies become more and more powerful—which, as mentioned above, is one possible explanation of ultimate spontaneous cure; so that the same dose of quinine may apparently have a more marked reduction rate in old than in new cases.

On the other hand, newly inoculated Plasmodia may possibly be able themselves to resist the drug more effectively than their descendants in the same host. Certainly, in Salonica many cases became infected while they were actually taking 30 grains of quinine a day for months—a dose more than sufficient to produce, say, an 0.8 reduction rate now, when the same cases have become chronic. Considerable light is thrown on this subject in a recent paper by Etienne and Edmond Sergent,[3] who have experimented on over 1,000 canaries, which they inoculated with *Plasmodium relictum* and then treated with subcutaneous injections of quinine. Contrary to previous Italian reports, the drug acted upon this Plasmodium just as it acts on the human species; but large doses, equivalent to 30 grains or more for men, given before inoculation, during it, or after it, failed to exclude infection; though, if given during the incubation period, they reduced the numbers of the invaders and the illness caused by them (the true value of "prophylactic quinine"). Personally I am inclined to think that the more marked reduction rates apparently obtained in older cases are probably due rather to the combined effects of the quinine and the antibodies than to any diminished resistance in the parasites themselves.

The authors give the case of a bird in which the Plasmodia appeared to become quinine-resistant after nine months' quinine treatment and remained very virulent in two passages through two other canaries; and they think it is a case of a genuine quinine-resistant strain. We have had a few similar cases in our malaria camps, and also in the Tropical Diseases Clinic (Chelsea) of the Ministry of Pensions out of very many thousands of cases; and I now have two cases who have resisted 20 grains or more for a month. But, in spite of what evidence has been shown for it, I feel very doubtful regarding the whole theory that strains may become drug-resistant. We do not know how quinine acts, whether as quinine or as a metabolite. The blood of some persons may perhaps throw out either the quinine or its metabolite so quickly that these have no time to affect the parasites, or can affect only a very few of them; while in other persons who have been long and irregularly dosed the blood may possibly gradually acquire this power in self-protection. Probably both kinds of cases exist; and I remember one patient at least on whose Plasmodia quinine had from the first no apparent effect at all, and who died in consequence—several cases of the same kind were reported during the war. But I think that such are cases of idiosyncrasy in the host, and not in the parasite.

The term "single-dose reduction rate" used above refers to the total reduction of the parasites actually obtained even when the proliferation of such parasites as escape destruction is taken into account. Obviously, if the treatment be interrupted long enough to allow large numbers of organisms to proliferate in the interval, then the final result will receive a set-back. Calculating on the basis of the incubation period, I judge that *P. vivax* multiplies roughly at the rate of ten to one every two days, and *P. falciparum* still more quickly. Hence, perhaps, we may infer that any intermission of continuous treatment for one or two days may allow the invaders to multiply ten times in the interval, thus undoing all the good work effected by the whole number of doses given according to Row B in one column of the table. I am quite sure that the reason why most returned patients in this country continue to relapse is that they stop their quinine (often on medical advice) a few days or weeks after an attack of fever. The histories which they almost invariably tell us at our clinic are that they have been instructed to continue quinine only for a short period. Suppose that during this period they have reduced the invaders to 1,000, then ten or twelve days afterwards the numbers will return again to the fever point, the patient will take more quinine, will stop it again too soon, and so on indefinitely, allowing relapse to follow relapse for months or years. The whole object of continuous medication is frustrated by such interruptions, especially when comparatively small doses are given; and success will be attained only if the clinician warns the patient strongly that the remission of quinine for one or two days will cost him all the fruits of seven to ten days' previous treatment. It may be a different matter if large doses, such as 30 grains, are given, say, twice a week, because then the drug may remain at sufficient strength in the blood during the intervals; but out-patients will seldom submit to such dosage, and the daily dose of 10 or 15 grains is better. Anything under 60 grains a week appears to be almost useless in the large majority of cases; and anything over 15 grains daily seems only to be required when there is fever, and say for a week or fortnight afterwards, followed, of course, by the 10 or 15 grains daily for months.

Exhaustion Period.

The period of treatment required to exhaust the infection entirely on this hypothesis may be called the exhaustion period. For malaria, in order to reduce say 1,000,000,000 Plasmodia to 0.1, we must multiply the figures in Row B of the table by 10. Then, if the single-dose reduction rate for 10 grains of quinine averages 0.8, the exhaustion period for a series of daily doses should be 104 days; but if the average reduction rate is 0.7 the exhaustion period should be only 65 days. Anything approaching decisive scientific statistics on the subject are, I think, not to be obtained; because, to obtain them, we should have to keep the same patients under strict supervision, not only for the whole period of treatment but for months or years afterwards, unless we were free to test the blood of treated cases by experimental inoculations into healthy human beings. But from clinical results extending over forty years I think that a 10-grain daily dosage carried out rigorously for three months (eighty-four days) is sufficient in the large majority of cases. This means an average single-dose reduction rate of 0.7602. In early infections perhaps four months would be safer; and in all cases, of course, reinfections must be excluded from our calculations. The two divisions which were brought from Salonica to France in 1918 were treated by Colonel J. Dalrymple on the three-months' principle (see the War Office publication mentioned), and we have had very few of these men in our clinic since then. In that clinic we have now treated 24,000 cases of real or alleged malaria infection on the same principle since October, 1919, and all I can say is that the large majority of those who take their quinine properly seem to be finally cured; but that those who are excused the third month of the course, or who do not take their medicine, or who are given doses below 10 grains daily, or for whom "tonics," etc., are substituted for quinine, generally continue to relapse as before. And I venture to speak still more definitely in the same sense with regard to cases in my private practice, who have no interest in pretending to have relapses when they are cured, or in pretending to be cured when they are not.

I do not say that no one can be cured of malaria under three months' continuous quinine course. That will probably depend upon two factors—the patient's own parasiticidal bodies and the receptivity of his blood for the drug. Certainly numerous persons have recovered entirely, either spontaneously or after only short courses. But we never

know when this is going to happen; and it is therefore seldom safe to order less than the three months' course from the date of the last relapse.

The comparative virtues of the various cinchona alkaloids and their salts and of different modes of administration cannot be dealt with here; and discussion of the best means of treating the rare intractable cases would also be out of place, though I must repeat that in my opinion such are due to natural or acquired quinine resistance in the host and not in the parasite. It is a misfortune for the whole Empire that, in spite of the loss of millions of pounds over the Salonica malaria, more investigation on such points is not now being carried on. But our Governments are incorrigible on the subject of research.

With regard to continuous medication in other infections, it appears to me probable that the quick cures which are often reported (especially in spirochaete infections) are really due chiefly to the patient's parasiticidal bodies, to which the curative drug only adds the finishing touch. We may possibly, however, find drugs which possess more marked reduction rates (for multiplying parasites) than those shown in the table. At our clinic many of us have had very encouraging results as regards intestinal amoebae from a form of continuous medication with ipecacuanha suggested by Colonel Drake-Brockman, and similar to that which we employ in malaria. I give from 3 to 10 grains of powdered ipecacuanha in pill, without any adjuvant, on an empty stomach at bedtime every night for months without fail. Others give the drug in powder or cachet, or add small doses of Dover's powder. The principle involved seems to be the same as that which I have endeavoured to indicate, as briefly as possible, in this paper.

REFERENCES.

[illegible]

ON CHRONIC NASOPHARYNGEAL INFECTION, CHRONIC TOXAEMIA, AND DISTRESSED HEART IN CHILDREN.

BY

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Nobody will dispute the statement that nasopharyngeal infection is a very common trouble, especially in manufacturing districts; and that, though it is often acute and obstructive in nature, it is also very often present as a chronic infection with catarrhal rather than obstructive signs. The points which I wish to bring to notice are:

1. That this chronic infection of the nasopharynx serves as one of the most important foci from which organisms may generate toxins which cause a chronic lowered state of health in the child.
2. That the nasopharyngeal infection may be due to different kinds of organisms, the influenza bacillus being an especially potent factor and often acting as the initial infecting agent, though it may not remain in the nasopharynx.
3. That this toxaemia often gives rise to heart lesions, and that, though these heart lesions may be valvular, they are often of quite a different nature from valvular lesions—that is, they are more in the nature of nervous irritation than of inflammatory troubles affecting the heart.
4. That these special forms of heart trouble need methods for diagnosis which are not usually employed, while they also need different treatment from that usually prescribed.

Chronic Nasopharyngeal Infection.

Such cases may be either obstructive or merely catarrhal. The obstructive ones are easy to recognize. The catarrhal cases are, however, often overlooked if a careful history is not taken from the parents. The child has not necessarily adenoid facies, but has a history of chronic catarrh, of frequent colds and of a running nose, while on making an examination mucus may be seen dropping from the nasopharynx. The tonsils may not be enlarged. Another point is that the glands behind the ear are often enlarged; these are the highest of the posterior cervical glands and less commonly the posterior auricular glands. It is an interesting point because it shows which glands drain the nasopharynx.

Chronic Toxaemia.

It is a commonplace that a septic focus may give rise to chronic toxaemia; dental caries and chronic gastro-intestinal infection are the two examples which occur at once. The nasopharynx is another situation from which infective trouble may cause a very definite toxaemia. The symptoms are: pallor, which may often be very marked indeed; darkness under the eyes, especially on getting up in the morning; pains may occur which can best be described as those usually known as "growing pains." These are said to be especially associated with rheumatism, but they are to my mind quite as often met with in the chronic toxaemia of nasopharyngeal infection due to various organisms.

Amongst other general signs we meet with slackness of the ligaments, especially those which are subjected to strain in a growing child, the spine, and the arch of the foot; in this way scoliosis, or general round-shouldered carriage, may occur, or flat-foot may make its appearance. The extremities easily become cold; the pulse becomes rapid and very easily disturbed in rhythm. There may be anaemia in addition to pallor. The heart signs and symptoms I shall describe later. The thyroid gland is not uncommonly a little enlarged. Enuresis is sometimes a symptom.

The nervous system, next to the heart, shows the most important symptoms and signs. The child often has bad headaches and is irritable and nervous. The mother says that the child's disposition has changed, and that he or she has become peevish, moody, or lackadaisical, and in some instances very depressed. Disturbed sleep is also common. If the child has a vivid imagination, all sorts of morbid ideas may occur. And of course, as one would expect, children of the neurasthenic type, who are those who have been endowed with a nervous system which feels the stress and strain of life, are the first to give out the above signals of distress when any lowering agent such as toxaemia makes its appearance.

Tic or habit spasm is common. It is necessary to make a clear distinction between this and chorea. Chorea is generalized and indiscriminate in that sudden and diverse movements of practically any part are provoked. In tic, on the other hand, there is a peripheral stimulus which acts on the excitable nervous system, and finds expression in a constant repetition of one particular movement. The spasm may affect one group of muscles, or, later on, change to another group.

The common forms of tic are: (1) blinking the eyes; (2) contorting the mouth (I have known cases punished in school for pulling faces where in reality they have had tic); (3) drawing the head round to the shoulder; and (4) constant clearing of the throat. This last may, of course, be present in a child who really has mucus at the back of the throat.

Chorea is a rheumatic manifestation, and is not a common accompaniment of nasopharyngeal toxaemia; on the other hand, tic or habit spasm is. In association with this I should mention the differential diagnosis between rheumatism and toxaemia. The term "rheumatism" has come to be used too loosely in relation to disease in children; it has often been used to give a name to cover a variety of symptoms, just as influenza is a convenient diagnosis when there are no clear indications as to the cause and nature of acute illness. To my mind the term rheumatism should at present be limited either to (1) the acute cases with hyperpyrexia, with joint inflammation; or to (2) those with throat trouble and chorea and morbus cordis; or to (3) those with subcutaneous nodules and, as often happens with these nodules, very acute and rapid valvular disease and heart failure.

The organism which causes acute rheumatism may cause chronic toxaemia, and no doubt it often does; but there is no doubt that other organisms may give rise to the signs and symptoms of chronic toxaemia, therefore these signs and symptoms should not be labelled as rheumatic.

[illegible] delivered to the Pelvic Medical Society on December [illegible].

Irritable or Distressed Heart.

Heart trouble may be either (1) actual inflammatory trouble, which gives rise to endocarditis, pericarditis, or myocarditis, or possibly a combination of all three; or it may be in the nature of (2) loss of tone of the muscle with toxaemia, but without actual infective inflammation; or it may be (3) irritability due to disturbance of the nervous supply. Now, though infective trouble of the heart together with inflammatory disease of valves or surfaces may arise as a result of nasopharyngeal infection, it is not my purpose to deal with it here. We shall, therefore, consider only two classes of heart trouble, which I shall name as (1) the muscle-relaxed heart (the lax heart), and (2) the nervous, irritable heart (the tense heart). Neither of these gives rise to bruits or to dilatation which is easily discernible by the ordinary methods of palpation, percussion and auscultation. The pulse in the lax heart is slow, but quickens abnormally with exercise, while the pulse in the irritable heart is always beating rapidly, and reacts especially to emotion and mental stress; but—a very important point—it may be slowed by exercise.

Differential Diagnosis.

Before we diagnose toxaemia following nasopharyngeal infection we must be careful to exclude other conditions and other toxaemias, and such a differentiation is often a matter of considerable difficulty. First, non-infective conditions may give rise to signs and symptoms of the kind I have mentioned. These are—bad hygienic conditions (which include constant underfeeding or unsuitable feeding), loss of sleep, crowded conditions of living, and mental stress. This is the lot of many children at the present time. A physician who has seen a worn-out child at the out-patient department, and then seen the extraordinary improvement which a few days in bed in hospital may effect, will realize this. In fact, such a rest is valuable as a means of prognosis, because the marked improvement following good hygiene shows that the trouble is non-infective.

Another condition is cyclical albuminuria. This will give rise to pallor and debility, while the presence of albumin may only be detected by frequent examination of the urine. Amongst infective conditions are oral sepsis and chronic ear discharge, and other forms of infection which may be associated with the nasopharyngeal trouble. There is, however, a more important form of infection which gives rise to chronic toxaemia—more important because it is less obvious—and that is tuberculous infection of the lymphatic glands, thoracic or mesenteric. The following case illustrates the difficulty, and the means of diagnosis.

Boy, A. H., aged 6 years.

This boy was brought to me in May, 1919, with a history of having had an attack of influenza in 1918. He had not been well since. He had had no appetite, had had one slight attack of influenza since, and had also had an attack of acidosis. On examining him I found that he had slightly enlarged tonsils and adenoids, and I made a note that the chest was suspicious of tuberculosis—that is, it was thinner than usual and showed a slight outgrowth of downy hair, but that it showed no definite physical signs of any kind which pointed to tuberculosis. Apart from this the boy presented no signs of illness, except that his heart rate increased too rapidly in response to exercise. His symptoms were those of tiredness, debility, and pallor. I said that he might have to have his tonsils and adenoids removed, but recommended a change to the seaside. He was away for two months, and when he came again in August he was very well; the tonsils had diminished. In October, however, his troubles had returned. His tonsils were now slightly enlarged; he had disturbed nights, and the heart was again rapid after exercise; he went away again and once more improved in health. But he could not keep up his health at home, and did not react so well to the change as he had done previously. He now showed more evidences of strain and more marked pallor, and the darkness under his eyes. I asked his medical man to examine the urine frequently at different periods of the day, and after producing an artificial lordosis; but there were no signs of any albumin. We then examined his chest by *x* rays for enlarged bronchial glands and found definite evidences of tuberculous infection, though the lungs were not affected. His chest still showed no physical signs, except that D'Espine's sign was now present, the whispering pectoriloquy to 333 being heard as low as the third dorsal spine.

This case shows very well many of the points of the differential diagnosis between chronic nasopharyngeal and tuberculous toxaemia, which are as follows:

1. *History.*—An attack of influenza may be the starting point of either trouble, but if anything is more likely to be a precursor of nasopharyngeal infection. Colds are a common feature of both, though here again they are more marked in nasopharyngeal infection. The opportunity for infection with tuberculosis is of importance. If there is anyone in the house who is suffering from tuberculosis, the likelihood of tuberculous infection is, in my opinion, very great indeed.

2. *Symptoms.*—Breathlessness, pallor, chronic lassitude, are equally common in both; but growing pains and headaches are more likely in nasopharyngeal infection. Cough may or may not be present in both. In glandular tuberculous trouble the cough may be brassy, while that of nasopharyngeal infection may be either in the form of tic or habit spasm, or an irritating cough from the throat, due to mucus dropping from the nasopharynx.

3. *Signs.*—Slight rises of temperature may occur in nasopharyngeal toxaemia, but they are not nearly so noticeable nor so constant as those which occur in tuberculous toxaemia. Even the latter need careful observations for their detection. Night sweats, if present, point to tuberculous trouble, and so does wasting. The skin shows a loss of tone in both conditions, but it is not usually very great in nasopharyngeal toxaemia. In tuberculosis, however, the skin may show very marked changes; there is a great loss of tone, wasting, and often a marked dryness, together with the downy outgrowth of hair. The best description I can give to it is that it resembles the surface of dirty and rather dry dough. If anything, laxity of ligaments is more marked in nasopharyngeal trouble. Tic, growing pains, and irritable heart are not often seen in tuberculosis, but are quite common signs in nasopharyngeal infection.

The local conditions of the nose help us considerably in diagnosis, while an examination of the chest may show physical signs, though in most cases it does not. I should like to mention here that nasopharyngeal obstruction can give rise to interrupted breathing of quite marked degree in the upper lobes, especially if the child, being on its best behaviour, tries hard to keep its mouth shut and breathes through its nose during the examination. It is often a good plan to tell the child to breathe through the mouth while listening to the chest.

D'Espine's sign is valuable though not conclusive: the child is asked to whisper "three—thirty—three," and the stethoscope is applied over the spines of the lower cervical and upper dorsal vertebrae in turn. Normally no definite pectoriloquy should be heard below the first or second dorsal vertebra; but with enlarged bronchial glands the increased pectoriloquy may be heard as low as the third or fourth or fifth dorsal vertebra. The *x* ray examination shows us very definitely whether tuberculous glands are present, and it often gives an indication as to whether the tuberculous infection is quiescent or active; it also indicates the state of the heart. The Von Pirquet skin reaction can be tried. It is specific, as showing whether the child has had a tuberculous infection or not, but it does not necessarily prove that the disease from which the child is suffering at the time of the reaction is tuberculous. The reaction may be the acquirement of the child as a result of an old and healed tuberculous lesion.

The effect of treatment helps us to some extent in differential diagnosis. Rest and feeding will improve the tuberculous child more than one with nasopharyngeal trouble. Sodium salicylate improves the latter, and creasote with cod-liver oil the former. A change, especially to the seaside, improves both; but the child with nasopharyngeal infection shows the more striking results, because its amelioration depends more on climate. Much can be done for tuberculous infection by home treatment in the way of rest and open air, but removal from home atmosphere is often essential for nasopharyngeal infection. Finally, it must be noted that tuberculous infection has, as one of its most important early signs, nasopharyngeal catarrh, and that a combination of the two infections may occur.

Nature of Organism in Nasopharyngeal Infection.

Dr. Sellers, Pathologist to the Manchester Children's Hospital, examined nasal swabs from sixty-three of my cases. He found many different kinds of organisms, but no one kind occurred with great frequency. Diphtheroid organisms occurred in twenty-one, but, tested in five instances, they were found to be non-pathogenic to guinea-pigs.[1] The influenza bacillus was not often found in the swabs examined,

but an inquiry into the history of these cases showed that an attack of influenza was often the starting-point of the trouble. I have found this history so often that I am convinced of the potency of the effect of an attack of influenza in setting up a chronic catarrh of the naso-pharynx. In this connexion we must remember the epidemic of 1918, and I am quite convinced from my experience that there has been a great increase of these cases of chronic nasopharyngeal toxaemia with tic and irritable heart since that time. The bacillus of influenza may not remain in the nasopharynx, but it has done its damage. It has set up chronic inflammatory mischief and it has lowered the resistance of the nasopharyngeal mucous membrane to other infections, and any other organisms are enabled to grow and multiply.

Treatment.

If there is nasopharyngeal obstruction, operation is needed; if not, local treatment of the nasopharynx should be tried. The nasopharyngeal toilet in children is not very easy, but with an intelligent child a good deal can be done in the way of douching and spraying. More important, however, are physical exercises and drill, which are directed to keeping the nasopharynx clear. I have seen great benefit from persistent treatment on these lines.[2] The value of change of climate has already been referred to, and this, when available, is perhaps the most important of all; but it is not easy for most children to have prolonged residence at the seaside unless they happen to be of boarding-school age and can be sent to a seaside school. The question of drugs can be summed up by saying that sodium salicylate is the most useful for the infection and toxaemia, followed by tonics in the form of either nux vomica or iron.

The treatment of the heart troubles is very important, and it is necessary to make a clear distinction between two forms: (1) The lax heart, and (2) the irritable (tense) heart. The lax heart needs a period of rest to recover from any dilatation which may be present, and then graduated physical exercises until tone is restored. The irritable heart is, however, quite a different matter; there is no dilatation, but only a very rapid pulse, which is stirred up especially by emotion and may be slowed by exercise. Dr. B. A. McSwiney, of the Physiological Department of Manchester University, and myself have been working lately at a series of tests—physical, emotional, and also one related to intrathoracic pressure—by which we hope to be able to evolve simple clinical methods of distinguishing between these two forms of heart disease. These tests are based on similar lines to those which Dr. Martin Flack has described with regard to testing candidates for the Air Force.[3]

The *x*-ray screen examination is also very useful, and the two varieties of heart trouble can be readily distinguished when looked for. The slow-beating heart, slightly dilated to the left, with an increased width from side to side at its lower part, shows up very clearly in comparison with the extremely rapid, and one might also say contracted, heart, which appears to be almost as wide in its upper part as in its lower. In this latter case it is quite obvious that, since the heart is not dilated, it is not necessary to treat the child by prolonged rest; this was shown during the war, when "disorderly action of the heart" was found to be improved by a series of drills and exercises. The trouble in these cases is that emotion and nervous control play a very large part in their production, and if the child can be taken out of itself and at the same time given suitable exercises the trouble will tend to disappear gradually. One must remember, however, that it is possible for dilatation to be superimposed upon irritability; in such cases a period of rest may be necessary before commencing the exercises. The point, however, is that some cases of heart trouble in children should be treated, not by rest, but by physical exercises.

I have arranged, in the massage department of my clinics, to have selected cases of irritable heart disease treated in this manner, and so far the results have been very encouraging. The children are set to play games which keep them fully engrossed, and if a little ingenuity is exercised this object can be attained.[4]

Prognosis.

This depends very much on whether treatment is continuous and thorough and on the lines recommended. I do not remember having ever seen valvular disease of the heart develop in any of the cases of purely irritable heart with which I have had to deal, though I have seen it develop after lax heart when rest was not persisted in. In conclusion, I wish to state once more that the ordinary methods of palpation, percussion and auscultation are not sufficient to diagnose these cases, and it is therefore necessary for us to adopt more delicate methods of estimating the heart efficiency by tests such as I have indicated.

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REMOVAL OF STONES FROM THE PELVIC PORTION OF THE URETER.

BY

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THE operations described in textbooks for the removal of a stone from the pelvic portion of the ureter, are nearly all devised with the evident intention of avoiding any interference with the peritoneum. Stones have been taken away successfully by direct incision of the ureter from the intraperitoneal aspect, followed by closure of the opening with sutures, but this, as a routine method, has not yielded the good results recorded where the extraperitoneal operations have been practised. There has therefore been, and is still, a tendency to avoid using the peritoneum in any way as a regular part of such a procedure.

The following methods are the chief of those recognized at the present time[1]—it is not necessary to describe them:

A. *Extraperitoneal*—
1. Exposure of the lumbar segment of the ureter.
2. Exposure of the whole length of the ureter.
3. Exposure of the ureter at the brim of the pelvis and in its pelvic portion.
4. Para-sacral route for exposure of the pelvic segment.
5. Vaginal route.
6. Vesical route for calculi in the intramural portion of the ureter.
7. Transvesical route for calculi lying in the lower two inches of the ureter outside the bladder wall.

B. *Transperitoneal*—
Exposure of the ureter at the brim of the pelvis and in its pelvic segment.

Advantages of an Opening into the Peritoneum.

There have been manifestations of a tendency to use the intraperitoneal route to some extent during recent years. For instance, Dr. Witherspoon[2] opened up the peritoneum to localize the stone, then sewed up the opening in the peritoneum very carefully. He afterwards peeled the peritoneum off the parietes, so as to enable him to extract the stone extraperitoneally.

Dr. Gibbon, of Philadelphia,[3] pointed out the advantages of combined intra- and extra-peritoneal uretero-lithotomy—"for doubtful cases and all cases where a stone is found in the ureter when the abdomen has been opened for some other condition." He records two cases in which stones were removed from the lower part of the ureter, having been found during exploration of the right iliac fossa. In both the appendix was removed and then the stone extracted through an incision made extraperitoneally.

Recent Opinions.

Mr. Kidd, when introducing a discussion at the meeting of the British Medical Association last year, advised an extraperitoneal operation, but conceded "that if anything can be gained it is permitted to open the peritoneum." In the discussion which followed that paper Mr. Grey Turner said that he thought it "advantageous to open the peritoneal cavity simply for the purpose of locating the stone

by exploring the ureter with the finger." Mr. Rowlands recommended "a long para-median extraperitoneal valvular incision displacing the rectus and peritoneum inwards, but did not like any form of intraperitoneal operation for the removal of a stone from the ureter."

During the period of the war, three adults (one female) came under my charge for the relief of symptoms due to the impaction of a urinary calculus in the pelvic portion of the ureter. By means of the *x* rays the position, shape and size of the stones were clearly shown. They were similar in size and appearance, being under half an inch in length and somewhat like date-stones in shape.

It was evident in the first patient that the stone would be difficult to find through an incision in the extraperitoneal tissues only, and that it would not be easy to incise the ureter with confidence over the stone, because of its rounded and somewhat narrow presentation and distance from the surface.

Deliberate Opening of the Peritoneum a part of the Operation.

It was considered that the operation would be done with greater confidence and precision, therefore more rapidly, if a peritoneal opening was made at an early stage, and the fingers of the left hand introduced into the cavity of the peritoneum to locate the stone and steady it whilst the other hand was working in the subperitoneal tissue to the point which had been located where the incision through the wall of the ureter was required.

Experience of the Combined Method.

The result of the operation was so satisfactory in the first case that when the others presented themselves with a similar condition it was repeated for them. In none of these three patients could the oat-shaped stone be worked away from its original position in the ureter, even with the combined manipulation of the two forefingers, but, with the ureter, it was lifted upwards to an appreciable extent towards the external wound, and this rendered it more easy to make the liberating cut. The precaution of placing a strip of gauze beyond this point was taken in each, but only a small amount of healthy urine escaped.

At the depth these stones are from the surface it is almost impossible to insert any useful sutures to close the ureteral incision, and as in the absence of any stricture of the ureter there is very little tendency for urine to escape by this opening, it is unnecessary to prolong the operation by the attempt. The edges of the cut ureter fall nicely together and heal quickly, for when the ureter is steadied as described there is a clean longitudinal incision which soon closes. It is advisable to place a tube down to the bottom of the extraperitoneal wound, or a gauze drain, for a small quantity of urine usually escapes during the next day or two, and provision must be made for its easy evacuation.

Steps of the Operation.

This method may be briefly described as follows: An oblique incision is made from midway between the anterior superior spine and the umbilicus in the direction of the pubic spine. The sheath of the rectus is opened for the whole length of the incision, the muscle separated from its sheath, and strongly retracted inwards. The deep epigastric vessels are found and divided between ligatures. The posterior sheath and peritoneum are incised in the centre of the upper part of the wound to an extent permitting easy passage of the fingers of the left hand, which are carried to the place in the ureter where the stone has been shown to lie by the *x* rays. Before the final stage of the operation the abdominal contents are protected and pushed out of the way with a strip of gauze.

When the stone is located the forefinger of the other hand is worked extraperitoneally directly to the spot, separating the peritoneum to a sufficient extent down to and a little beyond the stone. An attempt may be made to bring the stone higher up in the ureter if this is thought desirable; it does not always succeed, but it can be lifted upwards and forwards with the ureter to a useful extent. In my cases the lining of the ureter at the point of impaction was rough, and this appeared to be the reason why the stones could not be moved before the incision of release was made. As the stone was so definitely localized and the part of the ureter where the incision had to be made so clearly defined, it was possible to cut cleanly along the middle of the prominence felt, without varying from the straight line. In addition, the fixation of the stone by the fingers of the left hand made it easier to avoid any accompanying artery, and enabled the incision of the ureter to be made firmly and accurately. The importance of this will be evident to anyone who has had to deal with a case of small stone in the pelvic portion of the ureter in a fat patient, when the stone is not steadied in the manner suggested.

There is another advantage of this fixation—the incision being quite under control, one is less likely to break up the stone when making the opening for its extraction.

No Risk of Peritonitis with Ordinary Care.

It must be apparent that there is no danger of causing a peritonitis by the added manipulation within the peritoneum which this method of operating demands. The opening of the ureter is still placed extraperitoneally, but some distance away, and when the incision of the peritoneum has been closed with a continuous suture and the muscle is sutured over it, it is not exposed to further risk. Any discharge which may appear during the after-progress is carried away through the lower part of the wound, which is left open for the passage of the drainage tube or gauze drain.

Use of Landmarks.

The various stages help in the quick performance of the operation, each being marked by some landmark.

Sometimes in doing these operations which involve a deep exploration into the pelvis there is a danger, especially in private when perhaps the *x*-ray plate has been forgotten and the lights are inadequate, that it may not be possible to find a small stone although it is known to be there and the cause of the symptoms from which the patient is suffering. It has not always been found. When it is acknowledged that the help of the fingers in the peritoneum is part of the operation, and that it should be used to find and afterwards fix the stone, a feeling of confidence is engendered which is otherwise apt to be lacking. Another advantage is the opportunity which is afforded for an examination of the kidneys or other parts (which might be affected by disease) should the symptoms suggest the possibility of complications.

There is no weakness of the abdominal wall as a result of the operation.

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RESULTS OF INSTITUTIONAL TREATMENT IN SURGICAL TUBERCULOSIS.

By

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THERE have been published within the last few months a number of papers appealing for better treatment of the crippled child. These papers have made known schemes for institutional treatment excellent in their method and detail, but they have, with one or two exceptions, given little exact information as to the results likely to be obtained. Such appeals being of the nature of propaganda directed especially to the attention of local authorities and their medical advisers, it would, I think, much increase their value if some account of results were included.

The figures given in this article refer solely to the child crippled by tuberculosis, and embody the results obtained by me from work done at the Manchester Residential Schools for Crippled Children over the period 1905–18. These schools are maintained by the Manchester Education Committee, and occupying two large houses on the north side of the town, they provide in-patient accommodation for 114 cripples, of whom some 50 to 60 are cases of surgical tuberculosis of the spine and lower limb.

The fact that the schools are managed by an Education Committee involves two important consequences. The children admitted must be between the ages of 5 and 16 years, and it is, further, a *sine qua non* that they be in a sufficiently good state of health to be able to take the

ordinary school lessons. The age limit is unfortunate, since very many cases of surgical tuberculosis begin before the age of 5; in a large series of cases in which I endeavoured to determine the actual date of onset the average worked out at exactly 3½ years of age. Hence it is to be feared that we miss not a few early cases. The second consequence is, that as the institution is primarily a school, the type of case admitted is limited to early non-complicated cases and to chronic cases which have not suffered materially in general health.

The treatment of the cases has been on strictly "conservative" lines, with very careful and exact fixation. Abscesses have been treated by aspiration, and very little open operative work has been done. As the number of beds is so much below the needs of the situation, the cases admitted have been entirely those needing recumbent treatment, and therefore the results given in this paper are of necessity restricted to cases of tuberculous disease of the spine and lower extremity.

The schools having been in existence for sixteen years are in a position to yield exact information on the result of treatment, and I find that this information may be briefly stated as follows:

A very careful investigation has been made into the after-history of 159 cases which have been traced and examined; to minimize error no recently discharged case has been included. All the children dealt with in this report were discharged from the schools not less than three years ago.

Results in 159 Cases.

	Alive and Well.	Alive but Disease still Present.	Died.
Tuberculous disease of spine ...	34	10	26
Tuberculous disease of hip... ..	38	5	9
Tuberculous disease of knee ...	28	1	2
Tuberculous disease of foot ...	6	0	0
	106	16	37

The cause of death is not known in all the 37 cases. This figure includes two instances of death by accident, and there would, of course, be a certain mortality due to causes other than tuberculosis. Deducting the two cases of accident the number of deaths is 35, and we can obtain from the figures the following definite result: Out of 100 children between the ages of 5 and 16 years, treated under good conditions for tuberculous disease of the spine and lower extremities, 68 will be cured and able to attend an ordinary school or follow a useful employment; 10 will receive no permanent benefit, and 22 will die from the disease or its sequelae.

The very grave nature of tuberculous disease of the spine is well shown by the figures; of 70 patients with it no fewer than 26 are dead. The mortality is much less for disease of the hip; 9 out of 52. The knee shows only 2 out of 31. The 6 cases of disease of the ankle and foot recovered completely.

The development of abscess is always of grave omen, and it is interesting to note that of the 35 cases who died no fewer than 29 showed evidence of abscess formation on admission to the schools.

The results given above are not so favourable as others which have been published, particularly by more favoured institutions in the South of England. It would appear that the further north one goes the more virulent does surgical tuberculosis become—a state of affairs for which our adverse climate and absence of sun are no doubt mainly responsible.

A point of very real importance is the length of time needed for the treatment of these cases, since this length of time bears directly on the cost and number of beds required in any suggested scheme. The average time is certainly longer than is commonly supposed or usually indicated in the textbooks. I find that in my own cases of surgical tuberculosis of the spine and lower extremity the average duration of in-patient treatment is three years and two months.

SIGHT EFFICIENCY IN THE GENERAL POPULATION.

A CONTRIBUTION BASED ON THE EXAMINATION OF OVER 30,000 RECRUITS.

BY

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FROM the beginning of December, 1917, to the signing of the armistice in November, 1918, I acted as the ophthalmic specialist to the National Service Recruiting Boards for the Edinburgh district. I served as a whole-time officer, and every recruit was brought to me to be graded according to his sight efficiency before any further examination was made. I was in this way able to obtain a considerable amount of valuable information which I wish briefly to detail and analyse.

At the beginning I only took notes as to the causes of rejection, reasons for lower grading, and general points of interest, but from March to November, 1918, I made a brief record of the sight efficiency of every man seen. About 16,000 cases were thus detailed. The Edinburgh district from which the recruits were drawn is unique. It is a microcosm of the country, as it includes not only an ordinary city and suburban population, but a large agricultural and mining district in addition. The inhabitants of the area also have comparatively very few aliens among them as compared with other large industrial centres.

Grading Standards.

The Ministry's instructions for the grading of recruits were:

Grade I.—Right eye, 6/24, correcting to at least 6/12. Left eye, less than 6/60, but fields of vision must be good. This standard was altered on April 7th, 1918, to a minimum of 6/60 in either eye, capable of correction to 6/12 in either eye. The other eye to have 2/60 minimum, with good fields of vision.)

Grade II.—Right eye, 6/60, correcting to 6/18. Left eye may be less than 6/60, but vision fields must be good. (The lowered standard in this grade was 3/60 at least in one eye, correcting to 6/18. The other eye may be blind or missing.)

Grade III.—6/60 with either eye with or without glasses. The other eye may be blind or missing.

Grade IV.—Included all who were not up to this very wide-meshed standard net, and therefore considered unfit for any army service. It also included those who suffered from any progressive or recurring disease.

Results of Examination.

Working on these standards the percentages of the various grades among 16,000 recruits of all classes and occupations were as follows:

93.7 per cent. were fit for Grade I. Of this number 10.5 per cent. had errors of refraction which required correcting before they attained the standard.
4.2 per cent. with glasses and without were fit for Grade II.
1.6 per cent. with glasses and without were fit for Grade III.
0.5 per cent. were totally rejected.

Thus the total average of men with defective eyesight who did not reach the very low standard of Grade I unaided was 16.6 per cent. As a further guide to the level of sight efficiency in the general population of this country, if one takes 6/12 and better in both eyes as a reasonable standard, 23.8 per cent. of the total examined had defective eyesight.

To put the figures in another way, 12,320 recruits, or 76.2 per cent., had eyesight 6/12 and better in both eyes; 3,680, or 23.8 per cent., were below this standard. Of these, in 2,937, or 18.3 per cent., the sight deficiency was due to refractive errors without any obvious disease, and in 743 cases, or 4.6 per cent., there were morbid changes in the eye structures.

Myopia and Hypermetropia.

In regard to the proportion of the various forms of refractive error, myopia and myopic astigmatism, simple and compound, formed the majority. This follows from the fact that many hypermetropes were able easily to come to the standard of Grade I without glasses, and were not further examined.

The percentage of grades in myopia and hypermetropia were as follows:

	Grade I.	Grade II.	Grade III.	Grade IV.
Hypermetropia ...	74 %	24 %	2 %	0.5 %
Myopia	55 %	25 %	18 %	2.0 %

The above table is a clear demonstration that hypermetropia is much less a handicap to efficiency in life than myopia.

Disease Classification and Percentages.

The following table gives in brief the percentage of disease incidence:

	Per cent.
Chronic blepharitis	4.0
Trachoma	1.3
Tear duct cases	1.2
Corneal nebulae (secondary in the majority of cases to eczematous conditions in early life)	15.1
Conical cornea	0.6
Interstitial keratitis	0.6
Injuries and old ulceration of cornea ...	0.7
Chronic and recurring iridocyclitis ...	5.8
Congenital cataracts	4.3
Traumatic secondary cataracts	3.5
Dislocation (congenital) of lens	0.4
Neuro-retinal choroidal inflammations ...	3.7
Optic atrophies	2.1
Tobacco amblyopia	3.1
Retinitis pigmentosa	1.0
Glaucoma	0.4
Retinal detachments	1.0
Choroidal ruptures	0.8
Congenital amblyopia	1.2
Congenital colobomas	1.0
Secondary and congenital nystagmus ...	2.6
Miner's nystagmus	0.5
Total loss of one eye	4.5
Convergent strabismus	17.5
Divergent strabismus	4.0
Paralytic squints and ptosis	2.2

It must be remembered that the foregoing figures and tables indicate what may be termed the static conditions of eye deficiencies as found in a large representative mass of the population, as opposed to figures drawn from hospital statistics, etc., which represent the current incidence of eye disease.

What light does this material throw on the various problems of sight efficiency from the economic and social point of view? This question may be conveniently considered under the heads of the effect of errors of refraction and of diseased conditions.

Hypermetropia.

Hypermetropia is not normally a pathological condition as opposed to myopia, which in a large percentage of cases must be looked upon as a definite disease. Hypermetropia, however, as my figures demonstrate, emphatically has associated with it the important economic disability of internal strabismus, with its crippling effect on efficient sight and the consequent production in a large number of cases of monocular amblyopia. The large number of cases of this condition met with in these examinations emphatically emphasize (1) the great importance of the efficient treatment of squint in early childhood, (2) the avoidance of conditions which favour its onset. A great deal of attention has been directed to the prevention of myopia in school children, but the prevention of this sequence of hypermetropia in children at the beginning of school life and in these earlier years is in many ways as equally necessary. The hypermetrope is not nearly so liable to develop squint as long as the general health and surroundings of the child are good. Concomitant convergent strabismus is a disease of civilization and of large crowded centres. My many years' experience of eye conditions in native races in the Far East confirms this view. The condition is an uncommon one in these countries among the children. Squint is, of course, seen often enough, but it is almost invariably secondary to ulcerative conditions and specific trouble.

Secondly, I found in a large number of cases of hypermetropia where glasses had never been worn, and where there was no squint or fundus changes, etc., a comparative amblyopia (as regards test-card vision at least) and correction by glasses was unsatisfactory. On the other hand, in uncorrected myopic cases in the absence of marked fundus change, correction was generally complete.

Myopia.

This condition was responsible for the majority of cases of low grading. In addition to my general figures I made a more detailed analysis of 500 cases in relation to age, occupation, total degree of error, accompanying physique, and existence of complications, etc. I found that myopia is essentially a disease of town dwellers and of industrial life.

In the examination of a series of 300 agricultural labourers I found only one case of axial myopia above 1 D. A similar number of town dwellers of mixed occupations gave 18 such cases. Of the myopics 77.4 per cent. belonged to the industrial classes, and comprised all varieties of occupations. The miners headed the list with 28.4 per cent. of the total. Others included such diverse callings as engineers, compositors, rubber workers, plumbers, blacksmiths, railway workers, bricklayers, joiners, and carters.

The essential factor in the development of myopia is the condition of health and environment in the period of tissue development and growth. Therefore the condition is commoner in the industrial classes and their children, and more common in the big towns where nutrition is deficient or unsatisfactory and surroundings unhealthy. My experience leads me to believe that the following are the root causes in the production of this disease:

1. That it follows a post-natal maldevelopment of the tissues of the sclerotic tunic produced by yet undetermined factors, but which may be deficiency in certain essential nutritional elements, exogenous or endogenous—that is, vitamins and necessary salts or glandular secretions—or a direct toxaemia due to some microbic infection allied or similar to that which produces the changes popularly known as strumous, and which may be secondary to the febrile diseases of infancy.

2. This developmental weakness appears often to be hereditary.

3. The condition may ensue from certain predisposing or auxiliary causes. The strain of school work is the commonly recognized one, but what I gathered from my observation on these Boards is that hard physical strain in the early years of adolescence is a most important and often overlooked factor. Young apprentice engineers seem to suffer unduly from myopic error, and I was most struck with its development among young miners from 18 to 25. This showed itself first generally as a simple astigmatism gradually developing into the compound variety. What I wish finally to emphasize is that myopia, as opposed to hypermetropia, is essentially a disease, and therefore should be and can be prevented in the great majority of cases. Healthy surroundings in the period of development, suitable nutrition, fresh circulating air, cleanliness, ventilation, freedom or immunity from the common infectious diseases of children, especially measles, will in time eliminate from the population this avoidable condition, which is the leading crippling factor as regards sight efficiency of a large proportion of the inhabitants of our country.

The Effect of the Various Diseases of the Eye on Grading.

The outstanding point was that nebulae of the cornea secondary to eczematous keratitis of childhood accounted for 15.1 per cent. of eye disability due to disease. This figure shows emphatically the seriousness of this condition as a factor in the reduction of sight efficiency and the necessity both for prophylaxis and thorough and early treatment.

Eye injuries gave 15 per cent. of cases of disability resulting from various accidental injuries resulting in serious maiming or entire loss of vision.

Syphilis apparently does not rank high in this district as a cause of eye disability. Iridocyclitis with secondary pupil occlusion gave a total of only 5.8 per cent. My experience in the native populations of the Far East used to give me far higher figures. Syphilis, gonorrhoea, and trachoma were the most common causes of eye disability in the eastern tropics. Tubercle, struma and the diseases secondary to maldevelopment and malnutrition take their place in this country.

Miner's Nystagmus.

Several thousand young miners in this district were called up for active service after the German advance in

March, 1918. Their average age was 21, and the result of my examination of them shows that at that age in this district miner's nystagmus is most uncommon. I only found 3 cases. There were, however, 142 cases of myopia. Of this number 36.6 per cent. had simple regular astigmatism below 2 D. The peculiar strain of the miner's occupation, therefore, may result in the development in the young miner of myopic astigmatism. This later becomes compound, and nystagmus often follows in more mature years. The sequence, therefore, in many cases of miner's nystagmus is, first, the severe muscular strain of coal hewing, development of myopic astigmatism, defective illumination, interference with normal fixation, and an ensuing nystagmus, varying in amount according to the general health and influence of intercurrent disease.

The influence of refractive errors on miner's nystagmus has been often discussed, but I do not think that the point that the miner's occupation is often in itself a cause of the initial refractive error has been put forward before. My experience with a large body of young miners has persuaded me that the beginning of the trouble may be accompanied, either as a causal or predisposing factor, by the development of a low degree of simple myopic astigmatism, which develops later into the compound variety, and that this astigmatism appears to follow the peculiar strain on the eye structures of the miner's occupation.

Summary.

To sum up briefly, the following are the effects of the various eye disabilities on the grading of army recruits. Such a grading will represent a corresponding handicap in civilian life.

Grade II. High refractive errors, more commonly myopia. Corneal nebulae. Internal concomitant strabismus.

Grade III. High myopia 50 per cent. of the cases. Corneal scars. Congenital cataracts and colobomas. Secondary and congenital nystagmus. Tobacco amblyopia. Various eye injuries.

Grade IV. High progressive myopia. Chronic blepharitis a very common disabling condition in this district. Recurrent iridocyclitis, cataract, glaucoma, retino-choroidal inflammation and degeneration, optic atrophies, trachoma. This last is a very rare occurrence in this part of the country.

In conclusion, it is, I think, evident that to a very large extent the problem of sight efficiency in a nation is intimately connected with, and runs parallel with, its general standard of sanitation and hygiene, and the healthy upbringing of its children.

A CASE OF PLACENTA PRAEVIA CENTRALIS, WITH SPONTANEOUS DELIVERY OF THE CHILD.

BY

ALEXANDER C. BLAIR, M.D.,

BRIMSBY, YORKS.

PLACENTA PRAEVIA is sometimes, for purposes of description, divided into the classes of complete and incomplete, the term complete being confined to those cases in which the placental tissue covers the os internum when full dilatation occurs, and incomplete including all the other degrees of placenta praevia in which the implantation of the placenta implicates the lower uterine segment. Clinically such a description serves no very useful purpose, as it may be practically impossible to discover, at any rate before labour sets in, to what extent the placenta is abnormally attached to the lower pole of the uterus, and in practice one may meet with cases which are partial or marginal, or even lateral, in relation to the dilating os, and yet may be infinitely more dangerous to mother and child than those in which it is impossible to effect delivery without breaking through the placental barrier. The case which I describe is a notable instance of this. Yet there is no one who has had experience of such cases but knows that placenta praevia centralis usually gives rise to greater difficulty in effecting a satisfactory extraction than those varieties of the condition in which the presentation can be reached without much disturbance of the placenta.

With regard to the relative frequency of the different varieties of placenta praevia which are mentioned in text-books a great diversity of opinion has been expressed. In my own experience of some 3,000 cases of midwifery in a period of about twenty-seven years the lesser degrees of placenta praevia have been met with once in every 350 cases, whereas complete placenta praevia was seen once in about 800 cases. Altogether I have had six. Yet such an authority as Pinard has stated that he never met with a case in which the placenta was uniformly adherent to the margins of the internal os, and that marginal is the most frequent variety. Something may be said for the locality—perhaps for the social standing of the patients also—in which the practitioner carries on his work. Notoriously the complication is rarely seen in primiparae, and it increases in frequency with the number of children borne, being probably greatest when the number is over seven. In districts where a family of three or four is the average it is likely that the incidence of placenta praevia will be considerably less than where larger families are the rule rather than the exception.

In reference to treatment, the general trend of obstetric opinion seems to be that on account of the dangers of unavoidable haemorrhage the pregnancy or labour, as the case may be, should be terminated as soon as possible after the condition has been diagnosed. At any time a massive haemorrhage may coincide with the beginning of labour, which leaves little hope for the mother or child unless promptly dealt with, so that the operation of election with some obstetricians is Caesarean section. And there can be little doubt that this operation when performed in a suitable institution by an experienced operator is the best in the interests of both mother and child. I have employed this method in one case with excellent results to both. I was far from the nearest medical assistance—some fifty miles. Labour had set in and the woman had had three convulsions previous to my arrival, but the child was still living.

In general practice, however, one finds an unwillingness among patients to undergo operation; yet if the case is seen before the onset of labour removal to a hospital should be strongly insisted upon. As a rule the patient and her friends ignore such advice, and the case goes on until an attack of haemorrhage is the signal for calling in the practitioner. By plugging the os and vagina thoroughly, and perhaps giving an injection of pituitrin, the bleeding may be arrested until the labour begins. There is frequently a malpresentation of the child, often a transverse, and there is little difficulty in piercing or pushing aside the intervening placenta and performing bipolar or internal version, as taught in the textbooks of obstetrics. The chief difficulty is the haemorrhage: it may be formidable and give rise to hurry and an anxiety to empty the uterus at all hazards. Hence the not inconsiderable danger of tearing the softened and highly vascular cervix, or even the lower uterine segment, if too great haste is used. Should the child present by the head I can now see no reason why the placenta should not be boldly pierced and the head delivered by high or medium forceps extraction, always provided one has the pluck to wait until the os has become fully dilated. By forcibly pressing over the opposite pole of the child through the mother's parietes the haemorrhage could be greatly controlled, and, if necessary, pituitrin might be administered to strengthen the pains. Needless to say, such a procedure premises a multipara with a normal pelvis and a foetus not too large for easy delivery. Where there exist doubts as to these two conditions I consider that version is the easiest and safest course in general practice. I have had no maternal mortality in my cases, and the infant mortality has been 50 per cent. The danger of puerperal infection is almost negligible, even in an ordinary bedroom, if a proper technique is employed. In the event of there being a desire for a living child Caesarean section, vaginal or abdominal, must be seriously considered. It is open to question how far this is justified in every case of complete placenta praevia.

The Case.

On the night of March 21st I was called to see a multipara, in her eighth pregnancy, on account of haemorrhage from the vulva. The confinement was expected in the last week in March or early in April. Up to then she had been in good health, and there was no history of trauma or anything likely to account for the condition. On

* Specimen shown and described at the meeting of the Yorkshire Branch of the British Medical Association at Leeds, April 6th, 1921.

examination by external palpation the foetus could be felt lying just clear of the pelvic brim, with the resistant plane of the back well in front of the left flank of the mother, and in my opinion it was probably a right occipito anterior. Per vaginam I found a thin trickle of blood issuing from the os, which was soft and boggy to the finger, while the canal was somewhat patulous. Through the os the characteristic stringy feel of placental tissue was unmistakable. As the labour had not begun I did not feel justified in trying to diagnose the precise variety of placenta praevia I was dealing with. In view of the dangerous condition of the patient, I strongly advised her friends to have her sent to a hospital; but in spite of my insistence the woman refused to leave home. I plugged the os and vagina tightly with antiseptic gauze and waited for some hours for labour pains to set in, but the uterus remained quiescent. She was kept in bed for a week, with daily renewal of the packing, and the haemorrhage had practically ceased by the end of the second day.

Late on March 27th I was called in great urgency: there had been a sudden gush of blood, and labour had immediately set in with extreme precipitancy, the pains following each other almost without interval, and she complained of great pain. I covered the distance to the house within a quarter of an hour, and, on my arrival, I was astonished and gratified to hear the cries of the newborn child as I entered the bedroom. There had been a fair amount of haemorrhage, but it was not excessive. The child was a healthy male, and weighed about six pounds. On examination the placenta was found in the uterus closely adherent all round the fully dilated os. The uterus contracted to the usual manipulations, but blood still flowed freely. With some difficulty the placenta was stripped from the uterine wall, and after a hot douche and an injection of pituitrin the discharge became normal. The after-history has been without incident.

An examination of the after-birth explains the manner of the child's delivery. Evidently the case was one of placenta praevia centralis, with a somewhat meagre covering of placental tissue near the insertion of the cord. Owing to the extreme pressure of the head directly upon the central part of the weakened placenta it had given way, and a rent was made sufficiently large to permit the passage of the child. So far as I know, such an occurrence is unique, and it suggests a method of dealing with cranial presentations that is direct and simple. In most of my cases of complete placenta praevia the part covering the os was membranous. The commonly accepted methods in such circumstances is to turn the child, and bring down a leg to act as a plug, making pressure over the fundus of the uterus to drive it well down into the pelvis. But in suitable circumstances—for instance, where there is a normal outlet, with a medium-sized child—even with a transverse presentation a cranial delivery might be essayed with the possibility of greater safety to mother and child. In version cases there is frequent delay with the after-coming head owing to the mass of the placenta acting as a partial barrier and the anxiety of the accoucheur to deliver before full dilatation in order to get a living baby. Often the child dies simply because of the prolonged second stage of labour, and I suggest that an imitation of Nature's rare method, as exemplified in my latest case, is worthy of serious consideration. However suitable Caesarean section may be for the institutional treatment of placenta praevia, it will be some considerable time before the general practitioner will be in a position to get his patients to consent to undergo the operation in all cases. And there is still a considerable body of opinion in general practice which inclines to less heroic measures.

The placenta was shown exactly as it appeared after delivery. The extent to which it was adherent was plainly evident by the ragged surface consequent upon its forcible detachment from the wall of the uterus. Otherwise it was perfectly normal in shape and size and in the insertion of the cord.

THE first appointments in the faculty of medicine of the proposed Columbia University Medical Centre, New York, are Dr. Allen O. Whipple, of the Presbyterian Hospital staff, as professor of surgery and director of the surgical service; Dr. Walter W. Palmer, Johns Hopkins University, as Bard professor of medicine and director of the medical service; and Dr. Herbert B. Wilcox, as Carpentier professor of diseases of children.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANTITETANUS SERUM: ANAPHYLAXIS.

A MAN, aged 24, who was wounded in August, 1918, is under the impression that he received several doses of antitetanus serum, two while at the casualty clearing station, and two more after reaching England. He was hit in the face severely, and underwent several plastic operations. The wounds are now healed.

On June 2nd, 1921, as the result of a motor-bicycle accident, he sustained multiple lacerated wounds of the right hand; the wounds were very dirty, with much crushing of tissue and grinding in of dirt from the road. I dressed him in the morning, and told him to return for a prophylactic dose of antitetanic serum. This was given (500 U.S.A. units) subcutaneously over the right rectus abdominis muscle at 2.45 p.m. After walking three-quarters of a mile the patient very suddenly felt faint and vision became dim; after another quarter of a mile he collapsed unconscious near his lodgings. He was carried home by the police, having been unconscious for about twenty minutes. When he arrived home he "felt very sleepy and exhausted"; at about 4 p.m. he vomited, and did so at intervals until 6 p.m. I had been out in the country and only saw the patient at 6.15 p.m. I found him very collapsed and breathing heavily, and pulseless. I carried him upstairs to his bed, the foot of which I raised and "blocked" on chairs. Hot-water bottles were applied in each axilla, and he was given a cup of hot tea with sugar, and a stimulant mixture was ordered. The condition rapidly improved, but later, when he attempted to get out of bed to pass water, he fainted again, falling heavily and cutting his forehead; when I saw him at 9 p.m. he had been lifted back to bed and his pulse was palpable, though very poor and of extremely low tension. There was an urticarial rash on the abdomen and chest. At 10.45 p.m., when he reached a nursing home in an ambulance, his condition was much improved; the pulse was 100. He had a fair night, and next day, though he felt limp, was otherwise normal. He was discharged from the nursing home on June 6th.

Cambridge. R. SALISBURY WOODS, M.D., B.Ch.

Reports of Societies.

BIRTH CONTROL.

A MEETING of the London Association of the Medical Women's Federation was held on June 21st, with Mrs. FLEMING, M.D., in the chair. The subject for discussion—birth control—was opened by Dr. ELIZABETH WILKS, who strongly advocated State birth control as the only practical method of preventing the renewal of the race principally from the worst stocks. She pointed out that to-day the classes superior in intelligence and capacity practised individual birth control (not always from sufficiently justifiable motives), whereas the less intelligent and the degraded had neither the prudence nor the initiative to take any measures for limiting their offspring. Dr. Wilks thought that with a scheme of State birth control the unfit could be segregated and prevented from reproduction, but that this should be done in a manner more efficient than had been attempted by the Act for the care of the mentally deficient, which failed owing to the insufficient number of homes for maintaining defectives. On the other hand, by such means as changes in the marriage and divorce laws an increased birth rate among the fit should be indirectly promoted.

Mrs. SCHARLIEB stated that in over forty years' experience she had found that artificial limitation of birth damaged a woman's nervous system. The thwarting of any natural process eventually caused damage. Limitation of the family was not necessary—even in the poorest classes—in the interests of the wife. It removed the fear of consequences from the husband, and hence encouraged too frequent sexual intercourse. Mankind was already oversexed, she considered, and unbridled sex passions were

likely to lead to effeminacy and degeneration, to war against self control and self respect.

Lady BARRETT said that as the subject was now engaging much attention among the lay public it was very important for medical women to think out their own views. It would, she believed, be agreed that in certain cases conception must not be allowed—for instance, in cases of existing disease, insanity, and in working class women where health was already undermined by overwork. In what might be called "ideal cases," where control was practised with a view to enabling the parents to look after a few children more effectually, it was often assumed, quite unjustifiably, that every woman bore a child every year. It was also forgotten that privation and overwork rather than easy circumstances were proved to tend towards overproduction. In regard to the question of how birth should be controlled, in the first place it must be remembered that self-control was a great factor in education, and anything leading to the loss of this was harmful. The question of control should in most cases be discussed privately and individually. It should not be forgotten that, particularly in the working classes, child-bearing might have a less harmful effect on a woman than excessive sexual demand. The teaching of what was normal in sex was thus extremely important. Such teaching should be undertaken by medical women alone and individually in each case. She was much opposed to the present broadcast teaching among the lay public. She thought an opportunity for teaching arose at antenatal clinics, where medical women had an opportunity of getting into intimate relationship with mothers.

An animated discussion followed, in which Dr. FLEMING, Dr. STURGE, Dr. MCILROY, Dr. FORSHALL and [illegible] part.

Reviews.

THE PHYSICIAN'S OUTLOOK ON ABDOMINAL DISEASE.

PROFESSOR W. RUSSELL'S book, *The Stomach and Abdomen from the Physician's Standpoint*,[1] gives the mature conclusions of a teacher in the great medical school of Edinburgh, who began his career before the era of abdominal surgery and the light thus thrown on diagnosis, and is therefore well qualified to speak from long experience of the relative spheres of influence of the physician and the surgeon. Not unnaturally he feels that if the surgeon becomes supreme in the debatable territory of abdominal disease, the physician will have himself only to blame, as he should be responsible for the diagnosis guiding the treatment, of which laparotomy is but a part. Exploratory laparotomy has its place as a means of diagnosis, but it should not be allowed to be a screen for laziness and ignorance; the aim of the consulting physician and of the general practitioner should be the reduction to a minimum of operations which begin with the abdominal incision and end with its immediate suture; exploratory laparotomy is really a confession of diagnostic failure. While the physician's first duty is to arrive at an accurate diagnosis based on all the available methods of examination, he should also be sufficiently acquainted with surgical procedures and successes to understand and appreciate what he recommends patients to undergo at the hands of his colleagues.

As in the case of Professor Russell's recent book, *The Sphygmometer* (reviewed in our issue of March 12th, 1921, p. 386) this volume contains material previously published, but skilfully welded together; it deals, in seven sections, with the stomach, the pylorus and duodenum, the intestinal tract, the œsophagus, the liver, the spleen, and the kidney. These articles are on the lines of clinical lectures rather than exhaustive descriptions, are illustrated by cases, and constitute a record of much observation at the bedside. The view that hyperchlorhydria is neurotic in origin is regarded as "erroneous and brimful of evil consequences." Professor Russell submits, as the outcome of clinical experience, that some persons, especially the gouty and rheumatic, are prone to secrete gastric juice in excess, or in other words are the subjects of an acid dyscrasia. Air swallowing, commonly called flatulent dyspepsia, is a common though not generally recognized condition, usually associated with abnormal gastric secretion and generally hypochlorhydria, and should be treated by tactfully explaining to the patient what he unconsciously does, as improvement or cure is impossible without his co-operation; some help, however, may be obtained from valerian, nux vomica and acid. In the chapter on congenital hypertrophy of the pylorus attention is directed to the occurrence of symptoms in later life brought out by failure of muscle compensation or an attack of hyperchlorhydria. The section on the kidney does not include the various forms of nephritis, but deals with calculus, enlargement, hydronephrosis, nephroptosis, and coli infection.

[1] *The Stomach and Abdomen from the Physician's Standpoint.* By William Russell, M.D., LL.D. London: Baillière, Tindall, and Cox. 1921. (Demy 8vo, pp. xiii + 329; 35 figures. 15s. net.)

THE HISTORY OF ANATOMY.

CONSIDERING the great activity displayed in the study of medical history during the last generation, it is remarkable that a complete history of anatomy is still lacking. No full work on this subject has appeared since the monumental but antiquated treatise of Portal towards the end of the eighteenth century.

There is, however, a magnificent torso from the hand of LUDWIG CHOULANT (1791–1861), the most learned and accurate of all medical bibliographers, whose *Geschichte und Bibliographie der anatomischen Abbildung nach ihrer Beziehung auf anatomische Wissenschaft und bildende Kunst*, which appeared at Leipzig in 1852, has always been regarded as one of the most valuable of medico-historical reference books. In Choulant's time there were no posts available to medical historians as such, and much of his energy as professor of medicine was spent in opposing the introduction of modern "scientific" methods into clinical instruction. In his historical researches, however, he eagerly developed the scientific and critical methods of the new school, and his prodigious erudition, his painstaking accuracy, his unrivalled power of marshalling and condensing large numbers of diffused facts, his great capacity for systematic arrangement and his almost unerring judgement rendered him an ideal bibliographer. Sharing a common defect of the learned among his compatriots, he lacked those powers of generalization that are needed to make a historian, *sensu stricto*, and his works contrast unfavourably in this respect with those of such French authors as Flourens, Daremberg, Malgaigne or Nicaise. But no one has surpassed Choulant in providing and arranging the material out of which medical history can be written.

A translation of Choulant's book has recently appeared under the title, *History and Bibliography of Anatomic Illustration in its Relation to Anatomic Science and the Graphic Arts*.[2] The difficult task of turning this treatise into English was carried out by Dr. MORTIMER FRANK, of Chicago, who, unfortunately, has not lived to see the work through the press. Dr. Frank was a young ophthalmologist who had for some years exhibited great interest in medical history. He acquired a remarkable command of the intricate sources of the history of medicine, and bade fair to develop into one of the leading English-speaking medical historians. His early death, at the age of 44, on April 21st, 1919, is thus a serious blow to American medical scholarship.

In translating the treatise of Choulant, Dr. Frank annotated it, brought it up to date, and made it in every way a more valuable volume. He enriched it further by an account of anatomical illustrations in antiquity and in the middle ages, a department of investigation that had hardly opened in Choulant's own time. This section has been taken mainly from the works of Professor K. Sudhoff. The volume has been seen through the press by Colonel FIELDING GARRISON and Dr. E. C. STREETER. These accomplished historians have themselves added illuminating sections, the defect of which is their brevity, on "Sculpture and Painting as Modes of Anatomical Illustration"

[2] *History and Bibliography of Anatomic Illustration in its Relation to Anatomic Science and the Graphic Arts.* By Ludwig Choulant. Translated and Edited, with Notes and a Biography, by Dr. Mortimer Frank; with a Biographical Sketch of the Translator and two additional sections, by Dr. F. H. Garrison and Dr. E. C. Streeter. Chicago, Ill.: The University of Chicago Press; London: The Cambridge University Press. 1920. (Roy. 8vo, pp. 452; illustrated. 10 dols. net.)

and on "Anatomical Illustration since the time of Choulant."

The volume is a large and expensive one, but the number of facts to be marshalled is enormous, and the work is crowded with admirable illustrations. It forms, undoubtedly, the most valuable collection of data on the history of anatomy which has yet found a home between two covers.

X-RAY DIAGNOSIS.

THERE are not many books entirely limited to *x*-ray diagnosis, and it is therefore not surprising that that by DRS. HOLMES and RUGGLES, entitled *Roentgen Interpretation*,[3] originally published in 1919, has already reached a second edition. The authors have found it necessary to make few alterations. Some illustrations have been added and one or two omitted; the letterpress has in places been rearranged, and several additions have been made; one or two mistakes have been corrected. To many of the illustrations arrows have been added, pointing to the areas of abnormality and disease; this should be of distinct use to those without expert knowledge of radiographs. With the exception of these slight alterations the second edition is practically identical with the first.

The book is a good introduction to the subject of the interpretation of radiographs, and covers almost the whole field of *x*-ray usefulness in the demonstration of abnormalities brought about by disease, etc. At the same time the illustrations are not very satisfying; many of them leave much to be desired. No doubt, to some extent, this is due to the loss of detail in the process of reproduction, but when all allowance is made for this, there remain many which are inadequate. It is better not to attempt illustration of any point or points unless the abnormalities described are clearly shown. Further, some of the descriptions of the *x*-ray changes produced by disease are so much compressed as to be almost inaccurate; notably is this the case in the short note upon Köhler's disease of the scaphoid and that on osteochondritis deformans. However, as a whole the book will be useful to the general practitioner and also to the student who wishes to obtain an elementary knowledge of *x*-ray diagnosis.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

IN the new edition of his well known *Textbook of Medical Jurisprudence and Toxicology*[4] Professor GLAISTER has included additions relating to industrial and other poisonings, the lunacy law, and the relationship of intoxication to responsibility for crime. The book is now entitled to a place in the front rank of works on medical jurisprudence, and forms a valuable work of reference for both medical and legal purposes. It is clearly and concisely written, and contains numerous excellent illustrations.

Professor Glaister has devoted more space to certain subjects than is usual in books on medical jurisprudence. We are unaware, for example, of any other medical work in which the method of identification by means of finger-prints is so fully and clearly described. When dealing with the question of inebriety and responsibility for crime he gives a full account of the recent important case of Rex *v.* Beard, which was heard in November, 1919. The prisoner was convicted at the assizes of the murder of a child of 13 by suffocating her in his attempts to prevent her screaming whilst he was raping her, and was sentenced to death. On appeal the Court of Criminal Appeal quashed the conviction for murder and found instead a verdict of manslaughter. The case was then referred to the House of Lords, which reversed the decision of the Court of Appeal and upheld the original verdict of murder. The House of Lords held that there was no doubt that the man was not too drunk to form the intention of committing the crime of rape, and he could not therefore be regarded as not responsible for the further act of violence which caused death, and was a consequence of the initial crime. Professor Glaister regards it as now definitely established that irresponsibility on the grounds of inebriety can only be successfully pleaded when the prisoner was so drunk as to be in what amounts to a state of insanity at the time he committed the crime.

The law relating to lunacy is very fully and clearly stated. We note, however, that the author has not followed the usual practice of writers of textbooks on medical jurisprudence in giving an account of the different forms of insanity, and the characteristics of each form most likely to possess medico-legal significance. He merely refers the reader to textbooks on the subject. This is, perhaps, somewhat to be regretted. It could not, of course, be expected that the author should give a detailed account of all the psychoses, but every branch of medical jurisprudence necessarily draws material from clinical medicine, and a description in medico-legal textbooks of special features of the various psychoses, such as suicidal or homicidal tendencies, is not less desirable than, for instance, the inclusion of the signs of abortion when dealing with the medico-legal aspects of birth. The information is of the more importance as most books on medical jurisprudence are seriously out of date in their accounts of the psychoses. Even Professor Glaister, when referring to the classification of the psychoses, still adopts that given by the International Congress of Alienists in 1867. We note that here and there the author is not quite up to date, particularly when dealing with statistics. For example, he does not give the returns for industrial lead poisoning for dates later than the year 1902. The Poisons Schedule which he quotes does not contain the most recent additions and alterations. We do not understand the statement under the heading of carbolic acid: "The English Registrar-General gives in his report for 1918 for the first time in several years a detailed list of poisons causing deaths." There has been no interruption in the practice of the Registrar-General in tabulating the poisons responsible for accidental, suicidal, and homicidal deaths. These points, however, are not very important, and Professor Glaister is to be congratulated upon having produced a work which must be regarded as one of the standard textbooks on medical jurisprudence.

THE MAYO CLINIC.

THE ninth volume of *Collected Papers of the Mayo Clinic* (Rochester, Minnesota)[5] contains a hundred and ten articles, nearly all of which have been previously published; they are arranged under the nine headings of the alimentary canal, urogenital organs, heart, blood, skin and syphilis, the head, trunk and extremities, nerves, technique, and general. The wide scope of the clinic's activities, and the wealth of material that has been so fully utilized cannot but impress the reader with admiration for this unique organization. As is to be expected, the great majority of the articles deal with surgical practice or pathology, but pure medicine has been well represented in the clinic, and evidence of this is forthcoming in a number of papers; thus Willius discusses the expectancy of life in auricular fibrillation in an article based on 500 cases examined electrocardiographically during four and a half years at the clinic, and concludes that the mortality attending auricular fibrillation is double and in some groups treble that occurring in similar types of heart disease uncomplicated by this arrhythmia. The same worker writes on changes in form of the initial ventricular complex in isolated derivations of the human electrocardiogram. The diagnostic methods in the anaemias are discussed by A. H. Sanford; Winifred Ashby finds that transfused blood corpuscles survive for thirty days or more; and Rosenow contributes several papers, of which three are on aspects of influenza and pneumonia. There are two papers on thyroxin; and in the report on tetany in a eunuchoid Woltman adds a well-written summary of tetany and of its relation to pluriglandular insufficiency. It is obviously impossible even to name the most interesting papers here brought together, but a few examples may be mentioned: Broders analyses 537 cases of squamous-celled epithelioma of the lip, 98 per cent. being in males, and 95 per cent. on the lower lip; he also gives an account of benign xanthoid extraperiosteal tumours, which include those of the tendon sheaths formerly called myelomas, containing foreign body giant cells; from examination of 17 cases at the Mayo Clinic it appears that the tumours

[3] *Roentgen Interpretation* A Manual for Students and Practitioners. By G. W. Holmes, M.D., and H. E. Ruggles, M.D. Second edition. London: Henry Kimpton. 1921. (Med. 8vo, pp. 228; 184 figures. 18s. net.)

[4] *A Textbook of Medical Jurisprudence and Toxicology.* By John Glaister, M.D., D.P.H.Camb., F.R.S.E. Fourth edition. Edinburgh: E. and S. Livingstone. 1921. (Demy 8vo, pp. 917; 137 figures. 30s. net.)

[5] *Collected Papers of the Mayo Clinic, Rochester, Minnesota.* Edited by Mrs. M. H. Mellish. Vol. ix, 1919. Philadelphia and London: W. B. Saunders Co. 1920. (Roy. 8vo, pp. 1331; 490 figures, 3 plates. 60s. net.)

are granulomas derived from extravasated blood, and that there is a history of injury in 35 per cent. of the 75 collected cases. A suggestive paper on a mathematical terminology for neoplasia and its significance, by W. C. MacCarty, deserves attention, and there are several articles on the surgery of the stomach, and addresses by E. B. Wilson and by the stimulating heads of this famous school, W. J. and Charles Mayo.

THE ISLANDERS OF THE PACIFIC.

In *The Islanders of the Pacific, or the Children of the Sun*,[1] Lieut.-Colonel T. R. St. Johnston, now Governor of the Falkland Islands, but previously for ten years in the Lau Islands, Fiji, where he was District Commissioner, deals in an interesting manner with the origin and ethnology of the natives of the Pacific. As a medical man and, like some colonial officials of high rank, he was originally in the medical service of the Colonial Office—he has always taken an interest in anthropology. Accordingly, he has devoted much time and thought to a study of the mythology, traditions, and customs of the inhabitants of the Pacific Islands, with the object of throwing further light on their origin.

The sun-myths are considered in some detail; sun-worship and fire-worship are obviously connected, the followers of the fire cult having merely specialized in a variety of sun-worship. It is suggested that "the halo" as an emblem of divinity was borrowed, like so many other ideas in the early Christian Church, from a pre-Christian sun-worship. There are at least three main types among the inhabitants of the Pacific Islands: (1) The Negrito, the aboriginal, probably dating from untold aeons, but now rarely seen, of much the same type as the Andaman islanders; (2) the Melanesian, generally with a dolichocephalic head, quick and furtive in his movements, sulky according to European ideas, but a good worker under supervision; and (3) the Polynesian, which fairly certainly migrated into the Pacific 2,000 years ago, brachycephalic with evidence of remote Mongolian ancestry, handsome even according to European standards, with light-coloured skin, and the bearing of a race of chiefs. Though at first influenced by the general belief that any traces of sun-cult possessed by the Melanesians were received from the later Polynesian immigrants, Lieut.-Colonel St. Johnston is now convinced that both these races were formerly sun-worshippers, even if with different rites. He puts in a strong plea for the natives, who if given a chance will increase instead of diminishing, and become an asset to the Empire; he urges that, as the Polynesians and the Europeans had in the remote ages a common ancestry, dating from the time of sun-worship in England, a mixture of Polynesian and European blood should produce a better stamp of man than a mixture of the white man and the African negro or of the white man and the Chinese. He is now engaged on a history of British influence in the Pacific, a companion volume to the present well-got-up and beautifully illustrated work.

NOTES ON BOOKS.

ELLIOT'S *Lectures on Tropical Ophthalmology*[2] contains, we gather, the substance of lectures delivered at the London School of Tropical Medicine, and of an article the author has prepared for Byam and Archibald's *Practice of Medicine in the Tropics*, a work which we understand is in the press but not yet published. In the preface Colonel Elliot states that this small volume has formed the skeleton on which he built his work on *Tropical Ophthalmology*, which was published last year and was noticed at some length in the BRITISH MEDICAL JOURNAL of October 2nd, 1920 (p. 516). Students and practitioners who have passed through the course at the London and other schools of tropical medicine will, we think, be glad to have this handy reminder of the chief facts about eye diseases in the tropics. An amusing misprint occurs on page 23—fruitent for diffident; one or two names are misspelt—Crooke's for Crookes's, and Streatfield for Streatfeild. The late Mr. Streatfeild, who was ophthalmic surgeon to University College Hospital, used to explain the peculiarity in the spelling of his name by the humorous assertion that the family was founded long before squires were taught to spell. The book is well written, and brought out in the creditable manner that we associate with the Oxford Medical Publications.

[1] *The Islanders of the Pacific, or the Children of the Sun.* By Lieut.-Colonel T. R. St. Johnston, late District Commissioner of the Lau Islands, Fiji. London: T. Fisher Unwin, Ltd. 1921. (Med. 8vo, pp. 342, numerous illustrations. 25s. net.)

[2] *Lectures on Tropical Ophthalmology.* By R. H. Elliot, M.D., Sc.D., F.R.C.S. London: Henry Frowde, and Hodder and Stoughton. 1920. (Med. 8vo, pp. 56; 15 figures. 6s. 6d. net.)

EPSOM COLLEGE.

THE annual meeting of the governors of Epsom College was held at 29, Bedford Square, London, on June 24th, Sir HENRY MORRIS, treasurer, presiding. The names of successful candidates for foundation scholarships were announced as follows: Frederick J. Brice, David Joy, John L. Newton, Philip M. Lawson, Spenser G. F. Penny, Eric R. Bent, and James D. Shoolbread. The successful candidates for the Pugh, Christie, and Sir Thomas Smith pensionerships were respectively Margaret Bromilaw, Peter W. McGregor, and Celeste S. M. Orme. It was stated that the present number of Epsom College boys was 316, including 47 foundation scholars at Epsom and one at another school, 6 Council exhibitioners, 243 other boarders, and 19 day boys.

Sir HENRY MORRIS, in moving the adoption of the sixty-eighth annual report, referred with regret to the death of Sir Frederick Taylor, one of the earliest pupils of the school, who afterwards in various positions rendered it great service; also to the resignation of Sir William Church from the chairmanship of the council. Owing to the great increase in expenditure the year ended with a deficit of £5,518; the year 1919 ended with a deficit of £3,700. He did not anticipate a recurrence of these deficits, however, because the full advantage of the increased school fees, which came into operation in September last, in time only to affect one term of 1920, would now be felt. The salaries of the masters had been settled by the council before the report of the Burnham Commission on the salary scale of assistant masters in secondary schools was published, and he did not think it was incumbent on the College either to copy or follow the Burnham scale. The new scale at Epsom, he believed, was in some respects more beneficial to the masters. Pensions also had been increased under a new scheme. The previous scheme, which had been in operation for seventeen years, provided only for a maximum of £100 a year, and was contributory, whereas the new scheme provided for £200 a year, and was on a non-contributory basis. Arrangements had been made whereby contributors to the earlier scheme could transfer without detriment, and it had also been made possible to give some gratuity to masters who left the College before they became entitled to receive the pension. Sir Henry added that an analysis of the nationalities of the doctors whose sons applied for foundation scholarships showed that out of twenty-four candidates this year, thirteen were the sons of men with a Scottish qualification, nine with an English, and two with an Irish. The qualifications of the fathers of the seven successful candidates were Scottish in three cases, English in three, and Irish in one.

DR. G. E. HASLIP asked for the number of subscribers to Epsom College among medical men, and was informed that it was between 3,000 and 3,500. He went on to criticize certain points in the balance sheet, and then urged that the time had come for the amalgamation of the College with the Royal Medical Benevolent Fund. That Fund had fewer than 2,500 subscribers, and if Epsom had 3,500, the combined figures (even making no allowance for medical men who were subscribers to both) revealed a condition of affairs not creditable to the medical profession, which ought to support these charities more heartily, and might do so if effort was concentrated upon one fund kept well to the fore.

Sir HENRY MORRIS replied that he did not believe that amalgamation would add to the number of subscribing members of the profession. It was regrettable that so small a minority of men supported this work, and he had had experience of even obstinate resistance on the part of a number who might subscribe handsomely. One objection to amalgamation was that while the Royal Medical Benevolent Fund was wholly a charity, Epsom College was only in part a charity. It was educating the sons of a large number of medical men who could not afford the high fees of some other public schools, and these scholars might encounter some disagreeable reminders from outsiders if it were suggested that Epsom College was wholly a charitable foundation.

The report was adopted, and the retiring members of Council and auditors were re elected. A vote of thanks to Sir Henry Morris for his services as treasurer was carried, on the instance of Sir WILLIAM CHURCH, who also thanked the Council for the kindness it had shown him during the years of his chairmanship.

THE ROYAL SANITARY INSTITUTE CONGRESS.

THE thirty-second Congress of the Royal Sanitary Institute was held at Folkestone from June 20th to June 25th. It met in five sections and seven conferences, and considered sixty papers bearing on subjects ranging from personal and domestic hygiene to matters of special interest to municipal engineers and surveyors and sanitary and veterinary inspectors. The Earl of Radnor's presidential address was a strong plea for a retention of the voluntary system in health services. He instanced nursing associations and voluntary hospitals: to give up the voluntary principle in these two great services and transfer the burden to public authorities would probably double the expenditure while diminishing the efficiency. People had faith in voluntary agencies, and faith was of vital importance in all matters relating to health.

Hospitals.

The future of the hospital was the subject of discussion in the Section of Sanitary Science and Preventive Medicine, over which Sir LESLIE MACKENZIE presided. Dr. W. J. TYSON (Folkestone) reviewed various methods, contributory and other, by which additional funds for hospitals might be obtained, so that not only the poor but the lower middle class, whose incomes would not stand the strain of consultation and operation and nursing home fees, might enjoy the best modern institutional treatment. His hope was that the Insurance Act might be so amended as to empower approved societies to make periodical contributions to hospitals for the benefit of their members. He reminded the section that the annual income under the Insurance Act amounted to upwards of 26 millions, while the annual expenditure absorbed only 17 millions, leaving a generous margin, and if the approved societies should decide to assist hospitals by direct contributions they would be carrying out the spirit of national insurance.

Mr. E. L. MARTIN LOBB (West Kent General Hospital) dealt with the hospital as a health centre from the point of view of the general practitioner. He maintained that better organization would relieve much of the pressure of crowded premises and lengthy waiting lists. It was time that a sort of Domesday Book of the convalescent accommodation of the country were compiled, so that to every hospital, according to its size, a fraction of the available convalescent bed accommodation could be assured. He hoped also that a sliding scale of payment by hospital patients might be established in a day not distant. Dr. J. MIDDLETON MARTIN described the Gloucestershire scheme for the extension of medical services. The first ten of fifty-two out-stations, he said, had just been opened, and when in due course the whole of them were in operation there would be on the average one out-station within three miles of every part of the county. The services provided by the scheme included treatment, mainly out-patient, in connexion with the defects of school children, tuberculosis, venereal diseases, maternity and child welfare, and the care of ex-service men. Others who took part in the discussion were Dr. C. PONDER (assistant county medical officer for Kent), who spoke from the standpoint of the county health officer, and Dr. WHEATLEY (medical officer of health for Shropshire), who looked forward to a district nursing service trained in public health as a means of relieving hospital congestion by making it possible to treat at home a large number of cases which now came under institutional care. The view that the hospitals should receive more financial help from the approved societies found expression again in the general discussion.

The question of hospitals arose in another section, when not their administration but their construction was considered. Mr. EDWIN T. HALL, F.R.I.B.A., advocated wards on the pavilion system, separated by open spaces for wind currents and sunlight, and thought that if this plan were followed little attention need be paid to hard-and-fast rules regarding the number of beds per acre, as there were no data to justify the arbitrary figures laid down from time to time.

Maternity and Child Welfare and School Medicine.

A section was devoted to maternity and child welfare, under the presidency of Mrs. H. A. L. FISHER, wife of the Minister of Education. Dr. VYNNE BORLAND (Willesden) discussed the relation between overfeeding and wasting in children, and maintained that cases did occur in which wasting was caused by overfeeding, oftener, of course, in the case of hand-fed than of breast-fed babies. The tendency among the poorer classes to swathe the children in all sorts of garments which prevented the dissipation of energy necessary to maintain an undisturbed metabolic balance was also deplored. Dr. HAROLD SCURFIELD (Sheffield) urged as a definite aim in child welfare work, "No rickets, good teeth, and nose breathing." To prevent rickets, the diet of expectant and nursing mothers must contain the antirachitic vitamin; the infants should be breast-fed, and after weaning should get their supply of antirachitic vitamin in a form suited to their age. To secure good teeth there must also be such food for the weaned child as would make it chew, and, in order that the jaws might develop in the right way, nose-breathing must be cultivated; this last was the weakest spot in the advice given at welfare centres. Dr. A. WELLESLEY HARRIS (Lewisham) suggested certain legislative reforms which were needed in the interests of child life. These included the transference of responsibility for registration, inspection, and control of foster homes from Poor Law guardians to public health authorities, and the prohibition of total surrender of infants for fixed sums of money without proper safeguards. Boarding schools under private ownership and run for gain should be registered and inspected by the public health authorities, as also private day schools, many of which were ordinary dwelling houses, in many respects unsuitable for the education of the growing child. Dr. G. A. AUDEN (Birmingham) dealt with the backward scholar. He deprecated the haphazard formation of backward classes unless they were associated with an organized system of mental testing whereby the needs of the individual child might be gauged periodically.

Industrial Hygiene.

Various aspects of industrial hygiene occupied much of the time of the Congress. The section specially devoted to this subject was presided over by Lord BURNHAM, who said that in the Victorian era it would have been considered an interference with divine providence as well as with individual liberty to have attempted anything in the direction of industrial hygiene. At the same time, it was possible that we were going too far in the other direction, and certainly it was necessary to have safeguards to prevent the national character from being enervated by too much supervision. The spirit of co-partnership rather than of paternalism was wanted, otherwise welfare work of all kinds would encounter indifference if not hostility among those it was intended to benefit.

Sir LESLIE MACKENZIE, in his presidential address in another section, also touched upon this subject. The special investigation of industrial fatigue made during the war showed that the hours of labour, the types of food, the character of the work, and the general conditions of the factory were reflected in increased or diminished output. The drift of the last thirty years had been away from the study of environment to the study of individuals, and in medicine generally the drift had been away from the study of the end-products called disease to the incipient physiological deviations that need never become pathological. He had the hope that in the years immediately ahead, by the organization of the whole forces of research and treatment, the general public might have the benefit of the highest medical skill informed by the latest medical science.

Following on a paper on the organization of welfare schemes by Mr. ROBERT HYDE, Director of the Industrial Welfare Society, Sir ARTHUR NEWSHOLME said that in the United States very little was done with regard to factory hygiene from the Government side. The movement was a voluntary one on the part of the great industrial concerns, who realized how greatly they depended upon the health and well-being of the worker. Mr. D. R. WILSON, the Secretary of the Industrial Fatigue Research Board, contributed to the section a summary of the main work of the Board on the effects of environment upon output. The novelty of the work was not in the discovery that such conditions as temperature, humidity, and lighting affected output, for that was previously acknowledged, but in the

giving of numerical values to the several effects. It had been found that in heavy work, involving exposure to high temperatures, the production had a consistent seasonal variation, and was with few exceptions greater in winter than in summer. Some relation between air humidity and output had also been established along one line of production, that of the rolling process in tin-plate manufacture; while as for lighting, it had been estimated by one of the reporters to the Board that even good artificial light caused a reduction of 10 per cent. in output as compared with daylight. Dr. LECHMERE ANDERSON (Doncaster) again urged the benefits of a fixed refraction test for coal miners, with the object of diminishing the incidence of nystagmus (on the line of his paper in the BRITISH MEDICAL JOURNAL of November 27th, 1920, p. 813), and on his proposition the section passed a resolution urging the Home Office to fix such a standard.

The discussion on the prevention of smoke pollution, although it took place in another section, may be conveniently noticed under this heading. It was opened by Professor LEONARD HILL, who urged the advantages of the modern radiant gas fire, and thought that the coal crisis might be a blessing in disguise if it forced the nation to use gas, coke, and smokeless fuel in place of raw coal, and thus clean the sky and conserve the national coal stores. Dr. J. S. OWENS, superintendent of the Advisory Committee on Atmospheric Pollution, accused the domestic coal fire rather than the factory fire of being the chief cause of atmospheric impurities. He had calculated that the domestic fires of London during the hours from 6 a.m. to 9 a.m. produced over 200 tons of soot, and this was quite enough to create one of the densest of London fogs if the atmospheric conditions prevented its removal.

The Economics of Public Health.

A conference of representatives of sanitary authorities was held under the presidency of the Mayor of Folkestone (Mr. R. G. WOOD), who, in his address from the chair, urged that, in the interests of national reconstruction, the laws relating to public health should be codified. To bring under one head all the enactments and orders relating to public health would be, he said, the natural sequence to the formation of the Ministry of Health, and the powers which certain cities and boroughs had obtained by private Acts should be, as far as they were beneficial, applied equally to the whole country in one consolidated Public Health Act.

Dr. W. ALLEN DALEY (Blackburn) entered upon an analytical review of the costs and results of various public health activities. He had asked medical officers of health of county boroughs to send him particulars of the expenditure of their departments during the last financial year, and side by side with these he gave, as far as was possible in figures, the values of the various services in the prevention of sickness or the postponement of death which were carried out by well organized public departments in our great towns.

	Expenditure in every £100 on Health Work.	Results in 1,000 Points of Total Value.
	£	
Measures against infectious diseases, mostly hospital maintenance	26	220
Antituberculosis work	30	85
Maternity and child welfare	13	250
Venereal diseases	5	80
School medical service	9	200
Food control, and general sanitation, propaganda, and administration	17	165

The deduction was that too much was being spent on work against acute infectious diseases and antituberculosis work, and not enough on maternity and child welfare, on venereal services, and on school medical work. Dr. J. MIDDLETON MARTIN thought that the time had come when a comparison should be drawn between the value of the services of the health department and that of the services of other departments of local bodies. Much money was spent on roads and buildings, which the public could see, instead of on things which they could not see, but which would be more greatly to their advantage. Dr. NAYLOR BARLOW (Wallasey) protested against the inadequacy of Poor Law and other relief, especially in the case of widows and women with families deserted by their husbands. The relief should be adequate to provide the families with food and clothing when the mothers, owing to the ages of the children, could not go out to earn money to provide for them.

Diphtheria Carriers: Tuberculosis: Milk Supply.

A conference of medical officers of health was presided over by Dr. J. WRIGHT MASON (Hull), who said that during the past half-century the increase of pathological knowledge, including knowledge of infection, had been the outstanding feature of medical progress. It was now understood that the problem of the human carrier of bacterial infection was one of ever-increasing importance, and one which must be dealt with seriously in the near future. He mentioned that the Scottish Board of Health had issued an order to the local authorities under its jurisdiction empowering them to deal with a person adjudged to be a carrier of infectious disease germs in the same manner as if he were suffering from the disease. Dr. F. C. LINTON (Tunbridge Wells) entered into the question of the measures necessary for dealing with diphtheria carriers. In the case of carriers in whom no history of a prior attack of diphtheria was obtainable it was his practice to isolate them as quickly as possible, generally by removal to hospital. Some medical officers of health might deem it an inadvisable expense to remove to hospital a carrier who might be harmless and clear up quickly, but unless the home arrangements were unusually satisfactory there was no feeling of safety in leaving a carrier outside hospital. In no case had he left at home a carrier of this class of over four weeks' persistence after discovery, and in only one instance had he met with serious difficulty in persuading the carrier to go into hospital. Dr. Linton detailed special measures taken in the case of carriers who had suffered or were suffering from an attack of diphtheria, generally in a site other than the fauces. As for the persistent carrier and his treatment, vaccines might offer the most promising solution, though his own experiments along this line did not appear to be very encouraging.

A statistical study of tuberculosis in Ipswich was submitted to the conference by Dr. A. M. N. PRINGLE. It was based on an examination of the records of deaths in that town from 1841 onwards. The figures showed a fall in the tuberculosis death rate, particularly amongst females. From 1841 to 1860 the death rate of tuberculosis was identical in both sexes; during the next ten years the male death rate remained stationary, but the female dropped 10 per cent. Thereafter the male death rate also dropped, but remained somewhat behind the female. From 1841 to 1850 the death rate in Ipswich from tuberculosis for both sexes was 4.3; from 1911 to 1920 it was approximately 1.7 for males and 1.3 for females.

The question of milk supply figured largely in this congress. Dr. S. G. MOORE (Huddersfield) described the action taken by the municipality of New York. In September, 1920, New York City took over the laboratories and dépôts which had been established and maintained for many years by the Hon. Nathan Straus, and these were now being conducted as municipal undertakings. For five years there had been a law in New York providing that only two kinds of milk might be sold for public consumption—namely, pasteurized milk and Grade I certified milk. In 95 per cent. of the cities of the United States, with populations above 100,000, pasteurization was enjoined though not enforced. If the enactments which had been found practicable in New York, and also in Chicago, were taken into careful consideration by the authorities on this side of the Atlantic, it was not too much to hope that at the end of twelve or eighteen months one of the greatest advances in public sanitation would be achieved. Dr. C. E. GODDARD (Harrow) pleaded for a more vigorous supervision of the cowshed, and gave some advice to sanitary officers on ways of enforcing a higher standard of farm sanitation. Colonel R. J. BLACKHAM described the milk problem in hot climates, and spoke highly of dried milk as a substitute. Dr. H. SCURFIELD strongly urged that the sale of so-called custard and pudding powders, as well as invalid wines, under misleading titles should be prohibited. Certain powders analyzed by the Sheffield public analyst in no way represented the food value of eggs; the amount of fat and protein was very small, and the title "egg substitute" or "egg powder" was a misnomer. He desired the Council of the Sanitary Institute to take action in the matter.

The Congress closed its proceedings at a final meeting in the Town Hall, when Professor H. R. KENWOOD, the chairman of the Council, said that on all sides he had heard that the meeting had been most successful.

A CONGRESS of hygiene and microbiology will be held at Monte Video in October, simultaneously with the Pan-American Congress of Dermatology.

British Medical Journal.

SATURDAY, JULY 2ND, 1921.

PROFESSIONAL SECRECY.

IT was inevitable that the observations of Mr. Justice Horridge in the Divorce Court, to which we drew attention in our issue of June 18th, should cause a good deal of uneasiness. It will be remembered that a medical witness, Dr. Elliott of Chester, asked the judge to exempt him from giving evidence with regard to venereal disease, on the ground that he, with other medical men, had undertaken duties at a clinic on the distinct understanding that professional secrecy as to what happened there would be observed; he also called attention to the regulation made under the Act in this respect. The judge rather went out of his way to reaffirm in its crudest form the claim of courts of law to compel the disclosure of professional confidences. He denied that the regulations made by a Ministry under an Act of Parliament had any force affecting the jurisdiction of the courts. He put what seems to us to be an erroneous interpretation upon the regulation, and he refused to hear counsel, who was prepared to argue the point. He rather ostentatiously withdrew his sympathy from the medical witness in the case, and declined to look at the matter from the point of view of public policy. The matter was discussed at the meeting of the Council of the British Medical Association on June 23rd, when the following resolution was unanimously adopted: "That the Council of the British Medical Association has learnt with great concern of the position created by the recent decision of a judge that the medical officer of a venereal disease clinic must give evidence in a civil case as to the medical condition of a patient under his care at a venereal diseases clinic, thus violating the confidence between doctor and patient and the direct undertaking given by the Local Government Board that all proceedings at such clinics should be absolutely secret and confidential. In drawing the attention of the Ministry of Health to these facts the Council of the Association would urge that such legislative steps should be taken as would render such an occurrence impossible in the future." In sending the resolution the Council also asked the Minister to receive a deputation to discuss the whole question.

In a case heard before Lord Mersey on May 31st a similar point was raised, also in the Divorce Court. The medical officer of health of Ilford had been subpoenaed to produce a card containing particulars with regard to the notification of a stillbirth; the notification showed that the name of the father, who had notified the birth, differed from that of the mother. A firm of solicitors approached the medical officer of health, who declined to state whether or not he had such a card in his possession or whether such a stillbirth had been notified to him, and referred the solicitors to the Ilford Council. The solicitors then applied to the council, and the Public Health Committee declined to give any information, stating that they viewed with apprehension any departure from the usual practice of treating such notifications as confidential and considered such a course to be against public policy. The medical officer of health, who attended on a subpoena, stated before giving evidence that he was instructed by the committee to ask the judge's ruling, pointing out that hitherto notifications under the Public Health Acts and the Births Act had always been treated as confidential; that so far as was known this was the first time a medical officer of health had been subpoenaed to produce documents of the kind; that stillbirths were only reported to the medical officer of health for public health reasons, and that the Acts had been working harmoniously because the notifications had been treated as confidential. Lord Mersey said that he saw no reason why the notification card should not be produced; that there was no statement in the Acts to the effect that the information was confidential, and that he did not consider the production of the card would be against public policy.

We make no doubt that the action of the courts in these two cases is engaging the attention of the Ministry of Health, which is well acquainted with the reasons of public policy that render it proper that the confidence of the individual should be protected as fully as possible when he or she seeks medical advice and treatment. We know, indeed, that as long ago as June, 1920, the Minister of Health submitted the general question as to the position, in law, of medical secrecy to the Lord Chancellor in connexion with the confidential entries on medical history cards under the National Insurance Act. In giving this information to Dr. Fremantle, on February 23rd, Dr. Addison added that the Ministry recognized that very important issues were raised, and in reply to a further question made a definite statement on one point; he was asked whether a subpoena might not be granted compelling the production of a medical history card, and whether the practitioner concerned in the preparation of the card might not be called upon to support the statement therein contained; his answer was that he was advised that though a person might be compelled by means of a subpoena duces tecum to bring any document, private or otherwise, to the court, the document itself did not thereby become admissible in evidence. He was further advised that a record card was not evidence of the facts stated in it, and that if it was desired to prove them this must be done in the ordinary way—namely, by the oral evidence of the doctor himself. To the non-legal mind it rather seems that Lord Mersey has taken the matter further, inasmuch as he compelled the medical officer of health in the case above mentioned to produce the card and to give information which could only have been obtained from the card.

The medical profession has always viewed with anxiety the claim of the law courts and sometimes of the legislature to compel it to violate a great professional principle in order to get over some administrative difficulty. In this attitude it has usually had the support of public opinion and sometimes of jurists. The French Code, for example, makes it an offence punishable by imprisonment and fine for physicians, surgeons, and other officers of the health services to reveal secrets confided to them in the course of their professional duties, save in the case where the law requires them to make notification (à se porter dénonciateurs). One clause of the Hippocratic oath is thus translated: "Whatever, in connexion with my professional practice, or not in connexion with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret." We are not sufficiently informed as to the law in the United States of America, but it is to be gathered from a recent decision of the District Court of Appeal of California that in that State, if not in others, a physician or surgeon cannot, without the

consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient.

When we find an identical opinion expressed by the Father of Medicine and by the jurists who drew up the French Code, we are justified in asking whether the English courts are so unquestionably in the right as the tone and substance of the remarks of the judges would seem to imply. At the same time it has to be recognized that the claim as stated by Hippocrates, and the penal enactment of the French law both recognize that exceptions may be necessary; recently the Académie de Médecine, in making recommendations as to the amendment of the law with regard to public health administration in France, advised that it should be made compulsory for the doctor in attendance as well as for the householder to notify cases of infectious disease. It is understood, however, that this relaxation of the law is likely to be opposed by French jurists.

A NEW STUDY OF APHASIA.

III.

In two previous articles the problems of speech and its disorders have been considered in the light of new work on the part played by the cortex in sensation, and some of the results of Head's investigations have been set out. At an early stage he realized that the old clinical tests for examining aphasic patients were unsatisfactory. It is not sufficient to hold up some object and ask the patient to name it; at one time he may be able to do so, at another he fails. Inconstant responses do not justify any conclusions. The patient must be subjected to a series of tests in which the same task occurs on several occasions and is put before him in different ways.

In his Linacre lecture for 1920 Head describes the methods of examination and the nature of the tests employed. He reminds us at the outset that "an inconstant response is one of the most striking results produced by a lesion of the cerebral cortex," an observation which disturbs the confidence with which we used to embark upon cerebral localization in disease. During his studies in sensation he found that a stimulus exerting a constant physical force well above the normal threshold was sometimes appreciated, but at others evoked no response. Increase of intensity did not necessarily lead to an equivalent improvement in the answers given by the patient. There was a characteristic want of certainty in the reaction to measured stimuli, which was observed equally clearly in disorders of speech due to cerebral injury. Head's tests are so devised that inconstancy of response may be revealed. There are certain general rules essential to the success of the tests. The patient must be examined alone, in a quiet room. When the patient understands the task set him, each series of tests must be carried out in silence. It is important to record not only what the patient says or does, but also every remark or question of the observer, for these remarks on either side may throw light on the ideas or feelings of the patient and his difficulties with regard to the task. Fatigue on either side must be avoided. Much in the character of the patient's answers depends on his previous aptitudes, which may be entirely unknown. The precise details of the tests, which are too long to quote in full, are given in the Linacre lecture.

Head's observations show that disorders in the use of language due to a unilateral lesion of the brain cannot be classified as isolated affections of speaking, reading, or writing. They cannot be due to destruction of images, visual, auditory, or motor. Word-blindness, mind-blindness, and Jackson's "impereception" are all associated with more or less disturbance of the power to form images. Careful examination of cases of so-called "motor aphasia" shows that not only external speech but certain aspects of internal verbalization are affected. The remarkable fact was elicited that in this group are found patients who can neither imitate correctly movements made by the observer sitting face to face, nor carry out the same movements to pictorial command, but who may yet be able to execute such movements perfectly when reflected in a mirror. In the first case some formulation in words is required, whilst in its second form the test is verbally an act of uncomplicated imitation.

Head's tests reveal not only defects in the power of using words and figures in speaking, reading, and writing, but inability to execute other tasks with certainty and precision. Any act may suffer which requires for its perfect performance the antecedent formulation of the ultimate intention or goal to which it is directed. Thus the patient may be unable to draw a plan of the relative position of objects with which he is familiar, although he can indicate the site of each one of them individually. He mistakes the significance of the two hands of the clock, and fails to recognize the proportionate value of the space between the figures of the hours. He can draw from a model, but may be unable to reproduce the figure of an elephant to command. He fails to comprehend the full significance of a picture, though he recognizes the details of which it is composed. The closer a symbolic action corresponds to mere matching of two sensory patterns the less likely is it to be affected by these disorders of language, while the nearer it approximates to a proposition the greater difficulty will it present. Under the influence of lesions situated in various parts of the brain the several functions comprised under "symbolic thinking and expression" may become dissociated; this is analogous to the effects produced on sensation by injuries to the cerebral cortex.

Head suggests that the following varieties or classes of dissociated forms of symbolic thinking and expression can be distinguished, although he does not claim that there are no others. In (*a*) defective word-formation or "verbal aphasia," words are evoked and enunciated with difficulty, and the vocabulary is restricted; writing shows the same errors as articulate speech and spelling is defective. Words are few, badly pronounced, but applied correctly. Commands given in spoken or printed words may be correctly executed unless the evocation of some word or phrase is required for execution. But these patients know whether they have performed their task correctly or not. Reading to themselves is difficult because of inability to retain in memory long series of words. The significance of numerals is understood even though they may be miscalled. These patients can draw, play card games, and enjoy jokes in print and pictures. In a second class, (*b*) "nominal aphasia," characterized by defective use of names and want of comprehension of the nominal value of words or other symbols, enunciation may be almost normal, but there is difficulty in "naming." Repetition *viva voce* is perfect provided nothing further depends on the act; but reading is difficult, especially if the words are spelt out. Writing is gravely affected, and the patient may be unable to copy print into cursive handwriting. Writing to dictation and all actions demanding choice are performed with difficulty to spoken commands. Counting is possible

to a variable extent, but the significance of numbers, the power to carry out simple arithmetical operations or to appreciate the relative value of money are affected. The power to draw a plan of a familiar room is defective, although the position of objects named by the observer may be correctly indicated in a blank plan. These patients cannot play cards, but chess and draughts may be possible. A third variety (c) of defective phrase formation, "syntactical aphasia"—is easily recognized because the patient talks jargon. The grammar, balance, and rhythm of the sentence are disordered, as well as the balance of articulation of single words. Such patients can read if they are not compelled to reproduce the meaning in words. Writing is less affected than external speech, but it may be disturbed by verbal jargon. For the next variety—(*d*) defective recognition of the full significance of words and phrases—Head has invented the expression "semantic aphasia." The word "semantic" has the disadvantage of being new to the language. It is used in the sense of the ultimate meaning of words, which patients with this defect fail properly to comprehend. They do not grasp the final aim or goal of an action imposed on them from without. They cannot formulate symbolically a general conception, although they can enumerate the details of which it is composed. These patients can read and write, but the result tends to be inaccurate and confused. Counting is possible and the value of numerals can be recognized, but appreciation of the nature of an arithmetical process is defective. The patients cannot play games, and jokes set out in print or pictures are rarely apprehended in their full significance.

It may be asked, What is the practical bearing of these new views of aphasia? Head admits at once that they are of no immediate practical value to the physician. They may best be considered as researches into experimental psychology, and form, as he says, a fascinating example of the interaction of mind and body. They point to the error of regarding certain forms of dissociation of the processes which underlie speech as revealing an elementary basis for the acts of speaking, reading and writing. "Speech," as Head said in his reply at the discussion on aphasia that followed his Hughlings Jackson lecture, "demands the integration of a number of other functions before it can be carried out, and in this way resembles sensation"; either can be upset by lesions of the brain, but the whole act need not be destroyed, it may be destroyed in part only. Head contends that to attempt to localize the position of an unknown function on the surface of the brain is useless. It is advisable to determine first what function is disturbed before putting forward views as to what lesion has produced it. There can be little question that this is indeed the method to be pursued. Teachers of medicine may regret having to abandon "an easy dogmatism at the bedside," and examiners may still judge the merits of candidates by their capacity for remembering terms and diagrams that are "fundamentally incorrect, physiologically inadequate, and clinically untrue." But we do not doubt that the outcome of Head's efforts in following up and developing Hughlings Jackson's ideas will be a better understanding of the processes which underlie the production of speech.

THE FILARIASIS EXPEDITION.

THE expedition sent to British Guiana by the London School of Tropical Medicine to investigate filaria has been at work since the middle of April. It was dispatched at the request of the then Secretary for the Colonies, Lord Milner, who considered that further information was required as to the best method of controlling filariasis. The leader of the expedition is Professor R. T. Leiper, director of the helminthology department of the London School of Tropical Medicine; he was accompanied by Dr. John Anderson, Dr. Chung Un Lee, and Dr. Mahommed Khalil of the Egyptian Medical Service; Dr. G. M. Vevers, demonstrator of helminthology in the London School of Tropical Medicine, will leave England to join the expedition very shortly. It has its headquarters in Georgetown, the capital of British Guiana, and has, we learn from the Demerara *Daily Argosy*, been engaged in a house-to-house visitation in certain areas. There is evidence that filariasis is a house infection, and examination of the blood commonly shows that where one or two pronounced cases of the disease are found other members of the household, though apparently healthy, harbour the nematode. Steps have also been taken to make a kind of mosquito census to ascertain the proportion that are infected. It is known that more than one species of mosquito is capable of acting as host, and one of the objects of the expedition is to ascertain how many such species there may be. The microfilariae enter the mosquito's stomach with the blood when it sucks; they rupture the sheath in which they are enclosed, pierce the wall of the stomach and find their way into the muscles of the thorax, where they undergo development and become much larger. From the muscles the embryo passes into the labium, and when the mosquito bites it becomes liberated. It finds its way through the skin perhaps by the mosquito's puncture. The stages by which it reaches the adult condition are not known, but it is when full grown that it produces the chief signs of the disease—lymphangitis, abscess, chyluria, and elephantiasis. It was originally arranged that the expedition should last for six months, and at the suggestion of Sir Patrick Manson it is proposed that visits shall be paid to certain West Indian islands, choosing one, such as Barbados, where the rate of attack is high, and another, such as Grenada, where it is low. It is hoped that by comparing and contrasting the circumstances of two such islands light may be thrown on the conditions which favour the filaria.

THE SIGNIFICANCE OF SYPHILITIC REINFECTION.

IT is usually believed that as long as a person is suffering from syphilitic infection he is practically immune to further infection with *Spirochaeta pallida*; in fact, the appearance of a primary chancre in an individual who has previously had syphilis is commonly regarded as the most convincing proof, provided the chancre is not on the site of the original one, that the earlier infection had been cured or had died out. Before the era of salvarsan treatment examples of such reinfection were comparatively rare, but since then numerous cases have been reported, and have indeed been considered as evidence of the success of the treatment in eradicating this spirochaetal infection. This would appear to be a logical conclusion; but in the case of salvarsan treatment an element of uncertainty is introduced by the absence of certain knowledge as to the influence of the drug on syphilitic immunity. As this is obviously a matter of practical importance, Wade H. Brown and Louise Pearce,[1] of the Rockefeller Institute for Medical Research, have investigated it experimentally, with results that throw serious doubt on the validity of the current opinion. They found that rabbits infected by inoculation of the testes with an emulsion of the *Spirochaeta pallida* and eighteen days later treated intravenously with salvarsan or neo-salvarsan in doses insufficient to cure the infection, as shown by relapses of the testicular lesion, are highly susceptible to cutaneous reinoculation and developed characteristic primary chancres; in some instances these rabbits with an active syphilitic infection after subcurative doses of salvarsan preparations were more susceptible than

[1] Wade H. Brown, M.D., and Louise Pearce, M.D., *Journ. Exper. Med.*, Baltimore, 1921, xxxiii, 553–567.

normal rabbits to infection by *Spirochaeta pallida*. Control rabbits, infected by testicular inoculation of the spirochaetal emulsion but not treated with salvarsan preparations, were highly resistant to cutaneous infection with the same strain of spirochaete. It is suggested that treatment with substances such as salvarsan preparations may cause an infection to revert to the condition characterizing the first period when spirochaetes are present, but immunity has not developed, and further, that the spirochaetes which survive the action of the drug may for a time be so attenuated or enfeebled as to be incapable of arousing an antagonistic reaction on the part of the host, thus favouring the multiplication of more vigorous spirochaetes introduced from without, and the production of a characteristic primary lesion at the site of a fresh inoculation.

TOBACCO AND WORK.

AN article on the output of users and non-users of tobacco in a strenuous physical occupation, by J. P. Baumberger, Edna E. Perry, and E. G. Martin, which appears in the *Journal of Industrial Hygiene* for May, is the second of a series of records dealing with the general significance of the use of tobacco in industry. The previous article dealt with the effect of tobacco on strenuous mental work of a routine nature, the occupation chosen for investigation being telegraphy; it was found that the heavy smokers did not maintain the level set by the light smokers; there was a lessened ability to sustain output at the end of the working day, and a diminished power to react by increased effort to an increase in the volume of work. Heavy smokers had a better output during the first hours, but this was not enough to compensate for the lowering of efficiency towards the close of the day. The present study, on the other hand, required a routine occupation in which some process was repeated many times during the day and was dependent on the speed of the individual worker, unaffected by the rate at which machinery was driven; bottle making was chosen as best meeting the required conditions. In the factory where the investigations were made the old method of blowing glass bottles by mouth had been largely abandoned, and the work was for the most part done by machinery manipulated by certain skilled workers, with the aid of inexperienced helpers; in some machines, however, the whole process was carried out automatically under the supervision of an unskilled attendant. The average age of the eighty-five skilled workers studied was thirty-six years, and the average number of years spent in the glass industry was twenty. The men were largely native-born in the United States, with little schooling, and, on the whole, a very steady, clean-living class, their earnings being from eight to ten dollars a day. Their smoking and chewing habits were studied by direct questioning, and by observation and indirect conversation. Of the men 8 per cent. did not use tobacco, 83 per cent. smoked, 29 per cent. chewed, and 20 per cent. both smoked and chewed. Apparently 9 per cent. chewed but did not smoke. From the data obtained it appeared that the workers who chewed had a much lower output rate than those who only smoked or did not use tobacco in any form; the light smokers, however, showed some inferiority in output rate, and the heavy smokers a slight superiority. The authors seek to explain this result by surmising that "insufficient use of tobacco has more deleterious effects than a larger use which might confer an immunity." But it seems more likely that the differences are not statistically dependable, and it would be well to have more details than the article gives about the workers investigated and their habits of work. The low output of the chewers of tobacco as compared with smokers is probably due, as the authors suggest, to the greater absorption of nicotine. The conclusions drawn from the investigation are that in a strenuous physical occupation of this type smoking has comparatively little effect, but that the output rate is distinctly lowered by chewing.

THE HARVEIAN SOCIETY.

THE annual dinner of the Harveian Society of London—the first dinner to be held since 1913—took place at the Café Royal on June 22nd. Dr. Godfrey de Bec Turtle, president of the society, was in the chair, and there was a large assembly of members of the society and guests, including Sir John Bland-Sutton, Sir James Dundas Grant, Sir Malcolm Morris, Sir D'Arcy Power, Sir StClair Thomson, Sir Sydney Russell-Wells, Sir William Willcox, Dr. A. C. Jordan, and Mr. H. Curtis Bennett, K.C. The president proposed the loyal toasts, referring to the fact that on that day the King and Queen were visiting Belfast for the opening of the Ulster Parliament, and the toasts were honoured with more than usual enthusiasm. The toast of the Harveian Society was then given by Sir D'Arcy Power, who said that ninety years had passed since the Harveian Society was established, and never was it more flourishing than to-day. He gave some account of the human side of Harvey, which was less known than the scientific side, illustrating this by Harvey's own account of his ambrosial adventures on the Continent. The toast was responded to by Dr. Turtle, who said that the society had been founded by ten medical men who met for the purpose at the Western General Dispensary in Lisson Grove on September 15th, 1831. The period in which the society was founded was one fruitful beyond all others in the development of medical science, for two great discoveries had just been made and were beginning to bear fruit, the first being the discovery of auscultation by Laënnec in 1818, and the second that of Richard Bright, who had published his celebrated *Reports of Medical Cases*, showing the connexion between dropsy, albuminuria, and kidney disease, in the year 1827. These two great discoveries were of supreme importance in the development of medicine, but other events interesting in medical history occurred at this epoch. Dr. Marshall Hall, one of the founders of the society, published in 1833 his demonstration of the automatic reflex action of the spinal cord, while it was in 1836 that typhus and typhoid were first distinguished as separate diseases. It was natural, therefore, that medical men should meet together to discuss these great events, and it was in this way that the Harveian and many other medical societies began their existence. Dr. Leonard Guthrie presided at the last occasion on which the dinner had been held, in 1913, and his untimely death was a great loss not only to the society, but to medicine in general. With the coming of the war the Harveian Society, like many others, almost ceased to exist, but a few faithful members kept a minimum of meetings going in spite of being bombed out of their old rooms. In practically every theatre of military operations, from Rouen to Baghdad, a local medical society sprang into existence, but this was hardly to be wondered at when the wealth of clinical material available was considered. The toast of "Kindred Societies and Guests" was proposed by Sir James Dundas Grant in his happiest vein of anecdote, and was responded to by Sir John Bland-Sutton, who referred to the great traditions of the Harveian Society; he himself, when younger, had been a member of as many as ten medical societies at once, and he thought very highly of their value and usefulness to medical science. The toast was also responded to by Mr. H. Curtis Bennett, K.C., in a witty speech interspersed with stories of medicine and the law.

A CUSTODIANSHIP OF MEMENTOS.

AMERICANS have a happy knack, in which we in this country seem to be wanting, of rendering homage to contemporaries by little graceful acts that are remembered. In 1910 the College of Physicians of Philadelphia, which possesses certain objects that once belonged to Rush, Jenner, Lister, Pasteur, and Curie, established a "custodianship of mementos." The office, if it should so be called, was held for seven years by Dr. Weir

Mitchell, whose successor was Dr. Simon Flexner of the Rockefeller Institute; after three years he passed on the honour to Dr. William H. Welch of Baltimore; and Dr. Welch has promised to nominate a successor. A fund sufficient to maintain and enhance the collection has been given, and with the mementos are preserved portraits, autograph letters, and biographic notes. The memento of Benjamin Rush is his watch inscribed with his name, and a reminder that he was a "signer of the Declaration of Independence." He was one of the little circle of friends who immediately surrounded Washington, and in a recent publication of the College it is said, "His name has come down to our time as, perhaps, the most representative medical man who combined culture with patriotism, scientific zeal with literary attainments, and religious devotion, and an indomitable courage with unwearied power for work." The memento of Jenner is his inkstand, once the property of Weir Mitchell, who used it for years and bequeathed it to the College of Physicians. The memento of Lister is a small case of instruments containing three scalpels, two retractors, and, apparently, a handled needle. It was obtained by the College through the kindness of Sir Rickman Godlee. The case must, we think, have been used by Lister in some early stage of his career. The memento of Pasteur is a model of a tartrate crystal made by him and used to demonstrate his views during the controversies of 1862. It was given to Dr. W. W. Keen by Professor Calmette. Finally, the founder of the custodianship, Dr. Robert Abbe of New York, an associate fellow of the College, has recently presented an instrument given him by Madame Curie. It was made by Professor Pierre Curie, and was used to determine the strength of electron discharge from radium. It was used also to demonstrate the fact that crystalline substances, when compressed or expanded, emit electrons, owing to the strain put upon them. In this instrument there is a long slice of quartz crystal, held at one end and weighted at the other. An electroscope, placed opposite the face of the crystal, records the discharge of electrons, which is in proportion to the weight put upon it. Of the apparatus named the "quartz-piezo-electrometer" (a quartz pressure electric meter) Madame Curie wrote to Dr. Abbe: "It was designed by Professor Curie and is one of those used by us in our early research work for measuring the radioactivity of radium. Having served its purpose, it was replaced by other apparatus."

THE PHARMACEUTICAL SOCIETY ANNUAL DINNER.

THE annual dinner of the Pharmaceutical Society was held at the Connaught Rooms on June 21st, with the president of the society, Mr. E. T. Neathercoat, in the chair. Among the guests were Sir Alfred Mond, Minister of Health, Surgeon Vice-Admiral Sir Robert Hill, Sir Malcolm Morris, Sir David Prain, Sir William Willcox, Sir Anthony Bowlby, Sir W. S. Glyn-Jones, Sir Richard Winfrey, M.P., Mr. Howard Mummery, Mr. E. B. Turner, and Dr. Alfred Cox. After the loyal toasts had been honoured the toast of "The Pharmaceutical Society" was proposed by Sir Alfred Mond, who referred to the fact that it had now reached the age of three score and twenty years. He acknowledged the assistance which had been rendered to the Government by the society, particularly in making the health insurance scheme successful; during the war it came to the assistance of the State in a manner no less noteworthy. The Ministry of Health was under an obligation to those of its members who sat on the Select Committee on the Proprietary Medicines Bill and assisted in the framing of that measure, the passage of which he hoped was only postponed. The *Pharmacopoeia* expanded every year, and thus did the duties of members of the society get heavier and more complex. The president, Mr. Neathercoat, who responded, pointed out the important duties which devolved upon the Pharmaceutical Society. Under the aegis of the Privy Council it arranged the curriculum and course of study for its students, it maintained an official register of those who were qualified, it voluntarily devoted much time and money to the promotion of pharmaceutical education, and had for many years conducted a school of pharmacy. It had recently divested itself of some of that work, which had gradually been forced on the society but which was felt to be outside its ambit, and he hoped the society would be set free to devote itself to the principal objects of its charter—the scientific side of the profession of pharmacy and scientific research—and that in the future it would be of even greater service to the community. The toast of "Our Guests" was proposed by Mr. E. White, who referred to the distinguished representatives of Government departments, and of medicine, surgery and science who were present. The relations between the society and the different medical organizations were of the most cordial nature, and the value of co-operation between medicine and pharmacy for defensive purposes had been strikingly demonstrated by the joint action taken recently in connexion with the Dangerous Drugs Regulations. The toast was responded to by Surgeon Vice-Admiral Sir Robert Hill, who remarked that prescription writing had fallen off from the days when his father instructed him in the writing of ℞ with a good tail to it and of the Latin for every ingredient in the prescription; Sir Anthony Bowlby also replied, saying that as a surgeon he had very little to do with drugs, but he had personal reasons to know during the war how deeply indebted the nation was to the Pharmaceutical Society.

WE regret to learn that Professor Stuart McDonald will be unable, owing to ill health, to preside over the Section of Pathology and Bacteriology at the annual meeting of the British Medical Association in Newcastle-upon-Tyne; his place will be taken by Professor Matthew J. Stewart of Leeds.

THE Committee of the Pathological Museum at the Annual Meeting wishes to call attention to the importance of the Museum, and the necessity of making it it an adjunct to the work of the Sections. Readers of papers and those taking part in the discussions, who may have specimens illustrating the work done in the various Sections, and all who wish to exhibit specimens of general interest, are asked to communicate at once with the Secretary of the Pathological Museum Committee, Dr. A. F. Bernard Shaw, College of Medicine, Newcastle-upon-Tyne.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Voluntary Hospitals: Government Grant.

COLONEL MILDMAY asked the Minister of Health, on June 23rd, whether he could make any announcement as to the decision of the Government on a report of Lord Cave's committee as to voluntary hospitals.

Sir Alfred Mond replied that the Government had decided, in view of the serious state of the voluntary hospitals, to ask the House to vote a supplementary estimate of £500,000 to meet the deficits during the present year. This money would be under the control of the Commission and local committees recommended by the Cave committee; he was taking immediate steps to appoint the Commission. In view of the serious financial position of the country the Government had decided with regret that they could not give effect to the full recommendation of the Cave committee for a grant of one million pounds. They confidently anticipated that as they had done their part voluntary effort would find the balance required, and thus maintain the root principle of the voluntary system. A Commission *ad hoc* was recommended by the Cave committee, which had also recommended its composition. He proposed that the chairman should be Lord Onslow, the Parliamentary Secretary to the Ministry of Health. He added, in reply to Sir C. Kinloch-Cook, that conditions would be attached to the

grant. Need would have to be proved and the position of the hospital ascertained. He hoped that the voluntary effort would be commensurate to the sum the Government was granting. On further questions the Minister said that members who had studied the report would see that cottage hospitals were included, and that the Secretary for Scotland would have power to appoint a representative on that Committee. Irish hospitals were not included in the scope of the inquiry. In reply to Sir Philip Magnus, the Minister said that the Government expected a corresponding private effort to be made. He could not lay down the whole scheme in answer to a question, but the scheme and the manner in which it was to be carried out would be placed before the House in due course.

Dentists Bill.

The Dentists Bill was taken in Committee in the House of Lords on June 22nd.

On the first clause Lord Greville presented two amendments, the object of which was that there should be a separate list for the unqualified dentists who were under the measure to be included in the *Register*. Under the bill the Government were, he said, proposing to transfer some 10,000 or 11,000 unqualified dentists to the list of qualified men. The two chief reasons given by the Government for the bill were the shortage of qualified dentists and the desirability of putting a stop to the practice of unqualified dentistry. He could not see how, by adding unqualified men to a qualified list, they were increasing the number of qualified dentists; they were not by this action making anyone more skilled. In the second reading debate Lord Knutsford had said that unless the bill passed good men would not join the profession. In the report of the British Dental Association he found that the number of students in training in 1920 showed an increase approximately of 300 per cent., and the report stated that a considerable increase in the number of dentists qualifying annually might be safely expected. The placing of unqualified men on a separate register was strongly urged by the British Dental Association, but when told by Sir Alfred Mond that if it were pressed he would withdraw the bill they agreed not to pursue the matter; that, however, did not mean that the majority of qualified dentists agreed.

The Earl of Onslow (Parliamentary Secretary to the Ministry of Health) read a telegram from the British Dental Association, which said: "British Dental Association in annual meeting assembled at Bath this day unanimously supported Dentists Bill as submitted by Minister of Health." The number of persons actually practising who were not registered under the Act of 1878 was at least two to one of those registered under that Act and possessing diplomas. He maintained that the proposed conditions for the admission of unqualified men would protect the public from charlatans. Further, he would move an amendment for the Government later making it an offence for any person to describe himself as a surgeon dentist unless he were in possession of a qualification recognized by the Dental Board. A person who had a bogus degree as a surgeon would not be able to describe himself under the Act as a surgeon dentist. All those persons at present on the *Register* (except a very few admitted by the Act of 1878) were holders of diplomas in dental surgery, and would, therefore, have the exclusive right of calling themselves surgeon dentists.

Viscount Knutsford, strongly supporting the bill as a practical compromise, said the members of the Incorporated Dental Society had to have five years' training before practising as dentists, and the Committee concluded that they must be admitted for several reasons. In many districts in England there were no qualified dentists at all. Under the compromise men with diplomas had to surrender their privilege of being the only men on the register, but their reward was that in future unregistered practice would be forbidden. That was something very much stronger than had ever been suggested in the medical world before, because there was nothing to prevent any person from setting up as a bonesetter or a faith curer, or anything else; but under the bill no one might practise dentistry unless on the *Register*; if a man misbehaved himself while on the *Register* there was power to remove his name.

The Marquis of Salisbury read a telegram he had received from the Medical and Dental Defence Union of Scotland, which said that Scotland agreed to the second reading in the Commons on the understanding that the amendments would be left to the unbiassed decision of the Committee. The telegram requested him to support Lord Greville in the interests of good government and good faith. A telegram, asking for support for Lord Greville's amendment, had come from a committee of Irish dentists. He demurred to the suggestion of Lord Knutsford that the main consideration was control, for that would mean that [illegible] Lord Greville.

Lord Riddell and Lord Southwark both pleaded for acceptance of the bill, which had been agreed upon [illegible]. Lord Onslow briefly replied to the earlier criticisms. He insisted that [illegible] implied conditions of skill from the information that would have to be given as to character and length of practice. The [illegible].

A number of verbal amendments to meet certain amendments made in the House of Commons were then carried at the instance of Lord Onslow, who afterwards moved the insertion of the following new clause to follow Clause 3:

Use of Titles and Descriptions.

("A person registered under the principal Act . . . [illegible] by virtue of being so registered be entitled to take and use the addition of dentist or dental practitioner;

"shall not take or use or attempt to use in connection with his practice any title or description reasonably calculated to suggest that he possesses any professional status or qualification other than the professional status and qualification which he in fact possesses and which is indicated by particulars entered in the *Register* in respect of him.")

He explained that this was the amendment to which he had referred earlier. A number of other drafting changes were adopted and the bill passed through Committee.

The bill was read a third time on June 28th and passed.

National Health Insurance Bill.

Sir Alfred Mond, on June 22nd, moved the second reading of the National Health Insurance Bill, which has been framed to meet the increased cost of the administration of insurance societies and Insurance Committees. There had, he said, been a progressive increase owing to the effects of the war—in cost of postage and other matters—since 1919. In January a Departmental Committee reported in favour of raising the present annual allowance to approved societies from 4s. 5d. to 4s. 10d. to include all postal charges. The bill had been accepted, he understood, by those who represented approved societies and by the Treasury. In future the societies should contribute 6d. instead of 4d. to the cost of the Insurance Committees. There would be no diminution in the benefit to insured persons, nor would their contributions be increased. Incidentally, the alterations would effect the saving of £300,000 to the Treasury. The Act of 1918 established a fund called the Central Fund, made up of a fixed Exchequer contribution of £150,000 a year, and every society contributed yearly a levy amounting to an eighth of its contingency or reserve fund. The object of this Central Fund was to make grants to societies found on valuation to be in deficiency, and liable either to a levy or reduction in the normal rates of benefit. It had accumulated to over two million sterling, and the valuation had come out so satisfactorily that it was evident that calls upon the fund would be few and small. Probably no more money would be required for the fund for many years in any event. Therefore the Departmental Committee felt justified in recommending the suspension of the levy on the Societies' Contingencies' Fund and the diversion of this money to the benefit fund. This would enable the increase from 4s. 5d. to 4s. 10d. a member to be met, and also the benefit fund to be debited with a further 2d. per member in respect of the cost of Insurance Committees without interference with contributions or benefits. The sum of 4s. 10d. was fixed for two years, and was subject to revision when costs came down. The Exchequer would be relieved of its annual contribution of £150,000 to the Central Fund so long as the levy on the Societies' Contingencies' Fund was suspended, and that partly explained the saving of £300,000 by the Treasury to which reference has previously been made. Further, it was intended to make considerable reductions in the size of the Insurance Committees, and a saving on travelling and subsistence allowances of £4,000 to £5,000 would accrue.

After some discussion the bill was read a second time.

Dr. Addison's Appointment. Included in the Vote for Cabinet Offices submitted to the Committee on June 23rd was the sum of £5,000 for the salary of Dr. Addison, Minister without portfolio. In view of the large amount of criticism in the press and elsewhere of the office Mr. Lloyd George himself moved the Vote. It will be remembered that Sir L. Worthington Evans for a time held a similar position and then was made Secretary for War. Shortly after this latter appointment Dr. Addison was transferred from the Ministry of Health to the post of Minister without portfolio. Mr. Lloyd George, in justifying that arrangement, said it was necessary for a limited time, inasmuch as there were numerous tasks which Ministers with the charge of departments could not undertake. Dr. Addison was chairman of four important Cabinet Committees and was a member of six other Committees. The Government, however, would only ask the House for a sum of money that would enable it to retain the Minister until the end of the Session. Lieut.-Colonel Guinness had down an amendment to reduce the Vote by £2,000, and if instead he would agree to the reduction being made to £2,500, which would cover the period for which the Minister's services were required, the Government would accept it. The Premier then touched on the personal aspect of the matter. He was certain that the vast majority of those members of that House who objected to the Vote were not moved by any feelings of prejudice against Dr. Addison, though his interest in health had excited a good deal of prejudice. It was said, moreover, that he was rather too anxious to build houses; but members would bear in mind that his activities in relation to housing came at the worst time for any Minister. Labour and material were more expensive than they had ever been and more difficult to procure. There had been a great deal of criticism for expenditure here and there, but not a word of generous recognition of what Dr. Addison did to cut down expenditure when he was Under-Secretary to the Ministry of Munitions. He was mainly responsible for the great system of costings which reduced the cost of the provision of munitions, first at the Ministry of

Munitions and afterwards at the Admiralty and at the War Office, by hundreds of millions sterling. Lieut.-Colonel Guinness accepted the suggested alteration in his amendment, and after further discussion it was agreed to. Mr. Esmond Harmsworth, in defending the criticism of the post, said that in pressing this matter those who were allied on the Anti-Waste issue had absolutely no animus against Dr. Addison; although he was regarded as one of the master-spenders of the past, there was no objection to him in the personal sense.

Ministry of Health, Wales.—In answer to Mr. Haydn Jones, Sir A. Mond stated, on June 21st, that the total number of persons employed in the Welsh Insurance Commission in 1914 was 247, and the total cost £36,025. In 1921 the number was 279, and the cost £84,104, the work on various health services in Wales, which was done in 1914 by the Local Government Board having been transferred to the Welsh Board of Health, in pursuance of the Ministry of Health Act, 1919. A temporary staff was also employed in Wales on housing administration; the number in March last was 71, and the total cost £22,000.

Salaries at the Ministry of Health.—Sir A. Mond, on a question by Mr. Swan, on June 22nd, said that the number of officers of the Ministry of Health in receipt of a substantive salary of £1,000 a year or upwards was 83. In the original Departments out of which the Ministry of Health was created the number was 29. In addition, there were 215 officers receiving a substantive salary ranging between £570 and £1,000 a year, who, with the addition of the present war bonus, were drawing upward of £1,000 a year. The reduction of the war bonus, contemplated to take effect from September 1st next, would reduce this number by some 150, and the total figure would be still further decreased by reductions in staff he was now making.

The Maternity Convention.—Major Hills asked, on June 21st, whether the Government would submit a resolution embodying the terms of the Labour Convention and the Maternity Convention to the House of Commons before July 27th, when the time limit for bringing conventions before the competent authority for the enactment of legislation expired. Mr. Chamberlain said that the Government was anxious to give the House the fullest possible opportunity for the discussion of these conventions. Such an opportunity was afforded by the recent debate, and there would be further opportunity for discussion so soon as the pressure of other business admitted. As to the constitutional issues involved in the question, he referred Major Hills to the Attorney-General's speech in the discussion that had taken place.

Ministry of Pensions: Cost of Administration.—Asked, on June 23rd, several questions as to the comparative cost of administration of the Ministry of Pensions, Major Tryon said there could be no just comparison because from the year 1918 onwards the work of War Pensions Committees had largely increased, and the staffs of local committees which in 1918 were mainly voluntary were now employed on a salaried basis. In 1918, before the extension of the work due to demobilization and other causes, the approximate amount of administrative expenses of local committees was £500,000; in 1920 it was £1,200,000. This increasing expenditure was one of the reasons leading up to the appointment of a Departmental Committee of Enquiry. As regards staff in the direct employ of the Ministry the number in December, 1918, was 9,036; in December, 1920, it was 17,804, without reckoning hospital staffs. The present number of officials (including 151 medical officers employed on a temporary basis) who were in receipt of salaries of £1,000 a year or more, was 184. The number receiving £500 a year or over, including bonuses at the dates mentioned in 1918 and 1920, were respectively 268, including 160 medical officers and 880, including 642 medical officers.

Alleged Hardships under Pension Decisions.—In the miscellaneous debate on the usual adjournment motion, on June 24th, Mr. Cape seized the opportunity to raise several questions as to pension decisions. He regretted that he had not been able to give notice, and that therefore the Minister of Pensions was not present. He had gathered from a question he had put to the Minister of Pensions some time ago, that in 10,000 cases out of 14,000 heard before the Appeal Tribunals, the decisions had been given against the men. The appeals by pensioners followed upon attempts made by local committees to stop or reduce pensions, and he regarded the position as very unsatisfactory. He instanced the case of a man at Newcastle, discharged from the army as medically unfit after three years' service, paid a pension until about the middle of last year, and then told that after all what he was suffering from was not attributable to the war, although he was unable to follow any employment. Mr. Cape next referred to another case of a widow whose husband was called up as a Territorial in 1914. He went early to France, was married in May, 1915; and before he died, was the father of three children. Before his discharge from the army in 1916, he received a pension and allowances for the children, but although his death was definitely stated to be due to disease caused by the war, the allowance to his widow had now been stopped. Thirdly, Mr. Cape quoted the case of a man who lost a leg in France. He was paid pension up to February 22nd last; then he was told that he had not lost his leg owing to the war. It was well known that he went to France with two legs and came back with only one. After considerable difficulty his friends were able to get the pension renewed, but the grievance was that for fourteen weeks he had to go without any pension because someone had made up his mind that the man was not entitled to it. Captain Elliot pointed out that the Appeal Tribunals were nominated by the Lord Chancellor, whose decisions the House could not review. They were so established in order that the Tribunals might be independent of the Ministry of Pensions and the House of Commons. If any change was required it should be considered broadly by Parliament.

Use of Spirits in Hospitals.—In Committee on the Finance Bill, on June 21st, Mr. Lyle moved a new clause to provide that Section 4 of the Finance Act, 1918 (which permits the reduction and allowance of duty in respect of spirits used in medical preparations or for scientific purposes), should apply also to spirits used in hospitals on prescriptions, while Section 7, Subsection (1), of the Finance Act, 1920, should not apply to wines supplied on prescription in hospitals. Mr. Lyle said that he had moved a similar clause last year on behalf of the hospitals, but the then Financial Secretary to the Treasury was fearful what might happen to spirits in hospitals once the cork had been taken out of the bottle. The hospitals had to pay the full spirit duty, which was very heavy. During the war the Red Cross hospitals got spirits at a much reduced duty, and the concession he now asked was a small one. Mr. Hilton Young, in reply, said that a considerable concession had been made to hospitals in regard to the exemption on spirit actually used in medical prescriptions. What was now asked went a little further. The great objection would be that it would constitute a very serious breach of the control by the Inland Revenue over the use of spirits. Moreover, there was a considerable body of opinion amongst hospital authorities that there would be danger of abuse. Mr. Lyle said that the British Hospitals Association quite approved of the amendment, but he did not press it to a division.

Leave for Medical Officers in Mesopotamia. Sir M. Dockrell asked, on June 22nd, whether the Colonial Secretary would extend to the Royal Army Medical Corps and Indian Medical Services the recent orders, General Routine Orders No. 24 of January 10th, 1921, and No. 437 of May 4th, 1921, permitting officers other than those of these services I.M.S., who have completed their time in Mesopotamia and are due to serve a further period in India, such leave as they may be entitled to under existing leave rules before proceeding to India. Lieut.-Colonel Stanley, for the War Office, said the question of the grant of leave for the officers referred to was a matter for the local military authorities. Officers of the R.A.M.C., whose tour of foreign service was five years, served two years in Mesopotamia and three in India; this procedure could not be carried out if officers were granted leave on the expiration of their period of service in Mesopotamia before transfer to India. Sir M. Dockrell wished to know why there was this differentiation between medical and other officers. Lieut.-Colonel Stanley said that the question of difference between medical and combatant officers had always been the same.

Territorial Army Medical Service.—Lieut.-Colonel Fremantle asked, on June 22nd, what were the pay and allowance respectively of an A.D.M.S. and a D.A.D.M.S.,T.F.; what in general were their duties; and how many hours a week did they entail. Lieut.-Colonel Stanley replied that the emoluments (including all allowances) of Assistant Directors of Medical Services (Territorial Force), which were issuable only during annual training, amounted to £4 1s. 3d. a day. The emoluments of Deputy Assistant Directors of Medical Services (Territorial Force), which were issued all the year round, varied from £2 9s. 10d. to £1 16s. 7d. a day, according to the rank of the officer (major or captain) and whether he was married or unmarried. The duties of an A.D.M.S.(T.F.) in peace are laid down in paragraphs 46 and 386 of the Territorial Force Regulations.

Insurance Contributions. On a question by Sir Walter De Frece as to the large number of men and women in arrears with subscriptions under the National Insurance Act, Sir A. Mond said, on June 23rd, that he intended to lay on the table regulations which would enable approved societies, if they thought fit, to give some additional relief to certain classes of insured persons who by reason of arrears were liable to suspension.

The Public Health (Officers) Bill was read a second time in the House of Lords on June 28th.

Light Artificial Limbs.—On June 23rd, in reply to Major Cohen, Major Tryon said that the Minister of Pensions intended to set up a court of inquiry to consider the question of the advantages of the light artificial limb.

The Effect of Unemployment upon Health.—Asked by Sir Walter De Frece whether there were signs of increase of cases needing medical attention through privation entailed by unemployment, and whether such increase was anticipated in the near future, Sir Alfred Mond said statistics did not show that this was so at present, but an extended period of widely spread unemployment could hardly be without effect upon the health of the country.

Poor Milk.—Mr. Hurd asked, on June 21st, whether, in view of recent proceedings, the Minister of Agriculture would consult the Minister of Health as to the issue of a circular letter to local authorities, informing them that the basis of prosecutions for supplying milk deficient in fat should be not one of two tests made in exceptional circumstances, but a series of tests, so that, while care was taken by the authorities to detect adulteration, the farmer or dairyman should not be penalized for faults for which neither could be held responsible. Sir Arthur Boscawen replied that he should be prepared, if the evidence warranted it, to consult the Minister of Health with a view to the issue of such a circular.

England and Wales.

THE WILLS GIFTS TO BRISTOL.

THE Bristol Royal Infirmary has recently received a gift from its president, Mr. H. H. Wills, of securities to the value of £105,000. This is the largest single donation which has been made to the institution during the whole of its history. The intention of the donor is that the capital sum shall remain invested, and the interest, which will amount to about £5,000 per annum, shall be used for current expenses. Such munificent gifts are altogether unexpected at the present time, and this one will be all the more appreciated because of the serious financial difficulties which have overtaken the Royal Infirmary in common with most other voluntary hospitals. Bristol University announces almost simultaneously the receipt of the sum of £200,000 from the same benefactor to build and equip a new physics laboratory. The Prince of Wales, at his recent visit to Bristol, laid the foundation stone of a new building for the Homoeopathic Hospital, the cost of which has been borne by Mr. Melville Wills as a memorial to his son, Captain Bruce Melville Wills, who fell in action during the war. The amount contributed by various members of the Wills family to the University and to the medical institutions of Bristol has been very large, and it has the additional merit of being given during the lifetime of the donors, thus ensuring to the recipients not only the actual pecuniary advantage, but also the continued interest and practical working support of the benefactors. "It is the life of a gift to be done in the life of the giver."

THE LEEDS GENERAL INFIRMARY: RESIGNATION OF MR. CHARLES LUPTON.

The annual meeting of the Leeds General Infirmary, always an event of more than local interest, demands special notice this year, owing to the admirable speech made by Mr. Charles Lupton, a speech which, unhappily, is the last that he will deliver in the capacity of treasurer and chairman of the weekly board. Mr. Lupton became a member of the board in 1882, and on the resignation of Mr. Benson Jowitt, some twenty years ago, was unanimously elected chairman. His resignation is a great loss to the infirmary, but everyone must feel that, after such a long and valuable period of service to the institution in which he has taken an interest so constant and whole-hearted, his rest is well earned. Of the work accomplished by Mr. Lupton it would, indeed, be difficult to speak in terms of praise too high: he has thrown himself into it with the greatest zeal and with quiet and confident enthusiasm. His work in connexion with the recent enlargement of the infirmary, carried out as a memorial to the late King Edward, was a model of tact and courage. It involved the acquisition of property surrounding the infirmary, which is said to have belonged to some seventy different persons, and all was accomplished quietly and without litigation. Mr. Lupton has done a great deal to improve the status and the training of the nurses at the infirmary, and his voice and influence have always been on the side of progress. In proposing a vote of thanks to Mr. Lupton for his services, Sir Berkeley Moynihan truly said:

> "Every member of the Faculty has the profoundest respect for his character, the warmest admiration for his unwearying devotion to the infirmary, and deep affection for his personal qualities. All had witnessed the spectacle of a man of great ability and of untiring industry consecrating his life to one dominating passion—love of the General Infirmary at Leeds."

In acknowledging the vote of thanks, Mr. Lupton showed by his remarks how sound are his views on the relation of a large hospital to the community:

> "There is one side of the work of the infirmary," he said, "which I should like to mention, which has been growing upon me during all the years I have been connected with it. That is, that the work of the infirmary, great as it is, is not confined to that done within its walls. When I joined the board some forty years ago, I did so believing that its great work was that of bringing medical and surgical assistance within the range of the poor people of Leeds and the district. As time has gone on I have seen that, though this is a very important part of the work and the actual cause of the existence of the infirmary, it is really only a part of the flood of beneficence which it spreads round the whole district. We have a school in this infirmary for training the best type of medical men and nurses. The infirmary has a great tradition. The fact of becoming an officer—even a subordinate officer—in its service has a great effect on the character of those who come to work here, and this applies to students and to nurses alike. We are constantly sending out a supply of medical men, trained in the best principles of medicine and surgery. While the infirmary treats thousands of persons, its work affects tens of thousands through its students. When Lord Lister left Glasgow to go to Edinburgh in order to teach Edinburgh as he had taught Glasgow the use of antiseptics in the treatment of disease—and he had afterwards to go to London to preach to an apathetic audience—the Faculty of the Leeds Infirmary encouraged Mr. Teale, as their representative, to explain to Mr. Lister, as he then was, that, while it was a fact that in some cases the treatment he had advocated had failed, they had absolute confidence in the value of that treatment, and that any failure was due to the faulty carrying out of the details rather than to any defect in the principles involved. I am proud to think that our little hospital in Leeds was even then manned by people so awake to the possibilities of the treatment that they should have sent such a message to Lord Lister at that time."

It is a source of satisfaction to everyone that Mr. Lupton's resignation of the position of treasurer does not mean his retirement from the board, on which it is hoped that he may sit for many years to advise and to help. Mr. Lupton's successor is Mr. T. L. Taylor, well known as a cricketer, having played for Cambridge and for Yorkshire; he is a business man of large experience and a large employer of labour. In his speech moving the adoption of the annual report the retiring chairman touched upon finance. Like all similar institutions, the Infirmary causes its managers anxiety on this score. Happily the year has been characterized by what may be termed a large number of unanticipated donations, which has enabled the Infirmary to pay its way and to do something towards replacing the investments which had to be sold during the war. These extra donations amounted to over £120,000, and include a sum of £50,000 from Mr. Joseph Watson, a member of the board, £35,000 from the Prince of Wales's War Relief Fund, £5,000 from the Red Cross War Fund, and £30,778 from legacies. Of these items the only one which can be expected to be represented next year is the last, and it will be a great surprise if it reaches the figure for 1920. The regular income is still a long way below the annual expenditure, but there are hopeful features in the increasing interest which is being taken in the work of this, the greatest of the Yorkshire charities. Reference was made to the scheme inaugurated by Mr. Braim for getting the employers of labour in Leeds to subscribe a definite sum per head in respect of those in their employment. The scheme is not yet in full working order, but the results are promising. Mr. Lupton also touched upon the developments in the radiographic and radiotherapeutic departments, on the growth of the nursing school and the institution by the University of a diploma in nursing, on the dental department and on the work of the department for the treatment of venereal disease. After making a feeling reference to the death of Mr. Edward Ward, who was consulting surgeon to the hospital, Mr. Lupton ended his notable speech in these words, which it is hoped will reach the hearts of those who are able to help in the great work of the Leeds Infirmary, and especially those "to whom, from the golden horn of plenty, blessing and abundance have flowed."

> "I would urge upon the people of Leeds and the wide district around for which this hospital exists, that they should continue their wonderful liberality towards its maintenance. . . . Relying upon your help, which so far has never failed us, we shall go on and open the wards built by your liberality and carry them on as a part of this institution."

THE WELSH NATIONAL MEDICAL SCHOOL.

We are informed that Mr. A. W. Sheen, C.B.E. (Mil.), M.S., F.R.C.S., formerly surgeon to the King Edward VII Hospital, Cardiff, and recently to hospitals of the Ministry of Pensions, has been appointed Professor of Surgery in the Welsh National School of Medicine. We understand that at the meeting of the Council of the College at which this appointment was made it was decided to postpone the appointment of a Professor of Medicine. We understand, further, that Dr. D. J. Mackintosh, C.B., medical superintendent of the Western Infirmary, Glasgow, who was asked to inspect the King Edward VII Hospital, Cardiff, has made a report containing recommendations which it will take some time to

carry out. It would seem, therefore, very doubtful whether the School can be ready to start as a complete medical school next October, but Mr. Sheen's appointment, we are informed, is to date from the first day of that month.

Ireland.

SIR J. WALTON BROWNE.

MR. J. WALTON BROWNE, M.D., D.L., received the honour of knighthood on the occasion of His Majesty's visit to open the Parliament of Northern Ireland.

Sir Walton Browne is the senior consulting surgeon of the Belfast Royal Hospital, to the Ophthalmic Hospital, and to the Ulster Hospital for Women and Children. He was for thirty-seven years visiting surgeon to the first of these institutions, and was an immense favourite with his colleagues and the students. It would be a very lengthy matter simply to enumerate the various offices he has held and the duties he has discharged during his long, arduous, and honourable career. He resigned from the active staff of the Royal Victoria Hospital in 1912, and was made Deputy Lieutenant for the city in 1913. For over forty years he acted as surgeon to the post-office in Belfast. All his colleagues past and present, the profession in general in Ulster, and his innumerable friends everywhere will be deeply gratified at this recognition of his services, and will offer him their happiest wishes for many years of health and strength to carry the new dignity.

Correspondence.

CLINICAL AND LABORATORY METHODS.

SIR,—No one who is at all conversant with the more recent history of medical education can be ignorant of the claims of Sir James Mackenzie to be heard with respect. The story of his own successful efforts to educate his untutored mind must be familiar to every one. But in the process, and partly as a result of the process, he has reached a mental attitude which does something less than justice to many of his fellow workers.

I have waited for some writer better qualified than myself to challenge Sir James Mackenzie, but since no other has appeared I venture to enter the lists and touch his shield with blunted and not with battle point. I shall have occasion to refer particularly to my own school, but it is not to be supposed that it possesses or that I claim for it any peculiarity of excellence in teachers or methods of teaching over other London schools.

In his recent address to the pathological students at a London school Sir James stated that "his object was to demonstrate that the conception of medical research which is dominant to-day is so immature and imperfect that it renders fruitless much of the research work." This opinion obviously carries with it the implication that medical education is inefficient, and that the present system is based on rotten foundations. I do not think that Sir James explicitly says as much, but in almost every paragraph he attacks the present system and the present teaching. In his advocacy of the claims of the clinical observer he has in my judgement stated his facts wrongly, ignored the principal aims and objects of medical education, and constructed an entirely fanciful picture of the results.

"The highest aim of all research is the prevention of disease." And according to Sir James Mackenzie the clinical observer was satisfactorily dealing with this problem in such diseases as typhoid fever, syphilis, and rabies, until "a foolish idea arose that the methods by which he made his contributions to research are easily understood, . . . and their possibilities exhausted." He proceeds with a brief review of what he believes to have been the history of medical research in the last hundred years, and concludes that "as an investigator he (the clinical observer) has disappeared." I maintain that in this, the introductory portion of his address, he has misstated the facts, ignored the aims and objects of medical teaching, and drawn an entirely fanciful picture of the result.

He is wrong in his facts. It was not, for instance, the clinical observer who rendered possible the earlier diagnosis of typhoid fever but the laboratory worker; it is not the work of the clinician which has made typhoid fever uncommon, but the earlier diagnosis and the prophylactic use of typhoid injections—another laboratory method. It was not clinical observation which has enabled us to separate the paratyphoid infections from the mass of typhoid fever, but the work of the bacteriologist.

I could give similar examples from almost every paragraph, but I must go on to my second charge. The aim and object of medical research is the prevention of disease. To effect this object medicine requires not only the trained observer, but the man who has been taught to make good use of what he observes, and to test it by experiment. The teacher of medicine must therefore devote the short time which is allotted to him—a little more than one quarter of the two years which are assigned to clinical studies—to the endeavour so to train the mind of his pupils that they may become accurate observers and intelligent interpreters of experience. If he can further inspire them with a critical judgement and an earnest spirit of inquiry, he has no need to be ashamed of the result. Sir James Mackenzie ignores these aims, and would apparently have us substitute for them disquisitions on the art of prognosis, telling a story of a physician who was taken aback by the question of when his patient would be fit for work—"During the whole of his medical education he had never been taught to realize that such a question should be asked." Now, as student and teacher I have been in the wards of my own school for a quarter of a century, and I can honestly assert that I can hardly remember an occasion in going a round when this point has not been raised and discussed by the teacher. Nothing in my own school is more common than to hear the physician begin his remarks on a patient by saying, "Now, gentlemen, the first two questions which your patient will ask you are: 'Am I going to get well?' and 'When am I going to get well?'" Thereafter he sets out by question and suggestion all the knowledge which his experience and reading have given him. That experience is fallacious and judgement difficult we know from the lips of the Father of Medicine, but that experience is neglected and that the art of prognosis is ignored by the teacher is "a terminological inexactitude."

I suppose that he might answer that the hospital teacher is incapable of such teaching because he does not see patients in the early stages of their diseases, and that the only man who is fitted by his experience to undertake the task is the general practitioner. There is a small particle of truth in such a contention, but it is minute. To every physician attached to teaching schools there have come ample opportunities of study of the early symptoms of disease, and again, in my own school there is no lesson which is so earnestly impressed on the student as the importance of the early signs and symptoms exhibited or experienced by the patient. The student who comes fresh to the study of disease with a knowledge of normal physiology and anatomy must surely be taught to recognize disease in its more obvious forms; that is, his education must be begun in pathology, and he must learn by a study of morbid processes what is the course of events entailed in deviation from the normal. From such a study he is fitted to appreciate the first beginnings, and we strive to send him out, not indeed a finished practitioner, but with an intelligent appreciation of the dividing line between sickness and health, and alert to detect the point at which sickness begins. In other words, he is taught the importance of early and accurate diagnosis. Such a system in the time allowed produces a man who has been taught to use his brains to the best advantage; it does not and cannot produce a finished practitioner, nor can it give to the individual that personal experience and ready control of knowledge which can only come with years. If in the stress of practice he forgets the great aim of medical research and fails to contribute his quota, that is not due to any failure on the part of the teacher.

Lastly, Sir James Mackenzie quarrels with the results of the teaching of the past and even of the present. He could not understand and could not find an explanation of heart failure until he grasped the fact that "the disordered or impaired function of one organ upsets the others, and the signs of ill health are found, not in the inefficient organ, but in others." Yet Taylor and Osler, to take the two popular textbooks of my own student days in the

"anæmias," though neither uses the term "response to effort," both lay down plainly the doctrine that the effects of disease of the heart must be measured by "its efficiency as a propelling organ, and not by the loudness of the murmur" (Taylor, 1907, p. 13); "a murmur *per se* is of little or no value in determining the prognosis" (Osler, 1901, p. 7); and go on to teach us all that Sir James alleges he has had to rediscover unaided.

But, though I feel that Sir James has forgotten his debt to his teachers and has maligned his colleagues of to-day, I recognize that he is inspired by a real devotion to medical progress, and I leave the lists with a quotation slightly altered from the original:

> Oblivious Knight, to whom all Lords shines,
> Kill me with spites, yet we must not be foes.

—I am, etc.,

London, June 18th. HUGH THURSFIELD.

SIR,—From Dr. Crofton's letter it would appear that in trying to describe the importance of clinical methods I seemed to disparage laboratory methods. This was not my intention, for I recognize the necessity for laboratory methods in medicine. Medical knowledge has not advanced far enough for the place of the laboratory to be recognized, and during recent years it has been used to supplant clinical methods in place of supplementing them, and in consequence it has been called upon to do things for which it is not capable. The time will come when the different methods will be co-ordinated, and research then will be systematic and not haphazard, as it is at present.—I am, etc.,

St. Andrews, Fife, June 20th. J. MACKENZIE.

REPORT OF THE VOLUNTARY HOSPITALS COMMITTEE.

SIR,—The Voluntary Hospitals Committee was appointed on January 25th "to consider the present financial position of the voluntary hospitals, and to make recommendations as to any action to be taken to assist them." It has now reported to the Government. *Parturiunt montes, nascetur ridiculus mus.*

Those of us who took a wide outlook of the function of hospitals in our national life and recognized that a supply of hospital accommodation adequate to the nation's hospital needs was desirable in the interests of the nation, as of medicine, had no expectation of any result of importance from the Committee's labours. The Committee's report has in no particular disappointed us; rather has it justified our wildest anticipations. The keynote of the report is given in two sentences: first, where it says that the voluntary system is worth saving; second, where it points out that the present financial difficulties of the hospitals are due to the war. Nothing more is needed to demonstrate the incapacity of the Committee to grasp the situation's needs.

That the war has accentuated the difficulties goes without saying, and it needed no Committee to testify to this. But that the slough in which hospitals now find themselves is chiefly due to the increase of costs owing to the war is not the case. The truth is that the voluntary system has not been able to keep pace with hospital demands, and is quite incapable of increasing hospital supply to keep pace with the nation's needs.

In the BRITISH MEDICAL JOURNAL of May 22nd, 1920, appeared an article on voluntary hospitals by Sir Napier Burnett. In it he reviewed the results of a survey of 523 voluntary hospitals. The ordinary expenditure of these hospitals in 1919 was £3,310,895, and their deficit on the year's working was £475,627. But Sir Napier Burnett proceeded to show that these hospitals supply beds at the rate of 1 per thousand of the population, and he goes on to say: "In my opinion this is inadequate, and the provision ought to be in industrial areas 3 to one thousand of the population, and in rural areas 1 or 1.5 to a thousand."

No one who has given any thought to the needs of the nation imagines that this is an over-statement, and my own opinion is that adequacy needs a multiplication of hospital beds throughout by three, and this means a multiplication of expenditure by three. To do this would approximately increase the expenditure on these hospitals from £3,300,000 to £9,900,000, and would convert the deficit, unless the subscriptions were increased, from £475,000 to over £7,000,000.

In the survey London hospitals are not included, and I personally am satisfied that adequacy needs an increase in hospital expenditure for the country of nearer fifteen million pounds than ten million pounds *per annum* over and above any capital expenditure necessary to build new hospitals and replace obsolete ones. No one who has a smattering of knowledge of hospitals, their needs, and their work dare challenge this; and still less can he deny that voluntaryism is incapable of working on such a scale.

It may be that the financial condition of the country at present is such that such an expenditure cannot be immediately contemplated. Had the Committee recognized this need, and stated that it could not be met at present, and made proposals as a bridge over a difficult time, credit might have been given to it for taking a statesmanlike view; but, as it is, the proposals of the Committee do no more than play with the business, and this means playing with the life and death of the people.

Their proposed temporary grant of £1,000,000 is not much more than at the rate of £1,000 for each hospital in the kingdom. The overdraft at the bank of the hospital with which I am connected is at present £13,000.

I offered to give evidence to the Committee that hospital needs could not be met from voluntary sources. My offer was not accepted and I was not allowed to give evidence.

I am aware of my own limitations, and I realize that my name bears but little weight. But in the proceedings of the Committee some evidence ought to have been taken from someone of the kind which I offered to it. The Report states that a small minority of witnesses suggested that liability for the hospitals should be taken over by the State, so that some evidence seems to have been taken that the day of voluntaryism is past; but the evidence to support this view is so conclusive that the decision of the Committee that the voluntary system is worth saving leads one to believe that the case against voluntaryism was not well presented, and I regret that opportunity to state it was withheld when I offered it. I need hardly say that this regret is not a matter of personal feeling.

The report of the Committee, as it is given in the preliminary account, is valueless as a serious contribution to the solution of the problem of hospital finance. All it does is to endeavour to save the Government's face.

Is the medical profession going to be satisfied with this? The profession is still wrapped up in the fetish of voluntaryism, but it is waking, and it cannot long blind itself to the fact that the interests of medicine are co-existent with an increase in hospitals that voluntaryism cannot supply. Were it to take the lead in demanding reform it would do much to rescue itself from the contempt in which, with some justice, it is held in some quarters since the debacle of 1912.—I am, etc.,

PETER MACDONALD, M.A., M.D.,
[illegible]
[illegible] Dept. [illegible] Hospital.

REFRACTION WORK IN SCHOOL CHILDREN.

SIR,—When I sent you the short note of my lecture on "The axis of astigmatism," which appeared in your issue of May 7th, I did not anticipate that it would stimulate so brisk a correspondence. The discussion has turned on one issue—the relative values of subjective and objective methods of refraction work amongst school children. In my lecture I said:

> [illegible] methods are of little or no value in children's cases, and [illegible] should be abandoned except to obtain a [illegible] under [illegible]
>
> [illegible] the work of a school clinic who has not mastered the art of retinoscopy. The worker must [illegible] the use of his [illegible] discover all the data for the refraction, and must [illegible] what will be the most appropriate glasses to order in any given case.

But these statements did not stand alone, as some of your correspondents seem to imply. They were linked up with two other statements or directions:

1. That the worker must undertake a strenuous course of practice of both objective and subjective methods upon critical patients, so that he may learn what is the worth of his work and how he should use it.

2. That this course of practice must be continuous. "Only by a continuous course of practice such as outlined here . . . can he cultivate a mastery of objective methods

and free himself from the thraldom of reliance upon subjective responses."

Retinoscopy is a fine art, and like all fine things it can only be mastered by strenuous effort, and the mastery of it can only be maintained by continuous practice. Also the skill and judgement needed to apply the results obtained are equally hard to learn. Retinoscopy is not "only a guide"—it is *the* guide to the correct knowledge of the refraction of a patient's eye. Its development has swept into the limbo of forgotten things a host of subjective tests once greatly valued. Donders, in his classical work (*On the Anomalies of Accommodation and Refraction of the Eye*, p. 479 et seq., New Sydenham Society's Publications), discusses ten methods of estimating astigmatism; now we do not "estimate" astigmatism, we measure it by retinoscopy. Most of the remaining and diminishing prejudice against retinoscopy arises from a failure to appreciate what is obtained by the method. During cycloplegia retinoscopy will enable us to obtain an exact measure of the refraction of the eye. That measurement does not give a bald prescription for glasses; a ripe judgement is needed to correlate the facts of the refraction with the needs of the patient. That can only be learnt by assiduous practice with critical patients in the manner I indicated in the lecture. A school clinic is not the place in which to learn it.

One word on the time employed in the work. This must necessarily vary with the skill and experience of the worker. But the demands of education authorities for quantity must be limited by the equal demand for quality. Retinoscopy and the use of its results make great demands on the mental energy of the worker, both in observation and judgement, and neither can be obtained wholesale.—I am, etc.,

London, W., June 25th. N. BISHOP HARMAN.

THE PREVENTION OF PUERPERAL INFECTION.

SIR,—There is no doubt that an exchange of views and experiences, such as the present correspondence on the important and baffling problem of puerperal sepsis, is interesting and instructive. Apart from a few fundamental bacteriological facts we have little precise knowledge of the etiology of puerperal infection, and less of its specific treatment, and so it follows that most of our views on these diseases are based less on known scientific facts than upon our own observed clinical experience. This is well illustrated in the letters published recently, in which there are set forth almost as many views of the origin and prevention as there are correspondents.

A few attribute the freedom of their patients from infection to the pursuit of a more or less elaborate technique in the conduct of labour, while others pride themselves on an absence of technique, and confidently ascribe their success to the neglect of what they consider an unnecessary ritual. Between these extremes there are all degrees of variation. Some found their faith on mercurial antiseptics, while others rely on rubber gloves. Here we find advocacy of non-interference in labour, in another place the writer is enthusiastic on the good results which follow skilled assistance during the second and third stages, and so forth.

It is not possible in a letter to go fully into this question, but I will try to separate certain known facts, to the truth of which all agree, from some probabilities which various practitioners have come to accept as truth on account of their own observations.

The facts which none will dispute are as follows:

1. The more serious varieties of puerperal fever are due to organisms (usually *Streptococcus pyogenes*) gaining access to the recently denuded placental site.

2. Organisms transferred directly from a septic lesion (throat, whitlow, septicaemia) to a parturient woman are immensely dangerous.

3. The cervical canal and upper part of the vagina are often found sterile by ordinary cultural methods, but by no means always so, as in women who have a purulent vaginal discharge in pregnancy. An examination of a large number of cases at Queen Charlotte's Hospital shows that women with a purulent *antepartum* discharge are not liable to septicaemia, though they do develop sapraemia more frequently than ordinary women. Thus, out of 43 women with a purulent discharge before labour not one developed septicaemia, and only one became severely sapraemic. Local immunity is an important factor.

4. The peri-anal and vulval skin carry faecal organisms, which, therefore, as Mr. Bonney suggests, may be carried up by hands and instruments. These organisms include at least *B. coli* and streptococci, and are therefore potential causes of septicaemia.

Little more is actually known about the causation of serious infection, though much can be surmised, and is frequently accepted as fact. For example:

(*a*) That extensive and prolonged intrauterine manipulations are very liable to cause severe infection. Theoretically this should be correct inasmuch as there are many opportunities, during such repeated insertion, for the hands and instruments to carry up microbes. But I think all will agree that there are a surprisingly large number of difficult craniotomies, breech deliveries, etc., in which infection does not occur. Thus out of 50 consecutive craniotomies at Queen Charlotte's Hospital, involving considerable manipulation—and not merely perforation for hydrocephalus—of the patients who survived the first twenty-four hours after labour, only two died from sepsis. Cases of craniotomy during which the patient died from shock or ruptured uterus just after labour have been excluded.

(*b*) Lacerations of the perineum, vagina, and cervix provide a source of infection for the placental site by growing virulent cultures in its immediate neighbourhood. On this matter I am strongly in agreement with the thoughtful letter of Dr. Beattie in the JOURNAL of June 11th.

(*c*) Manual removal of the placenta, inasmuch as the hand comes into direct contact with the open-mouthed vessels of the placental site. Here I venture to disagree with Dr. Beattie, who describes this operation as almost a routine procedure. An infected hand in the amniotic sac is far less dangerous than one in contact with the raw uterine surface.

(*d*) Severe haemorrhage and exhaustion during labour I regard as the important etiological factors of septicaemia, by diminishing resistance. The very frequent febrile puerperia following extensive manipulations prove that the microbes have been implanted in a very large number of these cases. If there has been no blanching haemorrhage or deep exhaustion the patient is able usually to combat this infection, but if her resistance has been sapped she may die of sepsis.

The few unexplained cases of normal labours followed by septicæmia can only be due to accidental (perhaps autogenous) infection by streptococci of great virulence, the entire prevention of which seems to be almost impossible. With all deference to Dr. Young, I still affirm that the surest way is to take all possible precautions in the shape of rubber gloves and antiseptic technique and minimal examinations. Obstetrical teachers give the student the ideal; they cannot do less. We all know that it is quite impossible to attain it under manifold difficult circumstances, but if the spirit is there much can be accomplished.—I am, etc.,

London, W., June 15th. ALECK W. BOURNE.

SIR,—The fear of sepsis is the nightmare of every conscientious practitioner who is engaged in midwifery practice, and the knowledge that he will be blamed for every cases of sepsis occurring in his practice, not only by the patient's friends but by members of his own profession, does not lighten his burden.

The question of the prevention of puerperal sepsis will not be settled by stating that every case is due to the carelessness or neglect of the practitioner: "The practitioner is not to shelter himself behind the fact that cases of sepsis do occur where everything has been normal and no examination has been made." Such statements as that "such infection should be as rare in midwifery practice as it has become in surgery," and that "a confinement should be conducted as a major operation" are absurd. They show that the writers have no knowledge of the conditions under which a large number of confinements have to be undertaken.

Compare the conditions of a hysterectomy in hospital with the conditions of many a confinement in a single apartment house in a lower working-class district. In hospital you have a clean bed, clean sheets, patient bathed, skin sterilized, wound closed, sterilized dressings, clean garments, and lastly skilled assistance. In the other case you find a bed which has been slept on by the husband, wife, or one or two children; it has frequently been soaked with urine, the sheets are dirty, and the patient's garments soiled; she has not had a bath. Instead of sterile dressings you have a few old rags or the discharges are allowed to soak into a nightdress which is not changed for days. Lastly, there is no skilled assistance. No surgeon would undertake a hysterectomy under these conditions, and yet the practitioner has frequently to give an anaesthetic, apply forceps, and deliver the patient. To say that under such conditions the only cause of infection is the examining finger is absurd. If proper antiseptic precautions have been taken there should be no more risk in introducing the finger into the vagina than into an abdominal wound.

A thorough use of antiseptics will reduce the number of cases of sepsis arising from the introduction of organisms at the time of delivery, but cannot prevent those which are due to organisms already in the vagina or introduced subsequently.

The blame for these preventable cases lies with the teacher more than with the practitioner. When one sees a man drop a tablet of corrosive sublimate into a basin of hard water and proceed to wash his hands in it with soap, one knows that that man's knowledge of the use of antiseptics is small.

Lest I should be suspected of excusing myself for careless practice, I may say that in the last thirty years I have attended about four thousand cases with one death from puerperal fever, and that was, I think, a case of puerperal scarlet fever, as an attendant was found to be desquamating.—I am, etc.,

Erdington, June 13th. ROBERT ANDERSON, M.D.

SIR,—Is not the subject of the prevention of puerperal sepsis analogous to war surgery? Aseptic treatment of wounds in the early days of the war produced direful results. Even in an up-to-date lying-in hospital aseptic treatment will sometimes fail. There must always be some risk of carrying up infection with the examining finger; therefore, the essential seems to be that the examiner should be antiseptic. My only use for gloves is that they keep me from being infected. I never boil forceps or other instruments at the house of the patient; I come with them probably sterile (having been boiled at home), and then see to it that they are thoroughly sterile from antiseptics. But more important than all this part of the procedure I deem to be the sewing up of tears, cervical or vaginal. And, perhaps, most important of all is the looking for them. How often one sees a slight rise of temperature promptly come down after lightly touching over a granulating patch on the posterior floor of the vagina with pure phenol. To sum up: Is not it often what we leave undone that is the cause of the trouble?—I am, etc.,

June 21st. J. C. M.

Universities and Colleges.

UNIVERSITY OF OXFORD.

PROFESSOR C. S. SHERRINGTON, President of the Royal Society, received the honorary degree of D.Sc. at the Encaenia this year.

At a congregation held on June 23rd the degree of Doctor of Medicine was conferred on Gerald K. Bowes (Christ Church).

UNIVERSITY OF CAMBRIDGE.

DR. J. A. CROWTHER, of St. John's College, has been appointed by the General Board of Studies to the post of University Lecturer in Physics as applied to Medical Radiology. The appointment is until the end of 1925.

The following candidates have been approved at the examinations indicated:

THIRD M.B., B.CH.—*Part I, Surgery, Midwifery, and Gynaecology*: G. F. Abercrombie, A. C. Ainsley, F. Allen, S. H. Barnett, C. C. Boney, L. M. Burrell, W. R. Carling, C. N. Carter, A. O. Curtis, D. Crawford, C. Dunscombe, D. D. Evans, L. E. Frazer, H. J. H. Hendley, R. C. Hewitt, B. E. Jerwood, A. V. Johnson, P. B. Kittel, R. B. P. Lansdown, S. Orchard, E. S. Orme, F. A. Phillipps, J. H. Porter, W. Shaw, G. W. Theobald, G. I. F. Tweedie, D. C. L. Vey, J. P. Wells, C. E. Whitting, C. H. Whittle, H. L. Wiley. *Part II, Medicine, Pathology, and Pharmacology*: A. C. Ainsley, A. E. Clark-Kennedy, P. K. T. Collins, H. T. Cubbon, P. Donaldson, N. D. Dunscombe, V. N. Fenton, E. A. Feddian, C. L. C. Gill, W. S. Gross, L. A. H. Grylls, G. Habgood, A. T. Hawley, E. C. Malden, L. B. Maxwell, R. A. Olphert, W. H. Palmer, H. A. A. Pargeter, F. A. Phillipps, P. W. Putnam, W. Raffle, A. P. Saint, W. Shaw, T. H. Somervell, E. D. Spackman, H. N. Stafford, R. A. F. Starkie, S. D. Sturton, G. W. Theobald, G. D. C. Tracy, R. R. Traill, Y.-S. Wan, C. H. Whittle.

M.CH.—J. B. Hunter.

UNIVERSITY OF LONDON.

AT a meeting of the Senate, held on June 22nd, Sir Sydney Russell-Wells, M.D., was re-elected Vice-Chancellor for the year 1921–22.

The following were among the grants approved from the Dixon Fund for the year 1921–22:

£50—Mr. F. J. F. Barrington, M.B., B.S., for research on the nervous mechanism of micturition.

£40—Miss G. Z. L. Le Bas, B.Sc., for researches into the part played by lipoids in immunity and bacteriological intoxication.

£50—Professor Karl Pearson, M.A., F.R.S., to defray the cost of the publication of drawings of the sesamoid bones of the knee-joint to be used to illustrate a memoir on the subject now in progress.

The Scholarships Committee reported the appointment for 1921–22 of Mr. E. C. Warner, of Guy's Hospital Medical School, to the University Studentship in Physiology of the value of £50.

VICTORIA UNIVERSITY, MANCHESTER.

THE following candidates have been approved at the examination indicated:

M.D.—B. Browning, T. E. Dickinson, W. H. Kountze, R. L. Newell, J. A. Panton, H. Platt, D. McK. Sutherland.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—May T. Bassett, E. S. Clayton, R. D. S. Inman, R. T. Lee, Elsa F. Paige, R. Platt.

Obituary.

DR. SAMUEL BEATTY, of Pitlochry, died on June 16th in his 61st year. He was a native of Antrim, and was educated at Trinity College, Dublin, and the University of Edinburgh, graduating M.B., C.M.Edin. in 1886. He had practised in Pitlochry for thirty years, having succeeded the late Dr. W. S. Irvine, his former partner. Dr. Beatty showed a warm interest in charitable and philanthropic matters; he was chairman of the Pitlochry School Management Committee, parochial medical officer and public vaccinator for Moulin, certifying factory surgeon, and medical officer to the Post Office. He took great interest in the work of the British Medical Association, and, in addition to having served as President of the Perth Branch, was at the time of his death a member of the Branch Council and the Deputy Representative in the Representative Body.

WE regret to announce the death of DR. JOHN DOWNIE, of Bellevue, Wakefield, which took place on June 7th in Driffield Cottage Hospital, from injuries received in a motor cycle accident at Eastburn. Dr. Downie graduated M.B., Ch.B. of Glasgow University in 1900, and had been in practice at Wakefield in conjunction with his brother since shortly before the war. After the outbreak of war he proceeded to France with the Yorkshire Mounted Brigade Field Ambulance R.A.M.C.T., and he was awarded the Russian Order of St. Anne and subsequently the D.S.O., both in recognition of acts of gallantry in the field. The tragic ending to a promising career will be greatly regretted by Dr. Downie's many friends.

DR. HERBERT STANLEY BALLANCE, of Weston-super-Mare, died on June 11th, aged 56. He was educated at King's College, and took the diplomas of M.R.C.S. and L.R.C.P. in 1890, and graduated M.B., B.S.Lond. in 1892 and M.D. in 1894. He held the posts of resident medical officer of the Hospital for Consumption, Brompton, house-surgeon to King's College Hospital, and house-physician to the General Lying-in Hospital, York Road, and at the time of his death was surgeon and surgeon in charge *x*-ray department of the Weston-super-Mare Hospital. He was a member of the Bristol Division of the British Medical Association and of the Bristol Medico-Chirurgical Society.

Medical News.

THE Admiralty has appointed a committee under the presidency of Surgeon Vice-Admiral Sir Robert Hill, K.C.M.G., Medical Director-General, to inquire into the medical staffs and naval and civilian complements of the R.N. hospitals.

DR. J. C. BEASLEY, of Rowley Regis, has been presented with a gold chiming watch on the occasion of his retirement from the posts of medical officer of health and school medical officer. The former post he had held for nearly fifty years. The presentation was made on behalf of the medical men of Old Hill, Cradley Heath, Cradley, Netherton, Halesowen, Blackheath, Quarry Bank, and Rowley Regis, by Dr. T. M. Tibbetts. Dr. Beasley, who was prevented by ill health from being present, has addressed a letter of thanks to the subscribers.

IN the circular which has been sent to approved societies by the Ministry of Health sanctioning schemes for additional benefits, the provision of nursing service for members of the societies is mentioned. Lord Cave's committee's report on the voluntary hospitals favours a contribution to the hospitals by the approved societies from the surplus in hand in recognition of the services rendered to their members rather than any scheme of insurance by payment in advance or by compulsory payment afterwards. The Central Council for District Nursing in London is anxious to make it clear that nursing associations—which provide for the nursing of patients in their own homes—may receive contributions from the approved societies either under paragraph 20 of the Act of 1911, or by way of additional benefits out of their surplus. The Central Council has already informed the approved societies which have members resident in London that it is in a position to arrange for adequate nursing for all such members.

JUNE 28TH is the sixth anniversary of the opening of Queen Mary's Convalescent Auxiliary Hospitals at Roehampton for sailors and soldiers who lost limbs in the war; it is hoped that 200 beds may be permanently endowed, so that, with the help of the capitation grant from the Government, the institution may be maintained. Over 41,000 officers and men have needed artificial legs and arms, and over 22,600 new patients have passed through the hospitals at Roehampton since June, 1915. The instructional workshops, which provided training in different trades and commercial classes, have now been closed, as, fortunately, most of the disabled men trained in them have found suitable employment. The hospitals are, however, kept constantly busy with cases readmitted for second limbs and with repairs. Since the beginning of 1918 limb repairs to the number of 16,518 have been dealt with through the post alone, and in the out-patient department frequently fifty to sixty men attend in a day for major or minor repairs to their limbs.

MR. HENRY P. STURGIS, upon his retirement from the chairmanship of the Royal London Ophthalmic Hospital (Moorfields), which he has held for the last twenty-four years, has been presented by members of the committee and medical staff with a handsome silver salver, as an expression of their appreciation of his services.

DR. H. C. MACTIER, M.B.E., Honorary Secretary and Representative in Representative Meetings for eleven years of the South Staffordshire Division, and Honorary Secretary of the Wolverhampton Local Medical and Panel Committees since their commencement, has been presented with a cheque for £108 15s. from the practitioners in the area of the Division as an appreciation of his work as secretary of these bodies and his many other services to the local profession, including that of honorary secretary to the Local Medical War Committee. This is the second time that Dr. Mactier has been the recipient of such a testimonial, as in 1913 he received a cheque for 100 guineas in recognition of his strenuous services during the days of the inception of the Insurance Act.

THE 80th annual meeting of the Medico-Psychological Association of Great Britain and Ireland will be held in London, under the presidency of Dr. C. Hubert Bond, C.B.E., from July 11th to July 15th. The presidential address, which will deal with the position of psychological medicine in the medical and allied services, will be delivered at the house of the Royal Society of Medicine, on on Tuesday, July 12th, at 3 p.m. On Wednesday Dr. C. S. Myers, F.R.S., will speak on psychological medicine in relation to industry, and a number of papers will be read; the annual dinner will take place at the Connaught Rooms on the evening of the same day. The dinner will be attended by, among other guests, the Lord Chancellor and the Minister of Health. On the morning of July 14th papers will be read, and in the afternoon visits will be paid to the Springfield Mental Hospital, Tooting. On Friday, July 15th, papers will be read in the morning, and in the afternoon a visit will be paid, at the invitation of the London Asylums Mental Deficiency Committee, to the mental hospitals at Epsom.

THE annual general meeting of the Federation of Medical and Allied Societies was held at 11, Chandos Street, London, W.1, on Tuesday, June 28th. In the unavoidable absence of the President (Sir Berkeley Moynihan) the Vice-President (Sir Malcolm Morris) delivered an address. The annual report of the Executive Council was received and adopted. The president, vice-president, the honorary treasurers and auditor were reappointed for the ensuing year, and thirty societies were elected to representation on the Executive Council. The result of the ballot for a representative of individual members was declared in favour of Dr. Ford Anderson.

WE are glad to see that the rather wide claims that have been made at several clinics in Germany for the intensive x-ray treatment of cancer are to be subjected to investigation. We stated some time ago that Dr. C. C. Anderson, the Manchester Royal Infirmary scholar, was to go to Erlangen to observe the treatment there used. The West London Hospital at Hammersmith has recently announced that it has imported an apparatus from Dr. Wintz's clinic at Erlangen, and that it is proposed to make the results public. It will not, however, be possible to draw any trustworthy conclusions until after the elapse of a considerable period.

THE retirement of Dr. F. J. Stevens from the post of medical officer of health for Camberwell, announced in our issue of June 18th, will take place as from March 31st, 1922.

THE annual meeting of the school medical group of the Society of Medical Officers of Health was held in Birmingham on May 28th, with the President (Dr. G. A. Auden) in the chair. Correspondence from the British Medical Association, inquiring the policy of the group regarding recognized holidays for school medical inspectors, was read and considered, and after full discussion the following resolution was passed: "That where practicable all school medical officers and assistant school medical officers shall have the usual school holidays, and in any case shall have a minimum of four weeks' holiday." It was pointed out, in the course of the discussion, that in most towns the medical inspectors had the usual holidays, and that this was found beneficial to the efficiency of the medical and nursing staffs.

LIEUT.-COLONEL HENRY SMITH, C.I.E., I.M.S., gave an address to the Ophthalmological Society of Pittsburgh, Pennsylvania, on May 20th.

AT a meeting of the Association de la Presse Médicale Française, on June 4th, Dr. Le Sourd (*Gazette des Hôpitaux*), was elected President, Dr. R. Cruchet (*Journal de Médecine de Bordeaux*) and Dr. Loeper (*Progrès Médical*) Vice-Presidents, Dr. Pierra (*Revue de Gynécologie*), General Secretary, and Dr. G. Baillière (*Paris Médical*), Treasurer.

DURING April four cases of rabies occurred in Holland, one in the Province of Groningen and three in the Province of Drenthe.

DURING March 444 cases of plague occurred in Java, all of which were fatal.

THE triennial International Congress of Urology will be held at Paris from July 5th to 7th, with Professor Legueu as president. Papers will be read by, among others, Mr. Hurry Fenwick, Dr. Langdon Brown, Mr. Frank Kidd, and many distinguished French, Italian, and American urologists. An exhibition of instruments and appliances will be held and visits will be made to the hospitals, where special operations will be performed. There will be a reception at the Hôtel de Ville and other social functions. At the conclusion of the congress tours to the battlefields have been arranged.

A MONUMENT in memory of the great French chemist, Adolphe Wurtz, will be unveiled at Strasbourg on July 5th.

DR. W. W. CORT and Dr. E. L. AUGUSTINE of Baltimore, with Dr. J. E. ACHERT, Kansas State Agricultural School, have been sent by the International Health Board of the Rockefeller Foundation to Trinidad to study hookworm disease there.

AN invitation to attend the clinical course of lectures and demonstrations on heliotherapy, to be given at Leysin from August 16th to 20th by Dr. A. Rollier and his assistants, will be sent to any medical man or woman expecting to be in Switzerland, on application to Dr. Rollier, Leysin, Switzerland.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and, if possible, leaders on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor and the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4757, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

MRS. E. M. HENDLEY (Caxton) writes in reply to "Member B.M.A. for twenty-five years": We have been using a kitchen *range*, not stove, made entirely for anthracite for just a year and find it excellent. We installed the smallest size, and it is ample for cooking all meals and giving continuous hot water day and night. The bath tank is immediately over the kitchen, and supplies hot water to two lavatory basins—the bath and scullery. With care the fire never goes out, being banked up at night and all dampers shut. It is very clean, there is no smoke or dust, and it is labour-saving as there is no fire to light every morning. The difficulty is to get anthracite, and after various experiences we eventually purchased a truck-load by rail.

PERSISTENT HEART BEAT AFTER CESSATION OF RESPIRATION.

DR. D. S. CLARKE (Park Royal Hospital, Willesden, N.W.10) asks for information as to the longest interval during which the heart's action has continued after sudden and apparently complete cessation of the respiration. He mentions a period of 8 hours 10 minutes.

INCOME TAX.

"E.6" has been taking post-graduate courses for the D.P.H. while holding an appointment as resident in a hospital. Can he deduct the class and examination fees "as necessary expenditure" in his income tax return? He also inquires as to the method of returning fees for locumtenent work.

*** He can deduct only expenses necessarily incurred "in the performance of his duties," and the fees in question seem to be incurred outside those duties. A return for locumtenent work should be made under Schedule D, for the first year on that year's earnings, and for the second year on the same amount.

"O. G. C." asks for a reference to the authority for a recent reply to the effect that a salaried assessor of the Ministry of Pensions can deduct subscriptions and the cost of books necessary for keeping up his medical knowledge.

*** Rule No. 9, applying to Schedule E, provides that where a person is necessarily obliged to expend money wholly, exclusively and necessarily in the performance of his duties the expenditure can be deducted. We assume that an assessor is, impliedly, obliged by the Ministry to maintain his medical knowledge at a proper standard, and for that purpose must keep abreast of modern medical science.

LETTERS, NOTES, ETC.

SIR JOHN W. BARRETT (Melbourne, Victoria) writes: My attention has been directed to statements appearing in Great Britain to the effect that I gave evidence on the subject of the prevention of venereal disease before an Interdepartmental Committee in 1919. The Committee may have had some of my publications in front of them, but I write to say that I was neither asked for, nor have I given any evidence in connexion with that inquiry. It is therefore not correct to say that I [illegible] consideration.

HERPES ZOSTER AND VARICELLA.

DR. H. LAWRIE (Ramsbottom) writes: The following case (a coincidence at least) may be worth recording. There is no chicken-pox in the district at present. It was notifiable up to the end of May, and the last case was notified early in May. The family could have had no connexion. On May 27th last Mrs. W. brought to my surgery her daughter, aged 12 years, suffering from a well-marked attack of herpes zoster. This girl had an attack of chicken-pox when she was 5 years old. On the morning of June 12th the two youngest members of the family, aged respectively 15 months and 5 years, were observed by their mother to have a rash on their face and body. This proved to be the rash of chicken-pox.

THE SQUATTING ATTITUDE IN LABOUR.

DR. NORMAN H. JOY (Theale, Berkshire) writes: Dr. N. Beattie writes: "The great point is, not to leave things to nature." Here I disagree with him. The less we interfere with nature the better things will go up to a certain point. We have got into the habit of interfering with nature in the second stage. What is the really natural way that a woman should be delivered? Like the natives of Africa, squatting down as if defaecating. What are the advantages of this position? Dr. Beattie writes: "One may sit for two hours watching the head bobbing into and out of the vagina"; "the last pain gets the head through far enough to begin a tear." Why is all this? Let her squat down; what happens? The head does not bob in and out of the vagina. When it gets into the vagina it stops there, or rather only retreats a very little way. The woman of course only squats during the pain, but on standing up the child, by its weight, is still pressing towards the vagina. When lying down the whole tendency is for it to retreat. When the head begins to stretch the perineum it keeps it still dilated somewhat between the pains, gradually overcoming the resisting muscle, etc. Then again, all the muscles of the perineum are relaxed as much as possible, because the knees are as far apart as possible—a position many of us try to get the patient into when lying on a bed during the last pain.

My experience of this form of delivery dates from some years ago. I attended a woman in a cottage and watched the head bobbing in and out of the vagina for a long time. Then she said to me: "Please, doctor, the doctor I had before, in Wales, used to let me squat on the floor." I promptly spread a sheet on the floor and the woman squatted right down so that the vulva was a few inches from the floor. The child was born in the first or second pain on the floor.

I was knocked out of practice for some time, but the other day when acting as locumtenent I attended a former midwife who was having her first baby. Things went very slowly. I suggested that she should try squatting, and she consented at once, leaning against the bed. The labour was soon over; I let her have her last pain on the bed, taking care to keep the knees well apart. There was not the slightest tear in the perineum, although it looked like one that would require some stitches in it when the head was beginning to stretch it. The patient was very pleased with the result.

ERRATUM.

IN Dr. Charles Singer's letter on "What is Science?" published in last week's JOURNAL (p. 954) there was a printer's error. The word "neuristic" in line 17, column 2, should, of course, be "heuristic."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 30, 34, 35, 36, and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32, 33, and 34.

THE appointments of certifying factory surgeons at Milngavie (Dumbarton) and Pitlochry (Perth) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
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All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed otherwise than in initials or numbers.

THE COLON AND COLITIS.

BEING THE ANNUAL ORATION TO THE MEDICAL SOCIETY OF LONDON.

BY

LORD DAWSON OF PENN, G.C.V.O., C.B., F.R.C.P.,

PHYSICIAN-IN-ORDINARY TO H.M. THE KING; PHYSICIAN, LONDON HOSPITAL, ETC.

To attempt to traverse this wide subject within the time at my disposal would show a want of appreciation of its complexity and importance. I propose to try and requite the honour you have conferred upon me by presenting to you some thoughts and reflections based on observation, study, and clinical experience. But for the fact that we have an enjoyable function in prospect I should regret that no discussion can follow my remarks, seeing that it is a subject on which our President can speak as an outstanding authority.

The importance of the colon is borne in upon us by the recurring experience of our daily lives. On its periodic functioning depend our health, comfort, mental alertness and emotional outlook to a greater degree than we care to confess. Who is more of a misanthrope than the subject of the loaded colon? Optimism and pessimism in outlook may be decided by the state of the colon, good temper or bad temper, sunshine or cloud in the domestic circle. Recall, too, the contrast between the clear skin and pinkness of complexion on the one hand and the muddy skin and sallow mien on the other hand, the former associated with the functioning and the latter with the non-functioning colon. And another fact worthy of note is the extraordinary rapidity with which unloading of the lower bowel is followed by relief of general abdominal discomforts and the re-establishment of a sense of well-being.

This responsiveness, this influence for weal or woe, presents the colon to our minds as an organ with a highly developed functional activity closely linked up not only with other portions of the alimentary tract, but with the higher nervous centres. They do not suggest the colon as playing a mere mechanical part, or as a structure of declining importance—a fading evolutionary remnant, to be lightly cast aside as of doubtful utility to its owner.

When we contemplate the many and rapidly changing demands which modern life makes on our digestive system, and side by side with this the exceeding slowness with which adaptive changes in structure evolve, it is small wonder that there is an increasing strain on functional efficiency and that function gives out. This tax on function is in some measure due to the food we eat and the way we eat it, but in perhaps greater measure to the strain and stress associated with the pace of life.

From this it emerges that the determination of disease in part depends on where stress falls, and how far the individual is able to meet the stress. There is a group of people whose abdomens are over-responsive to nerve impressions. Fatigue, fear, anxiety, intensive endeavour, manifest themselves in their hollow viscera, and, it may be, through the agency of internal secretions. So do reflex disturbances. In some, it may be, the stomach is irritable and hypertonic, and secretes too much hydrochloric acid: such are prone to duodenal ulcer. Whereas in others the distal colon is irritable and hypertonic, and has its secretion disturbed: such are prone to colitis. In both of these examples the prime cause of disease is disordered function, and it is curious to note that the first is more common in men and the second in women.

But let such patients take comfort—strain on hollow viscera makes itself manifest and gives warning, and if disease shall follow, such disease is curable. Not so where strain is focussed upon the circulatory system. Here damage is often wrought in silence and even under cover of buoyant vigour, and may not disclose itself until health is irretrievably damaged by the effects of high blood pressure or degenerate arteries. Though I have not collected data to prove it, my own experience has been that colitis is more often associated with normal or low blood pressure than with high blood pressure.

Granted that disease is the interaction between a morbid process and the individual, it is clear that where the individual and his life are primitive, disease is simpler and more constant in its manifestations; on the other hand, when the individual has become highly specialized and sensitive, where he is harassed by the stresses of life and perhaps torn by its struggles, the picture of disease is more complex and varied. Colitis is a striking example of this fact. Not only is colitis a product of modern life, but to a singular degree, in the final presentation of its symptoms and effects in any given patient, it is a composite picture of the physical, the mental, of temperament and character. And by colitis I mean so-called mucous colitis, and exclude all cases where mucus in the stools is associated with organic disease of the colon, such as new growth, and the various forms of ulcerative colitis.

Next, as to the term colitis: if the condition is primarily due to disordered function and inflammation is only an added and not a constant feature, and if the disturbance is not limited to the colon, it might be objected that colitis is a misleading name for the condition. No name, however, has been suggested to take its place, and for complex clinical conditions comprehensive titles are difficult to devise, and we often have to be content with convenient labels. Meanwhile, "colitis" has the advantages of usage, brevity, and therefore of convenience.

THE CLINICAL PICTURE OF COLITIS.

The colonic manifestations are abdominal discomfort or pain, disturbance of the function of the colon as shown by irregularity in its evacuation and alteration of its contents, including the expulsion of mucus, and sometimes of blood or sand.

By variation in their severity, by the ease with which they are provoked and the frequency of their occurrence, the foregoing features produce varying clinical pictures. Thus pain may be acute or paroxysmal, or dull and aching, or, again, there may be a constant sense of abdominal discomfort and misery. Tenderness may be local, general, or absent. Mucus may be passed in casts, as lumps or in stringy form. In some cases the disease comes on in attacks and at long intervals, and the patient is quite well between whiles; in other instances the intervals of immunity are short and even incomplete, and, it may be, to such an extent that the patient is chronically ill and liable to exacerbations of symptoms on the slightest provocation.

The descending colon will be felt to be tightly contracted, and sometimes in addition the caecum toneless and distended. Examination by the sigmoidoscope will not usually at this stage disclose signs of inflammation, which shows that inflammation is not a necessary part of the condition; and in some cases where the mucous membrane is red and swollen such appearances may be evanescent and give place to normal appearances after a short interval. Infection does, in some instances, contribute to the picture, just as it is liable to follow disturbances of function in the urinary and biliary tracts. Such infection may be related to tonsils, gums, stomach, or appendix.

The appendix is seldom the focus of infection; more often it shares an infective process on equal terms with the colon; hence the results of its removal for colitis are commonly disappointing.

Radiography shows the distal colon to be tonically contracted and irregularly segmented. Side by side with this may be disclosed varying degrees of delay—it may be in the caecum, colon, in the lower ileum, in the second part of the duodenum. Further there may be displacements of the hollow viscera, such as a prolapsed caecum and the familiar festooned transverse colon, or again, a movable ascending colon, hairpin bends, and kinks.

With our greater familiarity with *x*-ray appearances in all varieties of cases we know how commonly anatomical irregularities can exist with bowels that function normally. When we recall how coils of intestine kinked and tethered by old adhesions can exist, and acute bends of the bowel be produced experimentally, without causing stasis, we are led to conclude that, provided the musculature of the bowel is efficient, these anatomical irregularities need not count for much, and especially in those portions of the bowel where the contents are fluid. In specimens examined by Keith the lumen of the bowel was not encroached upon, and the coils above kinks were not hypertrophied. On the other hand, delay can exist without the presence of any anatomical abnormality.

* Colitis is used here to denote mucous colitis.

The holding up of the contents of the lower ileum by the ileo-colic sphincter is a part of normal digestion and hypertonicity of that sphincter will produce local stasis. In the same way tonic contractions of the descending colon will produce delay in the proximal colon. In short, the immediate cause of stasis lies in the intestinal wall. It is the musculature and its nerve innervation which count, and it is only seldom that anatomical irregularities play an important part.

The importance of this question is great because its rightful determination is necessary to sound treatment. It is of small benefit to perform ingenious operations to replace or fix viscera unless these anatomical variations are causing the symptoms which are in need of relief. That such variations do occasionally cause ill health is undoubted, but their mere existence in conjunction with symptoms difficult of explanation is no proof that they have a causal relation to these symptoms. It is interesting to note how such fixing operations live, each its short day, and pass into comparative disuse.

The Involvement of the Alimentary Tract.

The colon is not the only part affected. There are commonly symptoms referable to other parts of the alimentary tract. Thus pain occurs in the epigastrium soon after food, or, again, two hours after eating and relieved by food, so that in making a diagnosis the possible presence of gastric or duodenal ulcer has to be passed under review. Cardiospasm, gastric distension, and flatulence may also be features, and the incidence of these symptoms bears relation to those more strictly belonging to the lower bowel. Thus the onset of the typical spasmodic contraction of the descending colon and increase in mucus will go hand in hand with gastro-duodenal symptoms.

Again, an acute attack will sometimes begin quite definitely in the upper alimentary tract. Such a patient may be tolerably well, when from a slight or unperceived cause there will be an unpleasant taste, a furred tongue, perhaps a red pharynx and epigastric pain, nausea, and distension. The onset of the attack is sometimes suggestive of "protein shock." Such a patient will know by experience that in a few hours his colon will be painful, his stools abnormal, containing perhaps much undigested food and mucus. In other words, the mucous colitis is the final expression of an attack which has swept along the alimentary tract. On such a patient I have had appendicostomy performed. The attacks continued afterwards, but if soon after the onset of the symptoms the patient washed out the colon through the opening the pain in the colon and the passing of mucus would be largely prevented. The washings consisted of undigested food, so the stomach and small intestine were clearly in fault.

Sometimes the order is reversed, and the colon manifestations are followed by gastric symptoms. A colonic dyspepsia is as much a reality as appendicular dyspepsia.

The foregoing observations—and I have notes of many such cases—point to the close inter-relationship of function that exists between the various parts of the alimentary tract. The latter is a finely balanced bit of mechanism—derange one part and the other parts suffer.

Colitis, then, is one phase of a disturbed digestion in which stomach, duodenum, intestine, pancreas may all play a part. Side by side with stress and strain which impair function we find foods and methods of feeding which at the same time overtax it. Whereas the conditions of modern life often require special care in the choice of food, in actual fact the food of the people is in many respects open to more criticism than in former days. The foods that have become popular are not always the best foods. White bread, margarine, the boiling of milk, and the freezing of meat, mean deprivation of those accessory factors which give living power to the food we eat. And vitamin deficiency means not only impaired metabolism, but appears moreover directly to damage digestive function itself. Infection no doubt at a later stage may play an important part, but only gets foothold because the resistance of the tissues has been lowered by damaged function.

The well-known features which the term "alimentary toxaemia" comprises—the sallow dirty complexion, the inelastic and pigmented skin, the "unclean" feeling of mouth and stomach, the dusky lips, the sad eye, the cold extremities, the depressed physical vitality, and the oppressed mind—go far to give character to any given case of colitis.

The measure of toxaemia is variable—being sometimes almost wholly absent, and at other times dominating the picture. Its association with fibrositis and arthritis is well established.

The Over-Responsive Abdomen.

Consider now the patients themselves—observe the difference as to the sex-incidence. Some find females to preponderate largely (Hale-White 85 per cent., Hurst 83 per cent.); others do not (Douglas Wilson 57 per cent.). I rather think the number of males has been increasing in recent years, and, judging by the notes of my cases, I should conclude the percentage of women to be about 70 to 75. The feature which is noticeable with a large number of patients is the over-responsiveness of the abdomen to nerve impressions. They have "barometric abdomens." Fatigue, fear, anxiety, mental stress and strain manifest themselves in their hollow viscera. So do reflex disturbances. Women suffering from the disease often have pelvic disorders which aggravate the intestinal symptoms, and especially during menstruation. Or let these patients have cold extremities (and they often have poor peripheral circulation), especially when they are fatigued, or, again, let them eat when they are cold, and an attack of colitis may easily follow. So much is this the tendency that in dealing with these patients it is part of my routine directions to them never to eat with cold hands and feet, and when they are tired to keep their extremities warm. The effect will sometimes follow the cause with amazing quickness—such quickness as would not give time for any inflammation to develop. I suggest it is rather that reflex nerve disturbance or central nerve disturbance, acting on over-responsive hollow viscera, puts function out of action—certainly motor function, and probably secretory and excretory function also. The rhythm of the intestine becomes disturbed. It is the difference between the regular and the irregular heart, between perhaps normal muscular contraction and auricular fibrillation. Since each zone of the alimentary tract influences the efficiency of the zone below and perhaps above it, if one zone be disturbed the other zones suffer, and thus the orderly sequence of digestion is deranged. Given failure in the function of movement, in the function of secretion (internal and external), and the consequent irregularities of putrefaction and deranged absorption, and "colitis" receives a large measure of explanation.

This over-responsiveness of the abdomen varies in degree. With precautions learned of experience it may, ordinarily, cause little trouble, but should untoward circumstances like over-fatigue, anxiety, bad feeding, occur the colitis symptom-complex may result. But there are some people whose nervous system is cut so fine that the ordinary rough-and-tumble of life is too much for them and thus are explained some of those examples of intestinal invalids who are never well, and in whom chronic ailing is only varied by recurrent phases of acute symptoms. Such patients are not "neurotic." To call them so is a misuse of the term; they may, on the contrary, be heroic, working and even smiling in spite of the load they have to carry. Whether they become neurotic will depend largely on the considerations set forth in the following paragraph.

The Conscious Abdomen.

If a gastro-intestinal tract is constantly causing aches, pains and discomforts, it gets raised in consciousness, with the result that slighter and slighter disturbances and even its very doings produce impressions and discomforts instead of remaining unperceived. We thus get built on the basis of physical disease a superstructure of symptoms and distresses which flourish on themselves and tend to grow apace.

There is thus a liability of a *conscious* abdomen being added to a *responsive* abdomen, or in other words, of a *state of mind* being added to a *state of body*.

The degree to which this happens in large measure explains the many varieties and intensities of symptoms occurring in patients who suffer from colitis; and here come in the temperament and character and training of the patient. The buoyant, cheerful temperament with a sense of humour will come off better than the inelastic

and sombre temperament. A subject which is introspective and self-centred may be enslaved by the disease, whereas if the subject has the power of sympathetic interest in people and things, can control the mind, and has courage to work, he can, in spite of a colon which is a constant trial, live a tolerably useful life by keeping clear of the worst evils which accrue from the conscious abdomen.

The so-called "neurotic" group consists of those who have developed from their colitis the "conscious abdomen" and have introspective minds.

To be neurotic is no essential part of colitis, though it is small wonder that many of the patients become so. It remains, however, a secondary incident, not an essential feature of the disease. How damaging the "conscious abdomen" can become is illustrated by that well-known type of patient who becomes so analytical of the feelings, doings, and contents of his colon as gradually to abandon aught else and live for his lower bowel.

If I may be allowed to digress for a moment, this consideration of the "conscious abdomen" prompts me to suggest that the profession needs to take up in a large-minded spirit the question of psychical treatment. The patient with colitis who is in danger of being crushed by his illness is not helped by being dubbed "neurotic." Often his physician can help him most by explaining his symptoms, by discriminating between those which have a physical basis and those which are nervous superstructure, those which threaten health and those which only threaten comfort, and in this way restore his perspective. The truth is often more helpful than drugs. The patient's mind can be trained and helped to detach itself, to control what it contemplates, to temper rather than reinforce in consciousness the aches and ills of the body, and thus establish the benign rather than the vicious circle. Such guidance is often given to patients by doctors with the requisite insight and grip, but it is a question whether in this world of hurry more method and system are not needed for this treatment, and there is surely room for those who possess the requisite gifts (and they are rare gifts) to be suitably trained. It is a branch of therapeutics which needs the guidance and restraint of the medical profession. Without such guidance it gathers to itself vanities and pretences which obscure its truth and discredit its usefulness.

It will be interesting to inquire how far clinical facts and considerations fit in with physiological knowledge, and here I turn, in the first instance, to the suggestive researches of Professor Keith.

The myenteric plexus (Auerbach's) possesses special features. In addition to ganglion cells and a network of fine fibres, it contains intermediate cells (nodal tissue) which connect the processes of ganglion cells with muscle cells. The development of the myenteric plexus varies in different parts of the alimentary tract. Thus it is found in greater abundance in the pyloric region and the lesser curvature than in the body of the stomach; in greater abundance in the second part of the duodenum than in the first and third parts; and again, more richly in the distal half of the transverse colon and the descending colon than in the caecum and ascending colon. Further, there are localized concentrations of the nodal tissue—"nodal centres"—at the ileo-colic junction and at the pyloric and cardiac orifices of the stomach.

This nodal tissue has the power of initiating contractile movement. It is the pacemaker of the intestines. The gastro-intestinal tract has been found to be divided into zones—gastric, duodenal, jejuno-iliac, proximal colic, and distal colic. Each of these zones has its own rhythm determined by its own nodal tissue. Where one zone joins the next there is a check or resistance to the peristaltic waves, and where there is a sphincter—for example, at the pylorus or ileo-caecal valve—the check is complete and the peristaltic wave comes to a stop. The rhythm of one zone is closely connected with that of the zones below and above it. The myenteric plexus, in addition to initiating contractility, has also a conducting function, for through it efferent impulses along the vagi and sympathetic nerves are conveyed to the intestinal wall.

Professor Keith aptly compares the nervous mechanism of the alimentary tract to that of the heart. We are well acquainted with tachycardia, irregularity of rhythm, fibrillation, heart-block, and the responsiveness of heart action to extrinsic impulses. Why should not corresponding irregularities occur in the alimentary tract? And if to disturbed motor function we add the supposition of disturbed secretion and the effect of both of these on the intestinal contents, I suggest the clinical phenomena of colitis receive a considerable measure of explanation.

Stasis, though not a necessary, is quite a common feature of colitis. The two conditions often present one and the same clinical picture, and in their pathological findings there is a close resemblance. They are variants of the same morbid state and the same case may be styled colitis by one observer and intestinal stasis by another.

Alimentary Toxaemia.

Although the term alimentary toxaemia presents to our minds a definite clinical picture the mode of production of the condition is obscure.

We may reasonably suppose that a high content of waste products and a damaged intestinal wall are the conditions which favour the passage of toxic products. And these are the conditions which exist in the large intestine in colitis, and sometimes also in the lower ileum. Stasis is not a necessary factor, for in ulcerative conditions of the colon associated with diarrhoea alimentary toxaemia may be a marked feature. Again, strong purgatives, by irritating the intestinal wall, may aggravate rather than allay an existing toxaemia. In colitis there is a retention of contents in the recesses of the colon even when the bowels are open; the latter, in short, do not sweep clean. The degree of toxaemia would depend on the nature of the contents which the colon receives from the ileum, the length of stay of such contents in the colon, and the measure of weakness of the colon defences.*

But in cases of colitis and stasis the colon and ileum are not solely responsible for alimentary toxaemia; for the latter will sometimes persist after ileo-sigmoidostomy and colectomy. The two following cases illustrate this fact; both showed colitis, stasis, and toxaemia.

Case A.

Radiographic examination before operation by Dr. Jordan.

Stomach, enlarged and dropped, emptied in four hours.

Duodenum: Definite delay with dilatation of second part.

Ileum: At the end of eight and a half hours the greater part of the bismuth was in the ileum. At the end of thirty-one hours most of the bismuth was in the ileum and only a small quantity in the ascending and transverse colon.

Colon: After forty-five hours the bismuth was evenly distributed throughout the ascending, transverse, and descending colon. After fifty five hours the bismuth was in the sigmoid and rectum. After seventy hours evacuation.

There was thus a very definite ileal and colonic stasis. The patient was the picture of colitis and alimentary toxaemia.

The operation of ileo-sigmoidostomy was performed. The same patient was examined a year later (Dr. Jordan).

Stomach: Not enlarged but dropped; peristalsis active.

Duodenum: First part dilated; no delay into jejunum. Bismuth went freely through the small intestine and after seven hours the whole of it was in the rectum; after twenty-four hours, evacuation in one unaided motion. The short-circuit was effective. There was no ileal stasis. The operation was a technical success, yet alimentary toxaemia was still present.

The same patient was examined *nine days after the operation*.

Stomach, rather irritable, was empty after one and a half hours.

Small intestine: After one and a half hours the duodenum was empty and the bismuth massed in the small intestine.

Rectum: In seven and a half hours the bismuth was in the lower sigmoid and rectum, except for a small amount scattered in the colon.

Yet alimentary toxaemia was still a feature of the patient's ill health.

Case B.

This was a case of ileal and colonic stasis, mucous colitis, and alimentary toxaemia. Colectomy was performed. Examination one year after operation.

Stomach: Large and dropped as before; peristalsis normal.

Duodenum: Regurgitation from third to second part.

Rectum: At the end of five hours nearly all the bismuth was in the rectum; at the end of twenty-five hours evacuation.

Thus technically the operation had been successful, but symptoms persisted.

Re-examination Four Years after Operation. The stomach and duodenum were as before; after six hours the bismuth was in the terminal coils of ileum, and some of these were dilated. After twenty-four hours the bismuth was in the rectum and the

* Graham Brown has described an amine (p hydroxy phenyl ethylamine which is formed in the intestine under conditions of stasis by the putrefactive destruction of proteins through the action of anaerobic bacteria. This toxin is converted in the liver into p-hydroxy phenylacetic acid, and as such can be found in the urine in cases of alimentary toxaemia. It acts on the sympathetic, producing hypertonus.

last 4 inches of ileum. Toxaemic symptoms persisted, so that at this later date the case was neither a clinical nor a technical success.

Thus, even when the damaged colon is put out of harm's way and prompt evacuation is secured, toxaemia may persist. This means there is a second line of defence - namely, the liver, and that this line may also fail.

The colon and liver would thus seem to have a joint responsibility. In some cases the colon defences may have failed so badly that the flood of toxic products is more than even a normal liver can cope with. Given such circumstances, colectomy should succeed. In other instances the liver has a substantial share of responsibility, and then the results of colectomy will be clinically disappointing, even if technically successful.

It is known that in health during two hours after digestion of a mixed meal unaltered proteins, as well as peptones and amines, pass from the intestine into the portal vein, and that such foreign proteins do not pass the liver defences. If, however, the liver defences are insufficient, such products get through. Is it not likely that the same happens in toxaemia?

In abdominal migraine there is a marked toxaemia which is best explained by supposing that the liver defences are temporarily out of action, and Widal, Abrami, Brissaud and other writers set forth reasons for supposing that migraine is the result of anaphylactic shock. A study of the familiar condition loosely called "chill on the liver" shows a close similarity to the symptoms sometimes produced by a second injection of a horse serum - namely, fever, headache, generalized pains, aching joints, anorexia, nausea, vomiting, etc. Is it not possible that certain attacks of colitis which sometimes light up quickly and without apparent cause may have an anaphylactic origin?

The following case is worth mentioning in this connexion. A patient liable to colitis always has cold reddish hands; at times her hands become blue, and patches resembling angioneurotic oedema rapidly appear on them. This is usually, in the patient's experience, an immediate precursor of an attack of colitis.

This reminds one of the anaphylactic origin of asthma, between which and colitis, as Hurst has pointed out, there are many suggestive parallels—the over-responsiveness of the patient, the spasmodic contraction, the excess of mucus, the liability of an inflammatory factor to supervene in the shape of bronchitis. In its late stages the lung of the asthmatic is inelastic and undergoes atrophic and fibrotic changes similar to those found in the colon in the later stages of colitis.

TREATMENT.

Owing to the complexity of its origin and the variety of its manifestations, mucous colitis is difficult to treat. The coarse food rich in cellulose advocated by Van Noorden is not a success. It irritates the intestine, and is prone to produce gas.

The food should consist of light solids—for example, white fish, first cooked meats, dishes made with eggs, light puddings, etc. Soups should be taken sparingly or avoided. Only a little fluid should be taken with the meals, but sufficient between meals. Fruit and vegetables are a problem; they are often difficult to digest, yet from the point of view of nutrition desirable; mashed potato, cauliflower, and cooked celery and lettuce agree, and of fruits apple is the safest.

In intractable cases the limitation of vegetables and fruit has often to be strict and by some authorities a paste (macaroni) diet is prescribed for a period. The disadvantage of a too restricted diet is twofold—it discourages the patient and is apt to result in an insufficiency of essential foodstuffs and vitamins. The latter may be given separately where foods containing them cannot be tolerated in adequate quantity. Sometimes fruit and even raw vegetable like lettuce can be tolerated if taken alone, whereas they remain undigested if mixed with other food. And, generally, colitis patients do better by taking only two main articles of food (courses) at a meal.

It is important for the extremities to be warm, and especially before eating.

If the body or mind has been engaged in effort, a few moments of repose and relaxation should precede the taking of food. It will often be found that these patients cannot take vigorous exercise of both body and mind on the same day. A business man is often better with only gentle exercise during the week, reserving his physical exertion for the week-end. Where the patient's abdomen is over-responsive the treatment advised should have regard to that fact. Fatigue, stress, and anxiety must be guarded against where possible. Periodic rests, such as a weekly or fortnightly day in bed, helps to secure this end.

A great deal can be done by educating the mind not only to concentrate but to detach and relax quickly. This is an important aspect of treatment. Physical culture holds an established position. Surely psychical culture is of like importance. The power to rest quickly and relax deliberately is essential to those who feel acutely and work strenuously.

Drugs that aid digestion, like takadiastase and pancreatin, do good. Sleep is apt to be disturbed by distensions of the hollow viscera. Bismuth and sodium bicarbonate with carminative, and if necessary a few minims of nepenthe, given at bedtime will help this condition.

Aperients should be gentle, and for clearing the bowel castor oil is the best. Very often little aperient is needed if paraffin is taken regularly, though there are patients in whom paraffin is ejected alone and even incontinently. Special care in the use of aperients is needed when bacilluria exists.

An essential indication is to secure the emptying and cleanness of the colon. This is secured by intestinal lavage. Bismuth in bulk (ʒij) administered in bread and milk or jelly taken every week or ten days is often of benefit. It seems to act by scouring the colon. Where there is much fermentation an ounce of wood charcoal may be mixed with the bismuth. Intestinal antiseptics are disappointing.

Where the above measures fail to secure evacuation and cleansing of the intestine, appendicostomy is a sound and safe procedure, and is often productive of considerable benefit.

Colectomy.

Sufficient experience has now been gained to pass the operation of colectomy under review.

The results as a whole have not been encouraging. Apart from its magnitude and therefore risk, the operation seldom restores to a patient anything approaching a normal life. Patients will express doubts as to whether they have gained enough to have made the operation worth while.

As the cases quoted above show, technical and clinical success do not always go together. Further, there are not a few instances where the operation completely fails in its objects and leaves the patient as wrecked, if not more wrecked, in health than before.

Now and again the results are excellent and succeed where previous measures have failed. I have under observation a case in which a transformation was effected by colectomy, and now, after ten years, the patient continues in good health.

The indications for colectomy would seem to be:

1. Where the motility of the colon is so spent that all other measures fail to prevent stasis within it.

2. Where the colon is so damaged in its defences that, in spite of every effort to keep it cleansed, toxic products get through in such abundance as to ruin the health of the patient. But here, too, there is risk that the second line of defence in the liver may be damaged also.

Hemicolectomy.

Hemicolectomy is on a different footing. The operative risk is small, and if it fails in its object there is little risk of the patient's condition being worsened. If the failure of function is in the proximal colon the prospect of success should be good, especially if the ileo-colic valve is preserved in the implanted portion, as has recently been done. Unfortunately, however, there is sometimes too much mischief in the distal colon for the operation to be adequate. When such is the case and a complete colectomy appears to be inevitable, I suggest that it is worth while considering in each case whether colotomy would not be efficient and preferable. The thought of colotomy is, no doubt, in discord with a fine surgical sense, and its performance carries a feeling of disappointment to the surgeon that circumstances do not permit him to do something better. But in relation to this particular problem it has advantages.

It is a simple operation, patients achieve a considerable accommodation to its inconveniences, and, if it fails, further surgical procedures are not precluded.

On the other hand, complete colectomy is the last and irretrievable word; it offers but a modest prospect of success, and its failures, not a few in number, are sometimes apt to be such dire failures as to mean for the patients misery and suffering little capable of alleviation.

ACUTE INFECTIONS OF THE ENDOMETRIUM.*

BY

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IT has hitherto been generally held that those cases of endometritis which give rise to marked constitutional disturbance, where there is often a feeling of chilliness, or even a rigor, the temperature and pulse are raised, the uterus is tender, soft, and boggy, with or without a tubal infection, should be left strictly alone. The treatment in these cases is described as "expectant" or "conservative," but surely, if those symptoms and signs were present in any other part of the body, the call would be for active treatment and not conservative. In such case, where there is pent-up secretion of a septic character, the first principles of surgery would be applied, the abscess opened and drained; but because it is the uterus, the patients are permitted to drag out days, if not weeks, of pain and discomfort, whereas experience shows that by disinfecting the endometrium and draining the uterus, the symptoms and signs can be effectively relieved. In these cases the cervix is septic and oedematous, the mucous membrane lining the canal is swollen and heaped up, the canal tortuous, which prevent any dilatation by surgical instruments. Any attempt at such would injure the cervix, whereas a small catheter, well lubricated, can always be introduced into the uterine cavity without causing injury, the interior of the cavity disinfected, and a way made for drainage.

I have now had considerable experience in the treatment of acute septic infections of the uterus and its adnexa, and be the infection streptococcal or gonococcal, or be it of a septicaemic character, I have rarely failed to relieve those acute symptoms and signs by dealing with the nidus of infection, which is in the endometrium. The results obtained prove to me that these acute conditions call for active and not expectant treatment. The lack of active treatment is liable to lead to the spread of infection from the uterus to the Fallopian tubes, to the pelvic peritoneum, and even to the general blood stream. At the same time it should be carefully borne in mind that it is very easy to increase the inflammation by opening up fresh channels in treating these acute conditions of the endometrium. Experience has shown me that any attempt at dilatation of the cervical canal and swabbing the uterine cavity is only inviting trouble, and, moreover, gonococcal infection cannot be eradicated at one treatment.

These cases must be approached with all the caution that one would employ in opening an abdomen. In performing the operation described below the following points must be insisted upon: All acute cases must be operated on immediately; the structures below the cervix must be carefully cleaned and made aseptic from below upwards; no attempt should be made to catch hold of or pull on the cervix with a volsellum, nor to dilate the cervical canal; and finally, the uterus should be rid of any residual fluid after syringing, and a tube left in for drainage.

Treatment for Gonorrhoeal Endometritis.

1. Three days before operation the vulval parts and vagina must be swabbed out with ether soap and water and saline solution; the bladder irrigated with potassium permanganate, 1 in 5,000, then glycerin 7 parts and iodine (1 in 10) 1 part applied to the vagina. All cases with pyrexia are, of course, operated on at once.

2. The operation must be performed under an anaesthetic, the patient being placed in the lithotomy position.

3. The external parts and vagina are washed out with ether soap and water and saline. The urethra, vagina, and any ducts that can be observed are swabbed out with the solution of iodine and glycerin.

4. A Sims's speculum is introduced into the posterior fornix, then a sponge forceps holding a swab is inserted into the anterior fornix and the cervix manipulated into a central position. A No. 4, 5, or 6 india-rubber terminal-eyed catheter is lubricated with glycerin and passed through the cervix to the upper part of the uterus; this is best done by a special introducer made for me by J. H. Montague, New Bond Street. Ten c.cm. of a solution of iodine (1 in 10) 7 parts and glycerin 1 part are gently syringed into the uterus. The syringe is lowered and any remaining fluid is sucked out. This is again repeated and the vagina swabbed dry.

5. A soft catheter is then introduced to the fundus of the uterus, the end coiled up in the vagina, and a large swab placed just inside the vulva to prevent the catheter coming out. The swab and catheter are removed in six hours.

6. The patient is kept in bed in the semi-Fowler position and takes plenty of hot water as soon as she is round from the anaesthetic. On the third day the whole of the vagina is swabbed out and left dry. The external parts are kept scrupulously clean. The patient is kept in bed for a week.

7. The treatment is repeated in from two to three weeks, and it generally requires to be done from two to six times.

8. No other treatment is required between the operations.

Results of Treatment.

The results are illustrated by the following cases:

CASE I.

M., aged 25, admitted April 10th, 1921. Patient was sent to the infirmary, having been diagnosed by her own doctor as suffering from acute appendicitis. She gave a history of sudden pain in the stomach and right lower abdomen coming on two weeks previously, which had continued ever since. She often felt sick but did not vomit, had burning pain on micturition, and vaginal discharge. She looked and felt thoroughly ill. The temperature on admission was 101°, pulse 118.

Abdominal Examination.—Semi-fluctuant swelling extending from the right pelvis to within two fingerbreadths of umbilicus, and within one fingerbreadth of the right anterior superior spine. *Per vaginam:* There was marked vaginal discharge; erosion of cervix; uterus enlarged, with impaired mobility in an upward direction. After being prepared she was taken to the theatre and anaesthetized; the lump then felt the size of a large fist. The uterus was syringed out with 10 c.cm. of solution of iodine (1 in 10) 7 parts, and glycerin 1 part. A small india-rubber catheter was left in for six hours and then removed.

The following morning the temperature was 100°, pulse 94; slept well. Slight pains only. Evening temperature normal, pulse 92. On April 12th the temperature and pulse were normal; slight pain only in lump, described as prickly in character. The next day she felt quite well, and on the 14th all pain had gone.

On April 20th examination *per vaginam* showed that the lump had decreased enormously; it was then only the size of a walnut. On this and the two following days the vagina was swabbed with glycerin 7 parts, iodine 1 part. On the 23rd she was anaesthetized and the uterus syringed out with iodine 7 parts, glycerin 1 part; a tube was inserted and removed in six hours. She afterwards slept well, and there was no constitutional disturbance.

On vaginal examination on May 3rd the uterus was freely movable. The swelling in the right lateral fornix was reduced to the size of a thickened cord. The patient was discharged on May 9th.

CASE II.

Y., aged 24, admitted March 5th, 1921. Sent in as acute appendicitis. Complained of pain in abdomen, chiefly on right side and below the umbilicus, which came on two days previously quite suddenly. Vomited several times before admission.

Condition on Admission: Lump felt on right side above inner half of Poupart's ligament. Some tenderness around umbilicus and over McBurney's point. *Per vaginam:* Some yellow discharge, tender swelling in right lateral fornix. Temperature 100°, pulse 102. Taken to theatre, given anaesthetic and uterus syringed out with iodine 7 parts, glycerin 1 part. On examination under anaesthetic the lump was found to be an enlarged Fallopian tube the size of a large orange. Uterus enlarged, erosion of cervix.

On March 6th the morning temperature was 99.4°, pulse 96. Pain was still present, though much less. The evening temperature was 100.8°, pulse 96. The following day both temperature and pulse were normal; there was complete absence of pain and discomfort.

On March 17th, eleven days after operation, the temperature went up to 99°, pulse 112. Pain and discomfort again appeared. She was taken to the theatre, given an anaesthetic, and the uterus was syringed out. The temperature immediately came down to normal, pulse to 84. The lump was now the size of a Tangerine orange, just palpable above the pubis; not tender.

From March 21st to 28th swabbing only was done; on the 31st the uterus was syringed out and drained for six hours.

On April 4th the vagina was again swabbed; tube hard, the size of a thickened cord.

The patient was discharged cured on April 9th. A month later the uterus was firm and the erosion of cervix entirely healed.

* Extracts from a lecture delivered to the Association of the Inspectors of Midwives at the Annual Conference in May, 1921.

CASE III.

R., aged 24, admitted January 17th, 1921, complaining of a thick yellow vaginal discharge, which first appeared two years previously. She also stated that since the appearance of the discharge the menstrual periods, which were previously normal, had become very irregular and lasted usually about seven to fourteen days. Three miscarriages had taken place during the past twelve months.

Condition on Admission: Pain and tenderness in both iliac fossae; slight swelling of vulva; vaginal discharge thick yellow in character. Vaginal examination showed a swelling about the size of pigeon's egg in the left lateral fornix; uterus slightly enlarged.

Result of examination of smear taken from cervix: A large number of pus cells were present with many different kinds of organisms, including some doubtful gonococci, the latter few and far between and showing no typical intracellular arrangement. Not possible to conclude positively that they were gonococci.

Treatment.

On January 18th the external genitals were washed with ether soap and water, and saline, then with glycerin and iodine (equal parts). The following day, under a general anaesthetic, the vagina was swabbed with glycerin and iodine (equal parts), the uterus syringed out with glycerin and iodine (7 to 1), and a catheter inserted, which was removed six hours later. Following this the patient felt quite comfortable; all pain had disappeared.

On January 21st the discharge was considerably diminished, and the patient was comfortable and free from pain. On the 25th the external genitals and vagina were swabbed with ether soap and water, and saline; the vagina was then swabbed with glycerin and iodine (7 to 1). Patient still free from pain.

On February 3rd, under a general anaesthetic, the external parts were washed with ether soap and water, and saline; the vagina was swabbed with ether soap and water and saline, then with glycerin and iodine (equal parts); the uterus was syringed out with iodine 1 part and glycerin 7 parts. The following day there was no discharge present, all pain had disappeared, and the patient was comfortable.

Pathological Report: Many pus cells; a few suspicious diplococci; enormous numbers of other organisms. It is difficult to be certain that they were gonococci in the absence of intracellular distribution.

The patient was discharged on February 12th with the uterus small, firm, and freely movable. There was thickening, but no tumour, in the left lateral fornix. Last menstrual period four days; no gonococci found; few pus cells.

PUERPERAL SEPSIS.

The puerperal infections vary in their degree of intensity according to the vitality of the patient and the virulence of the organism. In the gonorrhoeal type the constitutional disturbance is not so pronounced as in one of a streptococcal kind. But be the infection gonococcal or streptococcal, or be it a mixed infection, the condition has to be treated.

In cases of abortion or parturition which are followed by pyrexia the discussion again turns on the advisability of: (1) Conservative or expectant treatment; (2) active or operative treatment (*a*) by curetting, (*b*) by intrauterine applications and thorough draining of the cavity of the uterus, (*c*) by abdominal exploration and by drainage through Douglas's pouch. It is of course assumed in all cases that the placenta has been removed intact, and that if the uterus contains products of conception, they have been carefully removed.

1. *Conservative or Expectant Treatment.*—In these cases, as I have already pointed out, nothing is being done in the way of treatment, and unless there is free drainage the symptoms do not abate immediately; they are apt to be prolonged, and the signs of inflammation may progress.

2. *Active or Operative Treatment:* (*a*) *Curetting.*—In regard to this operation, I am sure that in some cases severe septic extension may be promoted, and such complications as parametritis, exudates in the pouch of Douglas, thrombophlebitis, may be set up. I am therefore of opinion that curetting ought not to be performed, and this also applies to a too vigorous swabbing.

(*b*) *Intrauterine Treatment with Drainage of the Uterine Cavity.*—By carefully following this line of treatment, and by always approaching the cavity of the uterus first, I have formed the definite opinion that this method improves the patient's general condition, that it cuts off the primary focus, prevents the spread of infection, and is the best way of helping the subinvoluted uterus to undergo involution.

(*c*) *Abdominal Exploration or Drainage through Douglas's Pouch.*—Any localized collection of pus should be let out. Collections should be looked for in the inguinal region or the pelvis where they usually point. I might add that during the last twelve months, since I have treated all septic infections of the uterus and its adnexa actively, I have had only on one occasion to operate, and that was for metastatic abscesses of the limbs. The patient recovered completely.

Case illustrating Acute Streptococcal Infection of Endometrium.

The patient was admitted to the infirmary with a history of having had a miscarriage on October 22nd, 1920. Bacteriological report: Smear showed many streptococci. Blood culture showed no organisms.

She had been sterile for five years previously, and in consequence underwent an operation for dilatation of the cervix at the Chelsea Hospital for Women a year before. Her periods stopped absolutely on June 3rd, and she became pregnant. Bleeding commenced about a month later, and she was advised to stay in bed, which she did in the hope of avoiding a miscarriage, which, however, occurred on October 22nd. This was followed by considerable haemorrhage, which became rather alarming, and she was curetted by her own medical attendant about twelve hours later, the whole of the placenta being removed in pieces. After three days she commenced having rigors, at first about three a day and one in the night; these continued for about three weeks, in fact up to the day before admission. The temperature during the rigors went up to 104°, and on two occasions to 105.2°. In between the temperature practically dropped to normal. During this period she complained of a pain in her right side, headaches, noises in the ears, dryness of the mouth, inability to sleep, feeling of sickness but no actual vomiting. She lost a little blood *per vaginam* for the first week, but after that nothing until after admission.

On the day of admission her pulse remained at about 80. The first evening the temperature was normal. The second and third evenings it rose to 99.4°, the pulse to 100. The fourth evening, however, the temperature went down again to normal. There was no vaginal discharge.

On the fifth day, in the afternoon, she had a rigor, the temperature going up to 104° and the pulse to 128. Her pad had shown the presence of a brownish, slightly offensive discharge. On the sixth day she had another rigor, the temperature going up to 103.4° and the pulse to 112. The seventh day there was another rigor, with temperature 103.2° and pulse 132. After this she was given a general anaesthetic, and nothing was done to the uterus except that a No. 6 catheter was passed, without any dilatation, into the uterus, and this syringed out with iodine 7 parts and glycerin 1 part. The catheter was left in as a drain for six hours only. As a result the temperature was normal for nearly forty-eight hours, rising to 102° on the afternoon of the ninth day. On the tenth day a small india-rubber catheter was again inserted in the uterus and left in for six hours, being withdrawn at the end of that time. There was a rise of temperature to 101.6° on the eleventh day. After this the temperature remained normal, and the uterus, which at first was enlarged from before backwards and felt boggy, gradually became firm, hard, and of normal size, with a complete absence of symptoms.

Case of Puerperal Sepsis, Left Hemiplegia, Bronchopneumonia.

The patient was admitted on January 28th, 1921, ten days after confinement. She was extremely ill, with large, tender uterus and foetid discharge. Pathological report: Gonococci appear to be present.

On the two following days she was given vaginal douches. This treatment had no effect on the temperature, so the uterus was syringed out with glycerin and iodine, equal parts, and a tube left in for six hours. The immediate effect was that she began to feel better. The temperature slowly became normal by lysis in five days. She made a good recovery.

Case of Puerperal Sepsis, with Pelvic Cellulitis, following Six Months' Miscarriage.

B., aged 32, who was admitted on April 3rd, 1921, with signs of inevitable miscarriage with sepsis, was delivered naturally of a foetus the following day. On the 5th the adherent placenta was removed under an anaesthetic. The next day the evening temperature rose to 101°, pulse 100; and on the following day the temperature was 104.2°, pulse 132.

On April 8th the uterus was syringed out with equal parts of glycerin and iodine, and a tube left in for six hours. The temperature rose the same evening to 103°, pulse 130; the following evening the temperature had returned to normal, pulse 90.

On April 10th the uterus was again syringed out with equal parts of glycerin and iodine, and a tube left in for six hours. Temperature 104.1°, pulse 102. On the 11th the temperature rose to 103.2°, pulse 120. The following day the uterus was syringed out with glycerin and iodine (7 to 1), and the temperature returned to normal on the 13th, pulse 76. On the 14th the evening temperature rose to 99.2°, pulse 90.

On April 15th the uterus was again syringed with glycerin and iodine (7 to 1) and a good deal of pus drawn off. The evening temperature was normal and remained so the following day. On the 17th the uterus was syringed with glycerin and iodine (7 to 1); evening temperature 101.4°, pulse 102.

On April 20th, at 6 a.m., the temperature rose to 102°; in the evening it was normal. Since then the patient has made good progress.

CONCLUSIONS.

In acute septic conditions of the uterus I am of opinion:

1. That careful treatment of the endometrium and draining the cavity of the uterus does not produce an extension of the existing inflammation but lessens it.

2. That the cavity of the uterus can be approached time after time until the temperature becomes normal, the uterus firm, and the discharge is got rid of.

3. That inflammatory conditions in the adnexa of the uterus are not only no bar to but are an indication of the need for treatment of the endometrium, since the centre of the infection must be therein. This is proved by the fact that the physical signs subside much more rapidly when the uterus is drained than if left alone.

4. That in a large number of cases the origin of the pain and discomfort lies not in the tubes but in the uterus, because it is inflamed and heavy.

5. That unless these lesions outside the uterus are of the grossest kind no operation should be performed, at any rate until thorough methodical treatment of the endometrium has first been tried. Exacerbations of salpingitis have proved far less frequent since I have followed this line of treatment.

I have to thank Dr. Robert Donaldson for the assistance he has rendered me in the bacteriological examinations, and Drs. A. D. Morris and M. J. O'Brien for their loyal help in carrying out my treatment.

THE INTRAVENOUS ADMINISTRATION OF CALCIUM ACETYL SALICYLATE.

BY

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A CONSIDERATION of the many conditions in which acetyl salicylic acid may be successfully employed shows that it possesses both antipyretic and analgesic properties. In acute rheumatism and other acute febrile diseases it frequently has a marked action as a febrifuge, and if given in the very early stages of influenza it often appears to cut short or abort the attack. It is an anodyne and a sedative in most painful conditions, and it is popular with the lay public because it sometimes relieves headache and neuralgia.

Stockman[1] states that the analgesic action of acetyl salicylic acid can only be explained by supposing that part of the drug is absorbed unchanged into the blood stream; Cushny[2] states that part is decomposed into salicylic acid, that part is absorbed unchanged, that the salicylate formed from it exercises its usual action in the tissues, and that there is a further action in headache and neuralgia attributable to the absorption of unchanged acetyl salicylic acid. It appears therefore that acetyl salicylic acid has two separate actions, one being antipyretic and produced by the salicylate content, and the other analgesic and due to the unchanged drug. It occurred to me about a year ago that the analgesic action might be greatly increased if the drug were injected into the blood stream by the intravenous method. I have been unable to find any account of its having been done before.

Acetyl salicylic acid itself is only very slightly soluble in water, but the calcium compound dissolves in water, one part in six. Given by the mouth, its action resembles that of acetyl salicylic acid. The solution has a pinkish tinge and a slight acid reaction to litmus, 1.7 c.cm. of decinormal sodium hydrate completely neutralizing 0.5 of the drug. The solution can be boiled without any chemical alteration. The first samples I used were taken from the powder intended for oral administration. It had a strong smell of acetic acid, and had a marked acid reaction to litmus. I gave only two or three injections of 0.1 gram, as I did not like to give larger doses of such an acid substance. Messrs. Martindale then supplied me with their preparation of tylcalsin in 0.5 gram compressed tablets made without the use of wax or theobroma (substances used to prevent chemical action by atmospheric moisture). The following notes on cases illustrate its action.

1. *Tabes Dorsalis.*—A man, aged 43, had severe lightning and girdle pains. He had had a prolonged course of antisyphilitic treatment with arsenical compounds and mercury; he also had seven intraspinal injections of mercurialized serum, with a diminution of the pains a few days after each injection, but with no lasting benefit. Acetyl salicylic acid by the mouth eased the pain to some slight extent. I then gave him 0.25 gram of calcium acetyl salicylate on September 2nd, 1920, 0.5 gram on September 3rd, and 0.75 gram on the following day. Three days later, on September 7th, he reported that he had no pain in the legs, but pain in the abdomen was severe. On September 21st I gave him 0.75 gram, and on September 28th 1 gram, and he stated that the pain became much easier. On October 5th I gave him 1 gram calcium acetyl salicylate, and I saw him again on the 9th, when he had been at work since the last injection and had had only slight occasional pains. Since that date he has had 1 gram every month, and is practically free from pain.

2. *Tabes Dorsalis.*—A woman, aged 40, complained of severe lightning and girdle pains. She had had a prolonged course of arsensical compounds and mercury, and although it had improved her general condition and ataxia to some extent it had not relieved her pains. Intraspinal injections of mercurialized serum produced intense reaction with relief of her lightning pains for some days afterwards. On October 18th she complained of severe headache and girdle pains, and I gave her 0.25 gram calcium acetyl salicylate. On October 20th she reported that she had had no pains since the injection, but on November 24th she complained of severe girdle pains again, and I gave her 0.5 gram calcium acetyl salicylate. On December 1st I gave her again 0.5 gram, and when I saw her on January 17th she reported that she had been free from pains until a few days before. I again gave her 0.5 gram of the salicylate, and when I saw her on February 2nd she had been free from pains since the last injection.

3. *Interstitial Keratitis of the Left Eye.*—A boy, aged 12, suffering from interstitial keratitis, had been given seven injections of 0.2 gram kharsivan and thirteen injections of 0.2 gram novarsenobillon intravenously, with twenty injections of mercurial cream in half-grain doses intramuscularly, between May 31st, 1917, and January 1st, 1918. On February 24th, 1921, he again attended with a fresh attack of interstitial keratitis of the left eye, with much ciliary injection, ocular tenderness, and photophobia. He was given 0.2 gram calcium acetyl salicylate, and on the 26th the ciliary injection was much less and the pain much easier. On that day he was given 0.3 gram calcium acetyl salicylate, and on March 1st, when he was seen again, he stated that he had been quite free from pain for forty-eight hours after the injection, but the pain returned slightly after that. He was given 0.3 gram calcium acetyl salicylate, and by March 3rd there was slight photophobia still, but all the ciliary injection had practically disappeared, and when seen again on March 5th the eye was quite well.

4. *Acute Gonococcal Iritis.*—A man, aged 32, had had gonorrhoea five years ago, and had been previously treated by myself in 1919 for an attack of acute gonococcal iritis, which lasted nearly three months. Ten grains of aspirin had always given him relief from the pain for a few hours. In July, 1920, he had a fresh attack in the same eye and was treated for two months in France. In September, 1920, he came to me, when he had all the acute symptoms of iritis, and the condition appeared to be as far from recovery as ever. He had photophobia, severe ocular tenderness, and supraorbital pain. On September 25th I gave him 0.2 gram calcium acetyl salicylate, and he then had relief from pain for about ten hours, and although his symptoms returned they were not in any way so severe as before. On September 27th I gave him 0.4 gram, and on the 28th a similar dose of calcium acetyl salicylate; all pain and tenderness then disappeared and the ciliary and conjunctival injection began to clear up at once. When I saw him again on October 11th he was quite well and the instillation of atropine was stopped. Since then there has been no relapse.

5. *Arsenical Neuritis.*—A woman, aged 41, who first attended on August 25th, 1920, had seven injections of novarsenobillon intravenously, the last one being given on October 20th, 1920. She then had four injections of 0.6 novarsenobillon at weekly intervals, from December 1st to 22nd, 1920. I saw her on January 19th, 1921, when she reported that she had severe pains in the arms and legs, extending downwards to the fingers and toes, apparently due to arsenical neuritis. Potassium bromide gr. xx and aspirin gr. x at night were given with no relief. On February 2nd she was given 0.5 gram calcium acetyl salicylate intravenously. On February 9th she reported that her pains had disappeared one hour after the injection and they had not returned; she has been free from pain since then.

In three other cases of tabes dorsalis intravenous injections of calcium acetyl salicylate produced equally good results. In five cases of gonorrhoeal synovitis, in which the knees, shoulders, and ankles were affected, pain was almost immediately relieved and the swelling began to go down after the first injection. The dose given was 0.5 gram every second or third day. In one case of synovitis of both knees the patient, after the first injection of 0.5 gram, was able to carry on his work as a motor driver. After seven injections given at intervals of three days, his knees were quite well with the exception of slight puffiness of the capsules of the joints, which

disappeared two to three weeks afterwards. In three cases of longer duration, although the injections relieved the pains the synovitis appeared to run its usual course. In one case of acute rheumatism with multiple synovitis and high temperature, while each injection was followed by a lowering of the temperature and relief of pain for some hours, no curative effect resulted, and the progress of the disease appeared to be unaltered. She had been given sodium salicylate up to the point of causing deafness and noises in the ears and sickness, without any relief of pain.

The technique is simple: a 1 gram tablet is dissolved in 10 c.cm. of distilled water by boiling in a test tube in order to ensure sterilization; the solution is then cooled and injected into the vein with a glass syringe. It is advisable to inject slowly to allow the solution to mix gradually with the blood stream in order to prevent thrombosis. I have now treated a diversity of painful conditions where other remedies have failed to bring alleviation. They include sciatica, acute rheumatism, tabes dorsalis, interstitial keratitis, acute iritis, gonorrhoeal synovitis, arsenical neuritis, dysmenorrhoea, and severe headache of doubtful causation. In all, 55 cases have been treated. Pain is relieved in half to three-quarters of an hour and the effect persists for several hours and in some cases for days. In one case of acute rheumatism the patient was unable to take sodium salicylate and aspirin by the mouth on account of gastric irritation. Daily injections of 1 gram of calcium acetyl salicylate produced complete freedom from pain for about six hours. For adults the dose usually given is 1 gram.

In no case has there been the slightest ill effect. Following a personal experimental injection of 0.5 gram I noticed within a few seconds a slight acid taste in the saliva and two or three seconds later a sensation of flushing over the whole body with momentary slight tingling in the extremities. These symptoms, I think, are due to an alteration in the chemical reaction of the blood before the acid is neutralized. So far I believe I am justified in claiming that intravenous injection of calcium acetyl salicylate produces a greater and more immediate relief of pain than aspirin given by the mouth, and its administration is not harmful. It will act beneficially in many cases where other remedies have failed, and it can be repeated daily.

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EXTROVERSION OF THE BLADDER:

THE SEQUEL TO TWO CASES.

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IN the BRITISH MEDICAL JOURNAL for April 28th, 1906,[1] were published some cases of extroversion of the bladder, in which a method of extraperitoneal implantation of the ureters into the rectum had been adopted. The first operation was performed on May 12th, 1899, and the method employed was original so far as we were concerned, and indeed has since been termed by Dr. Jaromir Jelinek of Brunn (Moravia) in his exhaustive pamphlet[2] the "Lendon-Peters operation," the late Dr. Peters[3] of Toronto having operated in a precisely similar manner in July, 1899. Dr. J. J. Buchanan[4] of Pittsburg, however, points out that both Dr. Peters and ourselves were anticipated by Bergenhem (Sweden) in 1896, by Pozza (Italy) in 1897, and by Martin (U.S.A.) and Capello (Italy) in 1898. The operation should, therefore, properly be known as "Bergenhem's." As the two patients, whose cases were described at length, have recently died, it was thought that a brief account of their condition during the many years they survived, and of the *post-mortem* findings in one case, might be of interest.

CASE I (DR. LENDON'S).

In the case of this patient the operation was performed on May 12th, 1899, and he died on Christmas Eve, 1920, having thus survived over twenty-one years. The operation was performed when he was only 9 years of age, and as previous operations for the radical cure of large inguinal herniae had involved castration, he showed some of the characteristic features of a eunuch—namely, piping alto voice, hairless face, and childish countenance. He was broad and stout, his maximum weight was 8 st. 3 lb., and height 5 ft. 5½ in. when aged 23; other members of his family were much taller. He became a barber, a calling for which by temperament he seemed well fitted, and he continued to shave and amuse his customers till he was about 28 years of age.

He remained in perfectly good health for quite nine years after the operation (1899–1908), and he could always hold his water in the rectum all through the night. During the next ten years he had occasional bouts of illness, which included rigors, vomiting, pains in the loins and groins, and occasionally diarrhoea. The attacks were naturally attributed to uretero-pyelo-nephritis, and in confirmation of this idea there was at times some tenderness on palpating the right kidney.

About Christmas, 1918, his legs began to swell. The following January he contracted influenza. From that time forth he began to go downhill. In March, 1919, he got relief from multiple incisions into the dropsical limbs, and this treatment was repeated on three occasions. There was never any fluid found in the belly, but the right forearm towards the end was swollen, and when ill he was troubled with vomiting, but there were no other corroborative indications of uraemia.

He encountered a severe heat wave in December, 1920, and died on Christmas Eve. A very complete autopsy was performed by Dr. C. T. Turner, the urinary apparatus, together with the lower bowel, being removed *en bloc*, and the whole pelvis extracted.

Post-mortem Notes.

The only traces of the genital organs remaining were remnants of the crura of the penis. The bladder was replaced by scar tissue, behind which was some perivesical fat, and the fibrous structures which constituted a strong ligament between the separated halves of the pubes. (This has been well described by Professor Watson in one of our cases previously reported.[5]) The left kidney with its ureter was embedded all the way down in a dense mass of hard fat; it was a little difficult to find the kidney, and very difficult to trace the ureter. The kidney itself was much shrunken, tough, with wasted cortex (1 mm.), and dilated calyces filled with greenish-grey putty-like material. The ureter was 21 cm. in length and of varying calibre—the upper fifth the size of a slate pencil, the middle portion that of a lead pencil, whilst the lower end was strictured and kinked, becoming dilated again at its entry into the rectum on the left antero-lateral aspect, 5½ cm. above the anal margin. Its site was easily found in the rectum by a small polypoid projection.

The right kidney was a complete contrast. Its capsule peeled fairly readily, and its cortex measured 4 mm. There was some dilatation of the calyces, which were filled with semi-purulent material having the characteristic odour of the *Bacillus coli communis*. The right ureter was slightly dilated all the way down, and measured 6 mm. in diameter where it opened into the rectum, 8 cm. above the anus, where its gaping orifice admitted a No. 9 catheter.

Notes on the Pelvis, by PROFESSOR WOOD-JONES.

The pelvis No. 1 is rearticulated after maceration. The sacro-sciatic notch may be described as ultra-masculine in type. The first three sacral elements remain ununited, and all epiphyseal lines are distinct. The epiphyses for the iliac crests and for the tuberosities of the ischia are separate. The backward rotation of the ilia is not nearly so well marked as in pelvis No. 2 (that of a girl aged 8), but the ilia are still more markedly upright. The sacrum is flattened from side to side and from above downward, but the loss of curvature is not nearly so marked as in pelvis No. 2. Three sacral elements articulate with the ilia, but the first element has been almost completely liberated from the articulation; the first coccygeal element has undergone sacralization. As in pelvis No. 2 there are joints between the laminae of the first two sacral vertebrae; the posterior arches of these two vertebrae are incomplete. The upper articular facets of the first sacral element are of the normal sacral type. The ischio-pubic ramus is slender, and the

large obturator foramen is almost vertical in its long axis. The pubic diastasis measures in the rearticulated specimen 31 mm. The distance from the anterior margin of the acetabulum to the free margin of the os pubis is equal to the diameter of the acetabulum.

The upward displacement of the sacrum relative to the pelvis has been noted in other specimens by Ballantyne. It is a very remarkable anomaly difficult to associate with the primary malformation. In pelvis No. 2 it has led only to an abnormally high position of the sacrum, and to the assumption of some definitely lumbar characteristics by the first sacral element. In this case it has led to the almost complete liberation of this bone.

Although the general deformity consists in a splaying apart of the two ilia, it is noteworthy that the pubic diastasis is exaggerated in both specimens by an absolute shortening of the pubis. Whereas in this specimen the horizontal ramus of the pubis measures 63 mm., in a normal male bone of very similar general dimensions it measures 76 mm. Associated anomalies consist in (*a*) general flattening of the sacrum, (*b*) peculiar slenderness of the ischio-pubic ramus, (*c*) general uprightness of the whole of the ossa innominata.

CASE II (DR. NEWLAND'S).

Apart from an attack of measles in 1914, he remained in good health from the date of the operation in 1904 down to the time of his final illness in 1920. He worked on the family farm, and during his brother's absence on active service he managed it. In September, 1920, he weighed 10 st., the heaviest he had ever been.

In October, 1920, he consulted Dr. L. G. Muirhead, of Henley Beach, complaining of general weakness, abdominal pain, and some cough without haemoptysis. No pulmonary or laryngeal condition could be detected. He had complete control over his urine and could pass it irrespective of the act of defaecation. The urine on examination was turbid and contained a good deal of albumin. The kidneys were neither tender nor enlarged.

On his return to the country he consulted Dr. G. H. B. Black, of Showtown, and was admitted to hospital on November 23rd, 1920, complaining of weakness, wasting, and occasional slight pain below the left costal margin. He had suffered from indigestion for several months, and from a cough for several weeks. He stated that occasionally he had difficulty for a day or so in holding the urine in the rectum for any length of time, but as a rule there was no incontinence. He was very wasted; the heart and vessels were natural. Slight pleural friction could be detected at the posterior base of the left lung. The kidneys were neither palpable nor tender. The healed scar of the old operation, in the pubic region, was partly covered with pubic hair. The penis was rudimentary. There was little hair on the face and the voice was falsetto. A filtered specimen of urine was free from sugar.

On December 2nd doubtful signs were detected at the apex of the right lung. On December 10th there were signs of a cavity in the same situation and tubercle bacilli were found in the sputum. A week later signs of consolidation developed in the lower lobe of the left lung. His general condition now rapidly deteriorated, and after an attack of "convulsions" he died on January 15th, 1921. An autopsy was not performed, and therefore no report on the condition of the kidneys is possible.

REMARKS.

The principal object of this paper is to encourage surgeons who may encounter these rare cases in future to operate upon the lines laid down in the communication referred to above,[1] for, if a child of 9, whose left ureter was noticed to be much thickened at the time of operation, can survive in comfort for about twenty years, and follow his occupation for eighteen years till disabled by cardiac dropsy, how much better results may reasonably be expected when clean cases are operated upon before the ascending ureteritis has set in. It would be interesting to learn the ultimate result of the cases reported in your columns by C. J. Bond,[6] Gilbert Barling,[7] Murray,[8] Riddell,[9] Lawford Knaggs,[10] Rigby,[11] Ball,[12] Arumugum,[13] Holman.[14] Mr. Bond's case[6] survived six years, according to a letter from him dated October, 1906, but this may be an error, as in his original report he gave the date of operation as 1903. Dr. Hatch, of Norwich, and formerly of Bombay, wrote of a successful case reported to the East Anglian Branch in 1904. The only cases we can find in recent Australian literature where this method was adopted are reported by Dr. Hamilton Russell, of Melbourne[15]: his three cases gave excellent results. Dr. Stewart McKay, of Sydney,[16] planned an ingenious operation on the old lines of closing in the bladder: he introduced a tube of rectal mucous membrane into the bladder to avoid the ureteral orifices coming into contact with faeces.

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ON THE ESTIMATION OF THE PHYSIOLOGICAL COST OF MUSCULAR WORK:

THE SIGNIFICANCE OF THE RESPIRATORY QUOTIENT IN INDIRECT CALORIMETRY.

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In an article in this JOURNAL (May 21st, 1921, p. 733) Leonard Hill and Campbell show that in the estimation of the physiological cost of muscular work there is a lack of agreement between the results obtained by the method practised by Waller and De Decker and that recommended by Cathcart. Waller and De Decker base their estimation on the exhalation of CO_2, 1 c.cm. of CO_2 being taken as equivalent to 5.856 calories. In the method described by Cathcart[2] the estimation is based on the absorption of oxygen, the caloric value of 1 c.cm. of oxygen varying with the respiratory quotient—that is, the ratio of the volume of CO_2 exhaled to the volume of oxygen absorbed during the same time. Leonard Hill and Campbell consider that two sources of error in the results of Waller and De Decker are (1) the short duration of the period of taking the sample, and (2) the failure to take sufficient account of the increase of metabolism due to taking food.

The source of error, however, which is inherent in Waller's method is the neglect of the significance of the respiratory quotient (R.Q.) in determining the caloric equivalent of the volume of CO_2 exhaled. According to Waller,[3] one cubic centimetre of CO_2 is equivalent to 5.317 calories when the R.Q. is 0.95, and to 6.396 when the R.Q. is 0.75. In assuming a fixed R.Q. of 0.85, and a consequent constant value of 5.856 calories per cubic centimetre of CO_2, there is ample room for a wide error, even though the other source of error pointed out by Leonard Hill and Campbell were eliminated. On an uncontrolled diet the R.Q. is sometimes as high as 0.95 or as low as 0.75. On special diets it may fall outside these limits. Table I shows the extent of the error that may occur. The subject and the work—marching at 160 yards per minute on a level floor—were the same in both cases. The diet was uncontrolled.

TABLE I.—*Showing Extent of Error.*

Subject accustomed to apparatus (5-minute samples).

Date.	CO_2 exhaled per minute.	Oxygen absorbed per minute.	R.Q.	Calories calculated from Oxygen Consumption Factor varying with R.Q.	Calories calculated from CO_2 output, R.Q. assumed 0.85.
1919.	c.cm.	c.cm.			
Jan. 8	743	989	0.75	4.69	4.35
Jan. 9	865	950	0.90	4.73	5.07

The energy expenditure in the two cases as calculated from the exhalation of CO_2, assuming a constant R.Q. of 0.85, shows a difference of about 15 per cent., although the real expenditure as calculated by the more exact method differs by less than 1 per cent. The usefulness of this rapid method of estimating the physiological cost of muscular work by simply measuring the CO_2 output is

thus limited to the approximate determination of the relative severity of the work. Waller is, of course, aware of the source of error in the method, though he has probably underestimated the range of error.

Even in the exact method recommended by Cathcart, in which the caloric value of the oxygen varies with the R.Q., care has to be taken to ensure that the R.Q. represents tissue respiratory exchange. Analysis of expired air frequently shows a quotient that is quite fictitious. This erroneous result arises in the following way. In the body there is a large store of loosely held CO_2 which can be washed out by excessive respiratory efforts, or displaced by acid products of metabolism. On the other hand, part of the CO_2 produced in the tissues may temporarily accumulate within the body. In any sudden change, therefore, in the rate or amplitude of respiration or in the rate of metabolism, as in passing from rest to work or vice versa, there is apt to occur a washing out or retention of CO_2 which completely upsets the relationship between the CO_2 output and the rate of metabolism. The oxygen exchange is, on the other hand, much more steady. Hence, when a washing out of CO_2 occurs, there is not a balancing "washing in" of oxygen, and the R.Q. consequently rises. In the same way, on a temporary retention of CO_2 the R.Q. falls. In sudden changes of the rate of respiration, therefore, there may occur wide fluctuations in the R.Q. which are not a true reflection of tissue metabolism.

In connexion with some experiments which were being carried out we found it necessary to determine the nature of the fluctuations of the R.Q. liable to occur in sudden increases or decreases of the rate of work. Our results obtained for half-hour periods of work of moderate severity show that on passing from rest to work the R.Q. immediately drops and then rises, usually above the pre-work level, after which it slowly falls to the pre-work level. On passing from work to rest there is a sharp rise in the R.Q. followed by a fall below the pre-work level. Table II shows the nature of the fluctuations; the work consisted in marching at a uniform rate of 120 yards per minute.

TABLE II.—*Nature of Fluctuations of R.Q.*

Subject accustomed to apparatus.

R.Q.		Calories per Minute.	
94	.....	1.28	Rest.
74	.....	5.55	First minute work.
89	.....	8.44	Third minute work.
97	.....	8.19	Fifth minute work.
91	.....	7.55	Seventh minute work.
94	.....	7.55	Twenty-fifth to twenty-seventh minute work.
101	.....	4.93	First minute rest after work.
98	.....	1.71	Third minute rest after work.
105	.....	2.01	Fifth minute rest after work.
90	.....	1.55	Seventh minute rest after work.
80	.....	1.23	Twentieth to thirtieth minute rest after work.

A rise in the R.Q. shortly after the commencement of work and a sharp rise on the cessation of work have been noted by several workers. The extent and the causes of these have recently been studied by Campbell, Douglas, and Hobson.[4] Apart from these more or less regular fluctuations there occur occasional changes in the R.Q., such as the sudden rise in the fifth minute after work in the above table. These we believe are connected with changes in the rate of respiration. All these changes in the R.Q. are undoubtedly due to the gap that exists between tissue respiration and tracheal respiration. They merely indicate a washing out or retention of CO_2 in this undetermined zone.

From the foregoing considerations it is obvious that any sudden alteration in the R.Q. suggests that the result is vitiated by a wash out or retention of CO_2. In determining the energy expenditure, therefore, it is necessary that the rate of muscular work should have been constant for about ten minutes before the sample of expired air is taken. If the work is very severe a longer period may be necessary. The constancy of the R.Q. at or about the level of the preceding period is the indication that equilibrium between tissue respiration and tracheal respiration has been established, and that the result may be relied on to represent tissue metabolism. It is obvious that in the method of estimating the cost of work from the CO_2 exhalation, results obtained at the beginning of work or immediately after the work stops are of little value. In the former case CO_2 is accumulating within the body, while in the latter it is being washed out. In neither case is there any parallelism between the production of CO_2 in the tissues and the exhalation of CO_2.

The consideration of the R.Q. is of interest apart from the accuracy of the determinations. Krogh and Lindhard[5] have shown that the physiological cost per unit of work is less in the post-absorptive state following a high carbohydrate diet than following a high fat diet, and Orr and Kinloch[6] have shown that following a meal the net cost of the work—that is, the rate of metabolism during work *minus* the rate of metabolism during the preceding rest period—is greatest on a high protein diet and least on a high carbohydrate diet. The net apparent cost of the work therefore depends to some extent on the nature of the material being consumed in the muscles which is indicated by the respiratory quotient.

Note.—The first observations on which the above note is based were made when one of us (J. B. O.) was working with Professor Cathcart, F.R.S., at the London Hospital in the winter of 1918–19. The results of Table I are taken from unpublished results of that period and included here by the kind permission of Professor Cathcart.

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THE CONTROL OF HAEMORRHAGE BY INTRAMUSCULAR INJECTION OF CALCIUM CHLORIDE.

BY

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THE treatment of haemorrhage by intramuscular injection of calcium chloride is gradually becoming a well recognized and useful procedure, but we know of no published results which show what has taken place in the blood, or how long the drug may be acting. Originally it was pointed out in the *Guy's Hospital Gazette* of May 18th, 1918 (W. R. G.), that the credit for the use of the drug is due to Dr. W. E. Dixon. One of us (H. W. C. V.) has now examined the blood after many of these injections, and, though his results will be published later, it seems worth while to publish separately a short statement from the practical point of view.

One grain of calcium chloride is dissolved in about 100 minims of water and injected deeply into the gluteal muscles; it must not be injected subcutaneously or sloughing of the skin will be caused. If a solution of the salt is made up to a concentration of 1 in 4 (2 drachms in an ounce is a convenient quantity), four minims then contain one grain. This solution has been kept for weeks, and in this strength apparently remains sterile indefinitely. If the solution is not quite clear, it must be shaken before use. The four minims are diluted to 100 mm. with boiled water, and in some hundred or more injections nothing abnormal has developed at the site of injection. Generally the injection is painless, though a few patients have complained of pain and stiffness running down the limb. In the blood the calcium value is found to rise slowly to a maximum in six hours, and then to remain practically constant for at least twenty-four hours. It is not at present possible to state definitely the action of calcium salts in controlling bleeding; it is probable that there is a direct constrictor effect on the blood vessels, and, further, the increased calcium content of the plasma may cause combination to occur between the calcium and the blood lipoids, with a consequent acceleration of clotting.

As a practical application of these results it has been found perfectly safe to give a second injection at the end of twenty-four hours, and, if necessary, a third twenty-four hours later; this was actually done in a case of haematemesis. In anticipating haemorrhage at or after operation, an injection not more than two hours before, or even at the time of operation, would seem indicated.

Calcium salts given by the mouth had no influence on the blood calcium; this confirms the observations of Dr. Dixon, from whom this treatment originated. It may

be noted in this connexion that cases of chilblains showed no calcium deficiency in the blood, and the treatment by calcium lactate by the mouth therefore does not seem to be indicated.

The injections are of the greatest service in ordinary haemoptysis, and it is seldom necessary to give more than one dose, though the knowledge that another can be given in twenty-four hours is useful. They are also most helpful in uterine haemorrhages, and the results obtained in aneurysms are hopeful.

The uses are so manifold, the solution so easy to make and keep, and the technique so simple, that when once the effect is realized we believe that the majority of practitioners will carry a solution in the emergency and obstetric bag. We have frequently injected a 1 in 20 solution in an ordinary hypodermic syringe with a long needle, and it is only that we believe that a 1 in 100 solution is more readily absorbed that this strength has become the standard.

Memoranda:

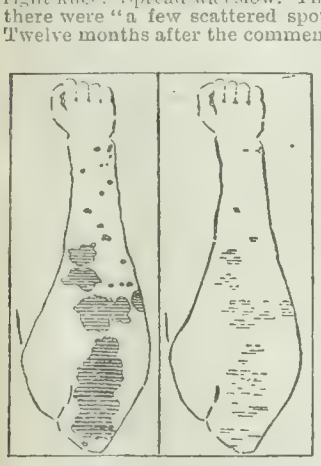
MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE RAPIDLY SPREADING PSORIASIS TREATED WITH ARSENIC.

In the second edition of *A Handbook of Skin Diseases and their Treatment*, by Professor Arthur Whitfield, King's College, London, the author says, on p. 176: "It is commonly asserted that arsenic should not be administered in acute outbreaks, but, having accepted this on the authority of others for some time, I have convinced myself that though in a few cases it may aggravate the eruption, in the majority of acute cases it is undoubtedly beneficial."

It was decided to test this statement, and the following case of acute rapidly spreading psoriasis, then in the ward, was selected:

A. B., aged 16, apprentice metal worker, was admitted to Ward 2, Edinburgh Royal Infirmary, on April 14th, 1921, suffering from acute psoriasis. According to the patient, the eruption first appeared eighteen months previously as a red spot on the right knee. Spread was slow. Three months before admittance there were "a few scattered spots" over the body and limbs. Twelve months after the commencement on the knee scaliness of the scalp was bad enough to demand attention. From a medical practitioner he obtained a "yellow paste," which he employed at irregular intervals, with little or no benefit. About a month before admission the eruption became much worse.



Dorsal surface of right forearm, April 30th, 1921. Same surface, June 2nd, 1921.

On admission there was profuse scaling of the scalp. There was a red patchy eruption affecting particularly the forehead, face, forearms, lower part of trunk, scrotal region, and lower limbs, and showing a marked preference for the extensor surfaces of the limbs. There was no pitting of the nails, and no involvement of palms and soles.

Treatment was as follows: For ten days the patient had a daily sulphur bath and an application to the scalp of 2 per cent., and to the body of 1 per cent., sulphur and salicylic vaseline. This gave no apparent benefit, and there was considerable spread.

On April 30th, 1921, Fowler's solution was commenced in doses of m v thrice daily after food, and detailed charts were made of the eruption on the dorsum of the right forearm and on the right thigh and leg. The sulphur and salicylic treatment was continued. For three days spread went on unchecked. In seven days, however, spread had stopped. The whole eruption had somewhat paled, and thickening had become less marked. Several large patches, especially those on the arms, had lost their well defined edge, and showed small areas of healthy skin in their centres. Seeing and feeling them from day to day caused me involuntarily to make a comparison between them and the idea of islands covered with low flat-topped hills becoming submerged. In a fortnight there was considerable paling of the whole eruption. This was most marked on the forehead and face. The scalp was almost healthy in appearance. A few of the newest spots had gone. Continuing the analogy made above, almost the entire eruption now appeared to be becoming submerged. In three weeks the face, forehead, and scalp showed hardly any evidence of disease. More spots had disappeared from the limbs, and the remaining eruption was now quite pale.

On May 18th, 1921, the sulphur bath was discontinued, and the strength of the sulphur and salicylic vaseline applied to the body was increased to that of the scalp application. On May 23rd, 1921, the arsenic was stopped because an erythematous eruption closely resembling a sunburn, which had appeared twelve days before on the front of neck and chest, was rapidly spreading. The spread stopped within forty-eight hours. The part was kept covered with a zinc paste. Ten days later there was no evidence of this eruption, save for a fine terminal scaling.

On June 8th, 1921, the psoriasis had disappeared, save for a few scattered "hilltops" in some of the larger areas that had been involved. These were in evidence near the elbows, knees, and in the scrotal region. On this day the patient was anxious to leave, for private reasons, and was discharged with the usual instructions concerning preventive treatment.

Dr. Norman Walker, to whom I am greatly indebted for permission to publish this note, considered the case to be of more than usual interest, because it appears to be so widely accepted a rule that arsenic is not to be employed, or very guardedly employed, in such acute cases.

E. FLEMING GRIFFIN, M.B., Ch.B.Edin.,
House-Physician, Skin Department,
Edinburgh Royal Infirmary.

PROCIDENTIA IN OLD WOMEN.

On reading the discussion on genital prolapse at the recent British Congress of Obstetrics and Gynaecology held at Birmingham, I was disappointed that none of the speakers made any allusion to the operation for complete prolapse of the uterus with accompanying prolapse of the anterior and posterior vaginal walls described below. For this distressing condition I used to perform vaginal hysterectomy combined with anterior and posterior colporrhaphy and perineorrhaphy. I found it was not good. Patients used to return as bad as ever, except that they had no uterus to prolapse. In this experience I see that several speakers at the congress concurred. For many years past I have performed the following operation with uniformly good results, and have seen no case of recurrence after it. I do no vaginal operation whatever. The abdomen is opened in the mid-line above the pubes. Both ovarian arteries are tied. The broad ligaments are separated from the uterus, and the uterine arteries are tied. The uterus is then cut in half antero-posteriorly as far as the internal os. The mucous membrane of the body of the uterus is next removed in one piece from each half with a separate knife, and a Paquelin's cautery thrust down the cervix from above. The two muscular flaps, consisting of each half of the uterus minus its mucous membrane, are then pared down to a suitable size, spread out over the anterior sheath of the rectus and stitched to it by a continuous catgut suture. The peritoneum is then closed round the protruding stump and the recti and skin united in the usual way. The elevation of the uterus in this fashion automatically slings up the vaginal prolapse. The operation is not a severe one and can be done in less than half an hour. It is a radical cure of the condition. No recurrence can take place. I first saw the operation described some ten years ago in an American journal at a time when my operations for this condition were causing me great dissatisfaction. I have performed it ever since, and have never had cause to regret it. I have never seen any other surgeon perform it; nor have I, on questioning our house-surgeons, who come from various parts of the British Isles, ever been informed that they knew of the operation or had seen it done. So I presume it is not a generally recognized operation in this country at all events. Nevertheless it is a good one, and I can commend it for trial by those who have to deal with this condition.

Portsmouth. CHARLES P. CHILDE, B.A., F.R.C.S.

TRIPLETS WITH TWIN FOETUS PAPYRACEUS.

Mrs. B., who had had four previous normal confinements, was admitted to the Louise Margaret Hospital, Aldershot, at 9 p.m. on October 8th, 1920; labour pains had commenced four hours before admission. The membranes ruptured at midnight; an examination was made by the sister on duty, who reported that she was very much puzzled by the presenting part.

When I arrived dilatation was complete; the os uteri was occupied by a hard mass with some sharp spicules on

it, one of which pricked my glove; the mass seemed to be attached to the presenting vertex above it; as the head was not advancing, and dilatation was complete, I assisted its descent with forceps. On removing the blades a solid mass, somewhat the shape and size of a kidney, separated from the head, which was now down on the perineum; the mass was then recognized to be a foetus papyraceus, which had been fitting on the foetal head like a bonnet.

A normal male child weighing 7 lb. was next born, followed by its placenta and membranes, followed again by a second and less compressed foetus papyraceus, with an atrophied bilobed placenta with two amniotic sacs, and one chorion; all three were males. The mother and normal child made an uneventful recovery.

The two papyraceous foetuses are in the Museum of the Royal Army Medical College, Millbank, London.

Aldershot. E. L. Moss, Major R.A.M.C.

Reports of Societies.

MILITARY AND CIVIL CO-OPERATION IN PUBLIC HEALTH.

AT a meeting of the Naval and Military Group of the Society of Medical Officers of Health on June 30th Colonel H. W. GRATTAN, C.B.E., D.S.O., A.M.S., Deputy Director of Hygiene at the War Office, read a paper emphasizing the necessity for co-operation between civil and military authorities in matters affecting public health. The experience of the war had proved how great was the value of co-ordinated action in such matters as billeting, sanitation, destruction of refuse, and measures to cope with infectious diseases; it was highly desirable that some scheme should be adopted in order that such co-operation might be simplified in the event of another national emergency. The military command must realize the principle on which the sanitary organization of an area was based. The tendency lately had been to transfer the centre of gravity as regards public health from small urban authorities to county councils, and if the county authorities generally took up this question it would be a great advantage.

Lieut.-Colonel CALDWELL SMITH described how co-operation with the local authorities had smoothed over many difficulties in his own war experience as sanitary officer to a division. In one small town in Essex billets had to be found in two days for a brigade, but with the assistance of the chairman of the local public health committee and the medical officer, complete sanitary arrangements were devised within twenty-four hours.

Major-General Sir W. G. MACPHERSON said that some difficulty arose during the war because the police authorities arranged matters without the sanitary authorities even knowing that the men were coming. In the earlier stages of the war the medical inspectors of the Local Government Board helped very greatly in billeting areas, and their work was gratefully acknowledged by the Army Council.

Sir GERMAN SIMS WOODHEAD agreed that the work done in the war was of a very high order, but thought it might have been even better if a little more attention had been paid to the sanitary side of the R.A.M.C. from the time of the initiation of the Territorial Force, so that the great weight should not have fallen on the shoulders of comparatively few medical men. He wished to see the time when men trained in the army could become eligible, without the necessity of retirement, to fill certain civil posts. They were all members of a great public service, and ought to have a chance of taking part in either branch of that service. Lieut.-Colonel G. T. CATTELL suggested that there should be a military sanitary survey of England, so that particulars as to water supply and so on should be well known to the military authorities. Lieut.-Colonel W. BUTLER agreed that greater consideration should be given to the local knowledge of those who had the necessary training. Surgeon Rear Admiral Sir P. W. BASSETT-SMITH endorsed from the naval point of view all that had been said.

Major HUTCHINSON WOOD spoke of mistakes that were made in billeting, especially in the choice of sites, and hoped that co-operation would prevent such faults in the future. He was afraid that the advice of medical officers had too often been overruled by what he might call the higher authorities in the army. General MACPHERSON remarked, in reply to the last speaker, that the local command and not the medical authorities at the War Office had the selection of camp sites. When the War Office heard of camps badly selected, measures were taken to remedy the matter.

In closing the discussion the President (Lieut.-Colonel H. R. KENWOOD) said that all the speakers seemed to be agreed as to the necessity of organizing some form of co-operation. It was proposed, with the approval of the Director-General of the Army Medical Service, that the Naval and Military Group of the Society should undertake such a survey as had been suggested. Civilian officers had always found the War Office most sympathetic with work done on right lines. It was the peculiar duty of the group to see that the proposals made in the course of the discussion were not lost sight of; he understood that the Director-General was taking a great interest in the matter, and was desirous of receiving any suggestions that the group might offer.

MENTAL HOSPITALS.

AT the annual meeting of the Mental Hospitals Association, held in the London Guildhall on July 1st, a resolution was proposed urging that, pending the complete revision of the lunacy laws, the Government should introduce at the earliest possible moment a short bill authorizing the reception of voluntary boarders in public mental institutions, the setting up, where desired, of out-patient departments in connexion with such hospitals, and the establishment by the local authorities of psychiatric clinics for the treatment of incipient cases. The chairman, Alderman J. G. TAGGART, Lancashire, in commending the resolution to the meeting, said that it was lamentable that incipient insanity alone among incipient diseases should be entirely neglected; no provision was made for its treatment, but the medical profession was helpless in the matter until psychiatric clinics to which affected persons could go voluntarily were encouraged. He knew cases in the asylums of his own district which would never have been in the institution at all had they been taken in hand sufficiently early. An amendment to leave out the reference to psychiatric clinics found very few supporters, but on a suggestion from the meeting the mover of the resolution agreed to incorporate words which provided for the co-operation of the authorities of the general hospitals and infirmaries with the local authorities in the establishment of such clinics. It was the general feeling that the psychiatric clinics must be established in towns, where the ordinary person could easily attend them, and not exclusively at the mental hospitals, which are very often situated in the country. With this addition the resolution was agreed to.

Sir WILLIAM HODGSON proposed a resolution directing that further representations should be made to the Prime Minister, the Chancellor of the Exchequer, and the Minister of Health with regard to the urgent need of an increase in the grant from the Exchequer in aid of pauper lunatics. The subsidy granted by the Government for venereal diseases services was largely to benefit people whose condition was the result of their own misdoing, whereas the pauper lunatic was suffering from a calamity which was not traceable to his own fault. The resolution was unanimously carried.

The Association agreed to raise its minimum subscription from three guineas to five guineas. Alderman Taggart was re-elected chairman of the Executive Committee.

UNDER new regulations adopted in Germany soldiers are to be vaccinated on joining the army and again on the completion of six years' service. After an unsuccessful vaccination three double inoculations are, if it is considered desirable, to be performed in three successive years.

DR. C. L. ALSBERG, Chief of the Bureau of Chemistry of the United States Department of Agriculture, has been appointed Director of the Food Research Institute which is to be established at Stanford University by the Carnegie Corporation.

THE Ministry of Health of the Czecho-Slovak Republic has instituted a number of sanitary centres, consisting of tuberculosis dispensaries, infant clinics, and venereal dispensaries, to which will soon be added departments for mental hygiene, gynaecology, and eye diseases.

Reviews.

GREEK MEDICINE IN ROME.

ENGLAND has produced few specialist medical scholars: we have not had a Daremberg, a Littré, or a Haeser; but there have been many Englishmen who, while engaged in the practice of medicine or surgery, have not forgotten their debt to Greece and Rome. Freind (whose history, written in the Tower away from books, has earned the praise of scholars and is well worth reading) at the beginning of the eighteenth century, Willan at the beginning of the nineteenth century, the learned Scottish country doctor Adams sixty years ago, and, in our generation, Frank Payne, William Osler, Norman Moore, and Clifford Allbutt, have helped to make medical history as well as to write it.

Sir CLIFFORD ALLBUTT'S contributions to the history of thought have long instructed and delighted us. His new book, *Greek Medicine in Rome*[1] includes also some detached essays and addresses, two of which—one being his presidential address to the Clinical Meeting of the Association in 1919—were first published in our columns. Of these papers we shall say nothing, save that they exhibit the enthusiasm for sound learning, the humour and the generosity towards less gifted authors, which have always characterized Sir Clifford's writings.

The greater part of the volume is devoted to the two courses of FitzPatrick lectures upon Greek Medicine in Rome, delivered before the Royal College of Physicians of London. Reports of both courses were published in the BRITISH MEDICAL JOURNAL at the time of their delivery, but in this volume they appear expanded and revised. We may give some general idea of the scope of the book by saying that the author begins by discussing primitive and early Roman medicine, and then passes on to the origins of Greek physiology and to Alexandrian medicine; at p. 176 he reaches the settlement of Greek physicians in Rome, and they and their doctrines are the subject of the remainder of that part of the volume devoted to the FitzPatrick lectures.

All educated men are conscious of the difficulty of rendering a credible account of even the externals of Roman life; they find a certain theatricality in even the best writers. Julius Caesar seems a great man, but hardly a real man in a real world. The reason is, of course, that our information is at once exceedingly full and hopelessly meagre. The most egotistical of our contemporaries will not furnish Macaulay's New Zealander with ampler personal records than Cicero left us; yet if all that awaits that explorer of old London in the form of written matter be an odd copy of the *Times*, he will be better informed respecting various essential facts of twentieth century life than is the most learned scholar respecting the social life of Rome: *alii fortasse aliquid requirent, idque vel maximum.*

If the difficulties of the ordinary historian are great, those of the historian of ideas are greater, and of the historian of medical ideas greatest of all. Nearly half the surviving documents are the work of a single man, a man of great powers indeed and of insatiable curiosity, but as great a partisan as Cicero himself. Galen was separated from Hippocrates by almost 500 years, the works of all those who during these centuries were physicians or physiologists *vom Fach* are lost or survive only in fragments imbedded (as has been the fate of part of Erasistratus's teaching) in hostile comments. The historian is called upon to perform a reconstruction as difficult as that of Cuvier's ideal zoologist using a single bone, and must constantly make allowance for the psychological and cultural factors which determined the attitude of the Graeco-Roman physicians towards that body of knowledge which he only knows by reconstruction. To assert that Sir Clifford Allbutt has succeeded in this herculean task would be for the reviewer to affect an omniscience beyond the vanity of the most olympian journalist. We say no more than that the account of Roman Medicine offered is credible. Sir Clifford has no doubt the defect of his qualities; an anxious desire to do full justice to the work of other scholars prevents him from being dogmatic, and an optimistic reliance upon his readers' knowledge of classical literature may render some chapters hard reading for the average Philistine.

In his estimate of the various schools of medical thought Sir Clifford is not unfair—he is never unfair—to the Empirics, but he does not dwell upon the possibility, it is hardly more, that this school, the name of which became—chiefly through Galen's efforts—the synonym of a quack, had really grasped a principle of *scientific* investigation, a rudimentary form of statistical induction, the neglect of which by Galen and the Galenists did most of the harm which excited Sydenham's wrath. If arguing the point made a doctor, certainly students of philosophy would be the best doctors, but in an abundance of fine words there may be a famine of medical skill, said the Empirics—if we may venture to paraphrase Celsus's remarks—and the Galenists spent some centuries in providing a practical comment on the text.

The name of Celsus reminds us that the reader will naturally turn to Sir Clifford's account of the few Graeco-Roman authors whom we all know—at least by name. Of Celsus he speaks with the respect which that great writer deserves, and awards him what is, from so enthusiastic a Hellenist as Sir Clifford, the highest praise of being "in content and temper wholly Greek." Sir Clifford's worship of Galen is very far on this side of idolatry; the vices of the Greekling and the vanity of the individual are not left uncensured; but if Galen could read that "he was something greater still, and far better, than 'a great compiler,'" that he was "after all the greatest master of scientific method from the second century to Roger Bacon," the vanity which inspired too many of his pages would not be unsoothed.

The moral atmosphere of Roman medicine, which provoked Galen to approve the saying that bandits and physicians differed merely in the location of their practices, has naturally excited Sir Clifford Allbutt's disgust. It has also inspired some pretty irony. "Musa, however," he writes, "was a man of insight and honourable independence of character. He is not known to have helped to poison anybody."

If anything, Sir Clifford is too generous to the public spirit of Roman physicians and hygienists. Perhaps he and Mr. W. H. S. Jones, whom he quotes, are right in holding that much Roman legislation "was due to a genuine desire to alleviate misery," but the medical writers show little altruism. Galen had plenty of excellent hygienic advice for the nobility and gentry, but roundly said that it was idle to lay down rules of hygiene for persons driven by poverty or otherwise to live laboriously (see Kuehn's edition, VI, 82). Ramazzini, 1,500 years later, was claiming no more than his due when he said that nobody before his time had diligently examined or prescribed remedies for the diseases of artificers—that is, that nobody had troubled about the hygiene of a large proportion of those whose labour rendered possible the pomp and circumstance of Imperial Rome.

Indeed, the period which Sir Clifford has selected, although a deeply interesting, is not a very cheerful one. Within it, Jugurtha's prophecy was fulfilled; the purchaser was found and the soul lost. When we have freed ourselves from the theatrical limelight which obscures our view of Roman civilization and thought, we shall discover many disquieting parallels between the third and the twentieth centuries. Perhaps the Roman Empire is not the only one which, having conquered the "Barbarians," has sold itself to itself. But if some such thought engenders pessimism, Sir Clifford's history at least provides a consolation. It shows us that science is indestructible; the balance of forces which made possible the existence of the men whom Hippocrates typified was soon upset, but their work remained. Upon the foundations laid by these master builders, cartloads of bad bricks were ill laid and many generations lived with immense self-satisfaction in jerry-built palaces. But in each age there were some who perceived the difference between foundation and superstructure, and when the palaces toppled down it was not necessary to lay new foundations. That a physician of great experience, equipped with the technical knowledge of the twentieth century, should write such a book as *Greek Medicine in Rome*, is in itself a proof that science (however we define it) is never obsolete, that Hippocrates and even Galen have a message for us yet. They could hardly wish for a better messenger than Sir Clifford Allbutt.

[1] *Greek Medicine in Rome, with other Historical Essays.* By the Right Hon Sir T. Clifford Allbutt, K.C.B., M.D., etc. London: Macmillan and Co., Ltd. 1921. (Pp. 635. 30s. net.)

CLINICAL MEDICINE.

THE book entitled *Notes on the Medical Treatment of Disease for Students and Young Practitioners of Medicine*,[2] by Dr. R. D. RUDOLF, of Toronto, does not profess to discuss the treatment of all diseases; it strikes a personal rather than an encyclopaedic note, and on this account is all the more attractive, as it conveys the conclusions drawn from a long experience of clinical work. The introductory remarks contain an account of the evolution of treatment from the earliest times, a subject which forms an interesting and, as the author remarks, often a humiliating chapter of medicine; in connexion with homoeopathy's influence in bringing into wide recognition the *vis medicatrix naturae*, it is maintained that Nature is the personification of natural forces, and is therefore neutral and as lief that the man should die as that he should survive infection. In the section on idiosyncrasies reference is made to the case of a nurse who showed symptoms of strychnine poisoning after a hypodermic injection of morphine, and the author, probably without any *arrière pensée*, adds, "Cats usually react thus to morphia, so there is a pharmacological explanation of it."

There is in this volume a happy blending of traditional experience with the most recent knowledge; thus in the full account of digitalis we read that Withering's directions for the use of the drug hold as good as when they were written in 1785, and that in 1915 Eggleston advocated the administration of the total quantity of the drug that may be expected to produce the maximum therapeutic effect, in one or in several, frequently repeated, doses; Canby Robinson's series of 100 cases in which the effect was apparent after an interval of only two to five hours, the maximum result being attained in twenty-four hours and the influence of the drug being maintained on an average for ten days, is quoted. The various preparations of digitalis are discussed and preference is expressed for Nativelle's granules of crystallized digitaline, which consist chiefly of digitoxin. In the account of the present position of venesection it is pointed out that Hippocrates used it, that it reached its acme and was abused early in the last century, when Broussais and Bouillard's opponents accused them of shedding more blood than Napoleon, but that in many cases it still remains the most effective method of treatment available. The value of the principle underlying Freud's psycho-analysis is admitted, and the chapter on the treatment of functional disorders of the nervous system is, like the rest of this well-written volume, the outcome of sound common sense and a long apprenticeship to clinical medicine.

NOTES ON BOOKS.

The Year Book of the Universities of the British Empire for 1921[3] is the fifth edition of an exceedingly useful publication. In a volume of manageable size the Editor continues to compress accounts of the degrees, courses of study, staffs of professors and lecturers, and other essential particulars of every university and university college in the British Empire, from Aberdeen to Hong Kong, and does so in such a successful way that intelligibility is never sacrificed to brevity. In the present edition Swansea College and the new University of Dacca appear for the first time. A new appendix, giving a certain amount of information concerning some foreign universities, is added, and, although there must be many difficulties to face, this section of the volume might well be made a little fuller, particularly in regard to the American universities.

In his *Hints to Pensioners on the Home Treatment of Disordered Action of the Heart*[4] Dr. FRANCIS HEATHERLEY, Chairman of No. 1 Pensions Board, Ashton-under-Lyne, explains in simple language what disordered action of the heart really means, and how it can be cured, so that an intelligent pensioner may know the why and the wherefore of the treatment recommended, and therefore be more likely to persevere with it. He points out that D.A.H. is not heart disease, any more than there is anything wrong with a motor car that becomes a nuisance because the driver exceeds the speed limit, for the driver at fault in D.A.H. is the nervous system, and D.A.H. is one only of the symptoms of neurasthenia, the disease of exhaustion, which is described as a revolution in the body, and compared to the condition of affairs in an orchestra when the conductor faints and all the players act as they please. The influence of toxins in causing neurasthenia is portrayed in familiar terms, and pensioners reluctant to submit to dental treatment are reminded that they would never tolerate in their mouths a large piece of dead and foul bone. The directions, especially those about alcohol, are clear and wise, and Dr. Heatherley may be congratulated on having achieved his object.

In *La Cisticercosi Cerebrale*[5] G. FORNI writes a monograph on cysticerci of the brain. It is based on a study of 440 cases recorded in medical literature, and is chiefly concerned with the clinical lessons to be derived therefrom. After a brief historical survey there follows an account of the etiology and pathogenesis of the disease; a detailed description of the pathological findings in the different parts of the brain affected; a chapter on general symptomatology, with a subchapter dealing with symptoms in relation to the number, form, and seat of the parasite; a fourth chapter on the diagnosis, course, and prognosis; a section on treatment, with a record of 12 cases treated surgically; and, finally, a long bibliography with over 300 references.

[2] *Notes on the Medical Treatment of Disease.* For Students and Young Practitioners of Medicine. By Robert Dawson Rudolf, C.B.E., M.D.Edin., F.R.C.P., Professor of Therapeutics in the University of Toronto. University of Toronto Press. 1921. (Med. 8vo, pp. 457.)

[3] *The Year Book of the Universities of the Empire, 1921.* Edited by W. H. Dawson and published for the Universities Bureau of the British Empire. London: G. Bell and Sons, Ltd. 1921. (Cr. 8vo, pp. 582. 15s. net.)

[4] *Hints to Pensioners on the Home Treatment of D.A.H.* By Francis Heatherley, F.R.C.S. Liverpool: G. Tinling and Co. 1921. (Pamphlet, pp. 15.)

[5] *La Cisticercosi Cerebrale.* By G. Forni. Bologna: L. Cappelli. 1920. (Roy. 8vo, pp. 72. 5s.)

NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.

THE sixth annual meeting of the National Council for Combating Venereal Diseases was held at the Barnes Hall of the Royal Society of Medicine on June 28th, when Lord GORELL presided over a large audience.

The CHAIRMAN said that the longer he held the office of President of the National Council the more impressed he was by the importance of its warfare and the value of its organization. The constantly increasing attendances at the treatment centres proved that people were beginning to realize that treatment, to be successful, must be continuous. The educational work was a very hopeful feature of the Council's operations. In one English county alone last year lectures were delivered to nearly 33,000 persons. There were some who alleged that lectures were of little use, but while the purely medical work might be very effective with the present generation there could be no permanent result unless the evil was tackled at the root and the minds of people educated and their sense of social responsibility quickened. The Council had dispatched three commissions to certain colonies and seaports abroad to investigate the conditions obtaining there. In conclusion, Lord Gorell touched upon the controversy which had arisen with regard to the choice of methods of preventing venereal diseases. He had himself conferred with prominent members of the Society for the Prevention of Venereal Disease on the points of difference between the policy of that Society and the policy of the Council, and third-party efforts to bring about a *modus vivendi* were still proceeding. The National Council was perfectly willing at any time to meet the Society in conference provided that no conditions were demanded and that their hands were not tied.

Representatives of the commissions then gave an account of their experiences, repeating in some particulars what had been already stated at the special meeting called recently to consider their reports. (BRITISH MEDICAL JOURNAL, May 14th, p. 716.)

Dr. WINIFRED CULLIS, one of the Mediterranean Commissioners, described the work done in Gibraltar and Malta, and quoted facts in support of the Council's proposed amendment of the Merchant Shipping Act. She warmly acknowledged the invaluable help rendered by the Governors of both Gibraltar and Malta. At the former port the incidence of venereal diseases was higher than in England; in the latter the problem was not serious as affecting the navy or the garrison, and amongst the civilian population the incidence apparently was low.

Dr. A. F. WRIGHT, one of the commissioners to the West Indies, urged strongly that action should be taken to prevent women boarding ships for the purpose of prostitution. The condition of things obtaining in many ports

was beyond description. Treatment ought to be available on every ship putting to sea, and every ship's doctor ought to be competent to give injections. In some of the smaller West Indian islands the provisions made for dealing with these diseases were disgracefully bad. The doctors were not entirely to blame, for they were called upon to do work for which they were not equipped, and their protests were unheeded. In one island dysentery patients were treated in an unscreened filthy ward, swarming with flies, which was next door to the kitchen. Instruments for use in the treatment of gonorrhoea were not sterilized in passing from one patient to another. In another island the poorer women were registered as suffering from venereal disease without any effort to make a positive diagnosis. In one institution which he visited the children slept in a ward "reserved for such odd cases as skin diseases or confinements." The commission, however, had pleasant surprises, and on one island, where many of the medical arrangements were shocking, he came across a beautiful and scrupulously clean maternity home. It was important that the doctors of the West Indies should have facilities for post-graduate instruction. Some of them had been in out-of-the-way places for twenty-five years.

Mrs. KEVILLE ROLFE, educational commissioner to Shanghai and Hong Kong, said that the situation in China was very difficult to deal with, because western customs were superimposed on eastern. There was ample evidence that enlightened Chinese opinion was in favour of the policy of the National Council, and already the visit of the commission had borne considerable fruit. Responsible authorities were now convinced that tolerated brothels must be suppressed in the interests of public health.

Thanks to the chairman and speakers concluded the meeting.

THE PRIVATE CLINIC SYSTEM.

DISCUSSION AT THE ROYAL SOCIETY OF MEDICINE.

THE discussion by Fellows of the Royal Society of Medicine on the private clinic system in Great Britain (BRITISH MEDICAL JOURNAL, June 25th, page 937) was continued on July 4th, when Sir JOHN BLAND-SUTTON again occupied the chair.

DR. LAPTHORN SMITH said that he had often envied the doctors in Vienna since the time, many years ago, when he spent six months there, and visited a private hospital of 700 beds, all occupied by paying patients. These patients were graded into four classes, from the nobility to the small shopkeeper. Every morning more than fifty doctors were in attendance. Each doctor registered his name on a notice-board as he entered and removed it as he left. The busy doctor sometimes paid from ten to twenty visits in that one building, and was paid for every visit. If he wanted a consultation he only had to scribble a line and send it to a colleague. Each doctor called at the office as he went out and handed his list of patients to a book-keeper, who at once charged the visit on each patient's bill and collected the fee, so that the doctor had not to trouble himself about money at all. Such an institution might be built in the neighbourhood of Regent's Park if only the enormous cost of an ornamental building were avoided, and it was not thought necessary to rear a building which would last a hundred years. The great clinic at Rochester, Minnesota, into which thousands of patients poured, was a plain, square, wooden building, with a passage-way down the centre and rooms on each side, and a large waiting room opposite the plain front door. A very utilitarian building, perhaps, with long pavilions radiating like the spokes of a wheel from the administration room, would serve the purpose well. He described some of the arrangements at the Mayo Clinic, mentioning that on one day when he was visiting there the same serious operation was performed on a wealthy bank president, on a clergyman of moderate means, and on a very poor doctor, and the fees charged were respectively about £1,000, £50, and nothing at all. He believed that the well-to-do would be prepared to pay handsomely for the facilities which they could get at such a clinic—that is, a thorough overhauling by ten or twenty men, who had all the most modern resources of medical science at their command. A clinic of this kind represented a great economy in administration as against a number of scattered nursing homes. Forty nursing homes in London—many of them in unsuitable and airless localities—meant the services of forty matrons and forty cooks, the staff generally had to be multiplied by forty, whereas if the 300 or 400 patients they could accommodate were in one building there would be an immense saving on that score alone. Dr. Smith also described visits to the private hospital at Battle Creek, Michigan (where he discovered that the profits for the previous year were £12,000), and at Baltimore, where the patients first saw the chief of the clinic at his consulting room and were then sent to a large nursing home, where from five to fifteen specialists called upon them during the following week. There was no provision here, however, for any but the rich. In London he would suggest that two distinguished members of the medical profession—the one a physician and the other a surgeon—should form around them a team of young men and float a company, in which not only the members of the team but the profession at large might be asked to take up shares.

DR. C. O. HAWTHORNE pointed out that the schemes presented on the occasion of the previous discussion differed widely from one another. What was a group clinic? Was it an expensive building, such as had been suggested by Mr. Dickie, and commended by him as a promising investment, or was it the scheme now actually in operation under Dr. Hurst—if so, it was not a true group, according to Sir Thomas Horder's definition—or was it an association of practitioners, as sketched by Sir Thomas Horder, held together by some vague financial and professional relationship? Until the group clinic was better defined, a vote for a group clinic was a vote for a phrase. He insisted that the aim of medical practice was entirely different from that of medical research, and that to argue that methods appropriate in the one case were necessarily so in the other was fallacious. There was no objection to combination in medical practice, provided only that the controlling influence was the welfare of the patient, and that the authority and responsibility of the individual medical practitioner were not obscured behind a crowd of counsellors or by an anonymous institute or organization. If Dr. Hurst's scheme was group medicine, group medicine was already in operation for every practitioner who sent sputa to be examined by a neighbouring laboratory. Another development advocated by various speakers was the establishment of an organization where an abundant supply of practitioners representing all the talents would be always on hand, and the patient would be passed from room to room and floor to floor until every pathological process of which he might be guilty had been brought to light, when in due course the diagnosis, determined perhaps by the majority vote, would be communicated to him by a new type of medical official called an assessor. But the ideal medical adviser would be one who was able to view and to deal with his patient as a whole. Such an adviser would be competent, upon the basis of complete and first-hand knowledge, to apply an inclusive and self-consistent scheme of medical advice and treatment. Surely a sound policy would aim at getting as near to this ideal as possible. The training, both before and after graduation, of a medical practitioner who desired to accept the responsibility of giving advice to patients should be directed to the acquisition of the widest possible knowledge and skill. The group system had a tendency in exactly the opposite direction; it urged men to be competent, not as advisers of patients, but as examiners of organs. They were told that this group system was simply the application to private practice of the methods universally adopted in hospital practice. The comparison was entirely misleading. The hospital patient was not the patient of an institution or organization or group. He was the patient of an individual medical practitioner who was responsible for him, and who could, if he judged it necessary, request the opinion of colleagues; but he could also refrain from doing so, and in any event he acted upon his own judgement. The hospital officer was free to develop his own knowledge and skill in any direction and to any extent. The freedom of the practitioner in reference to his own patient and to his own development in knowledge and skill was quite impossible in the system which had been

sketched: under the pressure of the rights of colleagues he would be compelled strictly to confine himself to his own definite department. Would a physician be sufficient to represent medicine, or must the group include such sectarian activities as were indicated by the titles, neurologist, cardiologist, gastrologist, endocrinologist? The more complete the group—that is to say, the more multiplied the departments—the greater the restriction upon the freedom of each individual member and the more narrow and limited his view of the patient. It must increasingly follow that no member of the group would be competent to act as medical adviser. The members of each group also must be loyal to one another, which meant that no member could pass by an immediate colleague in order to get the opinion of a member of a rival group. The group system was bad, therefore, for those practitioners of medicine who desired to qualify themselves as advisers of patients. He had nothing but respect for practitioners who had other ambitions, such as to become expert in the application of certain precise instruments in diagnosis, but the value of these methods was in the wide distribution of them, not in their detachment. As the group clinic had yet to be defined he must vote against any general motion which might be proposed in its favour.

Mr. A. W. SHEEN claimed, in opposition to the last speaker, that every piece of medical practice was a piece of medical research. He believed thoroughly in some system of group medicine, which he recognized must come about gradually and tentatively. The advocates of group medicine were not seeking to apply a cast-iron system over the whole country. In a good many parts of the country there were already smallish hospitals with private wards and with the services of consultants from near-by populous centres available, and these satisfied most of the requirements of the clinic.

Dr. STANLEY GEORGE believed that the establishment of private clinics would facilitate the diagnosis and treatment of disease. If the ultimate goal was prevention rather than cure, all energies must be combined and all instrumental aid must be available. He did not think very elaborate instrumentation a necessity of such clinics. This would belong to university laboratories; in the clinic the main thing would be to correlate laboratory and clinical observation.

Dr. C. F. HARFORD said that since the war clinics had been rising up in haphazard fashion—such as school clinics and pension clinics—all of them in connexion with public work. Was private practice to go on in the old-fashioned way? He thought that the report of the Consultative Council was the most statesmanlike thing put on paper, but it had been killed by its diagrams of beautiful buildings, which he believed were only illustrative and not fundamental, the personnel being far more important than the building in Lord Dawson's scheme.

Dr. CHARLES GRAY said that team work was necessary because medicine had extended so enormously that it was impossible for any one man to give the patient what he ought to have in any case requiring thorough investigation.

Dr. CARNEGIE DICKSON, speaking as a pathologist and bacteriologist, who refused to see any patient not sent by a practitioner, said that he regarded himself already as a member of a very large number of different teams. But closer association within the team was necessary. He had seen and appreciated group work in the R.A.M.C., where, once a week, all gathered in the commanding officer's room and discussed difficult and interesting cases. One of the difficulties in group medicine, he thought, would be the division of the fees. A special stumbling-block was the earning capacity of the surgeon. The surgeon had a considerably larger fee than the physician upon whose decision the operation depended. The pathologist's life (said Dr. Dickson in conclusion) would be rendered much more tolerable by the group system, because if he were on the spot and in intimate touch with his colleagues he could prevent errors in collecting specimens which at present made useless half the specimens sent to him by practitioners not specially instructed in the art of obtaining them.

Sir THOMAS HORDER, who had opened the discussion on the previous occasion, confined himself in his reply to rebutting the criticisms of Dr. Hawthorne. Dr. Hawthorne had complained of lack of detail and definition. But the scheme for group clinics was not intended to be precise, and if an attempt at precision had been made would not they who had advocated the scheme have suffered even worse things at Dr. Hawthorne's hands? Dr. Hawthorne's distinction between practice and research was a fallacy. Was it not the modern tendency to combine rather than to divorce practice and research? Was not the magnificent work of the Medical Research Council due entirely to the practice afforded by the war? So far from having been made enthusiastic for group medicine by what he had seen in the States, his ardour was rather damped there, for the clinics in the States were so huge, and (always excepting the brothers Mayo personally) they were not run with that philanthropic spirit and that freedom from financial interest which some of those on this side who favoured the American plan were inclined to assume. If the group system of investigation and treatment became a reality, he for one was not at all sure that he would not regret it quite as much as Dr. Hawthorne. It would be with sorrow that he gave up individual practice and sunk his individuality into the group; but that did not prevent him from investigating the subject, nor from arriving at the conclusion that the modern demands of medicine and of the health of the community made it desirable that group medicine should be encouraged.

Sir THOMAS HORDER then moved a resolution, which was seconded by Dr. DRURY PENNINGTON, as follows:

> That in the opinion of this meeting the time is ripe for the formation of group clinics in this country, and that sympathetic encouragement should be given to them by the profession and by its governing bodies.

Sir THOMAS HORDER, in reply to the PRESIDENT, said that there was no ulterior motive whatever behind this resolution.

The PRESIDENT said, in answer to a question, that it must be understood that the resolution was not that of the Royal Society of Medicine, but only the resolution of the Fellows present on that occasion.

Dr. HAWTHORNE moved, and Dr. M. I. FINUCANE seconded, an amendment:

> That until a precise definition and details are submitted this meeting prefers to abstain from pronouncing an opinion on any suggested modification of the existing methods of medical practice.

The amendment was lost, and Sir Thomas Horder's resolution was carried by 16 votes to 6.

RESEARCH DEFENCE SOCIETY.

THE annual general meeting of the Research Defence Society was held at the house of the Medical Society of London on June 29th, Lord LAMINGTON, President, in the chair.

The PRESIDENT expressed the regret of all members of the society that, owing to ill health, Mr. Stephen Paget had resigned the honorary secretaryship; he had consented to act as vice-chairman of the committee, and would be succeeded as honorary secretary by Dr. Daniel T. Harris. The society still had to encounter opposition, but an increasingly large body of people realized that the infliction of cruelty was the very last thing which the society wished to defend. It was essential that the society should be as strong as possible, to withstand any sudden wave of sentimental feeling, based not on logic, but on emotion. On the motion of Viscount KNUTSFORD, the annual report was adopted. This showed that a large amount of valuable literature had been circulated during the year, and many lantern lectures and addresses delivered. It was agreed that the subscription for members should be raised from 5s. to 10s.

THE NATIONAL INSTITUTE FOR MEDICAL RESEARCH.

Dr. H. H. DALE, F.R.S., then gave an address on the National Institute for Medical Research, which comprises the Central Research Laboratories under the Medical Research Council. He reminded the meeting that the Medical Research Fund, which the Council administered, was originally established by the National Insurance Act, and the sum of money annually available was assessed according to the number of insured persons. While the major part of the Fund was employed for supporting

medical research in existing hospital and university laboratories, the Committee which was first appointed to administer the Fund decided that a substantial sum should be devoted to the formation of a new central institute, staffed by workers who should be in the Committee's whole-time service, but free to receive other workers. The building and grounds at Hampstead, which had been the Mount Vernon Hospital for the treatment of consumption, were purchased, and the first members of the Institute staff were appointed in the middle of 1914. During the war the building became a military hospital, and it was not until April, 1920, that the members of the staff could begin work at the Institute. Meanwhile, with the absorption of the Health Insurance Commissions into the Ministry of Health, the Medical Research Committee was succeeded by the Medical Research Council, which administered a Treasury grant, and was responsible to a Committee of the Privy Council. The Institute, therefore, had only been in existence as a working institution for a little over a year. Much of the time had necessarily been spent in planning and preparation, and the story he had to tell was one rather of hope than of finished achievement.

Investigations on Antitoxic Serums.

The staff of the Institute was organized in four main departments, each with its director. These were the departments of Bacteriology and Experimental Pathology, of Applied Physiology and Hygiene, of Biochemistry and Pharmacology, and of Medical Statistics. Many of the workers in the departments, when they began their labours at the Institute, were still engaged in problems arising out of their war work. Under the stress of war conditions detailed investigation along established lines was largely thrown aside, but peace brought the opportunity for more thorough exploration along routes which a hasty war-time survey had marked out. To give one example, the shortage of the common constituents of bacteriological media led Captain S. R. Douglas, now in charge of the Bacteriological Department of the Institute, to devise, early in the war, a simple method of making such media by pancreatic digestion of meat or other protein materials; the method had become established as a valuable aid to all kinds of bacteriological work. The necessity for making bacterial vaccines in large quantities led Captain Douglas to investigate the value for this purpose of bacteria killed, dehydrated, and freed from their oily constituents by extraction with pure acetone; here again he found a method of wide application and usefulness. Possibly a combination of the two kinds of experience led him next to try the effect of the pancreatic ferments on the acetone-extracted bacteria. The result was already full of promise, giving, perhaps, the long-sought method for extracting from many bacteria the poisonous substances which they liberated when they underwent digestion by the ferments of the blood and tissues, and which were responsible for the symptoms constituting disease. Captain Douglas's work, growing out from his experience during the war, and projected into the conditions of peace, gave hope of a real step forward in the direction of obtaining serums of higher and of definitely measurable value.

Silica and the Germination of Tetanus Spores.

During the war no sufficient explanation seemed to be available of certain facts concerning the growth of the tetanus bacillus and the production of its toxin in the body, for while a suspension of washed tetanus bacilli or their spores could be injected without harm, if soil was introduced with them they would germinate and produce the toxin. Dr. W. E. Gye, who, with Dr. Cramer, was engaged in investigating the subject, found that two common constituents of the soil—calcium chloride and hydrated soluble silica—had the property, when either of them was injected with tetanus spores under the skin of a mouse, of providing the necessary condition for the germination of the spores and the production of the disease. This investigation directed attention anew to another condition with which the presence of silica had long been associated. The fact that working in air impregnated with siliceous dust led to injury to the lungs and predisposed to pulmonary tuberculosis was already known, but a clear understanding of why the presence of silica in the lungs should lead to fibrosis and predispose to tuberculosis was not forthcoming. Dr. Gye and Dr. Kettle had been able to show that the tubercle bacillus, which normally in the tissues of the mouse caused at most a localized nodule of infection, when injected with silicic acid caused a rapidly spreading infection in the tissues which the silica had injured. This opened the possibility of a new light on the problem of the phthisis of tin-miners, gold-miners, knife-grinders, ganister workers, brickmakers, and others.

Disseminated Sclerosis.

Another example of work which, in Dr. Gye's hands, was giving great promise, was the investigation of disseminated sclerosis, which had been supposed to be a derangement of the central nervous system due to an inherent defect. Dr. Gye's evidence was that it was due to a definite infection, since the affected nervous matter or the cerebro-spinal fluid from a patient when injected into rabbits could transmit the disease and evoke the characteristic lesions of the nervous system. He would be a rash man who would prophesy with confidence, but at least there was a line of investigation to pursue, for here was an infection with an organism to be discovered, its channel of entry to be identified, its means of access to be removed, and the methods for its elimination to be explored.

Other Work.

Dr. Dale touched briefly on other work proceeding at the institute. Professor Leonard Hill was at work on the conditions of ventilation and surface cooling (which at the moment did not need experiments on animals). Dr. Brownlee, in the statistical department, took his material chiefly from the large-scale experiments which our ignorance allowed nature still to make on our fellow men. Mr. Barnard was investigating the minute structure of micro-organisms by means of the most recent developments of microscopic and photographic technique. Mr. Dobell had made a critical survey of the protozoological examinations made on excreta, which had revealed the unexpected presence of the amœba of tropical dysentery in a material percentage of healthy Englishmen. While none of these lines of investigation involved experiments on animals, their value and significance depended on knowledge which could not have been attained without such experiment. Dr. Colebrook had been working on actinomycosis, others of the staff on shock in wounded men and the significance of the capillary circulation in connexion therewith, and others again on anaphylaxis. A very important task was the control of the activity and toxicity of some of the modern potent remedies, such as salvarsan and its analogues, which could not by any known chemical test be guaranteed as invariably safe for use in human therapeutics. He need not tell his audience that such remedies were discovered by experiment on animals, but he was not sure whether it was generally realized that there was a large and growing class of them which could not be used at all with any confidence in their efficacy or safety if their quality were not subjected regularly and systematically to the test of experiment on animals. It was hardly creditable to this country that we had hitherto possessed no publicly recognized organization for the control of such remedies, but to the limited extent to which the present state of the law and the willing co-operation of British manufacturers made it possible, such control was already being exercised by a department of the National Institute. The Institute always welcomed genuine and well-informed criticism, but its staff would be false to their trust if they spent the time which the Government paid them to give to research, in controversy with ignorance which no truth would convince.

A vote of thanks to Dr. Dale was heartily accorded on the proposition of Sir LEONARD ROGERS, seconded by Professor W. M. BAYLISS, and supported by Lord KNUTSFORD.

AT the recent half-yearly examinations held by the Sanitary Inspectors' Examination Board 35 candidates were approved and have been certified as qualified to discharge the duties of sanitary inspectors. Of the successful candidates 3 received instruction at the Royal Sanitary Institute, 3 at the National Health Society, 4 at King's College for Women, 21 at the Battersea Polytechnic, and one at the Hackney Institute; the 3 remaining candidates were in office.

COMPLIMENTARY DINNER TO DR. ADDISON.

DR. ADDISON was entertained at dinner on June 29th by a large number of ministerial and parliamentary colleagues, secretaries of departments of which he has been the head, members of the medical and pharmaceutical professions, persons engaged in national insurance organization, and many personal friends. Lord CARSON presided over a company which numbered about 160, and included Lord Milner and Lord Illingworth and about twenty-four members of Parliament. The medical men present were: Dr. G. C. Anderson, Dr. R. A. Bolam, Sir Anthony Bowlby, Dr. H. B. Brackenbury, Dr. Alfred Cox, Mr. E. D. D. Davis, Captain W. E. Elliot, M.P., Dr. A. C. Farquharson, M.P., Dr. M. I. Finucane, Dr. C. E. S. Flemming, Lieut.-Colonel F. E. Fremantle, M.P., Dr. M. H. Gordon, Mr. Bishop Harman, Dr. Alexander Macphail, Dr. E. S. Pasmore, Lieut.-Colonel Nathan Raw, M.P., Dr. J. J. A. Sherry, Dr. T. W. Shore, Professor Arthur Thomson, Dr. Edward Whelpton, and Colonel A. S. Woodwark.

Lord CARSON, in proposing the health of the guest, said that for many years Dr. Addison and he had scowled at each other across the floor of the House of Commons. But those scowls quickly disappeared under the test of war and in the mutual affection for the country which was manifested in her time of peril. That banquet had no political complexion; they knew nothing about those political crises which arose or were manufactured on occasion with regard to individuals, and had nothing to answer to headlines in the newspapers. But they were desirous of showing that through good report and ill Dr. Addison had many staunch friends left. (Applause.) They were present to bear testimony to the honest and zealous work which he had done in the interests of the community at large. Dr. Addison had held many offices, always with distinction to himself and benefit to the public. Lord Carson referred in particular to his energy and resourcefulness as Minister of Munitions in 1916, when he presided over the largest of all the war organizations. Afterwards he became the successful founder of the Ministry of Health. Health was not a subject which drew an enthusiastic assembly in the House of Commons, but that did not make it less important. Looking back on the political and party contests of his public life, he felt that they had had more excitement and interest over questions which ultimately meant nothing than over those radical changes which went to the roots of the happiness of the people. When the bill setting up a Ministry of Health was brought in he noticed that Ireland was left out, and he went to their guest and pointed out this omission, whereupon Dr. Addison adapted the bill so as to lay the foundations of a Ministry of Health in Ireland. Happily, said Lord Carson in conclusion, they were not writing Dr. Addison's obituary, and he for one looked forward with much interest to his future career.

The toast, which was given musical honours, was supported by Sir HENRY BIRCHENOUGH, K.C.M.G., who served under Dr. Addison at the Ministry of Reconstruction during the greater part of his occupancy of that office, where he found him "as ready to listen as to direct"; Dr. R. A. BOLAM, Chairman of Council of the British Medical Association; Sir THOMAS NEILL, Chairman of the Consultative Council of Approved Insurance Societies, and Sir ERNEST MOIR, who spoke from intimate acquaintance with Dr. Addison's work at the Ministry of Munitions.

Dr. BOLAM said that he had the privilege of speaking on behalf not only of his own but of the allied professions. He valued the opportunity of paying a tribute to Dr. Addison's work and worth. Members of the medical profession remembered that he had left a brilliant career as anatomist and teacher in order to enter the councils of the nation. At that very moment his old school (St. Bartholomew's) was wanting an anatomist, but it was too much to expect, he supposed, that after his experience of the larger service of the community he would care to go back to the narrower field. As a private member of the House of Commons from 1910 to 1914 Dr. Addison was always accessible, and always ready to give good advice, and if they did not follow his advice they found generally that his forecast of the feeling of Parliament was justified by the event. No one had the pulse of the assembly more surely under his finger. During his brief tenure of office as Parliamentary Secretary to the Board of Education, they approached him often on the subject of the school medical service, and found his ideals high and his policy in accord with their own. Subsequently, there came a very crucial time for the medical and allied professions in connexion with the National Insurance Act. It was a very important thing that this country should have a medical service cheerfully given and commanding the bulk of the profession, one which also should commend itself to the other professions involved, and they found in all their communications very valuable advice from Dr. Addison, who spared no effort in pursuit of a policy which he was convinced was sound and for the good of the nation. When he disagreed with them his criticism was candid and straightforward. The crown of Dr. Addison's achievements, however, was his creation, while Minister in Charge of Reconstruction, of the Ministry of Health. In raising that edifice he had done work which would abide for many generations. The Ministry of Health was the logical foundation of the whole health structure of the nation. It was earnestly to be hoped that no hasty legislation in these difficult times would undo what had already been accomplished, or in any way reduce the importance of the Ministry or impair its efficiency. Seven years ago Dr. Addison had said that the road of political life was uneven and sometimes hard, but that for medical men, at any rate, political life offered unusual opportunities for helpful service. It said much for Dr. Addison that, knowing as he did the difficulties and dangers of this new venture, along a path which had not been thoroughly surveyed, he should have had the courage to take up the work of first Minister of Health. In conclusion, Dr. Bolam said that the feeling of that gathering would be the feeling of generations to come, and that a calm judgement of the work of Dr. Addison would proclaim that he had added to the lustre of our national life, and had done great work for his country.

Dr. ADDISON spoke feelingly and briefly in response. He said that his friends had set him a hard task, but then, they were his friends, and they would not expect him to do more than give a very imperfect expression of his gratitude. There could be no better reward for a public man than that friends with whom he had worked in the close association of official life should come together to do him honour. He himself had been greatly helped during his occupancy of ministerial office by the knowledge and experience of many at those tables, and not their knowledge and experience only but their steadfastness and courage. However bewildering and difficult the times might have been, the British quality of resolution was always to be depended on, and comfort might be drawn from the reflection that beneath all the froth and fume of passing events this fixed quality would be a sure support in the future. This country was happy in its wealth of men who gave themselves freely to public service. Novel and difficult as were the tasks thrust upon the Ministry of Munitions it was always possible to find somebody who knew what should be done and was ready to do it. His friend Dr. Bolam had reminded him that the same was true in medicine and the allied professions. Frank as had been their conversations with one another, there had never been lacking a willing co-operation both in medicine and pharmacy. The same was true of the approved societies, to the leadership of which he would like to pay a tribute. One other group of his fellow workers to whom he wished to refer were the civil servants. Whether a Ministry had to deal with hogs' bristles or the financing of some contracts in a city across the seas, whether it had to deal with textile imports or infant welfare centres, it was always able to lay its hand upon some man in the Civil Service who would undertake the job. The versatility and ability of the Civil Service was not always appreciated. Unlike their political chiefs, our civil servants had not the embarrassment of publicity. Their willing co-operation was one of the brightest features of our public life. For his own part, he had had great joy in the work itself and the associations which the work had formed; the years had flown by, for the work was of such absorbing interest. That evening they had given him reward and encouragement far beyond what the average servant of the public had any title to expect, and their kindness would be to him a precious recollection. (Loud applause.)

The only subsequent toast was the health of the Chairman, proposed by Viscount MILNER.

British Medical Journal.

SATURDAY, JULY 9TH, 1921.

MUCOUS COLITIS.

WITH all the advance of medical science the ancient importance of the alimentary canal remains undiminished and continues to receive quite its fair share of research and speculative discussion. This field, originally the freehold of the physician, has been cut into by the surgeon and much investigated by the laboratory worker; many of its problems, however, still await complete solution. Lord Dawson of Penn has therefore done well to take the opportunity of the Annual Oration before the Medical Society of London of reviewing (p. 31) our practical knowledge on this difficult and far-reaching subject, upon which he speaks with the advantage of a ripe clinical experience that enables him to apply the new knowledge to the needs of the bedside.

The form of colitis considered is that commonly known as mucous colitis, due primarily to disordered function and not to inflammation, though infection may supervene. In order to avoid the implication of inflammation conveyed by the termination *-itis*, von Noorden and others twenty years ago preferred the name mucous colic. It is indeed now generally forgotten that the termination *-itis* has only secondarily acquired its present universally accepted significance. More than thirty years ago the late Dr. Thomas Buzzard, in the course of a discussion on the pathology of chronic alcoholism,[1] related the history of the termination *-itis*, which had not appeared to him applicable to conditions such as a simple degenerative neuritis; after some inquiry he found that *-itis* is a Greek feminine adjectival termination agreeing with *νόσος* (disease) understood, so that neuritis really is the short for *ἡ νευρῖτις νόσος*, the disease of the nerves. No doubt as most striking diseases were, or were thought to be, inflammatory, this secondary connotation became general; thus pleurisy was originally the disease of the pleura, as indeed is shown in Liddell and Scott's Lexicon (1883), but melaena (the black disease) with a different feminine termination did not lose its original significance. Therefore, from a strict etymological point of view, "colitis," meaning thereby colonic disease, might be applied to non-inflammatory disease of the colon.

In a paper read before the Royal College of Physicians as long ago as 1818 Richard Powell described cases of what is now known as mucous colitis, but the disease attracted little attention until the end of the last century; since then it has become much more frequent, or is at least more frequently recognized, so that we may agree with Lord Dawson in terming it a product of modern life. He pointed out that it is commonly accompanied by symptoms referable to other parts of the alimentary canal, and may be either the first or the final expression of an attack involving the whole of the gastro-intestinal tract; thus gastric dyspepsia due to the colon, just like appendix or gall-bladder dyspepsia, illustrates the close correlation of the various parts of this system. An interesting though brief reference is made to the part played in gastro-intestinal disorders by a deficiency of vitamins; this subject was fully dealt with in an illustrated article in our columns a year ago (1920, vol. i, June 19th, pp. 822–826) by Lieutenant-Colonel R. McCarrison, who described gastric dilatation, pancreatic insufficiency, coeliac disease, and gastro-intestinal stasis and toxaemia as probably connected in their origin or in their continuance with dietetic deficiency and lack of balance of the food. In monkeys colitis could be produced with great regularity by a deficient diet and removed by a diet perfectly proportioned and containing an adequate supply of vitamins, while microscopically the intestinal walls of such monkeys fed on devitaminized food showed muscular atrophy and degeneration of the nerve cells in Auerbach's plexus. These results would therefore seem to warrant a much freer use of fruit and vegetables in mucous colitis than in practice has been thought advisable, and also the propriety of giving the eggs raw.

In the discussion of the difficult subject of intestinal stasis and toxaemia, so familiar from Sir Arbuthnot Lane's work, Lord Dawson insisted on the important detoxicating function of the liver, and made reference to the observations of Widal and his coworkers on the "haemoclasic crisis" or the changes—leucopenia, fall of blood pressure, and loss of coagulation—which precede the manifestations of protein shock; normally the liver prevents protein products having this effect from entering the general circulation, and therefore no haemoclasic crisis follows digestion; but with hepatic insufficiency these changes occur, and in this connexion it may be mentioned that Widal, Abrami, and Iancovesco[2] have adopted as a test for the functional activity of the liver an examination for the haemoclasic crisis after drinking a tumbler of milk. Lord Dawson compares the condition popularly known as "chill on the liver" to anaphylactic shock, points out the resemblances between asthma and colitis, and suggests that some attacks of colitis without obvious cause may be anaphylactic in origin.

The reader of the Oration will turn with special interest to the subject of the treatment of mucous colitis, and more particularly to the judgements passed on the vexed question of operation. It is pointed out that, as the appendix is rarely the primary focus and when inflamed becomes so concomitantly with the colon, its removal seldom benefits patients with mucous colitis. Further, a wise caution is thrown out as to the significance of anatomical abnormalities revealed by *x*-ray photographs; various displacements of the intestines may exist without any symptoms because the really important factor is the muscular efficiency of the bowel, and hence ingenious operations for various ptoses may prove disappointing when the essential defect is muscular failure and not the obvious visceral displacement. The experience of complete colectomy was regarded by the orator as disappointing, though exceptional successes are admitted; a less gloomy view was taken of partial colectomy, for the operative risk is small and there is little danger that the patient's condition will thereby be made worse; but Lord Dawson is far from showing any enthusiasm, and indeed puts in a plea for colotomy as likely to be more efficient in the cases in which the distal colon shows muscular insufficiency.

[1] T. Buzzard: *Trans. Path. Soc.*, London, 1889, xl, 347.

FRENCH WATERING PLACES.

FRANCE is well endowed with mineral water and climatic resorts, and though we cannot go so far as M. Meillère, who, in an address delivered during the celebration of the centenary of the Académie de

[2] Widal, Abrami, et Iancovesco: *Presse méd.*, Paris, 1920, p. 893.

Médecine, declared them to be "jewels beyond compare, forming the most beautiful ornaments of which a country could dream,"[1] we may agree that their merits and attractions are many and various. Though Vichy, perhaps the most celebrated, boasts itself to be at the geographical centre of France, they are for the most part to be found among the hills and mountains of the southern and eastern border lands, in the Pyrenees, Savoy, and the Vosges. The majority, therefore, are in situations where the scenery is such as modern taste finds agreeable, and where there exist bracing climatic resorts suitable for an after-cure.

Many of them were used when Rome held sway in Gaul, and the sick, wounded, and convalescent sent to Aix-les-Bains and Vichy during the last few years were preceded by Roman legionaries who went to the same places to recover from the wounds or recuperate from the fatigues of warlike operations in districts not far removed from the areas fought over during the recent war. The Romans chose so well that nearly all the resorts now frequented were known to them. Not that they have been continuously in use; like much else of the apparatus of civilization, they fell out of use. Charlemagne revived Aix-la-Chapelle, which was within his Gaulish Empire. He also, M. Meillère slyly observes, brought the grape from the Abbey of St. Joseph, near Orleans, to the valley of the Rhine; but if the bane survived the antidote did not, and courts and schools forgot all about spas. Still, a hot or heavily mineralized spring is a natural phenomenon sufficiently striking to continue to attract local attention, and the return of somewhat more settled conditions and improved means of communication made it worth while for Henry IV in 1603 to appoint directors of the "waters, baths, and mineral springs of the kingdom," with the senior physician to the King as director-general. Though under Louis XIV it began to become fashionable to take the waters, arrangements for visitors remained primitive; when in 1675 Madame de Maintenon took the Duc de Maine, the 5-year-old son of the King, to the sulphur waters of Barèges, she had to be content, in the best house in the place, the only one with a tiled roof, with one room for herself and charge, furnished with a bed, a cot, a table, a wardrobe, and one chair.

At first there was little or no selection of cases sent to any particular mineral spring, but attempts at analysis were made before the end of the seventeenth century, and early in the reign of Louis XV his senior physician, Sénac, succeeded in obtaining the appointment at each place of a physician to supervise "the correct administration of the waters and the comfort of patients." When Sénac died, in 1772, the King appointed a commission to control the mineral springs of the kingdom and to collect information about them; it was instructed also to examine secret remedies. During the Revolution considerable attention was given to the matter; steps were taken to improve the equipment of the springs and to secure more effective inspection, arrangements were made to enable indigent persons to take advantage of them, and hospitals were established at twelve springs for the benefit of sick or wounded officers and soldiers.

The supervision of medicinal springs and climatic health resorts was handed over to the Académie de Médecine on its foundation in 1820. The Académie at once appointed a permanent mineral water committee and established a chemical laboratory, which has been at work ever since under a succession of distinguished directors. The Académie des Sciences had directed analyses to be made as early as 1670, but the chemical methods available were then very imperfect, and, although a great amount of interest was shown in the matter, it was only very gradually that chemists succeeded in improving them. Since 1892 a bacteriological as well as a chemical examination has been made, and the reports presented to the Académie de Médecine relate also to the constancy of composition, temperature, and yield, and to the method of collection. The Académie has also arranged that its authorization shall be valid for thirty years only, and that at the end of that period a fresh examination shall be made. Experience shows that the composition of mineral waters and the temperature of thermal waters are remarkably constant and that the yield varies very little. It is of course not possible to say that the salts in the water of the springs used remain the same, but it is at least significant that the most famous Roman thermal springs in Western Europe, from Bath to Aix-les-Bains, are famous still. No entirely satisfactory explanation of the constancy actually observed during the last century or so has been advanced. Eminent geologists from Elie de Beaumont to Suess have been disposed to regard the hot wells as, so to say, minor volcanic phenomena, but Amand Gautier, who reviewed the subject fully in 1906, while leaning to this view, had to admit that the mystery remains in spite of all that in recent times has been done about the gases of springs.

In giving permission for the exploitation of French mineral waters or the importation of foreign, the Académie is guided by the reports received from its permanent mineral waters committee, and has recently given much more attention to the general sanitation of the town in the case both of baths and climatic resorts. Special measures have been taken at the leading health resorts, and the bath arrangements at such places as Vichy, Aix-les-Bains, Brides-Salins, and Contrexéville are of the most complete modern type; at most of the smaller places, including the Pyrenean resorts, all necessities and most luxuries are provided. In this country there has been no attempt to institute central control of mineral water stations; it is not needed, for health resorts of all kinds have had their full share in the general improvement in urban sanitation, and the provision of bathing facilities has properly been left to local initiative, with the result that in these respects the larger British health resorts included within the Federation of British Spas are in no way inferior to the corresponding resorts in France or Germany.

In France the Académie is bringing pressure to bear on places ambitious to obtain its recognition; it has recently seen fit to refuse it to a good many applicants, pointing out that a place that seeks to attract invalids in search of health should be careful to see to its general sanitation, and be able to show a low death rate from communicable diseases.

[1] *Bull. de l'Acad. de Méd.*, lxxxiv., p. 502.

SECTIONS IN 1893 AND 1921.

THE annual meeting of the British Medical Association was last held in Newcastle-on-Tyne in 1893. It had met there once before, in 1870, when Dr. Edward Charlton was President. In 1893 the late Sir George Philipson, Professor of Medicine in the University of Durham, and Senior Physician to the Newcastle Royal Infirmary, was President, and the Address in Medicine was delivered by Dr. David Drummond, who will preside over the meeting this year. The Address in Surgery was delivered by Mr. G. H. Hume, Surgeon to the Newcastle Royal Infirmary, and that in Obstetrics and Gynaecology by Dr. C. J. Cullingworth, obstetric physician to St. Thomas's Hospital. Mr. (afterwards Sir) Henry Butlin, Surgeon to

St. Bartholomew's Hospital, was treasurer of the Association. Dr. Withers Moore of Brighton, who had been Chairman of the Council for the preceding three years, was at this meeting succeeded by Dr. Ward Cousins, who afterwards, when the Association met in Portsmouth (1899) became its President. This year there are seventeen sections; in 1893 there were eleven, but then all eleven met on three mornings, whereas this year six sections meet on two mornings only and six on one morning only. So that the number of sessions this year will be thirty-three, exactly the same as in 1893. It may be of some interest to look back to the subjects selected for discussion in the sections in 1893. In Medicine they were glycosuria in middle life, introduced by Sir Dyce Duckworth; atrophic paralysis, introduced by Dr. (now Sir) David Ferrier; and concussion of the spine, raised by Dr. Byrom Bramwell, of Edinburgh. This year the subjects are visceral syphilis, introduced by Sir Clifford Allbutt; asthma and allied disorders, by Sir Humphry Rolleston; and lethargic encephalitis, by Dr. Edwin Bramwell. In Surgery the subjects in 1893 were: the radical cure of hernia, introduced by Dr. Halstead, then surgeon to the Johns Hopkins Hospital, Baltimore; the surgical treatment of cerebral tumours, introduced by Professor (afterwards Sir) Victor Horsley; and the treatment of intestinal obstruction, a subject brought forward by Mr. Frederick Page, Mr. (afterwards Sir) Jonathan Hutchinson, Mr. Jordan Lloyd, Mr. (now Sir) A. W. Mayo Robson, and Mr. (now Sir) Gilbert Barling. This year the subjects are: acute pleural empyema, introduced by Mr. Henry Wade, of Edinburgh; compound fracture of the thigh and leg; and, curiously enough, the diagnosis and treatment of injuries of the intestines, a subject not very far removed from that discussed on the third day in 1893. In that year there were in the Section of Obstetric Medicine and Gynaecology discussions on that still much discussed subject, puerperal septicaemia, and on the conservative treatment of the diseases of the uterine appendages. This year the subjects are Caesarean section and the neurasthenic element in midwifery and gynaecology the latter introduced by an obstetrician, Professor Donald of Manchester, and a neurologist, Dr. Farquhar Buzzard of London. The Section of Diseases of Children, which met in 1893 under the chairmanship of Dr. (now Sir) Thomas Barlow, discussed abdominal tuberculosis in childhood, heart disease in childhood, and the treatment of enlarged cervical glands, a subject introduced by Dr. (now Sir) Clifford Allbutt and Mr. Pridgin Teale. This year tuberculosis again appears in the programme of the Section of Orthopaedics and Diseases of Children, for there is to be a discussion on the general principles of its treatment; other subjects for debate are the diagnosis and treatment of anterior poliomyelitis and blood diseases in childhood. In 1893 the Section of Ophthalmology held a discussion, opened by the late Dr. Buzzard, on optic atrophy as a symptom of chronic disease of the central nervous system; this year there will be discussions on the causes and prevention of blindness, to be introduced by Mr. Bishop Harman, and the treatment of corneal ulcers, to be introduced by Mr. J. V. Paterson. In the Section of Otology the subjects discussed in 1893 were the surgical treatment of mastoid disease and its complications, and the pathogenic organisms of the nasopharynx and ear, the latter discussion being opened by Dr. Macintyre of Glasgow. This year, in the Section of Oto-Rhino-Laryngology, Sir Charles Ballance will open a debate on the problems in connexion with the early diagnosis and treatment of meningitis occurring in aural cases, a subject nearly related to that discussed in 1893; there will be a discussion also on the various problems presented by haemorrhage occurring in connexion with operations on the tonsils. In 1893, in the Section of Dermatology, there were discussions on ringworm, opened by Dr. Colcott Fox; on psoriasis, introduced by Dr. Radcliffe Crocker; and on lupus, introduced by Mr. Jonathan Hutchinson. This year Dr. H. W. Barber will open a discussion on cutaneous sensitization and focal sepsis in the etiology of certain skin affections, Dr. G. H. Lancashire will raise the question of the association of skin tuberculosis with visceral and other tuberculous manifestations, and Dr. Henry MacCormac will open a debate on dermatological cases attending the Pensions Boards.

THE NEWCASTLE MEETING.

THE general arrangements for the meeting are now complete, and it is hoped that the promised restoration of normal railway services will encourage many members who may have been hesitating to make up their minds to attend. The hosts in Newcastle assure them of a hearty welcome. It has been possible to make use for purposes of the meeting of a series of buildings conveniently close together. The Annual Representative Meeting and the Annual General Meeting will be held in the King's Hall of Armstrong College, where also the President, Dr. Drummond, will give his Address. Most of the Sections, too, will meet in the College. The Grand Assembly Rooms, which are next door, will be converted into a medical club during the meeting, and there members will find sitting, reading, and conversation rooms, and a dining room where breakfast, lunch, tea, and dinner will be served. Within five minutes' walk is St. George's Hall, where the Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., will be held, and on the opposite side of the road is the College of Medicine, where the Sections of Pathology and Bacteriology and of Physiology, Pharmacology, Therapeutics, and Dietetics will meet, and the Pathological Museum will be displayed. It was mentioned last week that Professor Matthew J. Stewart, of Leeds, had taken the place as President of the Section of Pathology and Bacteriology of Dr. Stuart McDonald, of Newcastle, who is unable to act owing to a recent bereavement. As will be seen from the programme published in the SUPPLEMENT this week, it is proposed in this Section to hold discussions on the first day on haemochromatosis and on the streptococci; on the second day papers on the relation of carcinoma to infection and on malignant melanoma will be read; on the third day the Section will join with that of Medicine in discussions on encephalitis lethargica and on renal efficiency tests. Arrangements have been made for the exhibition of specimens illustrating the subjects for discussion. Offers of specimens and of contributions to the Pathological Museum may be addressed to Dr. A. F. Bernard Shaw, Pathological Department, College of Medicine, Newcastle-upon-Tyne, who is honorary secretary both of the Section and of the Museum. The Section of Ambulance and Red Cross when it meets on Wednesday, July 20th, will be addressed by the President, Sir James Cantlie, on the claim of first aid to be regarded as a special branch in practical surgery. He will afterwards describe the work of the *x*-ray motor ambulance wagon service in London and the surrounding counties, and suggest the extension of the system throughout Great Britain. He will also give a demonstration of Thomson's machine for armless men. Dr. Highet will show several devices of his invention, and there will be a discussion on stretcher slings. Within easy reach of Newcastle, especially to the north, there is much picturesque country and many places of historical interest. An excursion has been arranged on Saturday, July 23rd, to the Roman Wall and another to Alnwick, where is the castle of the Duke of Northumberland, one of the most successful examples of restoration in the country.

X-RAY TREATMENT OF CANCER.

IT is, we think, to be regretted that the authorities of the West London Hospital should have seen fit to give a press demonstration of the *x*-ray apparatus they recently obtained from Germany for the treatment of malignant

disease, and so made themselves responsible for the articles on a "New Treatment for Cancer" which have been appearing in the lay press. It is altogether too soon to make such statements as that "it is now clear that radiology can do far more for the cure of cancer than surgery has hitherto achieved," or that "a figure of cures as high as 80 per cent. of the cases thus treated is looked for by those who are by no means extravagantly hopeful." Yet both of these statements occur in a type-written communication which we have received from the hospital in question. As the apparatus has been installed for a time too short to allow any experience with it to be of value, these statements and such a statement as that a complete revolution in the treatment of cancer is taking place, must rest entirely on reports of results alleged to have been obtained in Germany. Essentially the success of the new departure will depend on two things—the production of *x* rays of very high penetrative power, and on the establishment of the claim that an accurately measured dose of these rays will destroy cancer cells. Radiologists have for some time past been asking for more powerful apparatus and more penetrating rays. Though they have been using the latter empirically, results have improved. The latest method must stand or fall on the facilities it affords for accurate measurement of the dose. Well-known radiologists both in France and in America would agree that the methods for the application of *x* rays have been improved, but to say this is very far from asserting that surgery is to be displaced, and that all cases of malignant disease are to be treated by *x* rays. The most recent statistics we have seen are those supplied by Wintz of Erlangen to Collin, and quoted by him at the meeting of the German Röntgen Society last April. Wintz claims that the results have grown better year by year as the technique has improved. Of the patients suffering from cancer of the uterus treated by the intensive *x*-ray method, 50 per cent. were, Wintz states, clinically free from relapse and fit for work after five years. Among those who had been under observation for four and three years respectively, the percentages of apparent recovery were 60 and 75. Of the cases of inoperable cancer of the uterus submitted to treatment, 17 per cent. were, after five years, clinically free from relapse and fit for work. With regard to the results in cancer of the breast he was more guarded observing that the slowness of the course of the disease in many cases rendered it difficult to determine the value of any treatment. He, however, gave some particulars of 35 cases of cancer of the breast, stating that of those which had been under observation for four years 75 per cent. remained free from the disease, and of those observed for three years 85 per cent. Collin evidently regards these statistics with some suspicion, pointing out that the effects produced by the new apparatus devised by physicists have not yet been adequately controlled by medical experts. He made the significant suggestion that such control could best be exercised away from factories and business centres, and hinted that it would be well to await the findings of a commission which had been appointed to inquire into the debit side as revealed by the failures and disasters traceable to *x*-ray treatment. We agree that the method ought to have a trial in this country; it is very necessary that the trial should be carried out in a scientific spirit. The Manchester Royal Infirmary, acting in conjunction with the University, has taken steps in the right direction by appointing a research scholar and sending him to Erlangen and other German centres as a preliminary to his beginning research work in Manchester under the direction of Drs. Barclay and Burrows and Professor Bragg. Meantime the profession will be well advised to reserve judgement and to use its influence to deter the public from jumping to the conclusion that the problem of the treatment of malignant disease has been solved.

THE LISTER INSTITUTE.

THE annual report of the Lister Institute gives a general view of its manifold activities. A great deal of attention has been given to the investigation of the physiology and pathology of the accessory food factors; thus, in the Department of Experimental Pathology, of which the Director of the Institute, Professor C. J. Martin, F.R.S., is the chief, Miss Hume has made experiments on the antiscorbutic value of sweetened condensed milk. A well known brand examined, which was found to retain its antiscorbutic properties unimpaired, is made by boiling *in vacuo;* in this way the destructive effect of oxygen at a high temperature upon this sensitive vitamin is avoided. Other experiments made in this department were those of Professor Korenchevsky and Miss Tozer on rickets. The former confirmed McCollum's observation that rickets is produced most readily in rats by deprivation of the fat-soluble vitamin A and reduction of calcium in the diet. Korenchevsky has also examined the histology of the glands of internal secretion in rickety monkeys, as well as the effects of various deficiencies in the diet upon the growth of the animals and the structure and calcium content of their bones. In the Department of Biochemistry, of which Professor Harden, F.R.S., is the head, he and Dr. Zilva have continued their investigation on the influence of a diet free from the fat-soluble factor, and Zilva and Miura have evolved a method by which quantitative comparison can be made of the amount of vitamin in various materials, or in the same material after various modes of treatment. As the result of the inquiries of Drummond and Zilva on the destructive influence of oxidation on the fat-soluble vitamin, to which we have at various times made reference, a scheme was prepared for an investigation of the methods employed in the preparation and purification of animal oil. With the help of a grant from the Medical Research Council various oil mills and large factories in England were visited, and a visit is being paid this summer to northern Norway to study the production of cod-liver oil. By continuing his work on the extraction of the fat-soluble vitamin from vegetables Zilva has devised a method of obtaining from carrots an extract potent in very small quantities. He has also investigated the effects of ozone on the antiscorbutic and antineuritic factor, and has ascertained that while the former is very sensitive to ozone, the latter is much more resistant. He has ascertained that the antiscorbutic factor is unstable in the presence of atmospheric oxygen, and experiments are being made to ascertain the effect of heat under aerobic and anaerobic conditions, the results already obtained pointing to the conclusion that the effects attributed to heat must be reconsidered with due regard to the degree of aeration during the process. From certain experiments he has made Professor Harden has established the important conclusion that the water-soluble antiscorbutic factor can be synthetized by yeast organisms. The mission sent to Vienna by the Committee on Accessory Food Factors appointed jointly by the Lister Institute and the Medical Research Council continued its work during the year, and we have from time to time been able to publish some of its results. The observations which are being made upon a large number of children will, it is anticipated, throw much light on the problem of nutrition in infancy and early childhood. In the Department of Bacteriology Dr. Ledingham has resumed his investigation on purpura in collaboration with Dr. Woodcock. It has been demonstrated that in mammals the inoculation of the corresponding antiblood plate serum has the property of producing an outburst of purpura simultaneously with a disappearance, partial or complete, of the platelets from the circulating blood. In view of certain physiological and morphological peculiarities of the blood of birds—for example, slowness of clotting and apparent absence of elements morphologically similar to

blood plates in the mammal—it was decided to inquire whether certain elements of avian blood, known for many years as thrombocytes or spindle cells, could be similarly acted upon by the corresponding antiserum with consequent production of purpura. Though the difficulty of isolating these thrombocytes from the other blood elements in sufficient concentration for immunization purposes has been much greater than in the case of mammalian blood plates, it has been possible to secure an antithrombocyte serum sufficiently potent to produce, when inoculated into the pigeon, a typical purpuric eruption with disappearance of the thrombocytes from the circulating blood. Dr. Bedson, who formerly collaborated with Dr. Ledingham in studying purpura in mammals, is engaged in working out some of the many unsolved problems in connexion with the experimental production and possible cure of the purpuric state. In the department for the preparation of antitoxic serums experiments on the refinement and concentration of antitoxin have been continued. All diphtheria and tetanus antitoxin issued is now refined and if necessary concentrated, and it is hoped still further to improve the methods used. The plan for producing reliable standard antitoxins in liquid form simply and easily, introduced some years ago by Dr. MacConkey, is being followed up, and would appear to be applicable to toxins also. The national collection of type cultures now contains over 1,000 organisms, and a selection of 500 authenticated cultures of fungi which are of importance in plant pathology and technical mycology has been made by a special committee of the Mycological Society, and will be maintained and distributed by the curator of the national collection.

THE SUSSEX HOSPITAL SCHEME IN LONDON.

IT is announced that the London Hospital, St. Thomas's Hospital, and the Royal Free Hospital have resolved to make trial of the voluntary insurance or provident scheme for hospital benefits and additional medical services known as the Sussex scheme. An organizing committee has been established at 3, Fenchurch Avenue, and the private help it has received towards the initial expenses will make it possible to bring the organization into operation at an early date without casting any charge upon the charitable funds of the assenting hospitals. The scheme was described in our columns by its initiator, Dr. Gordon Dill, on January 22nd, 1921, p. 129, and has been discussed on several occasions since, but we reproduce here, for the convenience of readers, the account of it contained in the report of Lord Cave's committee. "The scheme is confined to persons whose income does not exceed £260 per annum for a single member, £400 per annum for a man and wife without children or a widow with one child, and £500 per annum for a married couple with a family. The subscription for an unmarried person or a widow or widower without children is £1 per annum; married people without children or a widow or widower with one child pay a joint subscription of £1 10s. per annum, and married people with a child or children under 16 or a widow or widower with children under 16 pay a family subscription of £2 per annum. In the case of persons employed at works or factories, the amount is collected, as far as possible, by weekly deductions from wages. Members are entitled to free consultation and treatment at any of the co-operating hospitals, or, in the case of members unable to leave their beds, at their homes, but subject in the case of country members to payment of half the usual mileage rate from Brighton. The treatment includes ordinary dental treatment, laboratory and *x*-ray examinations, massage and electrical treatment when required. Urgent cases are admitted to hospital at once, and others in their turn, but a member has no precedence over more urgent cases. Of the proceeds of the scheme one-fortieth is reserved for the cost of laboratory work, one-fortieth for *x*-ray work, one-fortieth for secretarial work, thirty-five-fortieths are divided among the co-operating hospitals on a basis determined according to an estimate of work done, and the remaining two-fortieths are retained until the end of the year, and are then distributed among those hospitals which have had the heaviest calls made upon them. Of the sums paid to the hospitals 25 per cent. is placed in a fund which is at the disposal of their medical staff."

THE GOLD MEDAL OF THE ROYAL SOCIETY OF MEDICINE.

SOME time ago a Fellow of the Royal Society of Medicine furnished funds to enable a gold medal to be awarded triennially on St. Luke's Day for original discovery in medicine and other allied sciences, or for the practical application of the results of previous investigations of other scientists, or for the most valuable contribution in any other way towards the progress of the art and science of medicine, preventive medicine, or surgery. The donor expressed the desire that the first medal, at any rate, should be awarded for work which had been proved to be of service in the war, and a committee of selection appointed by the Society felt that Sir Almroth Wright's bacteriological researches amply fulfilled this condition. The award was accordingly made to him, and on Armistice Day, November 11th, 1920, he gave an address on medical research, a report of which was published in our columns at the time. The medal, however, was not



ready then, so that its presentation had to be deferred; it was formally presented at the annual meeting of the Society on July 6th. We reproduce photographs of the medal, which has been designed by Mr. E. Carter Preston. The obverse represents Hygeia, daughter of Aesculapius, bestowing a wreath upon Research, represented as a kneeling figure holding a lamp. The inscription round the rim is "Auspiciis Societatis Regiae Medicinae"; in exergue the legend which forms the motto of the Society, "Non est vivere sed valere vita"; in the field, "Institutae MDCCCV." The reverse represents Aesculapius being taught the art of healing by Chiron, the wise Centaur, beneath whom is the serpent of Aesculapius. In the field to the left is the bow of Apollo (father of Aesculapius) symbolizing the Sun, the deliverer from plagues. The fountain on the right suggests the Fountain of Truth, and the inscription runs, "Finis Coronat Opus."

THE Voluntary Hospitals Committee presided over by Lord Cave recommended the establishment of a Hospitals Commission for Great Britain, and advised that one of the twelve members should be nominated by the British Medical Association. The Council of the Association has nominated its chairman, Dr. R. A. Bolam, of Newcastle-upon-Tyne. The first and principal duty of the commission will be the administration of the temporary grant of a million, reduced by the Government to half a million, which the committee recommended Parliament should make. It will be empowered to recommend grants for the extension and improvement of hospital accommodation, and will be available for other functions mentioned in the report.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Maternity Convention.

THE Minister of Labour, in the House of Commons on July 1st, moved a resolution formally asking approval of the policy of the Government respecting the several conventions and recommendations of the International Labour Conference at Washington in November, 1919. The submission was made on the request of Mr. Barnes (who represented this country at the Conference), to enable a debate to take place on the two proposals carried at the Conference which were not adopted by the British Government. These were the convention for limiting labour to eight hours a day and the Maternity Convention. The whole matter was raised in a debate on May 28th, when the present further opportunity for going into it was promised. The Attorney-General then gave an opinion that unless legislation was required on the decisions of the Cabinet, the Government was not bound to submit the conventions for the consideration of Parliament; but, without prejudice to that legal view, Dr. Macnamara made his motion in courtesy to the House, the constitutional point being thus left open. The case of the Government with regard to the eight hours proposal was that it could not be adopted without upsetting the arrangement made with the railway unions. The proposals in the Maternity Convention that the State should provide for the six weeks preceding and the six weeks following confinement related only to employed women. Dr. Macnamara reminded the House that in this country a system had been developed for dealing with this question on entirely different lines, providing not only for employed women, but for the wives of employed contributors—a very much larger number. The British system was directed by the same spirit as the Washington Convention, but the latter, if adopted by us, would cut right across the arrangements we had built up. These arrangements, under the National Insurance Act and in connexion with maternity and child welfare centres, were (Dr. Macnamara said) in advance of those of any other country in the world. Was existing machinery, built up with a remarkable measure of success as the result of years of effort, to be scrapped and a start made again on new lines? The Government decided that such a change would be unjustifiable.

Mr. Barnes, in the course of a lengthy speech, said that the auditor had stated that the cost of ratifying that particular Convention would be about £1,700,000 a year. It was argued by some persons that the effect would be to attract into industry women who were not now engaged in it, and that therefore the cost might be greater. It was argued by others that employers would not engage married women if they were to be subject to the Convention. Mr. Barnes acknowledged that there was no obligation on the part of the Government to adopt this Convention, as he, the acting British representative at Washington, had not voted for it, but he added that he would have no hesitation in supporting it if it could be "fitted into our conditions."

Mr. Clynes urged that the Maternity Convention should be adopted because the primary consideration should be for employed women, and the recommendations were important for them. This provision, so many weeks before and after confinement, was not solely a question of money. It was a question also of rest and fresh air and of treatment of a kind that would tend to build up a better nation. The country could not afford to let women and children suffer by reason of a saving which might be two millions a year by not ratifying this Convention.

Viscountess Astor also supported the Convention. Under the present system in our country if the husband and wife were both insured they got £4 at the time of the confinement, but the woman drew nothing after confinement, unless after four weeks she was ill, and then she got 12s. a week. The whole point of the Convention was to protect women who, through the illness of a husband, or through the husband not getting a sufficient wage to keep the family, were forced into industry, and had to keep at work until the very last hour before confinement and had to go back after a week. The Minister should call a conference of women experts to see if there were any way in which this crying need could be covered.

Lord Robert Cecil agreed with Mr. Barnes that the Government was quite free as to the attitude it should take as to this Convention, as other nations had been warned by Mr. Barnes that this country was not prepared to accept it. Nevertheless, he should be glad if the opportunity arose for the nation to go further in that direction.

Mr. Myers said that if the parts of the country where women were most numerously employed were traced and the infantile death-rate examined the necessity for definite action would be obvious. In this country the employment of women for a month after childbirth was prohibited, but this applied only to industrial occupations. In Italy and Denmark similar conditions prevailed. In Belgium the conditions applied to all occupations in which women were engaged. In South Africa the employment of women was prohibited for four weeks before childbirth and eight weeks after. In some countries women weregiven the opportunity of having an optional resting period. At any time previous to confinement they could remain at home, and they had the right, established by law, that when they presented a medical certificate at any time after confinement they could resume their occupation, and the employer had then some measure of responsibility for giving them work again. As compared with a number of other countries, our conditions were the minimum.

Mr. Chamberlain, in replying for the Government, said that our legislation had gone further than that of any other country, with the possible exception of one of our dominions and part of another.

Dr. Macnamara's motion was carried by 164 votes to 53. As the main topic of debate was the Eight Hours Convention, it is impossible to judge the significance of the figures as touching the maternity question.

National Insurance Bill.

Committee and Third Reading.

The National Insurance Bill to provide for higher administrative expenses was taken in Grand Committee of the House of Commons on June 30th, Sir William Pearce presiding.

On Clause 1 (Amendment of Financial Provisions) Lieut.-Colonel Sir Alfred Warren traced the history of the proposal to increase the administration allowance for approved societies from 4s. 5d. to 4s. 10d. a member a year. The societies had all along contended that 5s. should be the minimum.

Sir Alfred Mond said that the figure of 4s. 10d. had been reached as the result of many months of careful investigation by the Departmental Committee, on which all the various interests were represented. In 1919 there was an allowance of only 3s. 5d. In 1914 the actual expenditure was 3s. 1d.

Colonel P. Williams said that he had been told, with what truth he did not know, that National Insurance could be run by one of the large industrial societies at a considerably reduced cost.

Sir Kingsley Wood said that the valuations of the societies throughout the kingdom, in almost every case, showed a large surplus. He believed that it was estimated that only 12 per cent. of the contributions went in management expenses. The cash benefits alone paid to insured persons during the operation of the Act had now reached a sum of almost 70 millions. The expenses of industrial companies approximated to 40 per cent. of the contributions. The clause was afterwards agreed to.

Clause 2 (Contributions by Societies towards Administration Expenses of Insurance Committees) was passed without discussion.

An addition was made to Clause 3, under which the Insurance Committees for England and Wales are to be reduced. Hitherto they were required to consist of between forty and eighty members; in future they are to consist of from twenty to forty. Colonel Sir W. Allen moved a provision that two members should be appointed by the committee recognized as the local medical committee for the county or county borough, and this was accepted by Sir A. Mond and agreed to.

The Committee also passed a new clause, now being inserted in all bills dealing with subjects on which Irish Parliaments had power to legislate. This is to enable them to amend a measure in its application to Ireland.

The third reading was taken on July 5th. Sir Alfred Mond, dealing with a criticism by Sir Godfrey Collins as to expense of administration, said that the cost of managing approved societies was 12½ per cent. of premium income as compared with 40 per cent. in commercial undertakings.

Ex-Service Men: Fee for Medical Examination. Sir H. Nield asked, on June 30th, whether ex-service men who had passed the qualifying educational standard for the Civil Service were required to pay a fee of 15s. before they could be medically examined; whether, having regard to the fact that most of these men had been employed temporarily in Government departments at a salary of £3 15s. per week, out of which they had had to pay fees for entering the examination, as well as for attending classes, this medical examination fee could be debited to the National Insurance Commissioners, seeing that many of these men had never received any pecuniary benefit under the Act. Sir H. Nield suggested further as an alternative that only those who passed the medical examination should be asked to pay, and they should make this payment at a later date. Mr. Young replied that the fee for medical examination demanded in the cases of candidates for all but the highest appointments in the Civil Service had, after negotiations with the British Medical Association, been fixed at 15s., and he was satisfied that this sum was a reasonable charge for the detailed report required. He was not prepared to impose a charge upon the Exchequer in respect of this fee, for which insurance funds could in no case be made liable.

Irish Hospitals.—Sir Maurice Dockrell, on June 29th, asked the Minister of Health why Ireland was excluded from the reference to the committee appointed by the ex-Minister of Health, and was in consequence excluded from the grant of £500,000 about to be made to the voluntary hospitals of the United Kingdom. Sir A. Mond gladly acknowledged the value of the work of the voluntary hospitals of Ireland. That country was left out of the purview of Lord Cave's committee, as it was thought that the Irish Parliament should be free to provide as they might think fit for the needs of Irish hospitals. On another question by Sir Maurice Dockrell, on June 30th, Sir Hamar Greenwood said that Parliament already made an annual grant of over £16,000 to Irish hospitals. Under present conditions the Government did not see its way to ask Parliament to increase that amount. The reason that Lord Cave's committee did not consider the condition of Irish hospitals was that under the Government of Ireland Act hospitals in Ireland came under the provisions of the two Parliaments.

Subsidy to Hospitals.—Mr. Leonard Lyle asked, on June 29th, what steps, apart from the grant of money towards voluntary hospitals, the Government proposed to take to give effect to the recommendations of Lord Cave's committee. Sir A. Mond replied that he was then taking steps to appoint a hospital commission, which would be responsible for the establishment of local hospital voluntary committees, for the distribution of the State grant, and for assisting in raising fresh revenue, and for combining and co-ordinating the activities of the hospitals generally on the lines recommended by Lord Cave's committee. The other recommendations of that committee, some of which would require legislation, were still under consideration. Mr. Lyle asked if, in view of the fact that the Finance Bill was passing through the House, the Government would consider the recommendation that the contribution of employers should be exempt for the purposes of income tax. Sir A. Mond said that point would certainly be considered.

Hospitals in Dublin.—Mr. Devlin asked, on July 4th, whether the attention of the Minister of Health had been drawn to the annual report of the Board of Superintendents of the Dublin Hospitals, which stated that all the hospitals were conducted in an economical and highly efficient manner, but that all were in a more or less critical condition financially, the indebtedness of each hospital being as follows: Westmoreland, £7,946; Meath Hospital and County Dublin Infirmary, £6,688; Cork Street Fever Hospital, £5,882; House of Industries Hospital, £5,843; Rotunda, £5,014; Coombe, £4,355; Royal Victoria Eye and Ear, £7,500; and Royal Hospital for Incurables, £7,279; and whether the Minister of Health would take immediate action to have grants made to these and other hospitals out of the £500,000 which had been allocated for the relief of voluntary hospitals in the United Kingdom, or by an equivalent grant for relief. Sir Alfred Mond said that the Irish Chief Secretary would answer the question; but as he was not present it was postponed.

Indian Medical Service. Replying to Brigadier General Colvin, on June 30th, Mr. Montagu regretted that owing to the conditions created by the war it had not yet been possible to grant leave to the Indian Medical Service to the extent desirable. Every effort was being made to bring the service up to full strength and so to make it possible to grant leave more freely. The terms of service had been immensely improved with the object of attracting a larger number of candidates of the best type, but the failing in the supply from the medical schools made this a slow process. In the meantime all the Government of India could do was to restrict the amount of leave that might be taken by an officer at one time, so that as many officers as possible might come home.

The Blind in India.—Mr. Montagu, in reply to Mr. Grundy, on June 28th, said that at the Census of 1911 there were 176,214 blind males and 173,133 blind females in British India. There was no special legislation applicable solely to blind persons, nor had the need for such legislation become apparent. Dispensaries, stationary and travelling, were available throughout British India, where treatment was given gratuitously to all poor persons; operations for cataract and other eye conditions formed one of the largest and most widely appreciated branches of the work. In the United Provinces, for example, 12,326 in-patients and 591,229 out-patients were treated during 1919 for eye diseases.

Mental Patients.—Sir A. Shirley Benn asked whether the next of kin of private patients in mental institutions, including the next of kin of ex-service men, were informed by the lunacy authorities that they possessed the privilege conferred upon them by Section 71 of the Lunacy Act, 1890, of directing the discharge of the patient, provided he could not be proved to be dangerous and unfit to be at large. Sir A. Mond assumed the reference to be to Section 72. As regards private patients generally, this provided for the discharge of the patient by the person on whose petition the reception order was made. As regards ex-service men, he recalled the answer he gave on June 16th to the effect that when a patient was sufficiently recovered to raise the question of his discharge, he was informed of the legal position.

Public Health Officers' Bill.—This measure, in charge of Lord Gainford, passed through committee stage in the Lords on July 5th. The bill was introduced in the Commons by Sir Philip Magnus.

The Occupational Census.—In reply to Mr. Rose, on June 29th, the Minister of Health said that as no occupational figures for the whole country, however approximate, could in any event be furnished until every individual return had been examined and classified, it did not appear that advantage was to be gained by any departure from the present programme. It was intended to prepare and publish occupational and other census statistics by counties. The earliest issue might be expected in a few months, and the whole would, it was hoped, be completed within two years.

Statistics of Pension Applications.—Major Tryon, answering Sir Walter de Frece, on July 4th, said that during the last six months 59,000 first applications for pensions were made by officers and men, and of these 40,700 were accepted and 18,300 were rejected. During the same period 512,500 pensioners were re-examined by medical boards, with the result that in 264,000 cases the pensions were continued at the same rate, in 45,500 they were increased, in 149,000 reductions were made, and in 54,500 the pensions were not renewed.

Dentists Bill.—The Lords' amendments to the Dentists Bill were considered in the House of Commons on July 1st, and, subject to one drafting alteration, were all agreed to.

England and Wales.

Professor Briggs of Liverpool.

JULY 2ND, Degree Day in the University of Liverpool, was happily chosen by the medical students as the occasion of their presentation to Professor Henry Briggs, the retiring Professor of Obstetrics, of a suitably inscribed silver cigar box as a token of their deep appreciation of his work. He has endeared himself to many generations of students by his strength of character and the excellence of his teaching and work. Lectures were never dull; brief notes, the fruits of many years' constant revision and improvement, were written out for the student to copy and thus aid memory; recent and preserved specimens were freely used and a student called out to demonstrate them to the class, to criticize the history, and, still more embarrassing, the diagnosis and treatment adopted.

The presentation was made in the lecture theatre by the Dean of the Medical Faculty, Mr. R. E. Kelly, C.B., F.R.C.S., in a brief speech wherein he recalled that in his own student days Professor Briggs had taught with little else than the blackboard and chalk—a few bottled specimens being his remaining equipment. Since that time the department has grown beyond recognition. About 200 specimens in a section of the pathology department comprised the equipment in 1898, the practical class was held in the medical school workshop, using a manikin in the carving of which the Professor had had an active part; lectures were given in a theatre used by several other professors and lecturers. There is now, twenty-three years later, a department of world-wide fame and reputed to be the finest of its kind. A lecture theatre, a laboratory for the reception of specimens and their investigation, either by routine work or by the constant succession of research workers; when desirable the specimens are prepared for the museum, which now contains approximately a thousand mounted specimens, some hundreds of water-colour drawings, photographs and enlargements, series of normal and deformed pelves, plaster casts and wax models, obstetrical and gynaecological instruments, ancient and modern, and for the teaching of practical obstetrics a dozen oak and teak manikins carved to the measurements of the pelves. Well might the Dean recall the words: "Si monumentum requiris, circumspice."

Professor Briggs thanked the students for their generous appreciation and the handsome reminder of many happy times spent with them. He pointed out the necessity for cordial co-operation and unselfishness in developing the department, and acknowledged the very great assistance he had received from the university, which had never refused any reasonable request; from the Maternity Hospital on the clinical side and by help in training the students, from the local medical profession and midwives in sending specimens, from the medical students and from his staff. In lighter vein he recalled some of the trials and tribulations encountered in the early days: students had to go to Dublin for their "cases," the quarters provided in Liverpool being then mainly occupied by the valued factotum of another department installed as caretaker with his numerous progeny who were eventually peacefully persuaded to depart. The student, then, was summoned by the husband, who received a shilling for his services, and, as a shilling—in those days—was translatable into a number of "pints," which required time for their due appreciation, the usual irregularity of calls gave rise to some amusing tales; one student, after a quiet week, had a strenuous time, and as a result fell fast asleep at a case, to be awakened by the husband's vigorous shaking and "The nurse says 'if you don't wake up you will miss the baby.'"

Mr. Pridgin Teale of Leeds.

Full of years, full of honour, and high in the respect and love alike of the members of his profession and of the general public, Mr. Pridgin Teale celebrated, on June 28th, the ninetieth anniversary of his birth. Mr. Teale's professional career is known to all, and this is not the time for any lengthy comment upon his varied activities. A great surgeon, he has also been a great public man in the true sense of the term, and his opinion has been sought and valued by many. Mr. Teale's years appear to sit

lightly upon him, and he retains that youthful alertness of manner which has always been his characteristic. He loves to talk of old times, and with him a humorous story, if it be a good natured one, never dies of age. No mere laudator temporis acti, he is still keenly interested in education, in the affairs of the nation, and in the progress of medicine and surgery. It was a great pleasure to Mr. Teale to receive congratulatory visits from many of his old professional friends, and he spoke to the writer of these lines of the joy with which these visits had filled him, and of how greatly he appreciated the kindness of everyone. Among the visitors was the Vice-Chancellor of the University (Sir Michael Sadler) who presented a letter from the Council and Senate, which was as follows:

"Dear Mr. Teale,

"On your ninetieth birthday we, the members of the Council and Senate of the University of Leeds, beg you to accept an expression of our affection and respect.

"We thank you for your service to Science and Medicine; for your labours on behalf of higher education in Leeds; for your share in the foundation of the University and for your devotion to its elder sister, the School of Medicine; for your sympathy with the young; for your alert and resourceful counsel; and, above all, for the example of your life.

"Your colleagues and friends of more than one younger generation join in cordial and grateful greetings to you, who, though the oldest among us, are still young in heart and mind."

The Board of Management and the Faculty of the General Infirmary marked the occasion in a very informal but pleasing manner by entertaining Mr. and Mrs. Teale to tea on the day following the anniversary. There was no speech making, but Mr. Teale was welcomed by the Board and the Faculty and by some of his old professional friends who had been invited. Two photographic groups were taken, one of the general company and another of the "Faculty," as the staff of the Infirmary love to designate themselves. There must be few hospitals which in the year 1921 include as a member of the staff, with the right to the use of beds, a surgeon who was appointed in 1864—the year when Mr. Teale began his long, useful, and honourable connexion with the General Infirmary at Leeds.

Pro-Chancellor of Leeds University.

When the University of Leeds was founded, in 1904, as a separate body on the disruption of the Victoria University the first Pro-Chancellor was found in the person of Mr. Arthur Greenhow Lupton, who was the Chairman of Council of the Yorkshire College. Mr. Lupton has served the university well. A first class man of business, a courteous and dignified gentleman, a conscientious and zealous friend to the university, he has been as a tower of strength to it in its earlier years. He has had the confidence of all, because his aims have been transparently honest and his methods have commanded respect. His resignation has been accepted with great regret. At a meeting of the Court of the University held on June 15th Mr. E. G. Arnold was elected as Mr. Lupton's successor. Mr. Arnold was Lord Mayor of Leeds in 1916, and is the head of the well known Leeds firm of stationers, printers, and publishers. In accepting the position Mr. Arnold was able to say that some forty years ago he had been an occasional student under Professor Rücker when the "Yorkshire College of Science," on which was founded the University of Leeds, began its career of usefulness.

Paying Patients at a Poor Law Infirmary.

The Bristol Guardians have been considering for some time past the question of allowing beds in the Southmead Poor Law Infirmary which are vacant to be utilized for paying patients who may not be able to secure accommodation in other hospitals. This will only be possible to a limited extent, as there is not much spare accommodation at Southmead, and the needs of the sick poor of the city have first to be provided for. The guardians have now approved the following arrangements, which are intended to afford assistance to patients whose means are just above the line of actual destitution.

Paying patients may, at the discretion of the Infirmary Committee, be admitted for treatment or operations when the accommodation there admits. Cases only will be entertained which need infirmary treatment, and who on investigation, are found to be quite unable to pay the rates of charge made at private nursing homes or other available institutions.

Applicants must, in the first instance, produce a certificate of recent date from a medical man who has been attending the case within one month from the date of the application, such certificate to state fully the nature of the illness, and in the case of an operation considered necessary, the nature of the operation.

The weekly charge for ordinary treatment will be £2 2s. in one of the general wards, or £3 3s. per week where a single-bed ward or bed in a three-bed ward is required. This charge to include attendance from the infirmary resident medical staff. In the event of the services of one of the consultant medical officers of the infirmary being required, an additional charge of £1 1s. for each attendance of the consultant shall be paid, and in the event of an operation being required, a fee shall be paid for the services of the operating surgeon at the rate specified in a table to be arranged.

The private medical attendant of a patient so admitted may be allowed, subject to reasonable restrictions, to visit him in the infirmary and confer with the medical staff in reference to his progress.

Application for admission is to be made to the clerk to the guardians and not to the relieving officer.

Provision for Tuberculosis in Bristol.

The Bristol City Council has recently agreed to the recommendations of the Health Committee for a far-reaching scheme dealing with the treatment of tuberculosis. Provision for sanatorium treatment of pulmonary tuberculosis already exists, as well as municipal dispensaries for similar cases. In November last the Council sanctioned an appropriation for a certain number of beds at Lord Mayor Treloar's Hospital at Alton, Hants, for children suffering from tuberculosis requiring surgical treatment. The Council has now acquired a large country mansion and 70 acres of land known as Frenchay Park, on the northern outskirts of the city, where it is proposed to provide sanatorium accommodation for the treatment of so-called "pre-tuberculous" conditions in children—that is to say, children suffering from malnutrition and glandular affections suspected of being tuberculous in origin. The consent of the Ministry of Health has been obtained for the immediate provision of 50 beds at Frenchay Park, but this is regarded as merely a first instalment; it is hoped to increase the accommodation to 100 beds in the near future. The estate offers fine opportunities not only for extending the scheme, but by means of open-air schools to continue the education of the children under ideal conditions. There is every reason to anticipate that eventually there may be established a children's sanatorium on the lines of those in France at Berck-sur-Mer and Zuydcoote. For the present surgical cases will be sent to Alton, since considerations of economy render it inadvisable to embark on the necessarily heavy expense of building and equipping a new surgical hospital for these cases in Bristol.

Dr. D. S. Davies, M.O.H. for Bristol, has given the following classified table of institutional accommodation which has been sanctioned or already exists in Bristol for tuberculosis:

Non-pulmonary Tuberculosis.

1. Provision for "pre tuberculous" conditions in children	50 beds
2. Provision in special hospitals for surgical tuberculosis in children	30 ,,
3. Provision for adult surgical cases	6 ,,
4. Provision for other non-pulmonary forms (genito-urinary, etc.)	12 ,,

Pulmonary Tuberculosis.

1. Sanatoriums for "early" cases	110 beds
2. Hospitals for "late" cases	93 ,,
3. Municipal dispensaries	2 ,,

The Bristol City Council would appear to be among the early converts to Calmette's views as to the necessity for commencing the combat against tuberculosis during infancy and childhood, and the efforts that are being made will be followed with keen interest.

Ireland.

Dublin University War Memorial.

THE Provost of Trinity College, Dublin, writes:

I ask a little space to acquaint University men with the arrangements that have been now approved by the Executive Committee and by the Board of Trinity College as to the manner in which the 450 members of the College who fell in the war are to be commemorated.

The memorial is to take the form of a Hall of Honour in connexion with a reading room for the library which it is intended to build when funds permit. This, placed between the

library and the theatre, will extend some paces into the Provost's garden. An admirable design by Sir Thomas Deane has been adopted, which, while not impairing the architectural dignity of the library, will provide a beautiful as well as a useful building. Between £5,000 and £6,000 have been subscribed, but a much larger sum will be needed.

A meeting of the general committee will be held next term, and it is hoped that the treasurers may be able then to report a large number of additional subscribers, now that the precise form which the memorial is to take has been announced. I should add that the Gold Medallists' War Fund which has no connexion with the official college memorial) amounts to over £1,400, and will be used to help in educating the sons and daughters of the Trinity men who died in the war. A list of all those who served has been prepared, and will be published at the end of the Long Vacation. Professor Fry will be glad to receive any additions to it that are sent to him.

Scotland.

ST. ANDREWS UNIVERSITY.

AT a meeting of the St. Andrews University General Council on June 25th Principal James Irvine, who presided, intimated, before the election of two assessors on the University Court, that Dr. William Barrie Dow, of Dunfermline, did not seek re-election as one of the Council's representatives. Dr. Dow had held the office for thirty years, and only those who had been closely connected with the University could, the Principal said, realize the value of the services Dr. Dow had rendered. He had always sought to further the interests of medicine with enthusiasm, but with fairness towards the recognition of other subjects. The President concluded by proposing that the Council should formally record on the minutes its recognition of the work Dr. Dow had done for the University. This proposal was heartily accepted, and Dr. Dow then proposed Dr. Angus MacGillivray as his successor; in doing so he thanked the Principal and the members of the University Court for their kindness. Thirty years ago he had defended the independence of the University of St. Andrews when the College in Dundee wished to absorb the University and remove it to Dundee; ever since he had endeavoured to uphold the University and at the same time to aid the College in Dundee. Emeritus Professor McIntosh, who seconded the proposal, said that Dr. Dow had become a member of the University Court at a most critical period, when there were very few medical students at St. Andrews, but now the class-rooms were overflowing. This was largely due to the efforts of Dr. Dow and Dr. Balfour. Dr. MacGillivray was unanimously elected as assessor in succession to Dr. Dow.

UNIVERSITY FEES.

By an Order in Council approval has been given to an increase in the matriculation fees at all the Scottish universities. The fees, which at present are one guinea for the winter and summer session combined and half a guinea for the summer session only, are to be raised to two guineas and one guinea respectively. The fees for examination in medicine are to be raised to £34 13s. The alterations are applicable on and after September 1st.

Correspondence.

NATIONAL PROVIDENT SCHEME FOR HOSPITALS AND ADDITIONAL MEDICAL SERVICES.

SIR,—Meetings of the medical profession are being held for the purpose of explaining to the general practitioner and popularizing the national provident scheme for hospitals.[1] At first sight the scheme on superficial examination may appear attractive, but this fallacy is quickly dispelled on closer investigation. In London it is hoped that five millions of the population will contribute £3,000,000 per annum—in other words, an average of 12s. per person per annum. What this means is better appreciated when dealing with smaller communities or individual practices of moderate size. Let us take, for example, an area containing 20,000 persons, who would under this scheme contribute £12,000 per annum. Is it seriously suggested that the cost of specialist treatment, including nursing facilities, ambulances, etc,, for these people, only a small proportion of whom are ill, and of whom only a minute percentage would require specialist advice, would amount to this enormous sum? Let us consider another example—that of an ordinary moderate-sized general practice embracing 2,000 persons. These would contribute £1,200 per annum for specialist treatment, etc., which would be required by the very small number among them who would need it in the course of one year. The amount is preposterous.

Part of the money is to go towards financing the hospitals, which are, at the moment, heavily in debt. It will not be disputed that the hospitals should be supported by voluntary assistance, but if we examine the conditions for which patients generally attend the out-patient department of any hospital it will be found that a very large proportion of them could be treated quite satisfactorily by the general practitioner, were facilities—such, for example, as test meals, *x* rays, bacteriological tests, etc.—provided for him.

Furthermore, it would be conducive far more to the practitioner's efficiency were he able to keep his patient under continuous observation. The experience gained by the general practitioner during recent years has converted inexpert diagnosticians and poor operators into skilful physicians and excellent surgeons. In country towns consultants are the exception; nevertheless, the work is no less efficient and the results no less good, although it is entirely carried out by the local doctor. I will go farther and say that the country doctor is far more capable through being thrown on his own resources, and I think I can safely say that the cost is considerably less than that suggested by the scheme. If those cases which at present attend hospitals and which could be satisfactorily treated by the general practitioner could be eliminated, the hospital expenditure would drop considerably and the annual deficit probably dwindle to vanishing point. It was suggested by Mr. McAdam Eccles, who addressed a meeting at the Fulham Town Hall recently, that visiting consultants would receive a reduced fee of £3 3s. per attendance on the patient at the patient's home. If 5,000,000 persons come into the scheme and £3,000,000 is collected each year, and if eight-eightieths (£300,000 per annum) is earmarked for visiting consultants, it looks as if the consultant is going to make a good thing out of the scheme; £300,000 will pay for nearly 100,000 consultations—that is, one visiting consultation for every fifty persons per annum—an absurd estimate. Does a doctor with 2,000 persons to care for, only a small proportion of whom are ill, require a visiting consultant on forty occasions each year on an average?

What is wanted is not a scheme such as that suggested, but one that will enable the general practitioner to develop his knowledge and exercise his skill. Provide him with the facilities for diagnosis and treatment. Allow him to keep his patients under continuous observation and, even in cases of serious illness such as are ordinarily admitted to hospital, to treat them himself. Do not stifle his progress for the sake of providing lucrative incomes for the consultant, who appears to be the only person who is going to benefit by this scheme. Such a scheme as this will tend to make the general practitioner more and more inefficient and more and more reliant on other persons' brains instead of using his own.—I am, etc.,

London, W., June 28th. S. CAPLAN, M.D.

[1] SUPPLEMENT, April 30th, 1921, p. 161.

THE PRIVATE CLINIC SYSTEM.

SIR,—All who were privileged to be present at the meeting of the Fellows of the Royal Society of Medicine on June 16th, when the important subject of the future of clinics in England was discussed (BRITISH MEDICAL JOURNAL, June 25th, p. 937), must have been surprised at the considerable advance there has been on the part of the profession towards accepting the principle involved. Not one of the many eminent speakers who took part in the discussion had a word to say against the system, and the only query raised was a fear of the difficulties that might arise if the medical profession were interested in the financial side.

I have considered this matter of finance very closely for several years past, and my firm were instructed, as solicitors, by a client who was prepared to invest a large sum of money for the purpose of starting a clinic with 200 beds, if he could be assured of the hearty co-operation of eminent surgeons and physicians in the work; and he

spent a considerable sum of money in getting the necessary data together. The many surgeons and physicians he and I saw agreed to all the plans my client formulated, but absolutely declined to have their names associated with it, as they feared that it would be contrary to professional etiquette. Owing to this withholding of medical support the scheme fell through, although my client's desire was only to receive a fixed small sum on the money to be invested by him, the whole profits of the scheme going towards improving the establishment and providing an adequate co-partnership account for the nurses and other employees working in the establishment.

In considering therefore the financial aspect of the clinic I venture to suggest that you must start with the principle that—

1. The medical profession should themselves provide the funds and leave no control to laymen, because control must follow the provision of capital.

2. It must also be accepted as a sound principle that no profits in the ordinary acceptation of the word should be derived by the medical men who finance the undertaking.

These two propositions appear on the face of them to be mutually destructive, and it was only after considerable thought that a manner in which they could be reconciled was evolved. I submit that it can be done in the following way:

(a) The clinic, when established, should be open to all members of the profession, who would be entitled to send and attend their patients there. It would also be open to the general public.

(b) Practitioners who paid an entrance fee of £100 (which would incidentally bear interest at 8 per cent. per annum) would have a first call on any vacant beds and the general services of the clinic holding a founder's bond.

(c) No medical practitioner should be allowed to hold more than five of the above bonds.

These proposals would eliminate any idea of the medical staff obtaining profits out of the clinic.

If these sums should prove insufficient, further bonds of a different category and having no controlling interest could be issued to large firms and individuals who might wish for preference in obtaining vacant beds for themselves, their families, or their clerks. I believe that if properly supported by the medical profession an amount would easily be subscribed sufficient to build a clinic on the most approved principles.

I do not think I need dwell further on other financial aspects, as most of the speakers were agreed that the personnel of the clinic would be run exactly as in hospitals, except that the consultants, specialists, and other members of the staff would be adequately remunerated. There would be the customary age limit over which professional men would retire, and there would also be a properly paid board of directors or governors of the committee.

In regard to the profits themselves, I do not think the speakers made sufficient point as to the value of continuity of well-trained and capable nurses. My proposal is that, after the payment of a fixed 8 per cent. dividend on the founders' shares, the profits would go 75 per cent. on co-partnership lines to the nursing staff and employees of the hospital and 25 per cent. to improving and extending its work.

I have tried to confine my suggestion within the limits of your columns, but if any member of the profession who is interested in the matter would care for more fully worked out details they are entirely at his disposal.—I am, etc.,

P. H. EDWARDS.

35, Southampton Street,
London, W.C.2, June 25th.

RADIUM THERAPY IN UTERINE CANCER.

SIR,—Mr. Hayward Pinch's experience, as medical superintendent of the Radium Institute, in radium therapy and the end-results of treatment, is probably unequalled in this country, so that his remarks under the above title in your issue of June 18th will be received by the profession as an authoritative statement of the present position of the treatment of this dire malady by this method.

For some time past I have been trying to find out by inquiry among professional brethren whether they had ever met with a permanent cure of cancer of the cervix by radium or *x* ray treatment, with a negative result, and this agrees with my own experience.

I regard Mr. Hayward Pinch's remarks on the ultimate prognosis as so important that I quote them verbatim.

> "In some cases the improvement, both local and general, has been so great as to induce the hope that the disease had been completely arrested and the patient apparently cured, but unfortunately sooner or later symptoms have appeared indicative of the infection of parts beyond the effective range of radium, and the disease has slowly progressed to a fatal termination."

At the present time, if I may use the expression without any disrespect, treatment by radio-therapy is rather a vogue, and from the repeated references to it in the lay press as a cure for cancer, I fear that not only the public but also the profession may be misled as to what may be expected from it.

We have all met with the most astounding improvement in cases of uterine and other forms of cancer with radium, but unfortunately the improvement is not permanent. These remarks, I believe, apply with equal truth to the treatment of uterine cancer by *x* rays and to mammary cancer by both forms of radio-therapy, although there are some who hope that with the new German apparatus and technique permanent cures may, with the lapse of time, be recorded.

I am glad to see that Mr. Pinch emphasizes the fact that early operation still holds out the best prospect of permanent cure, particularly if followed by a thorough course of prophylactic irradiation, which, I believe, will prove a great aid in improving the results of operations for cancer.

I have recently seen a case of cancer of the cervix, and in the same week I received a letter from another patient, in both of whom I performed hysterectomy by Wertheim's method in 1906, and they are both well. A third case, operated on in 1911, recently returned with a small recurrence in the vaginal roof after ten years of freedom. At the moment there appears to be a tendency to fall in with the views of patients who dread operation, and to treat them by radio-therapy without operation, for in the records before us it does not appear that the time has yet arrived when this course can be justified, as the results of radio-therapy do not yet equal those of surgery.—I am, etc.,

London, W., June 28th. DOUGLAS DREW.

AURICULAR FIBRILLATION.

SIR,—Sir James Mackenzie, in his lecture delivered at St. Mary's Hospital, and published in the BRITISH MEDICAL JOURNAL, says, under the heading, "The records of mitral stenosis": "Many instructive phenomena which explained features that had puzzled clinical observers came under notice during this research. But the most striking and most dramatic was the sudden onset of extreme heart failure that every now and again overtook some of these patients." Later he adds: "Many years after, this condition was discovered from experimental research to be due to fibrillation of the auricle."

This seems to me much as if a teamster, whose heavy cart had pulled the horses up, were to assert that the irregular effort of one and another of the horses to pull alone, often observed after the arrest, accounted for the stoppage. The fibrillation of the auricle or the fibrillation of the team, comes on after the breakdown. It may be an indication of the breakdown, but it is by no means the cause.

Extreme heart failure in mitral stenosis, coming on suddenly, may be due, physically, to dilatation of the auricle, or, physiologically, to its muscular exhaustion, either of which would explain the breakdown; and it is misleading to attribute it to the fibrillation which follows. One often sees exhausted or dying skeletal muscles fibrillate, but one does not attribute either the death or the exhaustion to the fibrillation, but the reverse.

It seems to me that we should make more progress towards the knowledge of cardiac action if we could get back to the simplicity of earlier writers and teachers, who spoke of cardiac dilatation or cardiac exhaustion, instead of exalting such a secondary phenomenon as auricular fibrillation into the false position of a primary cause.

Now that nearly every paper on the heart is rendered almost unreadable by innumerable and unconvincing tracings, and befogged by shibboleths such as auricular fibrillation, nodal rhythm, the bundle, heart-block, etc., we

shall all soon in despair, and as a natural reaction, be driven to Sir James Mackenzie's simple remedy, and, like him, scrap our science, and judge or misjudge the heart by its "response to effort."

Clyst St. George, Devon, June 15th. D. W. SAMWAYS.

THE PREVENTION OF PUERPERAL INFECTION.

SIR,—In the discussion on puerperal infection it seems to be taken for granted by all your correspondents that the initial cause is conveyed from without by the doctor, the nurse, or the insanitary surroundings. After an experience of about 2,000 cases, with one death from puerperal convulsions in a case of nephritis and one from puerperal fever, I believe that in ninety-nine cases in a hundred the cause of infection is the retention of some small portion of the membranes or the placenta, or possibly, occasionally, of a decomposing blood clot. Having seen several times the method of expelling the placenta by external compression I am convinced of its dangers. The uterus will perform its function of squeezing the placenta and membranes into the vagina in a beautifully perfect manner by contraction of its whole body, posterior as well as anterior, in from five to fifteen or even thirty minutes. No hand on the abdomen can imitate this universally even pressure. Some persons, male and female, are naturally clumsy, and I can recall a case where the compressing fingers had divided the placenta into two parts, with disastrous results. The uterus should be supported with gentle pressure to aid it in its work, but squeezing, and especially kneading, should be avoided. If the uterus has emptied itself it should be allowed to rest, and not be subjected to the pressure necessary to eject the placenta from the vagina. I can imagine stretching of the suspensory ligaments and prolapsus following that manœuvre.

I do not see how a placenta can be located for certain in the vagina without a digital vaginal exploration. I have been satisfied for nearly forty years with the method I have always employed, and I have not considered the time wasted in waiting fifteen, thirty, or sixty minutes for the placenta to be found in the vagina entire with the membranes. Immediately on separating the child I give two or three drachms of ergot and acetic acid (2 + 1), then, when the cord is cold and pulseless, taking it in the right hand and using it as a guide to two fingers of the left hand introduced into the vagina, I find whether it is in the vagina or not. If not, after washing my hands I support the uterus with gentle pressure of the left hand. One can generally feel then when the placenta passes out of the uterus. If the placenta is in the vagina, keeping it in position with the cord in the right hand but not pulling hard on it, the two fingers of the left hand can slip over the edge of the placenta to keep it on a flat axis. A few coughs from the patient will discharge the placenta, which should be retained near the vulva while it is turned round six or seven times, and the membranes will follow as a thin rope, no particle being left behind. When young, and perhaps impatient, I used to be bothered with *post-partum* haemorrhage, but since using the acetic acid and ergot immediately on the birth of the child I have not been troubled.—I am, etc.,

June 1.th. AN OLD MEDICAL.

SIR,—Dr. Blair Bell's address on the prevention and treatment of puerperal infections was a tissue of remarkable assertions, which he directs at the general practitioner, and for which he does not advance the slightest proof. It is a type of the stuff assimilated by many medical students, who finally become qualified, retaining the fixed idea that the general practitioner is a feeble-minded species compared with the medical and surgical supermen who give lectures, and who really ought not to have been ever let loose amongst the long-suffering general public.

Dr. Blair Bell begins by drawing conclusions from the Registrar-General's report. What these conclusions are worth may be gathered from the rest of his conclusions; indeed, he has been kind enough to make a summary. Here are a few samples:

The athletic girl will have difficult labour.
The woman with nerves will not willingly tolerate a tedious, inert labour.
A piece of unpurified vulval skin will be more deadly than a spoonful of faeces.
The remedy does not lie in better teaching.
Imperfect asepsis is practised as a sop to conscience.
The evacuation of *large pieces of placenta* should be practised after infection has taken place.
An attempt is usually made to repair a laceration.
Some amount of healing usually takes place.
Forceps are employed to appease an anxious husband.

All of these are priceless conclusions. The BRITISH MEDICAL JOURNAL seems to have been so impressed by them that special remarks apparently have been made showing how nice it would be if the wretched general practitioner always turned up late to the case. This wonderful Dr. Bell employs wonderful midwives who know how to keep the bowel absolutely empty, always, in all cases; and he is so sure when a tear is to happen that he puts in sutures beforehand. We await with some impatience more information, and yet it is only just to say that the general practitioner knows his work quite as well as Dr. Bell, and he may even know his work better than Dr. Bell. He can at times remove an ovarian cyst, or do a colporrhaphy or a hysterectomy in a manner which would open the eyes of Dr. Bell, with not half the skilled assistance the latter gets. He, the general practitioner, is a very busy man, and he is in competition with some of the best brains in the world, and with men who are equally as brave as Dr. Bell.

When the general practitioner is called out to Mrs. A. at 3 a.m. on a wild night, five miles away, he goes, knowing more about Mrs. A. than Dr. Bell could ever know; and he also knows a heap about Mr. A.; and he has been chosen to attend on this anxious and momentous occasion not because he is the only feeble prop to lean on but because he has achieved a reputation which has to be kept up in sickness and in health, even at 3 a.m., after a hard previous day. If Mrs. A. goes septic a lot of explanations will be wanted, very many more than Dr. Bell ever imagines; not only that, but the reputation hangs on bringing Mrs. A. (and her child) through without any after-effects at all. Therefore the general practitioner's conclusion is that if he knew as much about his work as Dr. Bell he would get little kudos and less little wheels to run the house on.

When the general practitioner says "forceps" he knows what he is talking about, and although he was never half taught his job until he saw and helped other general practitioners at work, he now might probably astonish Dr. Bell with his management of any midwifery case, including locked twins and two-headed monsters; but he does not start in and write about these things, because for one thing he has not time, and for another there are too many Dr. Bells about; and if a general practitioner thinks that prolapse is as frequent after unassisted labour as otherwise he has come to that conclusion in the best way of all—in the school of experience; and if he thinks that sepsis can and does occur without any manual interference he is not talking rubbish.

Some have seen septic matter taken from the vagina at the onset of labour, and some have seen septic children born unaided, and some *have heard of septic tubes throughout pregnancy*, and if they had never tried to combat these things with more gumption than Dr. Bell seems to think we should never have been the nation that we are.—
—I am, etc.,

Morecambe, June 22nd. FRED. W. HOGARTH.

ENUCLEATION OF THE TONSILS.

SIR,—In the JOURNAL of June 18th, p. 916, Mr. Mark Hovell calls attention to the danger of haemorrhage after tonsillectomy. Many of us who are concerned with doing hundreds of tonsillectomies in a year, will support his attitude. That the danger is real, and that it occurs with a frequency seriously to call in question the justification for the operation, is undoubted. Any surgeon who has had to suture the faucial pillars in a child, already in a bad way from loss of blood, under an anaesthetic sufficiently deep to abolish the pharyngeal reflexes, and who has to contend with the difficulty of keeping the operation area free from blood, where both tonsillar fossae are bleeding, can scarcely fail to acquiesce in this view. My personal feeling is that where, in addition to these troubles, the little patient presents posterior pillars that tear like wet blotting paper, the surgeon is entitled to much sympathy.

Whatever Mr. Hovell says on this subject is worthy of consideration, and I suggest to him that he does us all a greater service than he has yet done—and that is, tell us

what he means by a "diseased" tonsil. As far as children are concerned, I frankly confess I do not know. I know a large tonsil when I see one; but even here the enlargement is more apparent than real, as is evidenced on its removal. The size of buried tonsils cannot be estimated; the position of the tonsil in its bed will give a mistaken idea of its actual size. Many tonsils are already partially dislocated from their bed, with the result that practically the whole of the tonsil is visible and ostensibly large. But, apart from all this, What is a "diseased" tonsil in children? What pathological appearance does it present? Even enlarged cervical glands may not be due to sepsis from a tonsil; but may be merely a part of the general lymphadenomatous enlargement common in healthy youngsters.

I am practically never able to look into a child's mouth and say: "That child's tonsils are not only 'enlarged' but they are also 'diseased'!" I write in no spirit of criticism. I am asking for information and help. Will Mr. Mark Hovell give it? If *he* cannot, then assuredly no one can.—I am, etc.,

June 22nd. CLINIC.

VOLUNTARY HOSPITALS COMMITTEE.

SIR,—Dr. R. C. Buist's letter in your issue of June 25th was apparently written without a full knowledge of the objects and working of the Contributors' Certificates Scheme in operation at this hospital. In estimating the "value," one of the first considerations is, of necessity, its financial possibilities, as the problem hospitals are now facing is how best to obtain funds to keep open. But the scheme is in no sense a variety of the old "subscriber's line," which, besides giving a several hundred per cent. return on contributions, has all the disadvantages mentioned by Dr. Buist. Contributors' certificates form a sound business proposition, offering value for money, and, in addition, afford unique facilities for providence, in that those who look to the hospitals for treatment in times of sickness can provide for the cost of such treatment when in health, and the hospital can build up a reserve against the expenditure to be incurred when the certificates are presented.

The Great Northern, in common with other hospitals, now has to ask patients who can afford to do so to contribute towards the cost of their treatment, according to their means. The necessitous sick are received free of all charges, as heretofore, and we do not ask them to produce contributors' certificates in lieu of cash. Those patients assessed to contribute and holding contributors' certificates can present such certificates, and we accept them at face value towards the amount of the contribution.

It will thus be seen that contributors' certificates in no way influence admission. The names of all patients are placed on a waiting list, and admitted purely in order of medical urgency. In short, the certificates are a recognition of contributions received towards treatment to be given at a later date.—I am, etc.,

Great Northern Central Hospital, London, N., June 30th. GILBERT G. PANTER, Secretary.

DEFECTS IN TUBERCULOSIS ADMINISTRATION.

SIR,—A short time ago, your correspondent "Mixture" (BRITISH MEDICAL JOURNAL, June 4th, p. 839) called attention to overlapping and confusion in connexion with the duties of the county medical officer and the medical officer of health for a county district in connexion with the recent tuberculosis regulations, but, had he wished to expose a still more glaring instance of this kind, he would have found ample material in the rules of the Central Midwives Board and other regulations governing the midwifery service of the country.

For example: When a midwife commences work in a district "notice of intention to practise" as well as "change of address" must be communicated on a special form to the "Local Supervising Authority," which means actually to the county medical officer (Midwives Act, 1902, Sec. 10 and Rule 22 (2) C.M.B.), but no communication of the kind need be sent to the local medical officer. It must be presumed that the latter knows by intuition who and where the midwives of his district are, for by Sec. 1 (3) of the Notification of Births (Extension) Act, 1915, in cases where the county council has not previously adopted the Notification of Births Act, 1907, it is the duty of the local authority (in this case the medical officer of health of the district) "to bring the provisions of the principal Act to the attention of all medical practitioners and midwives practising in the area." He is also required to supply to them, without charge, addressed and stamped postcards containing the form of notice of birth (Notification of Births, Local Government Board circular dated July 29th, 1915, page 2), as well as forms for the notification of ophthalmia neonatorum (Art. III, Ophthalmia Neonatorum Order, dated February 5th, 1914). The midwife is one of the persons upon whom falls the duty of notifying the event of a birth, and this notification, according to the Act of 1907, Sec. (1), goes to the "medical officer of health of the district in which the child is born," while he, in turn, is required by Sec. 1 (2) of the Act of 1915 to send duplicates of these notifications to the county medical officer "as soon as may be after they are received." In the event of specified untoward symptoms arising in connexion with the mother or child, the midwife must send for medical aid and notify the local supervising authority (county medical officer) of the fact (C.M.B. Rules, No. 22), but when there is a purulent discharge from the eyes of the child commencing within twenty-one days from the date of birth and medical aid has not been obtained, she must notify that fact to the local sanitary authority—that is, to the medical officer of health for the district (Rule 21 (5) and Art. VI, Ophthalmia Neonatorum Order, February 5th, 1914), or again, whenever a midwife has been in contact with a patient suffering from any infectious ailment, she must notify the local supervising authority (county medical officer) of the fact, and "unless otherwise directed by the local supervising authority, all washable clothing must be boiled, and other clothing must be sent to be disinfected by the *local* (not the county) sanitary authority" (Rule E 6). In a footnote to this rule the midwife is advised to "ascertain who is the appropriate sanitary authority" by inquiring of the inspector of midwives, or of the local supervising authority; and so it goes on, one duty to be performed by one medical officer and one by another, while the confusion is rendered worse confounded by cross references from Rules to Orders and Orders to Acts. It is small wonder, then, that the midwife, in a hopeless muddle as to which is the "local supervising authority" and which the "local sanitary authority," and who is the "county medical officer," and who the "medical officer of health," sends one form here and the other there, as may be, leaving it to the clerical staff of the respective authority to sort them out.—I am, etc.,

Maidenhead, June 22nd. JAMES J. PATERSON.

SUGGESTED AUTOINOCULATION OF RODENT ULCER.

SIR,—Dr. Dyke, in your issue of June 25th, 1921, p. 932, relates the case of a woman of 71 who had a long-standing rodent ulcer of the sacro-iliac region and a more recent lesion of the same type in the site of a wound on the chin. Although the frequency of multiple rodent ulcers is recognized, Dr. Dyke suggests the possibility of autoinoculation, but remarks that autoinoculation had not previously been suspected in the case of rodent ulcer.

In 1902 I had under my care an old naval pensioner with an extensive rodent ulcer of the scalp of many years' duration, and his niece, who lived with him, and who had dressed the ulcer twice daily for a long period. She, a girl of 17, had a small linear rodent ulcer on the right lower lid. In both cases the lesions were examined microscopically. I thought the girl's ulcer might have been due to inoculation and placed the facts before the late Sir Henry Butlin, who was collecting cases of supposed cancer infection. He decided, and I think rightly, that the evidence of infection was insufficient.—I am, etc.,

London, W., June 28th. JAMES H. SEQUEIRA.

ESSENTIAL HAEMATURIA.

SIR,—The profession will doubtless have read with deep interest and appreciation Mr. Fullerton's illuminating remarks on haematuria in the JOURNAL of June 25th, p. 923. He makes special reference to the difficulty sometimes experienced in controlling haematuria of the "essential" type. Probably the chief difficulty in dealing with this "symptomless renal haematuria" is that so far its causation is not understood.

My only reason for troubling you with this short note is to refer to the distinct value attaching to the use in such cases of gallic acid, administered in 5-grain doses three times daily, increased if necessary to 15 grains. This simple remedy will frequently check the bleeding when other remedies have failed, and should certainly have a full trial before resort to the various formidable surgical methods which Mr. Fullerton catalogues under the heading "treatment."—I am, etc.,

Wednesbury, June 27th. WALTER GARMAN.

COCCYGEAL FISTULAE.

SIR,—Mr. Lockhart-Mummery, in his letter of June 24th, still does not appear to realize that the congenital coccygeal fistula and the sinus over the sacrum and coccyx are two totally distinct conditions.

He appears to consider, also, that microscopical examination of suspected cases of sinus over the sacrum and coccyx would in all instances reveal their congenital origin. I would point out, however, that the microscopical appearance depicted in the illustrations of his original contribution in your issue of June 4th are not in the least convincing in this respect. They certainly show an epithelial lining, but the real structure of the wall of a dermoid cyst is conspicuous by its absence. In one illustration, in addition to epithelium, the presence of giant cells is shown, but these latter are surely more suggestive of either a tuberculous lesion or chronically inflamed tissue. The epithelial lining shown in these illustrations is more in keeping with the appearance which one would expect to find in the wall of a sebaceous cyst. Sebaceous cysts, wherever found, are especially prone to suppuration and often give rise to a persistent and troublesome sinus which does not heal because part of the epithelial-lined cyst wall remains behind. Sebaceous follicles, often of large size, abound in the peri-anal region and are a fruitful source of a type of subcutaneous fistula which is frequently met with in the vicinity of the anus. These fistulae never communicate with the interior of the rectum. They are often found to have several off-shoots from the main track, and the portion of that track which was the original sebaceous cyst occasionally is found to have an epithelial lining. It is probable, therefore, that the cases from which the above mentioned illustrations were made were examples of this kind of fistula.

I agree with Mr. Lockhart-Mummery that one would not expect to find teeth in an inclusion dermoid, but we have it on the authority of Sir John Bland-Sutton that post-rectal dermoids are remarkable in that they usually contain teeth.—I am, etc.

London, W., June 25th. W. ERNEST MILES.

PROFESSIONAL SECRECY.

SIR,—As a witness in the Divorce Court quite recently before Mr. Justice Hill, I applied for protection when asked a question which to answer would have been a clear breach of professional confidence; the judge at once granted the protection applied for, observing "that he could not hold the question an improper one, but that he understood my position"; he proposed to counsel to get the information the court required in another way.

It would appear, then, that there is no definite rule. Indeed, an habitué of the court told me that Mr. Justice ——— would have "jumped down my throat" and insisted on a reply.—I am, etc.,

London, S.W., July 2nd. F. E. H. DAUNT.

COLONELS AND LIEUTENANT-COLONELS R.A.M.C.

SIR,—I was astonished to read in the daily press that a certain number of colonels Army Medical Service, were to be retained for over four years on full pay. Surely this change is a waste of public money and unjust to junior officers awaiting promotion? Before the war there were about twenty colonels A.M.S., now there are thirty-six. There is no useful work for half of them. The condition is much the same with regard to lieutenant-colonels R.A.M.C. Before the war there were about 100 lieutenant-colonels; now there are 158, and half of them are doing work that would be better done, at a less expense to the country, by a junior officer.

In other branches of the army a lieutenant-colonel has to go after four years' service in the rank. This should also apply to R.A.M.C. It would relieve the block in promotion of majors. No major R.A.M.C. has been promoted since 1918, and no such promotion is likely for many more years.—I am, etc.,

July 4th. MAJOR R.A.M.C.

The Services.

ARMY MEDICAL SERVICE.

Uniform of Higher Ranks.

WE drew attention some time ago (SUPPLEMENT, February 26th, p. 49) to the dissatisfaction caused by the Army Order altering the dress distinctions on the cap and tunic of general officers and officers of the administrative staff of the Army Medical Service. We have received from a young officer R.A.M.C. serving in India a letter from which we make the following extracts. His remarks show how deeply the change in the uniform of the higher ranks is felt, even by those who may never attain to them.

"It is very gratifying to members of the British Medical Association serving in the Royal Army Medical Corps in India to know that our Association is alert to the fact that this is an attempt finally to put the Royal Army Medical Corps in what might popularly be described as 'in its place.' This is a policy which does not specially involve that portion of the Royal Army Medical Corps serving in India. It was undoubtedly evolved in the War Office, and India merely follows suit. I have written this 'note' on the subject in consultation with a few of my brother officers in India.

"In the Army Order (No. 539) above referred to certain distinctions in dress are ordered for colonels and general officers of what is variously described as 'Medical Services' and 'Army Medical Service.' The former ranks will apparently wear dull cherry gorgets and hat bands, and the latter will be distinguished by the same emblems in black velvet.

"By a Royal Warrant dated June 26th, 1898, all officers of the then Army Medical Staff below the rank of Surgeon-General and the warrant officers, non-commissioned officers and men were constituted into the Royal Army Medical Corps a corps of the British Army within the full meaning of that expression and included in the constitution of the British Forces (vide chap. xi, para. 5 of the *Manual of Military Law, 1914*, in conjunction with which may be read Section 190, para. 4). Surgeon-Generals alone then formed the Army Medical Staff. Under a Royal Warrant dated June 9th, 1907, the Army Medical Staff was abolished, and Surgeon-Generals were classed as removed from the Royal Army Medical Corps, and substantive Colonels, previously on the cadre of the Royal Army Medical Corps, were similarly removed.[1] In 1917 the rank of Surgeon-General was abolished and substituted by the ranks of Lieutenant-General and Major-General, subject to the proviso that general officers from the Royal Army Medical Corps should not exercise general powers of command unless specially authorized to do so.

"We have, therefore, up to this period an orderly train of progress in the advancement of the status and recognition of the value of the work contributed by the medical profession in the British Army. This advance continued undisturbed through the greatest war in history. Few would debate that this was other than honourable recognition of equality of work, by the admission of the military branch of the medical profession to that equality in rank and status which had previously been denied them. The present movement to introduce distinctions in dress for the higher ranks of the Medical Services is retrograde, and if carried into effect will cause humiliation, loss of authority, and put the corps back to where it was twenty years ago. It is an invidious distinction, and will be looked on by other services in the Army as such."

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon the following officers:—*Territorial Force, R.A.M.C.:* Lieut.-Colonel David L. Hamilton (2nd Home Counties Field Ambulance); Lieut.-Colonel Charles L. Isaac (3rd Welsh Field Ambulance); Major George R. Wilson, attached 8th Battalion, Manchester Regiment; Major David H. Weir, M.C., attached 4th Battalion, Royal Northumberland Fusiliers; Major William F. McAllister-Hewlings, attached North Midland A.S.C. (retired); Major Edward L. Rowse (1st London Field Ambulance). *Territorial Force Reserve, A.M.S.:* Colonel Sir Richard H. Luce, K.C.M.G., C.B., V.D. (honorary Colonel R.A.M.C. T.F., honorary Major-General in Army).

DEATHS IN THE SERVICES.

CAPTAIN GERALD LEWIS COLHOUN LITTLE, Indian Medical Service (retired), died at Midgham, Berkshire, on May 30th, aged 37. He was the only son of Colonel Charles Little, I.M.S. (retired), was born on October 2nd, 1883, and educated at Edinburgh, where he graduated M.B. and Ch.B. in 1907, subsequently taking the F.R.C.S.Edin. in 1914. He entered the I.M.S. on August 1st, 1908, and was promoted to captain after three years'

[1] Paragraph 13 (Definitions) Royal Warrant, 1914, is as follows: An "Officer of our Army Medical Service" shall include a surgeon-general, a colonel removed from our Royal Army Medical Corps, an officer of that corps, or a medical officer of our Household Cavalry.

service; he was on temporary half pay on account of ill health, from November 15th, 1914, to December 5th, 1915, and retired from the same cause on February 5th, 1920.

Surgeon Gerald Burton-Brown, R.N., retired, died at Maidstone on April 21st. He was the youngest son of the late Brigade-Surgeon T. E. Burton-Brown, C.I.E., I.M.S., and was educated at Guy's, where he gained an entrance scholarship, and at Durham University, where he graduated M.B. and B.S. in 1898, and M.D. in 1905, having previously taken the L.S.A. in 1896. After acting as clinical assistant in the throat, ear, and eye department in the Newcastle-on-Tyne Infirmary, he entered the navy as surgeon on May 23rd, 1898, but retired early with a gratuity.

Obituary.

WE regret to record the death of Mr. HENRY WORK DODD, which took place on June 28th, at his residence, 136, Harley Street, W., in his sixty-second year. Mr. Dodd was the son of the late Mr. Charles Dodd, of the Hudson Bay Company, and was born at Victoria, Vancouver Island. He was educated at Norwich School and at St. Bartholomew's Hospital, obtaining the diploma of M.R.C.S. in 1881. He proceeded to the Fellowship in 1888, and in 1890 he was appointed to the ophthalmic department of the Royal Free Hospital, becoming later clinical lecturer on ophthalmology and eventually consulting surgeon. He was also consulting surgeon to the Royal Westminster Ophthalmic Hospital and consulting ophthalmic surgeon to the West End Hospital for Nervous Diseases. Formerly a member of the R.A.M.C. Volunteers, he had retired with the rank of major. Mr. Dodd was a member of the Ophthalmic and other medical societies; he had contributed a large number of papers on ophthalmic subjects to medical and scientific literature.

THE death is announced on April 24th of Dr. ARCHIBALD L. MUIRHEAD, professor of pharmacology, and formerly dean of the College of Medicine of Creighton University, Omaha, who was for eight years editor of the *Medical Review*. Dr. Muirhead was a graduate of the medical school of the University of Michigan in 1893.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examinations indicated:

M.CH.—G. Perkins.

SECOND M.B. *Materia Medica and Pharmacology:* M. McC. Baird, O. D. Ballinger, W. Champneys, E. F. Chapman, H. N. K. Elphick, R. van B. Emmons, R. V. Facey, H. A. Gilkes, J. R. B. Hern, R. F. Johnstone, C. R. Lane, W. J. E. Lupton, P. H. Martin, J. D. Mills, E. H. Watkins, Norah E. Bodkin, Katharine M. Hodgkinson, Constance M. Ottley. *Pathology:* J. W. Alden, O. D. Ballinger, W. H. Butcher, W. Champneys, D. S. Davies, J. H. Fletcher, D. G. Leys, H. D. Pavière, M. E. Shaw, E. H. Watkins, B. W. Williams, Norah E. Bodkin. *Forensic Medicine and Public Health:* T. H. Catmull, M. H. Mackeith, H. A. Osborn, M. E. Shaw, C. H. Terry, C. J. L. Wells, Dorothy J. Collier. *Medicine, Surgery, Midwifery:* W. H. Butcher, D. G. T. K. Cross, C. F. T. East, W. E. Hayes, E. G. T. Liddell, M. H. Mackeith, H. L. Rayner.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have satisfied the examiners in Parts I and II of the examination for the Diploma in Medical Radiology and Electrology: Part I, Physics and Electrotechnics; Part II, Radiology and Electrology):

F. M. Allchin, S. Colyer, G. Fildes, H. Gardner, W. Garton, A. H. Laird, T. Leucutia, D. B. McGrigor, D. M. Muir, H. E. H. Oakeley, P. J. Olivier, B. Shires, H. W. J. van Dijken, J. D. White, G. D. Whyte, W. P. G. Williams, J. R. Wylie.

A Pass has also been approved in Part I, and J. P. S. Dann in Part II.

UNIVERSITY OF LEEDS.

Graduation Ceremony.

AMONG the large number of degrees conferred at a congregation of the university held on July 2nd were the following:

M.D.—Hartley Carter.

M.B., B.S.—*G. Armitage, *G. D. Fleming, †C. M. Smithies, †N. Walsh, Ethe G. Bolton, J. M. Davey, T. H. Elmer, Bessie Goodson, Ella M. Hickman, I. Hipshon, R. N. Kirk, R. W. Lee, A. Sosnitzky, and Kathleen Wilson.

D.P.H.—J. Gordon, A. Massey, and W. S. Sykes.

* First-class honours. † Second-class honours.

UNIVERSITY OF DURHAM.

AT a convocation held on June 28th the following degrees were conferred:

M.D.—J. W. Craven, R. Errington, H. M. Leete, W. K. Russell, J. C. Spence, H. W. Walther.

M.D. (*For practitioners of fifteen years' standing*).—S. Bott, H. Chaffer, F. A. L. Hammond.

M.S.—H. Evers, W. Reynolds.

M.B., B.S.—S. E. H. Anderson, T. H. Bates, J. S. Brogdon, E. T. Colville, O. Colville, J. J. N. Daniels, Dorothy A. Dixon, Dorothy E. Elliott, E. Girais, G. A. Haydock, R. Hewitson, R. A. Hickley, D. F. Hocken, W. E. D. Hodgson, F. V. Howard, Hilda Lodge, M. Mackler, L. Myers, Jean W. Nicoll, R. J. Perring, S. T. Pybus, Mary F. Richardson, W. C. Wardle.

B.S.—J. E. Basham.

B.Hy.—C. N. Armstrong, Edith C. M. Jones, M. D. Mackenzie, T. N. V. Potts.

D.P.H.—C. N. Armstrong, Edith C. M. Jones, F. J. Lidderdale, M. D. Mackenzie, T. N. V. Potts, W. O. F. Sinclair.

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology.* C. J. C. Jones (with second class honours), R. B. Allen, R. Armstrong, Helen Austin, Monica F. Bell, T. H. Blench, E. C. Brewis, W. N. Douglas, C. Fenwick, C. C. Fenwick, Gladys H. Fletcher, G. A. Fothergill, C. J. B. Fox, W. Graham, Irene B. M. Green, W. A. Hogg, Gwendolen M. Hunton, E. H. Jacques, Katherine M. C. Jones, E. S. Kirkhouse, J. H. Laydon, Florence M. Menzies, Doris H. Motyer, F. G. Mundell, D. F. O'Shaughnessy, G. C. Parkin, Georgina L. Philipson, H. N. Popham, S. D. Rowlands, Evelyn M. Scott, A. Todd, R. F. Tredre, A. J. Watson, N. H. Watson, E. A. Welsh, J. C. Yeoman.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—J. B. Aitken, G. J. Alexander, S. E. Ammon, T. F. Andrew, Flora T. F. Angler, G. R. A. Armstrong, C. W. Badger, F. E. L. Beck, Rosa M. Bickerton, J. M. Bosman, W. H. S. Boyd, Maeve C. Brerton, A. S. Burns, D. I. Cameron, J. Campbell, E. E. Candlish, E. A. Carmichael, Edith K. Chandler, J. H. Clarke, Jessie M'C. Craig, Grace Cumming, E. D. Dingle, W. Douglas, A. Dower, S. J. Eapen, G. D. English, H. D. Epstein, Isobel M. Finlayson, E. M. Fraser, *J. S. Fulton, Katharine M'L. Gifford, Elspeth L. Gilmour, Mary H. M. Gordon, O. Gray, Helen Gregory, Adele Haggart, A. A. Hamilton, Mary I. Hemingway, H. Hodgson, N. R. H. Holmes, Helen R. T. Hood, R. Howarth, J. W. A. Hunter, J. F. Iddekinge, F. T. Ingram, V. W. Jack, E. S. Jackson, J. D. Johnston, P. R. Kemp, F. Krone, J. R. Larson, Laura M. Ligertwood, J. I. M'Caa, A. G. M'Clellan, Eliza W. M'Crae, A. Macdonald, Agnes B. MacGregor, R. G. M'Intyre, A. G. Mackay, D. E. Malone, Dorothea J. Mann, Margaret B. Martin, Nancy Martland, A. D. Maxwell, Isabella M. Mears, P. S. Meiring, C. E. Meryon, Mary Middlemass, Catherine A. J. Mitchell, Ruth M. Monro, D. M. Morison, Helen S. E. Murray, Jean Murray, P. N. Nag, C. S. Nimmo, O. A. Omololu, M. M. Ostrowick, C. G. Payton, C. S. G. Pillai, Mary E. Price, Margaret M. Proudfoot, Margaret T. Rutherford, Marjorie E. F. Sanders, C. E. Scott, Hilda D. Scott, J. Sharp, L. Siff, G. J. Smit, M. T. Smith, H. W. J. Steen, C. Stewart, J. D. Stewart, Jenny R. Tait, R. J. O. Taylor, E. K. R. Thomas, H. B. Thomson, Sophia M. R. Thomson, P. H. J. Turton, J. Veitch, J. H. Verwey, T. J. M. Walker, D. C. Wilson, E. A. Wilson, Isabel G. H. Wilson, H. Zaifol.

* With distinction.

UNIVERSITY OF ST. ANDREWS.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., CH.B.—*Medical Jurisprudence and Public Health:* F. E. Anderson, C. R. Baxter, A. J. Campbell, Cora C. Campbell, G. Chawla, D. C. Clark, J. Craigie, W. M. Cumming, Jean M. Davidson, Violet C. Dobbie, Ruby N. Foggie, D. S. Greig, C. R. Henderson, Norah M. Lindberg, N. McLeod, Jean H. Morton, Janet Muirhead, R. Norrie, S. S. Ogilvie, A. Pride, A. B. Richardson, Agnes H. T. Shepherd, Lucy C. Simpson, B. Singh, Edith M. D. Smith, Blanche D. S. Spence, Janet O. Stephen, A. Tateson, W. Thomson, Frances H. Watson, T. Wilson. *Materia Medica and Therapeutics:* M. K. Afridi, G. F. G. Batchelor, C. R. Baxter, N. T. Brown, D. R. Cameron, J. Dallas, Ellen Douglas, H. H. A. Elder, A. A. Finnigan, Jessie H. Fitchet, J. R. Graham, D. S. Greig, G. S. Halley, L. H. Henderson, R. A. Henry, J. A. G. Keddie, Lena E. Low, J. R. Miller, J. R. Murray, J. W. Napier, Margaret C. K. Patterson, J. A. Robb, P. C. Robertson, D. Rushton, Blanche D. S. Spence, Jessie R. Watson, J. M. Webster, Margaret P. M. Wilkie. *Pathology:* M. Khan Afridi, D. S. Anderson, G. F. G. Batchelor, C. R. Baxter, T. F. Black, N. T. Brown, D. R. Cameron, G. S. Chawla, J. Dallas, W. F. Dorward, Ellen Douglas, H. S. Edwards, H. H. A. Elder, A. A. Finnigan, Jessie H. Fitchet, J. R. Graham, D. S. Greig, G. S. Halley, Jean T. Harris, A. Henderson, L. H. Henderson, R. A. Henry, Lilian A. M. Johnston, J. A. G. Keddie, G. D. Laing, Jeannie P. Laird, Lena E. Low, F. McLagan, R. S. Melville, J. R. Miller, Hermina M. Morrison, J. W. Napier, J. E. Overstead, Margaret C. K. Patterson, P. C. Robertson, D. Rushton, Isabella Sim, D. B. Soutar, Gertrude J. Sturrock, I. C. Thomson, Jessie R. Watson, J. M. Webster, Margaret P. M. Wilkie.

FOURTH M.B., CH.B. *Medicine:* G. G. Buchanan, Katharine M. Campbell, Georgina S. Craig, D. W. Dawson, V. S. Ewing, Phyllis Fleming, Annie A. Fulton, A. H. Harkens, L. Jacobs, Isabella D. Kilgour, Nona S. Lesslie, Elizabeth W. MacVicar, Isobel M. Mansie, R. S. Paton, J. D. Stewart, Christina J. Thomson, Margaret L. Tod, Margaret H. R. Young. *Surgery:* Georgina S. Craig, D. W. Dawson, V. S. Ewing, Phyllis Fleming, Annie A. Fulton, A. H. Harkens, Isabella D. Kilgour, Katharine D. Macfarlane, Elizabeth W. MacVicar, G. J. Murray, R. S. Paton, J. D. Stewart, Christina J. Thomson, Margaret L. Tod. *Midwifery:* Georgina S. Craig, D. W. Dawson, V. S. Ewing, Annie A. Fulton, A. H. Harkens, L. Jacobs, Isabella D. Kilgour, Nona S. Lesslie, Katharine D. Macfarlane, Elizabeth W. MacVicar, Isobel M. Mansie, G. J. Murray, R. S. Paton, J. N. D. Smith, J. D. Stewart, Christina J. Thomson, Margaret L. Tod, Margaret H. R. Young.

FIRST D.P.H. *Physics:* Florence B. Mason. *Bacteriology:* Sheila Bridgeford, Edith D. Dobbie.

SECOND D.P.H. *Sanitation and Epidemiology, and Sanitary Law and Vital Statistics:* W. Alexander, Sheila Bridgeford, Caroline R. Crystal, J. Ferguson, W. S. King, Florence B. Mason. O. Johnston passed in Sanitation and Epidemiology only.

Medical News.

WE regret to announce the death, on July 5th, of Sir George Savage, consulting physician and former lecturer on mental diseases at Guy's Hospital, at the age of 78.

AT an honorary graduation ceremony held in the University of Glasgow on June 30th the degree of Doctor of Laws (LL.D.) was conferred on Dr. A. Freeland Fergus, President of the Royal Faculty of Physicians and Surgeons, Glasgow. At a meeting in the Faculty Hall, Glasgow, on June 29th, Dr. Freeland Fergus was presented with the gown and hood of his honorary doctorate by Fellows of Faculty.

AN International Congress on Military Medicine and Pharmacy, in which the British Army Medical Department is taking part, takes place in Brussels from July 15th to 20th. The subjects for discussion include the relations of the army medical service with the Red Cross; clinical and therapeutic studies of poison gases; the campaign against tuberculosis and venereal disease in the army; lessons of the war in the treatment of fractures; and the problem of water purification on campaign.

THE newly elected officers of the Röntgen Society are:—President: Professor J. W. Nicholson, F.R.S. Vice-Presidents: Dr. G. H. Rodman, Sir Ernest Rutherford, F.R.S., and Sir William Bragg, K.B.E., F.R.S. Honorary Treasurer: Mr. Geoffrey Pearce. Honorary Secretaries: Dr. E. A. Owen and Dr. J. Russell Reynolds. Honorary Editor: Major G. W. C. Kaye, O.B.E., M.A., D.Sc.

IN accordance with the regulations which the Ministry of Health have recently issued requiring all health visitors to undergo a special course of training recognized by the Board of Education, the National Health Society has rearranged its scheme of training for health visitors and infant welfare workers. For students who have no previous knowledge of the work a two years' course is now necessary, but for fully trained nurses, health visitors of three years' standing, and students who have obtained a university degree or its equivalent the period is reduced to one year. The next term will commence in September, and particulars can be obtained from the Secretary, National Health Society, 53, Berners Street, W.1.

THE National Housing and Town Planning Council states that the construction of 100,176 houses is in hand under the housing schemes of 1,208 local authorities in England and Wales.

AT a meeting of the Society for the Study of Inebriety, to be held at the rooms of the Medical Society of London on Tuesday next, July 12th, at 4 p.m., Dr. W. A. Potts, medical officer to the Birmingham Committee for the Care of the Mentally Defective, will open a discussion on alcohol and alcoholism in relation to mental deficiency.

THE Medical Supply Association, Ltd., recently advertised that it had acquired the whole of the surplus *x*-ray and electro-medical stores at the War Office. We are asked to state that the Supply Association has since learnt that the War Office had removed a portion of the apparatus before the sale, and that this portion is to be disposed of through the Joint Council of the Order of St. John and the British Red Cross Society.

DURING the annual meeting of the Ontario Medical Association it was stated that according to about 500 replies received to a questionnaire, the opinion obtains that approximately sixteen liquor prescriptions a month are needed in the practice of each physician.

THE *King's College Hospital Gazette* for June is the first number to be published since the war, and is another milestone in the renaissance of the activities of the hospital after the rather disturbed life it has had since the removal in 1913 to Denmark Hill. The editor must be congratulated on an excellent beginning and on the range of his contents—from an interesting article on epidemic encephalitis by Dr. Kinnier Wilson to an amusing skit, in the manner of certain organs of the daily press, entitled, "Aunt Dolly's Corner." Verse, prose—serious and gay—and black-and-white art are all well represented. It is published quarterly, price 1s.

THE Danish Government has allotted half a million kronen for the purchase of radium for use in the hospitals. It is hoped to raise another million by voluntary contributions.

A POST-GRADUATE course on orthopaedics will be held at the Orthopaedic Institute of Berck-sur-Mer (Pas de Calais) from August 1st to 8th. The fee will be 150 francs; particulars may be obtained from Dr. Foche, Institut Calot, Berck, or Clinique Calot, 69, Quai d'Orsay, Paris.

IN April 521 cases of plague are known to have occurred in Java; all were fatal.

DR. G. E. GILLETT, on his departure from Brooke, Norwich, for New Zealand, has been presented by his friends and patients with an illuminated address and a purse of Treasury notes, as a mark of their esteem.

MAJOR ANDREW ELLIOTT, R.A.M.C.(T.F.), has been appointed a Knight of Grace of the Order of St. John of Jerusalem.

THE style of the firm of Walton and Curtis, of Old Cavendish Street, W.1, makers of belts and other surgical appliances, has been changed to H. E. Curtis and Sons, Ltd.

THE late Dr. Henry Barnes of Carlisle left net personalty of £15,815. He bequeathed his medical books to the Royal Society of Medicine, and £50 each to the Royal Medical Benevolent Fund, the Medical Auxiliary of the Church Missionary Society, Epsom College, and the Border Counties Home for Incurables, Carlisle.

DR. GENGOU has been appointed Director-General of Hygiene and Medicine in Belgium.

THE French Academy of Medicine has received a donation from the widow of the Marquis Visconti to found a triennial prize of 3,000 francs in memory of Infroit, the radiologist.

DR. CHARLES E. DE M. SAJOUS has been appointed professor of applied endocrinology, and Dr. George B. Wood professor of laryngology in the Graduate School of Medicine of the University of Pennsylvania.

THE Central Midwives Board held a penal meeting on June 22nd, Sir Francis Champneys presiding, when six cases were considered and four of the midwives were removed from the roll. The monthly meeting was held on the same day. The Board expressed its hope that the Minister of Health would not limit his approval of the rules of the Board, as finally arranged, to one year, as such a limitation could not fail seriously to impair the authority of the rules, on which the safety of the mothers and infants of the nation largely depended. The Board believed that the ground of the proposed limitation was only that the register of nurses is in preparation by the General Nursing Council; it pointed out that the necessary alteration in the rules could be made at any time without delay, whereas the revision of the rules as a whole would take far longer. It was hoped, therefore, that the rules would be approved for the usual period of five years. The Lady Dufferin Hospital, Karachi, was approved as a training school.

THE Royal Earlswood Institution, the pioneer institution for mental defectives, is now entering upon what, we trust, may prove a period of less financial anxiety owing to the liquidation of its accumulated debt of £25,000, thanks to a munificent legacy from Mr. Ray. We learn from the 74th annual report (1921), which has recently been issued, that 431 patients were resident in the establishment (278 males and 153 females) on December 31st, 1920, and that the average number under care during the year was 442; 47 cases were admitted, and 51 were discharged or died. Dr. Charles Caldecott, the medical superintendent, states that of the 14 deaths recorded (furnishing an annual death rate of 3.16 per cent. on the average number resident), pulmonary tuberculosis was responsible for 4, and 1 was due to intestinal tuberculosis, whilst 3 patients who between them had had no fewer than 3,437 fits recorded during 1920, passed away in the status epilepticus. No serious epidemics occurred, and Dr. Caldecott cites, in proof of the generally satisfactory conditions of life at Earlswood, the longevity of many of the "life patients," some of whom are now attaining advanced ages, one having resided more than sixty-eight years in the institution. There is nevertheless a proportion of "hospital cases," amounting to about 25 per cent.; epileptics number about 15 per cent. of the population. Of last year's entrants, 29 (66 per cent.) were under 14 years of age, and it is stated "that a few of the new cases appear bright and of a grade sufficiently high to raise hopes of improvement from training in our schools and workshops, but the heavy proportion of epileptic, paralysed and mongolian patients maintains our percentage of hospital cases." Of the 37 cases discharged, 26 were reported "improved," amongst whom were some "who will be quite able to assist in their own maintenance whilst living amongst relations or friends." It may be interesting to note that Earlswood, though of charitable foundation and dependent to a considerable extent on benevolent contributions for the maintenance of its poorer patients, has also excellent accommodation at higher rates of payment for those of higher social class. Considerable improvements are in progress in the various educational departments, and the arrangements for industrial training advance with the times. Recreation, both musical and muscular, is also a conspicuous feature in the life of the institution.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4757, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"M. H.", who has been abroad since October, 1920, and expects to remain abroad for a total period of thirteen months, asks whether he is liable to British income tax on (1) a Research Fellowship and (2) a pension from the India Office. During his absence abroad his flat is sublet.

*** The principle involved is that if the income is derived from the United Kingdom it is liable to tax, although the recipient may be resident abroad. "M. H." *might* be able to claim exemption on that ground from tax on the India Office pension, but we hesitate to express an opinion to that effect as the question turns largely on the precise nature of the pension and of the fund out of which it is paid.

"CHANTLER" bought a new Humber coupé for £687, selling his second hand two-seater Humber for £475. The inspector refuses to allow the whole expenditure, £687 − £475 = £212, claiming to restrict the allowance to £62, the cost of replacing the two-seater car with a similar one.

*** The inspector appears to be in the right, for expenditure on improvement is regarded as capital expenditure, and as such cannot be deducted for income tax purposes. The fact that the improvement is forced upon the taxpayer by personal or local conditions is immaterial. Our correspondent's argument would apply *mutatis mutandis* to a claim for the cost of the original car purchased, which clearly represents an outlay of capital.

MADEIRA AND THE FRENCH RIVIERA.

IN reply to several correspondents, we may say that of all accessible places, north of the equator, Madeira probably has the most equable winter climate, particularly appropriate for chronic bronchitis. It must be remembered, however, that the island is small, that the choice of places of residence is limited, and that there may be difficulty in getting away owing to the boats being full. The information we have received is to the effect that visitors to Madeira during last winter found living expensive; hotel charges for board and lodging might be ten guineas a week without extras, although we have heard of a small boarding house where the charge was half this amount. On the French Riviera also charges were high, but there is an extensive choice among many places, and with care it might be possible to live on much the same expenditure as in this country. We have heard a good deal of irritation expressed about the number and amount of the extras (*suppléments*) charged at hotels and restaurants both on the Riviera and in Madeira.

ACHING KNEE.

DR. K. R. COLLIS HALLOWES (Peebles) writes in reply to "M." to suggest the application of local radiant heat by heated coil or arc apparatus or leucodescent lamp for fifteen minutes, followed by ionization for thirty minutes, using the salicylion for about a fortnight, and the chlorine ion for a month. The radiant heat should be immediately followed by the ionization, and three or four treatments a week should be the maximum, using a current of 70 to 80 milliamperes. If a current of 60 to 80 milliamperes be used two treatments per week will probably be sufficient.

LETTERS, NOTES, ETC.

CONSULTING ROOMS AND SPECULATORS.

COMPLAINTS are reaching us to the effect that in the West End of London speculators are getting control of consulting rooms, and with the help of much outward show attracting unsuspecting tenants. The house may turn out to be no more than a lodging house with very expensive bed-sitting rooms and a rapid flow of lodgers arriving and departing. It is, we are told, not uncommon for a house of this description to be sold as a going concern without the knowledge of the professional tenants, who may one day notice the furniture, obtained on the hire system, gradually disappearing, and find installed a new landlord or landlady who may have no knowledge of the management or regard for the amenities of a professional house. It would seem wise for seekers after a West End address to make certain of the bona fides of their prospective landlords or landladies, and in no case to omit the safeguard of a rigid financial inquiry as to solvency and previous experience. The success of a West End consulting practice depends in part upon good house management, and happily one of the few advantages of the present fall in prices is that the number of consulting rooms to let is daily becoming greater and rents in consequence less exorbitant.

PERSISTENT HEART BEAT AFTER CESSATION OF RESPIRATION.

DR. H. WALLACE-JONES (Liverpool) writes to say that he recorded in the *Lancet* of September 4th, 1920, a case in which the heart continued to beat for fifteen hours after cessation of respiration.

CHILD WELFARE POSTERS.

THE National League for Health, Maternity, and Child Welfare (4 and 5, Tavistock Square, W.C.1) has published a series of coloured posters on which are printed in bold lettering rhymes on such subjects as baby's food, clothes, exercise, and sleep. One of the rhymes run:

> Sleep, Baby, sleep!
> Baby, learn to sleep.
> Sleep is better worth than gold,
> Learn it young, you'll use it old,
> Sleep, Baby, sleep!

—but the others are really not so bad as that, and we imagine that the series will be useful in child welfare centres.

NORTHUMBRIAN HISTORY AND THE ASSOCIATION MEETING.

"R. T. W." (Manchester) writes: Many members of the British Medical Association who will visit Newcastle at the annual meeting will be well acquainted with the history of Northumbria, and of the Roman wall, and with the important part played by the Northumbrian Kings, by Lindisfarne, and by Bede's School at Jarrow, in the civilization of England. But the majority of members, even those who may have been lovers of English history in their early days, will probably know little of the old Northumbrian kingdom, since English university matriculation examinations in history are usually limited to the period after the Norman Conquest, and in schools little attention is usually paid to the very early periods of English history. I am sure, therefore, that many members would find their visit to Newcastle much more interesting if they read beforehand the section devoted to the Northumbrian kingdom in some standard English history. For those who have no time for more detailed accounts, I may mention the concise and interesting sketch of the old Northumbrian kingdom given in Green's *Short History of the English People* (London, 1919), and the short account given in Professor Tout's *Advanced History of Great Britain* (London, 1920). The district around Newcastle is one of the most interesting in the country historically.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, 32, 33, 34, and 36 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30 and 31.

THE appointment of certifying factory surgeon at Middleton in Teesdale (Durham) is vacant.

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Observations
ON
MALIGNANT GRANULOMA OF THE NOSE.

BY

SIR ROBERT WOODS, M.Ch.(HON.), F.R.C.S.I.,

HONORARY PROFESSOR OF LARYNGOLOGY, TRINITY COLLEGE, DUBLIN; LARYNGOLOGIST TO SIR PATRICK DUN'S HOSPITAL.

[*With Special Plate.*]

I VENTURE to think that the following two cases of a disease hitherto, as far as I know, undescribed are of sufficient interest to deserve a detailed description.

CASE I.

X., a man aged 68, consulted me in February, 1914, complaining of his nose. He was a big and robust countryman who had never had any serious illness in his life. His account of himself was very definite. He had never had occasion to consult a doctor for anything of importance, except when, on June 29th, 1869, he saw the late Sir William Wilde on account of "darkness" of the right eye. He left Sir William because he considered he proved his incompetence by suspecting him of having had venereal disease; and he never saw any doctor or had any treatment for any ailment until he was sent to me by Dr. Kerrigan in February, 1914. The eye was then no worse than it was in 1869, and for anything the patient knew it was no worse in 1869 than when he was born, but he discovered that it was "dark" at that time.

In 1905 he lost both taste and smell, but had no other trouble until December, 1913, when he found the nose blocked.

On examination, the bridge of the nose was sunken just below the nasal bones. The region of the right lacrymal sac was swollen, and a fistula below the internal canthus discharged a watery fluid on to the cheek. Both sides of the nose were filled with fetid crusts, the cartilaginous septum was gone, some of the soft tissues were deficient, and the walls of the nose in a condition of ulceration. The patient was well nourished, appetite good, no glands were enlarged, and the disease was strictly a local one. Syphilis was naturally at first thought of, but it soon became quite evident that it had nothing to do with the complaint. The foetor was quite peculiar, and quite unlike anything I ever before experienced; the crusts were glutinous, and adhered tightly to the forceps used for their removal. A specimen of blood was taken and found to be quite normal; the Wassermann test was negative; salvarsan was administered intravenously, mercury and potassium iodide were prescribed, but all without the slightest obvious effect on the disease. Specimens of the ulcerated surfaces were repeatedly removed, sometimes for diagnostic purposes, sometimes in the course of scraping operations preparatory to the applications of caustics. In every case examination showed granulation tissue to be the dominant feature, but in one place at least it had developed into something very like a sarcoma. Tiodine was injected subcutaneously for a considerable time; but it, too, was without obvious effect. The blood was several times tested for Wassermann's reaction after treatment with antisyphilitic drugs, but always with a negative result. The patient was kept in Sir Patrick Dun's Hospital for some weeks, during which time his temperature remained normal, and was then sent home. On his return about two months later the left lacrymal sac was swollen as the right originally was, and the fistula on the right side had healed.

The patient attended me at the hospital intermittently during 1915 without any substantial gain in his local condition or impairment of his general health. In the early months of 1916 the disease, which had hitherto been marked by the absence of obvious tumour, began to infiltrate the soft palate and back of the nose. In June of that year a necrotic area began to develop in the right side of the soft palate, and towards the end of July had perforated the palate, leaving a large hole about the size of a sixpenny bit. Deafness from Eustachian obstruction was very marked and as all attempts at catheterization failed, relief had to be given by myringotomy, which had to be repeated whenever the wound in the membrane healed. Some awkwardness in swallowing resulted from the perforation in the palate.

My colleague, Dr. Watson, who saw him with me in consultation, kindly undertook to try the therapeutic effects of *x* rays. This treatment was carried out at the end of July and during the month of August. No improvement resulted, and when I saw him on September 17th the soft palate was infiltrated in its whole extent, the perforation had increased in size, the increase being towards the middle line, so that the defect was about equally distributed on either side of the middle line. The edges of the perforation were very definite and sharp; quite rectangular on section. The floor of the ulcer was covered with a greyish slough; there was some redness at the edges.

By November, 1916, the ulceration had progressed in the palate, though it seemed stationary elsewhere, but this extension was irregular, the ulcer branched in the direction of the last right upper molar where the alveolar ridge was exposed and necrotic. He was again put on large doses of potassium iodide up to 20 grains three times a day. Myringotomy was performed every few weeks for the relief of deafness.

The patient's condition became steadily worse. The septum and turbinal tissues, including the turbinal bones, were completely destroyed, but the tissues of the face were never attacked. He ceased to attend hospital, and died at home in October, 1918, four years and a half after the onset of the disease. The progress of the disease could not be described as painful. The discomfort, though sometimes considerable, was never so great as to call for anodynes.

The case was as puzzling to the pathologists as to the clinicians. It seemed as if a wave of granulation tissue advanced irregularly into the healthy parts, breaking down behind as it advanced in front, so that there was never any great depth of pathological growth present. The term "malignant granuloma" was suggested by Dr. O'Sullivan, and I can think of no better label. Efforts were repeatedly made to discover some organism to which blame might be attached, but always without success.

CASE II.

The second case was that of a labourer in a wholesale store, aged 67, who was first seen by me in February, 1920. He had been complaining of discomfort in the nose for some weeks. He was a pale but organically healthy man who had not previously had any notable illness.

On examination, both sides of the nose were filled with the same glutinous crusts, with the same characteristic smell as in the other case. The quadrilateral cartilage was almost completely destroyed, and the crusts were firmly adherent to the edges of the perforation. The ulcer appeared to be spreading along the floor of the left nose. There was no sinking in of the nose below the bridge. Careful inquiry could elicit nothing in his previous history suspicious of syphilis, but as an aid to exclusion a specimen of his blood was examined by the Wassermann test, with a negative result. A specimen of the ulcerated tissue was removed for microscopic examination. It showed a very cellular granulation tissue invading the nasal cartilage; many polymorphs in the tissue. There were a few fibres, and the vessel walls were not thickened. Mercury and potassium iodide were prescribed, and a dose of novarsenobillon was administered intravenously on February 12th, 1920. A week after this injection a necrotic area appeared in the roof of the mouth on the left side of the hard palate. Through the floor of the slough necrosed bone could be felt by the probe. This necrotic patch measured about 10 mm. fore and aft and 6 mm. across. Blood was again sent for Wassermann test, with a negative report.

The condition of the patient grew steadily worse. The necrosis spread to the neighbouring parts of the maxilla, burrowing under the tissues of the cheek. Pain of a most severe neuralgic character set in, the nose and left side of the face were so exquisitely tender that he could not bear being dressed, and sleep became impossible without drugs. He even acquired a peculiar gait, moving cautiously from

one foot to the other, lest the jar of putting his heel heavily on the ground should hurt him.

By the beginning of June the nasal process and a large adjacent portion of the left maxilla was isolated and necrotic. The tissues of the face were attacked above the fold of the nostril and necrosed, leaving a large perforation with tender granular edges between the nose and the cheek, through which the dead bone could be seen and felt over a large area.

The treatment adopted during this time consisted in cauterization of the ulcerated surfaces by chemical caustics, such as acid nitrate of mercury; but though these appeared to arrest the disease now and then in places, it was quite evident that the general trend of the malady was from bad to worse.

We decided to try the effect of radium emanations, and accordingly, in June, four tubes obtained from the Laboratory of the Royal Dublin Society, of about 12 millicuries activity, in steel needles wrapped with tea lead, were placed through the perforation in the palate and left in for eighteen hours. In about two weeks it was quite evident that great improvement had resulted. The posterior part of the palatal perforation had epithelialized, and was no longer tender to the probe. A second dose of radium was given on July 17th, consisting of six tubes of about 20 millicuries activity in steel needles covered with eight wrappings of pure tinfoil. The needles were embedded in dental wax and left in for eighteen hours. In ten days the change was striking. The swelling had subsided, the tenderness reduced to a trifle, and the pain had eased off to such an extent that the patient had no difficulty in sleeping without drugs. Improvement was sustained, and in October the front of the left maxilla, which had become quite loose, was easily removed through the palatal perforation.

He put on flesh rapidly in the latter half of 1920, and remained quite well until Easter of this year, when a swelling appeared on the inner wall of the left nose near the body of the sphenoid. It was certainly a recurrence, but subsided within ten days after an exposure of 360 millicurie hours of emanation, screened through two layers of tea lead.

At my invitation the patient was seen in June by my laryngological colleagues Drs. Dempsey, Gogarty, Graham, Keogh, and Law, all of whom confessed that the case was unique in their experience.

One must hesitate before concluding that a case belongs to a new class, even though its clinical features differ from everyday experience. The vagaries of syphilis in particular are so notorious that the greatest caution must be exercised. I felt that in these cases syphilis was the one disease that needed the most rigorous exclusion. Not being a believer in the constancy of the Wassermann reaction in syphilis I placed no reliance on a negative report, though I am of opinion that, at least in the second case, the acuteness of the disease was such that the negative Wassermann amounted to a positive exclusion. But when, in addition to this and other evidence, all the best tried and most valued remedies are applied, as they were in both these cases, without the least effect on their progress, the case for its exclusion is overwhelming.

There remains to be considered the nature of the process in these two cases, for, although differing from one another in some important respects, their similarities make it likely that they resulted from the same cause.

Granulation tissue is usually the result of that attempt at repair that follows tissue destruction, and when the cause of destruction is bacterial there is little difficulty nowadays in recognizing the organism. In these cases no such organism could be found, and the presumption is raised that the granulation tissue, so far from being an evidence of attempted healing, is itself the primary cause of destruction.

Until we understand what is meant by a cell taking on malignant action we cannot doubt that what happens to one kind of cell may happen to another, and if we can have a malignant epithelioma, why not malignant granuloma?

The pathological side of the question, while of the highest interest and importance, must from the clinician's point of view give place to the interest attaching to the fact that the first case failed to be cured by *x* ray, and the second was certainly cured by radium.

INFECTIVE EXTERNAL HYDROCEPHALUS ("SHILLING EPILEPSY").

BY

CECIL E. REYNOLDS, M.D., D.P.H., M.R.C.S.,

LOS ANGELES.

[With Special Plate.]

THE following case, at one time or another, presented all the symptoms of the various other cases of epilepsy due to localized hydrocephalus which I have reported elsewhere.

History.

L. H., female, born October 29th, 1911, of good stock, was healthy until she had whooping-cough in June, 1916, the cough of which dragged on until December, 1916, during which month she had sore throat and fever. Her tonsils were removed in January, 1917. From this time until March she would cry out in her sleep. During March she contracted a habit of constantly rubbing the palm of the right hand upon the head of her "Teddy Bear," and when questioned, said her hand itched. Later in March, 1917, she ran to her mother during the day with her right hand in a state of involuntary flexion. This contraction was repeated with increasing frequency and severity, and in a few weeks it became so strong as to resist her father's efforts to open the hand. Consciousness was unaffected in these attacks. In April, 1917, it was discovered that she was having, about four times a night, attacks in which the whole body stiffened and the right arm was convulsed. The attacks from June onward became solely nocturnal, and were more severe and frequent, especially after a febrile attack in July, in which the temperature was 103°. Her memory appeared to be failing. During this time she complained often of headache "all over," and of nausea, but seldom if ever vomited; she was obstinately constipated, and her nose bled almost every week. The appetite was poor, but the diet had been greatly restricted. A Wassermann test of the blood was negative. The condition became steadily worse, until about October 5th she was having almost continuous fits every night, and on October 18th remained unconscious, cyanosed and rigid for so long that death was expected.

On October 19th, 1918, I met Dr. J. H. Utley and Dr. William A. Edwards in consultation, and, operation being agreed upon, she was admitted to the California Hospital under my care.

Condition on Admission.

The patient is a fairly well nourished child of 7 years, mentally bright to the point of precocity, over-restless, and inclined to laugh hysterically, good tempered, walks "pigeon-toed," the right foot being more inverted. The optic discs have clear, sharp margins; the temporal sides are rather pale, and the veins a trifle large. Alternating internal strabismus definitely present though slight. Slight lateral nystagmus to the left seen once. Pupils normal in size and contour, equal, and react well to light and accommodation. Slight weakness of the right angle of the mouth when at rest and on voluntary movement. No other muscular weakness discernible, but, although right-handed, she is at least as strong in her left hand as her right. Sensation everywhere very keen and well localized. Slight Rombergism present. Position sense of right arm rather less certain. Arm co-ordination excellent and pointing normal. Knee-jerks equal and exaggerated. No ankle clonus, plantar reflexes flexor. Temperature 98.6°, pulse 94; weight 50 lb.

Before she was soundly asleep at night the fits began with tonic contraction of the flexors of the body, extension and adduction of the arms, and extenson of the knees with flexion of the hips. The emprosthotonos was so great that the head nearly touched the thighs. Shortly afterwards there occurred blinking movements of the eyelids, the right angle of the mouth was drawn clonically to the right, the formerly extended right wrist was clonically flexed and the convulsion spread to the right arm. The left arm and both legs remained rigid throughout. During some fits she would awaken whilst the right arm and face were in clonus, and ask to have them stopped. Often she awoke aphasic or anarthric, and then would be greatly terrified. Usually she wept bitterly on coming out of a fit; at night, if awake without having had a fit, she seemed peevish and made even "fighting and striking out" movements. During the fit the eyes were obscured by the clonus of the lids, but it is probable that they were jerked to the right, for after the fit they moved slowly to the left, as if the opposite group of muscles were weak. The right arm was paretic after the fits, and the right side of the mouth drooped more. In less than 1 per cent. of the fits there was opisthotonus instead of emprosthotonos. These fits, solely nocturnal, occurred every ten minutes or more all through the night.

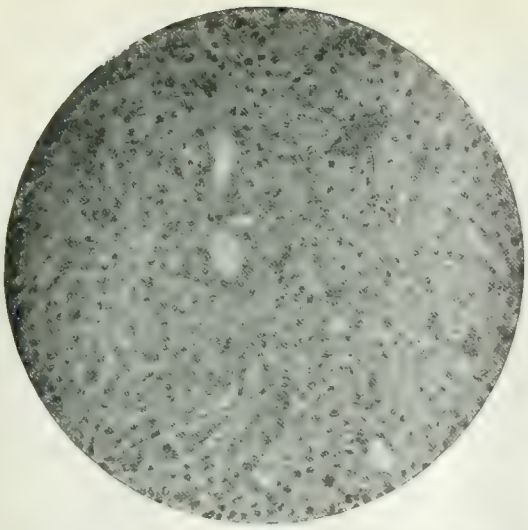


FIG. 1.—Case I, early stage. The section has the characters of granulation tissue.

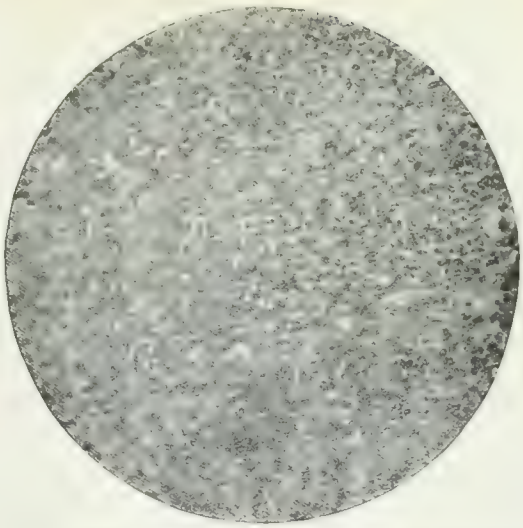


FIG. 2. Case I, later stage. The cells are more irregular in shape, size, and distribution.

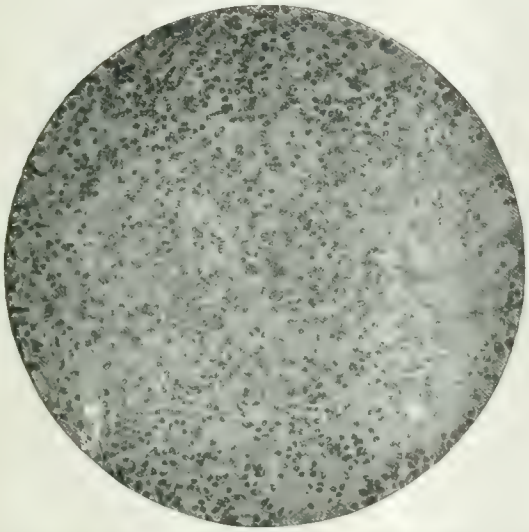


FIG. 3. Case II, early stage. The blood vessels resemble those of granulation tissue, and there are numerous polymorphs present. There are also many large multinucleated cells.

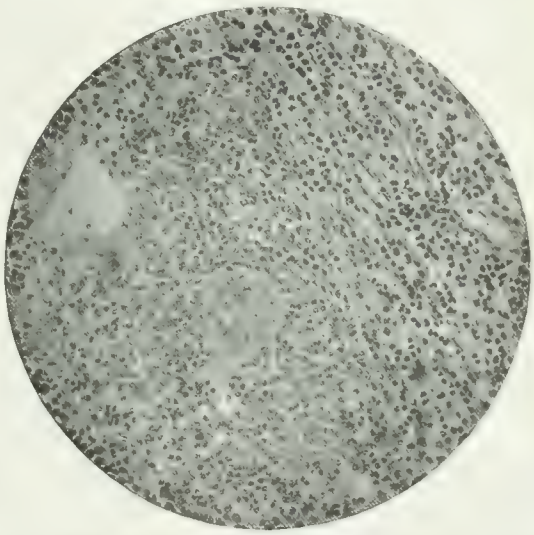


FIG. 4. Case II, later stage. The round cells are more numerous and have a tendency to lie in rows. The large multinucleated cells are also present.

The microphotographs were taken by Professor Adrian Stokes.



FIG. 5.—Case I.

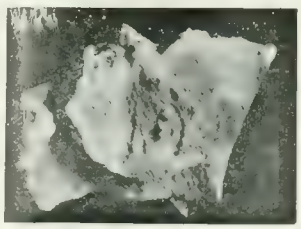


FIG. 7.—Case II, inner aspect.



FIG. 8.—Case II, outer aspect.



FIG. 6.—Case II.

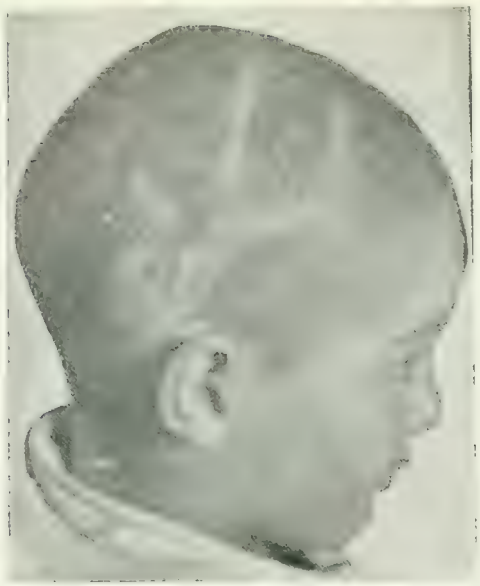


FIG. 1.—Second, third, and fourth operations (subtemporal decompression; right osteoplastic flap, and insertion of gold tube).

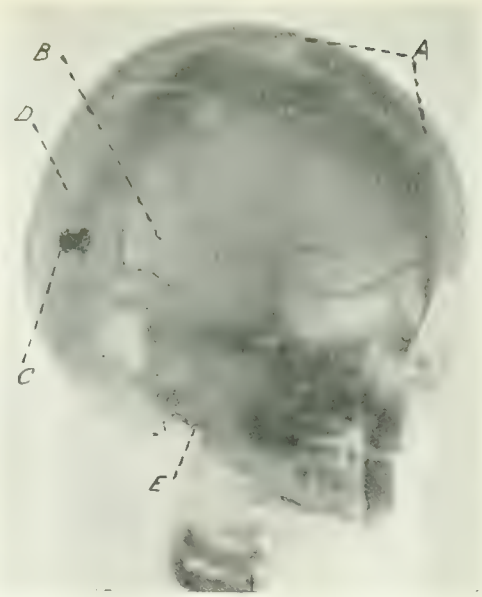


FIG. 2.—Operations 1 to 5. A, Left osteoplastic flap. B, Right osteoplastic flap and subtemporal decompression. C, Gold tube. D, Trephine hole for gold tube. E, Suboccipital decompression.



FIG. 3.—Fifth operation (suboccipital incision): exposing both cerebellar hemispheres and dura covering fourth ventricle and medulla.



FIG. 4.—The patient nine months after the last operation.

BROOK: TRANSFIXION AND IMPALEMENT INJURIES.

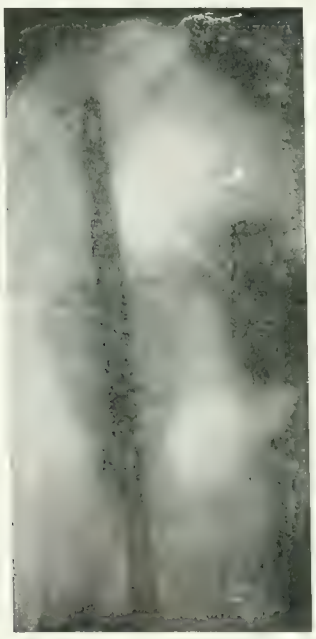


FIG. 1.

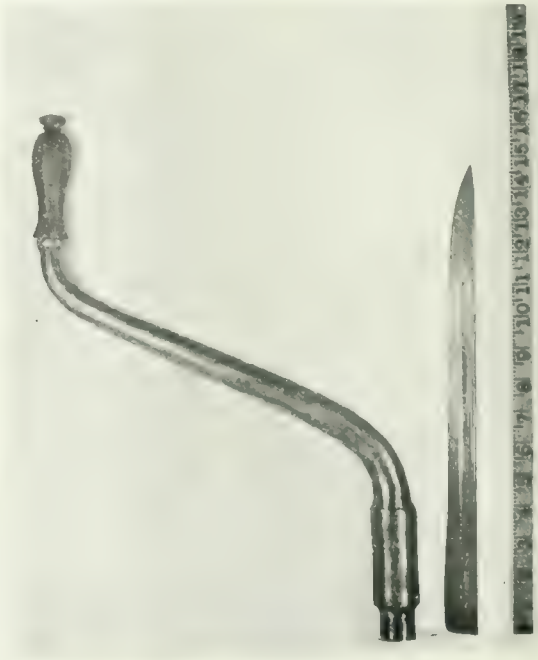


FIG. 2.

There were thus three types of fit seen, namely—

Cerebello-medullary or anterior vermis defect (tonic emprosthotonus and tonic rigidity of limbs).

Inter-peduncular or posterior vermis defect (tonic opisthotonos and tonic rigidity of limbs and alarming depression).

Left Rolandic (clonic contractions of right angle of mouth, blinking of eyelids, deviation of eyes to right, and, later, clonic flexion of the recently hyper-extended wrist and arm of the right side).

TREATMENT.

First Operation: First Stage.

October 24th, 1918, at 10 a.m. The blood pressure at time of incision was 117, and pulse 100. A bevel-edged osteoplastic flap reflected, and palpation over the left arm and hand centres revealed fluid under the dura, which was incised at the upper margin of the window; much subarachnoid oedema was evident. The blood pressure then fell suddenly from 115 to 80, and the pulse rate increased to 158. Accordingly I tied off the larger branch of the middle meningeal artery by under-running, and replaced the bone scalp flap, leaving a thin flat rubber drain at the postero-superior angle, and returned the patient to bed at 10.55 a.m.

The shock became more profound as fluid drained from the wound, probably forced through the arachnoid by pressure. In spite of this, it seemed best to combat the shock by keeping the head low, bandaging the legs, hypodermic injections of camphorated oil, and a rectal drip of hot tea and brandy. An anxious time for about five hours. She improved until October 29th, when she had twenty fits during the night, each about fifteen seconds' duration.

Second Stage of First Operation.

October 30th. Blood pressure at commencement 98, pulse 140. Osteoplastic flap non-adherent to the dura prised up without difficulty. The dura was covered with a little fibrin. The former incision was easily recognized, and reflection of the dura was continued from the point where it had been formerly interrupted; it was very thick. A flap, comprising the whole exposed area except a thin margin around the edge of the bony defect, was reflected and retracted sufficiently to leave an area of denuded cortex a good inch wide at the sides and above when the dura was laid back upon the bulging brain. Ventricular puncture was not performed. Marked subarachnoid oedema was visible over this area and the channels that lodge the middle cerebral vessels were filled with a clear yellowish fluid. The superficial wall of arachnoid covering this marsh was incised in several places, especially just above the Sylvian point. The meningeal vessels did not bleed, but fine sutures were passed around both sides of the flap base as a precautionary measure. The cortex was washed with lotio hydrarg. perchlor. 1 in 4,000, the dura laid smoothly on the cortex, and the bone scalp flap replaced leaving an unstuffed thin rubber cigarette drain in the postero-superior angle of the flap. Blood pressure 94, pulse 136.

This completed the second stage of the Rolandic de-duralizing operation, but it was now clear that a permanent subtemporal decompression to relieve the pressure would have to be done at the earliest favourable moment on the opposite (right) side. Largely owing to the admirable even, light ether anaesthesia by Dr. T. C. Low, the patient's condition was excellent after this operation. She was returned to bed with the head kept high, and improved until, at 2 a.m. on October 31st, there was much trembling of the right hand and arm for about a minute; had seven spasms of the old emprosthotonos type, some with the legs flexed and some with legs extended, and followed by right arm clonus and accompanied by blinking of the eyes. At 7.45 a.m. she developed anarthria after a fit. At 11.30 a.m. I found her in very good condition but complaining of pain in the right great toe. As the drainage tube was lying against the cortex in the neighbourhood of the sensory toe area I removed it, and this symptom abated very shortly. She had a good day, but that night, following a tonic (cerebellar) spasm, she had a Jacksonian attack, with definite coarse clonic contractions of the right arm, of which she was conscious throughout, asking to have them stopped. At 1 p.m. next day she had a tonic spasm, in which both eyes turned upwards. At 1.40 a.m. I found that she had a marked right-sided paralysis of the arm and angle of the mouth and was unable to speak, but understood what was said. Power of speech had returned at 4.30 a.m. At 5.30 a.m. involuntary micturition during a fit was noticed for the first time. She had four severe and twelve light fits during the night; temperature 100.4°, pulse 136, respirations 20. At 10 a.m. (November 1st), when the wound was dressed, clear fluid escaped. At 2 p.m. the arm was somewhat recovered as she had been sitting very vertically, but she looked very ill and the jaw had a tendency to drop. Slight anarthria. 4 p.m.: Deep sighing and yawning (cerebello-medullary oedema).

Second Operation.

Blood pressure 110 and pulse 120. A generous and low-situated subtemporal decompression was performed on November 1st and the dura opened to the fullest extent. A great excess of fluid, about a demi-tasse, escaped from the subdural space. The blood pressure at once rose from 110 to 130 and the pulse frequency dropped from 145 to 130. The dura was left wide open, the vertical separation in the temporal muscle brought together with catgut, the temporal fascia replaced, and a thin unstuffed cigarette drain left under the fascia at the postero-inferior angle. Blood pressure 130, pulse 130.

The patient was now turned around and, while still in the semi-recumbent posture, the left Rolandic area was further inspected. The bone flap was readily lifted and had not appreciably adhered either to the pia arachnoid or to the dural flap. The latter was quite flat and smooth but even more shrunken than before, greyer, and less congested. The arachnoid was glazed and closely applied to the pia and cortex, and there were only slight traces of blood around the margin of the skull defect. On raising the dural flap the under side was slightly sticky. Everything was replaced and the patient returned to bed at 10.3 p.m. with a blood pressure of 94 and pulse 148. Head raised.

She slept well from 10.15 until 12.30, when she had a customary emprosthotonos with both arms extended in front of the body. Slept till 1.30 a.m., November 2nd. At 2.25 a.m. a very severe Jacksonian fit began, affecting the right arm and angle of the mouth. Morphine gr. 1/20 hypodermically and bromide and chloral were given per rectum, but, until she was changed from the sitting posture and laid on the left side, the violent contractions were only checked by full chloroform narcosis and recurred when it was withdrawn. The drain was removed. After this the fits were easily controlled by chloroform. They were probably due to too rapid drainage.

These fits, in lesser degree and combined at times with those of the basal type, recurred all day on November 2nd, and in the intervals the right hand kept up a coarse tremor with the thumb flexed into the palm. The head and eyes were forcibly deviated to the right during the seizures, and she was conscious throughout many that I saw, her attempts to cry out being stifled by the spasms of the mouth and throat. Amyl nitrite and oxygen seemed of little value, but chloroform relieved at once; only in the first attack did it have to be pushed. I was ably relieved during this trying time by Dr. A. Zuber of the California Hospital, to whom I am indebted for the blood-pressure records taken during all the operations. I made the following notes at the times specified at the bedside, and they seem to be highly significant observations in regard to the fluid-pressure cause of these fits:

November 3rd, 8.45 a.m. Patient recumbent. Pure Jacksonian fit right arm and face (clonic). 4.20 p.m. Still recumbent. Jacksonian clonic fit of the right arm and eyes to the right. Speech impossible, hebetude marked. Temperature 98°, pulse 122, respirations 20. 4.45 p.m. Up on back-rest. 5 p.m. Clonic cortical fit of mouth to the right. The arm did not participate in this attack. 5.15 p.m. Still up on back-rest. Tonic basal spasm, both arms extended. No clonic. Mentally clear after it. Pulse 120, good volume. 5.50 p.m. Still on back-rest. Tonic basal spasm, followed by clonic of angle of mouth and tongue. Fully conscious of clonus and asks for $CHCl_3$, which at once arrests the twitching. Speech clearing markedly. Whole attack much milder. 6.23 p.m. Still on back-rest. Another fit, still milder.

This was the last clonic fit until November 30th, when they temporarily reappeared as described later.

It seems obvious why the cortical fits disappeared when she was raised in bed on the afternoon of November 3rd, since they vanished first from the arm, which is highest of the affected centres, and later from the mouth. The subsequent fits were tonic in character, being mild forms of what I had previously regarded as cerebellar or basal fits. The "shifting epilepsy" could only have been caused by fluid as it shifted according to posture—if one lowered the head the fits became cortical-clonic; if one raised it they became basal-tonic; and as one moved the patient they disappeared first from the higher placed centres.

On November 17th she had seven very slight and brief tonic spasms during the night; this was the best night she had had for more than a year. She was not herself aware of having had any "spells" since November 3rd.

On November 23rd the temperature at 8 a.m. was 99°. At 9 a.m. I performed a lumbar puncture under light chloroform narcosis, and with the patient recumbent upon her left side. Fluid came out under very great pressure. In all less than

20 c.cm. were allowed to escape; it was quite clear and colourless.

There was no ill effect afterwards on this day, although the temperature rose to 99.4 and the pulse to 104 in the evening. It was considered safe to remove this quantity of fluid because the lack of bulging in the subtemporal region argued against hydrops ventriculi—a condition which, when present, would render lumbar puncture dangerous—and also because the subdural location of the fluid found at the second (the subtemporal) operation gave the assurance that the intrathecal pressure was due to a pond under the cerebellum.

On November 24th, 1918, she had only three very slight spasms. There were no fits of any kind on the night of November 27th, and she slept well.

Report on Spinal Fluid.—Cell count: 2 mononuclears per 1 c.mm. Butyric acid test: Negative with 0.2 c.cm. spinal fluid. Wassermann test: Negative; 1 c.cm. spinal fluid produces no fixation with 1 unit of complement.

The trouble began again on November 30th with seven fits; five light, two severe. December 1st: Six fits last night (basal type). Discs normal; no congestion of the retinal vessels. Urine highly alkaline, otherwise normal. December 2nd: Ten fits last night (basal type). December 3rd: Eleven fits. On December 4th the fits had again assumed a cortical-clonic character, and at 7 a.m. next day I found her comatose with eyes deviated to the right, but the limbs at rest, and was informed that these urgent symptoms had been present for half an hour; also that she had had severe opisthotonos. She soon developed myoclonic shocks of the left arm, hand, and face, and the head and eyes were severely jerked to the left. Throughout this attack, which lasted about twenty minutes, and until she was under chloroform, the right side remained passive; the right side had been clonically convulsed before the first operation.

While she was under chloroform I performed a lumbar puncture between the fourth and fifth lumbar spines, and the fluid oozed out slowly drop by drop, so that in ten minutes I had only collected 3 c.cm. of clear fluid. It was therefore under greatly reduced pressure. I now put the needle well into the theca between the third and fourth spines, but no fluid came. I had felt the needle puncture the dura as usual, and the stilette found the needle clear, so that it was evidently a genuine "dry tap." At the same time it was noticeable that the subtemporal region on the right side was very tense.

The opinion was formed that an acute accession of internal hydrocephalus had followed the valve-like closure of the ventricular outlets, especially the foramen of Magendie. In other words, the insufficient relief of the external hydrocephalus had secondarily brought about a condition of internal hydrocephalus, which in turn displaced the fluid of the cisterna basalis upward and corked up the foramen magnum. It will be remembered that at the previous lumbar puncture the fluid was under high pressure, and remained so in the spinal theca after the needle had been withdrawn. It was now discovered, during the semi-lucid period, that she was hemiplegic on the left side, the leg being only slightly affected.

Third Operation.

She was removed to the California Hospital, where I enlarged the subtemporal decompression. The adhesions between the cortex and the temporal muscle were so firm that they could not be separated without haemorrhage. It was possible, however, to continue the enlarging with rongeurs from the edge of the old opening. Above this decompression an osteoplastic flap was cut with its base upward, the two sides being made with a Gigli wire saw, which was easily passed up to the drill holes from the large opening below, and on breaking the flap upwards an excellent hinge was obtained in the upper parietal region. The dura bulged, and pulsation was not observed. Reflection of the dura revealed considerable general pressure and much subarachnoid fluid, which flowed away freely after the arachnoid had been opened at the lower part of the flap and just above the old subtemporal adhesions. The dura was left open, being laid back upon the brain under the osteoplastic flap, but in the temporal region a large strip of dura was brought through the temporal muscle and stitched to the deep aspect of the skin flap in the hope of increasing the drainage. Two rubber cigarette drains (unstuffed) were left in contact with the temporal cortex and brought out externally. Blood pressure was 105 mm. at the commencement and at the end of the operation, and the pulse 120 to 140.

There was no vomiting after the operation and consciousness was soon regained, her mental condition becoming excellent. Immediate and profuse flow of cerebrospinal fluid necessitated frequent change of outer dressings during the night. There were no fits of any kind this night and she slept well. On the morning of December 6th, while sitting up, she had a severe *grand mal* attack, lasting a minute and a half. This ceased, and was not repeated when she was placed recumbent, and was evidently due to too rapid drainage. The drains were removed at noon. She remained in excellent condition (lying down) and slept from 6 p.m. till 8.40 p.m., when she had a slight spasm. Next day, at noon, there was a spasm lasting two minutes, and another at 4 o'clock. At 5.30 a.m., while still lying low, she had another fit, cortical-clonic in character, the convulsions of the mouth continuing after she awakened. I gave instructions to raise her to a sitting posture; the twitching promptly ceased, and the speech, which had been much affected for more than an hour, returned and she lost the dysphagia. It was now more obvious than ever that we had to maintain a balance between the fluid accumulating at the base and that collecting at the vertex, according to symptoms. I left standing instructions that if, after a fit, the colour was bad and there were signs of collapse, she was to be placed in the recumbent posture; if the colour and pulse were good but the speech thick and the mind dulled, she was to be propped up. This had a good effect, and at 10 a.m. she was as bright as usual.

Fourth Operation.

The fourth operation was performed on December 7th. Somnoform and ether was administered by Dr. T. C. Low. Blood pressure 108, pulse 145. A quarter-inch trephine hole was made over the posterior end of the right superior temporosphenoidal convolution, and another small hole made with the perforator of a Hudson drill about half an inch lower. By passing a protector between the bone and the dura this second small hole was reamered out so as to fit exactly the central part of the female half of the wide-bore flanged gold tube (14 carat). The dura was now cut in a circle as large as the drill-hole, and the female half of the tube passed from the subarachnoid space through the dura and the drill-hole in the bone; the male half of the tube was screwed home, so that the bone and dura were clamped, not too tightly, between the two flanges. In view of future growth enough space was allowed to sew the periosteum and some loose tissue between the male (external) flange and the outer table of the skull. During the insertion of the female or inner half of the tube a fine thread was fitted through a hole in the flange in case the tube slipped during insertion; this thread was removed as soon as the tube was well home. The whole procedure was made more difficult by the increased intracerebral pressure existing at this time, but as this was not very excessive I did not tap the ventricle, preferring puncture of the corpus callosum when driven to it. Moreover, I was working on the principle that if the external hydrocephalus were permanently relieved the internal hydrops could take care of itself, as there was reason to believe that the iter and foramen of Magendie were patent as long as the fluid was being absorbed with sufficient rapidity external to them. The patient was returned to bed at 12 noon, with a blood pressure of 116, and pulse 156; good volume. Diastolic pressure, 78.

Since this operation the patient has never had another cortical-clonic fit, with one doubtful exception on December 17th. The scalp healed promptly over the tube, which did its work well in combination with the dural valve in the subtemporal region, for fluid was evident in the loose cellular tissue of the scalp at the time of the fifth operation (suboccipital) described below, and marked oedema of the right side of the face was periodically visible as late as January 10th, 1919.

There were no more fits of any kind, either day or night, until December 12th, and during these five days of freedom and absorption the temperature was normal in the mornings and averaged 99.6° F. in the evenings; pulse 110. The decompression did not bulge. The nose bled once.

On December 12th, at 3.40 a.m., while sleeping and fairly low on the pillows, she had a slight tonic basal spasm, and at 10 a.m. her articulation was temporarily affected but her mentality bright as usual. December 13th: A good night and very bright and cheerful; slight epistaxis. December 14th: A good night and no more spasms. December 15th: A good night, though slightly more restless; bright all day. On December 16th slight basal spasms reappeared, and on December 17th, at 5.35 p.m., she had in my presence, while awake and lying low in the bed, a purely basal tonic spasm lasting 35 seconds. In this the head approximated the thighs, as in the initial basal element of her pre-operative fits. Lumbar puncture revealed fluid under strong pressure, but not so strong as on November 23rd. (It will be remembered that on December 5th the spinal theca was practically dry.) During this night she had eight purely basal spasms. December 18th: The lumbar puncture seemed to have brought about an exacerbation of basal pressure, as she had increasingly frequent basal fits until December 20th, when I again operated.

Fifth Operation.

9.19 a.m. Operation under somnoform and ether. Blood pressure at the time of incision 104, pulse 126. The skin flaps

of Cushing's crossbow method to expose both cerebellar hemispheres were turned down with minimal bleeding; but when the patient, who was lying in the semi-prone position, was turned a little further on to the right side to permit easier reflection of the muscles, the pulse disappeared at the wrist. Accordingly, the skin flaps were replaced and covered with a dressing, the head was lowered, and venesection of the median basilic vein and saline infusion of the median cephalic vein were performed. The collapse, probably due to a cerebellar fit under the anaesthetic, occurred at 9.36 a.m., and by 10.20 a.m. the operation could be resumed with the patient's blood pressure 98 systolic, 50 diastolic, pulse 110. The cellular tissue of the scalp over the occiput was found on incision to contain considerable fluid from drainage out of the openings above the tentorium previously described.

The patient being placed now in an almost upright sitting posture, a trephine hole was made to the left of the occipital sinuses and just above the margin of the foramen magnum. The bone was further removed with rongeurs and the de Vilbiss forceps until the posterior half of the foramen magnum had been taken away, the dura over the medulla, fourth ventricle, and occipital sinuses fully exposed, and both cerebellar hemispheres denuded of bone within the limits of the superior curved line. The dura was more adherent to the bone than usual and in places appeared thickened. Pulsation was not readily felt or seen, and upon incising the dura the arachnoid was found to be adherent to its deep aspect. Much fluid between the dura-arachnoid and the cerebellar substance obscured the latter from view even in the highest part of the wound, a bluish thin-walled sac of fluid coming into view, upon opening which much fluid gushed out.

The blood-pressure records (mm. Hg) and pulse rates are as follows:

A.M.		Systolic.	Diastolic.	Pulse.
10 35.	Before opening skull	92 ...	50 ...	130
10 39.	After opening skull	100 ...	50 ...	102
10 49.	Bone removal complete ..	92 ...	58 ...	140
10 51.	Dura reflected	96 ..	50 ...	120
11 15.	Subsequent manipulations ..	81 (lowest)	50 ...	124
11 18.	Wound closed	96 ...	52 ...	140

The dura was fully opened over both cerebellar hemispheres, leaving intact that over the occipital sinuses. The dura covering the fourth ventricle was not incised, as it was felt that the posterior medullary velum would, in this case, allow the discharge of fluid from the ventricle when its lateral supports had been removed. Accordingly, a large flap of dura-arachnoid was turned upwards on the left side and brought through a slit in the upper fringe of complexus muscle and stitched to the fascia covering the occiput just above. Upon attempting to do the same thing on the right side by turning a dural flap outwards, the dura here was found to be so friable that it would not hold a stitch, and so, time pressing, the rest of the dura was everywhere left wide open as it was, and the muscles were brought together by iodized catgut suture. The wound was closed without drainage.

The condition that had been found was therefore a posterior basic meningitis, evidenced by thickened dura, adherent arachnoid, excessive subarachnoid fluid, and fine strands and adventitious vessels bridging across between the pia and arachnoid and dura. No tubercles were seen.

From this time on the progress has been uneventful, and the temperature has been normal since March, 1919. In June, 1919, the weight was 69 lb. She is the brightest child mentally I have known. In January, 1920, the report was received that she has remained in perfect health and with increased mental development. There have been no fits of any kind since December 22nd, 1918.

OBSERVATIONS.

I have reported this case in great detail because of its rare nature and because of the physiological points brought out.

In regard to its apparent rarity, Professor Thomas M. Rotch, in his *Pediatrics* (1901), says: "Both the congenital and acquired forms of external hydrocephalus are so rare that they need not be more than mentioned . . ." In *Diseases of the Nervous System*, by Jelliffe and White (Lea and Febiger, 1917, p. 559), there appears the statement that "External hydrocephalus, synonymous with serous meningitis, is, as an entity, infrequent," and the better known fact is also mentioned that "in chronic hydrocephalus, contractions and partial and general spasms are of ordinary occurrence."

The title of this paper requires a few words of explanation in regard to its various elements.

I believe that there was a loculated serous meningitis of the left Rolandic area where the first craniectomy revealed a subarachnoid accumulation of fluid, because the child's first symptom was a paraesthesia of the right hand, followed in a few days by Jacksonian epilepsy of the right hand and, later, the right arm. In this respect the case was identical with Case 4 and Case 6 which I reported in *International Clinics*, vol. 3, series 28, 1918, under the title "The operative treatment of chronic polio-encephalitis superior"; these were cured by craniectomy over the affected area alone, leaving the dura open. This same procedure had a similar beneficial effect in the present case as regards the Jacksonian fits of the right arm, some time before the other types of epilepsy had been abolished by the combined subtemporal and suboccipital deduralizations.

F. Krause (*Surgical Operations*, 1917, vol. ii, pp. 496-499, reports a case similar to Case 6 of the paper referred to above) except that Krause's patient suffered three fits a month, whereas mine had twenty fits per night. Fluid was also found by Krause, who performed Kocher's valve-flap operation, with a resulting immunity from fits for at least six months, after which the patient was lost sight of.

The first element of the title, "infective external hydrocephalus," needs but little elucidation, for it is self-evident from the clinical notes, but emphasis may be placed on the large amount of fluid found in the middle fossa during the second (the subtemporal) operation, and in the posterior fossa during the fifth (the suboccipital) operation, as well as in the spinal theca on November 23rd; also upon the shifting character of the epilepsy, especially on November 3rd between 8.45 a.m. and 6.23 p.m., when it was well demonstrated that raising the patient to a sitting posture caused the fits to change their character and disappear in such order that the centres that were posturally highest were the first to be relieved from the spasms. Moreover, after 6.23 p.m. on November 3rd, when the fits ceased in response to the change of posture, there was no recurrence of cortical fits for twenty-seven days. It is difficult to imagine any other cause than shifting of fluid to account for such a disappearance of these symptoms and particularly on such a sliding scale. Moreover, confirmation was also present in that hebetude and aphasia rapidly disappeared when the patient sat up.

This does not tell us whether the fluid produces convulsions by mechanical pressure upon the blood vessels, causing anaemia of the cortex (which is my belief), or whether it acts by virtue of its abnormal chemical constitution. It appears certain that children more readily than adults react to varied intracranial pressure by convulsions, and convulsions are commonly observed a considerable time before the other signs of pressure appear in children.

Sir Charles Ballance (*Some Points in the Surgery of the Brain*, 1907) describes diffuse external hydrocephalus as follows (p. 46):

"In the subdural space, which is not divided into compartments, a pond of fluid will form, while in the subarachnoid space of the cortex the tissue under normal circumstances being traversed by countless rivulets of fluid (like marshy ground) will become oedematous and swollen."

This work does not mention polio-encephalitis as a cause for some of these conditions, but Krause mentions the likelihood in his works, and a good description of some of the symptoms attributed to this cause can be found in the article on epilepsy by the late Sir William Gowers in *Quain's Dictionary of Medicine*.

I believe that the internal hydrocephalus, which she must have had during the basal and cortical fits on December 5th, when the spinal theca was found almost dry, the subtemporal hernia bulged, and inadequate supratentorial drainage had been established for a month, was secondary, thus:

Fluid accumulated beneath the tentorium until, for example, the foramen of Magendie was occluded, the back pressure being assumed capable of causing a temporary valve-like closure when the posterior medullary velum was sticky with inflammatory products. Then, more fluid being formed within the ventricles by the choroid plexuses, the cerebellum was forced downwards and the fluid in the cisternae magnae and basalis displaced upwards to the cortex, which at first could accommodate it, the former operations also giving egress to the subdural space and to the subcutaneous tissues from the subarachnoid level, but later the cortical region became overburdened and the clonic fits reappeared. By this time the medulla had corked up the foramen magnum, and the fluid in the spinal theca was absorbed by the spinal veins and lymphatics at the time when I failed to get more than 3 c.cm. by puncture; hence the urgent condition of the patient, the severe basal spasms and the return of the cortical fits on this date, all of which were relieved by enlarging the subtemporal decompression, turning back a flap of dura through the muscle and inserting a gold tube.

It is clear why absorption of the fluid was arrested in the first place, since at the subsequent (fifth) operation it was found that the arachnoid was adherent to the dura all over the posterior fossa. Without doubt removal of one

half of the foramen magnum improved the venous circulation, and gave "elbow room" to the fourth ventricle.

In seeming contradiction to the above theory is the fact that on November 23rd I removed 20 c.cm. of fluid from the spinal theca under great pressure, and thereafter she had no fits of any kind for four days; but this contradiction is only apparent, because the fluid was still coming out in a continuous stream when I withdrew the needle, so that just enough fluid was removed, and not too much that is, not so much that the medulla should sink into the foramen magnum; whereas, on December 17th, when the pressure in the spinal theca was less, removal of 15 c.cm. of fluid did increase the basal fits.

A similar mechanical condition to the above seems to have occurred eventually in a case of primary internal hydrocephalus reported by Dr. Sutherland and Sir Watson Cheyne in the *Transactions* of the Clinical Society of London, based on experiments by Dr. Leonard Hill (*Physiology and Pathology of the Cerebral Circulation*), who states:

"If we could only establish a permanent communication between the ventricles and the subarachnoid space, then no matter how much fluid is poured out into the ventricles it would be at once absorbed and carried off by the veins of the subarachnoid and subdural space, and thus all injurious pressure intra- or extra-cerebral would be removed and the brain would be free to develop if it could."

Accordingly, Sutherland and Cheyne put the ventricle of a six months old hydrocephalic child into communication with the subdural space by means of a bundle of catgut which was left within the skull and the scalp closed.

The hydrocephalus greatly diminished, but the child showed no improvement in intelligence, and nine weeks later developed symptoms of basal meningitis, dying twelve weeks after operation. Necropsy showed the ventriculo-subdural drain patent and free from inflammation, the ventricles not distended, but a pool of fluid in the subdural space. The authors add that "expansion of the brain, the factor necessary for the removal of the fluid, had not taken place." The veins had not taken up the subdural fluid as Dr. Hill asserts is normally to be expected, owing, I suspect, to the basal meningitis spoken of above, and possibly for this reason the brain did not expand.

The patient whose case I have recorded had an extracerebral pool of fluid at every operation, and certainly the brain was then and is now well "expanded," but in spite of the palliative effect of the various supratentorial measures her symptoms did not disappear until the inflamed dura and arachnoid had been completely and permanently reflected from both cerebellar hemispheres. In regard to the original cause of the posterior basic meningitis and the localized serous meningitis of the left cortex that was discovered in this case it will be remembered that within a few days after the removal of inflamed and pus-laden tonsils she cried out in her sleep for several nights—an unusual thing for her—and within a month she began to complain of itching in the right palm, which was followed by the Jacksonian fits. It seems highly probable that a septic thrombus in the tonsillar branch of the ascending pharyngeal artery was carried off into the more distal posterior meningeal branches of the same vessel; and more septic matter may have been conveyed via the middle meningeal or middle cerebral to the left Rolandic area. I have no doubt that the tonsils are responsible for many such infections, although it is curious that the left Rolandic area should be so often the first to show symptoms of the infection. One moral is to render all tonsils as clean as possible before removal.

It may be asked why I did not perform a suboccipital decompression in the first instance in this case. The first and most weighty reason is that I have usually had greater shock with the suboccipital operation than when operating above the tentorium. In the four supratentorial operations upon this child not more than 1 oz. of blood in all was lost. The second reason is that I am by no means convinced that in cases of epilepsy having Jacksonian characters any mere decompression ever suffices to effect a cure, and believe that the most favourable outlook is produced by leaving a large dural flap wide open over the area indicated by focal signs. The dura eventually regenerates, as I have demonstrated elsewhere. The third reason is that as regards the type of fit that has been designated "basal" in this case, I have known these to clear up completely after the safe and simple subtemporal decompression of Cushing.

I reported [illegible] in the *Canadian Medical Journal* of November, 1914, under the title "Decompression in acquired hydrocephalus." The fits were identical with the opisthotonic ones of the present case (L. H.), and the trouble had progressed to almost total blindness before operation cured both conditions.

For these reasons, in the case of L. H. I did not approach the base until compelled to do so by a process of exclusion. Again, the osteoplastic flap causes the least deformity, leaves no permanent weakness of the skull, and will cure some at least of the most severe cases, even when the Jacksonian fits do not comprise the whole clinical picture, as was the result in Case 6 of my paper already referred to (*International Clinics*, 1918, series 28, vol. 3), in which the whole operation was completed in one stage without shock—a procedure generally inadvisable, as the two-stage operation allows more gradual adaptation of the vital centres to the alterations of pressure.

Ballance, in his work already referred to, speaking of the attitude of the head in cerebellar lesions, says: "Also the head may be retracted or the chin depressed on the chest; the anterior or posterior part of the vermis is then probably involved." This is in accord with Pagano's experiments on animals, in which he found that stimulation of the anterior part of the vermis caused the head to look upwards and the subject to fall backwards, whereas stimulation of the posterior vermis brought the chin down on the chest and caused a falling forwards.

Several additional points of moment have been emphasized in the course ot this case, three of which I have noticed in previous cases.

First, that the greatest shock of most brain operations is apt to occur after the skull is opened for the first time. When the intracranial contents have had a few days to become accustomed to the change of pressure, the brain can be judiciously attended to without much fear. In this connexion one is reminded of the views of Leonard Hill on the influence of atmospheric pressure, and, in spite of the statement of so experienced a cerebral surgeon as Sir Charles Ballance that no profound changes are observed upon first opening the skull, my experience from careful blood-pressure records has been that stage 1 is the only time in many operations that I had any cause to fear a sudden depression. I have never lost a patient from operation except from one cause—to wit, doing too much at stage 1, so that it became necessary to enforce recumbency to combat shock at a time when the mechanical conditions within the cranium called loudly for a sitting posture. I think that more stress should be laid on the question of posture both during and after cranial operations.

In none of the subsequent operations upon L. H. was there any disturbing shock due to the surgical procedure, and even after the suboccipital operation, which is usually considered a severe measure in a debilitated patient, her condition was excellent, because I believe there was a decompression above the tentorium that allowed the atmosphere to follow the changes in the fluid pressure and intracranial bulk. Thus, after I released the large amount of fluid from the cisterna magna, any fluid that followed it from the fourth ventricle could be replaced without tension by that from the third and lateral ventricles, for the atmosphere was able to press into the subtemporal region. The chief danger, therefore, of brain surgery lies in alterations of pressure, positive and negative. I have met with severe but not fatal shock under similar circumstances in at least three other cases of extracerebral fluid upon which I operated.

The next point is that cortical-clonic fits appear to be produced not only by too much fluid but by too rapid drainage of fluid from the cortex into the basal cisterns, as may be inferred from a reference to the events that occurred on November 2nd at 2.25 a.m., and on December 6th. In this connexion also Harvey Cushing speaks of convulsions caused by loss of cerebro-spinal fluid after his ventriculo-abdominal drainage (Keen's *Surgery*).

Fourthly, it is not always possible to obtain adequate drainage and decompression of the entire cranial cavity by any operations above it. Fifthly, the arachnoid of the great cisterns is most important for the absorption of excess fluid, but can be replaced by muscle.

It is evident that an accurate knowledge of the pathology of many of these conditions can only be obtained by exploratory operation, since fluid that would be obvious upon the brain during life is usually absent in the [illegible] room.

TREATMENT OF ASTHMA BY AUTOGENOUS STREPTOCOCCAL VACCINES.

BY

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MANY workers have recorded favourable results from the vaccine treatment of asthma, especially in the bronchial type of the disease. During my last seven years in India I used the method extensively in Bengal, where asthma is so common and difficult to treat, and I have already recorded favourable results in 13 cases[1] from the use of autogenous streptococcal vaccines made from cultures from the sputum. Since that time I have treated, and followed up by correspondence as far as possible, a further larger number of cases, and am now able to record a second series of 40 cases. As it would be tedious to describe them in detail, I have classified them to bring out the degree of benefit and the duration of the effects obtained.

The method consists simply in making cultures from the sputum, preferably that obtained during or soon after an attack, subculturing a number of colonies of streptococci, including any short chain pneumococci, so as to include a number of strains, and making up a vaccine of the strength of 100 millions in 1 c.cm., which can be conveniently put up in one of Wright's small rubber-capped bottles. The initial dose is $\frac{1}{4}$ to $\frac{1}{2}$ c.cm., and as soon as little or no reaction ensues it is rapidly worked up to 1 c.cm. weekly, and after several such doses to $1\frac{1}{2}$ to 2 c.cm., the larger doses being given at intervals of ten days. If any marked reaction or temporary increase of the symptoms occurs the dose should be decreased to one half and cautiously increased again when no reaction follows an injection. The treatment usually has to be continued for two or three months and sometimes longer, several injections being given after definite improvement is observed to obtain more lasting results. There has been no selection of cases, all those treated since my last paper appeared up to within one year of leaving India, and followed up for several months to allow sufficient time to enable the results to be judged, being included.

The patients may be conveniently grouped in the following classes, beginning with the failures, continuing with those who obtained only temporary benefit, and ending with the patients who were very greatly improved or quite well when last heard of, the last class being subdivided into those who had not been followed up for a complete year and those in whom the benefit had persisted for from one to four years.

I. *Failures.*

They number 6 out of 40, or 15 per cent.

In 2 severe reactions without benefit occurred; in one of them the symptoms appeared to be anaphylactic in nature.

In 2 no effect was produced, but one of these only had three injections and could not be followed up, so the treatment did not get a fair chance. In one much benefit followed for five months, but was probably due to a change of climate, so it is included among the failures as he relapsed. In one some benefit followed, but he was cured later by nasal cautery. On the other hand, I have seen several other cases in which nasal treatment failed, but vaccines were subsequently successful.

II. *Good Immediate Effect but It lapse within One Year.*

This was observed in 7 cases, or 17.5 per cent.

In 2 the relapse was as severe as before, although seven and ten months' relief respectively was afforded. In one much relief was afforded for nine months, and further benefit resulted from a second course, although the patient was aged 65 and had had asthma for ten years.

In 4 slight and less frequent attacks recurred after from five to nine months; chills brought on the attacks in two instances, but the patients were very much pleased with the great relief afforded them, although it was temporary in two and partial in the remaining three.

III. *Good Effect for a Year or More, but Subsequent Relapse.*

This occurred in 6 cases, or 15 per cent.

In one a slight relapse occurred after a wetting at the end of a year's freedom. In one after twenty-six months' freedom a relapse followed a wetting, but the patient kept well again later. In one a relapse occurred after influenza, and the later history is not known. In two a relapse was followed by freedom from asthma or greatly lessened severity of the disease for further periods of one to two years.

Thus in all these cases very great benefit of from one to three years' duration resulted.

IV. *Good Effects up to Six to Nine Months when Last Heard of.*

The number of cases in this series was 5, or 12.5 per cent. In all the immediate effect of the treatment was very satisfactory, although they could not be followed up for long; in view of the results obtained in the next series, there is, however, every reason to believe that in most cases in this class (IV) the relief was also of considerably longer duration. All except one were chronic cases.

V. *Good Effect Maintained for at Least One to Four Years.*

Considerably the largest number, 16 cases, or 40 per cent., fall into this most satisfactory class, in which complete or almost complete relief was afforded for a long time. Thus, when the patients were last heard of, the benefit had in 9 instances lasted one to two years; in 3 it had lasted two to three years; and in 4 from three to four years.

That Class V was not by any means composed of early or favourable cases will be clear from the following data:

The average age of the patients was 40.5 years.

The average duration of the disease was five years.

The average duration of the treatment was three months.

These results appear to me to be very satisfactory, especially when it is remembered that the patients were all treated in the extremely trying, damp, hot climate of Lower Bengal, which is notoriously unfavourable to asthmatic patients, as pointed out in 1886 by Norman Chevers. Many of them were very liable to colds and bronchial trouble, and these conditions also were much relieved. Only patients with well marked asthma are included in the above series, the bronchial type of asthma being the prevalent one in Bengal.

In view of favourable reports on the use of intravenous injections of peptone in asthma it occurred to me that my vaccines might contain an appreciable dose of peptone; but analyses kindly made for me by my colleague, Major Shorten, I.M.S., Professor of Physiology, Calcutta, excluded this explanation of my results. They therefore appear to be due to immunization against the streptococcal group of organisms, which are so frequent a cause of bronchial and throat infections, and a common excitant of asthmatic attacks in persons liable to them. I have not attempted to isolate and differentiate separate colonies of this wide group of organisms, as I believe the simpler plan of using a number of colonies to make subcultures from the original culture tubes for preparing vaccines is more satisfactory; it can readily be carried out in any small bacteriological laboratory, and has furnished results in my hands which have been most satisfactory to the majority of my patients.

CONCLUSIONS.

1. In 15 per cent. of the cases the treatment failed to give material relief of a lasting nature.

2. In 32.5 per cent. great relief was afforded, but it was either not permanent or it was incomplete.

3. In 52.5 per cent. the patients remained well when last heard of from one-half to four years after the treatment.

REFERENCE.

1 *Practitioner*, June, 1916.

TRANSFIXION AND IMPALEMENT INJURIES.

BY

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(With Special Plate.)

RECENT references to these injuries in the BRITISH MEDICAL JOURNAL, including that of the historic shaft preserved in the museum of the Royal College of Surgeons of England, encourages me to think that the following cases, one occurring in military and the other in civil life, are of sufficient interest to place on record.

Impalement on Bayonet.

The patient, a short, thick-set muscular man, was admitted in November, 1916, to Neath Section of the Third Western General Hospital, among a convoy of recently wounded from France. He presented a small bayonet wound in the right gluteal region, received six days previously, healing by primary union; beneath it was a hemispherical swelling about 3 inches in diameter, evidently a haematoma. I examined the latter carefully then, and again three or four days later, when it was diminishing in size, as its position suggested the possibility of injury to the gluteal artery. The only account vouchsafed

by the patient, who was a phlegmatic agriculturist in civil life, was that he had "sat on the sentry's bayonet."

The next I heard of the case was a few days later, when my colleague, Captain J. T. Williams, reported to me that on examining the man prior to transferring him to an auxiliary hospital, he had detected a foreign body at the site of the previous swelling. Investigation with an *x*-ray tube then revealed the fact that a portion of a bayonet blade, broken off near its base, and measuring some 15 inches in length, was embedded in the right gluteal and erector spinae masses, the point lying under the angle of the scapula (Figs. 1 and 2).

The story, which he had casually epitomized as "sitting on the sentry's bayonet," when dragged out of him amounted to the following: He was taking part in a night attack from our trenches. The party had only just got over the top when the attack was discovered by the enemy, who opened fire, and in scrambling back he had come down on to a sentry's bayonet which was leaning against the parapet. When removed the bayonet was quite bright, having evidently been cleaned only shortly before the accident.

The main interest in the case attaches to the fact, at first sight almost incredible, that a wounded man with just under fifteen inches of bayonet in his body could have found his way from the first line trenches right back to a home base hospital, and almost to an auxiliary hospital, without its presence being suspected. The chief factors contributing to such a possibility were, of course, first, the cleanliness of the sentry; secondly, the temperament, and thirdly, the build of the patient.

It was naturally easy enough when we knew it was there to feel the blade as it bridged the lumbar region, but then only by posturing him, as it lay flat against and in close contact with the iliac crest and ribs. During the day or two he was up and about before its discovery, the only inconvenience he seems to have experienced was in sitting down. This he avoided as much as possible, but walked freely about with other patients.

Impalement on Tramcar Control Crank.

In this case the patient, a young man of 26, was impaled on a tramcar control crank which traversed the rectal wall, the bladder, the peritoneal cavity, and the anterior abdominal wall except skin. He was admitted to the Swansea General Hospital on June 8th, 1912, at midnight in an unconscious state. The people who brought him knew nothing about him, except that he came from a neighbouring town, and that they had been asked to pass him on to the hospital. His general condition appeared to be due to a mixture of severe shock and alcohol. The house-surgeon, Dr. Lewis Jones, to whom I am indebted for notes of the case, found a doughy circumscribed swelling about two inches in diameter in the abdominal wall, three inches within and two inches above the left anterior superior spine. He further ascertained that the bladder was empty. In spite of the collapsed condition of the patient immediate operation was decided upon. The swelling proved to be a mass of small bowel covered only by skin, which had herniated through a recent laceration in the peritoneum, muscles, and fasciae. Further investigation discovered a little free fluid smelling faintly urinous and faecal. A tear about one and a half inches in length was found to the left of the fundus of the bladder. This was sutured, the peritoneum cleaned, and the abdominal wound closed around a drain.

Attention was then turned to the rectum. A little blood was discovered between the folds of the buttocks, and an extensive lacerated wound of the anterior wall of the rectum, above the internal sphincter, leading into the bladder. The bladder was drained by catheter through the urethra and the rectum by laying open both sphincters well back towards the coccyx.

Examination of the man's trousers confirmed the obvious conclusion already arrived at—namely, that he had been impaled on some stake-like object. Twenty-four hours later it was learnt that while getting down from the outside of a tramcar in the dark he had fallen on to the cranked control on the dash-board. (Fig. 2.) He made a good recovery, except that the wound in the abdominal wall suppurated freely, a ventral hernia resulting. For this he still refuses operation.

I was able a few months ago to secure the actual control crank upon which he was impaled, which is well shown in the photograph. (Fig. 2.)

THE PHYSICAL BASIS OF SOCIAL INEFFICIENCY.

BY

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In a monograph entitled *Intelligence and Social Valuation*,[1] by Mr. Porteus and myself, we ventured to assert, as the result of a long and extensive research, that it was now possible, in a limited number of cases—but particularly in the so-called mentally deficient—to determine the relative state of development of the cortical layers of the cerebrum in the living subject. While this claim has not been seriously controverted—possibly because it has not yet become widely known—it is certain that some of our critics have failed to understand how even this limited claim can be true of the individual. In view of the practical importance of the subject, it would appear advisable to furnish some explanation of certain points dealt with in the monograph referred to.

There is no part of the human body where function is so directly dependent on structure as the central nervous system. The neurone doctrine has very profoundly altered our conceptions of the working of the nervous system. Recent research has gone even further, and has created something like a revolution. The busy practitioner has neither the time nor the opportunity for following the stages of these scientific advances, and hence their accumulated findings suddenly come as something of a shock. I propose therefore, briefly, and probably very imperfectly, to endeavour to furnish an outline of these changes, particularly in so far as they concern the physical basis of social inefficiency.

The human brain is made up of peculiarly modified nerve cells and processes, termed neurones, embedded in neuroglia. The former are developed from neuroblasts, and the cells of the latter from spongioblasts. Prior to the time at which the two groups can be distinguished from each other they are spoken of as indifferent cells. The development of these cells into neuroblasts and spongioblasts does not occur in all cells simultaneously, some being more precocious than others. Further, the spongioblasts develop somewhat in advance of the neuroblasts, and there is not infrequently found a fairly complete spongioblastic framework having as yet no differentiated nerve cells or fibres. Should this condition persist into adult life, it is clear that there will result a large, heavy brain with an excess of neuroglia, an insufficiency of neurones, and a consequent lack of intelligence. On the other hand, should the neuroblastic development exceed the spongioblastic, there will result the large, heavy, multi-neuroned brain of high intelligence. Developmentally there are therefore two types of large and heavy brain—the multi-neuroned brain of superintelligence, and the multi-neuroglial brain of average intelligence or even stupidity. These two types must no longer be confused, though a study of some of the most modern physiological and anatomical textbooks would appear to show a confusion of thought on the subject, and a lack of appreciation of the clinical support given to the developmental truths herein enunciated. The large, heavy brain of a bricklayer, quoted in the works referred to, is, of course, an instance of the multi-neuroglial brain with an insufficiency of neurones.

The neuronic conception of the brain has become so important that it is now more usual to think of that brain in terms of neurones and neuronic reflex arcs than in the obsolescent lobes and convolutions of former times. That the cell body and dendrons of the neurone are the source, under suitable stimulation, of the energy displayed by the nervous system is undoubted, as is also the fact that, if a human individual possess a diminished number of neurones, or imperfectly developed neurones, he will be incapable—just as is the microcephalic idiot—of the same "intelligent" action as the more fortunately endowed individual. Just as with electric action, an insufficient number of batteries, an imperfectly connected series of batteries, or an improper insulation, give indifferent results, so also is it with the human central nervous system. An insufficient number of cell bodies, an imperfectly connected series of neurones, an insufficient number of collaterals, or an imperfect medullation of axons, especially within the white matter of the brain and cord, give imperfect

results as regards the display of "intelligent" action. All these facts, provided there has been no compensating over-development of spongioblasts into neuroglia, also denote a smaller brain.

It is unfortunate that a certain school of psychologists discuss "mentality" as though it had no physical basis, whereas the formula is "no neurone, no mentality." The intellectual activities of the individual are entirely dependent on the number of normally developed, connected, and insulated neurones, and all the neurones which the individual is to possess are present, in an immature condition, at birth, gradually assuming functional activity with growth, medullation, and collateral connexion. It follows, therefore, that any process which tends to interfere with the proper growth and development of the neurone has an extremely serious result, not only on the individual but also on those with whom he comes in contact. Amongst the causes which interfere with the proper growth and development of the neurone are lack of oxygen from interference with breathing, as from adenoids, chronically enlarged tonsils, long confinement in improperly ventilated rooms; hookworm, which reduces the haemoglobin; many poisons, particularly alcohol and syphilis, and other less well-known pre-natal and post-natal factors. Amongst the agencies of destruction of normally developed neurones the best known are old age, chronic alcoholism, and syphilis. Breeding from neuronic underdeveloped stock (mentally defective stock) is the most powerful method of continuing the evil, as if both parents are mentally deficient there is no escape for the offspring.

Different groups of neurones fulfil different functions. The known functional areas of the cortex occupy but a relatively small area, and are surrounded, like islands, by the very much larger association areas. The presence of the latter is one of the most striking features of the human brain, and it is certain, both from their structural neuronic connexions, as also from experimental and clinical lesions, that they play an important part in the production of those higher psychic phenomena which distinguish Man from any of the lower animals. The association areas are the true cortical areas of thought and of all that that implies. Were Broca's conception of a definite cortical speech centre true, it would be possible to educate a higher mammal to speak. That this is not possible is due to the fact that association centres are not present to any extent in the lower animals, and hence the absolute certainty that the mechanism of speech is a much more complex neuronic series of connexions than was supposed by Broca, and that it includes some portion of the association areas, in addition to the occipital end of the third frontal convolution.

Whilst it is undoubtedly true that different portions of the cerebral cortex fulfil specific functions, it must not be forgotten that, structurally and functionally, different parts of the brain are so intimately connected as to make it not improbable that injury or developmental defect in any one part may influence prejudicially the functional value of all other regions in the brain. The generalized idea of a localization of function has long been accepted, but the modern view is that the human cerebrum is composed of a plurality of organs, not completely separated from each other, but intimately associated, and to a certain extent dependent on one another for their functional importance. So far all attempts to localize the functional activities of the brain have had reference to planes of separation *vertical* to the cortex, but the most recent work on the lamination of the cortex makes it probable that it is also necessary to consider the separation of function along the *horizontal* planes of the cell layers of the cortex, because these layers certainly appear to perform quite different psychical functions. This work and its far-reaching consequences may now be considered.

In the post-central gyrus—a gyrus of afferent nerve terminations—there are, histologically, eight layers, the fifth of which is a granular layer, in which most of the afferent nerves have their terminations. This granular layer represents the original external cortical layer of the mammalian brain, and hence the dictum that the neopallium of the mammalian cortex is primarily built up on an infragranular basis, that is, of pyramidal and other cells lying deep to the granular layer. In the higher animals, and particularly in Man, those pyramidal and other cells lying superficial to the granular layer are a more recent evolutionary addition to the cerebral cortex, and subserve different and altogether higher psychic functions than the ontogenetically and phylogenetically older infragranular series of pyramidal cells.

The infragranular layer of the cortex, or the middle fibre lamina and inner cell lamina of polymorphic cells, comprises the deep large pyramidal cell layer, the deep medium-sized pyramidal cell layer, and the polymorphic cell layer of the histologist. In every human individual this infragranular layer of the cortex is the first to appear and the first to attain maturity. It subserves the lower voluntary and instinctive activities of the animal economy, and thus forms a lower level basis for the carrying on of cerebral function. It is absolutely and relatively as well developed in the higher animals as in Man, and is developed equally well in the feeble-minded and in the normal individual. It is, therefore, concerned with the activities of animal instinct, such as the self-protective, the selfish, and the sexual. Shortly after birth it has attained 82 per cent. of its ultimate adult development in depth. Judgement, common sense, reason, as evidenced in behaviour, are dependent on the control of the activities of this layer by the supragranular or outer cell lamina. The layer is often actually increased in depth in such *abnormal* cases as high-grade amentia, and of chronic insanity with moderate dementia. A considerable decrease, on the other hand, exists in more marked aments, and in gross dements who are unable to carry on the ordinary animal functions, such as attending to their own wants.

The supragranular layer (or the outer cell lamina and the outer fibre lamina) comprises the molecular or plexiform layer, the small pyramidal cell layer, the superficial medium-sized pyramidal cell layer, and the superficial large pyramidal cell layer of the histologist. This layer is the most prominent feature of the human cortex, and constitutes a higher level basis for the carrying on of the cerebral functions. It subserves the higher thought processes, and is, therefore, the layer through which school "education" largely works. It is the last layer of the cortex to be evolved, the last to commence to develop, the last to attain maturity, and consequently the first to undergo retrogression. Having been, from the evolutionary standpoint, recently added, it is in a state of instability. It is the only cell layer of the cortex which varies definitely in measurable depth in *normal* brains. It is under-developed to different degrees, according to the mental capacity of the individual in persons exhibiting various grades of mental subevolution, and it undergoes degrees of retrogression which correspond to the amount of dementia existing in cases which permanently suffer from diminution or loss of mental powers.

It is thus clear that, of the various evolutionary factors which have contributed to the enlarged brain of Man, the addition of the outer cell lamina and outer fibre lamina (supragranular layer) is, from the physical and psychic standpoints, one of the most important. If it be not present, or be badly or imperfectly developed, there must be a smaller brain, with deficient or imperfect psychic or "intelligent" function, because under these conditions about a third or a half of the variously estimated 3,000 to 9,000 million neurones of the cerebral cortex are absent or are very imperfectly developed. Provided such absence is not compensated for by an increase in neuroglial tissue, there should be a smaller head, which will be revealed by head measurement. If complete individual examination, mental and physical, confirms the findings of head measurement the diagnosis becomes certain, and there is thus revealed, even in the individual, the relative state of development of the cortical layers of the brain. The exact percentage of cases in which this is possible will be referred to later.

If such be the psychic functions of the horizontal layers of the cerebral cortex—and there is no reasonable ground for doubt—it is clear that they are very far-reaching in their consequences. There is seen to be a physical basis for a large proportion of crime and prostitution; for much of the social inefficiency with which we are now confronted; for many problems of resistance to disease, and so on; and the time has surely come when these doctrines must be transferred from the laboratory to the living subject.

In endeavouring to effect this transference, the first difficulty with which Mr. Porteus and I were confronted was the absence of data on the cubic capacity of brain of

the living individual at different periods of growth. We had to supply this information, and so became involved in a long and laborious research amongst some 10,000 living Victorian school children and university students. With the data before us we were profoundly impressed with the extraordinary range of variation of the brain capacity of children of the same chronological age. In every year of life from 6 years onwards there were a large number who possessed 30, 40, and even 50 per cent. more brain capacity than others of the same age.

In the cubing of the living head, by diametral measurement and mathematical calculation, there are various sources of error, most of which are known and can be guarded against. There are others, particularly those induced by varying degrees of neuronic and neuroglial development, which are unknown, and which may be the cause of serious error. These sources of error are fully discussed in our original monograph. But all the sources of error combined, even if they occurred in the same individual case—which is highly improbable—do not, and cannot, account for the whole of the large individual differences as we found them. The range of variation in the cubic capacity of brain of individuals of the same age is much too great to be swept away on the grounds of errors in technique. Some other explanation must be sought, and in my experience it is to be looked for in partial failure of neuronic development.

This problem of the range of variation and its significance, and of the limits of normality, is an extremely important one in all biological processes, and does not appear to be fully realized by the medical profession. Though neither my fellow author nor myself would venture to pose as statistical experts we are both fully satisfied that the statistical method is the only scientific method of attacking such problems. For the purpose, therefore, of establishing a first estimate of the confines of normality of brain capacity, we adopted, for reasons fully set forth in our monograph, the percentile, or more properly the decile method, which may be popularly explained as follows:

Let it be assumed that the stature of 500,000 adult men is the subject of investigation. Every individual's stature is recorded on a separate card. These cards are then arranged in order from the lowest to the highest. A scale, numbered 0, 10, 20, 30 and so on up to 100, is then prepared. The stature of the smallest individual is recorded opposite the zero percentile. The cards are then counted for one-tenth of their number, and the stature there found is placed opposite the 10 of the scale, and so on right through the whole series until the last card is reached, which is that of the tallest man, whose stature is recorded opposite the 100 of the scale. The stature recorded opposite the 50 percentile will give, without any calculation whatsoever—always provided a sufficiency of observations has been taken—the average stature of the community. It is further obvious that the readings at zero and 100 will give the range of the variation within the series examined, whilst the confines of normality may be regarded provisionally as being between the 10 and 90 deciles of the scale, which may be checked, if necessary, by the estimation of the standard deviation about the norm or average. It is clear that the dwarfs will be below the 10 percentile, and the giants above the 90 percentile. Persons whose stature falls below the 10 percentile or above the 90 percentile, may, therefore, be provisionally regarded as being abnormal as regards their stature. It is a matter for regret that school medical officers do not adopt this simple method of displaying the stature and weights of school children, as much labour would be saved, their results would be available for comparative purposes by other investigators, and an indication would be afforded of the range of the variation.

Such a method applied to head measurement and cubic capacity of brain gives the small-headed, and small-brained, at one end of the scale, and the large-headed, though not necessarily the multi-neuroned brain, at the other. On purely theoretical grounds, and as a basis for further investigation, we elected to regard the cases below the 10 percentile, and above the 90 percentile, as the *potentially* abnormal members of the series. We then proceeded to test this hypothesis clinically. Two hundred children, whom we had not previously seen, and in whom there was no suspicion of cerebral abnormality prior to that provisionally revealed by head measurement, were submitted to certain well known standardized mental tests, and what resulted? Of the small-headed, one in every two was found to be at feeble-minded levels, and of the big-headed, one in every four was at a super-intelligent level. In 50 per cent. of the microcephales (deciles 0 to 10), that is, in 5 per cent. of the total series of children, head measurement had revealed evidence of the lack of development of the supragranular layer of the cortex, and of its abundant development in 25 per cent. of the big-headed (deciles 90 to 100)—that is, in 2.5 per cent. of the population. It is a singular fact that these percentages, small though they may appear to be, agree fairly closely with the estimated proportions of cerebral abnormality as determined by other methods.

To have determined the proportion of feeble-minded in the remaining 80 per cent. of the cases—that is, between the 10 and 90 deciles—would have necessitated the psychological examination of nearly 10,000 children, which, for us, was impossible. Mr. Porteus thought he could elicit the same result in another way, and after his appointment to the Vineland Training School he examined a known group of 50 feeble-minded children with the object of determining the exact percentiles of their head measurement. He found that 39 per cent. of the cases fell below the 10 percentile and 14 per cent. above the 90 percentile. In these latter neuroglial development has replaced neuronic development. The remaining 50 per cent. are scattered throughout the remaining 80 percentiles. The agreement between the 200 Melbourne cases and the 50 Vineland cases is so remarkable as to afford a sufficiency of evidence that the majority of mentally defective persons have abnormally developed heads, and that in such cases the determination of the brain capacity affords valuable information as to the state of development of the cortical layers of the brain in a majority of such individuals. In the greater proportion of normal individuals it affords but little information, but in the abnormal its value has been established beyond doubt.

It is not to be assumed that this investigation has been carried out without being checked at every stage by actual clinical practice. It was the clinical problem with which we were concerned from the outset, but we determined that it should everywhere be checked by laboratory investigation of the phenomena of neurology. We have seen many hundreds of feeble-minded children, either private or institutional cases, and in our experience there have been few indeed in whom head measurement, combined with the other avenues of clinical approach, did not afford some indication of the state of development of the cortical layers of the brain. On p. 86 of our Memoir will be found two typical diagnosis charts, regarded by us as the minimum on which diagnosis should be based, these being two of our actual cases. The first one is the case of a middle grade imbecile of the microcephalic type, where the brain capacity (13 percentile) shows a retardation of brain growth of six years, and affords evidence of the lack of development of the supragranular layer, whilst the personal history confirms the fact, inasmuch as it indicates that the individual is working on the animal instincts of his infragranular layer.

The second case is that of a high-grade moron of the macrocephalic (92 percentile) type, which is specially selected because head measurement as such gives no certain indication of the state of development of the cortical layers of the brain. It merely elicits the fact that the child is an abnormally big-headed type. The complete examination, however, makes it an almost certain inference that this big head is not the product of a multi-neuroned brain, but is due to the presence of either fluid or neuroglia. In any case, valuable information has been obtained.

Deeming, the murderer, was an exceptionally small-headed individual, and it is certain that, in him, all the animal depravities were displayed from the presence of an infragranular cortex, with but little or no supragranular cortex; hence the small brain and head, because many of his neurones were absent, or were improperly developed. Deeming was an adult with the brain capacity of a boy of 13 years.

Oscar Wilde is an exceptional case of another category. He belonged to the big-headed type of genius—that is, both his supragranular and infragranular cortical layers were in excess of normal. The production of his literary and dramatic works involved the use of his supragranular

layer, which, exhausted with the effort, underwent a species of chromatolysis, leaving the clamant calls of the now uncontrolled sex instincts of his infragranular layer to work their way into Reading gaol. Students of literature will be enabled to recall many other cases of sex immorality in literary men of genius.

In the many cases of cerebrally under-developed children whom I have seen during the last few years there are few indeed where the examination did not give some indication of the state of development of the cortical layers of the brain, and there were practically none—of the bad cases at least—where the animal instincts of an uncontrolled infragranular layer did not manifest themselves in either the form of uncontrolled sexual activities or some form of theft. Both these are purely animal instincts. If cerebrally under-developed human individuals, through no fault of their own, are to continue to be allowed to exercise their animal instincts at the expense of society, it is time to abandon efforts at social reconstruction. Society demands, and is entitled, to protect itself against the ravages of the cerebrally under-developed, who should be the object of institutional treatment. If that were begun with the children of to-day, of whom there should be a complete national mental and physical record, the next generation would be freed from the incubus of much of the present-day maintenance of the criminal, the prostitute, and the social derelict, because it is now possible, during childhood, to diagnose many of the physical factors which, *given the environment*, make, from the child of to-day, the criminal of to-morrow. The really ironical part of society's indifference to a scientific problem, which it understands only dimly or not at all, is that such individuals, under proper control and guidance, can be made to be self-supporting.

"It is a curious fact," says Groszmann, "that the American nation is spending only 600 million dollars annually for schools, churches, and other constructive agencies; in other words 500 million dollars *less* is spent to develop human assets than is spent to keep up the human failures. It would seem reasonable to expect the American people to apply their recognized business perspicuity to invert these figures, investing more for *constructive conversion* and *conservation*. Such investment in proper methods of conversion of waste would reduce the enormous refuse-heap now accumulating in the form of human derelicts, causing it automatically to shrink to reasonable bounds. All the failures in the business of life, among them the 500,000 or so of criminals 'doing time' in the prisons of this land, were once pupils in our schools, or playfellows in our city streets, in the villages, and the rural districts."

In view of these facts I must take the strongest exception to the concluding remark of an anonymous writer in a medical journal, when he says, "conduct, the person's reaction to the circumstances of real life, must be the deciding factor in the diagnosis of mental abnormality." This is a pernicious doctrine which ignores alike the gravity of the social menace and the findings of neurology. It is a mere locking of the stable door after the stealing of the steed. With a properly established child study clinic, and the taking of a physical and mental census of the school population of to day, the next generation would be rid of many of its derelicts and criminals, and the business of life placed on the basis of efficiency. "The saving is not merely one of money, but, what is vastly more important, human souls."

REFERENCE.
[1] Publications of the Training School at Vineland, New Jersey, No. 20, May, 1920.

A PLEA FOR MORE FREQUENT USE OF CAESAREAN SECTION.

WITH A DESCRIPTION OF A NEW OPERATION.

BY

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CAESAREAN SECTION is an operation which is having an ever-widening application in the complications of pregnancy and should, and undoubtedly will before long, replace many of the complicated and risky manipulations at present practised.

Craniotomy, a relic of a barbaric past, is after all not so far removed in its sacrificial brutality from a so-called difficult forceps case where there is great risk to mother and child. The ordinary treatment of placenta praevia, entailing as it does risks from sepsis to the mother and grave risks to the child owing to difficulty with the after-coming head, and the frequently difficult and dangerous manipulation necessary to bring down the arms, and cross birth, with its intrauterine manipulations, present examples of conditions in which Caesarean section may well merit the careful consideration of the surgeon.

Eclampsia is rightly regarded as one of the most dangerous complications of pregnancy, and too often in private practice the first one hears of the case is when the patient is in convulsions. Frequently, no doubt, prompt treatment on medical lines leads to a cure, but there is no certainty about the issue and accouchement forcé has rightly been abandoned.

In my experience the best results are got by the early performance of Caesarean section. I have no hesitation in recommending this when convulsions are present, and I am not at all sure that it is not the best practice in a case of increasing albuminuria which resists treatment and before convulsions supervene.

There is no question about the simplicity and safeness of Caesarean section as an operation. One enters and leaves the uterus by an aseptic route, and has the added advantage of inspecting the whole interior so that no placenta or membrane is retained. Under the best conditions the vagina is not an aseptic route, and if the child is delivered after intrauterine manipulation the bruising and abrading of the tracts considerably lower resistance to infection.

The drawback to Caesarean section is the unreliability of the scar for future pregnancy, and unless the patient is sterilized the risk is a real one.

I have devised the following operation with a view to leaving a scar which, I believe, will stand the strain of future pregnancy. It is based on the fact that there are three layers of uterine muscle; the *outer* layer with its muscle fibres running transversely, the *middle*, which contains the vessels, with its fibres running longitudinally, transversely, and obliquely, with no regular arrangement, and the *inner*, arranged as two hollow cones with their bases joining at the middle of the body of the uterus, and their apices surrounding the orifices of the Fallopian tubes. In the non-pregnant uterus these layers are difficult to differentiate surgically. In the pregnant uterus, on the other hand, the outer and middle layers are easily differentiated.

I have taken advantage of this to perform what might be described as a form of gridiron incision. The abdomen is opened in the middle line, and a large strip of gauze wrung out of warm saline is packed between the uterus and the anterior abdominal wall in order to form a dam completely round the incision. The external layer of uterine muscle is now incised transversely, the incision being just below the centre of the body in front and two inches above Bandl's ring. To start the incision I make a small V exactly in the middle line and about one-eighth of an inch into the muscle. This V facilitates accurate apposition in stitching later. A pair of straight, blunt-pointed scissors are inserted into this and passed transversely under the superficial layer of muscle, first to one side and then to the other. The scissors pass easily, and leave a tract between the two layers. The superficial layer is then incised along this tract. It is necessary to carry this incision the full distance across the front of the uterus. The superficial layer is then peeled from the middle layer upwards towards the fundus. This is easily and quickly done with gauze, and the effect is not unlike peeling an orange. The middle layer is now exposed, and the large tortuous vessels it contains are plainly seen. Any bleeding points on this layer should be seized and ligatured, although this is rarely necessary. The middle and inner layers are now incised longitudinally, and the line of incision selected which seems most clear of blood vessels. This is usually, but not always, the middle line. The child and placenta are now delivered, the assistant grasping the uterus firmly to control haemorrhage. The uterus is turned inside out and its interior inspected. The longitudinal incision is now closed by a continuous No. 4 catgut suture, and the transverse incision in the same manner. The uterus is covered with large gauze squares wrung out of normal saline at a temperature of 120°, and kneaded until it contracts. The abdominal wound is closed in the ordinary way.

My experience with this operation is that the bleeding

is distinctly less than with the ordinary incision. The stripping of the outer layer is almost bloodless. I attribute the diminished bleeding to the fact that one is able to select a line of incision most free of vessels, and it may be that the stripping of the outer layer permits of greater retraction of cut vessels. The scar resulting from the operation is an inverted T, the principal scar through the middle and inner layers being covered by a flap of the external layer, the scar of which is the cross member of the T. The two scars not only run at right angles but are not opposite one another.

I have performed this operation successfully on eight occasions; four were cases of eclampsia, two of placenta praevia, and two of contracted pelvis; unfortunately I have not yet had an opportunity of seeing any case in a subsequent pregnancy. I am of opinion, however, that the resulting scar should greatly diminish the risk of rupture.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE DILATATION OF THE STOMACH.

AN example of the above condition occurred recently at the General Hospital, Birmingham. The patient was an obese man of 46; he was over 13 stone in weight, and of the hypochondriac type. He was admitted on May 1st, 1921, with severe upper abdominal pain and vomiting; the diagnosis of gall-stone colic was made. After three days the symptoms subsided, but another attack occurred on June 11th. It was decided that operation was necessary, and this was performed on June 20th. A small umbilical hernia was dealt with, and the abdomen opened. The appendix and gall bladder were removed, the latter containing ten rather large gall stones.

Vomiting occurred an hour after operation, and continued at intervals of an hour or so throughout the two days following, but on the third day much more serious and projectile vomiting ensued. By the fifth day vomiting was less frequent but sometimes more copious. Thus 30 to 35 oz. of yellow fluid neutral to litmus were brought up at one bout. During the fifth to eighth days following operation over 100 oz. of vomited fluid was measured daily. A remittent temperature of 99° to 101° F. persisted, with a pulse rate of 110 to 140, throughout this period of eight days. The patient became progressively weaker, and died on the eighth day. Lavage of the stomach and rectal feeding were tried without success. A striking fact towards the end was that the patient vomited twice to three times the total amount of fluids given daily.

At the *post-mortem* examination the operation area appeared to be sound, there being no peritonitis. The stomach was found to be enormously dilated. Over 71 oz. of yellow fluid was present within it. The pylorus was not obstructed, but the duodenum and upper two-thirds of the small intestine were extremely dilated. The coils of small intestine were lightly matted together by a delicate fibrinous reticulum of exudate. The liver was normal apart from some fatty infiltration. The heart showed marked fatty degeneration. The other organs presented no important abnormality, but early bronchopneumonia was evident on examination of the lungs.

The patient was admitted under the care of Mr. Seymour Barling, F.R.C.S., to whom I am indebted for permission to report the case.

Birmingham. CHARLES J. LEWIS, M.B., M.R.C.S.

RAT-BITE FEVER.

DR. BURTON-FANNING'S interesting paper upon five cases of rat-bite fever (June 18th, p. 886) induces me to record briefly a case that occurred in my own practice eighteen months ago. Towards the end of November, 1919, a woman, aged 52, was bitten by a rat on one finger; when she came to me, three days afterwards, she had a very septic finger, inflammation over the back of the hand and red streaks up her arm. Three weeks afterwards she had her first attack of shivering and sweating, and pain in the back and legs, with some difficulty of moving her legs and standing; this seizure, which was the longest she had, lasted for five days; after an interval of three or four days she had another attack of shivering and sweating. On nearly every occasion these symptoms were accompanied by erythematous blotches which might appear on any part of the body and disappeared with the fever. The attacks lessened in severity and the interval became longer; it is estimated that she had at least twenty attacks. I frequently saw her at the height of the fever, when her temperature would be 103° or 104° F. The patient lived far in the country and no nurse was available, so that a temperature chart was an impossibility. Quinine and salicylates appeared to have no effect on the symptoms; tabloids of iron and arsenic were commenced rather late and were given freely; they certainly had a good effect, and I think shortened her illness. Her convalescence was rather protracted; it was not until the summer that she fully recovered her usual health.

Milverton, Somerset. CHARLES RANDOLPH.

Reports of Societies.

PHYSICAL EDUCATION IN AMERICAN UNIVERSITIES.

A MEETING of the Medico-Chirurgical Society of Edinburgh was held on July 6th, Emeritus Professor F. M. CAIRD presiding. Dr. R. TAIT MCKENZIE, Professor of Physical Education in the University of Pennsylvania, described the system of physical training carried out there and in many other American colleges and universities. His own chair was founded in 1904, and some form of physical culture now formed a regular part of the curriculum in Pennsylvania University, a certain proficiency being required of every student in qualifying for his degree. This university had about 11,000 students, and the freshmen, about 4,000 each year, underwent a complete physical examination on entrance: in the first place defects in posture were dealt with by specially prescribed exercises, while more serious defects in the heart and lungs were met by suitable exercises or appropriate treatment. The details of this physical analysis, with other items, were entered upon a card for each student. A few lectures on physical fitness, diet, hygiene, and venereal disease were then given. Broadly, three forms of physical culture were provided for the young students: a variety of outdoor sports and games, about twenty in all; a course of gymnasium exercises; and specially prescribed exercises. But all were supervised, attendance was recorded, and a certain grade of proficiency required. About one-half of the new students took the gymnasium course; one-third engaged in outdoor sports; while the remainder, including the more enthusiastic students, carried out the specially prescribed exercises. He did not encourage the gymnasium course for more than a year, or at most two years; and, indeed, after one year many of the men discovered an aptitude for some athletic game and took that up, some of their finest athletes being discovered in this way in the gymnasium. They realized that the majority of men could not be made into great athletes, but their experience taught them that nearly all young men could be educated in one or other game, and also in alertness, versatility, and physical intelligence. The gymnasium training included instruction in the movements that were the basis of such sports as boxing, wrestling, and fencing. In the United States great public interest was taken in their athletic competitions, especially in football and baseball, which were witnessed by enormous crowds. A large revenue came in from these matches, but this all went into the common exchequer; in fact, football really paid the way of the gymnasium, rowing, and other unremunerative sports. In this way money abuses were guarded against; and care was also taken to repress professionalism by demanding even from their best athletes a certain grade in college proficiency, and also a residence rule of one year.

Sir LESLIE MACKENZIE said that a right policy of physical education was very wide, and meant intelligent superintendence of the individual almost from conception to the end of adolescence. The Royal Commission in 1903 had supplied ominous facts as to the poor physique of our people, and the institution of medical inspection in schools

had confirmed them. More and more attention was now being paid to physical culture in the schools, and they had in mind not the physical training of the drill sergeant, but a true physical education. The real end of physical training was not material but spiritual, and lay in the development of character. But this policy should not stop in the schools but should be continued in the universities.

Dr. L. D. CRUIKSHANK described the system of physical training carried out in Scottish board schools. It was based on the Swedish system, but it was only in the intermediate and higher grade schools that gymnastic apparatus was used. They had tried to avoid dull monotonous exercises, and made use of games, dancing, and general activity that quickened interest and made for alertness and brightness. They were also beginning instruction in personal hygiene in the schools. In their training colleges special attention was given to physical training, and regular instruction in theory and practice and in class teaching was given by medical officers. Further, the Dunfermline College of Hygiene and Physical Training turned out each year some twenty expert instructors who were sent to the higher schools but who had supervision of the teaching in the ordinary schools.

Sir MONTAGU COTTERILL spoke of the contrast between the position occupied by athletics at the Scottish public schools and at the universities. In Edinburgh University only a small percentage of students took part in athletics, and though the university authorities now gave some recognition and financial support to athletics, much more remained to be done. He would be glad to see athletics and physical training organized in the way explained to them. Mr. C. W. CATHCART said he had listened with admiration to the way in which physical training was being dealt with in Scottish schools, and he considered that the extension of this system to the universities would confer a great national benefit.

Dr. A. B. FLETT, speaking from his own experience, said the great difficulty in university athletics was the one of finance, and he asked for information as to the cost per man per annum of such a system as that in Pennsylvania University. Dr. G. MACKAY, F.R.C.S.Edin., said he was so convinced of the importance of this subject that he had already advocated in public the need for a chair of physical culture in Edinburgh University. Professor MEAKINS, Dr. SYM, Dr. CHALMERS WATSON, and the PRESIDENT also spoke, and Professor TAIT MCKENZIE replied.

Reviews.

MEDICAL CONDUCT AND PRACTICE.

IN his lectures to students of forensic medicine Dr. AITCHISON ROBERTSON is in the habit of including the subject of medical ethics; he has embodied his teaching in a small volume, *Medical Conduct and Practice*.[1] His object is to help the young doctor beginning his professional career, and it may be admitted that there is room for a new book on medical ethics. Dr. Robertson defines medical ethics as a body of rules and principles concerning moral obligation intended to regulate medical practice. It is, he says, a subdivision of that branch of ethics which is known as utilitarianism, which makes the "greatest happiness of the greatest number" the supreme end or criterion of conduct, and, though the exponents of utilitarianism by no means agree with one another in their philosophy, probably the definition will serve. Many of Dr. Robertson's propositions in his first chapter, "Ethics as a Branch of Philosophy," might be disputed; and his utterances on the value of truthfulness in the doctor do not seem always to be consistent. Still, the chapter is written in a lofty strain, and contains many wise remarks on the moulding of character. In Chapter III, on "Commencing Practice," the wisdom becomes more worldly and of a strictly practical nature: "If you intend to practise in a special locality, it is advisable to gain your experience in another locality more or less remote. It is inevitable that the beginner will make mistakes of some sort or another." Attention is called to an effect of the introduction of the National Insurance Act: whereas formerly it was possible to build up a practice by one's own efforts, the doctor—"climbing over the backs of the poor into the pockets of the rich," it is now, the author thinks, extremely hazardous to commence on one's own account without the purchase of a panel practice. The necessity for a house of superior and dignified appearance, well managed and with good domestic arrangements, is emphasized. Attention is called to the frequency with which partnerships are unsatisfactory, owing to the predominance of the personal factor in medical practice. In the chapter on "Increasing One's Practice" there is a certain naïveté which was, perhaps, unavoidable in dealing with such a subject if pure cynicism was to be avoided. But the general effect is good, and the advice should be of benefit to the young practitioner. Our author is very serious, and we gather from his remarks on leisure time that he does not approve of open-air pastimes for doctors. The amount of outdoor exercise involved in their daily work should lead them, he thinks, to devote their leisure to reading or to hobbies connected with science, art, history, or mechanics. Can it be that a Scotsman exists who despises golf? However, many truths are better enforced by over-emphasis, and this, perhaps, accounts also for Dr. Robertson's statement that "scarcely a month passes without there being something new discovered in medicine, pathology, or therapeutics." It is well to keep abreast of medical advances, but imagination reels at the thought of twelve epoch-making discoveries in a single year.

The advice on "Taking on your list new patients" is extremely sound, and the proper attitude with regard to patients who wish to change their doctor is dealt with very fully. Dr. Robertson's views on consultants are interesting; he says: "The term consultant means one who consults with another medical man; hence if he does not do so, he becomes an ordinary medical adviser, and loses that prestige which ought to go with the vocation." This weighty pronouncement is placed in close proximity with meticulous directions as to persons with whom the consultant should shake hands! The subject of fees is well dealt with, though it is by no means clear why it should still be regarded as proper "to attend the clergyman (and his family) of the church you attend without presenting any account," especially in view of a later remark that it "gives a feeling of independence to your patient to have paid your bill." Dr. Robertson regards surgical fees as out of all proportion to the services rendered or the amount of skill displayed, and adds that "it is the younger surgeons who err in making exorbitant demands."

In the later portions of his book, dealing with certificates, notification, lunacy, medical secrecy, and numerous other matters, Dr. Robertson's powers of condensation lead to occasional obscurity, owing perhaps to differences in the laws of Scotland and England. We are inclined to think that some of his statements need revision, such as the assertion in a book published in 1921 that for each notification of infectious disease a fee of 2s. 6d. is paid if it occurs in private practice! This is not a very important error, but certain points of a more serious legal or medical nature seem to need reconsideration. Even the statement that "unless a policeman comes himself, or definitely sends someone for you to attend an accident, it is unlikely that you will receive any payment for giving first aid," would be made much more watertight by omitting the alternative.

In our opinion this book, which is of moderate size, should be read by every newly qualified medical man or woman.

SKIN DISEASES.

SINCE the first edition was published in 1907, Dr. WHITFIELD'S handbook on *Skin Diseases and their Treatment*[2] has grown, but in an unusual fashion. The pages are bigger, but there are not many more of them; consequently it remains a convenient volume to handle. It is essentially a book for general practitioners, who will find it very useful owing to the fullness with which it deals with the problems of treatment. Moreover, specialists in the subjects will be able to pick up many valuable hints, for Dr. Whitfield is an experienced and ingenious physician, gifted with an original mind not unduly trammelled

[1] *Medical Conduct and Practice: A Guide to the Ethics of Medicine.* By W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E., F.R.S.E. Edinburgh: A. and C. Black, Ltd. 1921. (Cr. 8vo, pp. 174. 6s. net.)

[2] *A Handbook of Skin Diseases and their Treatment.* By Arthur Whitfield, M.D., F.R.C.P. Second revised edition. London: Edward Arnold. 1921. (Demy 8vo, pp. 301; 55 plates. 18s. net.)

by the shackles of conventional practice. These characteristics are especially brought out in the chapter on syphilis. He advocates large doses of salvarsan at long intervals, in fact, only three doses of 0.9 gram to every adult patient in good health, with intervals of three weeks between the doses, during which time the patient takes 1 grain of grey powder three times a day. The mercurial treatment is kept up for a year. He claims excellent results from this method, both clinically and as tested by the Wassermann reaction. But no statistics are given. Moreover, contrary to the general view at the moment, he prefers the oral administration of mercury to intramuscular injection. The reasons adduced for these modifications of the more usual practice are weighty, if perhaps not absolutely convincing. As an introduction to dermatology for students this handbook is sound but has the disadvantage that in the double endeavour to keep down its size and to give prominence to treatment the important department of diagnosis has not been dealt with quite so fully as it deserves. A celebrated physician is said to have remarked that the first essential of medicine was diagnosis, and the second was diagnosis, and the third was diagnosis. This is quite as true of dermatology as of any other branch of medicine, and the present author, we are sure, would be the first to admit that correct diagnosis is the only foundation for successful treatment. As an exposition of and apologia for the theory and practice of a leading British dermatologist the volume is very interesting and should be read and pondered. The illustrations are clear and good, but the microphotographs of sections are, as always, difficult to interpret.

GASTRO-INTESTINAL DISEASES OF INFANTS.

PROFESSOR MARFAN of Paris is so well known on account of his work on children's diseases that his *Introduction à l'étude des voies digestives dans la première enfance*,[1] which is the second edition of his lectures delivered during the war, and published in 1918 under another title, requires no recommendation to those interested in this important subject. With the commencement of the nineteenth century infantile digestive disorders attracted very little attention, and in the numerous works that have since appeared their nomenclature and classification have varied according to the dominant views as to the determining factors, such as the morbid changes found after death in the stomach and intestines, the clinical causes, infection, intoxication due to poisons in the intestinal contents, and functional disorders of the various parts of the alimentary tract, including the liver and pancreas.

The first part of the volume contains five chapters dealing seriatim with these several doctrines, and shows that a classification constructed on these lines fails in practice, for the digestive disorders are often due to combinations of these separate factors, the etiology and pathogeny being often extremely complex. An etiological classification is impracticable because the same clinical manifestation may be due to several different causes, and, moreover, a single factor may, on account of other conditions, determine different clinical pictures. Similarly attempts to base a classification on structural changes in the alimentary canal, and on the chemical, microscopical, microbic, and toxicological characters of the gastro-intestinal contents, have failed. Professor Marfan has constructed for clinical use a classification based on the predominant symptoms; this he has tested in practice and modified as the result of his experience. The predominant features which form the main headings of this clinical classification are vomiting, diarrhœa, constipation, and malnutrition; there are then several subdivisions under each of these four main divisions, those under the heading of diarrhœa being the most numerous. The elasticity of this classification will allow the insertion of any new form of disease without any disturbance in its main lines.

A VETERAN'S AUTOBIOGRAPHY.

IN *The Story of My Life*[2]—written when in his 78th year Mr. W. D. SPANTON, F.R.C.S., now in retirement at Hastings, gives a retrospect of his busy and successful career as a surgeon in the Midlands. The most interesting part of the volume is that which contains reminiscences of his apprenticeship to a provincial surgeon in the late fifties, and of the time when he was a medical student in London and a house-surgeon and an assistant in the sixties. The greater part of his life was spent at Stoke-on-Trent; he first went there as house-surgeon to the North Staffordshire Infirmary, and was on the honorary surgical staff of that institution for thirty-four years. Recognized as one of the leading provincial surgeons, he was the last president of the old British Gynaecological Society (now amalgamated in the Royal Society of Medicine), and he tells of the many international medical congresses which he attended abroad. A very old member and office-bearer of the British Medical Association, he is afraid, looking back on the roseate years, that it has fallen now on evil days. "The atmosphere" of the Annual Meetings—"is different, and there is an absence of that warm, friendly, personal intercourse which was formerly one of its great attractions . . ." We may hope that after writing these words Mr. Spanton went to Cambridge last summer, to find that he was mistaken, and is going to Newcastle this month. He has been very fond of travel, and in the volume describes the many voyages he has made, looking very rightly on the sea as the best relaxation from the cares of surgical practice. The autobiography has been edited by Mr. ERIC E. YOUNG, who has, however, been rather sparing of the blue pencil; the physiological inaccuracies on page 13, and the phrase, "the injection of toxins," on page 309, are instances. But Mr. Spanton's "humdrum domestic history," as he calls it, was well worth recording, and it will be read with interest by many others of his craft.

NOTES ON BOOKS.

The Empire at a Glance[5] is a pamphlet by Mr. J. B. THORNHILL which contains many original and patriotic ideas and some interesting maps. He is an enthusiast particularly on the possibilities of future development in the islands of the British Empire Newfoundland, Vancouver, New Zealand, and Tasmania—which he considers could support in comfort many millions more than the present populations. He remarks that "Australia has a strong imperial but no national sentiment," but surely in this instance he is mistaken. Was he ever in contact with an Australian division in the war, or has he ever talked about cricket to an Australian? His notes, however, on climate in regard to white men are sound and to the point.

Between forty and fifty sets of verse are contained in *Memories in Melody*[6] by Dr. ARTHUR CHARLES NASH, a Guy's student now resident in British Columbia. The majority are word pictures of places visited; in one or two there is a reference to the late war, but in none is there anything which betrays the author's professional occupation. Much the most ambitious in point of length is the poem which best justifies the word Memories in the title—a 500 line record apparently of the author's early life. The volume is to be welcomed, since the atmosphere throughout the book is restful, the rhyming true, the wording simple, and the cadence as a rule very tuneful.

The Control of Sex Infections,[7] by Dr. J. BAYARD CLARK, is a short manual intended "to bring forward the subject [of venereal disease] into the daylight of open and purposeful discussion." It is meant to appeal to the American rather than to the British public, with whom, the author thinks, the subject is already "a burning topic." Such books as this are useful in so far as they put forward new ideas for dealing with this problem. Dr. Clark's chief contribution is a suggestion of universal training, military for youths and physical and domestic for girls, to be carried out in camps for periods of from six to nine months. In addition, he considers that every child, on reaching the age of puberty, should receive "some instruction on the sexual infections and other pathology"; and in the field of sexual teaching he hails the moving picture as a great help. The publishers of the volume state on the

[1] *Introduction à l'étude des voies digestives dans la première enfance.* Par A. B. Marfan, professeur à la Faculté de Médecine de Paris. 2e édition, revue et corrigée. Paris: J. B. Baillière et Fils. 1920. (Fcap 8vo, pp 152. 6 francs.)

[2] *The Story of My Life.* By W. D. Spanton, F.R.C.S. Edited by Eric E. Young, M.S.Lond. London: Published by the *Connoisseur*. 1920. (Post 8vo. pp. 409. 25s.)

[5] *The Empire at a Glance.* By John Bensley Thornhill. London: J. B. Thornhill, 14, Jermyn Street, S.W. 1921. (Pp 11; 6 maps. 1s. net.)

[6] *Memories in Melody.* By Arthur Charles Nash. Toronto: The Ryerson Press. 1920. (Crown 8vo, pp 85. 5s.)

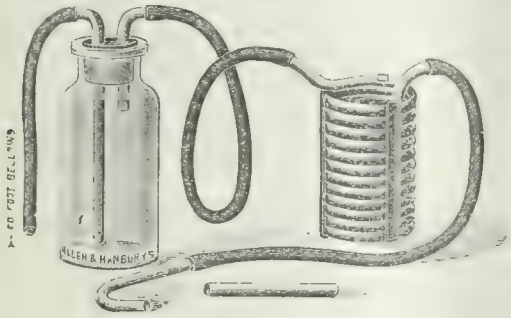
[7] *The Control of Sex Infections.* By J. Bayard Clark, M.D. New York: The Macmillan Co. 1921. (Fcap. 8vo, pp 139. 7s. 6d. net.)

cover that it is "of paramount importance to social workers . . . and to all intelligent parents." Nevertheless, parents may be excused if they doubt whether their young daughters should receive sexual education with the aid of the cinema, or instruction on sexual infections and pathology on reaching the age of puberty; and they may object to their daughters being segregated into camps and cantonments on "reaching the age of 16 or 17" to receive instruction in domestic economy and physical jerks.

APPLIANCES AND PREPARATIONS.

Apparatus for Maintaining Anaesthesia by Open Ether during Throat Operations.

DR. HAROLD SINGTON (Senior Anaesthetist, Hospital for Sick Children, Great Ormond Street) writes: The apparatus here illustrated consists of three main parts—(1) Foot bellows and rubber tubing which sends air through ether contained in (2) Wolff's bottle, and thence by a connexion of rubber tubing through (3) the coil of malleable metal (twelve circles, each nine inches in circumference) which is placed in a vessel containing hot water, whereby the ether vapour becomes heated. This warmed ether vapour continues through the rubber tubing to a flexible metal tube, six inches long, which is placed in the



mouth and is easily adjusted to the required position by its flexibility. The rubber and metal tubing, all having the same sized bore of one quarter of an inch, enables an ample amount of the warm ether vapour to enter the mouth and so maintain a perfect anaesthesia which has been previously induced by the open ether method. The use of the foot bellows leaves both the anaesthetist's hands free; or oxygen passed through the ether instead of air from the bellows serves the same purpose. This apparatus has been used by me for the operation of enucleation of tonsils by dissection in a vast number of cases during the last two and a half years. It was made for me by Messrs. Allen and Hanburys, Limited, of Wigmore Street, London, W.

An All-Glass Inhaler.

DR. R. C. MACDONALD (Inverness) writes: The all-glass inhaler, shown in the illustration, gives a highly saturated vapour with volatile drugs. It has been found beneficial as a means of employing a suitable inhalant mixture in phthisis, laryngeal tuberculosis, nasal catarrh, and as a preventive of influenza; also in rhinitis and suppuration of accessory sinuses (antrum or frontal) in various forms of nasopharyngeal catarrh, asthma and bronchial trouble. The inhaler can be sterilized by boiling, and by a quarter turn of the stopper it can be safely sealed and packed for travelling with inhalant in it, ready for instant use. It can be obtained for nasal or oral inhalation, or the nasal appliance can be used for either.



The appliance is supplied by Messrs. Allen and Hanburys, Limited, 48, Wigmore Street, London, W. 1.

A COLLECTION of lantern slides demonstrating the surgical anatomy of the temporal bone has been prepared from specimens in the collection of Mr. Arthur Cheatle, now in the Museum of the Royal College of Surgeons, Edinburgh. This collection, in five boxes, together with an album of 200 photographs and a descriptive catalogue and guide of the specimens, has been issued, under Mr. Cheatle's direction, through Messrs. H. K. Lewis and Son, 136, Gower Street, W.C. The price of the complete outfit is £30, but the album, catalogue, and guide can be obtained for £14, or the slides and catalogue (without the album) for £18.

MEDICAL excursions to French watering places, which were well attended before the war, will be resumed this year. From September 4th to 15th an excursion will be made to Vichy, Royat, La Bourboule, Mont Dore, St. Nectaire, Chatel-Guyon, and St. Honoré. The cost of the excursion will be 500 francs. Further information can be obtained from Dr. Gerst, 17, Rue de Suresnes, Paris.

PENSIONS ADMINISTRATION.

DEPARTMENTAL COMMITTEE'S REPORT.

THE Departmental Committee of Inquiry into the Administration of the Pensions Ministry presented its Report[*] on July 5th, and upon it the Second Reading of a War Pensions Bill was taken in the House of Commons on July 8th, though the volume of 156 pages had not then been generally circulated.

The Committee, of which Major Tryon, Parliamentary Secretary to the Ministry, was Chairman, comprised seven members of Parliament, ex-officers and representatives of local War Pensions Committees, Service Men's Associations, and of the Department. No fewer than 121 witnesses were examined, and 115 sittings, including those of sub-committees, were held. It was brought out that nearly three and a half millions of men, women, and children are now receiving war pensions allowances, as compared with about half a million at the beginning of 1917. The estimated expenditure of the Ministry for the current financial year was stated to be £111,556,665. The cost of administration is about 6 per cent., which is not considered excessive for detailed work of this kind, but various recommendations are made for greater efficiency and substantial economy. These are summarized under sectional headings.

Headquarters Central and General Matters.

After suggesting improvements in the statistical return the Committee reviews the business side of medical treatment (hospital supplies—medical and other, including contracts for food, artificial limbs and similar matters, and accommodation), and advise that a small hospital committee, composed of officers of the administrative, finance, and medical divisions, which at present deal with all proposals for capital expenditure in connexion with Ministry institutions, should be strengthened and made responsible for this work. As regards the internal administration of hospitals and other medical institutions of the Ministry, the Committee is of opinion that the medical superintendent and the medical staff of these hospitals should, in the interests of their medical work, be relieved as far as possible of the business details of management; and that, in the larger hospitals at any rate, a responsible lay officer should be associated with the medical superintendent in regard to the requisition of supplies, the staffing and equipment, and other similar non-technical matters. Already in some of the larger military hospitals there is a lay secretary whose duties are only of a minor clerical kind. It is recommended that the position should be raised.

The Committee makes further general recommendations for relieving the medical staff of the Ministry of routine and clerical work in the regional offices and sub-offices, and advises that the principle should also be applied to administration at headquarters. At present the staff, both of the medical services division at headquarters and of the commissioner of medical services at regional offices, is composed very largely of medical men.

Local Committees and Regional Systems.

The estimated expenditure for which local committees were responsible in 1920-21 was £20,575,000, and the Departmental Committee finds that, in the course of events, the local committees have been called upon to assume a far greater responsibility for public funds than was contemplated. The evidence went to show that, in the case of most committees, allowances and grants were paid by the officials without previous sanction from the committees, who relied for their knowledge of the cases upon tabulated statements submitted on prescribed forms. These were ordinarily accepted without any investigation of the merits of individual cases, and were signed by the chairman upon (or sometimes even without) a formal resolution. Only a limited number of committees had adopted a system of checking cases. Whilst a large majority of the secretaries and finance officers carried out their duties conscientiously, doors were opened to fraud, and 106 cases of malversation of funds had been discovered in a recent period of six months.

It is recommended that the committees should cease to be responsible for routine work in administration, and that this should instead be carried out under the direct control of the Ministry acting through the regional offices. For this purpose the staff required for local offices should be in the direct employment of the Ministry under the

[*] Report of the Departmental Committee of Inquiry into the Machinery of Administration of Pensions. 1921. To be purchased through any bookseller or direct from H.M. Stationery Office. Price 2s. 6d. net.

control of an officer to be termed the "Chief Area Officer." It is further recommended that the staffs at present employed in the local committees' offices should, together with the staffs employed in the offices of the Area Deputy Commissioner of Medical Services, be reviewed in order to determine the persons who should be transferred to the service of the Ministry. It is suggested that the chief area officer should act as secretary to the local committee.

There are at present 382 Local War Pensions Committees and about 900 Local Subcommittees. It is advised that the system of subcommittees be abolished; that the number of committees and local areas be limited to a maximum of 450; that the number for each region be prescribed by the Minister; that the total membership for committees should in no case exceed 25; and that all members should be appointed and removable by the Minister. It is suggested that the local committee should be constituted of representatives of local authorities, ex-service men, widows or dependants, voluntary organizations and labour, with other members, not exceeding four, to be appointed by the Minister.

As regards regional organization the Committee recommends that the local office should, as far as possible, be the combined office of the Deputy Commissioner of Medical Services and the local committee, and that the clerical staff of the local office, including that of the D.C.M.S., should be under the immediate direction of a chief area officer.

Medical Services.

The estimated cost of medical services for the year ended March 31st, 1921, was £9,187,271, made up as follows:

	£
Medical boards (fees, salaries, and travelling expenses)	1,587,250
Medical referees (fees and mileage)	294,735
Salaries of full-time medical officers of the Ministry and their clerical staffs	585,974
Treatment (Ministry hospitals and clinics) ...	2,990,650
Treatment (payments to civil hospitals, general practitioner treatment, special diet, dental treatment and dentures, payments to approved societies)	2,619,653
Artificial limbs and surgical appliances ...	758,121
Travelling expenses of patients	350,888
	£9,187,271

While recognizing the great progress made in the decentralization of duties to the regions, the Committee recommends that the work connected with the supply, repair, and renewal of artificial limbs should be transferred as soon as practicable.

After appreciative reference to the responsible character of the work of the regional authorities, the report touches upon the liaison services of the deputy commissioners of medical services. It is pointed out that area deputy commissioners of medical services are associated with local committees, medical referees, tuberculosis officers, Ministry of Pensions hospitals and clinics, and civil hospitals. This association is acknowledged to be the key to the efficient administration of medical services, and the Committee recommends that it should be developed and strengthened at every opportunity. There should be, moreover, a constant process of devolution of the medical work from regions to areas, and, just as the duty of the Medical Services Division at headquarters should consist of instructing, supervising, and co-ordinating the regions, so the regions should depute their executive functions more and more to the areas, retaining only such important and special executive functions as could not well be further decentralized.

The Committee regards the organization of medical services as generally satisfactory, but holds, as already noted, that medical officers should be relieved as far as possible from correspondence and similar clerical work.

Medical Boards.

During the twelve weeks ended March 19th, 1921, the number of cases examined by medical boards was 291,933. The present weekly rate of examination was approximately 15,000. The Committee considers that the composition of the boards was generally satisfactory as regards medical knowledge and experience. It understands, however, that the number of heart specialists required exceeds those available, and that a number of specially selected medical men are accordingly being trained by consultant cardiologists with a view to their subsequent employment as heart specialists on medical boards. The Committee is satisfied that pensioners have little or no cause for complaint with regard to the actual examination. It has been represented that the number of cases of appeal against the assessment made by medical re-survey boards pointed to these assessments being generally too low. This allegation was not supported by the results of the examinations made by appeal boards:

During the twelve months ended December 25th, 1920, approximately 1,250,000 cases were examined by medical re-survey boards; and during the same period there were 61,199 cases of appeal on the ground of under-assessment by re-survey boards. Of these cases the appeal boards confirmed 54.8 per cent.; lowered 11.6 per cent.; and raised 33.6 per cent.

Complaint has been made of delay in bringing claimants before medical boards under Article 9 of the Warrant, but the Committee holds that this rarely happens in ordinary or normal cases. Complaints have also been made of delay in re-boarding appeal cases, but the regional medical branches are now able to dispose of nearly every case within three weeks of the receipt of the documents. There were 1,140 cases under call for examination on April 23rd, 1921, leaving less than two weeks' work outstanding.

It appears to the Committee no longer essential that in re-survey cases the pensioner's examination should be conducted in all instances by three medical men. It is therefore recommended that in some areas where two or more medical boards are held on the same premises the experiment should be tried of reducing the personnel of medical re-survey boards to two, with a third medical officer present and available for consultation where doubt or difference of opinion arises. The third doctor should be present at the examination of any case in which the proposed assessment would result in no further awards, or in an award of gratuity or final weekly allowance, or where it is proposed to recommend that the pension should be permanent.

Alleged Secret Instructions.

On this subject the Committee states:

"Throughout the course of our inquiry we have repeatedly encountered the suspicion, amounting in some instances to positive belief, that the Ministry has, at some time, issued instructions to medical boards to make lower assessments. We are unable to say what has given rise to this suspicion, unless it can be explained by the fact that there is a tendency for assessments to go down; this is the expected result of medical and surgical treatment and attention and of restoration to civil life. We have inquired most searchingly into this matter, and wish it to be recorded that no instructions, secret or otherwise, have been given or issued by the Ministry, the effect of which would be to induce medical boards to depart from the practice which has always been followed, of accepting as their standard of comparison a normally healthy man of the same age as the pensioner and assessing the degree of the pensioner's disablement in accordance with the extent to which, in their opinion, his disability reduces him below that standard."

So far from there being a sudden reduction due to secret orders, a table shows that the rate of decrease in average assessment is slowly and steadily becoming less, the percentage having fallen from 6.6 in August, 1920, to 4.1 in March, 1921. In every case without exception the percentage assessment of disablement on which the amount of pension is based is determined by a medical board, by whom the man is examined and whose finding as to the degree of disablement cannot be overruled by any official of the Ministry.

Hospital Treatment.

The Committee is satisfied with the Pensions Ministry's practice of using as far as possible civil hospitals for in-patient treatment and meeting the deficiency by establishing hospitals under their own control. There is no delay in admissions, except in neurological cases, and, when the training of medical men at neurological hospitals is completed, the Ministry will be able to increase the bed accommodation for such cases. It appears that the staff in some of the Ministry's hospitals is in excess of requirements, and it is recommended that the Visiting Committee should determine a standard for each institution which shall not be exceeded without authority from headquarters.

The Committee advises that a clearing house shall be established in each region to deal with recommendations of in-patient treatment.

Statistics relating to the number of cases undergoing or awaiting the provision of out-patient treatment were supplied.

On March 31st 2,122 officers, 69 nurses, and 105,735 of other ranks were undergoing treatment; and 210 officers, 10 nurses, and 5,555 of other ranks were recommended for out-patient treatment and were awaiting completion of arrangements.

An analysis, on March 31st, of the four classes of cases being dealt with gave the following figures: General medical and

surgical: Receiving treatment, 64,236; awaiting treatment, 1,066. Tropical diseases: Receiving treatment, 20,217; awaiting treatment, 1,866. Neurasthenia: Receiving treatment, 7,515; awaiting treatment, 2,768. Tuberculosis: Receiving treatment, 12,077; awaiting treatment, 15.

While it does not consider that the Ministry could dispense with the valuable services rendered by civil hospitals in out-patient treatment, the Committee recommends that Ministry clinics should be made competent to provide, where necessary, for any form of disability by the appointment of selected local medical men as additional medical personnel in part-time attendance. A reason mentioned for this course is that it is exceptional for the out-patient department of civil hospitals to be open in the evening. The Committee strongly favours the Ministry's proposal to increase the number of clinics from 140 to 250.

Insurance Practitioners and Home Treatment.

In some cases a pensioner is certified to require general practitioner treatment for his service disability, and this is left to his insurance practitioner. In certain other cases Ministry of Pensions treatment is given to a man eligible for insurance practitioner treatment. The Committee recommends that the Ministry of Pensions should, in the interest of pensioners, endeavour to arrange with the Ministry of Health a system of exchange of medical information with regard to such cases.

Special Cases.

The Committee recommends that the Ministry of Pensions should endeavour to arrange with the Board of Control for wings of certain existing asylums to be reserved for certified ex-service mental patients, the food, etc., to be provided as if the wing were a Ministry hospital. Approximately 6,000 service patients are at present maintained by the Ministry in mental institutions.

The Committee recommends that the Minister of Pensions should give his attention to the possible danger that the interests of tuberculous ex-service men may suffer by reason of the divided responsibility for their care.

The provision of dental treatment is touched upon, and the Committee recommends that the Ministry should exercise more supervision in respect of the extent of the service, which, they suggest, has in some cases gone beyond the State's liability.

The number of men who lost limbs during the war was about 39,000, of whom 2,000 were officers. On April 12th of the present year 21,480 men had been provided with duplicate limbs. The Committee recommends that further limb-fitting centres should be opened where they are found to be required; beyond this no recommendation is made, as it is thought that this subject can be best dealt with by a special committee, composed of surgical and mechanical authorities, which has just been appointed by the Minister to hear evidence as to dissatisfaction.

Officers' Branch.

On March 31st, 1921, there were 37,118 officers, 9,741 officers' widows, 9,190 children, 6,541 dependants, 1,455 nurses, and 25 nurses' dependants in receipt of awards, the total estimated expenditure for the year being £6,291,000. The Committee recommends the continuance of a centralized system of officers' awards. The general conclusion is that delays are infrequent, and steps have been taken to remove the causes. The Committee, however, is not wholly satisfied with the standard of accuracy of awards made or proposed, and is of opinion that, whilst the total numbers of staff of the Officers' Branch could be reduced, steps should be taken to strengthen the higher staff of the Branch. Subject to the criticisms and proposals contained in other parts of the report dealing with the Officers' Branch, the Committee finds that the administration in detail is efficient, but in its broader aspects they feel some further consideration is necessary. There is insufficient co-ordination among the various branches administering benefits to officers, and they cannot regard this position as satisfactory. They therefore recommend further examination of the subject.

Miscellaneous.

Among the other recommendations the following may be noted: (*a*) That the whole question of permanent pensions should receive the early attention of the Minister. (*b*) That the Minister should consider the formation of a Central Advisory Committee, consisting of officers of the Ministry (local and central) and representatives of local committees, and ex-service men, to consider such matters as might be put before them by the Minister for their advice. (*c*) That regional awarding officers and medical officers should be instructed to explain briefly, in answer to queries by pensioners and claimants, the grounds of the decision. (*d*) That a Complaints Branch be set up in each regional office under the direct control of the regional director. (*e*) Under the Ministry of Health Act, 1919, powers and duties of the Minister of Pensions with respect to the health of disabled officers and men may be transferred to the Minister of Health within three years, and in not less than one year from the termination of the war, by Order in Council. Similar provisions exist in the Scottish Board of Health Act, 1919. The Committee draws attention to the disastrous effects of dual control, and recommends that the provisions referred to should be reconsidered with a view to their repeal.

VOLUNTARY HOSPITALS COMMISSION.

LORD CAVE'S committee recommended that there should be set up a Voluntary Hospitals Commission which should have as its first and principal duty the administration of the temporary grants the committee recommended Parliament to make, but should also be available for other functions mentioned in the report, such as the organization and linking-up of hospitals in different districts, and the control of co-operative schemes for cutting down expenditure. It advised that the commission should be formed on the lines of the University Grants Committee, should be appointed by the Minister of Health, and should consist of not more than twelve members, of whom the chairman and three others should be selected by the Minister of Health, and one by the Secretary for Scotland, and that of the remainder one should be nominated by the Joint Committee of the Red Cross Society and the Order of St. John of Jerusalem; and one each by King Edward's Hospital Fund for London, the British Hospitals Association, the Royal College of Physicians, the Royal College of Surgeons, the British Medical Association, and the Scottish Committee of the British Medical Association. It further recommended that service on the Hospitals Commission should be voluntary, but that it should be advised by a technical expert, should have a small clerical staff, and that its expenses should be borne on the votes for the Ministry of Health.

The following nominations have been made:

The Earl of Onslow (Chairman); Lord Clwyd; Captain W. E. Elliot, M.C., M.P.; Sir Robert Hudson, G.B.E.; Mr. D. O. Malcolm. Nominated by the Minister of Health.

The Marquess of Linlithgow. By the Secretary for Scotland.

Sir Napier Burnett, K.B.E., M.D., F.R.C.S. By the Joint Committee of the British Red Cross Society and the Order of St. John of Jerusalem.

Sir Cooper Perry, M.D., F.R.C.P. By King Edward's Hospital Fund.

Mr. H. Wade Deacon, C.B.E. By the British Hospital Association.

Sir John Rose Bradford, K.C.M.G., C.B., F.R.C.P. By the Royal College of Physicians of London.

Sir George Makins, G.C.M.G., C.B., F.R.C.S. By the Royal College of Surgeons of England.

Dr. R. A. Bolam, O.B.E. By the British Medical Association.

The remaining member will be nominated by the Scottish Committee of the British Medical Association, whose nomination has not yet been notified.

Mr. L. G. Brock, C.B., Ministry of Health, has been appointed Secretary to the Commission.

THE Congress of the French Association for the Advancement of Science will be held this year at Rouen from August 1st to 6th.

THE second Congress of the Association of French-speaking Gynaecologists and Obstetricians will be held in Paris from September 29th to October 1st. Discussions will be held on the following subjects: Disturbance of the thyroid function in pregnancy, introduced by Fruhinholz and Parisot (Nancy); medical and social protection of the pregnant woman, introduced by Doléris (Paris), and Woegeli (Geneva); indications for abdominal hysterectomy in labour apart from pelvic deformities, to be opened by Couvelaire (Paris) and Henrotay (Antwerp); and hysterectomy in acute puerperal infections, to be opened by Cottes (Lyons), and Potvin (Brussels). The subject of radium therapy will be discussed under three heads: first, in uterine fibroids, opened by Faure (Paris); secondly, in cancer of the body and cervix, introduced by Hartmann (Paris); and thirdly, in metrorrhagia, apart from cancer and fibroids, introduced by Koenig (Geneva).

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE.

THE Second International Congress of the History of Medicine was opened in Paris on Friday, July 1st, by M. COMBES, Director of Higher Education. Professor JEANSELME, President of the French Society of the History of Medicine, welcomed the members, who included representatives of Great Britain, Belgium, Holland, Italy, Switzerland, Spain, Portugal, Denmark, Czecho-Slovakia, Rumania, Armenia, and Greece. Dr. TRICOT-ROYER, the president of the first congress, who represented Belgium, responded, and was followed by representatives of the other countries.

General Sessions.

The first meeting for discussion was held in the afternoon under the chairmanship of Dr. SINGER (London), who made some observations on a manuscript attributed to Guy de Chauliac; Dr. J. G. de LINT (Holland) read a paper on anatomical terms used in ancient Egyptian literature, which broke new ground in Egyptian medical archaeology. Afterwards Dr. FERNANDEZ D'ALCALDE (Spain) gave a description, illustrated by models, of various statutes and seals of the chief ancient universities and seats of medical learning in Spain. Dr. BASMAJAIN (Constantinople) contributed some notes on ancient Armenian medicine, which appears to have drawn its inspiration from early Syrian and Arabian sources.

In the evening, on the invitation of Dr. Henri de Rothschild, the members of the Congress attended a gala performance at the Théâtre du Gymnase of *Le Caducée*, by "André Pascal." This remarkable drama has excited much comment in medical circles in Paris, as the play centres round an episode in the life of a young surgeon who, when financially pressed, is persuaded to perform an unnecessary operation on a wealthy young lady for a large fee. The patient succumbs immediately afterwards, and the operator decides to put an end to his life by injection of a toxic serum. Although his intent is suicidal, he leaves a statement to the effect that he had inoculated himself in the interests of humanity.

Dr. TRICOT-ROYER presided over the meeting on Saturday morning, when a number of papers were read. Dr. DUBREUIL-CHAMBARDEL described the infirmaries of abbeys in the eleventh century, and Dr. VILLARET read a paper on the origin of intravenous injection, which excited some discussion. In the afternoon the members of the Congress visited the St. Louis Hospital and were conducted over the old building, which was used for plague patients during the great visitations in Paris. Afterwards visits were paid, under the guidance of Dr. Fosseyeux, to the Salpêtrière and the Maternité. In the evening a soirée was given by the Cercle Artistique et Littéraire; the programme consisted of recitations written and composed by medical men, and the music was provided by the Orchestre Médical, under the direction of Dr. Henri Busser. During the evening recitals were given by artists of the Comédie Française.

On Sunday, July 3rd, an excursion was made through some of the most beautiful parts of the country around Paris, including Malmaison and St. Germain-en-Laye, where the visitors were met by M. Solomon Reinach, who took them over the National Museum of Antiquities; the return journey was by Versailles.

Dr. GIORDANO (Venice) presided over the meeting on Monday morning, July 4th, when various papers were read. Dr. BERTRAND spoke on the history of the plague in Antwerp, M. BUCHET traced the history of the druggist, and Dr. DELAUNAY read a paper on travelling doctors in the Marne under the ancient régime. Dr. DORVEAUX contributed a paper on the surgeons of Metz, and Professor LAIGNEL-LAVASTINE discoursed on psychiatry in France in the eighteenth century. In the afternoon the members met at the Musée Carnavalet, and from thence went to the Louvre, where M. POTTER explained the Greek antiquities, M. MARCEL AUBERT the sculpture, and M. GUIFFREY the pictures. This was followed by a visit to the Bibliothèque Nationale, where M. Omont, the Director of the Department of MSS., received the visitors and showed them a number of the rarer MSS. on medicine, surgery, and botany.

On Tuesday, July 5th, when Dr. CUMSTON (Switzerland) was in the chair, Professor GUIART read a paper, illustrated with lantern slides, on obstetrics in ancient Egypt; he traced the history of accouchement from the time of Amenophis III, representations being shown from sculptures in the birth houses in ancient Egypt. Afterwards Mr. C. J. S. THOMPSON, M.B.E., Curator of the Wellcome Historical Medical Museum, London, gave an account of the pomander as a link in the history of preventive medicine, tracing the use of aromatic and antiseptic substances from the Egyptian period to the present time. On the afternoon of the same day Professor JEANSELME made an interesting communication on dietary in the convents and hospitals in the Byzantine times. Later in the afternoon the members of the Congress attended a reception given at the Hôtel de Ville by the Municipal Council of Paris. In the evening Prince Roland Bonaparte gave a reception to the members of the Congress at his house in the Place d'Iena, which contains a library famous for its collections of cartographical and geographical works.

On Wednesday Professor GUIART (Lyons) presided, and Dr. FOSSEYEUX read a paper on medicine in Italy in the time of Dante, and gave an account of the Salpêtrière in the eighteenth century. A number of other papers were read, among them one by Dr. BOUVET on medical and pharmaceutical advertisements in journals of the seventeenth and eighteenth centuries. At the closing session on this day it was decided to hold the third meeting of the congress in London next year. At a banquet in the evening at the Palais D'Orsay, cordial thanks were rendered by the delegates to the presidents, Professors Jeanselme and Menetrier, and to the general secretaries, Professor Laignel-Lavastine and Dr. Fosseyeux.

Museum.

The museum of historical medical objects, lent by various institutions and members, was arranged in a large room in the School of Medicine. It included a fine collection of medical coins, medals, and plaquettes lent by Professor Gilbert and Dr. Desnos. Early printed and rare books on medicine and surgery were lent from the library of the Faculty of Medicine, and a collection of medical *ex-libris* by Dr. Olivier. Dr. Paul Richer lent some fine examples of his work as a designer of medical plaquettes, and an interesting collection of prints and caricatures. A large collection of surgical instruments of the eighteenth and nineteenth centuries was exhibited by the Faculty of Medicine of Paris, medical autographs by Dr. Wickham, and some fine specimens of the coloured plates of D'Agoty by Dr. Villaret. Dr. Guelliot lent an interesting collection of Roman bronze surgical instruments and antiquities excavated at Rheims. Dr. Harmonic exhibited his fine collection of medical antiquities. It comprised some interesting French microscopes of the eighteenth century, bronze mortars of the sixteenth and seventeenth centuries, Greco-Roman surgical instruments, Persian anatomical drawings of the sixteenth century, some curious specula of the sixteenth and seventeenth centuries; artificial limbs of iron as figured by Ambroise Paré, sixteenth century; ancient appliances for reducing fractures, seventeenth century; two accouchement chairs, one of which was a portable contrivance for use by the midwife. Professor Laignel-Lavastine lent a medallion of Baron Larrey, and some curious wooden urinals used for infants. Professor Gilbert lent medicine chests and cases of the seventeenth century.

An anatomical figure or manikin of ivory and an amulet of St. Georgan was lent by the École de Médecine of Rouen. Dr. Coulomb exhibited his interesting collection of artificial eyes, consisting of the eyes inserted in ancient Egyptian mummy cases, Utchat eyes in faience, and the artificial eyes of more recent times. A collection of Japanese inros or medicine boxes of fine lacquer was exhibited by Dr. Ancelet, a number of ancient medical seals by Dr. Mauclair, and statuettes of St. Antoine and St. Roch, the patron saints of plague, were lent by the École de Médecine et de Pharmacie of Rouen. The Administration Générale de l'Assistance Publique exhibited a number of prints and the seal and portrait of Baudeloque. A collection of old pharmacy jars, mortars, old drugs and books were lent by the Pharmacie Centrale de France. Dr. Berillon exhibited a large collection of charms and amulets. It is hoped to form eventually a permanent museum of the history of medicine at the École de Médecine.

British Medical Journal.

SATURDAY, JULY 16TH, 1921.

SECURITY OF TENURE FOR MEDICAL OFFICERS OF HEALTH.

"In order that medical officers of health may be able to discharge their duties without fear of personal loss they should not be removable from office by any Local Authority, except with the sanction of the Central Authority." These words were written in the year 1871 and appear in the second report of the Royal Sanitary Commission over which Sir Charles Adderley presided; it recommended the appointment in all sanitary districts of medical officers of health and inspectors of nuisances. The Government of the day agreed to make these appointments, though not on the terms recommended by the Royal Commission; it insisted instead that they should be made for limited periods only and that at the end of the period the officer might or might not be reappointed. The effect of this was that a medical officer of health who happened in his zeal to offend a member or members of the electing authority failed to secure reappointment.

The position of many of these officials became so unsatisfactory that about twenty years ago an appeal was made to the British Medical Association in the hope that it might be able to secure some remedy. Either on its own initiative or jointly with the Society of Medical Officers of Health the Association urged upon successive Presidents of the Local Government Board the need for reform, but it was not until Sir (then Mr.) Herbert Samuel became President that any headway could be made. From early in the century until 1913 the Association has promoted bills in Parliament almost every session, and considerable expenditure has been incurred in the endeavour to meet the views of the draftsman of the Local Government Board. It was all of no avail; the Board would give no support to any of the Association's bills. In June, 1914, the Association arranged for a deputation to interview the Chancellor of the Exchequer (Mr. Lloyd George), the President of the Local Government Board (Mr. Herbert Samuel), and the President of the Board of Education (Mr. J. A. Pease). The deputation was joined by representatives of the Society of Medical Officers of Health, the Sanitary Inspectors' Association, and other bodies, and it was introduced by Sir Philip Magnus, who had charge of the bill of the Association in the House of Commons in 1913. So convincing were the arguments of Sir Philip and of Dr. Addison, at that time a private member, and of others, that an undertaking was practically given that the Local Government Board would make an Order having for its object the remedying of the grievances presented to the Ministers.

During the war nothing could be done, but in 1919 Sir Philip Magnus pressed for the fulfilment of the promise made in 1914, and after further stimulating questions in the House of Commons the Order was made on April 12th of this year. The Public Health Committee of the Association had learnt early in the year that the Order would relate only to newly appointed medical officers of health, and that those in office could still be dismissed by the local authority without any power of appeal to the central authority, whatever might be the alleged cause for dismissal. The Committee acted promptly and drafted a bill, which was introduced in the House of Commons by Sir Philip Magnus on April 12th. On April 14th it was read a second time and referred to Standing Committee D. It came before this Committee on May 26th. There are some fifty members on this Committee, and Sir Philip wrote a personal letter to each one of them asking for their attendance. There was opposition from the representatives of large towns and others, but eventually the measure was reported unanimously and read a third time in the Commons on June 3rd. On June 7th it was introduced in the House of Lords by Lord Gainford, who, as Mr. J. A. Pease, was one of the Ministers who heard the deputation in 1914. By this time there was growing up some opposition to the bill outside Parliament, and the Westminster City Council presented a petition against it; its passage through the House, however, was not delayed, for it was read a second time on June 28th, passed through Committee and was read a third time on July 5th, and is now awaiting the Royal assent. It is very unusual for a private bill to pass through all its stages so rapidly as this measure, but it must not be supposed that it achieved success merely through luck. Not being a Government measure it had to take its chance on the Orders of the day, and Sir Philip Magnus and Lord Gainford had to be most assiduous in their attendance in order that when it was reached they might be present to pilot it over the rocks of any opposition that might be raised.

It is to be regretted that the bill as drafted by the Public Health Committee of the Association had to be amended in several important particulars in its passage through Parliament. The Committee desired that security of tenure should be given to all medical officers of health and sanitary inspectors, but had not foreseen opposition from unexpected quarters which had to be met. The appropriate clauses referred to "a medical officer of health" and "a sanitary inspector"; amendments altered "a" to "the" in both cases, and introduced a clause distinctly stating that the provisions of the bill applied only to one sanitary inspector in a district. This is much to be deplored, for there are some districts in which, though there are several inspectors, there is no one of them who is senior to the others. However, those to whom the care of the bill had been entrusted felt that it would be the best policy to take a part of what was sought rather than to imperil the bill by demanding the whole. Another amendment which had to be agreed to in order not to endanger the passage of the bill excludes those districts in which a contribution from Exchequer grants towards the salary of a medical officer of health or sanitary inspector is not received.

The passing of this bill is a distinct triumph for the British Medical Association. It was drafted by the Association, and the arrangements for its introduction in the House of Commons were made by the Association officials; later on assistance was given by other bodies, for which the Association is grateful.

The thanks of the public health service are due to those members of Parliament who backed the Association's bill—Sir Henry Craik, Lieut.-Colonel Raw, Sir James Remnant, Mr. Myers, and Captain Walter Elliot, whose names indicate clearly that the measure was supported by members of all political parties.

Congratulations and thanks are more especially due to two persons. Dr. Herbert Jones, Medical Officer of Health of the Herefordshire combined districts, as a

member and for some years chairman of the Public Health Committee, made this matter peculiarly his own. His keenness, assiduity, and diplomacy have at last received the reward which has often seemed to be within reach but has always hitherto been withheld. Sir Philip Magnus's services in the parliamentary sphere have been no less devoted and prolonged, and his help has always been given in such a way as to suggest that it was given *con amore*. He now has the satisfaction of having placed to his credit a solid parliamentary achievement for which his constituents, the public health service, and the Association, of which he is an honorary member, are very grateful.

MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Museum of the Royal College of Surgeons of England is the largest medical collection in the British Empire and one of the most important in the world; it is based on the collection formed by John Hunter, which, after his death, was purchased by the nation for £15,000. Parliament also made contributions towards the erection of a suitable building for housing the collection, but its maintenance and the provision of the extended accommodation needed for its proper display as it grew have been charges upon the funds of the College. It is very much more than a museum for surgeons; it contains a series of specimens illustrating comparative as well as human anatomy, and medicine as well as physiology. It is, indeed, curious to note that among the original terms and conditions was one directing that the collection should be open "for inspection and consultation of the Fellows of the College of Physicians," as of "the Members of the Company of Surgeons and persons properly introduced by them."

Year by year additions have been made to the collection, chiefly by gifts from Fellows and Members of the College; occasionally larger contributions and series of specimens have been presented, such as that given in 1905 by Sir R. Havelock Charles, consisting of 248 skulls and other specimens representative of the many castes and tribes in India. The most recent large addition and the most important gift received during the year 1920–21 is the series of specimens illustrating the anatomy of the nose and its accessory sinuses formed by Professor Onodi of Budapest, who attained world-wide reputation by his writings; it is the most complete collection of preparations ever made to illustrate the anatomy of the nose. Professor Onodi died in November, 1919, and his son brought the collection to England with the view of selling it. Sir StClair Thomson and Mr. Philip Franklin advanced £250 to secure the retention of the collection in England; this amount, and £32 more, was obtained by public subscription, the surplus being handed to the College to defray the cost of printing a descriptive catalogue. In the condition in which they were received the specimens were unfit for exhibition, being still in a rough undissected state, and the conservator estimated that the cost of mounting and displaying them would be not less than £650. There are 400 specimens in the collection, half being dried macerated specimens, and the other and more valuable half being preserved in alcohol. Mr. Henry Wilson, the prosector, is engaged in giving the specimens a finished form, a laborious undertaking which will occupy the greater part of two years. Mr. T. B. Layton, F.R.C.S., is assisting the conservator in preparing a descriptive catalogue.

The War Office collection of pathological specimens is still in the custody of the College, and will probably remain in its keeping at least for the immediate future. The War Office has defrayed the cost of preservatives and glass jars, and has lent a skilled worker to help in mounting and arranging the specimens; but, even if the Treasury should make a considerable financial allowance, the completion and cataloguing of this unique and valuable collection and its upkeep will entail a considerable annual drain on the funds of the College. Mr. Cecil Beadles, who is engaged by the War Office to continue the preparation of specimens—a task on which he has been occupied for five years—reports that during the year 315 specimens were mounted and added. They include a series of brains and skulls illustrating all kinds of gunshot injuries, and a series of lesions of the intestines, including the various forms of dysentery, typhoid and paratyphoid fever, and bilharzia.

The original Hunterian collection contained a small number of human skulls and skeletons, but by the efforts of a succession of conservators, extending over a century and more, the College now possesses the most representative and valuable collection of this kind in the British Empire—perhaps in the world. The need for a new descriptive catalogue has been felt by workers both at home and abroad, and at the suggestion of Professor Karl Pearson the Council of Scientific and Industrial Research has agreed to the engagement of Miss M. L. Tildesley, trained under Professor Pearson, and have undertaken to pay a salary of £200 for the first year. She began work last October, but the task before her is a large one, and it is hoped that the annual grant may be renewed. For many years it has been the custom to accept and preserve all human remains found in Great Britain in circumstances which gave a clue to their date. From the evidence that has been accumulated Sir Arthur Keith has become convinced that definite changes, particularly in the face and jaws, have been taking place in a large proportion of the British people during the last century or two, but the date at which these changes began and their exact nature and extent can only be determined by a systematic examination of the material; this is now in progress.

A number of researches have been carried on by voluntary workers, and the conservator has continued investigating parts of the colon removed by surgical operation on account of disease. As the prosector's time is fully occupied in the preparation of the Onodi collection it has been necessary to suspend this work.

Professor Shattock, F.R.S., the pathological curator, reports that a large number of specimens were received and added to the collection, and Mr. Burne states that good progress has been made in cataloguing the physiological series. Sir Rickman Godlee has enriched by many interesting gifts the collection of surgical instruments, which is now very extensive and is being catalogued by Mr. Alban Doran. The report of Sir Frank Colyer, the honorary curator of the odontological collection, shows that progress has been made in the arrangement and cataloguing of the collection. Formerly an annual exhibition of specimens added to the collection during the year was held in July, but last year it was postponed until October, and this plan will be followed in future. The exhibition for the current year will last from October 3rd to November 5th, and Sir Arthur Keith will make the recently added specimens the subject this year of the series of demonstrations which, as conservator, he gives each autumn.

THE NEWCASTLE MEDICAL INSTITUTE.

THE new Medical Institute at Newcastle-on-Tyne will be opened by the Right Hon. Sir T. Clifford Allbutt, K.C.B., F.R.S., on Tuesday, July 19th, at 3.30. The institute is the gift of Dr. J. W. Smith of Ryton-on-Tyne, a former President of the North of England Branch of the British Medical Association, and is a memorial to his son, Dr. J. Wilkie Smith, a young man of great promise, who died some six years ago. The hope of the donor is not only that the institute will provide a social and scientific centre, but also that the members will not forget the cognate sciences, and will find interest also in philosophy, literature and music. All members of the Association attending the annual meeting have been made honorary temporary members of the institute, and will be welcome at the inaugural ceremony. The institute is at 7, Windsor Terrace, Newcastle, and provides a library and lecture rooms, dining-room, lounge and billiard rooms, and bedrooms for country members. A committee, of which Mr. Grey Turner, F.R.C.S., is chairman, has prepared a guide book to Newcastle, which will be presented to members attending the annual meeting. It contains a brief history of the city and its principal institutions, and is illustrated by a series of blocks by Bewick lent by Mr. Basil Anderton, M.A., and by a number of photographs, including several of the Roman Wall, to which an excursion will be made on Saturday, July 23rd.

INFANT WELFARE CONFERENCE.

THE second English-speaking conference on infant welfare was held in London during the first week of July under the presidency of Viscount Astor. The main discussions were three in number, and to each of them a whole day was devoted. One was on the question of residential provision for mothers and babies, another on the milk supply in its physiological and economic aspects, and the third on inheritance and environment as factors in racial health. Viscount Astor, in his address from the chair, urged that in infant welfare the nation had an example of anti-waste policy in its highest expression. The country, he said, could not afford to lose the progress it had made during recent years; the great foe was public apathy, and somehow the public mind must be brought to appreciate the unseen triumphs of preventive medicine. The first discussion at the conference took place under the chairmanship of Sir George Newman, and the principal paper was read by Dr. Janet Campbell, who said that the Ministry of Health had now recognized between sixty and seventy maternity homes, with about 700 beds, in England and Wales, and over twenty proposals for new homes were under consideration. All this was in addition to the old-established maternity hospitals and Poor Law lying-in institutions. She considered that the progress of midwifery was slow in comparison with the progress made in the practice of surgery, particularly in regard to the prevention of infection and the elaborate training of medical students and nurses in surgical technique. Other contributors to the same discussion were Dr. C. J. Macalister and Dr. H. B. Gladstone, both of whom dealt with the provision for ailing children; while Dr. Eric Pritchard, chairman of the National Baby Week Council, followed up the discussion with a lecture on common infections in mother and child. In the discussion on the supply of milk not only the point of view of the physiologist and economist, but also that of the municipality and the producer, was canvassed, and among those who took part in the discussion was the Honourable Nathan Straus, the founder of the infant milk dépôts in the United States, whose dépôts with their attached laboratories in New York City have recently been taken over by the municipality. The final discussion of the conference, on inheritance and environment as factors in racial health, was opened by Dr. Helen MacMurchy, chief of the Child Welfare Division of the Canadian Department of Health, and it ranged over topics as diverse as the influence of the weather on the mortality and morbidity of early infancy and the ignorance of mothers in Poland. Dr. Gordon Ley entered into a comparison between working-class mothers and those of the educated class from the point of view of difficulty in labour and lactation; Dr. J. H. Sequeira dealt with the influence of syphilis as an antenatal factor governing racial health; and Dr. John Adams described the work done for the syphilitic mother and her infant at the Thavies Inn centre for pregnant women. A child welfare exhibition arranged in association with the conference was opened by Sir Alfred Mond. Of all the many subjects which engaged the Ministry of Health, he said, none yielded more satisfaction than maternity and child welfare work, but no Government department, however anxious, could produce the far-reaching organization required to assist the million babies who were born each year, and therefore voluntary work, as exemplified in the exhibition, had its great opportunity. The exhibition followed the now familiar lines of infant consultations and clinics, lectures on infant care, and exhibits, with very graphic charts and models, in which the art of the poster was displayed to the utmost advantage, to bring home to the poorest intelligence the principles of mothercraft.

PRIESTLEY'S LAST PHASE.

THAT the discoverer of oxygen in 1774, after but two years devotion to chemistry, was twenty years later obliged by the storm raised by his activities in "the sterile regions of polemic divinity and the still more thorny paths of polemic politics" to leave this country and end his days in America is a story now largely forgotten. The history of the ten years' residence in the United States (1794–1804) is sympathetically told by Mr. Edgar F. Smith, of the University of Philadelphia, in a well-written booklet, *Priestley in America*.[1] Priestley was a nonconformist minister and a teacher in Warrington, and in 1780 moved to Birmingham where his "beloved theology" so enraged the mob that his house, his scientific instruments, and the places of worship where he set forth his obnoxious doctrines were destroyed in 1791. There is a picture in the Wellcome History Museum of Priestley playing backgammon with his wife when the news of the attack imminent on his house arrived; and it is indeed a strange irony of fate that with a most peace-loving nature his reputation is that of perhaps the most cantankerous man of his time. After lingering some time, though with feelings of bitterness from his experiences, he sailed in 1794 for New York, where he was received with open arms and addresses of welcome by Governor Clinton, the Bishop of New York, the Democratic Society of the City, the Tammany Society, and other learned, including some medical, bodies. Benjamin Franklin, whose friendship he had made years before in London, was now dead, but he had many friends, among them Benjamin Rush, who subsequently attended him for a severe pleurisy, and bled him seven times. The professorship of chemistry at Philadelphia was declined, as he disliked the quaker city, probably because of the inhabitants' love of bright colours and extravagant dress. He, however, spent much of his time there, and, though he was chiefly interested in religion and preaching, which led to unpleasantness with the Baptist ministers, began experimental work again, and in 1797 and 1800 published pamphlets on phlogiston, with the result that a considerable amount of criticism was aroused among the chemists of America. His literary activity, especially on religious subjects, was remarkable, and on the day before his death, from dropsy and a cough, "perhaps from a translation to the chest," he revised his *Annotations* on the Old and New Testaments, and an hour before he breathed his last,

[1] *Priestley in America, 1794–1804*. By Edgar F. Smith. Philadelphia: P. Blakiston's Son and Co. 1921. (Cr. 8vo, pp. 175. 1.50 dols. net.)

on February 6th, 1804, "dictated in good language some notices which he wished his son, Mr. Priestley, to add to his unpublished works."

AN INDEX TO CURRENT MEDICAL LITERATURE.

THE *Journal of the American Medical Association* has long published lists of articles in current medical periodicals; for a time it issued also a semi-annual index to all articles in these lists and to papers appearing in its own original department. Subsequently it began the publication of a *Quarterly Cumulative Index to Current Medical Literature*, a publication now in its sixth volume. Authors and subjects are arranged under one alphabet. The April number is an index to journals printed during January, February, and March; the July number contains entries for the first six months, and the October issue contains entries for nine months and supersedes the July. Each quarterly number is thus an index to the literature of the year down to the month of publication. The January issue is an index to the literature of the preceding year; it is bound in cloth for permanent preservation. This bound volume for 1920 contains, it is stated, the titles of about 29,000 articles appearing in, approximately, 3,350 issues of over 200 periodicals. In the main index, that to current medical literature, subjects and names are given in a single alphabetical list; but each paper appears twice, once under the subject and once under the name of the author. This is, we believe, the only satisfactory way of making a really useful index, since the searcher may be looking for all the papers on a particular subject, or for a paper by some particular writer. The list of journals indexed is comprehensive and all titles are given in English, whatever the original language. There are two lists of books, one under the authors' names and the other under subjects. A list is given of Government documents of interest to the medical profession published in the United States, but not in other countries; the task of making a complete list for all countries would undoubtedly be difficult, and probably not worth the labour that would be involved. We are told that the number of subscribers to the *Cumulative Index* in this country is very small, but we are sure that its merits have only to be better known for the number of subscribers to increase. The annual subscription, which should be made payable to the American Medical Association, 535, North Dearborn Street, Chicago, Illinois, U.S.A., is 6 dollars, with 50 cents. extra for foreign postage.

HEALTH OF EUROPEAN OFFICIALS IN WEST AFRICA.

THE return showing the vital statistics of non-native officials in West Africa for 1920 has been issued by the Colonial Office.[1] The notes accompanying the statistics state that a considerable advance towards normal conditions in West Africa was made in the year under review, and the staffs generally were brought up to their full establishment. Over 800 appointments were made in 1920; this gave a net increase of 439, and brought the staff at the end of the year to the highest figure it has ever reached. There were 44 deaths, giving a death rate of 16.3 per 1,000 as compared with 12.5 in the previous year. This rise, however, was partly due to the fact that the number of deaths (8) from accident or suicide was exceptional. Of the 36 deaths due directly to disease 11 were caused by blackwater fever, as against 8 in 1919. On the other hand, the invaliding rate shows a considerable improvement; it fell from 27.5 per 1,000 in 1919 to 22.7. Since 1904, when the invaliding rate was 67.2 per 1,000, there has been a steady downward tendency. The average number of non-native officials in the service in 1920 was 2,687, made up as follows: Gambia 43, Sierra Leone 236, Gold Coast 725, Nigeria 1,683.

[1] Cmd. 1430. To be purchased through any bookseller or direct from H.M. Stationery Office. Price 2d. net.

THERAPEUTIC PROTECTION AGAINST X RAYS.

AUER and WITHERBEE[1] in an article entitled "Studies on decreasing the reaction of normal skin to destructive doses of *x* rays by pharmacological means and on the mechanism involved," describe a series of experiments carried out at the Rockefeller Institute for Medical Research, which have a special and practical interest at the present time. They found that rabbits previously sensitized by injections of horse serum acquire in the majority of instances a remarkably increased resistance to doses of *x* rays that destroy the tissues of normal control rabbits and of rabbits that receive a single injection of 10 c.cm. of horse serum thirteen days after the application of *x* rays. It was also proved that the protection against the effects of *x* rays, conferred by previous sensitization, is largely abolished if the animals are reinjected with serum after *x*-ray treatment; in other words, if they are subjected to an anaphylactic reaction, which, it may be inferred, functionally removes the anaphylactic antibodies locally fixed in the tissues and providing protection against massive doses of *x* rays. Previous sensitization with horse serum is estimated to reduce the lethal action of 30 skin units (Witherbee-Remer formula) to the level of 10 to 15 skin units. This increased resistance, due to the anchoring of anaphylactic antibodies to the cells in the subsequently *x*-rayed area, and not to the presence of these antibodies free in the circulation, is a non-specific reaction, because the abnormal response is called forth not by the sensitizing substance but by an utterly unrelated physical agent. The reason why injection of serum after the *x* ray exposure fails to protect appears to be that the cells of an *x*-rayed area are unable to produce anaphylactic bodies or to fix them when present in the circulation. It is probable that a similar increased resistance to the destructive effects of *x* rays can be obtained in man, and that in the future it may be utilized in cases of inoperable malignant disease in which the applicable dose of *x* rays is directly limited by the resistance of the skin overlying the neoplasm. It is not known whether the resistance of malignant cells is increased in the same way as that of the skin by injection of serum. This could easily be determined experimentally, and obviously must be decided before any attempt to employ this method in practice is made. The possible objection that heavy doses of *x* rays might induce malignant disease of the skin appears unlikely to hold good as no such change occurred in rabbits after 300 days, which, considering the relative life of rabbits and man, corresponds to a much longer interval in the human species. Inasmuch as the injection of serum to increase the resistance of the skin and so to enable massive doses of *x* rays to be employed in inoperable malignant disease would be the last scientific effort to obtain alleviation, any objection based on the drawback of rendering the patient sensitive to horse serum should have little or no weight.

[1] J. Auer and W. D. Witherbee, *Journ. Exper. Med.*, Baltimore, 1921, xxxiii, 791–814.

CONCERNING OBSTRUCTIVE JAUNDICE.

IT is not generally realized that a very small amount of liver is sufficient to eliminate the bile and so obviate jaundice; and it is often categorically stated that in man local obstruction of an intrahepatic bile duct produces jaundice. Dr. Peyton Rous has been carrying out a series of experimental researches on the pathology of hepatic disorders, at the Rockefeller Institute for Medical Research, and after the completion of an investigation into the effect of ligature of the bile ducts in the production of biliary cirrhosis (vide BRITISH MEDICAL JOURNAL, 1920, ii, 550), he has, with Dr. McMaster,[2] conducted further experiments in order to determine how much biliary obstruction may exist without jaundice resulting. By carefully planned experiments on dogs and monkeys they found that

[2] P. D. McMaster and P. Rous, *Journ. Exper. Med.*, Baltimore, 1921, xxxiii, 751–750.

three-quarters of the liver can be obstructed without the appearance of jaundice; indeed, in dogs nineteen-twentieths of the liver can be put out of action, as regards secretion of bile, without development of the jaundice that regularly follows obstruction of all the ducts. A number of pathological observations showing obstruction of intrahepatic ducts in man without icterus are quoted to show that the human liver's margin of safety in the elimination of bile is not inferior to that found in dogs and monkeys. In the past jaundice accompanying abscesses or other morbid changes involving a part only of the liver was ascribed to local resorption of bile, but in the light of Rous and McMaster's experimental observations it would appear that there must be some additional and general factor, such as changes in the liver cells or in the bile ducts, or haemolysis. The ability of a small portion of the liver to excrete all the bile probably depends on several factors; the areas of the liver with biliary stasis due to obstruction of the corresponding ducts manufacture less bile, and their dilated ducts press on the branches of the portal vein and so divert some of the portal blood and with it the functional activity to the more normal parts of the organ.

THE BIBLIOGRAPHY OF SIR WILLIAM OSLER.

THE revised and enlarged *Bibliography of the Writings of Sir William Osler*, by Miss Minnie Wright Blogg,[1] Librarian of the Johns Hopkins Hospital, has evidently been a labour of love, for the compiler says that Sir William's words of commendation on the appearance of the earlier bibliography of 730 titles during his lifetime were her chief reward and inspiration. The present bibliography, covering a period of fifty-one years (1870–1921), contains 1,195 titles; this considerable enlargement is due to the inclusion of articles and reviews that have been identified by his friends and pupils, such as A. Malloch and W. W. Francis and others who had certain knowledge that he was the anonymous or disguised author. There are nine titles bearing the date 1920 or 1921, three of them being in Kelly and Burrage's *American Medical Bibliographies*, published in 1920. His last published writing was a review of Stephen Paget's *Life of Sir Victor Horsley*, written for the *Oxford Magazine* in the autumn of 1919, and the last contribution that appeared before his death was an appreciation of the late Dr. C. A. Mercier in our issue of September 13th, 1919. In addition to the 72 pages of the titles of articles there are 15 pages of a subject index which will be of the greatest assistance to those anxious to obtain without loss of time the exact reference to any of Sir William Osler's widely scattered contributions. The frontispiece is a photograph of Sir William in khaki, with his signature and the legend in his handwriting, "A Memory of Canadian Hospital, Cliveden, 1915–1916." The volume, which has for motto "Books are tools, doctors are craftsmen," is appropriately dedicated to Dr. Thomas McCrae, "Friend and Co-Worker of Sir William Osler."

THE EFFECT OF PROHIBITION ON THE INCIDENCE OF PORTAL CIRRHOSIS.

THE effects, good or mixed, of prohibition in the United States of America still excite discussion, and it will be interesting to see fully analysed statistics showing the incidence of those diseases, such as hepatic cirrhosis, peripheral neuritis, tuberculosis, and gout, which appear to be specially related to alcoholism, since the advent of prohibition. An immediate effect was the falling off in the number of street accidents so that accident wards in many large hospitals became almost empty. A longer interval must elapse before it will be possible to estimate the influence of prohibition on chronic disease, but attention may be directed to a short paper by Joseph L. Miller[1] of Chicago on the effect on the incidence of portal cirrhosis. Although formerly spoken of as alcoholic cirrhosis, or whisky or gin drinker's liver, it is now generally recognized that poisons other than alcohol can cause cirrhosis, especially those of dyspeptic origin, and in 1899 Hanot termed this form "Budd's cirrhosis," after the description given in 1857 by George Budd, Professor of Medicine at King's College, London. On the other hand, dyspepsia is extremely common as the result of alcoholic excess, and the only question is how often alcoholism is responsible for cirrhosis. For a number of years Miller has carefully gone into the history of patients with cirrhosis in the Cook County Hospital, Chicago, and has never failed to obtain evidence of alcoholism. From a table of the yearly admissions from 1910 to 1920 of patients with cirrhosis, it appears that there was a rapid fall from 156 cases in 1917 to 87 in 1918, 48 in 1919, and only 19 in 1920. Prohibition did not begin until July 1st, 1919, so the fall in 1918 was due to some other factor and perhaps to closure of the hospital to all but acute cases in the autumn of that year when influenza was rife. The histories of the 19 cases admitted in 1920 all pointed to former alcoholism, but did not show whether this had continued after July 1st, 1919. The noticeable fall of incidence suggests that the cirrhotic process in the liver ceases when alcohol is discontinued, and that in Chicago, at any rate, alcoholism plays a very important part in the genesis of this morbid change. With few exceptions the diagnosis of cirrhosis at the Cook County Hospital means an advanced stage with ascites; and as these cases have almost disappeared, their association with alcoholism seems to be established.

ARSENICAL POISONING IN VINEYARDS.

THE use of various arsenical preparations to destroy insects and fungi by which vines are infested, which is very common in French wine districts, is, it is recognized, not free from danger. As long ago as 1909 a special committee of the Académie de Médecine presented a long report on the subject, and in July, 1916, a law amending that of 1845 on the sale and employment of poisonous substances was passed. It forbade the use of soluble arsenical substances in agriculture but allowed the employment of insoluble arsenical preparations if mixed with coloured and odorous bodies so as to obviate mistakes. The practical application of the enactment has, however, been delayed, and arsenical preparations are still freely sold under various fancy names. Cazeneuve[2] has recently described a small but very fatal outbreak of arsenical poisoning among persons employed on a farm surrounded by vineyards in the commune of Rieux-Minervois, in the department of the Aude. The poisoning, it is believed, was produced by drinking water from the farm cistern, which was found to be so heavily contaminated with arseniate of sodium that a glass and a half contained more than one grain of the salt. The way in which the arsenic got into the water in the cistern was not determined, but occipyral, a highly toxic arsenical insecticide, the exact composition of which is not known, was employed in the vineyards, and it is possible that it was washed into the cistern, which was in the basement, by a rainstorm the day before the explosion of acute cases occurred. The cases were of two kinds—very acute and fatal cases, and those with severe peripheral neuritis, some of them terminating in death. Altogether fifteen deaths occurred. After hearing Cazeneuve's story the Académie resolved to appoint a committee to report on the laxness with which the law is at present administered.

[1] *Bibliography of the Writings of Sir William Osler, Bart., M.D., F.R.S., Regius Professor of Medicine in the University of Oxford.* By Minnie Wright Blogg, Librarian of the Johns Hopkins Hospital. Baltimore: The Lord Baltimore Press. 1921. (Pp. 96. 5 dols.; 2.50 dols. to subscribers.)

[1] J. L. Miller, *Journ. Amer. Med. Assoc.*, Chicago, 1921, lxxvi, 1646-1647.

[2] Cazeneuve, *Bull. Acad. de Méd.*, Paris, 1921, 3e série, lxxxv, 660-671.

"THE JAPAN MEDICAL WORLD."

THE high standing of Japanese medical science is generally recognized throughout the world, and the names of several Japanese research workers are household words among Western medical men, but the West is by no means so intimately in touch with Japanese medicine as is desirable; this is due largely to the language difficulty. As a modest acquaintance with one other European language—rarely in these days with two or more—appears to be about as much as the average British medical man can be expected to gain, our friends of the East have for the past three years included for our benefit an English section in the medical journal, which is published weekly at Tokyo in Japanese. It was felt, however, that this was insufficient, and now, in commemoration of the tenth anniversary of the weekly journal under the editorship of Professor K. Miyajima, there has been successfully produced a monthly medical journal, the *Japan Medical World*,[1] entirely in the English language. Few Englishmen realize that in the empire of Japan there are to-day twenty-two medical colleges, all as admirably equipped for research work as for educational purposes, in addition to special institutions, while the number of Japanese medical men is estimated at 45,000 out of a total population of 55,000,000. The new medical journal is well printed and should prove to be an excellent medium for introducing Japanese medical activities to the notice of the outside world. In addition to a number of admirable original articles—all of which, however, in this number smack more of the laboratory than of the clinic—a summary is given of the more important articles in the current Japanese medical journals, which number nearly a score. The proceedings of almost as many Japanese medical societies are briefly but adequately recorded, and the medical news of Japan is fully dealt with. We hope that such an achievement as the production of this journal will have the success in Britain, the Dominions, and America, that it so richly deserves.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.

Public Health Officers Bill.

ON the motion of Sir Philip Magnus, on July 12th, the House of Commons agreed to some amendments made by the Lords in the Public Health Officers Bill. The measure now awaits the Royal assent.

War Pensions Bill.

Mr. Macpherson, on July 8th, moved the second reading of the War Pensions Bill, which was, he explained, to give legislative sanction to those recommendations in the Departmental Committee's Report (see p. 79) that needed it. The administrative changes in the headquarters of regional offices could be carried through by an instruction that he would issue.

Picturing the magnitude of the work, the Minister said that the three and a half million beneficiaries were equivalent in number to the population of Liverpool, Manchester, Birmingham and Glasgow. Clauses 1 and 2 of the bill were for the reduction and reorganization of local committees. These spent twenty millions a year without direct control. In reconstituting the local committees he proposed to enlarge the representation of ex-service men from one-fifth to one-fourth; and to reduce the representation of the local authority from one-half to what is given on committees under the National Insurance Act; but to make the appointments himself, this being necessary because the areas of local authorities would be mixed. Clauses 3 and 4 were designed to secure final assessments, and thus within a measurable time reduce the machinery to a minimum, enabling payments to be made through the Post Office.

The present system, Mr. Macpherson went on to say, with its periodic examination of men, required an elaborate structure of medical boards, referees, and so forth. The medical machinery of the Ministry had hitherto employed in whole-time, or part-time, one man in every four, or one man in every five of the medical population of the country. The periodical examination of disabled men and officers met annually the equivalent in working time of 20,000 men. Travelling expenses of examiners and examinees and their loss of time represented an enormous amount of money. Even more important was the effect that finality would have on the mind of the man who had hitherto been harassed by medical boards, and the relief it would be to him to get away from the atmosphere of the war and its disabilities. The Minister said that in this proposal he was supported by every single body of public opinion consulted, by members of the House, by the press, by the Departmental Committee (which voted unanimously in its favour) and by the Standing Committee of officers and men. The Labour Party Advisory Committee unanimously recommended that pensions should be made permanent in two years. He proposed to make the period four. At present there was an insuperable difficulty in granting any great number of permanent pensions. He had granted them where cases were clear, such as those of amputation. But permanent pensions granted now were on a rather one-sided basis. Any pensioner if his case got worse could come back to the State and demand more, and he could get it. On the other hand, if he got better he went on drawing a fixed pension—there was no right of appeal on behalf of the State. Under the Government proposal this one-sided process would be abolished, subject to qualifications. The Government actuary had shown that the proper time for examining a man for his permanent pension was four years after his discharge, or after his war service. During the first two or three years after a man's discharge the rate of improvement ranged from 20 to 60 per cent. of the disablement, but after two years it was a very gradual process, and at the end of four, to all intents and purposes, the man's condition became stationary. One important fact, however, had to be taken into account. Many cases were extremely difficult. Newly discovered diseases had arisen in the course of the war. They had actually to add to the medical profession in order to deal with these diseases, and they had had to create new hospitals. Under his proposal a man at the end of four years, however doubtful his case, would have been examined by thirty doctors. At present an assessment was made in 80 or 90 per cent. of the cases to cover one year or more. But, anyway, each man four years after his discharge would have been examined by many doctors. To meet cases of possible unfairness he proposed two things. If the medical board, when examining for a permanent pension, was satisfied that the man might get worse, they were to act on instructions not to make the award permanent. In the second place, he proposed to ask the House to give him power to appoint an independent appeal tribunal. He should hesitate before taking upon himself, unless there were an independent court of appeal, the responsibility of saying that a man was not entitled to any pension. He asked for powers to have this tribunal composed, not as at present, of a lawyer, an ex-service man, and a doctor, but of two doctors, one of whom would be the president of the court, an ex-service man, and an officer. Every discharged man would have the right to go to this court. By making the pension permanent he believed that on a conservative estimate there would be a saving of £2,000,000 annually in administration alone. One other point, however, should be clearly understood. If a man became seriously worse after his permanent pension had been given to him the Minister still retained the rights which he had under Article 6 of the Royal Warrant of dealing with the case. And even if a man's claim had been finally settled he might still, under those rights, be entitled to hospital treatment and to certain allowances, and those privileges he would retain for the rest of his life. Mr. Macpherson further explained that under Article 9 of the Royal Warrant was given a right to every man who served in the British army, even though he was never examined on discharge, to come before a medical board and have all the rights of a man who was examined on discharge. The Labour Party, in a very interesting memorandum, had suggested that a time limit of six months, the same as under the Workmen's Compensation Act, should be imposed on this consideration; but the Government decision was to make the period seven years after service. Unless there were a limit the machinery would have to be kept up indefinitely. Further, he would ask the House to say, in regard to appeals, that there should be a time limit of six months. Under Clause 6 he was proposing to take the same powers of commuting the disability pensions of seamen and marines and officers and men of the mercantile marine, as he already had in the case of soldiers and airmen. His policy was to see that commutation took place as rarely as possible, but there might be cases when it was expedient. Under Clause 7 he was taking powers to get under the Ministry of Pensions those children whom the boards of guardians would permit them to take charge of on the application of the Minister. Clause 8 was one providing for submission to Parliament of all the regulations made under the bill. He reckoned that on a conservative estimate the saving in administrative expenses by doing away with 800 local committees would be between £6,000,000 and £12,000,000.

Mr. Hogge, in a friendly criticism, hoped that the seven years limit would not be made too binding as regards the medical cases, which offered the most difficulty. He hoped that in the rearrangement of the local committees care would be taken not to lose the human touch. He reserved his opinion on various matters of detail until he had had an opportunity of studying the report. Major Cohen, speaking as treasurer of the British Legion of Ex-Soldiers, said they felt that the bill was being rushed forward, but he was glad to learn that the Committee

[1] *The Japan Medical World*. Edited by K. Miyajima, M.D. Vol. 1. Annual subscription, Yen 12.00. Published by the Nippon-No Ikai Sha, Kanda, Tokyo, Japan.

stage would not be taken for a week. The main objection he had to the bill was the clause vesting in the Minister the power of making schemes for establishing committees without reference in any way to the local committees.

Mr. Lawson moved the rejection of the bill, not from hostility to seven-tenths of it, but because it was presented so soon after the publication of the report. He was not in favour of the seven years' limit, and he raised several other points. Mr. Charles Edwards, seconding the amendment, urged that this subject might be more properly dealt with in the autumn recess, instead of in this hurried manner, and then next session they would not have to cancel legislation thus passed. Major Entwistle, who was a member of the Departmental Committee, supported the bill, with explanations of findings, but he offered some criticism on drafting.

Captain Bowyer was concerned at the possibility that with more direct control by the Ministry the findings of medical boards might be more upset even than at present in order to get uniformity of treatment. Major Henderson, who was a member of the Departmental Committee, took up this point as dealt with by the Committee. He said that they were satisfied that no decision of a medical board was overruled unless a man was re-examined by another medical board. There was a good deal of misunderstanding on this subject. The medical boards assessed as to disability but had no authority to decide as to attributability, because that was not entirely a medical question but of military law and other things. That was how it was that sometimes an assessment was reduced. A man should not be told what his first assessment was, but he sometimes overheard it.

Dr. F. E. Fremantle believed that if this bill were carried through it would be one of the Government's greatest achievements, but the matter was of such vital importance on the medical side that it would have to be most carefully considered in Committee. He wished to emphasize a particular point—that medical opinion was above all required on the question of the final award. He should like to know whether there was any foundation from medical evidence, for saying that the four years' limit, leaving out of the question for the moment the seven years, was sufficient for purposes of permanent pension assessment. It was an extraordinarily difficult professional problem to say what was the proportion of cases that might be expected to recur at the end of four years after active service. If they would be only two or three in a million the State had a right to discount them to get finality, but if they proved to be 10 or 20 per cent. it would be absolutely wrong. There were cases where it was perfectly certain there would be recurrence later on. Mental cases would provide the great bulk. A liver abscess might occur many years after serving in the tropics. He had certainly had malaria after he had got home. At the present time the definition seemed to be pure guesswork and dangerous from both points of view—of the pensioner and of the State. He was not sure that it was desirable to have two medical men and no lawyer on the appeal boards—medical men were essentially kind-hearted. The Minister of Health had urged that the department should cut its losses, but there was a danger of making a great loss if this was carried as it stood. He did not see why it should not be possible to put in an amendment that these final awards should be liable to revision in ten years' time. Dr. Fremantle also asked what the Minister meant by the promise to the pensioner that he would be qualified for hospital treatment to the end of his life. If there was the least possibility of any liability for treatment under the pension system for all conditions of disease to the end of a man's life, the department might have to extend the whole of their hospital system and keep it up in all the areas of the country for the next fifty years. They knew that the system of hospitals under the Ministry of Pensions was extraordinarily efficient, and that being so, it would be very jealous of keeping all its cases. Thus they might have a hospital pension system, a voluntary hospital pension system, a Poor Law system, and army and navy hospital. His own feeling was that there ought to be co-ordination of hospital work.

Mr. R. Young, a member of the Departmental Committee, supported the bill. Mr. Hodge, however, entered a protest against its being rushed through the House. Speaking as an ex-Minister of Pensions, he regretted that Mr. Macpherson was not prepared to abolish entirely the regional system.

Major Tryon (Parliamentary Secretary to the Ministry of Pensions) replied for the Government. He assured the House there would be a good lapse of time before the bill was taken in Committee.

Mr. Arthur Henderson entered a further protest against the "rushing tactics" which the Minister had adopted. Within the last half hour he had received a letter from the Association of Local War Pensions Committees protesting strongly against the bill being taken in this way without opportunity being given them to make representations. Mr. Henderson added that many points would have to be raised in Committee, but his party hoped that the bill would be passed into law.

The amendment was withdrawn and the bill read a second time.

Medical Officers in Pensions Department.—Mr. A. T. Davis asked, on July 6th, whether only about 60 per cent. of the doctors employed by the Ministry of Pensions, or under its control, had had overseas experience, and whether, seeing that such experience enhanced the value of doctors in their work for the Ministry in dealing with ex-service men, preference would in future be given on making appointments to those medical men who had had overseas experience. Major Tryon replied that he was unable to state the exact percentage of the total medical staff, whole-time and part-time, who had had overseas experience, but he had ascertained that it was considerably more than 60 per cent. Preference was given wherever possible to medical men who had served overseas; but other important qualifications, such as experience in special classes of disease, had often to be taken into consideration.

Pensions Appeal Tribunals.—Colonel Gibbs stated, in reply to Lieut.-Colonel Sir F. Ball, on July 7th, that the cases listed and in course of being heard by the Pension Appeal Tribunals were 1,134 and 3,071 on March 31st and June 20th, 1921, respectively; the numbers outstanding awaiting listing for hearing on the same dates were 7,734 and 6,779. Of the total number of cases awaiting hearing, a thousand were cases in which the appellants had already been afforded one or more opportunities of appearing before a tribunal. During the latter part of May and in June additional courts were set up, and one thousand cases were now being dealt with each week. Further tribunals were being formed and sittings would be held through the summer vacation; approximately sixteen during August and twelve during September. The number of tribunals to be allocated to London for the holiday period would depend upon the state of the work in London as compared with that of other regions.

Committee on Artificial Limbs.—The Minister of Pensions has appointed a committee to inquire into the arangements for the supply and repair of the various types of artificial limbs which are provided under the Royal Warrants and Orders in Council, and into the comparative advantages of the metal limb and the wooden limb; and to make recommendations thereon. The members of the Committee are: The Right Hon. Sir Archibald Williamson, Bt., P.C., M.P. (Chairman), Professor A. F. C. Pollard, Major Meurice Sinclair, C.M.G., R.A.M.C., Major M. P. Leahy, R.A.M.C. (ret.), Major A. A. Atkinson, R.A.M.C.(S.R.), Sir Lisle Webb, K.B.E., C.B., C.M.G., Director-General of Medical Services, Ministry of Pensions, Mr. Frank Cecil Meech, ex-corporal of horse, Royal Horse Guards. Mr. W. J. Sullings is the secretary of the Committee.

The Regional Medical Officers.—Sir J. D. Rees asked the Minister of Health, on July 6th, whether the thirty-two doctors who were appointed by his predecessor at £1,000 a year were still retained at the Ministry; and, if so, when would their services be dispensed with. Sir Alfred Mond took the reference to be to the regional medical officers, and said he had made clear in introducing the estimates for the Ministry of Health that after personal investigation he thought that this staff did useful work and should be retained. In any case, he was not in a position to dispense with their services, excepting on the terms of their engagements, which would not come to an end for several years. Colonel Ashley asked whether the House was to understand that the Ministry of Health had tied itself down for several years in the engagement of these public officials. Sir A. Mond said that, in view of the fact that most Government officials were engaged for life in the Civil Service, he thought that an engagement for five years in an important office was not an unreasonable agreement. Captain Coote asked whether it was not a fact that the public health had never before been so good as it was at present; and Viscountess Astor chimed in, "Is not infant mortality going down"?

Psycho-analytical Treatment.—Mr. Mills asked if the Minister of Pensions had any results that would justify the continuation of the treatment of ex-service men by the process known as psycho-analysis; whether he had received any protests from men "compelled to undergo this torture"; how many people were under this treatment and what were the qualifications necessary for those experimenting with shattered lives. Mr. Macpherson responded that satisfactory results had been obtained from this form of treatment, which, however, was in no sense compulsory, an essential element being the patient's willing co operation. The treatment was always given by registered medical practitioners specially qualified by previous training or experience. He was unable to state the number of patients adopting the treatment. Mr. Mills inquired whether it was quite clear to the men that the treatment was optional. Mr. Macpherson said that if it were not he would have made it clear. He promised that if another question were put down he would get particulars of the qualifications necessary in the medical men. He expressed his willingness to show to members of the House the hospital methods in this matter.

Scarlet Fever in the Metropolis.—In reply to Mr. Alfred T. Davis, on July 6th, the Minister of Health said that there were approximately 2,000 more cases of scarlet fever in the hospitals of the Metropolitan Asylums Board than at this period last year. Epidemics of scarlet fever tended to recur at intervals of about seven years. The causes of this periodicity were being closely studied but had not yet been fully elucidated. His department was in constant touch with the local authorities in London, and he was advised that the preventive measures taken by the bodies were satisfactory, and that hospital accommodation had been provided by the Metropolitan Asylums Board for the large majority of cases which had occurred.

League of Nations: Health Organization.—Mr. Balfour, on question by Sir J. D. Rees, said, on July 7th, that in pursuance of Articles 23 and 25 the League of Nations was proceeding, as it was bound to do, to set up an International Health Organization. At the present moment the arrangements were in the initial

stage only. Great Britain made a lump sum contribution towards the expenses of the League, no part of it being earmarked to particular branches of the League's work.

Financial Condition of Hospitals in Dublin.—Mr. Devlin repeated to the Irish Chief Secretary, on July 7th, the question he had addressed to the Minister of Health on July 4th as to the financial condition of the hospitals in Dublin. Mr. T. W. Brown, for the Chief Secretary, said that he was well aware of the facts and figures given in the report of the Board of Superintendance of Dublin Hospitals for the year ending March 31st, 1920. He was unable, however, to add anything further to the negative reply which Sir Hamar Greenwood recently gave on appeal, that Irish hospitals should share the grant recommended by Lord Cave's committee, or receive an equivalent grant. Mr. Brown made one correction in the figures given by Mr. Devlin. The deficit attributed to the Westmorland Hospital was that of Dr. Steevens's Hospital. The first named institution had no deficit. In reply to Sir J. Greig, on July 11th, Sir H. Greenwood said that the grants to Dublin hospitals from the Imperial Exchequer originated in a clause of the Act of Union which bound the Parliament of the United Kingdom to continue certain grants made by the Irish Parliament for the maintenance of institutions for charitable purposes. These grants had been paid by the Irish Parliament to the following hospitals which are still in existence—namely: Hospital for Incurables, House of Industry, Westmorland and the Meath Hospitals. The Irish Parliament had also contributed generously to the construction of the Rotunda Hospital. The United Parliament of Great Britain and Ireland was bound to continue these grants for a period of twenty years, but, taking a wide view of the contract, it had, in fact, continued and extended the number of the grants to the present day. The amounts paid to each hospital had varied from time to time, but were finally fixed at their present figures by the Select Committee on Irish Estimates, 1854, as modified by the report of the Royal Commission of 1855. So far as he was aware, neither English nor Scottish hospitals had directly received similar grants, nor had any Irish hospital outside of Dublin received them.

Injury to Sight During Film Production.—Viscount Curzon asked whether the Committee on the Cause and Prevention of Blindness had yet reported upon the question of injury to eyesight resulting from the powerful light used in film production. Sir A. Mond said that the conclusion of the report was that there was evidence only of transient injury to the eyes having occurred in two cases, and that such injury was associated with the use of a particular open arc lamp without a proper screen. He had received an assurance from the Incorporated Association of Kinematograph Manufacturers that no member of the association would permit any open arc lights to be used in their studios for general illumination without glass filters, and he did not consider further action necessary.

Imperial War Graves Commission.—In answer to Mr. Erskine, on July 7th, Lieut.-Colonel Stanley said that the Imperial War Graves Commission had been constituted by Royal Charter, a body corporate with perpetual succession. The total number of the staff was 2,354. This number covered all the later theatres of war, and included the gardening staff of 1,148. The salaries and wages of the whole staff amounted approximately to £377,500. The total estimated expenditure for the current year to be borne by the several participating Governments was £2,366,720.

Married Persons in Lunatic Asylums.—The Home Secretary was unable to state, in answer to a question by Mr. Rendall on July 6th, how many married persons there are in the lunatic asylums in England and Wales, and how many of these had been certified for over five years, but he promised to try to get the information.

The Children Act.—Mr. Swan inquired, on July 6th, whether the Minister of Health had received a representation from the medical officers of health of the country asking that the infant life protection section of the Children Act, 1918, should be amended so as to secure that where a maternity and child welfare scheme was being carried out by a local authority to the satisfaction of the Ministry, such local authority should be made responsible for the administration of Part I of the Children Act of 1908; and whether in view of the fact that this request had emanated from public health experts and of the recent disclosures as to baby farming in Margate, he proposed to take the necessary steps to meet such appeal. Sir A. Mond said he had received the resolution. The matter would certainly be considered when legislation was practicable.

Sanitary Conditions in Private Schools.—On an inquiry by Mr. Swan, on July 6th, whether the Minister of Health would consider the advisability of amending the law so as to enable the medical officers of health to present a regular report as to the sanitary conditions of private schools, Sir A. Mond said that local authorities and their medical officers of health had the same powers regarding overcrowding and sanitary defects in schools as in other dwelling houses. He was not sure that further powers were required, but the point would be considered when the Public Health Act was amended.

Dangerous Drugs Act.—Mr. Alfred T. Davis asked whether the committee appointed to consider objections to the draft regulations issued under the Dangerous Drugs Act, 1920, after considering the claim that prohibition of retailing by pharmacists was *ultra vires* in view of Section 7 (2) of Dangerous Drugs Act, and observing that the point could be settled only by a competent judicial authority, proceeded with their inquiry as if the contentions were not well founded; and whether the Home Secretary had since obtained, or proposed to obtain, the opinion of the Law Officers of the Crown on this contention of the pharmacists. Mr. Shortt said that the answer to the first question was in the affirmative, and to the second in the negative.

Universities of Glasgow and St. Andrews.—Sir R. Thomas asked, on July 6th, whether the Secretary for Scotland had noticed that in the returns from universities and university colleges in receipt of Treasury grant, 1919–20, it was stated, on pp. 271 and 286, that the universities received no grant from local authorities, and that in the statement of accounts on pp. 274 and 283 of the same publication it was shown that Glasgow University received £8,700, and St. Andrews University received £4,500. Mr. Munro said that, in point of fact, no grants were made to the Universities of Glasgow and St. Andrews from local rates. The sums mentioned were annual payments made from the Local Taxation (Scotland) Account (Scotland) Act, 1892, out of the Scottish share of moneys made available by statute for relief of local taxation in the different parts of the United Kingdom. These payments to the Scottish Universities reduced the amount which might otherwise be distributed among local authorities in Scotland in relief of local rates, and, therefore, might be said to represent indirect contributions from the rates to the universities.

Health Conditions in Slate Mines.—Mr. Bridgeman, on June 28th, in answer to Major Breese, said that the revision of regulations for safeguarding the health and providing against accidents to men employed in the slate quarries and mines of the United Kingdom had already been taken in hand, and would be completed as quickly as possible.

Miners and National Insurance.—Sir A. Mond, on a question by Mr. Allen Parkinson, said on June 30th that an insured person who had missed thirteen contributions in the contribution year ending July 3rd, could, in accordance with the regulations, avoid any reduction in benefits during the next benefit year, by the payment of 3s. (if desired in instalments of 1s.) before the end of next November. In view of the easy conditions of payment and the prospect of regular employment in the mining industry during the intervening months, it was not proposed to make any special provision for the miners.

Treatment for Bilharziasis.—Major Tryon informed Mr. Gratton Doyle, on July 12th, that arrangements were being made to provide the modern treatment for men still suffering from bilharziasis contracted as a result of their services in former wars.

Bonuses to Ex-Service Men in Sanatoriums.—Major Tryon stated, on July 12th, in answer to Mr. Alfred Davis, that, as the result of conferences between the Ministries of Pensions, Health, and Labour, the character of the training in individual sanatoriums which will satisfy the conditions necessary for the payment of bonus has been agreed upon; and effect is now being given to the conclusions reached.

Lancashire Sanatorium Benefit Fund.—Sir A. Mond, on July 12th, informed Mr. Walter Halls that he had been unable to allow any of the estimated surplus of the Lancashire Sanatorium Benefit Fund to be applied for the provision of new sanatoriums, as it was contrary to regulations. Substantial grants were available from the Exchequer.

The Services.

DEATHS IN THE SERVICES.

LIEUT.-COLONEL STUART GERALD MCALLUM, D.S.O., R.A.M.C. (S.R.), died while motor cycling on June 3rd, aged 54. He was educated at Edinburgh, where he graduated M.B. and C.M. in 1889, and as M.D. in 1893, subsequently taking also the D.P.H. of the Edinburgh Colleges in 1910 and the certificate of the Medico-Psychological Association. In his early days he specialized in lunacy, and filled the posts of assistant medical officer of the County Asylum at Chester, and of the Cumberland and Westmorland Asylum at Garlands. He served in the South African war in 1902, taking part in operations in Cape Colony, and received the Queen's medal with two clasps. On May 15th, 1901, he took a commission in the Eastern Districts Militia (Colchester) R.A.M.C., and on March 1st, 1903, received a honorary commission as lieutenant in the army. He became captain in the militia in June, 1904, and when the militia became the Special Reserve transferred to that force, attaining his majority on May 15th, 1913. Before the war he was in charge of the military hospital and barracks at Berwick-on-Tweed. He was appointed to the command of a field ambulance, with the rank of lieutenant-colonel, on June 15th, 1917, was mentioned in dispatches in the *London Gazette* of December 30th, 1918, and received the D.S.O. on January 1st, 1919. After the war he was appointed registrar of the Pensions Hospital at Hednesford, and held that post at the time of his death.

England and Wales.

CONFERENCE ON THE FINANCE OF LONDON HOSPITALS.

LORD CAVE'S Committee on Voluntary Hospitals, in reporting on schemes of mass contribution, expressed some doubt whether such schemes could be applied to London. This question was discussed at a conference held at the Mansion House on July 6th, when 154 representatives of ninety-four hospitals were present. Of the twelve large general hospitals with schools, all were represented except Charing Cross (which has preserved, though it is stated in no spirit of opposition, an independent attitude); of the eight large general hospitals without schools, seven were represented; of the thirteen smaller general hospitals, twelve were represented, and a large body of representatives were in attendance from the special and cottage hospitals in the metropolitan area. In addition, King Edward's Hospital Fund for London was represented by Lord Stuart of Wortley, who presided.

Three schemes of mass contribution are referred to in Lord Cave's report. The first is a scheme of organized weekly contributions by wage-earners, without any definite insurance system. The second is the scheme of weekly contributions as carried out by the Radcliffe Infirmary and County Hospital at Oxford, under which contributors pay 2d. a week and are entitled to free treatment, whereas non-contributors are expected to pay towards their maintenance. The third is the Sussex method of voluntary insurance, whereby, in the modified form proposed for London, the contributor would pay 5d. a week as premium and receive other facilities, such as private consultations and dental treatment, in addition to strictly hospital benefits. As was stated last week, the London, St. Thomas's and the Royal Free Hospitals have decided to co-operate in giving this scheme a trial, and the representative of the Westminster Hospital at the conference stated that it was ready to co-operate with other hospitals in its area, apparently in the same scheme.

Lord Stuart of Wortley said that the King's Fund had not pronounced in favour of any particular method, and did not think it necessary that one and the same method should be adopted by all hospitals, especially in view of the peculiar difficulties of London. These difficulties, as they emerged from the discussion, appear to be the lack of municipal patriotism in London and the fact that large numbers of London people reside in one locality and work in another. It was necessary, therefore, to consider London as a whole, although the schemes in various local areas might differ. In some cases it might be most convenient to take the area of the local authority, and in others the district immediately served by a large hospital. The special hospitals have no particular locality, but draw their patients from all parts of the metropolis, and this, as Lord Arran pointed out, further complicates the matter. The merits of the various schemes were considered; more than one representative observed that the first scheme, which proposed to organize on a large scale the weekly contributions of wage-earners, involves no contract, while the Oxford and Sussex schemes both involve a contract; it was contended also that the Sussex scheme meant the raising of the income limit, so that instead of confining hospital treatment to the sick poor it would bring in people in receipt of a considerable income (up to £500 a year for a man with a wife and family).

Mr. E. W. Morris, of the London Hospital, submitted that in the present economic situation such a raising of the income limit was necessary and right, and that the Sussex scheme, by means of insurance during health, would provide the black-coated poor with facilities at present available only for the indigent. Two or three representatives urged that contributions should not be confined to wage-earners, and the Chairman pointed out that Lord Cave's report specifically referred to "moderate and continuous contributions from all classes." Sir William Lawrence said that St. Bartholomew's Hospital would be willing to try the scheme of organized weekly contributions from wage-earners without a definite insurance scheme.

The resolution proposed by Lord Hambleden, and unanimously carried, did not commit the Conference on the insurance principle. The resolution merely suggested that King Edward's Hospital Fund should co-operate with the London Regional Committee of the British Hospitals Association (a committee of some thirty delegates from individual and grouped hospitals), the Hospital Saturday and Sunday Funds, and the League of Mercy, in the organization of local collections from employees throughout the London area.

PROPOSED NOTIFICATION OF MEASLES.

The London County Council on July 12th considered a report on measles from the Public Health Committee. In order to meet the resolutions of a recent conference with the metropolitan borough councils steps are being taken to secure the issue to school teachers and attendance officers of a general instruction enjoining them to acquaint the borough medical officer at once, on forms already used for reporting cases of infectious illness, of all detected cases of measles, with information of any special circumstances within their knowledge, particularly where young children under school age are affected and home conditions are unsatisfactory. It is also proposed, when the disease appears to be increasing in any particular school or group of schools, to secure the immediate following up of all absentees and a report to the medical officer of every case of measles discovered. When measles tends to become epidemic—that is, when the number of cases reported from schools throughout London approaches 1,000 weekly—another scheme is to be put into force entailing close co-operation between school nurses, attendance officers, and staffs of the local sanitary authority. The conference of metropolitan councils also passed a resolution declaring that the notification of measles by the medical profession was necessary to secure the prompt segregation of susceptible contacts and to render efficient any provision of nursing aid by the local authority. The Public Health Committee, however, considered that until more experience had been gained of improved arrangements for the detection and notification of measles through the school organization, it would not be desirable to make measles compulsorily notifiable by medical practitioners. Experience had shown that more complete information with regard to new cases of measles was obtained through the school organization than through compulsory notification. It was, however, recommended that, if so desired by the metropolitan borough councils, the County Council should send to the authorities of all hospitals and general medical dispensaries and to all private medical practitioners in London a communication directing attention to the facilities available through the public health services for the nursing of cases of measles in London.

THE SITE FOR THE UNIVERSITY OF LONDON.

The London County Council has adopted a recommendation of its Education Committee to invite the Board of Education and the Senate of the University of London to explore the possibilities of the Holland Park estate as a site for the new buildings of the University of London before further action is taken with regard to the Bloomsbury site. The Council is interested in the matter as the educational and town planning authority for London, and is of opinion that the Holland Park site, which is easily accessible from all parts of London, would cost much less money while providing a larger area and so affording room for expansion. During the discussion it was pointed out that neither the Government nor the Senate would be likely to recede from the arrangement sanctioned last October.

DIPLOMA IN NURSING AT THE UNIVERSITY OF LEEDS.

The regulations in connexion with the Diploma in Nursing, to which reference was made in this column on June 4th, when the training of nurses in Leeds was being discussed, have now been issued by the University. They are as follows:

DIPLOMA IN NURSING.

Regulations.

1. Each candidate who satisfies the examiners shall receive a diploma, and shall be styled a Diplomate in Nursing, University of Leeds.

2. Before presenting themselves for examination for the diploma, candidates must have completed four years' training in a general hospital recognized by the University for the purpose, and shall have received a certificate to this effect.

3. Candidates shall furnish evidence of having attained an adequate standard in general education satisfactory to the University.

4. The four years' hospital training shall include—

(*a*) Practical instruction and tuition in the following:

i. Ward nursing, medical, surgical and special.
ii. The principles of surgical technique and operation service.
iii. Bandaging and the preparation and use of splints and other appliances.
iv. Invalid cookery.
v. The feeding and management of infants.
vi. The principles of ward administration.
vii. Elementary urine testing.
viii. Preparation for autopsies.

(*b*) Attendance on the following courses of lectures and lecture demonstrations:

i. The Principles and Practice of Nursing	...	20 lectures.
ii. Elementary Anatomy and Physiology	...	20 ,,
iii. Elementary Medicine	...	12 ,,
iv. Elementary Surgery	...	12 ,,
v. Elementary Obstetrics and Gynaecology	...	8 ,,
vi. The management of infancy and childhood		6 ,,
vii. Elementary Hygiene	...	8 ,,

Candidates shall furnish certificates of such attendance and of having passed satisfactorily a class examination in each subject. At least three months must be spent in attendance on courses in the University of Leeds (for this purpose lectures delivered in the Leeds General Infirmary shall be deemed to have been delivered in the University of Leeds). The number and the character of the courses shall be determined in each case by the University.

5. Candidates must also attend a course of lectures in the University of Leeds on social economics or some other approved subject.

6. A nurse may be registered as a candidate for the examination *at any time* after she has been accepted for full hospital training, upon (*a*) payment of a registration fee of 5 guineas; (*b*) producing the necessary evidence of general education.

7. The examination may be taken at any time after lodging the certificate of completion of training (as defined in paragraph 2), upon (*a*) payment of a further fee of 5 guineas; (*b*) the production of the certificates of attendance upon the prescribed courses of lectures (paragraphs 4 and 5).

8. The examination shall be held twice annually, and shall be (*a*) by written papers; (*b*) in practical work; (*c*) *viva voce*.

There shall be a written paper in each of the following subjects: (*a*) The principles and practice of nursing; (*b*) elementary medicine and surgery; (*c*) elementary anatomy and physiology; (*d*) elementary obstetrics and gynaecology, the care of infancy and childhood, and elementary hygiene.

It will be seen that the course of study and of training is thorough. It is based upon what has for some time been done at the training school of the Leeds General Infirmary. For some time in all probability the Diploma in Nursing will be confined to candidates trained at the Leeds Infirmary. There is, however, no intention or desire so to limit the field of training; great care will be exercised before any hospital is recognized as fulfilling the conditions required by the university as to teaching indicated in Regulation No. 2. It will be seen also that the character and extent of the teaching must be of a high standard and fully adequate. In the case of those candidates who are trained at hospitals other than the General Infirmary, special courses of instruction must be taken in the University of Leeds during a period of three months. For this purpose lectures delivered at the infirmary are to be regarded as being delivered at the university, as, of course, prevails in the case of medical students.

It is contemplated that the Diploma in Nursing shall be of the nature of an honours certificate and the present general training certificate will be regarded as representing the pass standard. The institution of a Diploma in Nursing is regarded as a very important step in that recognition of the science and art of nursing as an honourable profession and as a gentle calling which is held by the medical profession and by many of the general public. The effect of the granting of the diploma will be watched with sympathetic interest by those concerned with the training of nurses, and it is thought probable that other universities will follow the example of Leeds.

Hospital Developments in Bath.

The difficulty in maintaining voluntary hospitals has been experienced by Bath in common with the rest of the United Kingdom. The Committee of Management of the Royal United Hospital considers that the time has now arrived when, if its work is to be carried on, the finances of the institution must be placed on a different basis altogether. They have decided that not only must measures be taken to secure that small weekly charges shall be paid by the existing class of patients when their means permit, but that provision must be made for the hospital to provide for the accommodation and treatment of paying patients on such lines that the profits realized thereby may meet the cost of free treatment for the necessitous poor. As was mentioned in these columns last November, it is proposed to acquire the site at Combe Park, some twenty acres in extent, formerly occupied by the Bath War Hospital, now by the Ministry of Pensions Hospital. It is situated within easy reach of the centre of the city by tram, and is admirably suited for the purposes of a complete modern hospital centre. Here it is intended, as soon as funds have been obtained, to build and establish—

1. A paying hospital containing 72 beds, for people of moderate means, where patients can be comfortably accommodated at moderate charges in private rooms and small wards, and where they can be attended by their own doctors.

2. An open-air children's hospital of 48 beds for cripples and surgical tuberculosis.

3. A maternity home containing 40 beds. Part of this building will be for the use of poorer patients under the aegis of the municipality; the remainder will consist of private rooms for patients who can afford to pay for their treatment. This portion of the scheme has been postponed for the present.

Eventually it is intended to transfer the Royal United Hospital to the new site, when the city and neighbourhood will be provided with a complete modern general hospital with all the special departments, such as children's, orthopaedic, and throat and ear and nose wards. For nearly one hundred years the Royal United has been the hospital centre for the city of Bath, and for large districts in Somerset, Wilts, and Gloucester surrounding it. The population of the area supplied by the hospital is over 250,000. Every year 1,500 in-patients and 7,000 out-patients are treated. The closing of such an institution would be a catastrophe to the neighbourhood; and it is maintained that the only alternative to the scheme of extension is a hospital maintained by the rates. It is pointed out that those who advocate rate-supported hospitals fail to realize the enormously increased cost to the community which will inevitably result. It is common knowledge that institutions supported by the State or the municipality cannot compare in economy with those managed by a voluntary committee; furthermore, the free services of the medical staff would be lost, as in a rate-supported hospital doctors would naturally require substantial salaries for their work. The present scheme, on the other hand, if once launched and under way, bids fair to solve the problem of hospital maintenance by making the institution self-supporting. Its aims and methods should appeal specially to that large class of people who, owing to the redistribution of wealth, now find themselves in the position of being neither poor enough to make use of existing hospital charities, nor rich enough to incur the expense involved in the thorough investigation and treatment in private of serious or prolonged illness. The prosperous working man, the clerk, the small tradesman or farmer, the professional man, the poorer gentry, will, it is hoped, find their wants provided for in this extension scheme. A general meeting of the medical profession of the city unanimously approved of the scheme, and at a largely attended public meeting, presided over by the mayor, in July, 1920, resolutions in favour of its adoption were carried without a dissentient. A second large meeting, held on Armistice Day, 1920, was addressed by Sir Wilmot Herringham, K.C.M.G.

A fête organized by the Bath and District branch of the British Red Cross Society was held on June 30th, July 1st and 2nd last, and proved a huge success. It is estimated that the funds in hand now are nearly sufficient to build and equip the paying hospital and the children's hospital.

Scotland.

Edinburgh Royal Maternity and Simpson Memorial Hospital.

The annual meeting of the Edinburgh Royal Maternity Hospital was held on June 28th, in the City Chambers. Bailie Hutchison presided in place of Lord Provost Chesser, whose death two days later has thrown a gloom over the city. The Chairman moved the adoption of the report, and emphasized the necessity for the provision of a larger hospital to meet the obstetric needs of Greater Edinburgh. Professor James Ritchie and others took part in the proceedings. The report showed that during 1920 nearly three thousand births had taken place under the care of the medical and nursing staff of the hospital, 1,412 in the hospital itself, 835 in the outdoor department, and 699 in connexion with the Leith branch. The total number of deliveries, 2,946, was 684 more than had been dealt with in 1919. But this did not represent all the

activities of the hospital, for 802 new cases had attended the antenatal clinics, and there had been 1,269 revisits, as compared with 701 new cases, and 711 revisits in 1919. Further, the clinics and the wards for the treatment of patients suffering from the venereal diseases in association with pregnancy, labour, and the puerperium had been in use during the year—these were in an annexe of the hospital—and 113 new cases visited the clinics (with 520 revisits), whilst about 100 infected mothers were delivered in the wards.

Medical Practitioner and Panel Patient.

A complaint was made to a Medical Service Subcommittee in Scotland by a panel patient that his panel doctor on being called to visit him professionally had used abusive language to members of the patient's household. The medical practitioner concerned admitted that in the course of his visit, finding that the patient had become unwell about 6 a.m., and having been called to visit him only in the evening of the same day, he "reprimanded" the patient for the delay which had occurred, but stated that he did not use any abusive or violent language. The Medical Service Subcommittee, the Insurance Committee, and, on appeal, the Scottish Board of Health (acting by two nominated Commissioners) successively dealt with and decided the question against the medical practitioner, who, however, contended that the bodies mentioned had all acted *ultra vires* in considering the complaint, basing his contention on the argument that the conduct complained of did not fall within the definition of "treatment," which was defined in the Regulations as meaning "medical attendance and treatment." Lord Ashmore, who heard the case in the Outer House of the Court of Session, held that jurisdiction was competently exercised by the various defendants and dismissed the case. The medical practitioner appealed to the Second Division of the Court of Session, but the Division adhered to the judgement of the court below.

Ireland.

DUBLIN MILK.

THE Local Government Board for Ireland has issued a report on a bacteriological examination of Dublin's milk supply, by Dr. Joseph W. Bigger. The results obtained are compared with those of other workers elsewhere. It details the dangers of contaminated milk, points out how such contamination is caused, indicates the preventive measures which should be taken, and discusses the way in which a pure milk supply can be obtained. There are two appendices, one dealing with the results of the examination of 100 Dublin milks, and the other with the methods of examination used. This report is of more value as a general consideration of the pure milk supply question than from a purely technical standpoint. Dr. Bigger hits hard—in one place he likens the abstracter of fat and the diluter with water to a thief stealing little babies' food, but he who through carelessness and prejudice introduces poisonous dirt into milk, to an actual or potential murderer. He emphasizes the fact that all concerned with milk have a grave responsibility, and he does not forget the housewife, often a very careless person about milk. There is apparently no grading of milk in Dublin, a measure found useful elsewhere. The commercial side is well discussed, and the work of the Reading workers is referred to in this connexion. The report is one that health authorities, laymen as well as medical men, will find of value in bringing home the gravity of the pure milk question to all and sundry. It proves that it is possible, without commercial loss or very high prices, to save children and others from the horrors, until recently hardly realized by the public, of grossly contaminated milk.

THE Bloomingdale Hospital, N.Y., one of the oldest institutions for nervous and mental diseases in the United States, recently celebrated its one-hundredth anniversary.

EIGHT HUNDRED medical men were present at a dinner of American Jewish physicians in New York, and 250,000 dollars were subscribed towards the 1,000,000 dollars fund which the Zionists are raising to establish a medical university in Jerusalem.

Correspondence.

BIRTH CONTROL.

SIR,—In your issue of July 2nd, p. 11, there is a report of a meeting of the London Association of the Medical Women's Federation, at which we discussed the important matter of birth control. We recognize that the question is one of national importance, and that medical women must be prepared both to advise wisely and to justify their advice.

Now, on the surface of things it would seem as if a knowledge of how to prevent the too rapid increase of a family would be a boon to over-prolific and heavily burdened mothers. There are, however, certain reasons which probably convert the supposed advantage into a very real disadvantage. An experience of well over forty years convinces me that the artificial limitation of the family causes damage to a woman's nervous system. The damage done is likely to show itself in inability to conceive when the restriction voluntarily used is abandoned because the couple desire offspring.

I have for many years asked women who came to me desiring children whether they have ever practised prevention, and they very frequently tell me that they did so during the early days of their married life because they thought that their means were not adequate to the support of a family. Subsequently they found that conception, thwarted at the time that desire was present, fails to occur when it becomes convenient. In such cases, even although examination of the pelvic organs shows nothing abnormal, all one's endeavours to secure conception frequently go unrewarded. Sometimes such a woman is not only sterile but nervous and in generally poor health, but the more common occurrence is that she remains fairly well until the time of the change of life, when she frequently suffers more, on the nervous side, than does the woman who has lived a natural married life.

Another argument against the artificial limitation of families lies in the fact that frequently it is not in the real interest of the wife, since by removing all fear of consequences from the mind of the husband it removes the only potent check on his desires, and thus, in many instances, it removes the wife's best protection against the slavery of too frequent intercourse.

On the moral side the case against "preventives" is strong. The knowledge of the means of artificial prevention of conception cannot be bestowed on some women and withheld from others. The methods of application and the specious arguments in favour of their use will become known to all women and girls. This is a moral wrong. We may believe in purity of intention, and we must hope that there are many women whose virtue is founded on nobility of character, on a strong moral sense, and on religious convictions, but we know quite well that a certain percentage of women and girls, even amongst the unmarried, need the support of what may be called an "outside conscience." Such individuals are more likely to fall into immorality if they know that they can indulge youthful passions without any fear of disagreeable consequences. Some people who advocate the use of artificial preventives of conception go so far as to consider this knowledge an unmixed benefit to unmarried girls and women; indeed, one well-known non-medical advocate of artificial prevention stated a few days ago that a young unmarried woman attending her clinic had already procured abortion twice, but she was thankful to have been able to teach her how to avoid that necessity in future!

Further, the knowledge that sexual intercourse may be enjoyed without the probability of pregnancy occurring tends to over-develop the sexual side of character in both men and women. Mankind is already over-sexed: the absence of all restraints, such as times and seasons impose on other animals, is probably the result of the over-exercise of this gracious gift, and anything which tends still further to increase the already superabundant sexuality of man is an injury and not an advantage, both physically and morally. Can one imagine a more terrible state of society than that which is bound to evolve from the indulgence of unbridled sexual passions? The people and the nations which practise artificial prevention of conception, and who therefore have no restraint on their sexual passions, are likely to become effeminate and

degenerate. The removal of the sanction of matrimony, and the unhindered and unbalanced sexual indulgence that would follow, would war against self-control, chivalry and self-respect.

London, W., July 1st. MARY SCHARLIEB.

SOME MEDICAL IMPRESSIONS OF THE MINERS' STRIKE.

SIR,—As a practitioner of some twenty years' experience in one of the largest mining areas in South Wales, it occurs to me that the record of certain factors of a beneficent nature—which are making for the health of the mining community and have forced themselves upon my notice during the past two months—may be of some interest.

The general practitioner's work here, at the moment, is at a minimum, and vividly recalls my experience in a neighbouring area in 1908 when the South Wales miners were out on strike for six months. Prior to that strike my average domiciliary visits numbered twenty-five daily; but, during the out-of-work period, it became quite unusual to be called upon to visit more than one patient a day. Most of one's time was taken up in assisting to dole out provisions to the hungry and needy during the mornings, while the rest of the day was spent at football, cricket, etc., in the nearest available fields with scratch teams of miners. Medical work at that time almost registered zero. To-day, similar features are characteristic. Life in the open air, combined with indulgence in healthy sport under excellent weather conditions, have considerably improved the miner's health and increased his resistance to disease. I have spoken to many and medically examined others, particularly those who, during the hard strain of war-time work, were suffering from bronchial catarrh, anaemia and fatigue, and it is simply astonishing to find how greatly the general health of these men has improved.

About seven weeks or so ago we were threatened with an influenza epidemic of the catarrhal (head) type. It was remarkable how quickly the men recovered after three days in bed, thanks chiefly to the glorious sunshine which poured into their bedrooms and to the fresh spring air which was allowed free entrance through the widely opened windows.

Many young men whom I have known from childhood, and who have only as recently as ten to fifteen years ago become colliers, had long since lost their colour and become sallow and pasty looking; but during these last weeks they have regained their colour to such a degree that they have completely lost their "hall-mark" appearance of colliers.

A specific instance of the beneficent effects of occasional respite from labour and of pure air and sunshine came under my notice at the beginning of the present strike. It was the case of a young father of three children. He had developed a very bad bronchial cold, which gave all the signs and symptoms of early phthisis in the apex of his right lung. His general condition was very poor, his sleep much disturbed by a harassing cough, and he also had a bad family history. The prognosis was not at all satisfactory, but the enforced rest from work, good feeding, and open-air treatment worked wonders. To-day he is rid of his cough, sleeps and eats well, and only goes indoors for meals and sleep. He has gained 2 lb. in weight each week during the last three weeks, and has taken no medicine for a month.

This case is typical of so many I have met with these last two months that I am led to ask the following questions:

1. Does the working miner get as much sunshine and fresh air as he needs?
2. Does he get the necessary rest from work and sufficient opportunity for healthy recreation?
3. Do not these factors bear directly upon restriction of output difficulty?
4. Would it not be economically and even morally profitable to give the collier fourteen days' rest from work, with full pay, after every three months' period of full-time work?

I am convinced that if the necessary changes suggested by these considerations were adopted, losses of time due to illness and accident, the inconveniences caused by the "ca' canny" policy, and the inevitable fatigue due to working in the vitiated atmosphere and the excessive heat of the coal mine would soon become experiences of the past.

There has been of late a revival of interest in this country in industrial diseases and hygiene, thanks chiefly to the splendid work inaugurated by Sir Thomas Oliver and also to the services of American pioneers such as Edsall, Mock, Linenthal, and others, as well as to the establishment of industrial and social service clinics at several large hospitals in the United States. In these and other ways much progress has been made in our knowledge of the etiology of many industrial diseases, and attention has been drawn to the importance of proper rest, recreation, feeding, and clothing for those engaged in such industries. All this has redounded to the mutual advantage of both the employer and the employee. Special clinics of this kind, however, should be merely supplementary to the teaching curriculum of a medical school. Experience has amply proved that these clinics (as well as maternity and school children clinics) can be conducted more effectively by the general practitioner in his own consulting-room; indeed, very little real progress will be secured in the health of the community until that plan is adopted. The strongest objection to the Dawson scheme lies in the fact that, while it is based on the excellent army organization of medicine during the war, the civilian population will never consent to be "pigeon-holed" wholly and solely as "pathological specimens" for the object of securing statistics and issuing pamphlets from Government departments. Dr. Linenthal, head of the Industrial Clinic of Massachusetts Hospital, U.S.A., maintains that "industrial medicine in its wider meaning is a field primarily not for the industrial physician but for the physician in the general practice of medicine who must recognize that states of ill health are in many instances due to the hazards of industry."

The miner's wife should not be forgotten in this survey. Her daily work invariably commences before the husband is awake. She is the last of the household to retire to rest at night; for most colliers' wives are in normal times (as they put it) "on their feet" from fifteen to eighteen hours each day. Not the least welcome feature of these strike days is the fact that these overwrought wives and mothers are now able to secure at least four hours' additional rest.

Further, the question of diet is of vital importance to the collier, and it provides an opportunity to the general practitioner in mining areas for the instruction of heads of households in suitable dietary for the periods of rest as well as those of work. And these people are, as a rule, very grateful for advice in this matter.

As a last suggestion, could there not be established in every large colliery area or group of collieries a miners' welfare committee, composed, say, of a dozen medical men experienced in colliery practice, half the committee appointed by the owners and the other half by the Miners' Federation, and presided over where possible by a medical expert in industrial diseases and hygiene? This committee could easily collect statistics and collate the facts incidental to the medical hazards of mining as well as those pertaining to the personal hygiene of the miner, with a view to making recommendations and distributing the same in the form of simply worded instructions to each miner. If one-half the energy expended during the war by the Medical Research Committee and the like to keep the soldier fit and well could now be devoted to improving the physical (and consequently the moral) well-being of men engaged in uncongenial industries, we should make much progress in the direction of increasing the efficiency and output in these industries.—I am, etc.,

July 6th. GENERAL PRACTITIONER.

CLINICAL AND LABORATORY METHODS.

SIR,—Dr. Thursfield's letter reveals that he and I have different conceptions of what is meant by prognosis and the early signs of disease. The reason that clinical observations have fallen into disrepute is because the advance of science has shown the need for clear and precise descriptions, and the backward state of clinical medicine is in a great measure due to the lack of precision in observations. That was the reason why I described in detail the steps I took to understand the meaning and significance of the individual symptoms. The symptoms of which a patient complained have not yet been clearly differentiated to enable us to investigate the early stages of disease. Speaking recently to a distinguished authority on consumption, I pointed out the absence of a knowledge

of the early stages of this disease. He agreed, and said that consumption began with a feeling of malaise. When asked how he defined malaise—was it a symptom or a condition made up of a number of symptoms?—he confessed that he had not looked at it from that point of view. At St. Andrews we have gone so far as to recognize that there are different kinds of malaise, suggesting that the different forms are caused by different agents. We are applying the same principles of investigation to pain, cough, etc., and we see the necessity of differentiating these different kinds very clearly.

It was to show the need and importance of the preliminary study of symptoms that I referred in my lecture to heart irregularities. Everyone who is familiar with the subject recognizes the enormous advance that has been made in our knowledge of the different forms of irregular heart action. I wished to impress on my hearers how equally important it was to find out their prognostic significance, a subject which had received scant attention, and which could not be clearly understood until the irregularities were differentiated. I have repeatedly tried to impress this on the medical mind, but with little success. A few years ago, in a correspondence in a medical journal, I called attention to the great advances that have been made in our knowledge of irregular heart action, not only in the differentiation, but also in the prognostic significance of each irregularity. A distinguished physician, attached to a large teaching school in London, wrote that "we knew as much about irregular heart action thirty years ago as we did to-day." What he really meant was that *he* knew as much about irregular heart action to-day as he did thirty years ago. My remarks on prognosis were not only to indicate its importance, but to show that before an intelligent inquiry into the subject could be made a preliminary knowledge of the mechanism of the symptoms on which a prognosis was to be based had first to be acquired. Then the functional efficiency of the organ which gave rise to the symptoms had also to be known. I illustrated this by pointing out that in heart affections it was necessary to know the symptoms of heart failure; that I had been studying the subject for over thirty years, and yet was far from fully comprehending the matter, and that in consequence I was not in a position to give a prognosis in a great many instances.

The attempts made at St. Andrews to get a clear insight into the nature and significance of symptoms has revealed that in the production of symptoms, as in the production of all other phenomena in nature, there is a definite law, and we are endeavouring to discover this law, and have made considerable progress in this direction, and it is even possible that we have already discovered it.

If we prove to be successful the effect upon medicine will be far-reaching, but it will require much labour and patient inquiry before we know how to use the discovery, and it will be a long time before it becomes recognized, particularly as it will mean the giving up of many beliefs on which the teaching of medicine has been based.—I am, etc.,

New Park, St. Andrews, Fife, July 5th. J. MACKENZIE.

P.S.—In the JOURNAL which has just come to hand (July 9th) there is an excellent example of a lack of comprehension of the meaning of symptoms in Lord Dawson's oration on colitis. There are a great many symptoms mentioned, but they are described with no ordered arrangement, and with no reference to their mechanism or their relation to the supposed disease. As an example: "Pains may be acute or paroxysmal, or dull and aching, or, again, there may be a constant sense of abdominal discomfort and misery. Tenderness may be local, general, or absent." Where were the pains felt and what was tender? Simple matters, it is true, but absolutely essential to the proper understanding of the diseased state.

I am not in this matter criticizing Lord Dawson personally. He is a man of experience and a recognized authority on colitis, and a distinguished exponent of medicine as it exists to-day. His oration is typical of the attitude of the modern physician towards disease, an attitude which gives a misleading representation of disease as it is manifested in the human body. Why it misleads can be seen if the mechanism by which symptoms are produced is understood. When a person falls ill, every organ of the body may be disturbed, so that a large number of symptoms are produced from this cause. Moreover, the disturbance of one organ reacts on and interferes with the functions of other organs. From these two sources an illimitable number of symptoms are produced. In place of recognizing this fact, and searching for the principles that should guide to an intelligent understanding of symptoms, the physician seizes upon one or more symptoms and calls that the disease. He then collects a number of the other symptoms, as if they were part of the supposed disease.

Dr. Thursfield may be interested to see what Lord Dawson has to say about the prognosis and early stages of a disease to which he has given so much attention. He will probably find it an example of the fact that *specialists rarely have any knowledge of the early stages of those diseases in which they specialize.* J. M.

CHRONIC NASOPHARYNGEAL INFECTION IN CHILDREN.

SIR,—In your issue of July 2nd Dr. Lapage ascribes various conditions to nasopharyngeal infection occurring in children. It does not, however, appear that he has adduced sufficient proof. In my experience nasopharyngeal trouble in children is commonly due to adenoids, and usually disappears after their removal. Dr. Lapage is no doubt aware that the pharyngeal tonsil may give rise to various symptoms without being sufficiently enlarged to cause very definite obstruction. For these reasons it is imperative that, if we are to accept his hypothesis, we should be furnished with many more data. Perhaps your space will be best economized by asking a few questions:

1. Does he mean some form of nasopharyngeal affection apart from adenoids?
2. How did he take his swabs so as to avoid contamination either from the mouth or nasal orifice?
3. Have his cases been examined by a rhinologist?
4. If so, how is the condition diagnosed?
5. What evidence has he as to the connexion between the nasopharynx and other symptoms?

It is desirable that these points should be cleared up. If the cases were merely instances of adenoids which were not large enough to cause obstruction, and if they were sources of toxaemia, the proper treatment would have been operative. Physical exercises are certainly beneficial in mild cases, but surely if the pharyngeal tonsil is causing systemic poisoning, more energetic measures are called for. Most cases of adenoids are, however, not benefited by sea air—rather the reverse.—I am, etc.,

Harrogate, July 4th. P. MCBRIDE.

SURGICAL TREATMENT OF ANGINA PECTORIS.

SIR,—I have read with great interest the article in the JOURNAL of June 4th, 1921, on "The Surgical Treatment of Angina Pectoris," and submit the following comments on the points suggested by it.

Jonnesco's operation, reported in the JOURNAL in 1920, appeared to have as its object the prevention of the most dangerous symptom associated with angina pectoris—namely, vagal stimulation resulting in cardiac inhibition—rather than treatment of angina pectoris itself. As such it appeared to have met with success (I am trusting to memory, as my notes are not at hand for reference), and I do not remember the mention of any other of the more frequent symptoms of angina pectoris in that connexion.

In Rénon's case of aortic aneurysm operated on by Tuffier with the object of relieving pains caused by the aneurysm, there were symptoms suggesting what Mr. Walter Verdon speaks of as "segmental neurosis," due to the aneurysm and its attendant mediastinitis. Those symptoms were apparently unrelieved by the very courageous and original operation, for the patient was subsequently treated for "a sensation of intrathoracic cramp," "pains in the back and neck," and "violent pains in the thorax." There was no attempt, as by Jonnesco, to divide the fibres through the cervical sympathetic ganglia to the vagus, and her myocardium appears to have been sufficiently healthy to withstand any inhibitory vagal attacks (which are not referred to), as she lived for about six years and died from quite other causes.

Jonnesco's operation was designed to protect the patient from a vagal attack on the heart, and as such was

successful. Tuffier's operation, I take it, could hardly be expected to result in much benefit to the anginous symptoms.

Sir Clifford Allbutt draws attention to the connexion between disease of the aorta and angina pectoris, and in his work on *Diseases of the Arteries* expressed his belief that some form of aortitis is the cause of most cases of angina pectoris.

Mr. Walter Verdon shows that irritation of the sympathetic nerve plexus in the subserous tissue of pericardium or pleura (in Rénon's case it is stated that there was "considerable mediastinitis") sets up a segmental neurosis in the thoracic region, or, as he puts it, "the anginous habit," a condition precedent to anginous seizures. As, notwithstanding the operation, the aneurysm remained, with all its attendant mediastinitis, the nerve irritation causing the segmental neurosis would also persist, with its attendant anginous symptoms. It appears, therefore, that whilst we could not expect Tuffier's most interesting operation to have any effect on the symptoms of angina pectoris, the after-history of the case supports the teaching of Mr. Walter Verdon.—I am, etc.,

Tunbridge Wells, June 27th. E. A. STARLING, M.B.

HEART-BLOCK.

SIR,—"Case," according to the dictionary, means a person under medical treatment, but it does not follow because the case died that there is any reflection on Dr. Wardrop Griffith's treatment.

Dr. Griffith admits that his receiver might with advantage be smaller, yet he does not seem to have made any effort to seize that advantage, nor does it appear to be of any use theorizing over results he has not obtained. As a result of my experiments with different sized receivers I have come to the conclusion that one must not be too dogmatic on the subject, for whilst there may be one or two points common to all the tracings, the differences also may be of instructive value. Is it possible that some of these differences depend on varying conditions of the normally negative intrapericardial pressure, or do they indicate any change in either the quantity or quality of the pericardial fluid?

In many cases I have been led to think that some toxic condition had produced such changes, and by directing treatment to this toxicity have conferred some benefit on the patients. Having obtained satisfactory results by acting on such a theory, one is justified in asking whether by using different sized receivers the results may be considered evidence of pericardial changes which cannot be obtained by using a 1½ in. receiver only.

A negative intrapericardial pressure being present in all healthy persons, it follows (does it not?) that when the ventricle is contracted there is more space in the pericardium and the negative pressure more marked, whereas when the ventricle is distended the pericardium is most taut. Am I not correct in stating that all pressure exerted by the heart must be by means of or through the pericardial fluid, a remark that applies also to the heart sounds? In pericardial effusion both the waves and sounds tend to get less and less.—I am, etc.,

Swansea, June 26th. G. ARBOUR STEPHENS.

CAPILLARY PRESSURE.

SIR,—Drs. Hill and McQueen (June 25th, p. 954 et seq.) attempt to answer my letter (June 11th, p. 873) by representing me as holding that the tension in the wall of a capillary blood vessel is produced in the same way as that in the wall of a soap bubble. I made no such statement.

I gave two illustrations of tension in curved surfaces—namely, a hose-pipe and a soap bubble. It did not occur to me that I ought to explain that in the case of a capillary blood vessel the tension in the wall is produced similarly to that in the wall of the hose-pipe; not to that in the wall of the soap bubble. I should have considered such an explanation an insult to the intelligence of your readers. But apparently, for the benefit of Drs. Hill and McQueen, I should have explained that the tension in the walls of the capillaries is produced through their being distended by having blood forced through them.

When a hose-pipe is working, the pressure at any point on its inner surface is greater than that at the immediately opposite point on the outside, the difference between the two being balanced through the tension in the wall of the pipe, according to the equation,

$$p_1 - p_2 = \frac{T}{R}.$$

The same principle holds good with blood vessels when blood is forced through them. Dr. Hill really admits this when he says (June 25th, par. 5)—

"An artery, big or small, when compressed by a surrounding fluid pressure, is shut up by a compressive force equal to that of the pressure which is maintaining the flow through the artery, and which is measured directly by a manometer connected with the lumen of the artery. The same holds good for a vein, big or small."

We may take it that the same holds good for capillaries. In his lecture, however, Dr. Hill assumed that the pressure in the cerebral arterioles, capillaries, and venules was no greater than that of the cerebro-spinal fluid. If that were so, then, according to his own statement quoted above, the pressure outside these blood vessels being equal to that inside them, they would be shut up and no blood could pass through. What amazes me is that Dr. Hill should fail to see this himself.

But Dr. McQueen reaches a point of still greater absurdity, for he imagines he has proved that the pressure at a point in a capillary through which blood is being forced is less than the pressure at the point immediately opposite on the outside of the capillary. That his argument led him to such a conclusion should have been sufficient to show him that there was something wrong with it. Not only is this conclusion at variance with the first half of paragraph 5 of Dr. Hill's letter which I have quoted above, but with the principle laid down for arterial blood pressure in the second last paragraph of his own letter, which principle is equally applicable to capillary pressure.

I do not pretend to know the correct numerical values of the quantities represented in the equation given above as applied to capillaries. These, no doubt, vary greatly under varying conditions. In the human body in the upright position, the value of p_1 would be very different in the sole of a foot from what it would be in the crown of the head.

The values I inserted were only intended to show that a very small tension in a capillary wall, 0.34 mg. per centimetre of length, could sustain a difference of pressure between inside and outside equal to a manometric pressure of 50 mm. of mercury. This important consideration was not taken into account by Dr. Hill in his lecture, not only when he took the pressure of the cerebro-spinal fluid as a measure of the pressure in the cerebral arterioles, capillaries, and venules; but also when he stated (Lecture, paragraph 5) that the pressure in the aqueous balances the capillary pressure in the iris. I repeat that he might as well say that the pressure of the atmosphere in the garden balances the pressure of the water in the garden hose-pipe.—I am, etc.

Knock, Belfast, June 25th. JOHN R. GILLESPIE.

TREATMENT OF ACUTE TOXAEMIA.

SIR,—The essential points which Sir Bryan Donkin enjoins in a trial of Sir Archdall Reid's treatment for acute toxaemia (BRITISH MEDICAL JOURNAL, June 25th) seemingly imply a doubt, which others will share, respecting the specific method of its action.

The examination of the sweat, the importance of which is emphasized by italics, will offer both difficulty and sources of error, nor will a negative finding prove much for or against a theory of elimination of the toxins through the channels of the skin, which is as fascinating as it is simple. Though not impossible, it is improbable that the toxins become fractionally distilled from the body fluids and appear on the surface unaltered. Sweating is common to healthy and diseased states, and a supposition reasonable to hold in the light of our present knowledge is that it is a parallelism and an outward and visible sign rather than a direct cause of betterment in the patient's condition. It not improbably corresponds to a revolutionary change in protein metabolism, and may be considered a part of the process of adjustment to altered biochemical states, analogous also in some way to tears in emotion.

It is impossible to escape from a conviction that there is some unity of process of adjustment underlying all life, and that all cures come from within. From my angle of view of medicine—broadly philosophic, often not capable of proof, and never of dogmatism, but agreeable to recorded experience—there is in our organism so long as it continues to live, in addition to the disturbances which we have inherited or acquired through our ignorance, faults or follies, a mass of old and new constructive influences which insistently work toward the restitution of the former condition of normal.

The exhibition of specific drugs and vaccines does not always lead to a direct attack on the supposed causal organism, but by throwing the whole protein mechanism out of gear, a molecular shuffle or dance is produced, and in this unstable phase a postulated life force mobilizes the reserves or antibodies, which destroy the toxins and restore law and order again in the body.

This is by no means in conflict with Sir Archdall Reid's recommended treatment, but it is intended to present another possible aspect of its manner of working, not out of tune with modern conceptions in science.—I am, etc.,

Southampton, June 25th. ARTHUR KING.

TUBERCULOUS PUS.

SIR,—It is frequently stated and generally believed that the tubercle bacillus alone does not cause pus, although at any hospital, on almost any day, thick pus can be seen from a recently opened, or aspirated, purely tuberculous abscess.

I heard a surgeon one Monday say in his lecture, "The tubercle bacillus never gives rise to pus. Clear fluid and broken-down débris, but never pus." On Tuesday I heard the same surgeon, about to open a psoas abscess, say, "My first step will be to let out the pus"; then later, "Receiver ready for the pus," and again, "Take the pus away."

Such contradictions confuse the student. Moreover the dictum that the tubercle bacillus does not cause pus has been transferred to the consideration of pulmonary tuberculosis, so that it is often stated that when pus occurs in connexion with this disease there must be also a secondary infection. Yet this by no means follows, and in an autopsy on a case of phthisis there are usually to be seen cold abscesses of the lung which have not yet burst into a bronchus, as well as the cavities of others which have already discharged.

The conception of pus differs widely in the minds of different authorities, and it would be a useful innovation if a committee of pathologists and others could evolve for us some authoritative definition, just as do physiologists with regard to their own terminology.—I am, etc.,

Paignton, June 17th. E. WARD.

THE USUAL SITE OF ORIGIN OF ENDO-LARYNGEAL CANCER.

SIR,—Sir StClair Thomson, in his contribution on the usual site of endolaryngeal cancer, published in the BRITISH MEDICAL JOURNAL of June 25th, claims to be the first to upset the current view and to prove the fallacy of the teaching of Virchow and Semon that malignant disease of the endolarynx is most commonly met with in the posterior third of the glottis. He refers to this important question as "a point which has not been settled and has threatened to mislead us."

I venture to suggest that he must have overlooked the investigations which I made four years ago and the definite conclusion I came to as a result of my experience, and after searching the literature of all the cases of thyro-fissure recorded since the first operation performed by Brauers of Louvain in 1833. These researches were published in the *Journal of Laryngology and Otology* in 1918, and have recently been republished in a book by the London University Press. I quote the following paragraphs from my article:

"It is generally taught that intrinsic malignant disease of the larynx is most commonly situated on the posterior third of the vocal cord, and extends posteriorly and has a special preference for the posterior commissure; but experience during recent years has shown that the *middle or anterior third is the favourite site*, and that extension is more common along the anterior portion of the cord to the anterior commissure. This is confirmed by reference to cases reported by Semon, StClair Thomson, Tilley, Jobson Horne, Middlemass Hunt, Barclay Barron, Mollison, Chichele Nourse, Hett, Cathcart, and others."

The reports of cases demonstrated that "intrinsic cancer may be situated on the surface of the cord and be confined to only a small portion, or it may invade a whole cord or ventricular band, or a diffuse deep infiltration may be present, which may only slowly approach the surface, or else having commenced on the anterior or middle third of one vocal cord it may extend to the anterior commissure and even invade the opposite cord, or again, it may be found to have spread downwards into the subglottic space, or backwards to the posterior wall of the larynx."

That "carcinoma of the vocal cord grows chiefly in a direction parallel to the long axis of the cord, which it tends to invade completely, or to a very large extent before it encroaches on surrounding parts—this characteristic method of growth being due, according to Blumenfeld, to the arrangement of the submucous lymphatic space of the cord which forms a closed sac, the boundaries of which separate it from the ventricles of Morgagni and the lymphatic spaces of the subglottic mucosa. For these reasons, according to Knight, the prognosis of intrinsic cancer of the larynx is, perhaps, more favourable than that of malignant disease in almost any other region of the body. Again, in the intrinsic variety, the disease at first remains a local one, owing to being surrounded by a 'cartilaginous box' from which the intrinsic lymphatics have a poor connexion with the neighbouring glands in the neck."

I also found from my investigations that

"endolaryngeal cancer—subglottic in origin—was very rare; just as in the case of benign growths. Butlin only found three subglottic cases amongst fifty cases of laryngeal cancer."

I referred in my paper to these subglottic extension cases as

"the more serious, because recurrences are more apt to occur in them, and if the disease has extended into the subglottic region it is difficult to remove it from the inner surface of the cricoid plate because here the perichondrium is more firmly adherent and there is a break in the continuity of the perichondrium of the thyroid and cricoid cartilages."

Also that—

"it is especially difficult to get beyond the growth in those cases where the growth has extended in between the thyroid and cricoid cartilages, and infiltrated the muscles in this position."

The importance of Sir StClair Thomson's contribution lies in the fact that his conclusions are derived from a personal series of fifty thyro-fissures, and that they not only confirm, but prove, that the conclusions which I had already come to in 1918 were correct.—I am, etc.,

London, W., June 25th. IRWIN MOORE.

THE TREATMENT OF CUTANEOUS ANTHRAX.

SIR,—Mr. Ogilvie and Mr. Hall, in your issue of June 18th, conclude an interesting article with an expression of the opinion that in cutaneous anthrax the combination of excision and serum treatment is the most rational and the safest course.

In the BRITISH MEDICAL JOURNAL of November 1st, 1919, p. 559, I published a summary of the treatment of 75 cases of cutaneous anthrax in the Kashmir Mission Hospital. I am inclined to think that in many cases treatment by actual cautery is preferable to excision. The limits of peripheral infection are often by no means sharply defined. And on general principles the risk of systemic infection is likely to be increased by cutting through any area where phagocytosis is active, as local resistance may thereby be impaired and fresh planes of tissue opened up to extension of the disease. I have been in the habit of applying a button cautery to the centre of each infected area. This appears to increase the local reaction and the peripheral resistance while destroying the more heavily infected centre.

I agree with the authors' criticisms of the value of statistics and with their recommendation that serum should also be used.—I am, etc.,

Bromley, Kent, June 22nd. ERNEST F. NEVE.

NATIONAL PROVIDENT SCHEME FOR HOSPITAL AND ADDITIONAL MEDICAL SERVICES.

SIR,—The letter last week of Dr. Caplan is important and deserves a reply.

1. *Statistics.*—He fails to realize that the scheme is primarily intended to overcome the present and future serious financial position of the 113 voluntary hospitals in Greater London. If 1,200,000 (not 5,000,000) persons join as "units" the scheme will be a success, in that it will cover the total deficit of these hospitals in 1920. If more than that number subscribe, it will be more than a success. The "minute percentage" of the population requiring

in-patient hospital maintenance and treatment (not merely "specialist advice") is 2 per cent. This cost nearly £3,000,000 in London in 1920.

2. *Facilities Offered to the Patient.*—He fails to realize that the whole of the facilities are to be obtained solely through the general practitioner. If the medical attendant of a patient does not consider his client should have the facilities he can refrain from obtaining them for the sufferer.

3. *Consultations at the Homes of the Patients.*—I presume that Dr. Caplan would admit that consultations upon patients who are unable to leave their beds have their advantages to both patient and practitioner. If so, then it is best to estimate for the maximum rather than the minimum of such consultations. It is hoped that by such consultations the contact of the general practitioner and the member of the hospital staff will be increased and their co-operation greatly extended, to the advantage of all.

4. *Facilities for the General Practitioner.*—I am at one with Dr. Caplan in his desire that the general practitioner should have greater opportunities for treating his patients, even serious cases, but I am sure that he will admit that many such cases are better treated away from their own homes. It is in this scheme, if successful, that money will be available for those extra beds in cottage hospitals ("primary centres") and infirmaries where, in the future, the general practitioner will be able to treat his cases. I can assure him that his gibe at the consultant being the cause of the want of progress of the general practitioner is not the opinion of his brother practitioners in London. Further, by this scheme, if it has only a minimum success, there will be money—£30,000 a year—which could be used for post-graduate teaching in London.

5. *Medical and Nursing Education.* Lastly, the fact that clinical material is needed for the education of the medical student and the nurse seems to have been overlooked by Dr. Caplan. It is the twelve London hospitals with medical schools which have chiefly felt the financial strain, and Lord Cave's committee thinks that in some such scheme as this lies the solution of the problem of their financial support.—I am, etc.,

London, W., July 11th. W. McADAM ECCLES.

WHAT IS SCIENCE?

SIR,—Dr. Charles Singer's letter suggests a test to be applied to discriminate what branches of human knowledge may be included under the term of "Science," and the test to be applied is that "Science is knowledge in the making."

As an illustration of the application of this test Dr. Singer takes the subject of descriptive anatomy, and he finds that it is "hardly any longer knowledge in the making"—assuming apparently that our knowledge of the anatomy of the human body is now complete and perfect. Such an assumption is, however, very far from justified. As an example of an opinion on this matter at total variance with Dr. Singer's may I quote the deliberate and well chosen words of one who is not himself an anatomist, but who from his work has been brought into intimate contact with the work of anatomists, and has sought in human anatomy for that complete and perfect knowledge of the human body which Dr. Singer believes to exist? He states:

"Even to this day, with all the excellent work which has been accomplished, there is, it is safe to say, not yet a single bone in the body, and no other organ, the knowledge of which and of its total range of variation is perfect, and that even in the white race, which has been most studied. The splendid anatomical textbooks of the present time give little more than generalities, and are marked by many omissions and imperfections. In special treatises and periodicals the literature is much richer, but in the matter of details there are innumerable lacunae. Yet details are the essentials of all knowledge. . . ." (*Physical Anthropology*, Ales Hrdlicka, 1919.)

—I am, etc.,

Bute Medical School, The University, St. Andrews, July 2nd. DAVID WATERSTON.

REMOVAL OF STONES FROM THE PELVIC PORTION OF THE URETER.

SIR,—I would like to suggest to Mr. Battle a means of approach which I prefer to any described in his article (July 2nd, 1921, p. 6). A mid-line suprapubic incision is made, the recti separated and retracted by a self-retaining retractor. The patient is then placed in the Trendelenburg position and the ureter quickly and easily exposed by stripping back the peritoneum from the lateral wall of the bladder and the iliac fossa; the operation is facilitated by previously distending the bladder. The advantages of this method are:

1. The wide exposure obtained so that the removal of the stone and suture of the ureter can be done under the eye. With the table placed near a window no artificial light is necessary.

2. The operation is extraperitoneal, an important point when the urine is infected, as it commonly is in these cases.

3. There is no damage to muscles.—I am, etc.,

London, W., July 4th. SYDNEY G. MACDONALD.

THE SITE OF OPERATION FOR EMPYEMA.

SIR,—May I thank those of your correspondents, especially Mr. Wm. Pearson (May 14th, p. 719) and Dr. T. B. Sellors (June 4th, p. 836), who replied to my inquiry about the site of operation for empyema, and at the same time urge that further trial be given to the anterior opening, for I am convinced that the results will justify the old-fashioned operation.—I am, etc.,

Broadway, Worcestershire, July 5th. H. CAMERON KIDD.

PROFESSIONAL SECRECY.

SIR,—In reply to F. E. H. Daunt (July 9th, p. 61), after fifty years' experience as a registered medical practitioner, during which period it has been my lot, often unwillingly, to give evidence on oath in a number of courts, from that of the coroner to the Divorce Court, I fully appreciate unwillingness on the part of the medical attendant to divulge professional secrets.

As a justice of the peace of forty years' standing I have had genuine sympathy with my brother medicals placed in similar unenviable positions; still I am certain there is neither moral nor legal obligation or justification not to fulfil the terms of their oath—"That the evidence they shall give shall be the truth, the *whole* truth, and nothing but the truth"—in spite of any sympathy or the reverse expressed by the bench trying the case.—I am, etc.,

Faversham, July 9th. P. BROOME GILES.

Obituary.

SIR GEORGE SAVAGE, M.D., F.R.C.P.,

Consulting Physician and Lecturer on Mental Diseases, Guy's Hospital.

THE death of George Henry Savage, which occurred at his house in Devonshire Place, London, on July 5th, removes another outstanding figure from British psychiatry. Though his name is perhaps not directly associated with any remarkable advances in our knowledge of mental disorder, he was, nevertheless, a great psychiatrist, whose name may fittingly be remembered with those of Clouston, Maudsley, and Mercier. His life was one of strenuous activity, and at an age when he might reasonably be expected to seek the rest and leisure he had so well earned, he still took an eager interest in the speciality to which he had devoted his whole professional life. Only as recently as February, 1921, he was present at the quarterly meeting of the Medico-Psychological Association to listen to Sir Frederick Mott give a summary of his researches on the pathology of dementia praecox; in May, 1920, he attended the first Maudsley lecture given by Sir James Crichton-Browne, and, in spite of his deafness, followed closely the long and closely reasoned oration, and himself contributed to the remarks which followed.

Sir George Savage was born at Brighton in 1842, but his father was a Yorkshireman and his mother of Scottish extraction. He was educated at Brighton, at the Sussex County Hospital, and Guy's Hospital, where he won the treasurer's gold medal. He took the diploma of M.R.C.S. Eng. in 1864, and the degree of M.B. in the University of London in 1865; he graduated M.D. in 1867, and took the M.R.C.P. Lond. in 1878, being elected to the Fellowship in 1885. His first appointment outside Guy's Hospital was at Bethlem Royal Hospital; he became assistant medical officer in 1872, and physician-superintendent in 1879, a

post he retained for ten years. It was during these seventeen years that his reputation as a psychiatrist became so firmly established in the estimation of the profession. He was well and widely read in the literature of the speciality to which he gave himself: he was a shrewd and careful observer, who made the best use of ample opportunities: he was endowed with much common sense, and had a genial open manner, totally free from pomposity, so that he was socially one of the most popular of men. Though in his early days at Bethlem Hospital he gave much time to the study of the history of the central nervous system, he was primarily a clinical physician. His lectures at Guy's Hospital and his teaching in the wards of Bethlem Hospital were enlivened by stories and anecdotes drawn from an immense store. With all these qualities it is not surprising that he drew large classes, and was visited by many post-graduates from British Dominions and the United States. He retired from Bethlem in 1889 to engage in consulting practice; in this he was very successful, and he was also frequently consulted by the Home Office in difficult cases. He was deeply interested in the medical education of women, and helped not only with sound advice but with money in the early days. For the last thirty years or so he had never failed to attend the opening ceremony of the London School of Medicine for Women, and was present last October.

He held a great many offices in various medical societies. In 1886 he was president of the Medico-Psychological Association, a society in which he has taken a lifelong interest, and one in which he is justly loved and honoured. His presidential address was devoted to the question of the relationship of insanity to bodily disease and to simple disorder of function. This address well repays reading at the present day, and the human interest of mental disorder which this paper reveals is characteristic of all Savage's work—an attitude towards his subject which made him the great clinical psychiatrist he was. At this time he was co-editor of the *Journal of Mental Science* with Dr. D. Hack Tuke. During their editorship a number of important papers were published in the journal, and we note with particular interest one by Hughlings Jackson on "Evolution and dissolution of the nervous system." Other offices he held were those of president of the Neurological Society, president of the Section of Psychology at the Annual Meeting of the British Medical Association at Belfast in 1884, and president of the Section of Psychiatry of the Royal Society of Medicine at the time it was first formed. This last office he held in 1912, the year in which he received the honour of knighthood. He was Lumleian lecturer at the College of Physicians of London in 1907, the subject of the course being "Insanity, its causes and increase." Two years later he was Harveian orator, and took for his subject "Experimental Psychology and Hypnotism." Savage was the author of a large number of papers, many of which were published in our own columns; all were characterized by independence of judgement and illumined by wide clinical experience. He contributed to various journals until quite recently, both American and English. His textbook, *Insanity and Allied Neuroses*, was deservedly popular with students and practitioners, and is now in its fourth edition. At one time he was examiner in mental pathology at the University of London.

Savage maintained his connexion with Bethlem Hospital, and was on the board of management of the Royal Earlswood Institution for mental defectives. In the latter institution he was keenly interested, and as honorary consulting physician he always was ready to render help and advice in cases requiring special treatment or causing anxiety.

Sir George Savage was twice married, his second wife being the daughter of the late Dr. Sutton, physician to the London Hospital. He leaves one son and one daughter. His two recreations were mountaineering and fishing; he became a member of the Alpine Club in 1878, and was its vice-president for three years. For fishing he had a riverside cottage at Hurstbourne Priors, in Hampshire. There also he was able to indulge a love of gardening.

His death leaves a gap which cannot be easily filled. He had no doubt done all the professional work of which he was capable, but his personality was a striking one, and he will be definitely missed not only by his wide circle of personal friends, but also by the larger circle of those of the same speciality at whose meetings he has been for so many years a familiar figure.

J. E. BLOMFIELD, M.D.OXON.,

Sevenoaks.

ON July 8th, after a long and trying illness, which he bore with great fortitude, Dr. J. E. Blomfield died at his home at Sevenoaks, aged 64.

Blomfield was educated at Winchester, and subsequently obtained a demyship at Magdalen College, Oxford, in natural science. Throughout his life his fundamental sympathies were with biology in all its branches, and he was an accomplished microscopist. In the early part of his career he wrote a paper on spermatogenesis, which gained the warm approval of Charles Darwin, and even in his later years he had made a large number of notes and preparations on new growths in trees. After he had taken his natural science degree, Blomfield entered on his medical course. He was elected Radcliffe travelling fellow, and worked at Jena, Vienna, and Paris; in 1886 he was resident medical officer of the Hertford British Hospital, Paris.

His medical studies were pursued at University College Hospital, where he became house-physician. Under the advice of friends Blomfield decided to spend his life in the regular routine of general practice, and from the year 1889 he was a devoted country doctor at Sevenoaks. He was a hard-working conscientious and very sound practitioner, and never spared himself in the care of his patients. He was very modest, unassuming and gentle, and never made any parade of his extensive biological knowledge; but, as his intimate friends well recognized, he was not only a keen observer but a man of philosophical bent who realized the true crux of a problem, even if it were insoluble.

He had a devoted wife, a happy home, warm friendships, and the grateful esteem of his patients.

T. B.

THE death is recorded of Sir STUART WOODHOUSE of Dublin at the age of 75 years. He was the son of the late Mr. George Woodhouse of Dublin, and was educated at the Royal School, Dungannon, and at Trinity College, Dublin. He graduated M.B.Dubl. in 1872 and M.D. in 1874, in which year he also took the diploma of F.R.C.S.I.; in 1902 he became F.R.C.P.I. He had served the posts of assistant physician and pathologist to the Richmond Hospital, physician to the Children's Hospital, registrar and lecturer on pathology at the Carmichael School, and an examiner in general education at the Royal College of Surgeons of Ireland. He relinquished a large private practice in 1880 on becoming an inspector under the Local Government Board for Ireland. In 1890 he became the medical member of the General Prisons Board, Ireland, but retired after fourteen years' service owing to ill health. He received the honour of knighthood in 1908.

WE regret to announce the death of Dr. E. H. DUNCAN of Strathpeffer. He was a graduate in arts and medicine of the University of Edinburgh. Before settling in Strathpeffer he spent two years travelling in Australia and Japan. He was well known in the North of Scotland. Some years ago he published a book on *Strathpeffer Spa: its Waters and Baths*. He was long a member of the Association, and was for some years secretary to the Ross and Cromarty Division.

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

THE following awards in the Faculty of Medical Sciences have been made at University College:—*Cluff Memorial Prize*: Katharine A. C. Gillie. *Anatomy*: Senior Class Gold Medal, L. Renvoi; Junior Class Silver Medal, Mary E. Evans. *Physiology*: Senior Class Gold Medal, Katharine A. C. Gillie; Junior Class Silver Medal, Iris M. Harmer. *Organic and Applied Chemistry*: General Course Silver Medal, Marian G. Palmer.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B. (*Part I only*).—Madge E. Golding.
D.P.H.—F. Campbell.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

M.D.—N. B. Capon, R. W. Gemmell, W. E. Hall Hewitt, W. A. Jacks, n. C. V. Pearson.
CH.M.—J. St. G. Wilson.
M.B. AND CH.B.—G. W. Phillips, †G. P. F. Allen, A. V. Campbell, S. B. Hall, Isabel E. Imison, M. Newman, S. V. Unsworth. *Part I*.—E. Abelmann, G. C. Bhatia, R. H. Blair, R. L. Bacer, N. B. Cooke, W. H. A. Dodd, J. O. Edwards, E. H. Glegg, C. E. Lewis, I. Lloyd, J. R. Parry, G. F. G. Prideaux, J. K. Reid. *Part II*.—Ethel Ashton, E. W. Ashworth, Ethel V. Beasty, R. H. Blair, R. L. Blair, D. Brown, Hilda Cantrell, A. Cathcart, S. Clark, Marie B. Clarke, H. M. Cohen, H. Cohen, M. A. Cohen, M. B. Cooke, R. L. Corlett, V. C. Cornwall, †Helen M. Duvall, J. Elsohn, §W. C. Evans, E. Fisher, §R. A. Galway, H. S. Gordon, J. V. Hall, §S. B. Hall, T. K. Hughes, Hilda F. Jefferson, A. Kefalas, Dorothy E. Knowles, C. L. Kopeland, Eleanor Lancelot, I. Lloyd, §N. H. H. Longton, B. L. McFarland, Lilian W. Massey, Annie Mather, §Vera M. Mitchell, §Annie R. Niven, Mary E. Nosworthy, §Muriel Pickering-Jones, E. D. Pridie, §Gertrude E. Pugmire, §D. Riding, §Mary D. Sheridan, §J. E. T. Shirlaw, J. E. Sykes, §V. T. Thierens, Mary A. Thomas, §A. K. P. Tobin, C. Voigt, C. H. Walsh, Dorothy A. Williams, Grace H. Wood. *Part III*.—F. H. Alexander, G. C. Bhatia, Doris Brown, W. E. A. Burton, Doris M. Cassidy, W. M. Frazer, G. L. Gately, Susan H. Gilchrist, J. Goldberg, Isobel K. Johnstone, R. J. Jones, A. Livingston, H. R. Madan, J. B. Oldham, T. R. Robertson, S. S. Skri-Kent, C. Voigt, T. A. Williams.

* First Class Honours and distinction in Obstetrics and Medicine.
† Second Class Honours and distinction in Surgery.
‡ Second Class Honours and distinction in Obstetrics.
§ Distinction in Public Health.
¶ Distinction in Forensic Medicine and Toxicology and Public Health.

D.P.H.—W. H. Brown, Gladys E. Chambers, J. H. Crane, A. Hamid, Dorothea E. Hewitt, Mary A. McHugh, R. Nixon, C. M. Ram, H. Rawsthorne, Dorothy M. Unsworth.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Pathology and Bacteriology*: *J. C. Earl, *J. O'N. McKenna, *P. J. Grobler, *G. F. T. Saunders, *W. F. Whaley, *R. H. Micks, *R. T. Jackson, *M. P. Louw, D. H. F. Milmo, M. Wulfsohn, D. M. Vellema, R. Hegy, J. D. Wicht, M. M. Viljoen, M. Gallivan, L. J. Coetzee, L. Heyman, Alice M. A. Downing, J. H. J. Stuart, D. L. H. Moore, J. H. Rauch, R. L. Hill, F. W. G. Smith, W. S. Dixon, C. de L. Shortt, C. G. S. Van Heyningen, B. Vivier, A. Bernstein. *Pathology and Bacteriology only*: S. W. Russell, H. Hall. *Materia Medica and Therapeutics only*: R. N. Perrott. *Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene*: J. Harte.

PART II.—*Medicine*: *Margaretta T. Stevenson, Alida C. Burt, Alice E. Lawlor, A. E. Phillips, R. V. Dowse, Constance McIlrath, A. V. J. Russell, J. Devane, J. D. Thompson, Doris Holland, Emily E. G. Baillie, J. C. Brennan, M. R. Coolican, R. R. Baker, W. H. Smith, G. C. Malherbe, J. M. Semple. *Midwifery*: *C. J. U. Murphy, †I. G. Sacks, †C. D. Dijkman, *A. V. J. Russell, *Doris Holland, G. M. Irvine, Beryl F. E. Cockle, T. de Bruijn, D. Hugo, Emily E. G. Baillie, C. T. de M. Villet, C. S. Wilson, F. Malone-Barrett, C. de L. Shortt, H. C. C. Deane, F. M. Hilliard, T. W. Panter, M. Elion, G. C. B. Robinson, Margery Boucher-Hayes, W. S. Dickson. *Surgery*: †E. S. Horgan, L. Wigoder, Edith F. Willock, E. R. Murray, A. V. J. Russell, Olive V. Fair, Nannette Norris, A. S. Bradlaw, Alice E. Lawlor, P. M. J. Bobbett, A. D. Ward, J. M. Semple, M. R. Coolican, J. C. Davis.

D.P.H., PART I.—*Chemistry, Bacteriology and Pathology, Physics and Meteorology*: E. D'A. McCrea, R. P. Pollard, A. G. Wright, W. B. J. Pemberton.

* Passed on high marks.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION TO THE COUNCIL.

A MEETING of the Fellows was held on July 7th for the election of four Fellows into the Council in the vacancies occasioned by the retirement in rotation of Sir George H. Makins, Mr. J. Ernest Lane, Mr. H. J. Waring, and Mr. F. F. Burghard. Mr. Waring and Mr. Burghard were declared by the President, Sir Anthony Bowlby, duly re-elected and Mr. C. H. Fagge and Mr. W. Thelwall Thomas duly elected members of the Council. Mr. W. T. Thomas, being fourth on the poll, becomes substitute member for Sir George Makins until July, 1927. 923 Fellows voted, 916 sending their ballot papers through the post, 7 voting in person. The result of the poll was as follows:

	Votes.	Plumpers.
HOLBERT JACOB WARING	415	5
FREDERIC FRANÇOIS BURGHARD	410	2
CHARLES HERBERT FAGGE	355	47
WILLIAM THELWALL THOMAS	351	34
Louis Bathe Rawling	271	10
Victor Bonney	247	14
John Herbert Fisher	214	31
Russell John Howard	193	17
Arthur Henry Cheatle	186	5
Donald John Armour	124	9
William Turner	94	5

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.

THE following have been admitted as Fellows:

Charles Cameron, Charles G. A. Chislett, James P. Crawford, Lachlan Grant, James L. Gregory, Robert Kennedy, David D. Logan, James L. Middlemiss.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT a meeting on July 7th, the President, Sir James Craig, announced the award of the Harry Godfrey Massy-Miles Prize to Dr. George Edward Strahan, a former student in the School of the Royal College of Surgeons. Dr. Strahan served during the war as Surgeon Sub-Lieutenant in the Royal Navy, was mentioned in dispatches, and received the Distinguished Service Cross.

The "Harry Godfrey Massy-Miles Prize" has been established in the Royal College of Physicians of Ireland by Mrs. Massy-Miles in honour of her husband Captain Harry Godfrey Massy-Miles, M.C., R.A.M.C., a licentiate of the College, who died of wounds received in France on April 18th, 1918.

CONJOINT BOARD IN IRELAND.

THE following candidates, having passed the summer qualifying examinations, were admitted Licentiates on July 6th and 7th:

M. Barton, H. C. Bell, W. B. Burke, D. Clein, J. H. B. Crymble, R. H. Dolan, T. E. Dorran, C. J. C. Earl, M. A. English, M. Elyan, J. A. Fitzgerald, J. Hewitt, F. W. G. Kelly, J. I. Levi, B. A. McElhinney, J. McGuire, M. Moloney, Eveleen N. Murphy, Mary C. O'Brien, P. J. Quigley, B. Scher, G. E. Strahan, J. Shannon, T. A. C. Stevens, A. D. Watchman.

Medical News.

SIR ROBERT JONES, who went to Boston to attend the meeting of the American Orthopaedic Association, received a most cordial welcome both there and in other centres he visited. The University of Harvard gave him the honorary degree of Doctor of Science, and the University of Yale that of Doctor of Laws. Perhaps the most remarkable honour was the degree of D.Sc., conferred upon him by Smith's College, Northampton, one of the largest women's colleges in America, with some 2,000 graduates. This was the first occasion on which it had ever conferred an honorary degree upon a man.

AT a meeting of tuberculosis officers held in Birmingham on July 9th a Midland Tuberculosis Subgroup of the Tuberculosis Group of the Society of Medical Officers of Health was formed and Dr. G. B. Dixon was elected temporary president. The organizing secretary is Dr. A. Ashkenny, Town Hall, West Bromwich.

A POST-GRADUATE course on diseases of the digestive system will commence on September 12th at the Hôtel-Dieu, Paris, under the direction of Professor Maurice Villaret. It will consist of clinical examinations at the bedside, and of instruction in recent therapeutic methods. The fee will be 150 francs. An excursion will be made, from September 23rd to 25th, to Vichy and Chatel-Guyon to study the balneological methods in vogue there. Full particulars may be had from M. Deval at the medical clinic of the Hôtel-Dieu, Paris.

THE annual general meeting of the Medical Golfing Society was held on June 29th, when Dr. Rolf Creasy was elected President, and Dr. Rolf Creasy, jun., Secretary and Treasurer. Rules were drafted and the subscription increased to 10s., payable on January 1st of each year. It is proposed to hold an autumn meeting in addition to the usual summer one. Mr. Canny Ryall has kindly promised to present a challenge cup of the value of £105, which must we won three times in all to be won outright. The President also offers a cup, and Mr. Ernest Clarke will give a small cup each year to be kept by the winner.

THE International Conference on Tuberculosis, which is to be held at the Institution of Civil Engineers, Westminster, from July 26th to 28th, will be attended by over 100 foreign delegates. M. Leon Bourgeois, President of the French Senate, will be in the chair, and Lord Curzon and Sir Alfred Mond will welcome the conference on behalf of the Government.

THE Faculty of Medicine of Paris has decided to appoint a number of foreign medical men as clinical assistants in its clinics. Medical practitioners who desire to fill these positions should send to the Dean of the Faculty of Medicine of Paris an application accompanied by a statement of their qualifications and a letter of recommendation from the Dean of their own Faculty. Those who are appointed will act as clinical assistants for a period which will not be less than three months or more than one year; at the end of the time a certificate will be given.

WE regret to announce the sudden death of Dr. J. A. Menzies, Professor of Physiology in the College of Medicine, Newcastle, and one of the Vice-Presidents of the Section of Physiology, Pharmacology, Therapeutics and Dietetics, at the forthcoming Annual Meeting of the British Medical Association.

LIEUT.-COLONEL KNOWLES STANSFIELD, C.B.E., on the occasion of his retirement after twenty-three years' service as medical superintendent of the L.C.C. Mental Hospital at Bexley, was the recipient of a casket and illuminated address, presented by the officers and staff at the hospital. Mr. Robert Jackson, L.C.C. chairman of the Visiting Committee, made the presentation on June 30th, and Dr. C. Hubert Bond, of the Board of Control, who was formerly senior assistant medical officer at Bexley, and members of the Visiting Committee, spoke most appreciatively of the pioneer work accomplished by Colonel Stansfield in the improvement of the administration and treatment in mental hospitals.

ON July 12th the King George's Sanatorium for Sailors, at Bramshott, Liphook, Hampshire, which is to be conducted as a branch of the Seamen's Hospital Society, was opened by the Duke of York. The sanatorium has been established and endowed by a fund amounting to £100,000, to which the Ministry of Health granted £14,500, the King George's Fund for Sailors contributed £6,950, and the Seamen's Hospital Society £11,087; assistance was also received from King Edward's Hospital Fund, the British Red Cross Society, and the National Relief Fund. The Duke of York was received on his arrival by the Marquess of Milford Haven, president of the Seamen's Hospital Society, and by the chairman and deputy chairman of the Society. In declaring the sanatorium open the Duke said that he was glad to know that the Seamen's Hospital Society, which founded the Dreadnought Hospital a hundred years ago, had now been able to open the first sanatorium exclusively for seamen. The sanatorium was a memorial to the valour of the British seamen of the Royal Navy and the merchantile marine, who had faced an equal danger and shared an equal honour. Four winters of the war at sea had caused the health of many seamen to be undermined, and many of them would be cared for at Bramshott. Four wards and one other bed have already been endowed, and tablets recording these endowments were unveiled by the Duke in the course of a tour of the sanatorium.

IT is reported that influenza has reappeared in Spain, where in some districts it is of a more serious character even than in 1918, particularly in Salamanca and Valladolid where there have been several deaths among the soldiers stationed there.

THE fifteenth French Congress of Medicine will take place at Strasbourg from October 3rd to 5th, under the presidency of Professor Bard.

GUY'S HOSPITAL biennial dinner will be held on October 26th, at the Connaught Rooms, London. Mr. Montagu Hopson will preside, and tickets, which will cost 15s. exclusive of wine, and other information, may be obtained from the honorary secretary, Mr. Arthur W. Ormond, 7, Devonshire Place, W.

ON July 9th a competition concert was held at the West End Hospital, St. Catherine's Lodge, Regent's Park, of the King's Services Choirs, which consist of ex-service singers in and out of hospital. Cups were presented to the winning choirs by the Countess of Bective. The concert showed the excellent results of the vocal therapy training which these ex-service men have had. The training endeavours to restore through speech, song, and correct breathing the physical and mental health of the sick, wounded, and disabled soldiers.

AT the annual meeting of the American Medical Association in Boston Dr. George E. de Schweinitz, professor of ophthalmology in the University of Pennsylvania, was elected President-elect of the American Medical Association for the ensuing year. Dr. de Schweinitz graduated in arts at the Moravian College, Bethlehem, Pennsylvania, in 1876, and in medicine at Pennsylvania University in 1881; the degree of LL.D. was conferred on him by his university in 1914. He has made many contributions to ophthalmology, and is an ex-President of the American Ophthalmological Society. He served in France in the American Army Medical Corps, in which he attained the rank of colonel.

A BUREAU has been organized at the Faculty of Medicine, 12, Rue de l'Ecole de Médecine, Paris, of the "Association pour le developpement des relations médicales entre la France et les pays alliés," where information as to hours of clinics, etc., will be given to medical men visiting Paris.

DR. M. DIAMOND, Chayes Post-Graduate Instructor at the Dental Institute of New York, will give a lecture and demonstration "On some new phases of old problems in dental reconstruction" on Monday, July 25th, at 5.30 p.m., at the Royal Society of Medicine, 1, Wimpole Street, W.1. All interested are invited to attend, whether or not Fellows or Members of the Society.

AT the seventy-seventh annual meeting of the American Medico-Psychological Association, held at the beginning of June, in Boston, a new constitution was adopted, and it was resolved that the *American Journal of Insanity* should in future be published under the new name of the *American Journal of Psychiatry* as the official organ of the Association.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediocre, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"J. F. S." inquires whether a medical practitioner can claim for the year 1922-21 to pay tax on the actual profits of that year if his profits are 10 per cent. less than the average of the three preceding years.

The practitioner is in the same position as the business man as regards the section in question, but the view of the Government presumably on the advice of the law officers of the Crown is that that section does not operate for 1920-21 because it was not specifically re-enacted. The view taken in many quarters is that that re-enactment is not required, and the Government's proposal is to cut the Gordian knot by inserting a declaratory provision in the Finance Act for 1921-22 disposing of the question by statute. In the circumstances "J. F. S." had perhaps better wait to see whether the Finance Act does settle the point before making his formal claim, which can be lodged if at all at any time before April 6th, 1922. The 10 per cent. condition applies to total income and not to the earned portion only.

"G. H." inquires as to the following motor-car transactions:

1911. De Dion, new, bought for £360.
1913. Briton, new, " " £200.
1921. Former sold for £80 and a Citroen Coupé bought for £550, and latter sold for £150 and a Wolseley Coupé bought for £750.

The inspector offers to allow one-half cost only, as he contends that the more modern cars are "more luxurious than those which they replace."

*** The greater convenience given by modern accessories does not always add much to the cost, but while we think that to allow one half only is unreasonable, we also think that there is something in the inspector's contention in principle. "G.H." suggests that the Coupé model is really a necessity in his circumstances, but this does not affect the principle that where money is laid out on improvements (whether necessary or not), that expenditure represents capital outlay. We suggest that "G. H." obtain quotations of the 1921 cost of a Briton and a De Dion car (or of cars as similar as possible), of the same horse power, seating capacity, and body type as those he had originally, and claim allowance of the total of those two sums less £80+£150=£230.

"H. G. B." inquires as to the allowance he is entitled to for the purchase of a new car and motor cycle. He has not yet been able to sell his old car. He asks whether the inspector is entitled to require audited accounts of the practice.

*** "H. G. B." is entitled to the cost of replacing his old car, and we fear that until the old car is disposed of he cannot make a claim for the purchases. In any case the cycle would seem to be an outright addition, so that no allowance is due; but when the old car is sold he will be entitled to an allowance equal to the cost of such a car as at the date when the new one was purchased, less the receipts from its sale. The inspector is not entitled to require production of accounts, but if he has reason to suppose the amount returned to be insufficient the Commissioners might make their assessment on an estimate and "H. G. B." would then be required to produce accounts on the resulting appeal. We suggest that some conversation with the inspector might have the desirable effect of clearing the air and enabling some mutually satisfactory arrangement to be made.

Carcinoma of the Testes.

DR. VAUGHAN PENDRED (East Sheen) writes: Sixteen months ago I removed a much enlarged right testis from a healthy man of 65. The pathologist reported marked carcinoma. The patient remained perfectly well until a fortnight ago when he presented himself with the left testis enlarged, notably the head of the epididymis. I removed this testis, clearing out the scrotum as far as possible, and dividing the cord high up. The pathologist reports "a solid mass of carcinomatous new growth." There was no spreading of the cancer across the scrotum from the first testicle—the intervening tissues macroscopically being perfectly normal. That the patient has remained very well for sixteen months and that now his second testis has independently become carcinomatous, must be excessively rare. It would be interesting to learn if any other surgeon has met a like condition.

LETTERS, NOTES, ETC.

Refraction Work in School Children.

DR. ARTHUR T. BLEASE (Altrincham), in the course of a letter on this subject, writes: Drs. Wilkins and Williamson are to be sympathized with in having to deal with ten thousand children "requiring refraction," and only one school oculist to do the work. Certainly in their position I should not feel justified in spending very much time in confirming retinoscopy by subjective testing in the case of very backward children, or the very few whose nervousness cannot be allayed to the extent that they will probably be able to name a letter they really see; but neither would I act on Mr. Harman's opinion that subjective testing is useless in children between 5 and 14 years of age. They inquire as to the earliest age at which subjective testing is useful. It is of course not merely a question of age, but usually in an elementary school child aged 8 it is quite possible, only of course as an adjunct to retinoscopy; a few days ago I used it without difficulty in a boy aged 5½, but he was above the elementary school type.

Most of the ten thousand children requiring sight-testing in Staffordshire have presumably been discovered to have this need because they cannot read the blackboard beyond a very short distance, or because they cannot read the ordinary test-types—usually both, I expect. In either case it is subjective testing, and has been employed, showing it is possible. If with glasses according to the retinoscopy they can read better it would appear reasonable and gratifying to record the fact and the amount of improvement, in other words, to check the retinoscopy by subjective testing. If, on the contrary, they cannot read better, what has it all been about?

Medicine as a Science.

MR. W. ROGER WILLIAMS, F.R.C.S. (Ilevedon), writes: In the issue of the BRITISH MEDICAL JOURNAL for June 4th the question is mooted as to "medicine" being a science. In order to answer such a poser, it is necessary to know something about the birth and infancy of medicine. It is not necessary to go beyond the infantile stage, because, having been "more professed than laboured" for so many centuries, medicine is still in this interesting condition.

A more striking example of the strange way in which fact and fancy are interwoven in our human fabric can hardly be found than in the life-history of this backward child—the outcome of the three great Utopias of the ancient world: magic, alchemy, and astrology. It was in Egypt that he was born and bred; for the Greeks only developed what they derived from the Egyptians. In Egypt the medical art was as old as Pan, and as promiscuous. It arose under the aegis of the priests, in a witches' cauldron of superstition and religiosity. Magic was its chief ingredient, with officiating priests as Hecate: and there were elaborate rites and ceremonies, with incense, sacrifices, enchantments, incantations, mysteries, spells, exorcisms, penitential supplications and offerings. To these add divinations, haruspices, auguries, horoscopes, elixirs, sorceries, prodigies, thaumaturgies, miracles, ghosts, spirits, goblins, fays, totems, with talismans, charms, amulets, philtres, abracadabras, and abraxas. At Lourdes, under the aegis of a modern church, we may see such cures now being performed. Such is the brew of which the medical art was compounded; and since such natal influences can never be entirely got rid of, we need not be surprised at some of its modern vagaries; and that it still remains a highly conjectural art, notwithstanding the efforts of science to extricate it from the ancient thraldom.

Almost the only generalized conception as to the nature of disease attained by the ancients was the obsession as to maladies being caused by an evil spirit possessing the affected individual, which, of course, had to be driven out or conciliated to effect a cure. The moderns have got rid of this obsession without having acquired any generalized conceptions in its place. You cannot have science without at least some generalized conceptions. Our infant is unprogressive because he is fed up with details. The spirit of the age produces these in undue abundance. In vain do we ask that these *disjecta membra* should be generalized and reduced into order. "Instead of that the heap continues to swell." Our infant still lacks the eye of philosophy. His lore is not unlike a magnificent library turned upside down. It is forgotten that it is an essential feature of science to connect; and "no natural phenomenon can be adequately studied in itself alone." With this undone the mental outlook necessarily remains confused and infantile—that is to say, unscientific. There is lack of light and leading, and consequently of progress. The unbridled empiricism of our age, which we all have to deplore, is a consequence of this arrested development. It differs from that of antiquity in direction rather than in essence, and in both instances its causation is the same. It is a danger to the practice of medicine when science and its teachings are but little considered or disregarded; for, under such circumstances, knowledge of the art is apt to become inferior to that of the trade. Here then we must leave our infant in the hope that future generations will be able to break the thrall retarding development.

Pneumothorax.

DR. CHAS. J. HILL AITKEN writes: A patient suffering from phthisis pulmonalis was suddenly seized with severe pain in her chest. She collapsed and was put to bed. I saw her on the following day, when I diagnosed pneumothorax of the left side. A day later, when she was somewhat better, I asked her to describe to me what happened, telling her at the same time that something had burst in her chest. The story she gave me was that after a fit of coughing she heard a sound like the "explosion of a gun," and a severe agonizing pain in her chest seized her. The next day she modified her statement by saying that perhaps an "explosion of a gun" was an exaggeration, but she certainly heard a noise in her chest—a crack, short and sharp.

Alastrim or Kaffir Pox.

DR. S. LITTLEWOOD (Mansfield) sends a note of a case of alastrim which occurred under his notice. Its great similarity to small-pox was, he says, noted, and the case was, in fact, diagnosed and treated as small-pox; the only doubt being in the fact that the man, a gunner in the R.F.A., was well vaccinated but twelve months ago. The man, aged 20, had just returned to England with his brigade from Palestine, and was in this country three weeks when he began to suffer from pyrexia and pains in the lower limbs; the rash appeared on the third day, when the temperature fell, and a general feeling of improvement was experienced. The rash was typical of small-pox in appearance and distribution. There is an article on this disease in the *Medical Officer* of July 9th, 1921, which describes the condition.

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, 39, and 40 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36 and 37.

THE appointments of certifying factory surgeons at Senny Bridge (Brecon) and Swinton (Lancaster) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

British Medical Association.

EIGHTY-NINTH ANNUAL MEETING, NEWCASTLE-UPON-TYNE, 1921.

President's Address

ON

THE MEDICAL PROFESSION: A HORIZON OF HOPE.

BY

DAVID DRUMMOND, C.B.E., M.A., M.D., D.C.L.,

VICE-CHANCELLOR OF THE UNIVERSITY OF DURHAM AND PRESIDENT OF THE DURHAM UNIVERSITY COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

In addressing this great Association for the first time as its President, my first duty is to thank you for the great honour you have conferred upon me—an honour which, I am well aware, I owe in the first instance to my friends and colleagues of Newcastle and neighbouring counties. In the next place, it is my great privilege to bid you, on behalf of my Lord Mayor, corporation, and citizens of our city, a most cordial welcome—a welcome which it will be the pleasure and privilege of your professional brethren to make as genuine and as warm as possible during the whole of your visit.

This is the third occasion on which the Association has held its annual meeting in Newcastle, and twenty-eight years have gone by since your last visit. The interval with its tale of years has been marked by changes in our city, and especially in the personnel of our profession, for the young have grown old, and some of those of middle life, and all who were then in advanced age, "have one by one passed silently to rest."

The name of one calls for special reference, for, as we all recognize, much of the success of the Meeting of 1893 was due to the hospitality and courtesy of George Hare Philipson, the President of the Association, and not a little to his business acumen. I venture to hope that the present meeting will be as successful as the last and be enjoyed by you, our welcome visitors. At all events, it is our most earnest desire that it will be both agreeable and profitable; the latter I feel sure it will be from what I know of the scientific and professional programme, and if the surroundings of our meeting place are less attractive and beautiful than those of some other towns visited by the Association, we hope to balance that by the warmth of our personal welcome.

In choosing a subject for an address worthy of the occasion and my audience, I ask myself, Would the past, present, or future best provide me with what I want? and, seeing that we best prophesy of the future from the past, perhaps my own forty busy years of consulting practice, with intimate association all that time with students as a teacher of medicine, should entitle me to dream of the future in the light of the past, which brings me to a question that we must all ask ourselves in the fullness of time, Are we satisfied with things as they are, and, if not, in what manner can they be improved? In short, I am at once brought up against considerations of the widest nature regarding our profession as a whole in its present standing and what it might become.

Let us ask, in the first place, are we satisfied with the position our profession occupies in the scheme of national polity? And next, are we satisfied with ourselves? With regard to the status of the profession as a whole, we are told by a recent writer, Branford, in his book, *A New Chapter in the Science of Government*, "that the whole medical profession of the country in all its various groups of professional associations or subguilds (private, municipal, State) is now in process of organizing itself into a vast unified guild of a medico-political kind, which later will embrace the entire world, and why? Because it has become convinced that the whole hygiene of the folk requires its utmost and careful consideration in all its aspects, it is determined to be adequately represented in the government of the country." And, again, the same author writes, "it is illuminating to note that the first great social group to attempt its national organization thus as a whole (Labour has done it only in part) is the most highly organized of the biological group of occupations." This fairly represents our position to-day, and yet we cannot fail to recognize that we are still in a somewhat fluid state. It is evident at least that we are becoming an indispensable factor in the government of the country. But this has not always been the case, for our importance and indispensableness have risen with our efficiency. Contrast the influence exerted by the work of the doctor upon the result of the South African war with that of the late great war and the point will be conceded at once. But in what sense are we indispensable? All-important as a factor of party government? A power to conjure with? To be exploited by either party—as free, or fair, trade, or the Irish problem? Or else do we stand alone like the religion of a nation? Like the influence of the throne? A power that is essential to the well-being of the people, to be encouraged and fostered as one of our great national assets? Aye, indispensable in the highest sense, and all the more so because of our ever-growing efficiency. It is a soul-stirring thought and cannot fail to stimulate us to greater efforts which must succeed when all are united for a common purpose.

Consider for a moment the advance of one generation, contrasting the position of medicine fifty years ago with the advance of to-day. In some directions the progress has been phenomenal, in others very substantial, in others again, less so; but a gain all along the line; an advance that is quite as marked in the socio-politico-medical world as it is in the strictly scientific, and all purely professional and aiming at improvement of the health and welfare of the people, with proficiency as our goal, ever mindful of the fact that the standard of our efficiency is the measure of the value of our services to the State. And yet, if we read history correctly, it would seem that in the past the State valued medicine in the inverse ratio of the value of our services to the nation. But this can no longer be said to be true. From time immemorial, when pristine medicine and religious beliefs could not be considered apart, from the time when primitive man was unable to connect cause and effect, the echo with the sound, the reflection with the mirror-like surface of still water, to the present, medicine has been accepted at its face value, and whilst we would not disturb confidence in the doctor, it is our aim more whole-heartedly than at any other time in the past to deserve that confidence—to bring our true value into closer harmony with our face value—and it is only fair to ourselves to recognize that the public are more discriminating than they were, and neither they nor we are quite so prone to confuse the *post* with the *propter* as in days gone by. Formerly the outlook of the bystander was not what he thought but what he felt, but now ever-increasingly the people have acquired the at times inconvenient habit of thinking, a change that we welcome, for we look to the public for assistance in our efforts to advance. We are a scientific and progressive profession, and are not "content to dwell in decencies for ever." Progressive, yes, but the question is, Can we do more than we are doing and thus progress more rapidly? Can we render still greater services, and thus deserve and earn still more the goodwill and appreciation of our fellows? If so, we shall have no cause to complain of our position in the State, for we shall recognize our true value, and as is the custom, others will esteem us as we esteem ourselves.

Progress with us consists in increase in knowledge and its wider diffusion, together with greater accuracy in its application in preventing and combating disease; or, in other words, what we want is more light and more efficient torch-bearers. The late great war demonstrated very clearly that the personnel of the medical profession varied enormously, as was only to be expected, in professional knowledge and character, and that therefore there was a great lack of uniformity in the value of individual services rendered to the country. On the whole, it may be said to the credit of the profession of medicine and surgery that these services were splendid; nevertheless they were not uniform, for whilst many covered themselves with glory, there were some who failed; nor need one lay oneself open to the charge of a breach of allegiance if I remind the Association that the same want of uniformity obtains throughout the length and breadth of the land; and of necessity there must be great difference in the skill and ability of both men and women forming the ranks of our calling. The personal factor varies enormously, and we cannot shut our eyes to the inequalities, though we can do much towards diminishing the disturbances arising from them. Making due allowance for the differences in the personal qualifications, inclusive of natural ability, the lack of uniformity depends in some measure upon the want of uniformity in educational opportunities—but to this point I shall return; suffice it for the present that there are inequalities, and that the service to the public is defective in consequence. We must not, however, lose sight of the fact that character is the most important human factor in the levelling-up process, for, as everyone of experience recognizes, character is of more importance than ability. "What," asked Le Play, the great French sociologist, many years ago of an audience, "is the most important thing that comes out of the mine?" a riddle to which the average auditor replied, "Coal." "No," said Le Play, "Not coal, but the miner." And so it is with us; a doctor is of more importance than his physic, and it should be our duty to educate, train, and equip him so that he will fulfil his proper functions towards his patients and the State.

We cannot make character, but we can shape it, and the first step surely is to imbue the novitiate with a proper sense of responsibility. This, our responsibility, imposed upon every member of our profession, is a serious, a tremendously serious matter, and it is growing with the evolution of our calling. The man of character recognizes it, meets it, and does his utmost to face it, but I am afraid I am within the mark when I venture to say that there are a great many who do not sufficiently realize it, and look upon their profession as a means to an end—to wit, a living. As matters are shaping, the State will soon realize fully the great weight of responsibility that belongs to every medical man, and I am anxious that it should not be left to the State to bring it home to us; and assuredly if we only realize our personal obligation we shall have no difficulty in facing any measure of official responsibility the State may think fit to place upon us. And so let us, conscious of the advantages of a discerning criticism, acknowledge freely that progress might be hastened and indulge in a dream of constructive idealism.

It is scarcely possible to discuss in a comprehensive way the problem of the education and training of a doctor without considering that all-important question, the personal factor—the characteristics fitting the individual for the profession of medicine; all are not suitable, many are manifestly unsuitable; the good doctor is born, the indifferent doctor is made. I pass by, but with due respect for its utility, that personal charm which asserts itself favourably in all human relationships, and would probe deeper in search for the qualities that ensure success in the highest sense. Nor do I despise the factors of self-aggrandizement and desire for gain, for even these selfish desires, if I may so designate them, are legitimate, and often play an important part in the evolution of our science; but behind them we may recognize the interpenetration of more worthy aspirations tending towards higher conceptions of the public weal, and making for the successful struggling of the ever-upward movement. For to frame ideals (as has been well said) is of the essence of man's nature. We all recognize that we cannot ignore the business side of medicine—would that we could, and live for the interest it is to us and for the service we can render our fellows. But although this, as a practical proposition, is hopeless, the sentiment touches very close the traits or characteristics that distinguish the good from the indifferent doctor. One naturally hesitates to set oneself up as a critic, and it may even be said that he who criticizes his fellows is disloyal to his cloth, and I hope that this objection will be disallowed when I candidly admit and deplore my own shortcomings, and when I venture to claim the right, in the interests of all, to utilize the results of over forty busy years of professional experience.

In our profession, perhaps more than in any other, if a member is to do his duty by the community and State, justice and credit to himself, and, in a word, fulfil his professional obligations in a proper and satisfactory manner, he must continue his education during the whole of his professional career. He must remain a student, for unless this be so, he will not profit by his daily professional experience, and in the passage of time he will lose more than he gains. Experience, as all will admit, notwithstanding present-day ideas, is most valuable, but only if it includes sound knowledge in its content, for otherwise it may be worse than useless, and like little knowledge a dangerous thing. For experience is only of value when it is associated with accurate thinking, and thus professional experience and studious habits are inseparable.

The doctor's life abounds in matters of the deepest interest, and if his heart is in his work, and his grasp of fundamentals sufficient, a foundation upon which a superstructure may be raised, he cannot fail to develop the habit of study, for the working of the studious mind brought into daily contact with the problems of Medicine and Surgery is smooth and progressive; but everything turns upon the one essential point—is he interested? Yes! The secret of individual progress lies in the answer to the question—Is he interested? And the man or woman who is, in the true scientific sense, must inevitably advance, though naturally much must depend upon opportunity. The objection will no doubt be raised, "What time in running a busy practice have I for study?" and doubtless our sympathies will be with our objector, who represents a multitude of practitioners without leisure. But even the busiest drudge in our profession, if only he be interested, must advance; and if it so happen that he is one of the elect, nothing can keep him back so long as he is able to work. But the rate of progress and the height of his achievement will depend upon opportunity, for next to enthusiasm opportunity tells most heavily in the race, and without it all competitors are of necessity badly handicapped; but earnestness begotten of enthusiasm is easily the first essential, for the man who possesses it will make his own opportunity. Nevertheless, the profession of medicine is an open field, and the entry will always include some who, lacking zeal, even with the advantage of opportunity, inevitably fall behind. In the interests, therefore, of all it is in the highest degree important to facilitate the acquisition of knowledge, and thus to bring within the reach of all the ascertainable facts out of which professional experience is fashioned. These facts are either to be found in literature, and as such are at our command, or exist as observations that come under our personal notice, and naturally the earnest student welcomes his information from all sources; but, as I have said, he makes his own opportunity, and can safely be trusted to acquire what he is searching for, whilst by increasing the facilities to the average man and rendering it more easy for him to acquire information we are opening wide the avenue of knowledge for all.

How best, then, can we help forward post-graduate training and assist the doctor to add to his store of information, and thus increase his individual usefulness? It may perhaps enable us the better to answer this question and to understand the necessity for some change if I remind the public of the conditions—with which the majority of my hearers are already familiar—under which the average doctor enters upon the practice of his profession and endeavours to do his duty to his patients, and to add to his professional knowledge. During the greater part of a long professional life I have taken part in examinations for medical degrees, and have been able to test, more or less accurately, the capabilities and acquirements of upwards of two thousand candidates, so can claim to be somewhat familiar with the kind and extent of the professional knowledge with which the minds of those about to embark upon medical practice

are stocked. Two things have impressed me: first, the severity of the ordeal, or examination test, to which the candidate is subjected—that is, the extensive range and large amount of knowledge expected of him; and, second, the inadequacy of his attainments, having regard to the serious and responsible duties awaiting him. Further, it will be known to most present that the University of Durham admits to the degree of M.D., after a searching examination, practitioners of medicine of fifteen years' experience, and who have attained to 40 years of age, and my experience of this examination has taught me the utter hopelessness of any candidate's chances of success who has not devoted many months (six to twelve) to careful preparation for the examination. That is to say, the man who, in popular language, "has a shot at it," always fails, and it must be recollected that the examination is thoroughly practical; and I would like to add that candidates who have presented themselves without careful preparation and have been rejected, and have returned in six or twelve months' time spent in a manner calculated to render themselves fit for the test—including, often, attendance on hospital clinics—have, generally speaking, impressed the examiners most favourably; indeed, the difference in many cases has been most striking between the first and second experience. I would like to add that those who have had the courage and enterprise to undergo this further ordeal, with the necessary thought and preparation, have, I believe, one and all recognized the signal benefit they have obtained by it.

In thus suggesting that there is room for improvement in our service, we must remember we are dealing with knowledge in the practice of medicine and surgery, which it is the aim of all workers, in the interests of all, to raise to the highest possible level of exactness. This is a design to which every practitioner could under favourable circumstances contribute, though at present he is heavily handicapped, as he has to live and work in the most depressing atmosphere of constant doubt—of problems unanswered, of opportunities lost. This wail, for it is a wail, will probably suggest to the minds of all here one of the chief difficulties in the way of progress, and will, I hope, elicit a sympathetic interest in the problem—How are these difficulties to be overcome? It may perhaps be a surprise to many, but not, I suspect, to the more thoughtful section of the public, that the diagnosis in many cases (very many, I am afraid) is only a matter of opinion, which must remain in doubt unless cleared up by an autopsy, and in making this statement it will not, I trust, be thought that I am casting blame upon the doctor; far from it, for the marvel is that his opinion is so often correct, considering the difficulties with which his path is beset in his endeavour to contribute his quota to the common cause. I have alluded to this state of matters as an atmosphere of doubt; it is more than that, it is in the highest degree discouraging and is calculated to kill the scientific spirit with which it is our aim at college to inspire all our students; and in claiming the right of the doctor to follow up the lines of his training, I am urging a change in the interests of all; in the interests of scientific medicine and surgery, and more particularly in the interests of his patients.

I found myself recently discussing the present status of the medical practitioner with a prominent member of our profession, a man of high standing and wide experience as a general practitioner, and the conversation inclined towards the question of education and training of the doctor, and I asked him what in his opinion could be done to improve his scientific and professional standing. His reply was definite and uncompromising. "The one thing above all others," he said, "calculated to elevate and generally to improve the standing of the general practitioner is opportunity for *post-mortem* verification or the contrary of his expressed opinion." He added, "We shall never be any better until we are entitled to claim, with the knowledge that we shall not be denied, a *post-mortem* examination." I was much impressed by this view of the matter, coming as it did from one whose knowledge and experience of general practice could not fail to make clear to him the revolutionary character of the suggestion, and how inconvenient it might be to have to acknowledge our mistakes, for, indeed, the opinion my friend expressed coincided fully with my own. Revolutionary it certainly would be; but what an enormous gain to have our doubts set at rest; and it is not too much to hope that before very long both the public and the profession will be educated up to feel that truth above all things must prevail. Could we but engender amongst our members the love of truth as the fundamental essence of our professional life and the mainspring of our activities, and could we also inspire eagerness to search after and courage to proclaim it, what a noble profession would be ours! I believe the desire to rise and live up to our loftiest professional aims is there; but we are unfortunately trammelled and moulded by public opinion and prejudice and the requirements imposed upon us by the State. The very loftiness of the estimate which is entertained of the doctor is his undoing, for he is set tasks which he cannot perform; he is expected to make bricks without straw, and not infrequently we assume to ourselves personally the public estimation of our calling, though this I believe in the main to be a failing of youth.

In urging the importance, nay more, the necessity for greater facilities for *post-mortem* investigation in clearing up doubts which must arise in the mind of the doctor in many cases, I am indicating the most important step towards a rational scheme of post-graduate training. It is, perhaps, unnecessary to insist upon the enormous advantage it would be were *post-mortem* examinations universal, for all, save those who never make them, are prepared to admit their educational value, and I have little doubt that the opposition to a movement in this direction, begotten of prejudice in the public mind, would soon vanish were the incalculable service to the science of medicine made sufficiently clear. I have said that medicine has advanced in every direction, but I regret to have to admit that the advance along certain diagnostic paths is not as rapid as we could wish, and not nearly so rapid as it would be were *post-mortem* examinations more frequent; and I believe I am stating what is correct when I say that in private practice they are not even so frequent as they were in my earlier days. It is true that in a few of our large hospitals throughout the country, in the wards of which students of medicine enjoy the inestimable privilege of clinical study, the enlightened committee of management now sanctions an autopsy in every case under fitting limitations, but in the majority of our clinical hospitals the old restrictions still obtain and the study of pathology is still hampered as of old, to the great disadvantage of the medical school and, if they but knew, to the public themselves.

Did anyone question the service rendered diagnosis by the substitution of the unclouded prospect of certainty for the befogged atmosphere of uncertainty—the educational value of exact diagnosis in a doubtful case—let him ask himself what he has learnt from the modern surgeon's exploratory operations, and he will candidly admit that nearly all he knows of abdominal diagnosis is the outcome of the lessons he has learnt in consequence of the ease and impunity with which we can now "open and see." It is the examination *ante* which, as we know, is often effectual in averting the *post*.

We all recognize the value of post-graduate teaching in connexion with the Fellowship of Medicine and Post-Graduate Association, and similar courses of study instituted in various centres, and no doubt many take advantage of these opportunities, but after all they are only supplementary to the curriculum of the student and cannot take the place of the natural progress and ever-ripening experience, the outcome of facilities which I would like every practitioner to be able to claim as a right, and for which I have little doubt sooner or later the State will make provision in the interests of medical science and the health of the nation.

The importance of accuracy in diagnosis cannot be overstated, and it is unnecessary to insist upon the value of the autopsy in promoting it as well as in the training of the practitioner. As a scientific profession we naturally aim at precision, but unfortunately take no steps to secure it in our daily work. Of what value, has any one ever asked himself, are the statistics upon which the computing officials of our insurance companies are accustomed to base certain actuarial statements which are accepted as guides to practice because they are founded upon statistics compiled from official returns, which we have reason to believe are so hopelessly inaccurate that the results can at best be nothing more than rule of thumb guides? Some may possibly doubt this statement. Well, let any one that does institute an inquiry—say into the accuracy o

the death certificates as tested by *post-mortem* examinations in even the best of our clinical hospitals—and he will have his eyes opened, and his knowledge of practice may possibly lead him to draw a still more striking inference from the contemplation of the question of the accuracy of the returns throughout the country generally—outside the walls of our great hospitals.

Accuracy in diagnosis is, as I have said, of the first importance, but the search after truth in nearly every other direction as well is lax and indeterminate. Time will not permit me to pursue this most important subject, but I am convinced that until there is instituted in every large teaching hospital connected with our medical schools a statistical department with a highly trained official at its head—call him registrar, or what you will—whose duty it would be to collect and systematize all returns having accuracy as the constant aim, we shall continue to flounder on as we have been doing, groping after truth, and failing to read correctly the signs ready to hand and awaiting interpretation.

At present the returns are grossly inaccurate, and therefore many of the deductions are necessarily fallacious, whilst, for the want of a proper system, the waste of what I may call raw material is simply appalling. Observations of interest are made daily in the wards, *post-mortem* rooms, and the adjacent pathological and chemical laboratories of every teaching hospital, of which use is never made, perhaps because they are isolated and their significance is not at the moment recognized. They are forgotten and, in many instances, pass even from the mind of the physician, surgeon, or pathologist who made them. Professor Vincent tells us of a physicist who, long before the discovery of x rays by Röntgen, noticed cloudy markings upon his photographic plates whenever they were brought near to Crookes's tubes, but disregarded the observation as of no value. But instances could be indefinitely multiplied illustrative of the loss to science that may be involved in the failure to note, collect, collate, and investigate simple observations in medicine, surgery, pathology, and collateral sciences. This loss, which cannot be estimated, may very properly be compared with the loss to commerce and science involved in the crude uses to which tar was put before the discovery by Perkin of the colour mauve in the year 1856. Then followed other colours, together with benzine and its homologues toluene, xylene, naphthalene, and anthracene, not to mention the manifold uses to which the long series of coal-tar derivatives have been put. So without any great stretch of imagination may we regard the waste of which I have spoken. The fact is, the work in every hospital ward, *post-mortem* room, and scientific laboratory engaged in the investigation of disease for the purposes of teaching should be regarded in the light of research, and I think the assumption is only reasonable that the establishment of whole-time professorships in medicine, surgery, and midwifery in connexion with all our medical schools, together with properly organized registration departments, would help very greatly to promote this most important side of the teacher's functions. The importance of collecting this raw material, at present running to waste, will be recognized by all, but especially by teachers themselves, who would have the results of their own labours, of their hospital's records and statistics by which to drive home the lessons they would inculcate, for, as Professor Vincent very properly points out, students pay more attention to the personal observations of their teachers than to text-book statements. And further, research workers would be in possession of vast quantities of accurately noted and properly collated facts for the pursuance of their investigations. Thus our teaching facilities would be promoted and our methods of instruction put upon a more satisfactory basis, whilst our knowledge would increase more rapidly and our science correspondingly benefit, and, transcending all, truth would be recognized as the presiding genius of our activities—our great purpose, our highest aspiration.

The history of the general practitioner, the corner stone of the profession of medicine, told in terms of his professional education, is, or should be, a record of continuous progress from the first stage of the introduction to the end of the last chapter, when *finis* marks his retirement or his decease. He travels along a road, at times rough and uphill, in which there is no break, and perhaps the easiest going, from the education point of view, is the outset carefully indicated by notices bearing the official imprint of the curriculum. It is greatly to his advantage if, at the end of this part of his journey, he can secure a resident appointment in a first-class hospital. This cannot be too strongly emphasized, and it is impossible to over-estimate the value of six months' intensive training at this period of professional life, when responsibility and a certain measure of authority under discipline, with ample opportunity for the study of special problems, unite to shape and develop character, and furnish illustrations in abundance of the principles already forming the foundation of that superstructure of experience, the endowment of the trusted practitioner. So helpful is this experience that the young graduate who has enjoyed it begins life with a take-off vastly superior to his neighbour who has not—who is, indeed, in comparison badly handicapped in the race of life. I feel so strongly upon this point—the advantage of a resident appointment—that I would like to take this opportunity to warn the rising generation against the practice, which is becoming only too common, of declining these appointments in order that an immediate financial return may be secured. It is true there are not at present hospital appointments for all, but sooner or later, with perhaps some adjustment of the period to be served, this want will be remedied, and I venture to hope that the time will come when a resident appointment will be found to be an essential feature of the training of the doctor. Having regard to its educational value, the period of the student's career at which the appointment is held is, I believe, a matter of great importance. During the war, when every available practitioner was called upon to serve, our hospitals had to fall back upon students to fill the posts usually held by qualified doctors, and it was the common experience that in the case of many students who were appointed before they had reached a certain stage in their professional training to fill these gaps the appointment and all that it entailed was not only valueless but actually harmful. But coming in due course at the end of the curriculum, and after the final examination, the experience is most useful; and cannot fail to produce a lasting impression upon the future career.

Whilst urging thus strongly the importance of post-graduate training I must not overlook the claims of the student, to whose work, training, and examinations I may be permitted to make brief reference. I have already hinted that of the many who elect to study medicine there are some who are quite unsuitable, and who would be well advised to try some other walk in life. This I admit raises a very difficult question, and it is one to which hitherto no attention has been given, nor can it very well be discussed in a public address. I pass it by, therefore, with the observation that it is a question that deserves our attention, and I would particularly commend to the authorities the question of preliminary general education of the doctor.

Success in the profession of medicine, by which I mean the proper fulfilment of the duties of the practitioner, is attained by the exercise of certain faculties which are capable of development. Among these gifts stands out prominently the faculty of taking notice. This gift—the power to observe—is in many people, until developed by special training, entirely in suspension, but there is no endowment of which the complex mental organization of man is composed more capable of development than this. A party of grouse shooters, when tramping through the heather between the rows of butts, made a search for white heather, and the host was the only member of the party who succeeded in gathering the white sprigs. He was invited to explain his success. "Oh," he remarked, "you know I am a manufacturer, and I have trained myself to observe flaws in certain goods when passing rapidly through the galleries." And in like manner, I maintain, may the faculty be trained in the case of the students. The training could go on *pari passu* with the teaching of physics, chemistry, anatomy, and physiology, in connexion with which courses the habit of observing accurately might be acquired, to be further developed in the out-patient department, wards, and *post-mortem* room. The opportunity to promote this kind of training will increase in the case of anatomy and physiology when these subjects are brought into closer touch with clinical work, as recommended by Keith, Berry, Vincent, Lewis, and others, the importance of whose suggestions, it is to be hoped, will be recognized and put into universal practice. These have for

their aim the realization of the vision of the prophet Ezekiel—to make the dry bones to live; the giving of a vital interest to subjects at present dead, at least in the mind of the average student; the bringing into prominence from the very outset their practical utility, and thereby furnishing a living continuity between the earlier and the later subjects of the curriculum.

The question of special instruction of our students in the diagnosis of early disease is intimately associated with this subject. It is recognized by all that the earlier a diagnosis is made the better for the patient, and notwithstanding this self-evident truth it is remarkable how little attention has been given to the training of students in the recognition of the earliest indications of disease. The wards are, as a rule, filled with examples of advanced disease, and the subjects selected for clinical lectures and demonstrations are usually conditions in which history and physical signs are as far as possible characteristic and strongly marked. And, of course, this is almost inevitable, for the student has but a short two years into which to crowd his clinical training, and he is naturally attracted by outstanding and obvious pathological changes in which the signs and symptoms are more or less gross and appeal to his untrained senses. It is evident that something must be done to help forward the student's training in this direction. At present, as things are, his opportunities are derived from attendance in the out-patient department of the hospital, where as a rule a large number of patients have to be seen, and the teacher is a member of the junior staff, and is not infrequently only just qualified. I have no wish to under-estimate the value of the out-patient teaching, but the diagnosis of incipient disease is at once the most difficult and the most important problem the doctor has to face, and yet it must be admitted that hitherto but little attention has been given to this phase of clinical medicine. It is generally supposed that the art of early diagnosis will be acquired later in the course of practice, but it is then too late, for in panel practice there is, I fear, contrary to the expectations of the authors of the present system, no such thing as early diagnosis. The truth is there is no time to work out an accurate diagnosis in an early case in a crowded consulting room in panel practice, and there is a danger of the aptitude becoming a lost art. For, on the one hand, the doctor has not the necessary time to devote to a careful examination, and, on the other, the tendency of the present day is to ignore physical signs and to rely altogether upon laboratory methods. I would therefore earnestly plead for some alteration in our system that will give due prominence to training in the methods of early diagnosis.

It is obvious that a thoroughly serviceable knowledge of the functions and structure of the human body in health and the possession of well trained senses—the ability to observe—are essential to successful diagnosis. Nevertheless, I believe I am correct when I state that comparatively few practitioners are familiar with the range of the limits of health as signified by signs evident to the trained senses. For instance, to take but one example, failure to recognize the fact that our stethoscopes employed in the examination of chests (heart and lungs) detect the widest possible differences in normal individuals, has been the source of much error in practice. The truth of this assertion was made apparent in connexion with recruiting examinations during the war, when thousands of perfectly healthy young men were graded low, or rejected altogether, on account of the erroneous interpretation of some physical sign. And, in the same way, every day life assurance problems are settled incorrectly on similar grounds. The fact is, when we recognize that a comprehensive knowledge of the functions of man, together with the indications of their working, is necessary to enable us to detect abnormalities, it is plain that the normal state demands our very special attention, for we are dealing with what is at once the most perfect and the most faulty machine of creation.

Students in future will be taught the working of this machine in such a way as will make it more easy for them to appraise at their proper value departures from the normal; and it will be the aim of the teacher to render his teaching more vivid and to demonstrate as far as possible its bearing upon clinical problems.

I am fully aware that there are objections to this attempt to abolish the line of demarcation between pure science and practical application, and that from a university point of view, on the ground that the foundations of applied science are ever extending, it would be a mistake to do anything that would tend to limit the range of the student's studies; but the patient must be our first consideration, and it cannot be denied that the practical side of the curriculum is hazardously short.

I must not conclude this dream of progress without a reference to the examination test which all students of medicine must pass before their names are inscribed upon the official Register. For long I have questioned the wisdom of the present system which wholly neglects to take into account the candidate's record as a student. He is known as a number, his anonymity is preserved as far as possible throughout the examination, and no notice is taken of the results of class, prize or scholarship examinations, or of what should be the most valuable evidence of teachers of industry and capacity during his period of training; indeed, as far as I know, except in the case of one or two universities, there is no official record kept. The examination is not competitive, and the object of the examining board, composed of home or internal and external examiners, is to impose a test that will safeguard the public. But as such a test it is necessarily very imperfect since it takes cognizance only of the present, ignores the past, and makes no attempt to anticipate the future. I welcome, therefore, the support and recommendation of the General Medical Council in this direction.

Let me briefly recapitulate. In the short time at my disposal I have not been able to do more than touch the outskirts of some of the more conspicuous problems at present confronting us for practical solution. I have reviewed the present standing of the medical profession in strength and weakness; and I have tried to point out how, in my judgement, certain weak places might be strengthened. I have looked at the selection, teaching and examination of the students, and have offered hints as to some ways in which these courses might be reviewed with advantage. I have laid stress on the all-important fact that self-education of the true doctor continues through the whole of his professional life, and calls for steady combination of study with practice; and I have endeavoured to show what invaluable aid and stimulus may be given to the individual doctor by placing within his reach co-ordinated methods of assistance in advanced work.

It is hardly too much to say that attention to post-graduate work is of even greater importance, and brings more fruitful results than the indispensable attention to undergraduate instruction. In this connexion I have dwelt on the value of resident appointments in hospital; on courses of post-graduate lectures; on post-graduate examinations after a considerable interval of practice; and I have outlined a scheme of almost unlimited possibilities in research work.

Accurate observations accurately recorded, strictly tested and verified, provide the one sure foundation of certain knowledge in place of guesswork. If such observations were systematically collected and tabulated; if every practitioner had free access to the record and the stimulus of knowing that further observations of his or her own would be heartily welcomed, we should before long gain a permanent rise in the level of medical efficiency.

As a profession we earnestly desire to serve the community to the very best of our ability. We desire to serve freely, to serve graciously, to serve effectually. We desire to safeguard health that by knowledge and foresight can be kept intact; to restore health that has been impaired or lost; and where restoration is impossible, to alleviate suffering and fortify endurance to the best of human power. With the standard of our high calling kept in view, we, in whose hands it rests at this present to shape the immediate course before us, are ambitious that we should leave to our successors an increased store of doubtful points definitely cleared up and settled; should leave certain obstacles on the way forward definitely removed; so that they, our successors, may be freed from the first to attack fresh, and perhaps still more intricate, problems which will assuredly present themselves for solution. I would fain echo the words of one of the world's pioneers:

"Now understand me well—it is provided in the essence

of things that from any fruition of success, no matter what, shall come forth something to make a greater struggle necessary."

Some considerable fruition of success is already ours; led by courage and confidence we shall triumph in many another encounter.

A Special Address

DELIVERED AT THE

EIGHTY NINTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION

BY

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INDUSTRIAL HYGIENE: ITS RISE, PROGRESS, AND OPPORTUNITIES.

IT is just over a century ago since the British Parliament turned its attention to the fate of children employed in the mines and factories of this country, and little more than half a century ago since diseases due to occupation received similar recognition. Great Britain was the pioneer of industrial legislation. The utilization of water power and steam led to the rise of the factory system and to the growth of large towns. The "Industrial Revolution," which began about 1740, and the inventions which preceded and followed it, not only placed us as a nation in a high position in the world of commerce and made us wealthy, but it created new methods of employment associated with the subdivision of labour, as well as a new class of workers to meet the requirements. It also initiated problems, towards the solution of which, as the statesmen of the time had no experience to guide them, the laws which they framed could at the best be but only tentative and a makeshift. While the introduction of machinery made labour in the factories in one sense less irksome, it led to the employment of women and children, many of whom, owing to the long hours and low wages, rapidly broke down in health, with no financial assistance from the State or from the industry to fall back upon, so that to ill health were added the distressing circumstances of poverty and starvation with only the workhouse to look forward to. In order to prevent physical degeneration of the working classes it became necessary to improve the conditions under which labour was carried on in mine and factory by shortening the hours of labour for women and children, and by raising the age of child workers. The employment of children of seven years of age in our coal mines and factories, and the harsh treatment extended by overseers to them, since they were frequently beaten or handled roughly when they were found asleep at work, form unpleasant reading in the pages of the industrial legislation of this country. From the first decade of last century onwards to the Victorian period Parliament time and again shortened the hours of labour, restricted the employment of children and improved conditions within the factories, but even as late as sixty years ago little had been done to instil into the mind of the people the association of certain diseases with particular occupations, and how these diseases might be prevented. Thackrah, in 1831, had written upon the subject, and Arlidge, in 1892, had published his monumental work, but occupational diseases as a class had not yet caught on with the medical profession, and so matters drifted. Sir John Simon, at the dawn of the public health movement in this country, recognized how closely identical was the health of workers with the objects sought to be secured by a public health service, and that in the prevention of disease lay one of the most important duties of the medical profession. To-day the preventive side of industrial medicine is regarded as even more important than the curative. It was the meeting of the British Association in this city in 1889 which brought me into vital contact with industrial medicine, and which drew from me my first appeal for improving the conditions under which the manufacture of white lead was carried on. The time was opportune, the country was ripe for action, a spirit of reform and a desire for industrial betterment had penetrated into the House of Commons, with the result that the Home Secretary, then Mr. Asquith, appointed a White Lead Commission to inquire into the circumstances under which white lead was manufactured, and how the risk to health of the workers might be diminished. It was my fortune to be placed upon this and other commissions concerning dangerous occupations. In the Blue Books which these and subsequent committees published is contained a mass of useful information. Industrial hygiene may be said to have merged out of, or to have been a continuation of, parliamentary interference with the claims of employers to utilize labour almost to its breaking point. Occupation was never meant to cripple workmen, cause ill health or induce early death. It was thus that medicine was drawn into the social movement in which it plays an honoured part to-day. In few fields of human activity has the call for preventive medicine been greater than in the various industries of this country, with their former high mortality and sickness rates. Society, in the past, kept itself too far aloof from knowledge of the conditions under which certain trades were carried on, and even the workers themselves were not always aware of the dangers to which their employment exposed them. Ignorance is responsible for many of the calamities which overtake us. It became necessary to instruct workers and employers in regard to occupation and health, for to have knowledge is to be forearmed. Regulations drawn up by the Home Office, and meant for the welfare of workers, have from time to time been challenged by both employers and employed, and there is no objection to this, since at a conference of the parties concerned conflicting opinions may be modified, or, failing this, a compromise is effected, and work allowed to continue, during which fresh regulations can be given a trial.

Within the last few years the scope of industrial hygiene has widened. It includes not only consideration of the conditions under which work is carried on, the hours of labour, and diseases incidental to occupation, but it deals with the physical effects of work as seen in fatigue and how hours of work and rest may be correlated so that there may be obtained the maximum of production with the minimum of effort, also that the hours of respite from labour may be made sufficiently long for recovery from exhaustion to take place. The tendency has been to remove from labour any serfage element which may have clung to it as a remnant of bygone days, and to recognize that men and women are not mere machines, but that they are entitled to the opportunities of improving themselves mentally and physically. To-day industrial hygiene is no longer the affair of one nation but of all the advanced nations. The creation of the International Labour Bureau under the aegis of the League of Nations has raised industrial medicine to a higher platform, so that while the health of the workers is one of the main objects, and production is regulated by the physical fitness of the worker and by the hygienic conditions under which labour is carried on, the fact that industrial medicine has become international will incite backward nations to aim at securing a higher standard of health for their workpeople, as well as more efficient means of increasing production. Arising out of legislation passed for improving conditions of labour and shortening the hours of work, also proceeding through medical supervision of workers and the elimination of the unfit as well as the substitution of comparatively harmless for harmful methods of production, of industrial medicine it may be said that although it has made such rapid strides that many of the results obtained have become fresh energizing influences in the life of nations, yet many opportunities for good still lie in front of it.

Medical examination of workers before commencing their industrial career would no doubt create hardships, but the ultimate gain would transcend all these. Even with the ordinary precautions taken there would still be found a certain number of persons who would break down in health earlier than others, either as the result of diminished vital resistance or of idiosyncrasy. With the view of determining the susceptibility of individuals to poisons in particular trades Sir Kenneth Goadby has suggested the employment of blood tests, thus indicating that the liability to occupational disease, as in the case of infectious maladies, is largely a personal matter.

Lead Poisoning.

For several years Newcastle has been one of the principal centres of the lead industry. From the dales of Northumberland and Durham lead, either as ore or smelted, was brought into this city, but since the ores of Spain and Greece contain larger quantities of silver, and the smelted material can be readily transported to the Tyne, larger quantities of foreign pig lead have found their way into the factories on the banks of the river. Lead miners in this country do not suffer from lead poisoning; they have suffered in the past from pneumonoconiosis and pulmonary tuberculosis. The danger to health commences with the smelting of the ore, and the danger is repeated in certain processes in the manufacture and use of white lead. If anything is required to show what preventive medicine and Home Office regulations have accomplished in transforming this previously dangerous industry into one which, to-day, is comparatively safe, it is the record of the notification of cases of lead poisoning and of deaths therefrom over a period of twenty years.

The total number of cases of lead poisoning and of deaths from plumbism over the whole country drawn from Home Office statistics are as follows:

Year.	Cases.	Deaths.	Year.	Cases.	Deaths.
1900	1,018 including	38	1911	659 including	37
1901	865 ,,	34	1912	587 ,,	41
1902	629 ,,	14	1913	535 ,,	27
1903	614 ,,	19	1914	445 ,,	23
1904	597 ,,	26	1915	381 ,,	21
1905	592 ,,	23	1916	358 ,,	21
1906	652 ,,	35	1917	317 ,,	21
1907	578 ,,	26	1918 ,,	144 ,,	11
1908	646 ,,	32	1919	207 ,,	25
1909	553 ,,	30	1920 not yet published.		
1910	505 ,,	38			

The increase in the number of cases notified in 1919 and the larger number of deaths are attributed to the employment of men returned from the war and whose physique had been reduced, also to the re-employment of ex-service men who had been previously lead workers, and who had lost their tolerance to the metal. The number of deaths, it will be observed, has not been reduced in proportion to the number of cases notified.

If we take Newcastle similar improvement is observable.

Newcastle-upon-Tyne District: Lead Poisoning.

Years.	Males.	Females.	Years.	Males.	Females.
1900	187	17	1911	14	0
1901	102 (2)	17	1912	8	1
1902	73	3	1913	10	1
1903	57	6	1914	14	1
1904	65	7	1915	22	1
1905	49	1	1916	19	3
1906	40	2	1917	4	7
1907	34	3	1918	0	0
1908	69 (1)	6	1919	12	0
1909	24	6	1920	8	0
1910	10 (1)	1 (1)			

The figures in brackets ( ) are fatal cases, and are included in the totals.

Further confirmation of the above is evident if we take the admission of cases of lead poisoning into the Royal Victoria Infirmary over a period of thirty years. During the latter years of the decade ending 1890, before our inquiry began, there had been admitted into the Infirmary an average of 27 cases per year, of which 18 were women and 9 were men. In 1910 only 3 cases were admitted, and in 1920 only one case—a male.

It is not my intention to deal with the symptomatology of lead poisoning in detail. Here I would only remark that the severe forms of plumbism attended by blindness and by convulsions, and which were frequently observed, especially in female lead workers, thirty years ago and were extremely fatal, are now rarely met with even among male lead workers—a circumstance largely due to the abolition of stoving, to better means in use for the removal of dust, improved methods of production, also to weekly medical inspection of the workers, with power of suspension on the part of the doctor. In furtherance of these objects, and of the assistance rendered by Dr. Legge of the Home Office, Miss Anderson, the Principal Lady Inspector of Factories, and her staff, the Newcastle inspectorate, and by Professor Collis, I cannot speak too highly.

The abolition of female labour in the dangerous processes of lead manufacture in 1893 removed from the industry much of the stigma which had become attached to it as an unhealthy occupation, and while I was responsible for the recommendation, and had in consequence to withstand the hostility both of employers and employed, I believe that to-day manufacturers admit that it was the best thing for the trade. While both sexes are injured in their reproductive capacity by lead, the consequences of plumbism are more disastrous in women than in men. Miscarriage, stillbirths, and the death of infants shortly after birth from convulsions, are some of the sequences of lead poisoning of the mother, the interesting point being that while the conception may be killed by lead and thrown off prematurely the woman herself may exhibit no sign of the malady, nor have any of the symptoms of plumbism. In this respect lead poisoning recalls the action of the toxins of syphilis. A female lead worker can have several miscarriages and stillbirths, and she may also bear infants who die shortly after birth and in whose internal organs lead may be found, while she herself remains free from symptoms. With the ordinary symptoms of lead poisoning, such as colic and wrist-drop, you are all more or less familiar, but to many of you saturnine encephalopathy with convulsions is unknown. Some physicians seek to explain the nervous symptoms in this form of plumbism by pathological changes in the kidneys and the presence of minute quantities of lead in the brain; by others the symptoms are regarded as due to auto-intoxication consequent upon pathological changes in the liver and kidneys. The brain symptoms in these cases are not always the result of kidney changes, for the malady may occur without albuminuria, nor are they always due to the presence of lead in the brain, since the metal is not regularly found therein. The presence of structural changes in the liver places saturnine encephalopathy much on the same footing as those obscure forms of poisoning which occur in pregnancy and in syphilitic patients undergoing salvarsan treatment. It is a secondary poisoning. It is difficult to say what is the quantity of lead required in the body to cause death. There are no definite data. In the brain of one of my patients Professor Bedson found 4.04 milligrams of lead, estimated as metallic lead, and 3.41 in another. The cerebrum and cerebellum of a young female lead worker contained 34.6 parts of lead per million, or 0.779 grain of lead; and the same organs of another female lead worker 30.1 parts of lead per million, or 0.634 grain of lead. Taking the other organs of the body, Bedson found 37.8 parts of lead per million in the liver of one lead worker, equal to 1 grain per weight of organ, and 41.6 parts per million, or 0.819 grain of lead; in another, in the kidneys, 10 and 13.3, and in the spleen, 12 and 39 parts of lead per million.

Bilateral distribution of paralysis of limbs is suggestive of the operation within the body of a general poison—as witness "double wrist-drop" in plumbism, "double ankle-drop" in alcoholism and in poisoning by arsenic. Although "wrist-drop" is usually double in lead poisoning, the paralysis is frequently more marked in one arm than the other; the tendency is for the loss of power to be more pronounced in the limb whose muscles have been exposed to the greater strain, hence is explained the greater frequency with which in children the legs are more affected by lead than the arms. Although bilateral paralysis is characteristic of plumbism, there yet occur instances in which the loss of power is one-sided and its distribution extremely limited. In such cases the true nature of the malady may be overlooked. The presence of a blue line on the gums and the detection of lead in the urine are helps to a diagnosis. We know little of the minute one-sided degenerative lesions which occur in the brain of persons who are the subjects of chronic lead poisoning, and which are interesting from the workmen's compensation point of view. There may be only slight weakness of the muscles of one foot, accompanied or not, it may be, by feebleness of the muscles of the hand and wrist of the same side. Such is the picture of a lead-poisoned patient whom I saw in consultation for the first time nine years ago. He has never regained his physical fitness; he drags the right foot in walking; the grasp of the right hand is feeble, and there are flaccidity and weakness of the flexors of the distal phalanges of the fingers. The urine is free from albumin and lead; heart and internal organs are healthy, and his blood pressure is equal to 100 mm. Hg. By a physician seeing this patient for the first time the case would probably be regarded as late syphilis, but the paresis of right hand and foot developed

during the time he was the victim of subacute lead poisoning, and besides several blood tests have been made and always found to be negative. On a previous occasion I drew attention to the fact that a positive Wassermann reaction was occasionally found in lead-poisoned persons who had never had syphilis. When in Christiania last August I was asked to see a paint-works manager, aged 36, who, ten years previously when a steward in a vessel, was given twenty-four hours to have his ship coated with quickly-drying paints. He crushed the paint with his hands, and with the crew he worked hard for several hours, only making a break to partake of coffee, bread-and-butter, simply wiping and not washing his hands. A month afterwards there was loss of sensation in the tips of the right fingers and paralysis of the wrist and loss of sensation in the leg. Colic, rather sharp in character, developed, also diplopia. There was no blue line on the gums, so far as he remembers. There was obstinate constipation, the bowels were not moved for nine days. There is no specific history in the case; the patient's blood has been examined on several occasions, and has been in every instance found to be negative. There are feeble grasp of left hand compared with right, slight staggering, right knee-jerk absent, left present, and no longer diplopia.

A few months ago a plumber, aged 43, was sent to me from Greenock for examination. Seven and a half years ago, after having worked in all kinds of lead, he developed colic and diarrhoea, also paralysis of the left upper eyelid and of the ocular muscles, giving rise to diplopia from which he took two years to recover. In April of last year, when at work he again developed colic, had vomiting and diarrhoea. A day or two previously to this his left arm and left leg had become heavy and painful. Shortly afterwards speech became affected; this was followed by loss of power in the left side of the face and of the muscles of the left eyeball. There was never loss of consciousness. By the medical man who saw him an injection of a "German serum" was administered, with the result that the patient became worse, an uncontrollable diarrhoea supervened, also retention of urine. When I saw him he could not walk properly, the left arm below the elbow was somewhat rigid, there were incomplete paralysis of the left arm and leg, diplopia, pulse 120, blood pressure 180 mm. Hg, excessive left knee-jerk, and hardly any response on tapping the right patellar tendon. The heart was normal; there was no albumin in the urine but there was a distinct trace of lead. There were no basophiles in the blood, only a slight increase in the number of the polymorphs. Wassermann's tests were negative. We know that lead of itself is a cause of arterio-sclerosis without the kidneys being necessarily affected. The case was evidently one of thrombosis of small cerebral vessels, not of syphilitic origin but probably a consequence of lead, and as a sequel of the endarteritis there had occurred limited areas of degeneration in a portion of one cerebral hemisphere. It is because some of these cases so closely resemble vascular syphilis that I bring them before this audience. I have recently seen other instances of one-sided lesions in painters in whom there had occurred endarteritis of minute vessels of the brain, followed by degenerative changes and giving rise to only the most limited loss of muscular power, and which I could only attribute to lead in the absence of such other causes as syphilis and kidney disease. The Greenock patient took his case to one of the courts in Scotland and won it—an eminent professor of medical jurisprudence having taken the view which I had done that the man's illness arose out of his occupation.

The so-called lead-poisoning of painters requires further elucidation, for the last word has not yet been said upon this important subject. Are the symptoms always and really due to lead? The illness is usually attributed to the inhalation of vaporous material arising from the paint, to the absorption of paint which has fallen upon the skin, to the practice indulged in by some painters of holding the brush between their teeth in order to liberate both hands for a few moments when at work; to the inhalation of dust when sand-papering flat surfaces, and to the inhalation of fume emitted during the burning off of old paint. Acute symptoms may arise, such as severe headache, vomiting and colic, or there may occur wrist-drop, and when this develops and is bilateral it is always more pronounced in the muscles which have been most used. Considerable discussion has centred round the question as to whether the symptoms met with in house painters are the result of lead *qua* lead present in paint, or are consequent upon the inhalation of vapour arising from the solvents used, such as turpentine, benzine, and other spirituous bodies. In exposing animals to the vapour given off from freshly painted surfaces their health suffered, and in exposing others to the vapour of turpentine these animals also suffered, and at the autopsy I found the lungs engorged, and the tubular epithelium of the kidneys, on microscopical examination, the seat of cloudy swelling. Sir Kenneth Goadby is of the opinion that the illness complained of by house painters is more the result of the turpentine and thinners used than lead, and as the opinions of chemists are still divided as to whether lead is present in the emanations from painted surfaces, this is a subject to which I am giving, with other observers, fresh attention.

For some reason or other it was decided at the International Labour Conference of the League of Nations held in Washington last year that the use of white lead paint should be prohibited. The subject is to be discussed at a conference of the League of Nations in October. It is a vital question, since it threatens important industries. I have never found lead poisoning prevalent to any extent among house painters in Newcastle. If lead carbonate is no longer to be allowed to be used as a pigment something other will have to take its place. Such a substitute, while being innocuous to those who use it, would have to possess equal powers from a trade point of view to the material which it seeks to supplant. Of the pigments suggested I shall only mention two, namely, lead sulphate and zinc white. Lead sulphate is soluble in the gastric juice, and would therefore be harmful, and as regards zinc white, not only in my opinion does it not possess the resistance to external atmospheric conditions which lead carbonate possesses, but it frequently contains impurities such as arsenic, and since it too has to be mixed with thinners, inhalation of the vapours given off would not be free from danger. The subject demands further experimentative and unbiassed consideration, for since by regulations, as statistics show, the number of notified cases of lead poisoning has fallen from hundreds to tens, by still stiffening regulations, and by improved medical inspection, the dangers to health consequent upon the use of lead compounds can yet be materially reduced, and I base that remark upon personal experience of the cheap manufacture of pottery which is a home industry in many parts of Hungary. In my early visits to Hungary I found lead poisoning extremely prevalent. Familiar as I was with lead poisoning when as an industrial disease it was at its worst in Great Britain, this was nothing compared with that which prevailed in the pottery villages of Hungary. Several of the men who were employed in the industry were paralyzed in their limbs, as were also their wives and children. So large was the number of miscarriages and so heavy the infant death rate that in some of the villages there were hardly any children. The dipping of the ware was carried on in the living room; in this room the man turned the clay upon the potters' wheel and the wife assisted in dipping the ware in the lead glaze. In this workroom the family lived, ate, and slept. The dried dust given off from the dipped ware and from the splashed glaze rich in white lead was disseminated through the room. It was inhaled and it was swallowed with the food. The late Dr. Chyzer, who accompanied me in my visits, found lead in the underclothing of the children and in the blankets in the cradles. In my report to Mr. Csterenyi, then Minister of Labour, and to his successor in office, Baron Harkanyi, I recommended, among other things, that the dipping and the stoving of the ware should be carried out in a communal building away from the homes of the potters. This was done, and when a few years afterwards I again visited Hungary Baron Harkanyi invited me to go to Czákvar to see the result of the operations. I was received by Count Esterhazy, who subsequently became Prime Minister during the recent war, and conducted by him to the communal workshop, where everything was in perfect order. Dr. Grässer, the village medico, accompanied us. He had prepared for me a list of the number of cases of lead poisoning which had occurred in Czákvar for twenty-eight years. Between 1885 and 1912—that is, in twenty-eight years—there were 655 men and 193 women, or a total of 848, who had suffered from lead

poisoning. In the decade for 1880 the number of potters' families in Czákvar was about 100; at the end of 1906 there were only 72 men and 53 women who were associated with the industry, and in that year there were 37 cases of lead poisoning. In the year 1912 the number of potters' families had fallen to 50, with 14 cases of lead poisoning. By this time the potters had begun to work under the new regulations. When I again visited Czákvar in August, 1913, only 3 cases of lead poisoning had occurred during the eight months, and one of the most gratifying things Dr. Grässer said to me was that on the day previous to my visit he had gone over the whole of the large village trying to find a child suffering from lead poisoning, and that he had been unable to find one. If such a satisfactory result can be obtained by improving the methods of production without dislocating an industry, is it not advisable, before rushing to such an extreme measure as prohibition, to see first what regulations can accomplish? If additional evidence is required to support my argument, it can be seen in what has been achieved in the manufacture of pottery in Great Britain.

When Sir Edward Thorpe and myself, at the request of the Home Office, undertook an inquiry into lead poisoning in the Potteries, there had been several deaths and much ill health due to plumbism. On concluding our inquiry we did not recommend that the use of white lead glaze should be prohibited. We suggested rather that for certain kinds of cheap ware, also that required for sanitary purposes, a satisfactory glaze could be found free from lead, but that for finer types of earthenware which manufacturers insisted required lead, a glaze containing the metal might be allowed so long as the lead was fritted and thereby rendered more insoluble, and the results are seen in the marked declension in the number of cases of lead poisoning.

Lead Poisoning Cases.

Whole Country (Totals).

	Potteries.		Paint and Colour Works.	
1900	200	(8)	56	(1)
1901	106	(5)	55	(0)
1902	87	(4)	46	(0)
1903	97	(3)	39	(1)
1904	106	(4)	32	(1)
1905	84	(3)	57	(1)
1906	107	(4)	37	(0)
1907	103	(9)	35	(1)
1908	117	(12)	25	(0)
1909	58	(5)	39	(2)
1910	77	(11)	17	(1)
1911	92	(6)	21	(0)
1912	80	(14)	19	(0)
1913	62	(11)	22	(1)
1914	27	(6)	21	(0)
1915	26	(4)	12	(0)
1916	23	(7)	22	(0)
1917	15	(7)	10	(0)
1918	11	(1)	3	(0)
1919	21	(8)	11	(0)

The figures in brackets ( ) are fatal cases and are included in the totals.

Phosphorus and the Manufacture of Lucifer Matches.

If there is one industry to which industrial hygiene has been of the greatest service it is the manufacture of lucifer matches. Between 1900 and 1907 inclusive, out of 4,000 lucifer match makers in this country, 13 suffered from phosphorus necrosis of the jaw-bone. Matters were even worse in Austria. Between 1900 and 1908, among 4,500 lucifer match makers, there occurred 74 cases of necrosis; but Teleky, as the result of a personal inquiry, found that in the ten years 1896–1905 there had occurred at least 350 cases.

I visited match works in England and Scotland, in France, Prussia, Belgium, Sweden, and Hungary, and I saw some of the ravages caused by phosphorus. In Prussian Silesia—to take only one instance—I found a woman, working in a match factory, the whole of whose lower jaw had been removed by a surgeon on account of necrosis. It is the white or yellow phosphorus which does the harm, the red, or amorphous phosphorus, is free from risk. There are two types of phosphorus poisoning: (1) the constitutional known as phosphorisme, in which there is anaemia and albuminuria and a peculiar fragility of the bones, so that an affected workmen going along a road may have the long bone of one of his legs broken simply by the muscular effort required to lift his foot on to the footpath; and (2) the local form known as *phossy jaw*, an extremely painful affection in the early stages, and one which ends in a slow death of the bone. Once this takes place the decaying bone keeps discharging pus into the mouth, and as this is swallowed with the food it causes gastritis, or it finds its way into the trachea and sets up a bronchopneumonia. When the disease is seated in the upper jaw it may extend to the base of the skull and cause a fatal septic meningitis. It was this unhealthy industry which Sir Edward Thorpe and I were also invited to report upon. Meanwhile chemists had set themselves the problem of finding a substitute for the dangerous white phosphorus. At Aubervilliers, near Paris, I saw several experiments carried out with several suggested substitutes, but the one which seemed to fulfil all requirements was the sesquisulphide of phosphorus. In this country a large firm of matchmakers was extremely wishful to use scarlet phosphorus, since they believed it to be harmless, but as I found on experimentation that scarlet phosphorus set up acute structural changes in the brain and caused death, the request was not granted. Since the introduction of sesquisulphide of phosphorus into lucifer match factories not only has phosphorus necrosis disappeared and the industry become free from danger, but as the matches now in use are no longer poisonous, suicidal and the accidental deaths of infants from phosphorus poisoning have ceased. Beyond an occasional dermatitis arising in workers as a result of contact with the sesquisulphide of phosphorus, the whole industry has become transformed from a dangerous to a harmless trade.

Carbon Monoxide Poisoning.

It is unnecessary to dwell upon the symptomatology of acute carbon monoxide poisoning, but as an illustration of acute poisoning by the escape of waste gas from the engine into a closed motor-car, I will briefly mention the case of two patients whom I saw in consultation. These gentlemen, aged 72 and 56 respectively, had motored from London to Yorkshire. Breaking their journey in York for a cup of tea, the younger of the two occupants of the car complained of headache and a feeling of sickness which prevented him taking tea. On the car reaching its destination both of the travellers were found to be deeply unconscious. It was not until the early morning that oxygen was obtainable. Three and a half hours after the use of oxygen there were signs of returning consciousness in the younger patient, and it is to him I chiefly refer. In the early stages both pupils were found to be widely dilated, the pulse was 136, respirations 38; there was also intermittent muscular rigidity amounting at times to opisthotonos. When I saw the patient later on in the day there were gleams of consciousness, the face was flushed, the pupils were mid-dilated, the right responding more slowly to light than the left, there was involuntary micturition, knee-jerks were excessive, plantar reflex was vigorous. Babinski's sign was absent, heart and lungs were normal, the temperature had risen to 101.4°, and the pulse and respiration had fallen to 120 and 36 respectively. The blood gave the spectrum characteristic of the presence of carbon monoxide, and on microscopical examination it showed a marked leucocytosis affecting particularly the polymorphs and lymphocytes. This patient slowly but imperfectly recovered. Six weeks afterwards he was the subject of insomnia; was restless and fidgetty; he was the victim too of involuntary muscular twitchings and of an inability to apply himself to work. Although it is twelve months since the accident there still remains a considerable amount of mental depression and of physical and mental unfitness for work. The older patient who, in the early stages and when only partially conscious, was the subject of a restlessness that made it difficult for him to be restrained and kept in bed, has made an excellent recovery. His blood also responded to the spectroscopic test for CO.

In my book on *Diseases of Occupation* I describe some of the after-effects of CO poisoning met with in men who had been employed in charging blast iron furnaces. In these men, after the early symptoms of headache and sleepiness had passed away, there occurred incomplete loss of power in the limbs; subsequently speech became affected. Recovery was incomplete, for although the power of walking returned, the gait was slow and stepping; the grasp of the hand, too, was feeble. There were nystagmus and a degree of nervous excitement and exaltation such as one occasionally observes in toxic hysteria. Two years afterwards the condition of these men, from a health point of view, had but little altered for the better.

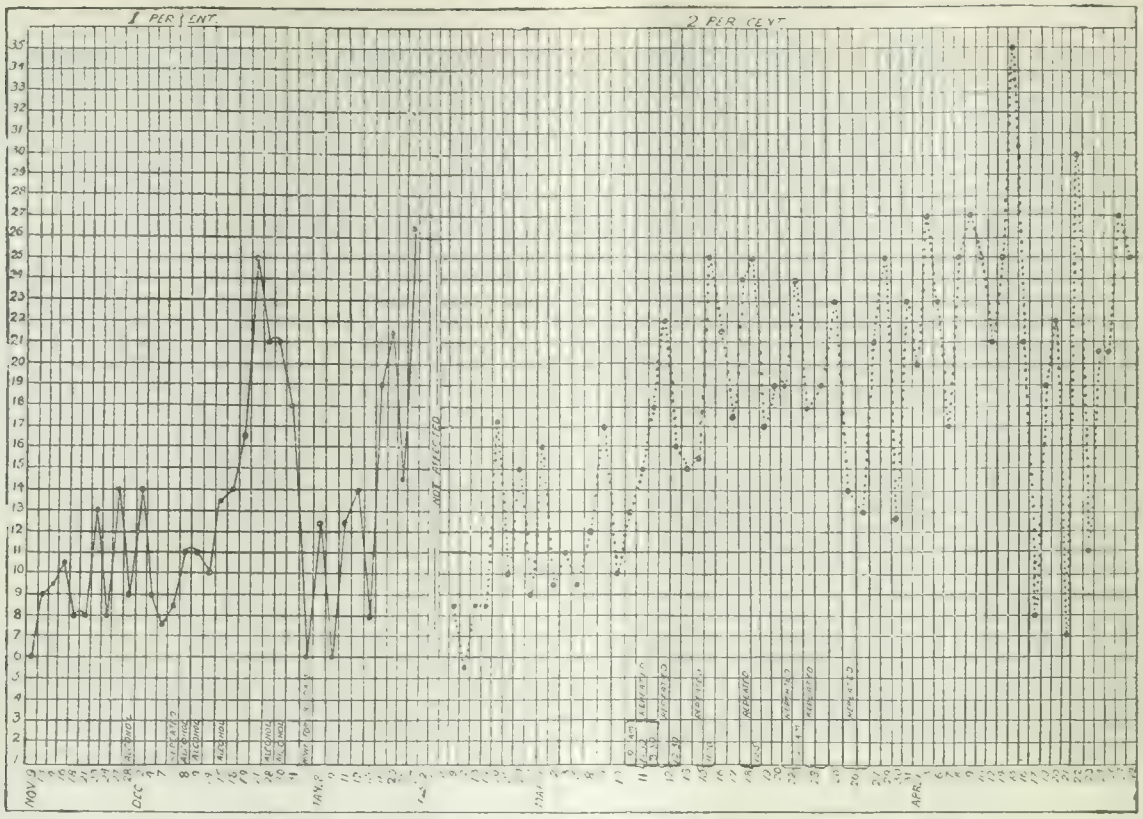


CHART 1.—Carbon monoxide. Rabbit. Showing imperfect tolerance created to the gas.

We are not quite familiar with the effects of small quantities of carbon monoxide daily inhaled over a lengthened period, nor with the pathological changes which may be set up in the body. To this subject Professor Glaister and Dr. Dale Logan have given careful study. Of two things I am convinced: one is that the inhalation of minute quantities of CO is probably the cause of some minor forms of illness which are not diagnosed, and the other is that a certain tolerance can be created in regard to CO. Dr. D. W. Inglis of Hebburn has had the opportunity of examining boys who are employed in a large iron works on the banks of the Tyne. Several of these boys after working a few months complain of general lassitude and a feeling of weariness which the physical character of their employment does not explain. They cannot join in games nor undergo the exertion of boys of their own age. If they attempt to do so they suffer from palpitation and breathlessness. Their appetite gradually becomes impaired and they become the subjects of insomnia. In them, too, the rosy hue of health is replaced by a peculiar pinkish coloration of the cheeks. In none of them is there the appearance of anaemia. Dr. Inglis traced the cause of their indisposition to the inhalation of CO in the brass-melting department of the factory. In the blood of one of the boys he found on spectroscopic examination evidence of the presence of CO. On questioning the men employed in the brass foundry some of them reminded him that years ago as boys they too had gone through the same experience as the lads were having now, that they had been treated by him for the same malady, and that as they had grown older they no longer suffered. These cases suggest a greater susceptibility on the part of growing lads to the harmful influence of CO than adults, also that a degree of tolerance to the gas is probably created.

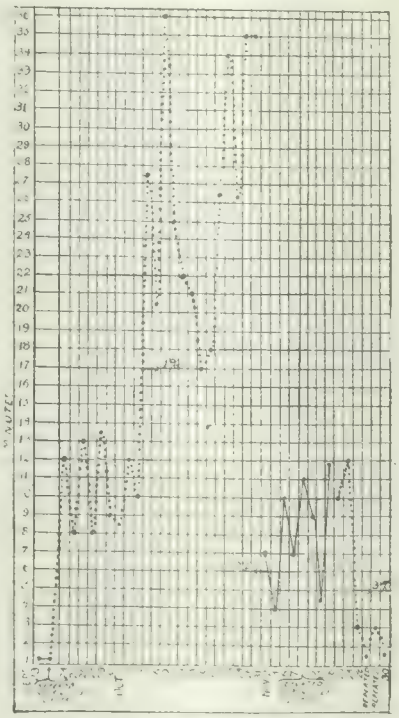


CHART 2.—Carbon monoxide. Rabbit. Tolerance to the gas.

The question of tolerance attracted attention several years ago and was dealt with by Naismith and Graham in the *Journal of Physiology* in 1906. Guinea-pigs were allowed to inhale CO until there occurred a 25 per cent. saturation of the colouring matter of the blood with the gas. They received the gas daily for several weeks. Most of the animals gained in weight; they apparently suffered no inconvenience; the red blood cells increased in number and by this means the blood was compensated against the CO. The experiments were carried further so as to produce 35 to 45 per cent. saturation of the haemoglobin, and they found that when a normal animal was placed in an atmosphere sufficient to cause 45 per cent. of haemoglobin saturation, it died in from three to four days, while an acclimatized animal remained in good health. Haldane showed that when an animal is exposed to 0.08 per cent. of CO in air the haemoglobin will in due course become almost half saturated with CO. Since men, like animals, can become acclimatized to CO it is a question worth considering whether men who in their occupation daily run the risk of being exposed to the gas should not undergo training in regard to it. How long the tolerance lasts I am not prepared to say, but these charts convey some idea of the tolerance which is created. A considerable degree of tolerance of uncertain duration develops with exposure to 1 and 2 per cent. of CO, but it would appear as if after exposure to 3 per cent. the blood during twenty-four hours is unable to rid itself of CO to any extent before the next reinhalation of gas. It is difficult to say just how CO is eliminated from the blood, but it can scarcely be a mass

elimination; it is more likely that minute portions of the haemoglobin of the red blood corpuscles, probably the peripheral, first give off the gas, and having once again become fairly normal haemoglobin, this on re-exposure to CO readily absorbs the gas and the animal dies asphyxiated.

Mining.

Although a hazardous occupation, mining is not so dangerous as it was a few decades ago. Taking the mines generally, coal, ironstone, and metalliferous, the number of persons employed therein in 1851 was 220,000. At that date the number of deaths from accident was 960, or 4.5 per 1,000. In 1912 the number of persons employed was 1,089,090 and the total deaths 1,550, or about 1.37 per 1,000 employed. On casually looking at the figures supplied by the Home Office it would at first sight appear as if no important change had taken place in regard to the number of deaths, but when the number of workmen is considered it is observed to be five times greater in 1912 than it was in 1851. The number of accidents remaining the same in a population five times greater than in the early half of last century, this circumstance shows that the dangers of the occupation have been reduced to one-third what they were. In 1851 the number of miners killed by accident was 4.35 per 1,000, in 1912 it was 1.37 per 1,000, a reduction of two-thirds. The largest number of accidents occurred between the ages of 25 and 35, and the same remark applies to accidents which disable men for more than seven days. Falls of ground appear to be the most common cause; they accounted for 446 cases in 1912; the deaths caused by explosions of coal dust were 9.4; 6.1 were shaft accidents and 26.3 per cent. were due to miscellaneous causes underground. The number of deaths caused by explosions of fire-damp and coal dust is fortunately small. For the ten years prior to 1912 the average death rate from this cause was 0.168, and in 1912 it was 0.138.

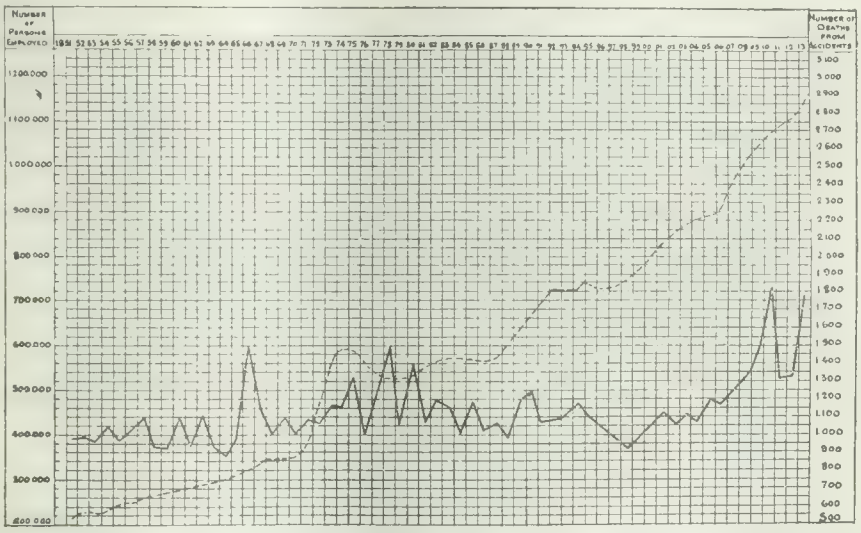


CHART 3.—Number of persons employed and the number of deaths from accidents from all causes at mines of the United Kingdom both under and above ground from 1851 to 1913. (From 1851 to 1860, coal mines only; from 1861 to 1872, coal and ironstone mines only; from 1873 to 1913, all mines under the Coal and Metalliferous Mines Regulation Acts.) "Persons employed" to be read from left-hand scale. "Deaths from accidents" to be read from right-hand scale.

The reduction in the number of deaths of miners is the result of careful inspection of the air in particular workings before the miner descends to the hewing of coal, of better signalling, and improved ventilation by the double shaft system, also of better supervision of the haulage. As showing the improvement in the death rates per 1,000 men employed we need only glance at the results in the Newcastle and Durham areas:

Deaths per 1,000 Employed.

Newcastle Area.		Durham Area.	
1864-1872	= 2.64	1873-1882	= 1.992
1873-1882	= 1.42	1883-1892	= 1.290
1883-1892	= 1.35		

Under the Workmen's Compensation Act of 1897 no compensation was paid to miners until they had been off work for a clear fortnight, but the Act of July 1st, 1907, provides for compensation being paid if the miner is disabled for one week, also that if disabled for fourteen days he receives compensation for the first week. In some of the areas the number of cases of accident of two weeks' duration or a little more was in 1918 double what it was in 1906. The rise in the figures suggests that the men laid off work for two weeks where one formerly sufficed; and as regards major accidents, but which do not last more than twenty-six weeks, the information is equally interesting. In one area in 1910 there were 29,400 accidents; the weeks paid for numbered 130,000, or 4.44 weeks compensation per person consequent upon accident. In 1920 there were 15,600 miners injured, with 76,500 weeks paid for, or 4.9 weeks per person.

In these days, when coal miners and their social circumstances have been so much before the public, it may not be out of place if I draw attention to what their work has been during the last twenty years:

	No. of Men Employed.	Output of Coal in Tons.
1900	767,901	225,170,153
1905	813,418	236,111,150
1910	1,032,702	264,417,588
1914	1,133,736	265,664,393
1915	953,642	253,179,446
1916	998,065	256,348,351
1917	1,021,340	248,473,119
1918	1,008,857	227,714,579
1919	1,191,313	229,743,128
1920	1,248,224	229,503,435

As coal miners are a healthy class, and do not suffer from the form of pulmonary diseases to which gold miners are liable, I have simply drawn attention to the hazards attending them in their occupation.

Fatigue.

If there is one side issue of industrial hygiene which has recently attracted attention and to which an address of this nature must refer, it is the subject of fatigue. A hundred years ago the world moved, as the saying is, more slowly than it does to-day. Men took things more quietly, there was neither the strain nor the competition characteristic of modern times. Hard work was followed by fatigue then as now, but it affected principally the muscular system; to-day it falls more upon the nervous system. Collective work is carried on in over-heated factories amid the din of machinery and it demands close attention. The reality of fatigue was brought home to us by the large number of men and women who broke down in munition work during and after the war. There is a limit beyond which the human machine cannot produce satisfactorily. Fatigue as subjectively experienced is a series of ill-defined sensations not always localizable, attended by disinclination for work and by a desire to rest. Professor Drever[1] thinks that the word "weariness" pretty accurately describes the subjective state in the individual, and that objectively fatigue can best be defined in terms of output, as shown by a lowered efficiency in the organism, and revealed by impairment of the quality, and diminution of the quantity, of work done. The delicate nerve cells and nerve endings of the human body become readily fatigued, but if we take fatigue to mean an inability to carry on as previously, then fatigue is not confined to living tissue alone, for a similar event occurs in the inorganic world. Steel wires when over-strained play out and behave as tired nerves. It would be of the greatest assistance if we could with a certain degree of definiteness ascertain just to what number of hours a man can work before his energy begins to fail, for once this takes place, if work is continued, it is unprofitable. Clearly the number of hours of work cannot be the same for all individuals or for all trades. As regards fatigue, much will depend upon the previous health and upbringing of the worker, how

he is fed and housed, and how he spends his leisure hours.

The recent war has been followed by disastrous consequences in the case of many of the discharged soldiers. The long weary vigil in the first line of trenches and the hardships endured, also the comparatively idle months spent away from the firing line, have made many of the men unwilling or unable physically to return to their previous employment. Some of them have lost their taste for work, and they clamour, like those who remained at home, for shorter hours of labour. Shortening of the shifts and a change in the hours of work are notable facts of the times. Men no longer go fasting to work at 6 o'clock in the morning and breakfast in the factory at 8 o'clock. They leave home, or ought to, after a comfortable breakfast in time to reach the factory by 7.30 a.m., and, as Collis and R. M. Wilson in their writings show, it has been to the advantage of employer and employed. Better timekeeping has been the result and there has been less sickness. Shortening of the hours has in most industries been followed not by diminished but by increased production and by a rise in wages, but as there is a limit to which hours can be shortened and productive efficiency retained, it is a question whether, in some trades, this limit has not now been reached. It is unwise to work men and women to the last unit of their energy, for not only is work under these circumstances never so good, but fatigue—although his contention is not supported by Dr. Vernon—may become a cause of accident. It is now generally admitted that fatigue is the result of the action upon the tissues of such poisonous substances as carbon dioxide and lactic acid formed by the chemical dissolution of the glycogen of overworked muscles. These bodies act not only upon the muscular tissue itself and the nerve endings in the muscles, but since they find their way into the blood stream they poison the higher nerve centres in the brain, thus converting fatigue, the outcome primarily of localized changes in the neuro-muscular apparatus, into a general state of the organism, and of these two forms of fatigue, central and local, the central or general fatigue is the more important.

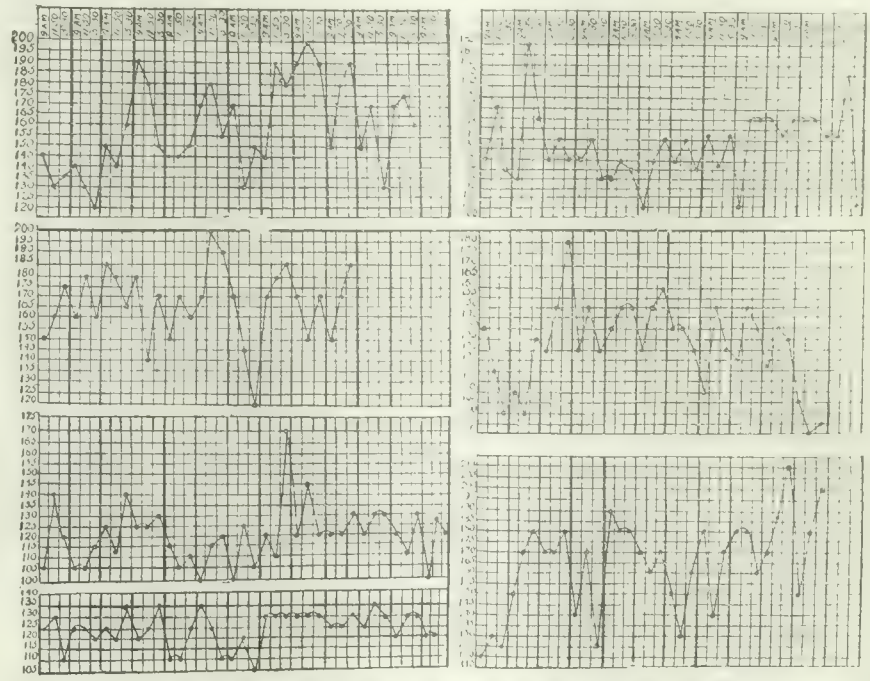


CHART 4.—Register of hand-grips in female munition workers, showing occasionally higher grips just before leaving off work for the day than on commencing it.

We are familiar with the excellent research work which has been done by the Medical Research Council in regard to fatigue, and by such enthusiastic workers as Vernon, Leonard Hill, Stanley Kent, Myers, and others, that it is unnecessary for me in the short time at my disposal to traverse ground they have already so well covered, but there is one aspect of the question I will allude to, and that is the condition of blood in fatigue.

Blood in Fatigue.

It is known that the transference of blood from a fatigued to a healthy animal produces symptoms of fatigue in the receiving animal. Following up this fact, Dr. Otto Burkard of Gratz[3] has demonstrated the presence of a leucocytosis in the blood after exhausting work—a form of leucocytosis which Grawitz named myogenous. He found this in healthy men who had been subjected to hard work from thirty to forty minutes. Even as early as fifteen minutes after the exercise there is already observable an appreciable increase in the number of white corpuscles. There may be no further increase, for when signs of fatigue become manifest there may occur a diminution in the number of leucocytes. After the individual has rested for an hour the condition of the blood is again practically normal. An interesting fact in Burkard's investigation is that all the white corpuscles are not affected. The slight leucocytosis which occurs after the first fifteen minutes concerns mainly the lymphocytes, but after a period of thirty minutes' work these diminish, and their place is taken by neutrophile corpuscles, and the explanation he offers is that when muscles are in active operation they produce substances which, passing into the blood stream and circulating in it, stimulate the blood-making tissue of the medulla of bone. Grawitz regards this myogenous leucocytosis as physiological and as necessary to the organism in order that it may detoxicate itself, so to speak, from the harmful substances. When, therefore, during occupation the work is hard and is continued day after day, the repeated stimulation of the osseous medullary tissue by causing an over-production of neutrophile cells may become injurious not only to the medullary tissue itself but to the body as a whole. He compares daily work, which is physiological, with fatigue, which is pathological, and he asks himself the question whether the myogenous leucocytosis which is physiological persists, and he tries to find an answer in the kind of leucocytes which are present in the blood. The blood of healthy individuals contains polymorph neutrophiles. These constitute one of the completely developed types of leucocyte. In the blood of persons suffering from infectious disease mononuclear cells are found, some of which are immaturely developed owing to the rapidity with which they have been thrown off by the medulla of bone in its reaction to the toxins circulating in the blood. Such a leucocytosis is not physiological, for the stimulus which has given rise to these cells has exceeded that which operates in normal conditions. Burkard examined ten young healthy men who were working in a glass factory. During nine hours of work they were pretty constantly in movement carrying hot glass to a refrigerating apparatus. Films of blood were taken before work, also three and nine hours after work; these were suitably stained and examined, and he found an increase of neutrophiles of the pathological type, an increase which was proportional to the duration of the work. Burkard's opinion, therefore, is that fatigue can be detected by an examination of the blood before fatigue has developed to such a degree as to be harmful to the individual. He finds, as I have already mentioned, the same type of leucocytosis as prevails in infectious fevers. I glean, therefore, from Burkard's investigations that while fatigue, as first experienced by workmen, primarily manifests itself in the muscles and subsequently in the nervous system, it is this alteration of the blood content, consequent upon over-stimulation of the medullary tissue of bone, which is largely responsible for that reduction of the vital resistance which predisposes fatigued persons to illness.

During the war, when Dr. Pallett was called up for military service, I was requested to take charge of the munition workers in the filling shops at Derwenthaugh and Lemington Point. I thus became responsible for the health of several hundreds of men and women belonging to Armstrong's works. The firm was fortunate in having as the manager of its three munition factories Mr. Pike. It may interest you to know that Lemington and Derwenthaugh were the first factories established to render aid to the Government after the outbreak of the war, and as an illustration of the part these works played in helping to win the war, I may say that during the years 1914–1918 the Derwenthaugh factory turned out 12½ million rounds of 18-pounder high explosive and shrapnel shells, weighing 181,250 tons, the total weight of the explosives alone used being 9,774 tons; that at Lemington and Alexandria factories, the total number of 18 in. to 3 in. shells filled was 3¾ millions, the total weight of which was 145,888 tons; the number of 18-pounder shells charged with lyddite was 4½ millions and the total weight of the explosives used in connexion with these was 19,398 tons. In order to enable the Elswick firm to carry to a successful issue this gigantic task, the work was carried on under a day and night shift system. As several of the munition girls lived a few miles from the city and had to travel by train, many of them had to rise as early as half-past four in the morning, and it was frequently 7.30 to 8 o'clock before they reached home in the evening. Notwithstanding this and the difficulty of obtaining proper quantities of suitable food, during the control, there were remarkably few breaks-down in health, considering the long hours of work and the hardships incidental to transport. Nor as the result of exposure to and handling of the high explosives was there a large amount of sickness among the male and female operatives. There were several cases of dermatitis, anaemia, throat and stomach troubles, but during the two years and more that I had charge of the health of the workers no death, fortunately, occurred from T.N.T. poisoning and no serious illness traceable to the occupation. My predecessor in office handed over to me the works in good hygienic order, also hundreds of workers in, comparatively speaking, good health, so that it was easy for me to carry on.

I was anxious to ascertain to what extent fatigue was experienced by the female workers. No method of estimating fatigue hitherto in vogue has been quite free from defects, so that the simple method of testing muscular efficiency which I employed is not above cavil. With the ordinary spring dynamometer used in hospital practice for estimating the muscular strength of patients the hand-grips of women were taken by the lady supervisor, a B.Sc. of a university, before breakfast, before the mid-day meal, and again just before giving up work in the evening. It was to be expected that at the end of a nine-hours' shift the instrument would register less than the figures obtained in the earlier hours of the day, and while this was usually the case it was not so in every instance, for on certain occasions, as seen in the charts, the evening grip registered higher than that of the morning or mid-day. Admitting that the value of the readings of the dynamometer is diminished by "knack" or the particular manner in which people handle it, yet it cannot be said that either this circumstance or habit played any recognizable part in the results obtained. The occasional increase of muscular strength was more frequently observed in women who were employed in such heavy work as shell shifting. I am unable to offer any explanation as to the increased muscular strength at the close of the working day.

Industrial Disease and Compensation.

It is only within recent years that diseases arising out of employment have been scheduled under the Workmen's Compensation Act. Previous to this accidents arising in the course of work had been compensated. An accident was a definite fact; something had occurred at a particular hour on a particular day, that there was no doubt as to the relationship of the injury and the employment, but in the case of an industrial disease, such as plumbism, the malady had developed so insidiously that it could not be traced to one particular day or to the absorption into the body of a definite quantity of lead. It was owing to this indefiniteness, so jurists pleaded, that occupational disease could not be considered as an accident occurring at work and therefore entitling to compensation. Industrial poisoning, however, might be regarded as an accident if when a man was at work he was suddenly overpowered by an escape of gas, such as carbon monoxide, and yet the same man exposed for weeks or months to a leak of carbon monoxide and whose health had become slowly undermined, perhaps even more ruined than a fellow workman who had had a fractured limb or been acutely poisoned but had recovered, would have been refused compensation. To bring occupational disease within the scope of the Workmen's Compensation Act it was necessary to drop the idea of regarding such maladies as accidents and to consider them as incidents arising in the course of employment, and caused by it, and thereby entitling to compensation. The law had to be modified so as to include these diseases, and here I would remark that the greatest care and discretion ought to be exercised by medical men in expressing their opinions and in signing certificates as to the complaints of men and women who are employed in occupations that are known to be unhealthy. The spoken or written word is always difficult to retract. Painters, white lead workers and plumbers, for example, are liable to the same illnesses as other mortals. Without careful consideration it is not enough to accept occupation on the statement of a patient or his friends, as the cause of his illness. A few months ago I was consulted by an insurance company in regard to a claim for compensation in the case of a discharged soldier, aged 43, who had died under the following circumstances. During the war, when in Catterick Camp, he had been engaged in painting huts; he developed colic, and as his health was unsatisfactory he was discharged. After a few months' rest he resumed his occupation as a house painter. One evening after tea he was suddenly seized with acute abdominal pain, but did not vomit. Becoming worse, the doctor who saw him, on receiving the history of the patient's occupation, called the illness "lead poisoning," and ordered poultices to be applied to relieve the pain. Next morning the patient rambled a good deal, and raising himself in bed he suddenly expired. Knowing that death in uncomplicated lead colic is an extremely rare event, and that the symptoms exhibited during the last hours of life did not quite confirm the diagnosis, we made a *post-mortem* examination of the body on the following day, and we found a perforated gastric ulcer with generalized peritonitis. In the case of other persons who had been working with lead products and whose abdominal pains had been attributed to plumbism, I found the cause of death to be not saturnine poisoning but malignant disease of the intestine. Each case of occupational disease claiming compensation must therefore be judged on its own merits. But for the *post-mortem* findings in the case I have referred to, compensation would in all probability have had to be paid.

It is with trade poisons as with those of an infectious origin, some persons are more susceptible than others. The amount of posion absorbed may be so small that for a long period no harmful effects follow, and then without any explanation other than perhaps some failure in the elimination whereby the balance of intake and output is broken, the retention limit is overreached, and symptoms unexpectedly arise. To the slow absorption and tardy development of symptoms the term chronic industrial poisoning is given, but even in these cases spmptoms may suddenly and unexpectedly arise, so that while the symptoms appear to be acute they are the outcome of a long period of gradual absorption. It is no uncommon event to find men who have worked in a dangerous trade for many years to be healthy and free from complaints. In these men a degree of tolerance has been established, but should some unusual incident arise the symptoms of trade poisoning may without warning suddenly develop, a circumstance which reminds us that industrial poisoning can be latent and, therefore, can be overlooked.

A few years ago I had a male patient under my care in the Royal Victoria Infirmary; he was suffering from lead poisoning, there were the usual signs and symptoms, colic and double wrist-drop, with signs of aortic dilatation. He made a good recovery and acting upon my suggestion he did not return to the lead works, but followed some other employment. Two to three years afterwards he was readmitted into the infirmary under the care of one of my colleagues, who, finding him the subject of aortic aneurysm, prescribed for him fairly large doses of potassium iodide. Within two weeks the patient redeveloped double wrist-drop, there reappeared a blue line on the gums, he rapidly

emaciated, and in the course of a few weeks he died, not from aortic aneurysm, but from plumbism. It only required in this patient a few doses of potassium iodide to cause death by stirring into activity and by inducing reabsorption of lead which had been lying dormant in the tissues for years.

Since industrial medicine has come to stay, facilities will in the future have to be provided to medical students and young graduates to become familiar in a practical manner with its objects. Never were the times more opportune than to-day. The prosperity of a nation is intimately bound up with the health of the people who compose it. Preventive medicine has, practically speaking, swept these islands clear of typhoid fever and considerably reduced the mortality of diphtheria. What it has accomplished on the side of public health it can also accomplish in regard to occupational disease. The die has been cast. There is a psychology of industry just as there is a physiology. Psychology is no longer simply "the science of mind or soul," but "the science of the facts of human nature and behaviour," and there is no department of human activity which offers greater scope for its study and application than industry. Employers no longer regard "industrial hygiene" as something to be turned down on the ground of its interference with labour and the conditions under which it is carried on. They recognize that it introduces into industry just that something with a touch of humanity in it which softens the asperities of labour, makes occupation more healthful, and tends to bring employers and employed into closer touch with each other. Had it not been for "welfare work" carried on during the years 1914 to 1918 the enormous productions of munitions could hardly have taken place, and without it we would have lost the war. Industrial medicine and welfare work go hand in hand. Invention and chemical research tend to make industrial processes, if not more complicated, sometimes more dangerous, as was the case in the early days of the war with the handling of certain high explosives, but the same inventive skill which created temporary dangers showed itself equal to supplying an antidote to them or of finding a substitute. In the ever-enlarging sphere of industrial enterprise, to which the various sciences are contributing, and the needs of the world are calling for, lies the opportunity of Industrial Hygiene.

REFERENCES.

[1] *The Psychology of Industry*, p. 61. Drever—Methuen. [2] *Il Lavoro*, No. 3. Milano, July 31st, 1920.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUPERFOETATION.

THE following case is of interest on account of the difference in the period of gestation between the two foetuses.

On November 20th, 1920, I was consulted by Mrs. X., aged 18½ years, as to whether she was pregnant or not. She had been married on September 30th previously, and had had scanty menstrual flow in early October and early November. She had morning sickness and there was some slight knottiness in the breasts. I told her that most probably she was pregnant. On March 1st, 1921, she consulted me again. She had had slight haemorrhages at irregular intervals, but was undoubtedly pregnant, for there were foetal movements, and the foetal heart could be heard. She had some pain, though no definite contractions could be felt.

At 6 a.m. on March 2nd I was called to see her as she had had a severe haemorrhage. The os was partly dilated, membranes were presenting, and she had frequent though not very strong labour pains, with some haemorrhage. A dose of pituitary extract arrested the haemorrhage, and I saw her at intervals during the day. At 9 p.m. the os was well dilated and the breech was presenting; I ruptured the membranes and the child was born shortly after. It was a five months foetus, and it breathed and cried for about fifteen minutes. The placenta followed quite normally, the uterus contracted, and there was but little haemorrhage.

She did well till the morning of March 4th, when at 2 p.m. I was summoned in a hurry. I found a second abortion had taken place, consisting of a complete, perfectly shaped cast of the uterus, which contained a foetus of about six weeks. Judging from the shape of this abortion, it would appear that she might have a double uterus, as the cast had evidently filled the whole cavity. The five months child may possibly have been contained in an irregularly shaped uterus, and hence the abortion.

The patient had to leave Colombo as soon as she was fit to travel, so I did not have the opportunity to make an exhaustive examination. The case, however, is at any rate interesting in so far as it shows that ovulation and impregnation can take place during pregnancy—unless it may be that, in this case, beyond the cervix the whole internal generative organs were duplicated, in which case pregnancy in one uterus evidently has no effect on the other uterus and its appendages.

Colombo. R. E. INGRAM-JOHNSON, L.R.C.P. and S.Ed.

Rebiews.

BIOCHEMISTRY.

Two books reach me together, one by Professor BENJAMIN MOORE [1] of Oxford, the other by Professor BRAILSFORD ROBERTSON [2] of Adelaide. Though both deal with the same subject, it would be difficult to find two books so widely different. The former author treats his subject from the functional side (the keynote of the Oxford school), the second from what Professor Moore somewhat disdainfully terms the anatomical side, that is, from the point of view of the structure (chemical structure) of living matter, on which, as he says, textbooks by the score already exist. All who know Professor Moore or his writings will be aware that his thoughts run on original lines, and that he is gifted with the virtue of imagination. Much of what he writes has appeared before, either in the publications of the Royal Society, or in two volumes of *Advances in Physiology*, edited by Dr. Leonard Hill some years ago, one of which is now out of print. These chapters have been brought up to date, and are here collected together for the benefit of honours students. We hope that they will find a wider audience, for although to many of us "biotic energy" is an old friend, it will be new to the younger generation. The theme that runs through the book is that the organism, plant or animal, is a transformer of energy. The original source of energy is the sun, hence the large space devoted to the plant where photo-synthesis is so prominent. Before chlorophyll appeared, certain inorganic colloidal systems were able to capture and transform the energy of sunlight, and when it appeared as "biotic energy" then arose life. Biologists may differ greatly on the "origin of life," but I doubt whether any now would question the author's statement that it is futile to search, as Bastian did, among torulae and amoebae for its earliest appearance. The yeast cell and the pond animalcule may be simple in comparison to a tree or a man, but after all they are highly specialized and elaborate organisms, and no doubt the gulf which separates them from the more primitive forms which were the earliest to appear is wider than that between man and the amoeba. However much we may commend Professor Moore's praiseworthy and skilful attack on this old, but ever new, problem, it is a pity that he veils so much of what is evidently important in mathematical language. My own acquaintance with mathematics is not deep enough to be able to criticize, and I fancy the majority of physiologists and students (even honours students) are in much the same predicament; it is, moreover, always possible to put into plain English most of the facts which to the mathematician are more easily condensed into a formula. The worst of a formula is that it has an air of depth and finality about it, and in these days when "relativity" is in the air, who shall say what finality means? Still, with all that, Professor Moore's book is one which is well worthy of study. It makes one think, and that is not what can be said of many other books.

[1] *Biochemistry: A Study of the Origin, Reactions, and Equilibria of Living Matter.* By Benjamin Moore, M.A., D.Sc., F.R.S., Whitley Professor of Biochemistry, University of Oxford. London: Edward Arnold. 1921. (Demy 8vo, pp. 346. 21s. net.)

[2] *Principles of Biochemistry, for Students of Medicine.* By T. Brailsford Robertson, Professor of Physiology and Biochemistry, University of Adelaide. Philadelphia and New York: Lea and Febiger. 1921. (Med. 8vo, pp. 645. 8.00 dols.)

Professor Robertson's book is most appropriately dedicated to his old teacher, Sir Edward Stirling, whose chair he now fills. Brailsford Robertson is first and foremost a chemist. He never seems to have been through a course of medical training, which is the best school in the making of a biologist. His work bristles with constitutional formulae; physical chemistry, as one would expect from a knowledge of his original work, looms large, and rightly so, in his horizon. He, too, has imagination, and looks forward to a time when science will have conquered death, and when even the workings of the mind will be explicable on chemical lines. His imagination is more unbridled than Moore's, and no doubt time will make him more cautious. Although he is a British subject, and after a stay in American universities has returned to a British Commonwealth, he has not returned to English spelling. There is, however, more to criticize in his book than mere Americanism. He is a bit too ready to swallow statements made by others as a result of imperfect work, and preach them as Gospel. In one place, for example, he describes the vitamins as substances allied to betaine, and on another page as allied to purines; I suppose the evidence is as much in favour of one view as the other, or indeed of any other view which can be advanced without any evidence at all. Why the antiscorbutic substance should be denied the title of vitamin, but admitted to the category of "accessory foodstuffs," as Hopkins terms these unknown principles in a healthy diet, is a mystery. I think Moore's treatment of the vitamins infinitely better. He only alludes to them once, and that in a footnote, where he refers the reader to the pamphlet issued on the subject by the Medical Research Council. It is much better to say to a reader look up the proper authority than to write at large about them in the way Robertson does. He treats the unknown hormones in much the same way; one can forgive him for his lengthy allusions to tethelin, the supposed active principle of the anterior pituitary lobe, because it is his own offspring, but when he states that the hormone of the posterior lobe is allied to ergamine he is again speaking without authority. It will be news to the British Medical Association that it was concerned in the question of protein nomenclature, and if he means the Physiological Society of this country he sadly misquotes what it proposed. His use of the word "amnesia" as equivalent to forgetfulness will be somewhat of a shock to neurologists. His references to authorities are frequently marred by misspellings. Whether his mathematical excursions are correct or not I have, as I said before, not sufficient knowledge to judge; whether his tables of analyses and the like are correct I have not had the patience to ascertain. But judging the work as a whole by those portions I have been able to check, I would warn readers and students to verify statements by consulting either the original papers or some trustworthy textbook.

Professor Robertson has not written an uninteresting book. Some parts of a speculative nature are really stimulating reading, but the whole preparation has been undertaken in too slapdash a manner to make the book one which can be recommended to the student.

W. D. HALLIBURTON.

TOXICOLOGY.

THE new edition of BLYTH'S well known treatise on *Poisons*[3] has been thoroughly revised; much of doubtful utility that found a place in the previous edition has been omitted, while new matter has been introduced. Stress has rightly been laid upon the importance of microchemical and physical methods in the detection of poisons, since the analyst has often to operate on minute amounts of poison he has succeeded in recovering from his analysis of portions of the viscera.

The book will be of use as a book of reference to those engaged in the study and practice of toxicology, but we question whether the style in which it is written will appeal to the student, for the descriptions are diffuse, and the reader will sometimes find it difficult to select those methods which are of practical value at the present day from others which are really of historical interest. For example, three different classifications of poisons are given, and that adopted by the authors seems to us too complicated to be of real value or to be retained in the memory. Throughout the work there is constant reference to the writings of foreign workers, but these are not the most recent, and the most important additions to our knowledge obtained by scientific workers in this country during the past few years seem to have escaped notice. It is rather surprising that there should be no mention of the effects of the poisons used in the preparation of munitions such as trinitrotoluene and the similar substances used for explosive purposes during the war, and about which so much has been published both by medical societies and Government departments. Again, tetrachlorethane, which was the constituent of the dope or varnish used in the manufacture of aeroplanes and which gave rise to a classical form of toxic jaundice is not mentioned. Then, again, under arsenic an account is rightly given of its organic preparations salvarsan and allied substances, but no mention is made of their toxicological effect, which is entirely different from that of inorganic arsenic. This omission is remarkable since during the past five years the medical journals in this country have given very numerous accounts of the toxic effects of the various arseno-benzol compounds, and the Medical Research Council has issued a voluminous report on the subject.

Brief and very useful accounts are given of the various chemical poisons and their compounds from the chemical point of view, but the toxicological aspects are less adequately discussed. The clinical accounts of the effects of poisons do not seem to have been written from personal experience, and it appears doubtful whether the most recent literature has been consulted. Thus, in the case of phosphorus, a long account is given of its poisonous symptoms, but the fact that it causes degeneration and loss of function of the liver, and that all the dangerous symptoms are really the result of an auto-intoxication is not sufficiently brought out. We can find no mention of the use of diachylon (lead plaster) as an abortifacient, though numerous cases of fatal poisoning from this have occurred in recent years in this country, and diachylon has in consequence been placed in Part I of the Poison Schedule.

The methods described for the toxicological analysis of poisons are those which have been described in various papers and books in former years, but sufficient stress is not laid on methods of chief practical value at the present day; indeed, the toxicological analyst would in most cases find great difficulty in selecting from this work the method of analysis which he should apply in any given case.

NOTTER AND FIRTH'S "HYGIENE."

FOR more than a quarter of a century NOTTER and FIRTH'S *Hygiene*[4] has been a popular textbook, and the care taken in revising the ninth edition justifies the high reputation it has held for so long a period. The chapter on food appears to have been revised in accordance with present-day knowledge. The clearly written account of vitamins, though brief, contains perhaps all the information certainly possessed on the subject.

Among the new chapters in this edition is one dealing with child welfare and school hygiene, in which the closing of a school by the school medical officer is referred to as a step which should only be taken after most serious consideration. Trough closets are spoken of as most unsuitable for schools, but a qualified approval is given to their use in factories or groups of artisans' houses. Slop closets, which were first used in Crewe, and later in some Lancashire towns and in Stafford, and the use of which is now very generally condemned, are spoken of approvingly under certain limited conditions. The purification of sewage by means of "activated sludge" is now beyond the experimental stage, and merits a longer reference than eighteen lines, though a general idea of the process can be gathered even from this short account. Having in mind the long military experience of the authors, we might reasonably have expected to find more than five pages devoted to camp sanitation, though it is only fair to state that this is explained by the opening sentence of this section: "In principle, the sanitation of a camp is the

[3] *Poisons: Their Effects and Detection.* By Alexander Wynter Blyth, M.R.C.S., F.I.C., F.C.S., and Meredith Wynter Blyth, B.A. Cantab., B.Sc. Lond., F.I.C., F.C.S. Fifth edition. 1920. London: C. Griffin and Co., Ltd. (Med. 8vo, pp. 779; illustrated. 30s.)

[4] *Hygiene.* By J. Lane Notter and R. H. Firth. Ninth edition. London: Longmans Green and Co. 1921. (Cr. 8vo, pp. 552; 80 figures. 10s. 6d.)

same as that which concerns a group of ordinary dwellings; it differs therefrom mainly in the circumstance that its actual practice is essentially the use of simple methods and simple material used in an intelligent way." The chapter on sanitary law has been very carefully revised, and appears to include a reference to all public health legislation up to the end of 1920.

NOTES ON BOOKS.

THE second edition of *The Qualitative Analysis of Medicinal Preparations*,[5] by Mr. H. C. FULLER, an officer of the Institute of Industrial Research, Washington, D.C., sets forth in detail a scheme for the analysis of drug compounds of all kinds. This in its general form appears to have been tested and approved by many workers in the United States since the publication of the first edition some eight years ago. The field covered by the volume is wide and the phraseology for the most part clear, so the volume may be found helpful by those interested in the identification of drug contents in this country, where the use of "proprietaries" from all over the world is rife.

There was certainly room for a *Dictionary of British Scientific Instruments*,[6] such as that now issued by the British Optical Instrument Manufacturers' Association. It supplies a list and definitions of nearly all instruments of precision connected with "knowledge in the making"—to adapt a recent definition of science—as also of most of those employed on board ship, in the great manufactories, and in the laboratories of teaching hospitals, if not in their operating theatres. There are also illustrations of many of the leading types, and a summary of the history of the development of the manufacture of optical glass, of the Royal Observatory, and of some other connected undertakings.

[5] *The Qualitative Analysis of Medical Preparations.* By H. C. Fuller, B.S. Second edition, rewritten. London: Chapman and Hall. 1920. (Crown 8vo, pp. 191. 12s. 6d. net.)

[6] *Dictionary of British Scientific Instruments.* Issued by the British Optical Instrument Manufacturers' Association. London: Constable and Company, Ltd. 1921. (Demy 8vo, pp. 347, 313 figures. 21s.)

AIX-LES-BAINS.

A PARTY of twenty medical men from England recently visited Aix-les-Bains and a number of health resorts in Switzerland, under the guidance of Sir Henry Lunn, M.D.; a second party will follow much the same itinerary during the first fortnight of September. The railway companies at home and abroad have given facilities for these tours, and the first medical visitors were received with warm hospitality by the local medical profession, the municipalities, and the directors of the various bathing establishments and sanatoriums.

Travelling from London by way of Paris, Aix-les-Bains was reached within twenty-four hours, and the greater part of three days was spent there in fine weather. An opportunity was thus given of studying the various methods of treatment at Aix, and of taking in something of the beautiful scenery amidst which it lies. In an article on French watering places in the JOURNAL of July 9th, 1921, p. 49, some allusion was made to the long history—dating from Roman times—of the medicinal waters and climatic treatment at Aix-les-Bains, and to the measures taken by the Académie de Médecine to ensure that the bathing establishments and the general sanitation of this and other leading French health resorts are in every respect of the most modern type. We propose to give here a brief account of the famous Savoy spa and its mineral springs as they appear to day, and to refer later to the Swiss spas visited by members of the British medical profession during the same tour.

Aix lies in a broad and smiling mountain valley—860 feet above the sea—which slopes down towards the picturesque Lac du Bourget, the largest lake in France. It was a celebrated bathing place under the name of Aquae Gratianae, Aquae Domitianae, or Aquae Allobrogum, in the time of the Romans, the word "Aquae" becoming by an easy conversion "Aix." Many of the old Roman monuments were destroyed in the fifth century A.D. A number of Roman remains are, however, preserved in the town, at the museum and elsewhere, and there still stands in the Place des Bains the stone arch erected in the fourth century A.D. by Lucius Pompeius Campanus in honour of members of his family. Little or nothing is known of the history of Aix during the Dark Ages, but in the eleventh century it passed into the possession of the House of Savoy. The modern history of Aix begins about 1776, when King Victor of Sardinia laid the foundation-stone of the thermal establishment. Other parts were added in 1859 and 1881, and the latest additions to the building were made in 1899. It stands at the foot of the lower slopes of Mont-Revard, towards the east end of the town.

The bathing establishment, which belongs to the French Government, is open throughout the year, but the season proper, when the social amenities of the place are at their height, lasts from April to November. The building consists of three stories, installed with a great variety of balneological apparatus, including the "bouillon," or general vapour bath, and the "Berthollet," or local vapour bath. The distinctive feature of the thermal treatment at Aix-les-Bains is, however, the douche-massage, known throughout the world as the "Aix douche." The method is too familiar to need any description here. According to Daquin, massage was first introduced into Aix by some of the returning members of Napoleon's Egyptian expedition of 1799. Thenceforward simple rubbing, which had been in use at Aix for a century, seems to have been replaced by the more elaborate manipulations and friction of patients under the hot sulphur water; and thus as time went on the douche-massage became the principal item in the Aix programme. In some of the many treatment rooms the hot and cold water pipes are so arranged as to give the "douche Écossaise," or alternating hot and cold douche. As to the origin of the term "Scotch douche," we learn from Dr. H. Forestier that it was coined by Despine, who was appointed Director of the Aix baths in 1787. He had studied under Cullen in the University of Edinburgh, and there learned the use and advantage of cold shower-baths. Despine's grandson records that on his return to Aix his grandfather introduced that mode of treating nervous diseases, and gave it the appellation "douche Écossaise" in memory of the place where he received his medical instruction.

A familiar sight in the streets of Aix is that of two stout porters carrying a sort of sedan chair from the baths to an hotel, the patient, wrapped in a maillot, being screened from cold draughts and inquisitive eyes by curtains. The length of the treatment, of course, varies according to the nature of the case, but in general a course of from twenty-five to thirty days is prescribed, thus allowing for some twenty applications of the douche-massage with intervals of rest. Medical men, it should be added, are treated free of charge.

The thermal water rises from the ground in two springs at a temperature of about 114° F. These are called respectively the "sulphur spring" and (by a misnomer) the "alum spring"; between them they yield about a million gallons a day. The waters are trapped in a grotto on the rising ground behind the baths, and are mainly used for external application. Another spring at 51° F. gives an abundant supply of cold water for the hydrotherapeutic rooms, and for cooling the hot water to 95° F. or thereabouts for the douche-massage. The hot water is clear and has a slightly sulphurous smell, due to a small amount of free H_2S.

In addition to the principal springs there is also the cold sulphur water of Marlioz, which is dispensed at a building, equipped with inhalation and spray rooms, in the midst of a pleasant park on the outskirts of Aix. The water here rises in three springs at 57° F.; the principal salt is sodium sulphate, with a small amount of sodium iodide and a trace of bromine. It is mainly used in the form of sprays and local douches in chronic laryngeal and bronchial catarrhs. Lastly may be mentioned the "Source des Deux Reines," a cold, bright, and feebly mineralized water used solely for drinking purposes, and served to visitors at a kiosk opposite the bathing establishment, whither it is led by pipes from Corbières on the mountain side. Its action, if any, must be diuretic.

As an adjuvant to the ordinary treatment at Aix there is a mechano-therapeutic institute, built in 1899, where exercises are applied by means of Zander's apparatus under the direction of Dr. Guyenot. In the same building is installed a set of Nauheim baths, a full equipment of electro-therapeutic appliances, *x*-ray apparatus, and a laboratory for urine analysis.

amusement and relaxation, which play an important part in what is still ineptly called "the cure," are lavishly provided for at Aix. The two casinos—the Grand Cercle, with its theatre, and the Villa des Fleurs—rival anything of the sort to be found elsewhere, and there is an abundance of good hotels. The scenery of the lake and the prospects from the top of such peaks as Mont-Revard (5,070 feet) and La Chambotte are magnificent. From the former, which is ascended by a cogwheel railway, can be enjoyed an alpine panorama that includes on the clearest days a peep of Mont Blanc. At the summit of La Chambotte and overlooking the whole blue lake there is a little hotel at which are preserved mementoes of Queen Victoria, who was a constant patron of Aix and its neighbourhood.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

EIGHTIETH ANNUAL MEETING.

THE eightieth annual meeting of the Medico-Psychological Association was held in London from July 11th to 15th under the presidency of Dr. C. HUBERT BOND. The presidential address was on "The position of psychological medicine in the medical and allied services," and it was followed by a number of papers and demonstrations, occupying seven sessions. At the business meeting Dr. G. M. Robertson was elected to succeed Dr. Bond in the chair; Sir Henry Carr Maudsley, physician and lecturer to the Melbourne Hospital, was elected a honorary member of the association, and Sir Maurice Craig was chosen to deliver the third Maudsley Lecture.

On the evening of July 13th the Association dined at the Connaught Rooms, when the chief of many distinguished guests were the Lord Chancellor and Sir Alfred Mond, the Minister of Health. In reply to the toast of the Legislature, proposed in fitting terms by Dr. BOND, who reminded the Lord Chancellor that he discharged historical and not entirely nominal functions in relation to the mentally afflicted, Lord BIRKENHEAD said that it was literally true that every communication on this subject addressed to his department was most carefully examined by a competent person. It was far better that a thousand trivial and baseless cases should be carefully examined than that there should be a risk of one in which there was a vestige of substance being overlooked. He suspected that the great majority of our countrymen contemplated legislative activities with anxiety and suspicion, and he himself had always been inclined to measure the merits of any Government by the slimness of those unappetizing volumes which recorded the corpus of the statute law. He took a modest pride in the fact, years ago, when his side was in power, that those volumes were so thin, and that they were much thicker after parties had changed places. But he was bound to admit that during recent years those volumes had grown portentously, and they would have been larger were it not for the pruning function of the assembly in which he himself led an existence not altogether indecorous. He believed that they had too much legislation, though if it were said that during the past three years the Government had passed a large number of complicated measures it could at least be pleaded in extenuation that the Government had since repealed several of them. (Laughter.) He believed further that his right honourable friend, Sir Alfred Mond, was contemplating a considerable jettisoning. He (the Lord Chancellor) had the opportunity of presiding at the birth of proposals, and, from his place in the House of Lords, of having a hand in their extinction, and he added, amid laughter, that a process of that sort made a legislator at once sympathetic and versatile, and gave him a vivid sense of proportion. He owned that he sometimes looked with favour upon the Scots practice whereby an Act of Parliament became non-effective through desuetude. Such a practice gave great power to judges, and it went far to diminish the mischiefs of legislation.

Sir ALFRED MOND, who also replied to the toast, said that the transference of the Board of Control to the charge of the Ministry of Health was a sign of that scientific progress which no longer treated lunacy as some mysterious and obscure malady, but as one which came within the category of medical research and of that enlightened and modern treatment for which the association stood. In order to obtain legislation it was necessary, in the first place, that those who wanted it should know clearly what they wanted. One of the difficulties with which the Minister of Health had to contend was the great diversity among the medical profession. To the scientific mind controversy was the salt of life, but to the lay mind the diversity of expert opinion was the best excuse for doing nothing. The second requisite was that public opinion should be educated, and none were better fitted for that function than the medical profession. Fresh legislation was difficult in the crowded state of our public affairs, but with regard to the peculiar interest of those whom he was addressing, he could say that all proposals would be regarded with a very sympathetic eye and a desire to see all possible progress made.

Sir WILLIAM COLLINS proposed the health of the Navy and Army Medical Services, and referred to the lessons which emerged from the hecatomb of suffering this generation had been called upon to bear. Much had been learned which would lead to the control of disease, and if many old principles had received new extensions, it was probably true also that some knowledge which had been accounted new was found on investigation only to fall in with earlier experience and observation. Surgeon Vice-Admiral Sir ROBERT HILL, replying on behalf of the naval service, said that that service at the moment was suffering from malnutrition, due to the leakage of old blood and the lamentable want of new, but he hoped that with the masses of students now passing through the colleges the naval service would very soon have the additions it needed. Lieut.-General Sir JOHN GOODWIN, who replied for the army, referred to the debt which the army owed to the Board of Control for the loan of hospitals during the war. The first hospital given to the army by the Board of Control was opened in December, 1914, and before long twenty-four hospitals with 31,000 beds were working solely for the army. The civil patients in these hospitals were transferred to the remaining asylums, whose staffs most loyally worked double time. More than half a million army patients were treated in hospitals lent by the Board of Control, and the death rate among these patients was under 1 per cent. In the largest of them—the Lord Derby War Hospital—with 3,300 beds, 8,500 patients were treated in the mental section alone, and of these more than 74 per cent. were absolutely cured. (Applause.)

The BISHOP OF WORCESTER, at the close of a witty speech in responding for the guests, mentioned that the bishops were now entering upon a self-imposed course of psychology in order better to fit themselves for examining candidates for ordination who had been enjoined by an assembly of the Church to make a study of psychology a part of their preparation. Lord Justice ATKIN, who also responded, referred to contests in the Medico-Legal Society over the formula which governed criminal insanity. He agreed that the formula might be amended, but any amendment of it must comply with two conditions: In the first place, there must be a reasonable degree of unanimity of opinion as to the revised formula, and in the second, it should not merely have the effect of transferring all the inhabitants of His Majesty's prisons to the various mental hospitals in the country.

Sir JAMES CRICHTON-BROWNE, who mentioned that sixty years ago his father, then a Commissioner in Lunacy, occupied the chair of the association, also addressed the gathering. He said that there was one mental disorder—the most fatal and deplorable of them all—that they now knew could be prevented by a simple sanitary precaution, and ought to be prevented, let puritanical bigotry say what it might. In a delightful and whimsical speech Sir James pointed out how the advances of science—telephonic communication, for instance, or the discoveries in connexion with the electron—seemed gradually to be making good what were formerly regarded as the delusions of the insane. The wildest vagaries of insanity were now within measurable distance of becoming philosophic truths, while such philosophic speculations as the theory of relativity seemed likely to lead a man who tried to grapple with them into confusional insanity.

The final toast, that of the Medico-Psychological Association itself, was proposed by Sir JOHN BLAND-SUTTON, and responded to by Dr. BOND. Sir John Bland-Sutton said that the more thoroughly psychology—or, to use a simpler term, human nature—was understood, the more successful became the practitioner whether of law or medicine.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

The twelfth annual meeting of the Oxford Ophthalmological Congress was held at Oxford on July 6th, 7th, 8th, and 9th last.

A new departure was made this year in an extension of the proceedings to the morning of Saturday, July 9th, for it was felt by the Council that, with the increase in the number of contributions to the programme, insufficient time was available during two days only to enable members to go carefully through the Museums, and in addition to attend the demonstrations and papers. The addition of the extra day proved an unqualified success, and will be adopted at future meetings.

As in former years, the proceedings took place in the Department of Human Anatomy of the University Museum, kindly placed at the disposal of the Congress by Professor Arthur Thomson, professor of human anatomy. The majority of the members enjoyed the hospitality of Keble College, which was again available through the courtesy of the Warden, the Rev. Dr. Kidd. The advantage which accrues from a return to college life, even though for so short a time, is considerable, for opportunity is thus afforded to members for a closer acquaintance with each other than would otherwise obtain, whilst occasion can be and is made for informal discussions on ophthalmology in general. The latter was always aimed at by the founder, the late Robert W. Doyne, and it has ever proved a profitable feature of the Congress.

The attendance was above the average and included representatives from France, Denmark, Holland, and from nearly all British possessions, together with a larger number from the British Isles than usual.

Members met at dinner in the Hall of Keble College on the evening of Wednesday, July 6th, and the proceedings opened at 10 a.m. on the morning of July 7th with a short address of welcome by the Master, Mr. SYDNEY STEPHENSON, immediately followed by a discussion on "The causes of infection after extraction of senile cataract."

Dr. VICTOR MORAX, who came over to open the discussion, pointed out that with present-day knowledge of operating every surgeon should be in a position to avoid all sources of infection which come from himself, his instruments or any liquids which he might use, but that he was not in a position wholly to prevent infection from the conjunctival sac. Such infection might occur at any time from shortly after the operation up to fourteen days later, the more immediate being usually the more severe and often leading to panophthalmitis; the later ones evolved as iritis, iridocyclitis, or the more severe plastic iridocyclitis. The most commonly found micro-organism was the pneumococcus, less frequently the staphylococcus, and rarely the streptococcus, but in the cases of late iridocyclitis it had been difficult to identify a micro-organism though undoubtedly such must exist as a cause. There was still much bacteriological work to be done in this sphere. The importance of a good operation with a clean cut incision, and therefore rapidly healing wound, was emphasized, together with the advantage of the conjunctival flap.

Those who took part in the discussion were Dr. T. HARRISON BUTLER (Leamington Spa), Mr. JOHN HERN (Darlington), Mr. E. H. E. STACK (Bristol), Mr. P. H. ADAMS (Oxford), Mr. BURDON-COOPER (Bath), Mr. RAYNER D. BATTEN (London), Mr. N. C. RIDLEY (Leicester), Major A. E. J. LISTER, I.M.S., and Mr. JOHNSON TAYLOR (Norwich).

At the conclusion the Annual General Meeting was held, when it was reported that sixteen new members had been elected during the past year, making a total membership of over 320, and that the Congress was in a satisfactory position financially. An invitation from an International Congress of Ophthalmology which would take place in America in April next was read, and it was hoped that as many members as could would accept.

In the afternoon details were given by Mr. R. J. E. HANSON of an apparatus which would afford a rapid method of estimating stereoscopic vision, especially in the case of intending candidates for gunnery in the Royal Navy, although also of value in all spheres of work. Mr. ARTHUR GREENE of Norwich described two cases of petrosal sinus sepsis, the source of infection being apparently sties in the lids. Dr. WILLIAM WALLACE showed a beautiful and artistic series in water-colours of fundus conditions from war injuries, a unique collection on which Dr. Wallace as both observer and artist is to be heartily congratulated. Mr. RAYNER D. BATTEN followed with an interesting series of drawings of macular conditions.

On Friday the proceedings recommenced with the Doyne Memorial Lecture, delivered this year by Mr. ERNEST E. MADDOX of Bournemouth, who chose as his subject, Heterophoria, on which he is a world-wide authority. Delivered with logical clearness, the lecture should prove of the utmost value in its practical as well as theoretical aspects. At the conclusion Mr. Maddox paid a fitting tribute to the founder of the Congress, and was then presented with the Doyne Memorial Medal for the year.

Dr. CHARLES RUSS of London described an interesting discovery he had made with regard to the effect produced by the human eye when directed upon a delicate electrostatic system. Several models, which had previously been seen by a number of the leading physicists, were exhibited and demonstrations of the phenomenon given. Mr. JOHN HERN then read a paper on his experiences of "606" and its substitutes in eye diseases.

The afternoon was spent at the Eye Hospital, and was given over to the consideration of chronic glaucoma. Mr. N. C. RIDLEY described his "trench" operation for the relief of tension. Dr. T. HARRISON BUTLER urged the necessity of early diagnosis and operation in the chronic forms of the disease, and described his method of dealing with the acute forms. Dr. P. H. ADAMS (Deputy Master) described an operative procedure which was a combination of the Lagrange and Herbert operations with a modification devised by himself, and showed several successful cases. Mr. B. CRIDLAND commented on some points in the performance of the Lagrange operation. An interesting discussion followed the papers.

On Saturday morning Dr. T. HARRISON BUTLER read a good paper on "Loss of vitreous during cataract extraction," a subject which aroused much interest and free discussion. Mr. PERCIVAL J. HAY showed ophthalmic instruments and apparatus which he had devised, and also some useful coloured test-types. The value of the latter in practice was clearly explained, and the types should prove a useful adjunct in the consulting-room. A paper by Dr. HAMILTON MCILROY, on "Some points in the work of a school oculist," was read *in absentia*.

The Scientific and Commercial Museums were open daily. Amongst exhibits in the former were the beautiful series of water-colour drawings illustrating abnormal fundus conditions shown by Dr. WILLIAM WALLACE; a useful operating chair devised by Mr. P. H. ADAMS; together with a number of interesting pathological specimens shown by various members. Demonstrations of reading by the optophone were also given by a blind lady. Ophthalmic instruments, apparatus, and new books, etc., were shown in the Commercial Museum, some thirteen firms contributing stalls.

On Thursday afternoon the Congress held a garden party at Brasenose College, members being welcomed by Mr. R. W. Jeffery, M.A., the historian of the College, and Mrs. Jeffery. A short but extremely interesting address was given by Mr. Jeffery on the history and traditions of the College. The official dinner was held in Keble Hall on Thursday evening, July 7th, and was well attended. The visitors present included the Rev. Dr. Kidd, Warden of Keble College; Sir Archibald Garrod, Regius Professor of Medicine; and the Rev. Canon Matheson.

As a whole the meeting, favoured with fine weather, was one of the most successful yet held.

A COMMITTEE appointed by the Indianapolis Humane Society to investigate alleged cruel treatment of dogs by vivisection at the Indiana University School of Medicine reports, according to the New York *Medical Record*, that on a recent unannounced visit to the school of medicine it was found that the dogs were being humanely treated.

THE Golden Book, a memorial to French medical men killed in the war, has been completed, and will be published in October. It contains a series of articles on the achievements of the French Medical Corps during the war, on the part of the surgeon in battle, on medical men in prisoner-of-war camps, and on similar subjects, followed by a list of over 1,700 medical practitioners who died for their country. The volume is to be illustrated by reproductions of paintings by Barrère and by over sixty photographic plates.

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SATURDAY, JULY 23RD, 1921.

THE PRESIDENTIAL ADDRESS.

AT the meeting of the Association in Aberdeen in 1914 there were, as in previous years, in addition to Sir Alexander Ogston's presidential address on "The Making of a Scottish Medical School," in which the growth and development of Aberdeen in its civic as well as its academic aspect were reviewed, two formal addresses—in Medicine and in Surgery respectively. At the special clinical meeting of the Association in London in April, 1919, and at the successful Cambridge meeting last year, the first regular meeting since the outbreak of the world war, the addresses in Medicine and in Surgery were dropped, and this example has been followed at Newcastle. The change certainly prevents overlapping, makes more room for the "popular lecture," or a special address such as that on "Industrial Hygiene" by Sir Thomas Oliver; and has the further advantage of concentrating attention on the presidential address, which both in 1919 and 1920 was delivered by Sir Clifford Allbutt. In the first of these masterly addresses, entitled "The New Birth of Medicine," the Regius Professor considered the principles and operations of modern medicine in the light of the natural sciences, and by their standards measured our progress and forecast our future; in the Cambridge address he discussed "The Universities in Medical Research and Practice." The last three presidential addresses have been professorial and representative of Aberdeen and Cambridge; and now Professor David Drummond, President of the Durham University College of Medicine, who will next year be followed by Sir William Macewen, the Regius Professor of Surgery in the University of Glasgow, has fully maintained this high standard in his address on "The Medical Profession: A Horizon of Hope."

In the first instance Professor Drummond, as will be seen, deals with the future of the medical profession more from the point of view of its efficiency in the State than from an academic and strictly scientific aspect. In discussing the question whether our increased professional ability is accompanied by a corresponding advance in our recognized power in national activity, he gently lays his finger on certain deficiencies that it behoves us to try to correct; of these some are no doubt natural; some inequalities in technical attainments which render the service to the public imperfect depend on differences in educational training. This could be met by improved methods of instruction, but the power of acquiring knowledge is not the only factor needed. The personal character of the student and future practitioner must be borne in mind as a factor responsible for inequalities in our value of services rendered, and the President's epigrammatic remark that "the good doctor is born, the indifferent doctor is made," suggests, though he does not say so, that he had in mind the advisability of some restriction of entry based on psychological tests such as are enforced on intending medical students in some American universities. As medicine is a progressive and constantly changing art, its followers, if they are to continue efficient, must be students all their days, and this raises the important and at this moment extremely urgent problem of graduate education. Of the various forms that this may take, Professor Drummond lays stress mainly on the practitioner's self-education and on the need for verification and checking of his work. Thus, in order to clear up any doubt as to the nature of fatal illness, necropsies should, he urges, now be the rule; this is very far from being the case in present-day practice; indeed, necropsies have become less frequent in recent years than in the past—a state of things by no means confined to this country, as is shown by the remarks of Professor H. A. Christian of Harvard and others interested in the future of American medicine. Such a change cannot but have a retrograde influence, and Professor Drummond traces some delay in the advance of accurate diagnosis to this neglect to obtain data for trustworthy statistics by *post-mortem* examinations; for, as it is, our statistical returns and the deductions made by their analysis are fallacious. Over and beyond this, however, there is much waste of the available statistics, and to remedy this the hospitals should be provided with officials highly trained in statistical methods and able to correlate and systematize the material now rarely utilized.

Emphasis is rightly placed on the supreme importance of cultivating the faculty of observation, so as on the one hand to be able to recognize the earliest departures from health, or the commencement of disease, and on the other to possess a sound acquaintance with physiological variations, and thus to assess correctly the value of abnormalities. In this essential matter Professor Drummond is obviously at one with Sir James Mackenzie's well known views. Lastly, the President's long experience as a teacher and examiner enables him to speak with authority on the question of the examination test; many have regarded it as a necessary evil, and attempts have been made to minimize the drawbacks, which are perhaps most noticeable in the case of the ablest students; thus the factor of competition has been cut down by making examinations "pass" rather than "class." There is another change, among the advocates of which Professor Drummond has long been numbered: namely, that the results of an examination should not be determined solely by what the candidate does during the brief period of that trying ordeal, but that credit should be given for previous class and ward work as reported on by his teachers; the recommendation to this effect recently made by the General Medical Council naturally meets with his warm support.

INDUSTRIAL HYGIENE.

IN his address on Industrial Hygiene Sir Thomas Oliver reviews an important branch of preventive medicine, in which, thanks to the labours of a small but indefatigable band of investigators, amongst whom the lecturer himself holds an honourable place, great successes have been achieved in the last two generations. The most complete victory over industrial disease is that won in the lucifer match industry, and Sir Thomas Oliver can justly claim that "the whole industry has become transformed from a dangerous to a harmless trade." Less dramatic and less exclusively a medical triumph, but, in view of the vastly greater number of persons affected, much more important, has been the reduction effected in the death rate of miners. In 1851 the fatal-accident rate was 4.5 per 1,000, in 1912 the death rate was 1.37 per 1,000.

The statistics of industrial lead poisoning — a subject which has been greatly elucidated by the work of Dr. T. M. Legge, Sir Kenneth Goadby, and Sir Thomas Oliver — show a decreasing incidence, although not, unfortunately, an equally decreasing mortality. There is, however, a general tendency towards diminution of deaths.

Sir Thomas Oliver very rightly calls attention to the fact that research in industrial hygiene has been extended, that not only certain special diseases of occupations, but also the general reactions of the physiological and psychological machine to industrial life are now taken into consideration, and he properly commends such researches as those of Dr. H. M. Vernon. Industrial hygiene, in the true sense of the term, includes the study of both factory conditions and home conditions. Our mid-Victorian predecessors gave priority to the latter; we now strive to deal with both. We must indeed always bear in mind that both are important. It is often extremely difficult to determine whether a deterioration of health associated with industrial employment is directly or only indirectly due to that employment. An instructive case has occurred in Sweden. Although Sweden enjoys a far lower infant mortality and an appreciably lower mortality at ages over 35 than we do, her mortality in adolescent ages is much higher and has not shared in the general improvement which has characterized other groups; in fact at ages 15 to 20, Swedish mortality was about at its minimum sixty years ago. In the opinion of the late Professor Sundbärg, this stagnation or even deterioration was a consequence of the rise of Swedish industry. "Formerly," he wrote, "the adolescent boy and girl remained at home for a longer time. Nowadays one goes more frequently and at an earlier age to the city or the factory. The new conditions of existence bring in many cases increased dangers to health and life, dangers which, especially in the case of women, often lead to tuberculosis" (*Statistisk Tidskrift*, 1909, 206). We may remark that in the five years 1911–15, the male death rate from pulmonary tuberculosis in Sweden at ages 15 to 20 was never less than 1.5 per 1,000, the female rate never less than 2.1. For the decennium 1901–1910 in England and Wales, the rates were 0.8 and 1.0. Assuming that Professor Sundbärg's opinion is correct, we need to know whether opportunities of direct infection in factories or the unsatisfactory housing conditions of the Swedish working classes are the more to blame. In this country a similar problem has to be solved.

There is the more need to emphasize the duality of the problem because in the near future the task of securing good conditions in the factory is bound to be easier than that of obtaining tolerable conditions in the home. This is an age of "big business"; the war has left us a shortage of dwellings, but it has provided factory accommodation in various centres which leaves little ground for complaint and should allow of the enforcement of the wisest hygienic rules. But it would be rather optimistic to believe that ten hours in a factory under the most favourable conditions will enable a man or woman to struggle with success against such a home environment as, for instance, that noted by Dr. Robertson in his report of 1918. Dr. Robertson pointed out that in the five central districts of the County Borough of Birmingham from 51 to 78 per cent. of the houses were "back-to-back," and that the general death rate ranged from 19.3 to 22.8 per 1,000 (1914–18), being below 10.9 in eleven outer districts where at the most 8 per cent. of the houses were back to back. Dr. Robertson further remarked that "it is impossible to imagine a rising generation of young people being able to improve in health or self-respect, even if the best of educational facilities are provided, when everything they come into contact with is sullied by dirtiness and squalor."[1] Dr. Wanklyn used very similar language of parts of London even before the war, and it does not, either in purport or in literal truth, differ much from that of Sir John Simon seventy years ago.

It is, we fear, inevitable that the housing of the working classes, bad as it may be, will deteriorate fairly rapidly during the next few years. What the effect upon the public health will be cannot be foretold; it is as idle to prophesy devastating epidemics as to pretend that the outlook is favourable. The duty of the medical profession, when deprived of perhaps its most efficient weapons in the struggle against disease, is not, however, to give up the fight and join the band of prophets who prophesy evil, but to make use of what weapons are left. We are likely to have not worse but better opportunities of improving factory conditions than before, and these must be used; indeed, the very fact that the workman is likely to encounter in his home more abundant opportunities of infection is a stimulus for us to seek to remedy extra-domestic conditions which lower his resisting powers.

Sir Thomas Oliver points out that the determination of appropriate hours of labour in different industries and a study of the psychological conditions of labour are well worthy the attention of the hygienist; the "welfare" movement which he commends, correlated with the scientific inquiries now under the immediate direction of the Medical Research Council, will provide means for learning much truth about a subject respecting which we have yet mastered very little truth. At the end of a day's work we are all of us sometimes happily tired, sometimes in that condition of unhappy weariness which current slang rather effectively terms being "fed up." Is there any correlation between being "fed up" and liability to take a current infection? Is one "fed up" because one is ill, or does one become ill because one is "fed up"? What are the effects of different systems of ventilation, of different degrees of noise, or of different types of work upon this noxious form of fatigue? Here are but a few of the problems upon which clinician, physiologist, psychologist, and statistician can and must collaborate. It is the business of the physiologist and psychologist to imagine and apply experimental methods, of the clinician to assess the physical conditions of those tested, and of the statistician to analyse the numerical data collected. We would call attention to the remarkable letter of "General Practitioner" in our last issue, the purport of which is that freedom from occupational strain—even when purchased at the enormous cost, both moral and economic, of a strike—has greatly improved the general health of the workers. If this correspondent's observations are both accurate and typical, it clearly follows that the normal organization, even of the coal-mining industry, is hygienically inefficient, and the four questions he asks must be answered.

We have to explore all the myriad influences of industrial life upon the general health of the workman or workwoman, and, as Sir Thomas Oliver says, "in the ever-enlarging sphere of industrial enterprise, to which the various sciences are contributing, and the needs of the world are calling for, lies the opportunity of industrial hygiene."

[1] Report of the Medical Officer of Health to the City of Birmingham, 1918.

ANNUAL MEETING NOTES.

GENERAL ARRANGEMENTS AT NEWCASTLE.

ALTHOUGH the social and scientific sides of the Annual Meeting at Newcastle-upon-Tyne are scarcely yet in full swing at the time these lines are written, it is already safe to pronounce the meeting a great success. An immense amount of preliminary spade work had been done by those who represent the hosts of the Association on this occasion—namely, the new President, Professor David Drummond, his chief of staff, Mr. R. J. Willan, and the chairmen and secretaries of the various local committees. No pains have been spared by them to offer a hearty welcome to their visitors, and to make provision alike for the medico-political business of the Representative Body and the work of the scientific Sections, as well as to draw up an attractive programme of social entertainments and excursions. One great advantage of Newcastle as a centre for a gathering of this kind is the concentration of its principal buildings. The Royal Victoria Infirmary and the adjoining War Pensions Hospital, in which buildings most of the demonstrations in the scientific Sections take place, are immediately opposite the west front of Armstrong College. In the large King's Hall of Armstrong College have been held the sessions of the Representative Body, the Annual General Meeting with the President's Address, the Secretaries' Conference, and Sir Thomas Oliver's Address on Industrial Hygiene; it is also set apart for the dance on Thursday and Sir Arthur Keith's Popular Lecture on Friday evening. The various scientific Sections are holding their discussions in the lecture rooms and theatres of Armstrong College and of the College of Medicine in Northumberland Road. The two buildings are only a short walk from each other, and on the route between them stand the Grand Assembly Rooms, known throughout the period of the meeting as the "Assembly Rooms Club." Here are held the President's reception, the Annual Dinner, and the reception and dance given by the proprietors of the *Newcastle Chronicle*. Here also the Representatives dined together at the close of last week and were given an excellent concert, the chief features of which were the wonderful sword dances in the traditional Northumbrian manner by the Westerhope team of young miners, and the airs played on the Northumbrian or small pipes by two members of the Clough family, father and son, both coalminers. The Reception Room is placed in the Examination Hall of the College of Medicine, and every convenience that forethought could devise has there been provided for members and their friends. Near at hand, in St. Mary's Place, is St. George's Drill Hall, in which has been arranged the Annual Exhibition of instruments, foods, drugs, etc. The reception given by the North of England Branch Council was held on Wednesday evening in the Hancock Natural History Museum, just to the north of Barras Bridge, and therefore but the shortest of walks from the other principal buildings. Equally close are the premises of the Durham University Union Society in Eldon Street, which have been lent to the Association as a ladies' club. Such compactness in a city of the size of Newcastle is remarkable. It has proved a great convenience to all those attending the Annual Meeting, and in a special degree to those with official duties of one kind or another. As a means of learning something about the place, its history, institutions, industries, and neighbourhood, the *Guide Book* issued by the Printing and Publishing Committee has been much appreciated. The historical section of this little book is the work of Mr. John Oxberry, and a dozen woodcuts by Bewick, used as tailpieces, give the volume a peculiar charm.

THE REPRESENTATIVE MEETING.

THE Representatives, when they assembled on the morning of Friday, July 15th, found everything ready for them in the King's Hall of Armstrong College, and the arrangements for the business of the meeting working with smooth precision. It was stated by the Chairman that the numbers present exceeded those at any meeting of the Representative Body since the troublous times during the passage of the National Insurance Bill. In the SUPPLEMENT this week will be found a full report of the first two and a half days' proceedings of the Representative Body. We expect to complete the detailed report in our next issue. A short record of the speeches at the Representatives' Dinner, which proved a most enjoyable event, appears also in this week's SUPPLEMENT. The spontaneous warmth of the welcome given on that occasion and on the following day to Dr. Todd, the spokesman of the Australian Branches, will, we know, remain in his memory, and be reported by him to our colleagues overseas when he returns to Australia from his mission in this country.

The Representative Meeting began the consideration of that section of the annual report of the Council which dealt with Hospitals, and the Appendix on the future of Poor Law infirmaries, after the adjournment for luncheon on Monday, July 18th. The discussion, which was not concluded when the meeting adjourned at 6.30 p.m. on that day, occupied the whole of Tuesday morning, and was resumed after the first part of the Annual General Meeting, when the retiring President, Sir Clifford Allbutt, inducted his successor, Professor David Drummond of Newcastle. The recommendations contained in the report of Council (SUPPLEMENT, April 30th, p. 133) were in the main adopted. The first was adopted almost without discussion. It recorded the belief of the Representative Body that the voluntary method of administration of the voluntary hospitals of the country is to the advantage of the public, medical science, and the medical profession, and should be maintained.

Considerable discussion took place on the second recommendation, which was "that necessitous persons shall continue to be treated free." Difficulty was felt with regard to the word "necessitous," which, it was pointed out, has a special technical meaning when used in reference to Poor Law administration. It was suggested that the recommendation should run: "That such treatment should not be given gratuitously to patients who are maintained in whole or in part by public funds." Eventually, however, the following form of words was preferred: "That inability to pay for adequate treatment shall be the consideration for the admission of all patients to hospital treatment." The recommendation of the Council "that it is undesirable for the voluntary hospitals to be subsidized by the local rating authorities, except in so far as payment is made for the examination and care of patients for whom those authorities are responsible," was adopted after a good deal of discussion. A further recommendation, which was approved, was that every patient of a voluntary hospital able to make a contribution during treatment towards the cost of maintenence should do so unless the contributory method of subscription is adopted as essential in industrial areas. The debate on hospitals terminated about 3 o'clock on the afternoon of Tuesday, July 19th. The Representative Body completed the remainder of its business at 4.30 p.m. Before separating, it adopted by acclamation a vote of thanks to Dr. Garstang, the retiring Chairman.

THE LORD MAYOR'S DINNER.

ON Monday evening, July 18th, the Lord Mayor of Newcastle (Councillor T. W. Rowe) entertained at dinner at the Mansion House a number of members of the executive of the Association, when they had an opportunity of meeting the Deputy Mayor and Sheriff and other members of the Corporation, some leading citizens of Newcastle, and many members of the profession residing in that city and neighbourhood. Among those present was Sir Theodore Morison, Principal of Armstrong College, who

has shown his interest in the annual meeting by readily placing at the disposal of the Association the classrooms, laboratories and theatres of that fine institution, as well as the King's Hall, where the Representative Meeting met, and where the President delivered his address.

After the toast of the King had been duly honoured, the Lord Mayor proposed the British Medical Association. Among the many associations that have visited Newcastle during the year, none, he said, occupy a more important place than the British Medical Association. The members of the medical profession were indispensable to the well-being of the community, and as a municipal worker he greeted his guests as colleagues and friends. The high ideals of the profession and the deep personal interest in their patients displayed by its members made every patient feel that the doctor was his friend. In the war the medical profession had risen magnificently to the occasion, and it was, perhaps, through the medical profession that the world would reap the greatest blessings accruing from victory. Medical science had taken advantage of the distressing circumstances of the war to obtain knowledge beneficial to the nation so that the sufferings of the present and future might be lessened. Medical men had served heroically in the war, and many had given their lives, but it was not only in war that medical men risked their lives—many fell martyrs to their work in civil life. Doctors strove for what was best for humanity, and he hoped that their work would be strengthened and enlarged by the discussions during the meeting at Newcastle.

Sir Clifford Allbutt, who replied, said that the length of his term of office was unique in the history of the Association, owing not to his own merits but to the circumstances of the time. Professor Drummond had told him that this was the third time the Association had held its annual meeting in Newcastle, and that the first meeting in 1870 was the first occasion on which the Association was received in a formal way by the Mayor of the city in which it was meeting. Since then the Association had gone on growing in strength, and was now a power and influence in the country; there might even be a danger that it was getting too strong and self-confident, but that was a risk its members were willing to take. The medical profession was one in which many members, thinking for themselves, went their own way, uninfluenced by others. Though this attitude of mind had its merits it kept a certain minority out of the orbit of the Association; that minority, however, was growing less and less, and even those who were not members of it were beginning to realize that it was as well to keep in with the organization. Medical men lived often isolated lives, and were apt to get a little angular and over-individualistic; the Association was doing much to bring them together and to induce them to work in co-operation. Recent statistical reports showed a surprising fall in infant mortality and a remarkable increase in the survival rate of children, and also, in spite of all the gibes that had been directed against sanatoriums, a fall of something like 15 per cent. in the tuberculosis rate. Although the effort had been as imperfect as efforts on a large scale must be, the incidence of that awful plague had been substantially diminished. With the establishment of tuberculosis colonies he hoped and believed that there would be another large fall in the course of the next ten years.

Professor Drummond, who also responded, recalled how, at an earlier stage of the Association's existence, he had been a member of its Council, along with the late Sir George Hare Philipson and the late Mr. Williamson. He was immensely impressed with the way in which the Association transacted its business now as compared with what happened in those earlier days. He recalled the prolonged efforts of the Association which, after forty-nine years, resulted in the Medical Reform Act, by which the profession obtained direct representation on the General Medical Council. Dr. R. A. Bolam (Chairman of Council) thanked the Lord Mayor for the cordial welcome he had given to the Association and for his genial hospitality. The Lord Mayor, in a brief reply, reiterated his good wishes for the success of the meeting.

Local Organization.

We have remarked in previous years on the success attained in organizing Annual Meetings of the Association by medical men who, for the most part, have had no previous training in work of the kind, and who in the months preceding the event have been fully occupied with the cares of private practice or other professional duties. The work in preparation for an annual meeting is arduous and exacting, and the climax is reached during the early part of the week itself. The experience of previous years is, of course, available through the headquarters staff of the Association, but each town presents difficulties of its own, and the way in which they are met and overcome on every occasion says much for the energy and goodwill of the local workers. In Newcastle the division of labour has followed fairly closely the lines laid down in past years. A large General Committee appointed a smaller General Executive Committee, of whom six acted as local members of the Arrangements Committee sitting in London. The executive work is divided among nine smaller committees with special duties, their plans being co-ordinated by the presence on each of the President, Dr. David Drummond, and the local general secretary, Mr. R. J. Willan, as *ex officio* members. The entertainment of lady visitors has been organized along parallel lines. A Ladies' General Committee, with Mrs. Drummond as president, Mrs. Bolam as chairman, and Dr. Mabel Campbell as honorary secretary, appointed a Ladies' Executive Committee and seven smaller committees with specialized functions. Mrs. Bolam and Miss Campbell have served *ex officio* on each of these as liaison officers, while Dr. Drummond and Mr. Willan linked up the work of the Ladies' Executive Committee with that of the local administration as a whole.

The Temperance Campaign.

During the past half-century a breakfast organized by advocates of total abstinence has been a regular feature of the Annual Meetings of the British Medical Association, and members found an invitation to one awaiting them at Newcastle. The National Temperance League Breakfast this year took place on Thursday morning in the Grand Assembly Rooms, with the President, Professor David Drummond, in the chair, and later we hope to give a note of Sir Alfred Pearce Gould's address and of some of the speeches delivered when the meal was over. The medical temperance campaign had, however, already begun in Newcastle on the Sunday intervening between the opening of the Representative Meeting and the confluence of ordinary members to Newcastle. In the words of the local press on Monday, "Several well-known medical gentlemen who are visiting Newcastle in connexion with the annual meetings of the British Medical Association filled speaking engagements at local brotherhoods and churches yesterday. Generally their remarks bore on the temperance question." Thus Dr. E. Rowland Fothergill, Chairman of the Medico-Sociological Committee, at the invitation of members of the West End Brotherhood, gave an address on "Alcohol as a beverage in relation to present social problems." Dr. Mary Sturge of Birmingham addressed a meeting on Sunday afternoon, at the P.S.A. gathering in the Central Hall, Newcastle, where she urged the importance of total abstinence among men and women who contemplated parenthood. Dr. Horace Rose of Wendover spoke at the Byker Brotherhood on "Alcohol in general practice." Dr. F. C. Coley of Newcastle addressed the Felling Brotherhood on the topic of "Delusions about drink." Dr. W. L. Reid of Glasgow gave an address to the Bensham Brotherhood on "What

doctors believe about drink." Mr. McAdam Eccles addressed two meetings on facts concerning alcohol, one in the morning at the Friends' School, Pilgrim Street, and the other at the Brunswick Chapel; on the first occasion he was supported by Dr. Francis Rutter of Mere, Wilts. At the meeting of the Willingdon Quay Brotherhood in the United Methodist Church Dr. George Morgan of Brighton gave a discourse on "Alcohol and the child." Lastly, the Rev. Courtenay Weekes, M.R.C.S., delivered an address on "Alcohol and national efficiency," at St. Nicholas Cathedral.

THE ANNUAL EXHIBITION.

THE Exhibition of surgical instruments, drugs, foods, etc., was held in St. George's Drill Hall, St. Mary's Place, Newcastle, from Tuesday to Friday, and was formally opened on the first day by the President of the Association, Professor David Drummond. There was an excellent attendance of members. Professor Drummond made a tour of the Exhibition with some of the members of the local committee. He then addressed the exhibitors, who received him with hearty applause. He welcomed them, he said, in the name of the great Association of which he had the honour of being President, and also in the name of the Lord Mayor of Newcastle. He warmly congratulated them upon the high merit of their exhibits, which had greatly impressed him, and he wished them much success in all their endeavours. He hoped that the Exhibition would receive the attention and appreciation from the visiting members that it deserved. The President then, amidst applause, declared the Exhibition open. A review of the eighty stands which the Exhibition comprised will appear in a later issue.

THE Scottish Committee of the British Medical Association, on the invitation of the Secretary for Scotland, has nominated to be a member of the Voluntary Hospitals Commission Dr. R. C. Buist, gynaecologist to Dundee Royal Infirmary. This completes the committee. The names of the other members were published last week (page 81).

PUBLIC HEALTH IN 1920.

THE Annual Report for 1920 of the Chief Medical Officer of the Ministry of Health was published at the end of last week.[1] It is entitled, *On the State of the Public Health*, and is less than half the length of the document issued last year, when it was deemed desirable to describe in some detail the machinery of the new Ministry and its working. In his introduction Sir George Newman discusses the purpose of preventive medicine and the part played by the Ministry of Health in supervising and correlating the operations of State medicine as they are initiated by Parliament. "I recognize to the full," he says, "the imperative necessity of national economy, but I submit that suitable and sufficient medical staffing of the Public Health Service, centrally and locally, here by whole-time medical officers and there by part-time medical practitioners, is true economy, for without that we could only anticipate wasteful expenditure and disaster. If the nation desires to secure a high measure of public health it is obvious that we must pay for it. For public health is purchaseable. It is equally obvious that the control of that expenditure is, and should be, in the hands of Parliament and the local authorities representing the will of the people." In the pages that follow an account is given of the state of public health in England and Wales during 1920, as revealed by official statistics and by the work and records of the Ministry. A notable feature is the decline in infant mortality to 80 per 1,000 births in 1920 and to 90 per 1,000 births for the quinquennial period 1916 to 1920; this represents an immense saving in life. There is, however, still room for further reduction before a reasonable standard has been reached, more especially as regards the very high death rate under four weeks and the mortality among the illegitimately born. The closely related mortality among women in childbirth still remains high, and has shown little or no improvement since 1894. The chief characteristics of 1920 in respect of infectious diseases were the decline of influenza and the excessive number of cases of diphtheria and scarlet fever, which together accounted for nearly 189,000 patients, and upwards of 7,000 deaths. In considering public health as a whole, it is noted that cases of epidemic and infectious disease exceed half a million per annum, and though the primary burden is relatively light the ultimate results are grave. If tuberculosis be excluded, notifiable infectious diseases are, however, responsible for not more than about 10 per cent. of the mortality. The chief burden of disease and disablement is provided by general sickness, invalidity and physical impairment. Much of this great mass of disease is directly or indirectly infective in origin, though it is not included in the records of infectious disease. "It is largely unmeasured and unregistered, and yet it is the principal cause of physical inefficiency. Much of it lays the foundation of mortal disease, much of it is preventable; and all of it constitutes a part, perhaps the main part, of the health problem of the nation." The expenditure on sickness and disablement benefits shows that 270,000 years are lost per annum among the insured population alone; there is also to be considered the labour and expense imposed upon others during the 14,000,000 weeks of their incapacitation. Thus, while here and there great gains have been made in the health of the nation, and the death rate as a whole has declined, there remain certain sections of the death rate, both as regards age and cause, which are exceptionally high, and a serious amount of preventable sickness and avoidable disablement, the tendency of which must be to undermine the physical stamina of the people, reducing their capacity and shortening their days. Passing from general considerations such as these, the report takes up in turn the chief branches of work undertaken by the Ministry of Health under the following main headings: Maternity and Child Welfare; the Insurance Medical Service; General Epidemiology; Infectious Diseases Introduced from Abroad; Tuberculosis; Venereal Disease; The Relation of Food to Health and Disease; Medical and Sanitary Administration; Medical Intelligence, Investigation and International Health. In a later issue we shall discuss some of the findings and opinions presented in these sections. The chapter on the Insurance Medical Service will, without doubt, be studied in many quarters with close and critical attention. It may be noted here that Sir George Newman regards the British scheme of national insurance as a *via media* that retains and secures the peculiar individual genius of English medicine, and provides the medical practitioner with an opportunity of public service, instead of excluding him on the one hand, or creating a practitioner service of whole-time medical officers on the other. Summing up the situation at the end of his report, Sir George Newman finds cause for encouragement in the steady advance in the public health service that has taken place since 1918, and the substantial recovery since the war. He warns the general reader that in the practice of preventive medicine quick returns cannot be had, and he summons local authorities to practise what he calls intensive culture and internal development. "It is not the Ministry of Health, but the local authority, in whose hands rests the main business of the execution of a national health policy."

[1] Cmd. 1397. To be purchased through any bookseller or directly from H.M. Stationery Office. (Pp. 180. Price 1s. 6d. net.)

THE RISK OF EPIDEMIC DIARRHOEA.

THE Ministry of Health has issued a pamphlet[1] pointing out the importance of the practical measures which local authorities should take for the prevention of epidemic

[1] Circular 217. 1921. London: H.M. Stationery Office. Price 1d.

diarrhoea in the summer months. Of recent years the number of deaths due to this cause in England and Wales has been considerably reduced, and this has been an important factor in lessening the infant mortality rate. While in 1911 there were 36 deaths per 1,000 births from diarrhoeal diseases, with a total infant mortality rate of 130 per 1 000, in 1919 the rate for diarrhoea was only 9 per 1,000, with an infant mortality rate of 89. A hot summer and autumn, however, may check the satisfaction naturally felt on comparing these figures, as such seasons may cause a sudden and serious rise in the death rate. Preparations should therefore be made for dealing with any possible epidemic of diarrhoea. The mortality from this disease is almost entirely confined to children under the age of five years, and cleanliness of the home is perhaps the most important factor in determining its occurrence; so that not only is it most important for local authorities to insist so far as possible upon domestic cleanliness, but they must also secure that all accumulations of dust, refuse, or filth about dwelling houses are removed at short intervals. In this way the breeding of flies should largely be prevented and practical measures should also be undertaken for their destruction in order to prevent their polluting food and drink. If an epidemic of diarrhoea be seriously threatened in any district the local authority may have to suspend for a time the usual organization for health visiting, and to employ the staff of medical officers, health visitors, and child welfare nurses, in preventing the spread of the infection and in the nursing of sick infants. The attention of the public should be called to methods of preserving and storing milk and other food, to the detection of early symptoms of the disease, and to the importance of securing immediate medical advice. Medical practitioners, it is suggested, should be invited to notify any serious cases in order that nursing assistance may be provided immediately, at the child's home if necessary, while the child welfare nurses should also instruct mothers in the methods of carrying out the treatment advised by the family practitioners. Hospital accommodation, it is recommended, should be obtained as far as practicable for children who are seriously ill, either in special wards in isolation hospitals or in hospitals for sick children, or, if necessary, temporarily in other hospital institutions.

THE RED CROSS REPORT.

THE general report of the British Red Cross Society and the Order of St. John of Jerusalem in England on the work which was so successfully carried out during the great war has just been published by H.M. Stationery Office and will be more fully dealt with in a later issue. The report, which extends to over 800 pages, goes into details of all the different branches of Red Cross work at home and abroad, and contains many interesting notes and lessons for future use in regard to the relationship of such voluntary societies with the War Office and the Government. The total expenditure by the joint committee of the societies amounted to just over £20.000,000. The report, which is the work of many hands, has been edited by Mr. J. Danvers Power, and the price is 12s. 6d. net.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Evidence of Medical Men in Courts of Law.

LORD DAWSON OF PENN has given notice to call attention in the House of Lords, on July 27th, to recent rulings as to the privilege of medical men with regard to evidence in courts of justice, and to move that the matter be referred to a Select Committee of the two Houses of Parliament.

Industrial Fatigue Research.

Mr. J. Davison asked, on July 13th, whether the Government had reached any decision for continued Treasury support for the Industrial Fatigue Research Board; and whether, in view of the importance of the work in its bearings on industrial efficiency, the Minister of Health would press for the maintenance and expansion of the Government's financial assistance. Sir A. Mond replied that the future position of the Board could not be settled pending consideration of the financial requirements of departments in the next financial year.

Colonial Medical Service.

In Committee of Supply on the Colonial Office vote, on July 14th, Mr. E. Wood (Under Secretary for the Colonies) said as regards many parts of the Colonies it was impossible to feel satisfied with the health conditions of to-day. He expressed the thanks of the Government to a committee presided over by Lord Chalmers, which had recently reported as to how best to link more closely the problems of research in the Colonies with universities and other allied institutions in our own country. He was glad to think that more and more the forces in different parts of the world were being mobilized in the pursuit of disease.

The London and Liverpool Schools of Tropical Medicine in one way and another were doing work in the West Indies and in West Africa. In Ceylon there was an active pursuit of malaria. In Mauritius a sum of 10 million rupees had been set aside for similar purposes, and they had been fortunate in enlisting the services of one of our greatest medical scientists, Dr. Andrew Balfour, to advise as to how best the money might be applied. It was with the keenest pleasure that a few weeks ago the Colonial Office was able to welcome the representatives of the International Health Board of the Rockefeller Foundation, who came over from the United States to confer as to the possibility of closer co-operation in their valuable work. And he had every hope that extremely important results would emerge. In this connexion he wished to impress on the Committee the importance of medical personnel. They were confronted with it whenever they began to tackle the problems of research or of its application. In this matter the department had had the advantage of another strong committee presided over by a very distinguished administrator, Sir Walter Egerton. Some of the recommendations made by these gentlemen had already been adopted, and it was hoped as time went on to adopt others. The unification of a Colonial Medical Service presented difficulties. In all these questions of administration the Colonial Office was dealing with forty or fifty different Governments in an infinite variety of conditions and with great differences in their financial resources, and in these days in many all reforms the depth and length of the purse was the deciding factor.

Sir Samuel Hoare agreed with Mr. Wood that medical administration was the most important service of any in the tropics. If inquiry were made into medical administration in the West Indies, and it was compared with what the Americans had done in Panama, or with what they had done in a lesser degree in countries like Guatemala, he was afraid it would be found that British medical administration had lagged behind the medical administration of our neighbours. That was the kind of question that a High Commissioner could consider on the spot, and he wished that we could have such appointments of big men with influence in London, who could make frequent visits to Downing Street to present Colonial demands. He believed further they would never get effective administration in the smaller and poorer dependencies unless there were a single graded Colonial service.

Dr. F. E. Fremantle said it was essential for the Government to see that our Colonial Medical Service and the medical services throughout the Empire were far more efficiently managed than at the present time. Officers joined the Colonial Civil Service on the understanding that medical attendance would be provided, and then they found themselves after many years of service 50 or 100, or 200 or even 300 miles in the bush away from a medical officer, not because a medical officer could not be provided but because, at the present time, the deficiency was not being made good. At present there were stations in West Africa with half a dozen European families and no doctor within eighty miles. Owing to the road conditions it would take him four hours to reach these families. Over and over again in a similar case he had been unable to go because he had had to attend to cases at his own station. The matter had now been taken up by the Colonial Office and he had been supplied by the Under Secretary with a return as to the deficiencies. It dealt with all the different services, and showed 114 vacancies on a strength of about 600. On the West African Medical Staff the total strength was 152, and on that there was a deficiency of 68. That was brought up to June 1st or July 1st, and it did not include 15 natives not attached to the medical staff; four dentists were also excluded. But that was a serious shortage, and was not only true of West and East Africa, but there were worse complaints as to some of the smaller colonies. The Under Secretary had indicated that the difficulty was that these colonies had to pay their way. In many cases the promise of private practice was held out to the medical officer, when he was offered three or four hundred a year to do special Government duty. That was a misleading and ineffective arrangement, because if there was any private practice the medical officer gave it as much time as possible and gave as little as possible to his Government duties.

The system had worked out very badly in certain colonies from which he had special reports. In many cases there was no real private practice, and men who had accepted appointments from the Government under the impression that there was, had felt themselves to have been misled, and had returned home. The Departmental Committee reported on Colonial Medical Services as far back as July of last year, and the latest official statement was that some of the recommendations had been granted and others might be granted. It was a vague reply, and he desired a little more definite assurance. He knew that a medical man could not be supplied for each resident European. The pay in the West African Medical Service had been improved, but it was glaringly insufficient; it was not enough to provide a proper medical service at the present time. Moreover, if all these different services were to be self-supporting there was a very definite reason for treating this matter as an Imperial service, supported by Imperial contributions. For services of defence Imperial natives were equally available to all Imperial colonies, and he saw no reason why the colonies should equally contribute towards medical service. Why should they not get exactly the same grant for colonies in all parts of the Empire, seeing that they were kept together by virtue of the navy, and were only useful as of the Empire if they had a proper medical service? He maintained that there was good reason for having contributions from those colonies which could not afford to maintain a medical service of their own. Thus a proper service might be built up under the Government for the whole of the colonies. Those engaged in it should have a good initial salary and a proper chance to get work. They should be entitled to pensions and gratuities, together with free passages for their families, such should be insisted upon as minimum requirements for these very useful agents of the British Empire. The Departmental Committee had again pressed for some consideration to be given to the possibility of a United Government Medical Service. He believed that would effect an enormous saving. Now one service was competing against another, and they had no Colonial Medical Service which could be said to be united. With some kind of guarantee good men would be attracted.

Mr. Churchill, in the course of his reply, said he agreed with the Under Secretary that great as had been progress during the last twenty years, only a beginning had been made in the assertion and establishment of the mastery of science over the jungle of diseases. Mr. Churchill afterwards dealt with general considerations affecting economies, and also with the situation in Mesopotamia, which had been discussed at great length.

Criminal Law Amendment Bill.

The second reading of this measure, which has already passed through the House of Lords, was moved in the Commons on July 15th by Dr. A. C. Farquharson, who expressed gratitude to the Government for the facilities afforded for its progress.

Clause 1 of the bill would lay down that consent of young persons under 16 years of age shall be no defence to a charge of indecent assault. Clause 2 would declare that reasonable cause to believe that a girl is over 16 shall be no defence to a charge under Section 5 or 6 of the Criminal Law Amendment Act, 1885, and that the limit of time for proceedings under that Act shall be extended to twelve months after the commission of the offence. Clause 3 would enlarge the maximum penalties that hitherto have been imposable upon brothel keepers. Clause 5 would repeal Section 5 of the Punishment of Incest Act, which required all proceedings under that Act to be held *in camera*. In the application of the bill to Scotland, provision is made to substitute for Clause 1 a more comprehensive definition of an offence, and the maximum punishment (with or without consent) is put at two years' hard labour when found guilty on indictment; and three months' imprisonment on summary conviction.

Dr. Farquharson, in presenting the case for the bill, gave a brief but very able review of the development of the law on this subject. He traced back from the year 1817 how deplorable, physically and morally, had been the condition of children in the first half of the last century, and the advance of legislation for their care from the year 1861. He emphasized the constitutional relationship between statutes with regard to sexual offences and child protection. In the evolution of the law the question had revolved round the age of 16 as that at which childhood was likely to have ceased. He suggested therefore, with reference to Clauses 1 and 2 of the present bill, that the chief point to be determined was at what particular year was the age of childhood to be fixed, and, if fixed at the age of 16, then it was right that the fullest protection should be given to that period of childhood, both as to sexual offences and offences taken up in the Children's Act. In this regard he pointed out how, in successive Acts of Parliament, the age up to which a child should be protected had been advanced, and he submitted that with a right sense of national obligation the age of 16 should now be accepted as a definite milestone.

In support of this view Dr. Farquharson afterwards touched upon the biological or scientific aspect of the subject. In the human mammal there was an abnormally long period of dependence by the child upon the parent for care; and there was no period during that time more urgently calling for protection than that between 15 and 16 years of age. At that period there was a certain hiatus between parental care and the needs of the child; it was a time when the State should step in to exert every form of protection that it could. He dealt next with the public health aspect. A vast amount of physical disability found during the war to be prevalent was directly traceable to the conditions of life during the past half century. He was certain that an enormous amount of the venereal disease which prevailed—he would say 80 per cent.—was transmitted by children and very young persons. No other measure could be more fraught with good, not only for the prevention of prostitution, but to bring home to the very young the nature of the matter, and to save them from embarking on a career of vice. It would also tend more than almost any other health measure of the past to prevent the transmission of venereal disease. This was a bill for the protection of the race, and a stepping stone to a greater and higher physical efficiency.

Mr. Wignall seconded the motion, and recalled that the bill was the outcome of the recommendations of the Joint Committee of the two Houses of Parliament. It was based on the Bishop of London's Bill, which was one of those considered by the Committee.

Major Christopher Lowther moved the rejection of the bill, taking the view that more could be done to cure this kind of immorality by education and proper protection of children by parents and guardians. In regard to Clause 1, he raised the question of the incitement by girls, which was sometimes revealed in assize trials. He objected to Clause 2 as contrary to the spirit of British law by making a man guilty in the absence of intention; he objected to it also because alien girls in this country, while under 16, often had the appearance of being 18, 19, or 20 as compared with English girls. He believed that the mothers of this country who had sons as well as daughters requiring protection would be opposed to the measure.

Captain Loseby seconded the amendment, but said that Clause 2 was the only part of the bill to which he objected.

Mr. J. W. Wilson supported the bill, and Sir Ryland Adkins, speaking with considerable experience in the courts, also favoured second reading, but reserved his judgement on Clause 2 until after there had been discussion in Committee. He hoped that the promoters of the bill would not stand by the proposal to extend the limit of time for prosecutions to a year.

The Home Secretary (Mr. Shortt) urged the House to give the bill a second reading as a measure which had been proved to be very necessary. It was needed for the wretched children who had been absolutely neglected by their parents. This was not legislation to produce morality between adults, but to protect the children, and as for Clause 2 he added that if a man was reckless he must take the consequence of his recklessness.

After further discussion, the bill was read a second time and referred to Grand Committee.

Hospital Disinfection.—On inquiry by Lieutenant Commander Kenworthy, on July 12th, Sir L. Worthington Evans said that the hutment on Spike Island was used as a segregation camp for soldiers during the war and until December 7th, 1920. It was closed in accordance with the policy of treating venereal diseases in sections of general hospitals, and without any reference to the need for accommodation for Irish prisoners. Seventy-four days—that is, from February 19th, 1920—elapsed between the sick soldiers moving out and the Irish prisoners moving in. During the interval the camp was disinfected, and all bedding and blankets disinfected and removed, the latter being replaced by new bedding and blankets. These measures were carried out under the supervision of an officer of the Royal Army Medical Corps. The Assistant Director of Medical Services, Irish Command, inspected the camp before the Irish prisoners were moved in, and he was satisfied that there was no risk of infection. No trace of venereal or other disease had occurred among the prisoners which was traceable to their location at Spike Island.

Weather Conditions.—Sir A. Mond stated, in answer to Sir Walter de Frece on July 13th, he had issued a circular to local authorities and their medical officers of health as to the danger to young children of epidemic diarrhœa in the existing weather conditions (see page 125). Dr. Fremantle asked the Minister to take steps to warn the public against the common misconception that throwing disinfectants down drains was an advisable thing, seeing that it often stopped the septic processes on which the treatment of sewage depended.

Venereal Disease Amongst Seamen.—Major Colfox asked, on July 14th, if the Government was prepared to give facilities for the passing into law this session of a one clause non-contentious bill to amend the Merchant Shipping Act, 1906, Section 34, subsection (1), so that British seamen might no longer suffer under disabilities not shared by their fellow countrymen or by foreign seamen in being penalized if they sought treatment for venereal disease. Mr. Baldwin replied that a clause dealing with this matter would be included in the next Merchant Shipping Bill, but he was afraid that it was not possible to introduce legislation this session. Captain Elliot asked whether, seeing that this was an urgent matter in relation to infectious disease, it would not be possible, if agreement were reached, to have it dealt with this session. Mr. Muls asked whether the Government knew that the Shipping Federation and the Seafarers' Joint Council were in agreement on this subject, and that it was almost a non-contentious matter. Mr. Baldwin suggested questions to the leader of the House.

Experiments on Living Animals.—Sir John Baird, on July 14th, on behalf of the Home Office, made the usual motion for the annual return showing the number of experiments on living animals during the year 1920 under licences, with distinction as to the nature of the experiments.

England and Wales.

VOLUNTARY HOSPITAL POLICY.

A special meeting of the President and General Council of King Edward's Hospital Fund in London was held in St. James's Palace on Wednesday, July 13th. The Earl of Donoughmore presided, in the absence of the Prince of Wales, who sent a message welcoming the fact that Lord Cave's Committee had reported so strongly in favour of the voluntary hospital system. His Royal Highness expressed the hope that if the Government could not do as much as the Committee thought would be required, a still greater effort would be made by the hospitals, the central funds, and the public to carry out the suggestions in the Committee's report.

Lord Stuart of Wortley, Chairman of the King's Fund Policy Committee, presented that committee's preliminary report on the final report of Lord Cave's Committee. This drew attention to the steps to be taken and the new duties which would fall on the King's Fund if the committee's recommendations were adopted. Emphasis was laid upon the urgency of the situation, in view of the limited amount of time at the disposal of everybody concerned, and upon the need for prompt action.

On behalf of the King's Fund Policy Committee Lord Stuart accordingly moved the following resolution:

> That the General Council of King Edward's Hospital Fund (*a*) thanks Lord Cave's Committee for its sympathetic and clear-sighted survey of the problem and in particular for emphasis laid by the report upon the value of individual effort and initiative in hospitals and for the fruitful suggestions of methods by which hospitals could restore their finance; (*b*) welcomes the recognition by Lord Cave's Committee that none of these new methods will immediately produce a large revenue, and that the next two years must be regarded as an emergency period during which a Government grant on a sufficiently substantial scale will be necessary, subject to such conditions and administered by such machinery as would secure the maintenance of the voluntary system; (*c*) considers that the sum of £1,000,000 recommended by Lord Cave's Committee for the year 1921 would probably be required for this purpose, since the evidence in the possession of the King's Fund goes to show that the deficits at the London hospitals alone are likely to amount to about half this sum; (*d*) desires to emphasize the fact stated by Lord Cave's Committee, that, solely as a consequence of the war, many of the hospitals are at present carried on at a large weekly deficit, and that the position of hospitals throughout the country is thereby imperilled; (*e*) urges the consequent danger from a delay of even a few weeks, and the importance of prompt action to carry out the recommendations of Lord Cave's Committee, in order to avoid immediate disaster to the hospitals and the sick poor, and the enormous expense to the Exchequer which would follow if the voluntary system were to collapse and hospitals had to be provided by public funds.

The motion was seconded by Sir Norman Moore, President of the Royal College of Physicians of London, and after discussion was put and carried. Copies were ordered to be forwarded to the Prime Minister, the Chancellor of the Exchequer, the Minister of Health, and the members of Lord Cave's Committee.

It was further resolved to inform the hospitals that King Edward's Fund would, at the ordinary current distribution, take into account what had been done by the various hospitals to carry out the recommendation of Lord Cave's Committee to the effect that they should take all steps open to them to re-establish their financial position within the next two years.

WELSH NATIONAL SCHOOL OF MEDICINE.

At a meeting on July 15th of the Council of the University College of South Wales and Monmouthshire, Dr. Alexander Mills Kennedy, of the University of Glasgow, was appointed to the chair of medicine in the Welsh National School of Medicine, Cardiff (University of Wales). Dr. Kennedy, who is at present senior assistant to the Muirhead Professor of Medicine in Glasgow University, and one of the assistant physicians to the Glasgow Royal Infirmary, has acted as director of the Research Department at Glasgow Royal Maternity and Women's Hospital on behalf of the Medical Research Council. He is the joint author of a large monograph on cerebro-spinal fever, and has contributed numerous papers to medical journals. The new professor takes up his duties as Professor of Medicine and Director of the Medical Unit at Cardiff on October 1st.

CO-ORDINATION IN THE CARE OF SICK CHILDREN.

On the invitation of the Medical Board of the Royal Liverpool Children's Hospital, a meeting of physicians and surgeons specially interested in the institutional care of sick children was held at the hospital on July 1st. Those present unanimously constituted themselves "the Medical Council for the Care of Sick Children of Liverpool and District." An executive committee was appointed, and subcommittees were formed to which the following subjects were referred: (1) the development of increased efficiency through co-ordination in the care of sick children; (2) after-care; (3) institutional care of sick babies; (4) research and post-graduate instruction.

VERMINOUS CONDITIONS.

The Public Health Committee of the London County Council has recommended that application should be made to Parliament in 1922 for amendment of the General Powers and Public Health Acts to secure than whenever a person is found to be infested with vermin (including fleas, bugs, lice, and itch-mites), or a child is found by a local education authority to be infested with such vermin or to be in a foul and filthy condition, the premises, bedding, clothing, and other articles in use by such person or child shall be liable to be compulsorily cleansed, purified, or destroyed. The attention of the Ministry of Health is also to be drawn to the desirability of an amendment to the Cleansing of Persons Act, 1897, requiring that the provision for dealing with persons affected with vermin or in a foul or filthy condition should be made by each local sanitary authority, and to the desirability of introducing legislation empowering local authorities to inspect second-hand wearing apparel in the hands of dealers, making it an offence knowingly to deal in such apparel when it is verminous.

Scotland.

EDINBURGH UNIVERSITY: ADDRESS BY SIR ROBERT PHILIP.

At the graduation ceremonial in medicine which took place at Edinburgh University on July 15th, after the degrees had been conferred, details of which are given elsewhere, Sir Robert Philip delivered an address to the new graduates. He said that a conspicuous landmark of the old place was slipping from immediate view in the retirement of Professor Sir John Halliday Croom, who had taught in that medical school for fifty years, and had added further lustre to the famous chair of midwifery. These fifty years had meant much to the faculty of medicine; in 1871 the medical students numbered 712, while this year the medical students enrolled in the University numbered 1,960. During that period some 8,500 students had graduated as bachelors of medicine, and 2,488 as doctors of medicine. In 1871 the faculty of medicine included twelve professors and eleven assistants, a total personnel of twenty-three; in the current academic year the faculty of medicine included twenty professors, with whom were associated seventy-eight lecturers and almost one hundred assistants, a personnel of approximately two hundred. The figures illustrated strikingly the development of modern medicine, and showed that the needs of the student had been abundantly supplied. The remarkable advances of the last fifty years were in chief part due to the inspiration and genius of Pasteur, who in 1870 left Strasbourg for the last time, interrupted in the midst of his series of wonderful researches by the roar of cannon. The principles of antiseptic surgery which, based on the teaching of Pasteur, Joseph Lister had propounded in Scotland in 1867, were so little appreciated that in the early battles of 1870–71 no one thought it worth while to apply them practically. In the *University Calendar* of 1871 bacteriology did not appear, nor was there then a chair of public health. The significance of preventive medicine to day was emphasized by the place it held in connexion with every subject of the curriculum, and by the establishment of chairs and lectureships in several special departments. The artificial distinction between so-called medical officers of health and the great body of the profession must inevitably yield to the larger view that they were all concerned with the protection of the nation's health.

Correspondence.

ANGINA PECTORIS.

SIR,—Jonnesco's operation of division of the vagus, mentioned by Dr. E. A. Starling and others, for the relief of angina pectoris is very interesting to me as, in 1893, at a Branch meeting of the Association at Yarmouth, I published my hypothesis that in (say) 90 per cent. of cases the malady was due to aortitis, and that death was due, not to "heart failure," but to vagus inhibition—both propositions then made for the first time. Since then I have prescribed atropine—as advised in my book on arterial disease—to protect the heart from the inhibition. Where the heart is sound it escapes from the vagus grip; but in the large majority of the cases the heart is not sound.

My purpose now is to say that Professor Wenckebach of Vienna wrote to me some months ago to say that he had completed his five-hundredth necropsy on cases of angina, and that he was "absolutely with me" as to my interpretations of the disease. He added that he had found in many of the severer cases that the vagus in the neck was tender to pressure, sometimes very tender; so much so as to make it desirable that stiff or tight collars should be removed.

My hypothesis is now widely accepted in France and in the United States, but hardly yet in England. Indeed, a few years ago a dear friend of mine argued with me that it was a "childish opinion," and advised me for my own reputation's sake to say no more about it. That notwithstanding in a small minority of cases the angina arises in or about the heart I set forth and described in my Arteries book. Mr. Verdon's book is replete with interesting matter, and he has paid more formal attention than I had done to the gastric side of angina; a feature in these cases which I am sure is of great importance. It will be most interesting to hear farther reports of Jonnesco's operation.—I am, etc.,

Cambridge, July 16th. CLIFFORD ALLBUTT.

THE COLON AND COLITIS.

SIR,—May I, while testifying to the great helpfulness of Lord Dawson's Annual Oration to the Medical Society of London, published under the above heading in your issue of July 9th, make the following comments?

1. Anatomical varieties do count and fixing operations are in use and of value. Recently I have carried out a number of colon and other fixing operations on pensioner patients suffering in the way Lord Dawson describes. The bulk of these patients had been idle for years; all had spent many months in hospital; many had had previous operations, usually appendicectomy. The time is not yet ripe for full publication, but the large majority of the patients are greatly improved; some have already fulfilled the pensioner test of cure by having gone back to work. Comparison of opaque meal radiographs before and after operation has shown the reality of the fixations. The operative work of Rovsing in Copenhagen, Coffey in America, and Waugh in this country, shows the value of fixations.

2. My experience has also taught me that in many cases where operation is not deemed necessary or thought advisable, a properly supporting "truss" belt, giving an uplift to the lower abdomen, is very useful in relieving symptoms. A doctor recently wrote to me of a patient: "to report the wonderful success achieved by the abdominal belt . . . after years of misery she is now entirely free from abdominal discomfort." To test whether a belt will be of value let the investigator stand close behind the patient, link his hands across the lower abdomen and lift; relief of any pain present and a feeling of comfortable support suggest that the belt will prove useful.

3. In reference to Lord Dawson's statement that it is "the musculature (of the bowel) and its innervation which count," I believe that it is the drag on the mesenteries rather than the change in the bowel wall which principally causes the pain and other symptoms. Apart from the testimony given to the value of fixing operations and of support, it is known that in abdominal operations under local anaesthesia bowel manipulations are painless, but bowel dragging causes pain, and under general anaesthesia bowel dragging causes shock. A non-obstructing carcinoma of the bowel wall does not cause pain. These facts suggest that it is to dragging due to prolapsed viscera that symptoms are to be referred.—I am, etc.,

London, W., July 11th. A. W. SHEEN.

RADIUM THERAPY IN UTERINE CANCER.

SIR,—I read Mr. Hayward Pinch's paper, and Mr. Drew's comments on it, with great interest, and while the former is cautious and hardly enthusiastic as to the results of treatment by radium, he does not appear to me to justify Mr. Drew's pessimism.

The treatment of carcinoma of the cervix is only a vogue, inasmuch as it appears to hold out greater promise of success than any other treatment yet discovered, and the reports available from Continental and American gynaecologists can leave us in no doubt that the results are encouraging and heartening in both early and advanced cases. Mr. Pinch refuses to treat all early and operable cases by radium; is he therefore entitled to express a magistral opinion upon the results of such cases treated by radium? Recasens (Madrid), an eminent gynaecologist, has abandoned the Wertheim operation since 1913 in favour of radium, and reports better results from it than from the operation. Taussig (*American Journal of Obstetrics and Gynaecology*) reports 223 cases of carcinoma of the cervix free from recurrence five years, and concludes that (*a*) the percentage of cases cured by radium is equal to the number cured by operation; (*b*) the percentage of early cases cured by operation is slightly larger than those cured by radium; (*c*) the percentage of cases (late) cured by operation is smaller than that treated by radium.

These and many other published papers seem to suggest that Mr. Pinch is over-cautious in his estimate of radium treatment for carcinoma, and his conclusions are necessarily drawn from the treatment of inoperable cases. The treatment of early cases has not been tried out in England, whereas in France, Spain and America it has definitely emerged as a rational means of dealing with carcinoma of the cervix. What of the Wertheim operation? After two decades it remains upon trial, and the results are not heartening or encouraging, and any alternative to it would be welcomed. Again I quote Recasens, who abandoned the operation in 1913.

In advanced cases there is no dispute that surgery is out of the question for I find few who are prepared to revert to the cold cautery of Percy, and the recognized truth that radium will stop haemorrhage and offensive discharge, relieve pain and even heal the local ulcer, certainly brings hope to the stricken patient as well as to the surgeon.

Cancer is either operable or inoperable. In the latter event we sentence the patient to death relieved by opiates; in the former case we dwell upon cures of five to ten years' or longer duration and still cannot affirm that there will not be a recurrence. Are we worshipping the time cure as a fetish?

The immediate reason for the patient consulting us is haemorrhage, discharge, pain, or an ulcer; how are we to deal with it? In inoperable carcinoma mammae it is justifiable to excise the tumour locally, and although we have not cured the patient in the time sense, we have cured the local lesion, and trust that recurrence will take place in the viscera. In carcinoma of the cervix radium will produce the same result; and after all this is the basis of Mr. Pinch's paper, so why expect a time cure from material which was admitted to be in the main inoperable?

Abroad radium appears to be used (*a*) to cure, in the time sense, early cases; (*b*) to relieve and cure locally advanced cases.

In England it appears to be used (*a*) to render borderline cases operable; (*b*) to relieve advanced cases; (*c*) for prophylactic irradiation.

These methods of employment express the divergent views of gynaecologists, and, as Mr. Pinch suggests, the truth probably lies between them, and therefore I do not think that the pessimism expressed in Mr. Drew's letter is justified.—I am, etc.,

London, W., July 10th. SIDNEY FORSDIKE, M.D., F.R.C.S.

EXTROVERSION OF THE BLADDER.

SIR,—The sequel of the two cases of extroversion of the bladder, reported by Mr. Lendon and Mr. Newland in the BRITISH MEDICAL JOURNAL for July 9th, will be read with interest by many surgeons, for it is only by the end-results that we can arrive at the best method of treating these distressing cases. The authors state that it would be interesting to learn the ultimate result of similar cases reported in the JOURNAL.

The case I reported was that of a boy, aged 5 years, on whom I operated in July, 1908, performing the extra-peritoneal operation described by Lendon. The after-history has been as follows: Two years after operation he had frequent bleeding from the rectum, due to small adenomata, which I removed. I did not see him again until March, 1921, when a strong, healthy looking boy of 17 called to know if I would give him a certificate that he was in good health and able to do labouring work. He had been working as a clerk, but said the indoor life did not agree with him, and he wanted to go to Canada to try for open air work there. He seemed in perfect health, and has never had any pain or tenderness over the kidneys. He has had no return of the bleeding during the past eleven years. The penis and testicles are well developed. He has quite good control over the urine, but has to get up once or twice at night to empty the rectum. He has a sound abdominal scar where the bladder was removed. It is now thirteen years since the ureters were implanted into the rectum, and the kidneys appear to have escaped infection so far.

It will be interesting to know if cancer of the rectum is more likely to occur after implantation of the ureters. Cancer sometimes develops in the extroverted bladder where no operation is done. My case had several adenomatous nodules on the bladder at the time of operation, and some afterwards developed in the rectum, but there has been no further trouble for eleven years.—I am, etc.,

Dublin, July 12th. C. ARTHUR BALL.

HERPES ZOSTER AND VARICELLA.

SIR,—With respect to the association of these two eruptions as exemplified by cases recently reported, I would suggest that those interested focus their attention on those cases in which the varicellar follows the herpetic eruption in the same individual. They will then, I think, get at a reasonable explanation of the association. The following are the noticeable points: (1) When both eruptions appear in the same individual the herpetic invariably precedes the varicellar; (2) there is a constant interval of two to five days between the two eruptions. The disease in this form may therefore be looked upon as a varicella with a prodromal rash, and contacts will be infected with one or both eruptions according to age and temperament. Adults and neurotic children will generally be found to exhibit the herpetic eruption commonly known as "shingles," while the majority of young children will exhibit the varicellar eruption only, commonly known as "chicken-pox." Taking this point of view we cannot, I think, get away from the inference that we have to deal with one disease (call it "varicella herpetica" or what you will), which may be split up according to circumstances into shingles or chicken-pox. I have just had a typical case of the sort under treatment.

J. H., a small and rather nervous boy of 6 years, sat next to a chum of his own age at a bioscope, who had chicken-pox scabs still on him. About fourteen days later J. H. broke out with a painful shingle eruption over the eighth and ninth right intercostal and epigastric area with confluent vesicles in the region of the angle of the right scapula. The usual mixture of sodium salicylate failed to allay the pain or give him rest at night, so that 2½ minims of liquor morphinae had to be administered. Three days later the first chicken-pox spots appeared, and his body was soon covered with the typical eruption.

The noticeable points about the case are: (1) A neurotic temperament (inherited from his mother), rendering him susceptible to the herpetic as well as the varicellar eruption; (2) the unusual pain (for a child), associated with the shingles, doubtless dependent on the same cause. The boy's mother had had chicken-pox with her twin-brother at the age of 22 years, the latter's attack being so severe as to be mistaken for small-pox. After her marriage she suffered from an attack of shingles on the left side when about 7 months pregnant.

The earliest record of the double eruption that I have been able to find was made by Pundschu in the *Wiener medizinische Presse* of 1865, and is quoted in the New Sydenham Society's *Transactions* for 1867. There are also two interesting diagrams of the double eruption in the *Medical Review*, vol. vi, p. 43 (1903), and in the *Journal of the American Association* for 1910, p. 532.—I am, etc.,

W. P. LE FEVRE, M.R.C.S., L.R.C.P.

[illegible], South Africa,
May, 1921.

THE USUAL SITE OF ORIGIN OF ENDO-LARYNGEAL CANCER.

SIR,—In your issue of July 16th Dr. Irwin Moore enters a claim for priority in establishing the above point, on conclusions he "had already come to in 1918." He says these conclusions were the results of his experience and his researches into literature.

Direct examination during a laryngo-fissure—and at many laryngo-fissures is the only method of definitely establishing the point under discussion. I had the pleasure of assisting Dr. Moore at his first laryngo-fissure operation in 1918—the year in which he published his conclusions. But I had had the advantage of Dr. Moore's skilled help at some thirty to forty of my laryngo-fissures in the previous ten years, and I venture to think that no inconsiderable part of his experience may have been gained in my practice.

As to his researches in literature, it is clear from his letter that he had not neglected the *Proceedings of the Royal Society of Medicine*. I fear, however, he must have overlooked the Section of Laryngology, vol. x, p. 52, where the following occurs in the report of the meeting of the Section on February 2nd, 1917:

"Sir StClair Thomson in reply: It is striking that not one of the four cases shown this afternoon had fixation of the cord. . . . In two of to-day's cases the growth was on the anterior four fifths of the cord. The old idea that malignant disease selects by preference the posterior aspect of the glottis is, in my experience, quite a mistake. Perhaps the growths in half my cases were more in the anterior than in the posterior half of the larynx."

This conclusion, founded entirely on my own observations, was made public more than a year before the appearance of the communication to which Dr. Moore refers your readers in support of his claim.—I am, etc.,

[illegible], W., July 19th. STCLAIR THOMSON.

ENUCLEATION OF THE TONSILS.

SIR,—In spite of our rapidly growing knowledge of the far-reaching effects of focal sepsis in general and that of the tonsils in particular, there is still a section of the profession opposed to the complete removal of the latter. This opposition is largely owing to the supposed dangers of haemorrhage and post-operative deformity. Both these are due to bad surgery.

The letter of "Clinic" in your issue of July 9th affords a good illustration of this. "Clinic" apparently does several hundred tonsillectomies a year. Nevertheless, we find him waiting till the child is "in a bad way from loss of blood" before dealing with the haemorrhage, and then suturing the faucial pillars together as a belated means of obtaining haemostasis. Apart from the questionable surgical propriety of burying a necessarily infected area, and apart from its doubtful efficacy, the method tends to produce post-operative deformity without the addition of a manipulative dexterity which tears the posterior pillars "like wet blotting-paper." The obvious surgical method of dealing with haemorrhage is to take up the bleeding points with forceps at the time of the operation and at once apply ligatures. If there is more haemorrhage than can be controlled by this method it is due to unnecessary trauma of the muscular tissue in the tonsillar bed. If the operation is properly performed not only should the haemorrhage be perfectly under control, but at the end a few blood-stained swabs should represent the patient's total loss. As to the pillars, they should remain not only untorn but unbruised, and with the mucous membrane intact upon both their surfaces. In this way there will be no greater danger of post-operative haemorrhage than in any other operation where an open wound has to be left to heal by granulation. There will be no post-operative deformity, and convalescence will be rapid and comparatively painless.—I am, etc.,

London, W., July 9th. GILBERT CHUBB.

BIRTH CONTROL.

SIR,—The issue raised by Dr. Mary Scharlieb, in her letter appearing in your issue of July 16th, is so vitally important that I feel it must not go unanswered, especially in view of the weight rightly attaching to anything uttered by one who has attained to so distinguished a position in the profession as she has done.

Mrs. Scharlieb admits that "on the surface of things it would seem as if a knowledge of how to prevent the too rapid increase of a family would be a boon to over-prolific and heavily burdened mothers," but she thinks that the disadvantages outweigh the advantages.

The first disadvantage, in her opinion, is that the artificial limitation of the family causes damage to the woman's nervous system. This, of course, is a practical point of the utmost importance, and raises the whole question of the injuriousness or otherwise of contraceptive methods, assuming that the best methods are selected, and that they are properly used. I am aware that some opponents of birth control have alleged that all sorts of physical ills follow the use of contraceptives, including uterine carcinoma, fibroids, ovarian disease, insanity, etc. The difficulty is to distinguish between *post hoc* and *propter hoc*. The use of contraceptives has become so common amongst the educated classes that it must be very easy to find numerous instances where the victims of any of these ills will admit to having used contraceptives at some period of their lives. On the other hand, other recognized authorities have failed to trace any real connexion. Thus, Sir Francis Champneys, who is not at all an advocate of birth control, and not likely to be biassed in favour of contraceptives, when giving evidence on the question before the Birth Rate Commission, said: "I do not think it is true to say that in the majority of cases prevention does affect health in a deleterious manner." Questioned as to the use of soluble pessaries, he replied: "I believe the common ingredient is quinine, and I do not believe that does any harm whatever." Dr. Hector Treub, professor of gynaecology at the University of Amsterdam, in his handbook of gynaecology (fourth edition, 1903), after describing several of the methods of preventing conception as harmless, says: "And the fact in itself that pregnancy is prevented cannot be said to be a source of danger." Professor Forel, a recognized authority on sex, writes:

> "We must no longer be content to remain indifferent and idle witnesses of the senseless and unthinking procreation of countless wretched children, whose parents are diseased and vicious. . . . We must, therefore, recommend to all persons who are sickly or infirm in body or mind, and especially to all suffering from hereditary ailments, the use of means for the prevention and regulation of conception. . . . We refer, of course, to such preventive methods as are completely harmless to the persons making use of them."

A few years ago, in order to ascertain what was the prevailing opinion of the medical profession in this country as to the injuriousness or otherwise of contraceptives, I issued a questionnaire to 100 medical practitioners, including a number of women doctors, selected quite impartially. The great majority of the replies were to the effect that the two forms of contraceptives which I specifically mentioned were not injurious. I will quote two replies as a set-off against Dr. Scharlieb's opinion. The first was from a woman, the second from a man.

> 1. "In nearly thirty years of practice among women, of which nearly twenty years have included experience on the staff of a women's hospital, I have not met a single case in which I could trace ill health to this cause. Naturally, both forms of practice have involved the receipt of many confidences on the subject."
>
> 2. "I am convinced after many years of gynaecological and obstetrical practice that the above practices (the use of contraceptives) are extensively practised among the educated classes. Personally, I have been consulted on several occasions about these methods, whether they have any deleterious effects upon the general health of either the male or the female. In both cases I have always, from practical experience, answered in the negative."

Dr. Scharlieb's second objection is to the effect that she believes that the practice of birth control may cause sterility, so that subsequently the couple, when they want children, are unable to obtain them. Personally, I doubt the validity of this objection. I have been unable to find any satisfactory evidence to justify such a supposition. Of course, sterility being very common, it may often happen that couples who have practised birth control from their earliest married days only discover the sterility later on when they want children. It is very possible that they will then reproach themselves together with those who advised them. But the obvious way to meet this contingency is to advise all young couples to make sure of some children, if they can, before beginning to practise birth control.

I must also join issue with Dr. Scharlieb in her third objection, that the use of contraceptives increases self-indulgence on the part of the husband. There is no evidence that the father of an unlimited family is any more abstemious than the father of the strictly limited one. In any case, her objection could hardly apply to the use of contraceptives by the husband, which implies an appreciable measure of self-control.

Dr. Scharlieb's fourth objection is that unmarried persons may abuse birth control. Of course, all knowledge may be abused. Is that a sufficient reason for suppressing knowledge, or for censuring those who use it legitimately?

May I say, in conclusion, that no unbiassed observer can doubt that birth control has come to stay. It is eminently desirable, therefore, that the medical profession should study it in all its aspects, and especially in regard to its practical application. In the past this aspect has been sadly neglected. There is room for full and thorough scientific research. I am glad that attention is now beginning to be turned to a subject fraught, as I believe, with great possibilities for good to the whole human race.—I am, etc.,

Leicester, July 17th. C. KILLICK MILLARD.

SIR,—In her letter of July 1st Mrs. Scharlieb states that in her experience prevention of conception has led to sterility and nervous disease. This is quite at variance with the experience of many who have had good opportunities of judging. Many of my patients have practised prevention of conception successfully for years with nothing but benefit; and when circumstances have allowed, and another child has been desired, conception usually follows intercourse whenever prevention is discontinued. In a case at present under my care the third conception has occurred in a married life of eight years, each conception having been wished for and prevention having been practised between each in order to "space" the family. Such cases prove that prevention does not cause sterility. Mrs. Scharlieb's cases prove nothing—they may have been sterile from other causes.

As regards the alleged nervous diseases, it is not the mother of a limited family who is particularly prone to these at the menopause; it is the worn-out woman who has borne child after child beyond her strength, and the unwilling celibate, who fall victims to their nerves. It is hard to follow Mrs. Scharlieb on the moral issue—surely it is better for a woman habitually immoral to have no child? Would she have the State burdened with more bastards, or would she have the prostitute continue to practise abortion? Surely in a case of this sort prevention is a duty to the race just as it is in the case of physical and mental defectives?

Mrs. Scharlieb does men less than justice when she implies that without the fear of conception they would make their wives slaves to their lust; and she evidently does not realize that in the case of a healthy young couple sexual intercourse only once a year could quite well result in a family of a dozen or more, so that if early marriage is contemplated some form of birth control must be used by practically all but the utterly reckless.

Birth control in any form involves self-control, and Mrs. Scharlieb need not fear that its spread will lead to unbridled sexual passions—these are not prominent characteristics of the professional and educated classes who chiefly use birth control at present.—I am, etc.,

Mancot, Chester, July 17th. BARBARA G. R. CRAWFORD.

SIR,—The opposition of Dr. Mary Scharlieb to birth control suggests that she does not appreciate the supreme fact of sociology—namely, that the world's food supply has always been increased so slowly that only a small percentage of couples in the world could get sufficient food for more than two or three children. We have to choose between birth control on the one hand, and poverty, high death rates, unrest, war, prostitution, and abortion on the other.—I am, etc.,

Brasted, Kent, July 18th. BINNIE DUNLOP, M.B., Ch.B.

A COLLEGE FOR BLIND GIRLS.

SIR,—May I be allowed to draw attention to the new college for the higher education of blind girls which has recently been opened under the auspices of the National Institute for the blind? It is situated at Chorley Wood, on the foothills of the Chilterns, some twenty miles from London by road and rail. The building is a fine old mansion standing on high ground on the south border of the wide and beautiful heath which tops that piece of country. The spaciousness of the house, the spread of the grounds with the splendid trees therein, and the openness of the position together make it a place of exceptional interest for a school of this order. It would be difficult to find a place where other senses than sight received so many and such happy impressions.

The college is for the higher education of girls who are totally blind or have no useful degree of sight. The education will be as liberal as in the best public schools for girls, and the physical and mental development afforded will enable blind girls to live full and active lives at school, at home, and in professions. The principal is Miss Phyllis Monk, formerly of Girton College, Cambridge, and latterly a mistress of Roedean School, Brighton; with her is associated efficient teaching and house staff.

I have visited the school, and can speak of the excellence of the arrangements for teaching and for the comfort of the girls; also on my visit there accompanied me a lady experienced in domestic affairs, and she was greatly impressed with the domestic arrangements and the evident happiness of the resident pupils. The fees for a place of this order are moderate, and there are some scholarships for girls of promise.

There are (happily) not many blind girls of the professional class, but for these few there can be no better place of education and training than this new college. Miss Phyllis Monk, M.A., the principal, will be pleased to receive doctors and others interested during the afternoon of Saturday, July 23rd. The address is "The Cedars," Chorley Wood, Herts. The school is ten minutes' walk from the station across the heath, and the London road passes within a hundred yards.—I am, etc.,

London, W., July 5th. N. BISHOP HARMAN.

PUERPERAL INFECTION.

SIR,—Much has been written lately, both by specialists and general practitioners of large obstetric experience, on the origin, prevention, and treatment of puerperal sepsis, but not one has drawn a broad line of distinction between those cases which are avoidable and those which are unavoidable. Before condemning the medical profession for the high rate of mortality in confinements it would be more just to give some idea of the percentage of cases caused by auto-intoxication and those due to the carelessness or lack of skill of the accoucheur.

Many a man has been blamed unjustly for the death of a patient from puerperal sepsis, when the cause of the death was auto intoxication and had nothing whatever to do with the conduct of labour. Every year large maternity hospitals have admitted into their wards cases of puerperal septicaemia which have never been examined, have no lacerations, and when the placenta has been expelled complete. Had any of these cases been attended, in general practice, and had the medical man applied forceps or extracted the placenta manually, I feel sure that he would have been blamed for the death, had such a catastrophe followed. Most men are engaged to attend a confinement months ahead and do not see the patient again until labour has commenced or has terminated. Would any reasonable person suggest that it is his duty to examine the teeth, tonsils, toe-nails, or other parts of the body with the idea of locating some septic focus?

I hold strongly that cases of auto-infection following labour should not be included in the statistics of puerperal sepsis, any more than a death from auto-infection following some minor operation performed by a general surgeon should be certified as being the result of the operation instead of a general septicaemia. I heard a medical man say once that if he had a fatal case of puerperal sepsis he would be ashamed of himself and never attend another case. Surely this is too drastic a self-condemnation, unless the death were due to carelessness or wrong treatment.

Leaving out all cases of auto-infection, following labour, I venture to put forward the following hypothesis:

No case of avoidable puerperal sepsis occurs, unless—

(1) The cervix uteri, vaginal wall, or perineum is lacerated;
(2) The hand or some instrument is introduced into the vagina or uterus;
(3) Some cotyledonous remnant of the placenta or portion of the membranes is left behind in the uterus.

A native woman, wearing filthy clothing, confined in a road or in a field, does not become septic, any more than does a poor woman delivered naturally on a filthy bed in a dirty hovel. On the other hand, a society lady, protected by every antiseptic and aseptic device known to modern science, may develop puerperal sepsis if any of the three conditions above mentioned obtains.

The most frequent causes of severe lacerations are:

(1) The premature use of forceps;
(2) Unreduced occipito-posterior presentations;
(3) The use of forceps in unsuitable cases, such as brow or parietal presentations;
(4) The premature use of pituitrin.

Pituitrin should be administered only when the cervix is dilated fully, or when the lips of the cervix can be pushed back over the head. Forceps should be applied only when the head is well moulded, and is in a position and with a presentation suitable for delivery by the natural channel.

Caesarean section or craniotomy is preferable to the application of forceps in difficult cases in which the disproportion between the mother and child is very marked. Davis of Philadelphia goes so far as to say that when difficult forceps operations are attended in tenements and other unfavourable surroundings, septic infection is inevitable. It is a clever man who knows his own limitations and shortcomings, and, when possible, it is advisable to send such cases to hospital, and, when this is impracticable, further medical aid should be called in.

The third condition can be avoided by:

(1) Being patient and not trying to express the placenta forcibly until it is separated;
(2) Examining carefully the placenta and membranes;
(3) Removing any remnant left behind in the uterus with a gloved hand.

In normal cases intrauterine douches should be avoided, either before or after delivery, though they may be necessary after the use of forceps, turning, or the removal of the placenta manually. Whether it is advisable to wear sterile gloves and jacket, or rely upon clean hands and antiseptics, seems to be a matter of opinion, though the former procedure seems preferable in every way, especially in the case of a man whose hands have been soiled by attending to his car or his garden.

It has been said, aphorismically, that a man who wears a clean collar and shirt every day will never get a septic case, and certainly it may be said, axiomatically, that such a man is less likely to be careless or dirty than one who takes no pride in his personal appearance and cleanliness. I have seen such a man scrub his hands and soak them in biniodide and yet have dirt beneath his nails. One of your correspondents considers that the use of sterile gloves and apron is to be deprecated as it leads to inevitable carelessness, whilst another holds a brief for both gloves and apron, but thinks that "antiseptics are a snare to the careless." Generally speaking, the man who is dirty, careless or untidy in private life shows the same weaknesses in his profession. The fact that a medical man has been known to poke the fire, blow his nose or put on his glasses after putting on sterile gloves, is no true condemnation of gloves *qua* gloves. It would be a pernicious and dangerous doctrine to condemn either sterile gloves or antiseptics simply for the reason that their use may give some men a false feeling of security against infection and sepsis.

In regard to the treatment of severe cases of puerperal sepsis there is everything to be said against the use of the curette, and whenever bacteriological examination proves the presence of a haemolytic infection it is doubtful if operative interference will benefit the patient. Hysterectomy for septicaemia *qua* septicaemia is useless. It has been tried and failed. If there are local abscesses in the uterus or degenerated fibroids, hysterectomy may save a life. A brave man may effect a cure in early cases of puerperal sepsis by performing hysterectomy without waiting for a bacteriological examination. Some cases "cure themselves."

Two of the chief means of preventing puerperal sepsis have not been mentioned by your correspondents. I refer to suitable diet and exercises which increase the natural resistance of the body against infection. A faulty though plentiful diet causes a condition of avitaminosis and depression of the whole alimentary functions. Every pregnant woman should partake freely of natural foods. Surely a woman should train before undertaking the greatest ordeal of her life. No athlete, be he sculler, boxer, or jockey, would dream of overfeeding and rest, yet this is the attitude adopted by most women before their babies are born. The old ideas of "stuffing" and "rest" are exploded. The pregnant woman's diet should be limited in amount and contain wholemeal bread, nuts, eggs, animal fat, fresh fruit and green vegetables, and not consist chiefly of "dead" foods.

Hindhede says, "the principal cause of death lies in food," and few careful observers can deny the fact. Most women exist on food deficient in the fat-soluble factors (vitamin A), which are necessary for the maintenance of the natural resistance against infection. Fresh salads should enter into the dietary of all pregnant women. In most cases green vegetables are cooked, to the destruction of the vitamins and salts. On a diet rich in carbohydrates and poor in vitamins nervous symptoms supervene. Without suitable exercises no woman can be "fit" to give birth to a child, for their regular and graduated use not only develops the muscles but eliminates toxins. In my opinion shock plays a large part in *post-partum* complications, and for this reason I advise the use of scopolamine and morphine at the proper time in all cases.

One cannot leave the subject at issue without protesting against the totally inadequate teaching of practical obstetrics in our hospitals. Of course the whole blame is on the General Medical Council and not on the hospitals. Hundreds of men are sent out into the world qualified, by law, to attend any confinement, without having been given the opportunity either of seeing forceps applied or of applying them themselves, with the result that these men gain their practical experience from their first patients, who suffer in consequence. Until such a deplorable state of affairs is remedied the mortality and morbidity of confinements will remain at the present level.—I am, etc.,

London, W., June 15th. CECIL WEBB-JOHNSON.

SIR,—This subject is one of perennial interest. From the discussion the inference appears to be that there is another factor, besides the micro-organisms found in cases of puerperal fever, a factor which we appear to know little about. A moiety of this factor is immunity. Many of the writers appear to infer that the upper portion of the vagina and cervix are sterile until the infected finger and hand of the accoucheur converts this portion into an infected one. In regard to this point, Dr. A. W. Bourne refers to the large number of patients at Queen Charlotte's Hospital with *ante-partum* discharges, none of whom developed septicaemia. It is also known that the gonococcus and other organisms do not produce puerperal septicaemia. Brouha, quoted in the BRITISH MEDICAL JOURNAL Epitome, No. 444 (April 9th, 1921), states that he performed sixty Caesarean sections, and that in forty-eight cases the women were previously infected by various manipulations hours or days previously; yet every one of these forty-eight cases recovered. Of the twelve uninfected cases two died, one from haemorrhage and the other from septicaemia. Brouha dismisses this last case by attributing the fatal result to imperfect sterilization at the operation.

From these illustrations, ought one to infer that a woman with an *ante-partum* discharge is less likely to get puerperal fever, and that Brouha's fatal case would not have developed septicaemia had she been previously infected, as the forty-eight infected recoveries were?—I am, etc.,

Plymouth, July 2nd. J. S. PEARSE.

CLINICAL AND LABORATORY METHODS.

SIR,—A good deal that is given out as new in the study of cardiology is embodied in textbooks older even than those of Taylor or of Osler. I have been looking up a book that I read as a student—namely, Frederick T. Roberts's *The Theory and Practice of Medicine*, seventh edition, 1888. It would well repay a practitioner to read or re-read the whole article on diseases of the circulatory system, so as to be able to assess what is really new in cardiology. May I quote a sentence or two as bearing directly on questions which are so keenly discussed to-day?

"Much stress has been laid on certain points in making out whether local cardiac symptoms are due to organic mischief or not, namely, that mere functional disturbance is not increased by effort; is inconstant; and is usually brought on by some obvious exciting cause. My own experience would lead me to avoid placing any implicit reliance on such distinctions, except that grave disorder of the cardiac action following slight exertion may be a useful sign indicative of degeneration, when other signs are wanting."

Here is Sir James Mackenzie's "response to effort."

"The questions which have to be considered in any individual case of heart disease are mainly three: 1. Whether there is any danger of sudden death? 2. What are the events likely to arise in the progress of the case, and the dangers to be feared? 3. What will be the probable duration? 4. Whether a cure is possible?

The brilliant work of Sir James Mackenzie is an attempt to answer questions put by Dr. Roberts thirty-five years ago.

The following passage from the same book is a clear anticipation of Sir James Mackenzie's gospel:

"It is a fact familiar to all experienced practitioners that cases of valvular disease of the heart, as determined by physical examination, may exist for many years, even without any symptoms, but this fact was brought into special prominence by Sir Andrew Clark in a paper read before the British Medical Association in 1886, in which he called attention to a large number of cases where valvular disease had been known to have existed for over five years without causing serious symptoms. As the result of his observations this eminent physician remarks: 'It will conclusively appear that there exist multitudes of persons with chronic valvular disease of the heart who not only suffer no inconvenience therefrom, but are also capable of discharging the duties and enjoying the pleasures of life.'"

May I quote just one sentence more to show that physicians thirty-five years ago studied their problems with the same zest as Sir James does to-day?

"The prognosis of cardiac disease with reference to marriage, parturition, and suckling is of much importance, and those who are interested in the subject will find valuable information in the work by the late Dr. Angus Macdonald on *Heart Disease during Pregnancy*."

—I am, etc.,

Exeter, July 5th. J. PEREIRA GRAY.

Obituary.

JAMES ACWORTH MENZIES, M.A., M.D.,

Professor of Physiology, Newcastle-upon-Tyne.

THE University of Durham College of Medicine has sustained a severe loss by the somewhat sudden death of its esteemed professor of physiology, James Acworth Menzies, at Luton on July 8th. While on his way to Oxford, as a delegate of the University of Durham, to attend the Conference of Colonial and Home Universities, he became ill, and alighting at Luton he was taken to the house of his brother, where he died from cerebral haemorrhage, at an age when most men are at their best. He was a son of the late Rev. R. Menzies, of Riding Mill-on-Tyne, and was a distinguished student of the University of Edinburgh, where he graduated M.B. and C.M. in 1890, and M.D. in 1894, when he was awarded a gold medal for his thesis. His ambition was to become a teacher, and for this he had not long to wait, as he was shortly afterwards appointed demonstrator of physiology at Owens College, Manchester, a post which he held with great acceptance from 1890 to 1896, and also from 1898 to 1899. From this position he retired to take up ophthalmic work in Rochdale, and was appointed ophthalmic surgeon to the Rochdale Infirmary. The duties of that office he discharged during a period of six years.

Ten years ago he was appointed lecturer on physiology at Newcastle-upon-Tyne College of Medicine, and when, four years afterwards, his colleague, Professor Bainbridge, left the North for London, Menzies was appointed his successor. It was a judicious choice on the part of the University of Durham. Menzies loved and lived for the subject which he taught. Nowhere was he seen to greater advantage than in the laboratories. Always

willing to help his colleagues by rendering them all the practical assistance he could regarding any research work in which they were interested, he proved himself one of the kindest and most genial of colleagues. By the students he was recognized as a sound and inspiring teacher. With Professor F. A. Bainbridge he jointly produced *Essentials of Physiology*, a textbook which has passed through two or three editions; he also contributed many papers to the literature of physiology.

Professor Menzies left Newcastle for Oxford apparently in good health. So unexpected was his death that he had arranged to give several physiological demonstrations—one particularly with the assistance of Miss M. Atkinson, lecturer on physiology, and Dr. G. A. Clark, "On the passage of sulphate through the cells of the tubules of the kidney of the frog," during the Annual Meeting of the British Medical Association this week in Newcastle. Of Professor Menzies it can be truly said that in life he was held in high esteem, and that in death he is lamented. On Tuesday, July 12th, his body was laid to rest in St. Andrew's Cemetery, Newcastle-upon-Tyne, amid many expressions of deep regret from colleagues, students, and friends who had assembled to pay their tribute of respect to his memory. His wife and one daughter are left to mourn his death.

DR. EDWARD REYNOLDS RAY, who practised for many years in Dulwich and afterwards in town, died at the age of 79 on July 8th. He was in busy practice to within six months of his death, retaining a vigour of mind and body unusual at his age. He was educated at Guy's Hospital, qualifying M.R.C.S.Eng. in 1863, and subsequently becoming house-surgeon at Guy's. He left hospital to help in the practice of his father, whose health had begun to fail; otherwise he might have obtained a position on the staff of the hospital, since he was one of the best students of his time. He was greatly respected, trusted, and beloved by many, and held for a long time a leading position in Dulwich. Mr. Ray was a sportsman in the true sense, an expert fisherman, a good shot, a frequent attendant at Lord's, and a good whip. As a breeder of bloodhounds he took prizes with dogs which became famous, and for fifty years was a member of the Kennel Club. He became a special constable during the war, and led his section at the parade before the King. Just sixty years previously he marched in the review of the newly raised Volunteers, a record few could surpass. While taking night duty three times a week with charge of the ambulance, Dr. Ray attended daily at the Horton Military Hospital at Epsom. Here he won the esteem and affection of patients and staff alike, and here he worked throughout the epidemic of influenza. Dr. Ray, as a loyal son of Guy's, was present and was welcomed at all reunions. A sound practitioner, a warm-hearted sincere friend, a man of high ideals, and a thorough sportsman, he will be missed by a large circle of friends.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on July 9th the following medical degrees were conferred:

D.M.—J. M. H. Campbell.
M.CH.—G. Perkins.
B.M.—C. H. Terry, C. F. T. East, M. H. Mackeith, E. G. T. Liddell, W. H. Butcher.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on June 22nd. The annual report of the Physiological Laboratory Committee was presented. It gave a record of the work carried out in the laboratory, including a continuance of Professor A. Waller's work, with the assistance of Miss De Decker, on the emotive response and on the energy output associated with various forms of muscular work. It also contained lists of lectures given and of the publications issued.

Mr. G. Scott Williamson has been recognized as a teacher of pathology at the London Royal Free Hospital's School of Medicine for Women.

Dr. T. D. Lister, C.B.E., has been appointed chairman of the Establishment and General Purposes Committee, and Mr. H. J. Waring, C.B.E., chairman of the Committee of Medical Members of the Senate.

Applications for the William Julius Mickle Fellowship of the value of at least £200 should reach the Principal Officer of the University, from whom further particulars can be obtained, by October 1st, 1921. It is awarded annually by the Senate to the man or woman who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

THE following have been elected to Burney Yeo Scholarships:

H. A. Robertson, M.A., Balliol College, Oxford; R. Cove-Smith, B.A., Gonville and Caius College, Cambridge; L. C. Whitworth, B.A., Downing College, Cambridge.

On the results of the June examinations the following awards have been made:

Senior Scholarship (£40), Tanner Prize (£10), Todd Prize (medal and £4 4s.), and Class Prize in Diseases of Children, R. C. Lightwood.
Class Prize in Orthopaedic Surgery, J. W. Hirst.
Class Prizes: Medicine, H. Moos; Forensic Medicine, N. W. Hubble; Hygiene, N. W. Hubble; Psychological Medicine, D. Murgatroyd.

UNIVERSITY OF EDINBURGH.

AT a graduation ceremonial held on July 15th the following degrees were conferred:

M.D.—G. A. Borthwick, T. L. Clark, †T. M. Davie (*in absentiâ*), A. V. Dill, ‡F. P. Fouché, ‡J. G. Greenfield, †R. L. Impey, J. P. P. Inglis, N. S. R. Lorraine, ‡H. M. Moir, B. P. B. Naidu, †R. H. H. Newton, P. J. Olivier, A. C. Renwick (*in absentiâ*), W. G. Richards, ‡W. Stobie (*in absentiâ*), J. J. Thomson, ‡G. G. Wray.

† Awarded gold medal for thesis. ‡ Highly commended.
§ Commended.

PH.D.—R. K. S. Lim.
M.S.—D. Holmes.
M.B., Ch.B.—J. B. Aitken, G. J. Alexander, S. E. Ammon, T. F. Andrew (*in absentiâ*), Flora T. F. Angus, G. R. A. Armstrong, C. W. Badger, P. E. L. Beck, Rose M. Brereton, J. M. Black, J. M. Bosman, W. H. S. Boyd, Maeve C. Brereton, A. S. Burns, D. I. Cameron, J. Campbell, E. E. Candlish, E. A. Carmichael, Edith K. Chandler, J. H. Clarke, Jessie M'C. Craig, N. S. Craig, E. J. Crarer, Grace Cumming, E. D. Dingle, W. Douglas, A. Dower, S. J. Eapen, G. D. English, H. D. Epstein, Isobel M. Finlayson, E. M. Fraser, J. S. Fulton, Ivamarine M. L. Gifford, Elspeth L. Gilmour, Mary H. M. Gordon, O. Gray, Helen Gregory, Adele Haggart, A. A. Hamilton, Mary L. Hemingway, H. Hodgson, N. R. H. Holmes, Helen R. T. Hood, R. Howarth, J. W. A. Hunter, J. F. van Iddekinge, F. T. Ingram, V. W. Jack, E. S. Jackson, J. D. Johnston, P. R. Kemp, F. Krone, J. R. Larson, Laura M. Ligertwood, J. I. M'Caa, A. G. M'Clellan, Eliza W. M'Crae, A. Macdonald, Agnes B. MacGregor, R. G. M'Intyre, A. G. Mackay, D. E. Malone, Dorothea J. Mann, Margaret B. Martin, Nancy Martland, A. D. Maxwell, Isabella M. Mears, P. S. Meiring, C. E. Meryon, Mary Middlemass, Catherine A. J. Mitchell, Ruth M. Monro, D. M. Morison, Helen S. E. Murray, Jean Murray, P. N. Nag, C. S. Nimmo, Marjorie Norris, O. A. Omololu, C. G. Payton, C. S. G. Pillai, Janetta J. Powrie, Mary E. Price, Margaret M. Proudfoot, Margaret T. Rutherford, Marjorie E. F. Sanders, C. E. Scott, Hilda D. Scott, J. Sharp, L. Siff, G. J. Smit, M. T. Smith, H. W. J. Steen, C. Stewart, J. D. Stewart, Jenny R. Tait, R. J. O. Taylor, E. K. R. Thomas, H. B. Thomson, Sophia M. R. Thomson, P. H. J. Turton, J. Veitch, J. H. Verwey, T. J. M. Walker, D. C. Wilson, E. A. Wilson, Isabel G. H. Wilson, Hassan Zaifol (*in absentiâ*).
D.P.H.—H. Alexander, A. F. Campbell, Majorie H. King (*in absentiâ*), Annie L. MacDonald, Jane C. MacDonald, Annie S. MacLeod, H. J. Parish, A. Priestman, Annie M. Roxburgh, G. M. S. Smith, Mabel Thomson.

The following Fellowships, scholarships, prizes, etc., were also awarded:

Cameron Prize in Practical Therapeutics: J. J. B. V. Bordet, Director of the Pasteur Institute, Brussels, for important contributions to bacteriology, bio-chemistry, and chemo-therapeutics. Goodsir Memorial Fellowship: R. K. S. Lim, Ph.D., M.B., Ch.B. Straits Settlements Gold Medal: F. H. Stewart, M.D. (Acting Lieut.-Colonel I.M.S.). Gunning Victoria Jubilee Prize in Medicine: R. L. Impey, M.D. Gunning Victoria Jubilee Prize in Anatomy: C. W. Stump, M.B., Ch.B. Ettles Scholarship and Leslie Gold Medal: A. L. M'Gregor, M.B., Ch.B. Allan Fellowship in Clinical Medicine and Clinical Surgery: J. I. M'Caa, M.B., B.Ch. Murchison Memorial Scholarship in Clinical Medicine: J. M'C. Craig, M.B., B.Ch. M'Cosh Graduates and Medical Bursaries: E. A. Wilson, M.B., Ch.B. Beaney Prize in Anatomy and Surgery: L. M'Gregor, M.B., Ch.B. Mouat Scholarship in the Practice of Physic: R. G. M'Intyre, M.B., Ch.B. Conan Doyle Prize: A. L. M'Gregor, M.B., Ch.B. Annandale Gold Medal in Clinical Surgery: E. A. Carmichael, M.B., Ch.B. Buchanan Scholarship in Gynaecology: G. J. Alexander, M.B., Ch.B. James Scott Scholarship in Midwifery: Isobel M. Finlayson, M.B., Ch.B. Scottish Association for Medical Education of Women Prize: Isobel M. Finlayson, M.B., Ch.B. Dorothy Gilfillan Memorial Prize: Jessie M'C. Craig, M.B., Ch.B. Wellcome Medals in the History of Medicine: Gold Medal, J. M. Anderson; Silver Medal, T. Ferguson. Pattison Prize in Clinical Surgery: D. S. Middleton and A. J. Wilson (equal). Wightman Prize in Clinical Medicine: A. J. Wilson. Cunningham Memorial Medal and Prize in Anatomy: D. G. S. M'Lachlan. Whiteside Prize in Surgery: D. Mainland.

ST. ANDREWS UNIVERSITY.

AT the annual graduation ceremony on July 12th the honorary degree of LL.D. was conferred on Professor W. M. Bayliss, F.R.S., University Professor of Physiology in University College, London; and Professor David MacEwan, Emeritus Professor of Surgery, University College, Dundee.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony held on July 14th the honorary degree of LL.D. was conferred on Dr. W. M. Bayliss, F.R.S., Professor of General Physiology in the University of London, and the following medical degrees were conferred:

M.D. †John Kirton, †G. F. Mitchell, A. J. Will.

M.B., CH B.—*With First-class Honours:* †Annie Thain. *With Second-class Honours:* †Elsie J. Mann, †G. O. Thornton. *Ordinary Degree:* †C. A. Allan, A. B. Clark, R. Dawson, D. R. Dugan, Frances M. Duguid, L. I. Duncan, Margaret F. Fraser, Barbara M. Geddes, J. W. Gill, Ethel E. M. Gray, C. Joiner, Patricia H. Low or Cassie, †Max Mindé, F. H. Moliére, R. M. Savege, Elsie J. Seorgie, Jenny H. A. Simpson, Frances M. G. Sinclair, Elizabeth M. Walker, Nora I. Wattie, Fred Wilson.

The John Murray Medal and Scholarship and the Lyon Prize, awarded to the most distinguished graduate in Medicine (M.B. and Ch.B.) of the year 1921, were both awarded to Annie Thain.

D.P.H.—Emily M. Badenoch, C. A. Harvey, F. D. R. Keyt, Winifred M. A. Kindness, Mathilda F. Menzies, D. I. Walker.

* Commendation for thesis.
† Completed Final Medical Professional Examination with much distinction.
‡ Completed Final Medical Professional Examination with distinction.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved at the examinations indicated:

M.B., CH B. (*Medical Jurisprudence and Public Health*).—A. W. Aird, J. R. B. Alexander, W. Bain, D. Baird, R. Black, F. A. Brown, R. O. Bruce, J. Campbell, H. Collingbourne, J. Cook, A. MacD. Douglas, I. Fine, L. P. Foyer, W. Fraser, A. Gardiner, W. Geyer, W. Gibson, G. F. Graham, *J. Grant, J. Hamilton, J. W. Hamilton, *R. C. Hamilton, W. D. Hood, M. Jackson, A. King, J. A. Lister, A. Logan, A. M. MacCallum, M. M'Lean, N. A. MacLean, A. M'Nulty, D. C. Marshall, D. V. Marshall, J. H. Miller, J. Nicholson, J. H. Ramage, W. Robinson, W. Simpson, J. Sommerville, A. V. Steen, T. Tannahill, H. G. B. Teggert, R. W. Todd, H. M. Walker, J. Wilkie, Martha L. Anderson, Mary E. Berry, Mary MacQ. Bonnyman, Margaret E. Campbell, Evelyn L. Caskey, Gladys M. Chapell, Margaret E. Colville, Agnes C. J. Davidson, Margaret B. Graham, Jessie M. C. Jamieson, Margaret S. L. M'Cash, Mary L. M'Kay, Mary R. Peden, Mary E. Proudlove, Elizabeth C. Rodger, Rosemary E. Scanlon, Annie Werner.

* Passed with distinction.

UNIVERSITY OF MANCHESTER.

THE following appointments have been made: Lecturer in Systematic Surgery and Assistant to Professor of Systematic Surgery: Mr. W. H. Hey, M.B., Ch.B., F.R.C.S. Lecturer in Clinical Surgery and Assistant to Professor of Clinical Surgery: Mr. Charles Roberts, M.B., B.S., F.R.C.S. Lecturer in Pathology: Dr. Arnold Renshaw.

At a meeting of the Council of the University on July 13th the following appointments were made:—Lecturer in Bacteriology: Mr. J. H. Dible, M.B., Ch.B.Glasg. Lecturer in Morbid Anatomy and Histology: Mr. B. J. Ryrie, M.B., Ch.B.Edin. Lecturer in Psychology: Mr. R. H. Thouless, M.A. (Fellow of Corpus Christi College, Cambridge).

The following awards have been made:—Platt Physiological Scholarship: S. L. Mucklow. Dauntesey Medical Entrance Scholarships: F. H. Smirk (first), H. B. Kitson (second). Dumville Surgical Prize: H. L. Sheehan.

The following have been approved at the examination indicated:

FINAL M.B., CH.B.—S. Almond, *‖G. V. Ashcroft, Martha F. Barritt, E. C. Berg, Nancy E. Bleakley, ‡Muriel Coope, T. E. Coope, Eugenia R. A. Cooper, S. W. Drinkwater, Winifred M. Edgehill, T. M. Fisher, Kathleen M. Fullerton-Bailey, E. Gleaves, W. H. Gratrix, Ruth Hill, C. D. Hough, Violet M. Jewson, R. R. Lane, Eva G. le Messurier-Kneebone, C. Nelson, L. S. Potter, W. L. Powell, Harriet R. Reid, Annie Rothwell, †§H. L. Sheehan, *‖§Margaret Single, H. Stafford, *S. Wand, S. Waterworth, R. Williamson. *Medicine:* Margaret Pownall, J. W. Smith, Nora M. Walker. *Surgery:* Nora M. Walker. *Obstetrics:* S. Adler, Marguerite Johnstone, Jessie Kilroe, W. L. Martland, H. Rosenthal, J. W. Smith. *Forensic Medicine:* R. S. van Aalten, P. D. Abbatt, J. H. Appleton, Mary W. Atkinson, Elsie C. Begg, J. B. Bennett, Doris H. Bentham, B. Broman, G. H. Buckley, **V. Chadwick, E. W. Clough, **H. M. Coope, N. S. Craig, Margaret Derbyshire, O. M. Duthie, Kathleen M. Eastwood, **Beatrice L. Ellison, H. E. Emmett, **J. H. Fletcher, E. S. Frischmann, W. Geraghty, R. Handley, Doris M. Hardman, A. Ingham, E. L. Jones, J. I. Kelly, Mary Kent, G. A. Lord, G. L. Meachim, Nora Mills, Winifred H. Mitchell, L. Morgenstern, A. C. Newman, Hilda Pratt, G. T. Robinson, A. Rosenstone, F. H. Scotson, Eleanor P. Smith, H. Southworth, G. B. Stenhouse, J. H. Struthers, Leo Unsworth, Emmeline Wade, C. B. V. Walker, Margaret J. Warburton, Margaret Wild, J. Worthington, J. Yates.

* Awarded Distinction in Medicine.
† Awarded Distinction in Surgery.
‡ Awarded Distinction in Obstetrics.
** Awarded Distinction in Forensic Medicine.
‖ Awarded First Class Honours.
§ Awarded Second Class Honours.

D.P.H.—A. Barrett, K. D. Bean, Mary Boullen, G. F. Bowman, J. W. Chadwick, W. Edge, D. Fisher, A. Furniss, E. Jones, W. H. Kaunitze, Emily M. Peach, A. W. Ritchie, W. R. N. Smithard, R. J. Staley, W. Stott.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT a Quarterly Council, held on July 14th, the following four candidates were elected members of the Council: Holburt Jacob Waring, Frederic Francis Burghard, Charles Herbert Fagge, William Thelwall Thomas.

The Licence in Dental Surgery was granted to fifty-three candidates found qualified at the recent examination.

The Diploma in Public Health was granted to twenty-three candidates found qualified (conjointly with the College of Physicians).

The Diploma in Psychological Medicine was granted to six candidates found qualified (conjointly with the College of Physicians).

Donations.—The thanks of the Council were given to the President of the American Museum of Natural History, New York, for presenting a plaster cast of the Chapelle skull, models of Dr. J. H. McGregor's reconstruction of the Gibraltar skull, and brain cast. Thanks were accorded also to Lieut.-Colonel R. H. Elliot for a collection of forty-six specimens illustrating rare pathological conditions of the eye.

The proposal for an Examination in Ophthalmology was adopted. The proposal is to establish a special higher examination open to those who have passed the Fellowship.

Election of Officers of Council.—Sir Anthony Bowlby was re-elected President for the ensuing year. Sir Charles Ballance and Sir D'Arcy Power were elected Vice-Presidents.

The President reported that a letter had been received from the Minister of Health referring to Lord Cave's Committee on the voluntary hospitals, and inviting this college to nominate a member of "The Hospitals Commission" as recommended in Paragraph 17 of the Report, and that, on behalf of the college, he had nominated Sir George H. Makins to act in this capacity.

The Services.

DEATHS IN THE SERVICES.

DR. JOHN MONKHOUSE ROGERS TILLSTONE died of heart failure on May 16th. He was the son of the late Benjamin Rogers Tillstone of Moulse, near Brighton, was educated at St. Bartholomew's Hospital, and took the diplomas of M.R.C.S., L.R.C.P.Lond. in 1891. Before the war he was in practice at Maidstone, and for many years held a commission in the R.A.M.C.(T.F.), and succeeded to the command of the 1st Home Counties (Maidstone) Field Ambulance on April 1st, 1912; subsequently he was promoted to Colonel A.M.S.(T.F). He was also awarded the Territorial Decoration. During the war he was in command of the 81st Field Ambulance, B.E.F., and was mentioned in dispatches in the *London Gazette* of June 22nd, 1915.

Captain Wilfrid Hawkins, R.A.M.C., died at the Military Hospital, Belfast, on April 21st, aged 29. He was educated at Aberdeen, where he graduated M.B. and Ch.B. in 1914. After filling the post of resident medical officer at the Maternity Hospital, Aberdeen, he took a temporary commission as lieutenant in the R.A.M.C. on August 11th, 1914, in the first week of the war, and was promoted to captain after a year's service. He had served throughout the war, was mentioned in dispatches in the *London Gazette* of January 22nd, 1919, and received the 1914 star with the medals.

Medical News.

THE Right Hon. F. B. Mildmay, M.P., has been appointed a member of the Medical Research Council and its Treasurer, in succession to the Hon. Edward Wood, M.P., who resigned upon becoming Under Secretary of State for the Colonies.

ON July 15th the Duke of York unveiled at Guy's Hospital a war memorial to Guy's men who died in the war. The Prince of Wales, who is President of the hospital, had arranged to unveil the memorial, and his absence on account of indisposition was much regretted. The war memorial takes the form of new entrance gates on the eastern side of the hospital building, with the names of the fallen engraved in panels on the pillars of the gates, while on an arch above are the words, "Their name liveth for evermore." In addition to this memorial, three-fifths of the memorial fund is to be held in trust to provide such assistance as may be necessary to dependants of Guy's men who fell in the war, and to found a war memorial scholarship. The Duke was received at the hospital by the principal members of the medical and surgical staffs, and was elected a Governor of the Corporation. After the ceremony of unveiling the memorial the Duke formally opened the new massage building of the hospital.

THE North-East London Post-Graduate College will hold a special post-graduate course of two weeks' duration at the Prince of Wales's General Hospital, Tottenham, N.15, from Monday, September 26th, to Saturday, October 8th, inclusive. The course will include demonstrations of methods, cases, clinical lectures, etc. A syllabus will be issued in due course.

THE annual dinner of St. George's Hospital Medical School will be held on October 1st, at Oddenino's Restaurant, with Dr. H. A. Des Voeux in the chair. The usual notices will be sent out during August.

VIEW day will be held at the Great Northern Central Hospital, Holloway Road, N.7, on Wednesday, July 27th, at 3 p.m. The Chairman (the Marquess of Northampton) will receive visitors in the Board Room.

THE winter session of the Middlesex Hospital Medical School opens on October 4th, when the opening ceremony in the Scala Theatre at 3 p.m. will be presided over by the Earl of Athlone. Mr. Gordon Taylor will deliver an address, and Sir John Bland-Sutton will distribute the prizes.

SIX months' courses of lectures and practical instruction in Part I (physics and electro-technics) and in Part II (radiology and electrology) for the Diploma in Medical Radiology and Electrology of the University of Cambridge will be given in London beginning October 1st, 1921, and in Cambridge and London beginning January 12th, 1922, for examination at the end of the courses. Further particulars may be had from Dr. Stanley Melville, 9, Chandos Street, London, W., or Dr. Shillington Scales, Medical Schools, Cambridge.

MR. GERALD STANLEY, M.S.Lond., F.R.C.S.Eng., has received the doctorate of the Faculty of Medicine of Paris (M.D. Paris), with honours.

THE secretary of the University of Brussels has announced that in future there will be no more M.D. Brussels examinations held, nor will the diploma of the degree be granted by the University to foreign medical practitioners as formerly. In connexion with this announcement Dr. Arthur Haydon, 41, Buckland Crescent, N.W.3, secretary of the Brussels Medical Graduates' Association, is preparing a petition to the University of Brussels, and he asks graduates of Brussels University to write to him signifying their approval.

A POST-GRADUATE course on oto-rhino-laryngology will be held, under the direction of Professor Sébileau, at the clinic of the Hôpital Lariboisière, Paris, commencing on August 20th, and continuing thrice weekly. The course will comprise twenty lectures, and will be followed by a course of operative surgery; the fee is 150 francs. Further information can be had from the Secretary of the Faculty of Medicine of Paris.

DR. R. ROBLES, of Guatemala, has been made a chevalier of the Legion of Honour by the President of the French Republic, in recognition of his discovery that the disease known in Central America as "coast erysipelas," is transmitted by a filaria. The recent suggestion by Dr. V. M. Calderón that the mosquito may convey this disease has not yet been confirmed.

A BILL to create a Department of Health has been introduced in the Japanese House of Representatives, in order to bring the various health organizations of the empire under the control of one department.

ON June 1st the twenty-fifth anniversary of the Loomis Sanatorium, New York, was celebrated by the dedication and presentation to the institution of two new buildings, one to be called the Griswold Building, and the other the Standard Oil Company of New Jersey Building, in honour of their donors.

THE Philadelphia Medical Club held a dinner and reception on June 13th in honour of Professor Blair Bell of Liverpool and Dr. R. G. Rows of London.

AN Institute of Pathological Anatomy, named after Professor Hlava, who has supervised the building, has recently been inaugurated at the University of Prague. The institute is described as being the largest and best equipped of its kind in Europe.

THE Committee of the Fifth Cuban Medical Congress, which will be held in December next, has decided to invite American, French and Spanish physicians and surgeons to attend.

THE Associated Anaesthetists, a body formed by the combination of a number of societies, including the Canadian Society of Anaesthetists, is appealing for contributions to a fund to place a bronze bust of Dr. W. T. G. Morton in the American Hall of Fame. Subscriptions may be sent to the treasurer, Dr. F. H. McMechan, Lake Shore Road, Avon Lake, Ohio.

THE *Archives de l'Institut Pasteur de Tunis*, founded in 1906, are henceforward to be continued under the title of *Archives de l'Institut Pasteur de l'Afrique du Nord*, and will be published alternately at Algiers and Tunis.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the Editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediocra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams *Associate, Edinburgh*; telephone, 4361, Central).

LETTERS, NOTES, ETC.

ANOTHER CURE FOR CONSUMPTION.

A CORRESPONDENT in the Punjab sends us a letter recently received by him, which appears to show that there is in India a belief that consumption can be cured by the ingestion of monkey's flesh. The manner in which it acts is said to be this: that "no sooner the patient eats it than he vomits, and along with the vomited matter will come numberless germs that it is said daily consume the lungs. It is said that naturally those germs are as fond of monkey's flesh as ants, etc., of sugar."

SIR THOMAS BROWNE ON PROFESSIONAL SECRECY.

A CORRESPONDENT who once before found himself able to report to us the views entertained by Sir Thomas Browne on some incidents of these days has been listening to the debate in the Representative Meeting, and imagines himself to have heard the author of the *Religio Medici* discourse thus:

"In all disputes so much is there of passion, so much is there of nothing to the purpose. This is one reason why controversies are never determined. They so swell with unnecessary digression. Live by old ethics and the classical rules of honesty, nor think that all is good enough which the law would make good. Secrecy is no sectarian profession. The confessor is the confidant of the sinner; the law allows the confidences of the attorney and the commonweal requires the secret confession of the secret sin. Even debauchery deserves the pity of the puritan, and the redemption of corruption requires no discretionary disclosure.

"Think not that morality is ambulatory and an Eastern resolution is not less iniquitous when carried in a Northern hemisphere. Vicious opinions in one latitude become not virtuous in another. Vice and the devil put a fallacy on reasonable counsel, but let us admit no treaty with dishonour which no circumstances can make good, and therefore, though vicious times invert the opinions of things and set up new ethics against virtue, yet hold thou unto old morality."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, and 31 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 28 and 29.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
Each additional line...	0 1 6
Whole single column (three columns to page)	7 10 0
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An average line contains six words.

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The Popular Lecture
ON
EVOLUTIONARY WOUNDS.

Delivered at the Annual Meeting of the British Medical Association, Newcastle-upon-Tyne.

BY

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THINK of the condition every one of us should be in if human flesh were suddenly bereft of the power to heal. The innumerable cuts, abrasions, and punctures we inflicted on our hands and bodies during boyhood would still, when we were old men, be open weeping sores. The surgeon's trade would be gone, for none of us would care to go through life with wounds which needed stitching and dressing day by day. The late war would have filled the streets of Europe with wounded men doomed to live out their lives swathed in bandages and bound in splints. We cannot conceive human life, or any kind of life, as a successful venture in this world unless it carries with it the power to heal as part of its essential machinery.

There is a tendency among medical men to take too narrow a view of this marvellous property of repair possessed by all living tissues. The tendency is to suppose that healing is a gift which comes into operation only after birth to preserve us in the rough-and-tumble of this world. My purpose to-night is to show that healing is a process which comes into play long before birth, that Nature, in fashioning the body and brain of man—which we may describe as her wildest evolutionary ventures—has made the freest use of just that same process she employs in mending the simplest cut of the skin. From its inception until its final shape is reached the human embryo passes from stage to stage by the healing of evolutionary wounds—so neatly and promptly repaired that not even a scar remains to mark the site. The evolution of the higher forms of animals, including man, was rendered possible by healing being an inherent property of their flesh.

To note the nature of evolutionary wounds and the manner of their healing we shall glance at the upper lip of a human embryo towards the end of its sixth week of development. At this time a cleft descends from each nostril to enter the roof of the mouth, thus dividing the middle part of the upper lip from the two side parts. These clefts or wounds in the lip have not been produced by a knife, but by an evolutionary process. Originally the nose consisted of two separate pits, but at an early stage in the evolution of vertebrate animals it became advantageous that water passing into the gill chamber should first be sampled by the nose; hence each pit became connected with the mouth by a deep groove or channel. That is how it comes about that two evolutionary wounds have to be healed in the formation of the human upper lip.*

Is the process which leads to the union of the embryological parts of the lip comparable to that which seals the edges of a cut wound? For the purpose of comparison we shall take a wound of the cornea, because here, as also in the case of an evolutionary wound, the process of healing is not masked by bleeding nor by vascular reaction. A cut in the cornea is mended by a threefold process: (1) a temporary or fibrinous bond is formed to unite the cut edges; (2) into this temporary bond grow connective tissue elements from each margin of the wound until they meet and thus bridge the gap; (3) fluid collects in the tissues on each side of the wound, a circumstance which has the mechanical advantage of tending to press the cut edges together. These are the apparently simple provisions which lead to the closure of a wound of the cornea; but when we attempt to answer the question, What is the machinery which calls each of them into being? our answers are anything but certain or definite. The knife which made the wound in the cornea set free a substance or substances which converted the spilled lymph into a fibrinous temporary bond of union. It is also probable that substances are set free which stimulate neighbouring and injured connective tissue elements to action and growth. We know, too, that tissue elements which have been severed by injury tend to seek each other out again across a wound, compelled to grow under an influence which we may speak of under the name—homotactic. It is at least clear that the healing of the simplest wound calls into operation a complex machinery which is inherent in all living tissues.

When we watch the healing of a cleft in the upper lip of the human embryo we see the same threefold process as in the cornea. There is a temporary bond of union formed by the fusion of the epithelium which covers the edges of the cleft; across this temporary bond the opposite connective tissue elements press and unite, drawn together by the influence or attraction we speak of as homotactic; the edges of the cleft are pressed together by fluid which collects in the spaces of the adjacent connective tissue. Why the epithelial coverings of the cleft should adhere and fuse when they meet, and why the connective tissue elements should grow across the bond thus formed we do not yet know, but our information is sufficient to permit us to say that the healing of an evolutionary wound in the embryo and of a surgical wound in the adult is essentially the same process.

For reasons we do not yet understand an evolutionary wound may fail to heal—just as sometimes happens in one produced by the surgeon's knife. In the case of the upper lip we have thus produced the congenital condition known as cleft or hare-lip. Here Nature's operative skill has failed her, and the human surgeon has to step in and take her place.

The evolutionary operation which led to a cleavage of the lip in the human embryo took place early in the history of water-breathing vertebrates. At a later date another series of operations had to be undertaken in the ancestry of mammals to provide a horizontal partition to serve as a roof to the mouth and a floor for the nasal chambers. Here again Nature produced extensive evolutionary gaps or wounds in another manner and relied on the inherent healing powers of living and growing tissues to mend them. Three elements in the roof of the mouth had to be enlarged and united, and these three in turn had to be joined to the lower margin of the nasal septum. The operation is performed in a methodical manner, beginning at the end of the sixth week of development behind the upper lip and spreading backwards to the soft palate, the operation and process of healing occupying a period of seven weeks. The most critical point is to be seen in the embryo of the ninth week when the tongue occupies the median cleft of the palate, and the lateral folds, which are to close the gap, hang limp on each side of the tongue. In this week (the ninth) tissue fluid collects in the substance of the lateral palatal folds; they become turgid and erected, so that their free epithelial covered edges come together and adhere. At the same time their margins, as they unite together from before backwards, adhere to the epithelium covering the lower or buccal margin of the nasal septum. A vertical section made across the palate at this time shows a Y-shaped seam of epithelium serving as a temporary bond to hold the nasal septum and lateral palatal folds together until a true union can be established. Presently, as the connective tissue or mesenchyme cells press across the Y-shaped seam and unite at several points, the epithelial constituents of the seam are broken up and become slowly absorbed. All traces of the evolutionary wound have disappeared by the end of the third month of development. Once in a thousand times, for reasons we are still ignorant of, Nature fails to secure a good result in her palatal operation and thus leaves the surgeon the very difficult task of remedying her defects.

The embryological operations just described exhibit the processes of evolution working in a minor mood; we are now to see Nature at her boldest, carrying out operations on a major scale. Occasionally children are born with their brain and spinal cord spread out along the back, from crown to rump, as a great nerve plate, which at its margin becomes continuous with the skin covering the body. Here Nature has completely failed in one of her oldest and boldest of evolutionary operations—one which would have been impossible had not the virtue of healing been given to living things at the very beginning of the world's story. We see the operation worked out in all its details in the very lowest of vertebrate animals, and from

* I take this opportunity of acknowledging my indebtedness to Dr. Alex. Low, University of Aberdeen, and to Dr. Reginald Gladstone, King's College, London, for their liberality in placing their embryological material so freely at my disposal.

that we see how very ancient its invention must be. The operation of closing in the neural plates to form the brain and spinal cord occupies only about one week in time—the fourth week of development. The human embryo, at the end of this week, is only about an eighth of an inch in length. As in all surgical operations healing edges have to be approximated. When we examine a section across a human embryo early in the fourth week of development we see the epithelial neural plate being folded in, carrying at its lateral and rising margins the ectoderm or embryonic skin which retains its continuity with the plate. The mechanism which raises up and brings together the lateral margins of the neural plate and thus converts it into a tube is a simple one. It depends on the new swarms of neuroblasts which are produced in the neural plate, migrating to and becoming packed in the deeper or circumferential stratum of the plate. The margins of the neural tube come together just where the skin epithelium becomes continuous with the nerve epithelium. No sooner has contact been established than one sees a homotactic influence come into operation. The skin epithelium on each side of this great embryological wound breaks its connexions with the nerve plate and effects a union across the site of the median fissure. The neuroblasts which come into contact also adhere and regroup themselves to form the roof plate of the neural tube. Thus in less than forty-eight hours after the lateral margins of the neural folds have come into contact at any given point all trace of the great evolutionary wound has become obliterated at this point. No sooner have these epithelial unions taken place than mesenchyme or connective tissue elements lying on each side of the neural tube begin to spread upwards to meet and unite along the median dorsal line, where only a short time before existed an open gap or wound. Out of the bridge of tissue which thus comes to lie between the skin and roof of the nerve tube are fashioned the membranes of the cord and brain and all the bony and fascial tissue which help to roof over the great central nervous system. The healing of the great dorsal median evolutionary wound may completely fail, but it is far more common to meet with cases of partial failure, which give us the conditions known as spina bifida and anencephaly.

In closing the great dorsal median evolutionary wound of the body we see Nature placing her whole artillery of repair at the disposal of her evolutionary forces. What she does on a magnificent scale in this instance she applies to minor operations in many parts of the body. The lens of the eye arises as a depression or pocket of the embryonic skin; the mouth of the pocket takes on the character of a healing wound and closes; the depressed pocket of ectoderm becomes thus the lenticular vesicle.

In recent years surgeons have resorted to a similar method to obtain inlay grafts of skin when performing plastic operations; they depress an area of loose sound skin to form a pocket or cylinder, suture the mouth of the depression, which in time adheres. These little rolls of skin thus submerged can be excised afterwards and used to replace the cicatrices which result from bad burns. Another instance of the "pocket-form" of embryological surgery is seen in the production of the membranous labyrinth of the ear. Nature has fashioned this elaborate structure out of an area of skin which becomes depressed to form a pocket. The mouth of the pocket, as John Hunter discovered, remains open in certain fishes. In the human embryo the pocket is formed in the fourth week and its mouth closes by a process of concrescence or healing early in the fifth week, whereafter the pocket or otocyst quickly becomes submerged by the upgrowth of surrounding tissue. The follicles for the teeth and the basis of the thyroid gland are separated in a similar way from surface membranes. The ingrowths which give rise to hairs, sweat glands, mammary glands, and sebaceous glands retain their open mouths.

Surgeons are well aware that serous membranes, such as those that line the abdomen, thorax, and pericardium, are richly endowed with the power to unite and heal. If a mechanical or chemical irritant be applied to a serous membrane its surface becomes covered with an exudate, and very soon the cells beneath the exudate assume the growing characters and spreading tendencies shown by connective tissues on the sides of an ordinary incised wound. The film of exudate which binds one serous surface to another serves the same purpose as the fibrinous bond of an incised wound; it becomes the scaffolding or bridge across which the opposite cells spread to form a union or adhesion. All this is well known, but what is not generally recognized is that this power of repair, which is inherent in serous membranes, has been used by Nature as a means of carrying out her evolutionary projects. With the evolution of the orthograde posture in anthropoid apes, and subsequently of the plantigrade posture in man, increased fixation had to be secured for the abdominal viscera. For this end an orderly series of peritoneal adhesions are brought about in the human foetus, commencing in the third month and lasting until the time of birth. How the machinery of adhesion is set going in the foetus we do not know; I have never succeeded in detecting a film of exudate between the adhering mesenteric fold and the parietal peritoneum to which it was being applied. What one does notice is that the flattened cells covering the applied serous surfaces lose their pavement form, become rounded and then branched—the branching processes of opposite cells uniting and thus binding the two membranes together. One also sees that as this union occurs the lymph spaces of the neighbouring subserous tissues—particularly of the parietal peritoneum—are distended. Nature does not need to resort to gross mechanical or chemical stimuli to bring about the machinery of adhesion during development.

The same adhesive means are employed to secure the final closure of the openings between the pericardial and pleural cavities, and those between the pleural and peritoneal cavities. The first is sealed during the sixth week of embryonic life, and the second during the eighth week. In the latter case one notices that the cells which line the openings in the diaphragm become cubical in shape and proliferate until they meet, but the final process resembles that of repair. The communication between the tunica vaginalis and abdominal cavity is closed by the formation of adhesions at or soon after the time of birth. In these, as in other embryological operations Nature may fail, and then the surgeon may have to step in and take her place.

In watching the fashioning of the heart we can mark unsurpassed feats in plastic surgery, evolutionary wounds being produced and healed with the most perfect of results. We need say nothing of the operation, which was perfected long before vertebrate animals were evolved—the union of a right and left blood pump to form a single median tubular heart. We shall begin with the operations which came into practice when the higher vertebrate animals were being evolved, those which—as is the case with man—have their hearts completely divided to provide the lungs and the body with separate pumps. The first step towards making the heart into a double pump is the subdivision of the passage from the common auricle to the common ventricle. This was secured by bringing about an adhesion—a union—between the dorsal and ventral valves situated in the primitive auriculo-ventricular passage. How such a union was brought about can be guessed from what happens when a blood vessel is occluded by a thrombus. The lining cells of the vessels and those underlying them invade the thrombus and ultimately meet and unite in the centre. In the developing heart Nature has no need to resort to the production of a thrombus to bring about the proliferation of the living cells which are spread over the adjacent surfaces of the dorsal and ventral cusps in the auriculo-ventricular passage; she succeeds without that, but the machinery she employs to make these cells act as if they covered the edge of a wound has not yet been discovered.

Having secured the division of the common auriculo-ventricular passage, the next operation is to seal the orifice between the partition thus formed in the common passage and the interauricular septum. This is effected by a process exactly like that which leads to the closure of the passages between the pericardium and pleura and between the pleura and peritoneum. Having thus completed the separation at the auricular end of the heart, the aortic end is next attended to. The infundibulum of the right ventricle is cut off from the left ventricle by the proliferation and union of two masses of cells representing opposite rows of bulbar valves. The fourth operation, which is carried out at the end of the seventh week of development in the human embryo, closes the interventricular orifice—the gap left between the auriculo-ventricular and infundibular partitions. The pars membranacea septi

represents the cicatrix of this evolutionary operation. Then, finally, there is the closure of the foramen ovale, the temporary passage made to permit the foetal blood to pass from right to left auricle. All these passages of the heart are closed by a process of repair exactly similar to the manner in which the lumen of a blood vessel is occluded and healed. In one, or even in all of these operations undertaken to establish a double circulation Nature may fail to secure a good result, but as yet surgeons have not dared to make good her failures.

It is the exception for a cicatrix to remain to mark the site of an embryological wound. The perineal raphe, however, which passes along the scrotum from anus to fore-skin, shows that the track of the evolutionary knife may be traced in some cases. The raphe is the result of one of Nature's latest evolutionary operations. With the creation of a womb in the female mammal a new kind intermittent organ became necessary for the male. The raphe is the scar left in the embryological operation that established a floor for the penile urethra. The operation is exactly similar to that we have seen taking place in the palate. The process of union of the opposing genital folds begins behind and spreads forwards. The epithelial coverings adhere and form a temporary bond or scaffolding, across which the connective tissue elements spread and unite. The operation begins at the end of the eighth week, and is completed by the end of the eleventh week, but long afterwards remnants of the epithelial bond may be found in the septum of the scrotum. Many instructive examples of evolutionary union and healing are to be seen during the development of the urogenital system, such as the fusion of the genital cords and of the lower parts of the Müllerian ducts, to form the uterus and vagina.

If we apply an ultra-critical surgical standard we have to admit that Nature in her operation at the umbilicus has left a very distinct, if not an ugly scar. When, however, we consider the magnitude of the operation of which the navel marks the site, and remember that it is an evolutionary operation introduced at a comparatively recent date, we think that even the super-surgeon will admit that Nature has a wonderful technique at her disposal. For the umbilicus marks the site at which part of the body was sacrificed in order that the rest of it might spend nine months as a parasite on the maternal system and thus reach a seaworthy condition before being launched on the voyage of life.

In her most extravagant moods Nature never did anything more marvellous than when she made arrangements for the young spending the opening period of life within the womb. The feat was one requiring surgical resource and skill of the first order. Although she triumphed only when she came to the evolution of mammals, she had taken her first successful step long before, when she discovered it was possible to load an egg with yolk or nourishment sufficient for a developmental journey. She discovered how to make a small segment of the intestine come into existence precociously and form a sac large enough to contain the load of yolk. She turned the orderly realms of development into an Alice in Wonderland sort of world where the smile appears before the cat. In this case the meal for the embryo appears first and then a part of the intestine—the yolk sac—appears and encloses the meal. The premature formation of the yolk sac leads to an equally precocious appearance of the overlying area of the body wall, which, becoming greatly expanded, rises up over the body of the embryo like a double hood. The free margins of the hood meet over the embryo until only a linear gap is left between them. This gap is healed in exactly the same manner as the median fissure along the roof of the embryonic mouth. Thus it comes about that the embryos of all higher vertebrates are wrapped in an inner and outer envelope or membrane—both of them fashioned by the premature formation and expansion of a circumscribed area taken from the front wall of the body. So early are these membranes formed in the human and allied embryos that the opening in the membranes is closed almost before they have begun to expand. It is as if the seams of a coat had been sewn before the garment had been cut from the cloth. It sounds an Alice in Wonderland story, but it is true.

Let us see what has been made out of the ectoderm or epithelium which covers the outer enveloping membrane. It was, in the ancestry of higher vertebrates, merely ordinary surface epithelium covering a small area of the front body wall, but in the embryo of higher mammals the epithelium has been endowed with wonderful powers. It possesses what one might call a limited malignancy—the power of fixing itself to the interior of the womb, of invading the tissues of that organ, of effecting a union which, in the case of human gestation, will last for nine months. Then, towards the end of this period, preparations are made to break down the bond and set the child and its placenta free.

Nature is ultra conservative in most of her affairs, but when she sets out on a new venture, like that of placentation, she throws tradition to the winds. A good example of this is seen in the way she fashioned a respiratory mechanism or lung for the embryo hatched within a shell. She had provided the kidneys with a receptacle or bladder, which naturally became distended during a period of development spent within the close confines of a shell. Out of the fundus of the bladder she fashioned a respiratory apparatus; this, too, is added to the formation of the placenta, and has to be sacrificed at or before birth.

Thus it comes about that every child born into the world has had to sacrifice three parts of its body, an offering made for a nine months' lodging. Part of the intestine, in the shape of the yolk sac, part of the bladder in the form known as the allantois, and part of the anterior wall of the body, have all to be parted with. So well does Nature usually perform her operation that only the navel or umbilicus remains to mark its site. But here again Nature may fail; the opening or duct from the intestine may remain unclosed, the bladder may be left in a leaking state, or the intestines, which at an early stage seek to follow the expanded abdominal wall, may not retreat to their cavity, the condition known as umbilical hernia being thus produced. If Nature fails, then the surgeon has to step in and reawaken the mechanism of healing by creating freshly wounded surfaces and stitching them together.

If it had been necessary many other instances could have been cited from the developing human embryo to support my thesis that healing is not a gift merely to enable man and beast to overcome the accidents of life. It is something much deeper than that. I have sought to show you that the power to heal or repair has been a gift given to living tissues from the very beginning of organized life. Because of this virtue it has been possible for Nature, in the course of the evolutionary progress which has brought man to his high estate, to create gaping embryological wounds and to heal them. The processes which the surgeon sees at work in healing wounds are the same as those with which students of embryology are familiar. As knowledge of vital processes grows the more we become certain that the problems which face the researching biologist and the operating surgeon are the same.

I had, too, one other aim in giving this lecture. Every one of us has become so familiar with the ease with which clean wounds heal that we have ceased to realize the miracle that is taking place daily under our eyes. This is true not only of the layman but of the surgeon and pathologist as well. It is more than true of men like myself who study the mechanics of development; we become so accustomed to embryonic evolutions that the underlying mysterious machinery ceases to arrest our attention or rouse our curiosity. I have stood back a little from my laboratory bench to try and make you realize the miraculousness of it all. In every instance hitherto explored the mysterious and the miraculous have proved to be the children of ignorance. When our knowledge of healing has reached the point of being a science the closure of a wound will be no longer a miracle, but it will remain none the less one of the beneficent wonders of the world.

A DEPUTATION from the London County Council, including Sir William Collins, Captain Swinton, Mrs. Hudson Lyall, and Mr. A. F. Buxton, met a number of London M.P.'s at the House of Commons, on July 25th, to urge that the Holland Park site, with the additional 15 acres on which an option could be secured, was preferable to the Bloomsbury site which has been offered through the Government to the London University. Owing to other business the meeting was brief, and is to be renewed.

STILLBIRTH: ITS CAUSES, PATHOLOGY, AND PREVENTION.*

BY

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THIS communication is based upon the *post-mortem* examination of 200 consecutive cases of stillbirth and neo-natal death occurring in the Edinburgh Royal Maternity Hospital from August 1st, 1919, to November 30th, 1920. Of these, 120 were stillbirths and 80 neo-natal deaths. The term "stillbirth" is used in the popular sense to include infants born dead at and after twenty-eight weeks' pregnancy, as well as those which, though born with the heart beating, failed to breathe after complete birth of the head and body. The term "neo-natal" death, on the other hand, is used to include all infants in whom respiration took place after complete birth, even though the child only gasped a few times. In every case an effort has been made to co-ordinate the *post-mortem* findings with the clinical history of the parents and of the labour, and from the results of this co-ordinated inquiry certain practical conclusions have been drawn with regard to the supervision of pregnancy, conduct of labour, and care of the newly-born infant. The problems presented by the termination of pregnancy at a period earlier than the seventh month are in many respects so different that it seems preferable to make this the subject of a separate paper at some future date. It is impossible to give in any detail the numerous facts that have been observed during the course of the investigation, but certain broad principles have emerged, and it is these that I wish to state with as much conciseness as is consistent with clearness and continuity.

I. CRANIOTOMIES.

Of the 19 craniotomies, the operation was performed upon the after-coming head in 3. In all cases the cause of difficulty was disproportion between the head and the pelvis, due in 12 cases to pelvic contraction, in 5 to excessive size of the child, the pelvis being normal, and in 2 cases to hydrocephalus. It is an interesting fact that 9 out of the 17 non-monstrous children were born to multiparae, and that 7 of these multiparae (or 77 per cent.) had previously given birth to full-time living children, in many cases even without instrumental interference. In only 3 of the 9 multiparae in whom it was necessary to perform craniotomy was there any history of dystocia in previous labours, and one, a 5-para, had had four previous full-time natural labours.

II. ASPHYXIA NEONATORUM.

Of 120 cases of stillbirth, asphyxia was the cause of death in 49 (or 40 per cent.). In addition to these there were 15 cases of craniotomy in which the child was dead before craniotomy was performed, and in which the cause of death was probably asphyxia during prolonged and unsuccessful attempts at delivery. The real number of deaths therefore due to asphyxia would probably be 64, or 53 per cent. For the purpose of this analysis, however, the lower figure has been taken as not being open to question.

The 49 cases may be divided into those occurring before labour—"ante-partum asphyxia"—11 cases (22 per cent.), and those occurring during labour—"intra-partum asphyxia"—38 cases (77 per cent.). The chief causes of ante-partum asphyxia were placenta praevia, accidental haemorrhage, and eclamptic convulsions. The foetus in these cases had been dead some hours, or even a day or two before birth, and showed slight maceration; in the internal organs the signs of asphyxia were extremely well marked, much more so than in those cases in which asphyxia occurred during labour, for certain reasons that will become apparent later.

With regard to intra-partum asphyxia, the chief causes were disproportion between the head and the pelvis, primiparity, prolapse of the cord, and difficulty with the after-coming head in breech presentations. The two first act chiefly by causing prolongation of the second stage of labour. In at least one case the cause of this prolonged second stage seemed to be the cord round the child's neck. There were a few cases in which there was no undue prolongation of labour and no apparent reason why asphyxia should have occurred, and these emphasize the importance of keeping a careful watch on the foetal heart during the second stage. When the child is lying in a posterior position this is not always possible, and the correction of posterior positions by external manipulation before the onset of labour should therefore be attempted as a matter of routine. It must be admitted, however, that to follow the foetal heart when the head is low in the pelvis, the uterus firmly contracting, pains coming frequently, and the mother crying loudly, is not always possible. Neither is it always possible to feel pulsations in the anterior fontanelle even when this is palpable, nor to pass the examining finger over the advancing head, to palpate directly the cardiac area. Often a dangerous condition of the foetus is only indicated by passage of meconium, and when this occurs it is generally too late to render effective aid. We have, in fact, at present no constantly reliable method of discovering the condition of the foetus during even a normal second stage of labour.

Of the 38 cases of intra-partum asphyxia 11 were delivered by the breech. If we reject 2 cases of vertex presentation in which podalic version was performed after forceps had failed, and in which asphyxia might reasonably have been expected to occur had the presentation remained as vertex, and if we assume 3 per cent. to be the normal frequency of breech presentations, we arrive at the conclusion that asphyxia is eight times as likely to occur in breech as in vertex delivery.

The Post-mortem Appearances in Asphyxia Neonatorum.

These *post-mortem* appearances are, as a rule, definite, and seldom leave any doubt as to the cause of death.

1. *The External Appearances.*—The body is limp on account of the late onset of *post-mortem* rigidity. It is livid on account of deficient oxygenation of the blood. The conjunctiva is injected and the lips and finger-nails are almost black.

2. *Internal Appearances.*—The membranes of the brain are injected, the veins being filled almost to bursting point. The lateral ventricles of the brain contain, as a rule, excess of serous fluid, sometimes blood-stained. The chief signs, however, are found within the thorax. There are subpleural haemorrhages in the lungs—the so-called Tardieu spots, found chiefly around the roots on the posterior surface, on the basal surface, and on the surfaces between the lobes. There are subepicardial haemorrhages in the heart, with a peculiar grouping, mainly on the anterior surface, along the interventricular groove, and on the posterior aspect of the ventricles, along the auriculo-ventricular sulcus. In a well marked case there will also be subcapsular haemorrhages in the thymus, and occasionally one sees large interstitial haemorrhages in the thymus extending downwards from underneath the capsule. Punctate haemorrhages on the front of the aorta and pulmonary artery are frequent, and even in the fibrous pericardium. Occasionally one sees them also on the upper surface of the diaphragm and on the anterior aspect of the part of the vertebral column within the thorax. Intrathoracic haemorrhages therefore constitute one of the most important signs by which asphyxia may be recognized, but sometimes they are entirely absent. I had one case especially, where the child was born dead soon after prolapse of the cord. I was present at birth, and carried out the *post-mortem* examination soon after. In this case not a single intrathoracic haemorrhage was present, and the only internal signs of asphyxia were two other important signs that have not yet been mentioned—fluidity of the blood due to its increased carbon dioxide content, and great congestion of the internal organs.

Causes of Intrathoracic Haemorrhages.

When the child's blood supply is suddenly cut off by pressure on the cord, placental separation, or otherwise, the accumulation of carbon dioxide in the blood, by stimulating the respiratory centre, causes the infant to make a premature inspiration and expands the chest wall.

* Read at a meeting of the Edinburgh Obstetrical Society, May 11th, 1921. Abstract of report to the Medical Research Council, May, 1921.

If there is a little air in the maternal passages, as generally happens if the hand of the accoucheur has been introduced for any purpose, it is drawn into the lungs, which therefore imperfectly follow the chest wall, a negative pressure is created within the thorax and blood is sucked into it, with consequent giving way of the tiny venules and capillaries in places where they are least supported—that is, on the surfaces of the organs. We thus see why it is that in ante-partum asphyxia these intrathoracic haemorrhages are most marked, and why it is that in premature infants they are often entirely absent. In the premature infant the respiratory centre is poorly developed, attempts at respiration during asphyxia therefore ineffective, and the consequent negative pressure inside the chest comparatively slight. In ante-partum asphyxia no air whatever is available; therefore the negative pressure created inside the chest is greater, with consequently greater haemorrhage. The chief points, then, that require emphasis with regard to asphyxia are the great danger of breech presentation and the necessity for keeping a careful watch on the foetal heart during labour.

Also, the greatly increased liability to the occurrence of asphyxia in primiparae on account of rigidity of the tissues, even when the pelvis is normal and the child not excessively large, points to the desirability of inducing labour in some of these cases a little before full time, unless the pelvis is more than usually roomy or the child below the average size. Finally, most of the cases of asphyxia might have been prevented by adequate ante-natal supervision, which would have led to the discovery of such conditions as contracted pelvis, excessive size of the child, breech presentations, and albuminuria, and to the institution of preventive treatment.

III. Maceration.

In the series are included 22 macerated foetuses, in 14 of which the cause of foetal death was syphilis, in 3 albuminuria, in 1 diabetes, and in 4 the cause was doubtful, further observation of the mother being required, especially during a subsequent pregnancy. The number of cases labelled doubtful show that it is occasionally a matter of some difficulty to decide definitely as to the cause of the foetal death. The chief points to be relied upon in arriving at a diagnosis of syphilis in any particular case are:

1. The presence of spirochaetes in the foetal organs.
2. Enlargement of the foetal spleen.
3. Presence of chondro-epiphysitis.
4. Presence of active syphilis in the mother, or in both parents.
5. Strongly positive Wassermann reaction in the mother.
6. A maternal history of repeated stillbirths, abortions, or neo-natal deaths, without other discoverable cause.
7. Presence of syphilitic changes in the placenta.

At this point I shall only say one word about the value of the placental appearances in distinguishing between the causes of foetal death. In the syphilitic macerated foetus the placenta is sometimes, but not always, larger and heavier than normal. It is always more or less pale on section, and is usually thickened from the maternal to the foetal surface. It is rare to find infarcts or haemorrhages in the syphilitic placenta, whereas in the albuminuric placenta large white or red infarcts and numerous circumscribed haemorrhages are common. The albuminuric placenta in maceration is, like the syphilitic placenta, pale and avascular, but it is not usually enlarged, and is not thickened from the foetal to the maternal surface. Microscopically it is very difficult to tell the one from the other, both being almost entirely avascular, but in the syphilitic placenta the villi are larger and thicker than normal, and consequently the intervillous spaces are diminished in extent.

In deciding, therefore, as to the cause of foetal death in the case of any particular macerated foetus it is necessary to weigh carefully all the available evidence—that obtained from the parents, the placenta, and that from the examination of the foetus itself—and only rarely, and more seldom with increasing experience, should the observer be left in doubt as to the cause of death.

IV. Cerebral Haemorrhage.

Out of the 200 there were 59 cases of cerebral haemorrhage, or 29.5 per cent., and of these 20 were delivered by the breech and 39 as vertex. Of the 39 cases delivered as vertex, 17 were forceps and 22 non-forceps. Of the 17 forceps cases, 9 were classified as difficult, and in 8 no special difficulty was encountered. The causes of difficulty in the difficult cases were either contracted pelvis or excessive size of the child, and all except one occurred in primiparae. Of the 8 cases in which forceps delivery was effected without any special difficulty, 3 were premature, and in the remainder forceps had been applied early in the second stage to hasten delivery, the patient in two cases being eclamptic; in one the mother had mitral stenosis, and in another ventral hernia.

Non-forceps Cases with Cerebral Haemorrhage.

Of these there were 22 in all, and all occurred in premature infants, 16 occurring at from seven to seven and a half months, 6 at eight months, while at eight and a half months there were none. The liability to cerebral haemorrhage in premature infants is thus greatest at from seven to seven and a half months, still considerable at eight months, while at eight and a half months the liability would appear to be no greater than at full term. Further, no case of cerebral haemorrhage occurred in a full-time child in which delivery was a natural vertex.

Again, of the 59 cases, 23 were at full time and 36 premature. If, therefore, we take the normal proportion of full-time to premature infants over a large number of cases as 10 to 1, we arrive at the conclusion that the liability to cerebral haemorrhage in premature infants is sixteen times that of those at full time. Further, of the 20 cases delivered as breech, only 9 were originally breech, the remaining 11 being converted into breech by internal version for various reasons. If we reject 3 cases in which the version was done for dystocia and in which cerebral haemorrhage might reasonably be supposed to occur had they remained as vertex, there remain 17 cases of breech presentation in which cerebral haemorrhage resulted out of a total of 59. Taking, again, 3 per cent. as the normal frequency of breech delivery, it is evident that the liability to cerebral haemorrhage in breech presentation is ten times that in vertex.

Operability.—It was a remarkable fact that probably none of the haemorrhages could have been removed by operation with any hope of permanent cure. This was owing to the site being in some cases inaccessible or to the brain being too much ploughed up and damaged by the haemorrhage, or to the presence of fatal lesions in other organs, such as kidney or liver.

Relationship between Cerebral Haemorrhage and Tears of the Dural Septa.

The condition of the septa of the dura mater within the cranium was carefully observed in the last 94 cases, with the result that tears, complete or incomplete, of the tentorium cerebelli were found in 35 (37 per cent.). Of these 35 cases, delivery was by breech in 22 (63 per cent.), by vertex in 12 (34 per cent.), and by face in one (3 per cent.). Reasoning in the same way as in the case of cerebral haemorrhage, we arrive at the conclusion that breech delivery is sixteen times as likely to give rise to tentorial tears as is vertex.

Further, in every case of breech delivery at full term some degree of tentorial tearing was apparent. It was also evident from my figures relative to methods of delivery that, while complete tears of the tentorium cerebelli are exceedingly likely to occur in difficult breech cases, yet they may also occur in breech cases in which there has been no difficulty whatever—in easy and premature labours; and while in vertex cases complete tears may frequently occur in forceps delivery, they are not confined to these, but may also occur in cases where delivery has been spontaneous but prolonged and somewhat difficult. It is evident, therefore, that the problem of the prevention of injuries to the dural septa is inextricably bound up with that of the prevention of breech and of difficult vertex deliveries.

Relationship between Tears of the Dural Septa and Cerebral Haemorrhage.

An examination of the 50 cases in which either tears of the dural septa, or cerebral haemorrhage, or both together, occurred, reveals the fact that there were 21 cases in which tears of the dural septa occurred, and in which there was no cerebral haemorrhage. This means that out of a total of 35 cases of tentorial tearing, 60 per cent. were

unassociated with cerebral haemorrhage in any situation or of any degree. If, on the other hand, we examine the cases in which cerebral haemorrhage occurred with no tears of the dural septa, we find there are 15 cases of such out of a total of 29 cases, or 57 per cent. Again, if we take the cases in which tears of the dural septa and cerebral haemorrhage coexisted, we find there are only 14 cases out of the total 50 in which septal tears and cerebral haemorrhage existed either together or separately—that is to say, tears of the septa and cerebral haemorrhage existed together only in 28 per cent. These 14 cases are tabulated in my report to the Medical Research Council and the causes of the haemorrhage analysed.

The matter is too detailed to enter into in this paper. Suffice it to say that there were only three in which it was necessary to invoke the theory advocated by Holland, of tearing of the dural septa, allowing excessive moulding of the head with consequent kinking of the vein of Galen and rupture of it or its tributaries from the base of the brain and cerebellum. In some cases the haemorrhage was in regions remote from that drained by the vein of Galen; in others it was obviously due to the tears in the tentorium cerebelli, extending deeply into the straight or lateral sinus.

Intraventricular Haemorrhage.

Of these there were 22 cases, but I shall only indicate here the points with regard to it that have a practical bearing. (1) It never occurred except in premature births, being most frequent from seven to seven and a half months, less at eight months, and at eight and a half months it seemed to be no more likely to occur than at term. As a matter of practical experience one does not expect to find intraventricular haemorrhage in infants born at full term. (2) Breech delivery was ten times as likely to cause it as vertex, a result exactly corresponding to cerebral haemorrhage in general. (3) In none of the subjects were any signs noted that might have led to diagnosis. The babies were all premature; one or two were blue from birth; they sucked and cried badly, or not at all. Some of them lived as long as forty-eight hours, even with both lateral ventricles distended with blood clot.

The points to be kept in mind in the prevention of cerebral haemorrhage would therefore seem to be:

(*a*) Avoidance of breech deliveries, by cephalic version of breech presentations at a period when this is always possible, not later than the seventh or eighth month.

(*b*) Avoidance of difficult forceps deliveries; this is only possible by antenatal supervision of every case.

(*c*) Avoidance of the induction of premature labour, certainly before eight months, better still before eight and a half months.

(*d*) Manual dilatation of the parturient canal for the passage of the premature infant and preservation of the membranes unruptured as long as possible. We shall see that the latter has also an important bearing on the question of infection of the newly-born infant.

In other words, every effort should be made to prevent pressure upon the premature infant during its birth. Before eight and a half months the infant is unfitted to pass with impunity through even a normal and easy labour.

Finally, after a study of this series of cases, it is impossible to avoid the conclusion that it is only by adequate antenatal supervision of every pregnant woman that the present high morbidity rate from cerebral haemorrhage can ever be seriously diminished.

V. SYPHILIS.

There were altogether 35 cases of syphilis, including 14 macerated foetuses. I should like to state very briefly the chief points that emerged from a study of these 35 cases.

(1) *With Regard to the Mother.*—Only very occasionally does one find that the mother has any signs or even any history of syphilis. In only 6 cases of the 35 did the mother show any signs or give any history of syphilitic infection. Again, while a positive Wassermann reaction is of great value, a negative Wassermann in a woman with a history of repeated stillbirths, abortions, or neonatal deaths, without any obvious reason to account for them, such as birth injuries, albuminuria, or retroverted uterus, has little or no value in excluding syphilis. So much has this been impressed upon us that in the presence of such a history, even though the Wassermann is repeatedly negative, we do not hesitate to carry out antisyphilitic treatment. In the case of a primiparous patient the bad obstetric history is, of course, wanting, but in these cases it is, in our experience, less common to find latent syphilis and a negative Wassermann.

(2) *With Regard to the Child.*—What are the points that guide us to a diagnosis of syphilis at *post-mortem* examination? It should be borne in mind that the evidence obtained from this *post-mortem* examination of the child is often the only evidence obtainable of the presence of syphilis in the mother.

In the first place, the syphilitic child is usually premature, as were twenty-six out of my thirty-five cases. Syphilis is the commonest cause of premature labour. In the second place, there may be marasmus, but only if the child has lived at least a few days, so that if it has died in the first day or two it may be perfectly well nourished. Third, it may be jaundiced, and sometimes the jaundice is present from birth—it may be born jaundiced or the jaundice may come on immediately afterwards. Fourth, there is sometimes an oedematous condition—a hard oedema of the body and the limbs. And fifth, there may rarely be a few pustules or vesicles or areas of desquamated skin about the body, especially on the buttocks or lower limbs. These five signs are all that may be seen externally and they may be all absent, and it is rare to find more than one or two present at the same time.

The Internal Signs of Syphilis.

There are four organs, or parts, of the foetus in which we may find naked-eye changes due to syphilis.

1. *Lungs.*—As a rule, there are no naked-eye changes present. The lungs may look perfectly healthy, well aerated, float buoyantly in water, and show the normal pink colour. The typical naked-eye pneumonia alba of the textbook is rarely seen in the newly-born foetus—it was only present in one case of my series. When seen it is easily recognized; the lung is heavy and voluminous, the cut section is more or less solid, in colour it resembles grey marble, and it sinks in water. On squeezing the cut surface, more or less purulent-looking fluid exudes. But in most cases of syphilis of the newborn the lungs look perfectly healthy to naked-eye examination, except for some terminal oedema in the lower lobes.

2. *Liver.*—It is commonly said that the liver is enlarged in syphilis. I have rarely seen an enlarged liver. In only two of my cases was there enlargement, and then it was not definite; in only one case was the liver tough on section, and its surface was smooth and bile-stained. As a rule the only change present is that, in cases of marasmus, the liver is pale and somewhat fatty, which is due to the marasmus and not to the syphilis.

3. *Spleen.*—An enlarged spleen is one of the most reliable signs of syphilis in the newly-born infant. When a definitely enlarged spleen is found in an infant that is stillborn, or that dies a few weeks after birth, it may be taken as pathognomonic of syphilis. But an enlarged spleen is not always found. It was only found in five of my series of 35 cases, or 14 per cent. One sometimes has a case where the spleen appears to be enlarged, but the enlargement is not definite; it is on the border line, and one cannot be sure, for the spleen varies a good deal in size in normal cases. Speaking generally, however, I think I am nearly correct in saying that a spleen weighing more than 16 grams may be taken as definitely enlarged.

4. *Chondro-epiphysitis.*—We come now to the fourth point in the *post-mortem* diagnosis, chondro-epiphysitis. Textbooks of midwifery lay great stress upon the presence of chondro-epiphysitis as proof of the presence of syphilis. No doubt it is when present. The trouble is that one very seldom sees it. Out of my series of 21 fresh syphilitic infants I have only found it definitely present in one, and so indefinitely in two others as to be useless in diagnosis.

5. *Placenta.*—If you are fortunate you will also have the placenta to guide you. It is generally taught that the syphilitic placenta is enlarged, greasy and pale, but nothing is further from the truth. The placenta of a syphilitic child born alive looks perfectly normal and healthy. It is not increased in size; its vascularity is normal: and even on microscopic examination it is

impossible to tell it from the placenta of the healthy child. Had it been otherwise the child would have died *in utero*. If, however, the child has been born macerated, the placenta is frequently enlarged; on section it is pale and avascular, thickened from the maternal to the foetal surface, and the larger vessels stand out on the cut surface as thick white cords. The reason for this is that the enlargement of the placenta as a whole is due to the enlargement of the individual villi, and these owe their enlargement to a cellular proliferation in their stroma which blots out the capillaries; and so the child dies from the cutting off of its blood supply, and the same cause that leads to the death of the child causes the enlargement of the placenta. It is not, therefore, strictly correct to say that the syphilitic placenta is never enlarged, for it may be in the case of the syphilitic macerated foetus.

It will be seen, therefore, that the naked eye *post-mortem* examination may be completely negative. The child may appear normal and well nourished, and the lungs, liver, spleen, epiphyses and placenta may seem perfectly healthy. How, then, are we to arrive at a diagnosis of syphilis? This is achieved by histological examination in the fresh foetus of the organs, especially the thyroid, thymus, lungs and liver.

Histological Changes in these Organs.

Thyroid. Five of my 21 fresh foetuses showed well marked fibrosis of the thyroid, which, as a result, contained few acini. In addition to this there is a peculiar proliferation of cells into the acini that remain, filling them so that little or no colloid may be visible. An interesting question arises here as to whether normal colloid-containing acini would become regenerated if specific treatment were carried out, or whether such regeneration would not take place, and the child become a cretin. Between the acini of the normal thyroid there are groups of cells which afterwards form new acini. Many of these are still present in the syphilitic thyroid, and it is probable that from these the thyroid would become sufficiently regenerated to carry on its normal function.

Thymus.—Several of my cases showed well marked fibrosis, increase of reticulum cells and plasma cells, with a peculiar change in the corpuscles of Hassal. These were enlarged, and the concentric body inside the capsule was replaced by granular débris and leucocytes, chiefly polymorphs and a few lymphocytes. In some the replacement is so complete that none of the concentric body is left, while in others some part of the latter is still left in the centre of the otherwise granular mass.

Lung.—The histological changes present in the lungs were: (1) Increased thickness and comparative avascularity of the alveolar walls, due to a fibro-cellular proliferation; (2) thickening of the vessel walls and of the walls of the bronchioles; (3) thickening of the pleura, liable to be irregular, and not always present; (4) in one case a few small microscopic gummata were found in which the chief cells distinguished were plasma cells, lymphocytes, and a few polymorphonuclear leucocytes; (5) the alveoli are usually loosely filled with catarrhal phagocytic cells derived from the endothelial cells lining them.

Liver.—Three chief types of histological changes were found: (1) Coarse, or peri-portal, cirrhosis was present in 10 cases, in which lymphocytes, plasma cells, and fibroblasts were numerous in the portal tract. (2) Fine, or intercellular, cirrhosis was present in 3 cases. Both in this and in the coarse type there was also present more or less thickening of the hepatic vein in the centre of the lobule. (3) The haemopoietic liver. In this the sinusoids are filled with large cells, chiefly lymphocytes, a few nucleated reds, also a few large cells lying in groups of two or three, and containing in their protoplasm large coarse eosinophile granules. This indicates a continuation of the blood-forming function of the liver into post-natal life. The large number of the lymphocytes present gives the liver the appearance of a case of lymphatic leukaemia, but the excess of lymphocytes is confined to the sinusoids, and is not found in the vessels of the portal canal or even in the central hepatic vein.

Spleen.—The splenic enlargement, in the cases in which it was present, was associated with peri-portal cirrhosis in the liver. Microscopically it was of the nature of a hyperplasia, while in three cases there was fibrosis. There was no definite or constant increase in reticulum cells as compared with several normal cases examined, adult and foetal. As regards plasma cells, their number in normal cases varied very much, and there was no characteristic or constant increase in their number in syphilis.

Kidney.—Only one case showed any change. In this there was marked interstitial haemorrhage between the tubules, strictly confined to the pyramids, and not all of these were affected. Microscopically there was thrombosis in the veins between the cortex and the pyramids. There was no thrombosis in the arteries, but their intima was much thickened by a cellular proliferation, and in some cases the lumen was obliterated. The condition was probably one of infarction.

Pancreas.—Fibrosis of the pancreas was well marked in several cases. The vascular coats were thickened and a young fibrous tissue spread between the acini, widely separating and destroying them. Islands of Langerhans appeared to be more numerous than in sections of the normal pancreas. In the latter they are rather scarce and somewhat difficult to find, whereas in some sections of a fibrotic syphilitic pancreas there were frequently found as many as eight in a microscopic field with 1/3 objective.

Finally, there only remains the examination for spirochaetes. It is another common idea that the spirochaete is always found in the tissues of the syphilitic foetus. That this is by no means true will be evident when I say that out of fourteen macerated syphilitic foetuses the spirochaete was only found in eight, while of twenty-one fresh syphilitic infants it was only found in one. The absence of the spirochaete was particularly unexpected in one case where twins were born at seven and a half months. The first was born macerated, and spirochaetes were very numerous in the organs, including the uterus, ovaries, tubes, and even in the wall of the heart. The other twin died, at the age of 16 days, of pneumonia. There were well-marked syphilitic changes in the liver and lungs, but no spirochaetes were found in any organ, in spite of searching examinations by dark-ground and Levaditi methods. Dr. Amand Routh has suggested to me that the infants may belong to different fathers, but there was nothing in the clinical history to suggest this, and the twins were both females and at the same stage of development. The placentas were separate, and that of the living child was much less avascular than that of the other. It would seem that it is only on the assumption that the spirochaete goes through a definite sexual cycle that its repeated absence in proved syphilitic foetuses can be explained.

It is evident therefore that the *post-mortem* diagnosis of syphilis is not always a simple matter, but that it frequently entails a careful weighing of all the available evidence—the obstetrical and clinical history of the mother, the Wassermann test, the placenta, a complete naked-eye and microscopic examination of the foetal organs. Even when all these data are available there will occasionally be a case where there is difficulty in deciding whether syphilis is present or not.

VI. Pneumonia.

Pneumonia is a common cause of death amongst infants during the first week after birth, and accounted for 21 deaths out of 80, or 26 per cent. I shall only draw attention very briefly to one or two points regarding it: (1) In the infant there is little defensive reaction as compared with the adult against the infecting agent. In the lung alveoli there are remarkably few polymorphonuclear leucocytes present. (2) Pneumonia in the first few days of life is an extremely insidious disease, generally presenting no characteristic symptoms which might lead to its presence being suspected, and to the carrying out of physical examination. (3) Even at *post-mortem* examination its presence may be missed if microscopic examination of the lungs is not carried out. The reason of this, of course, is that a small pneumonic patch, insufficient to alter the normal naked-eye appearance of the lung, may frequently be sufficient to kill the infant. (4) It is sometimes due to antenatal infection from premature rupture of the membranes, and the infant may be not only born infected, but may be even suffering from an advanced degree of pneumonia before its birth. This is illustrated by the following case:

A primipara at full time was admitted to the Royal Maternity Hospital after long delay on the district, due to primary [illegible]. The membranes had been ruptured for some time before admission. Forceps were applied in hospital, and a

"blue baby" was born, breathing badly, which died eight hours later. The child was at full time, very well nourished, and considerably above the average size—3,800 grams. Each pleural cavity contained about 2 oz. of blood-stained serous fluid, the lower lobes of both lungs were of solid consistence, and on squeezing the cut surfaces they exuded a yellowish frothy fluid. Microscopically the lungs showed an advanced degree of catarrhal pneumonia, in the stage of grey hepatization. At some parts no cells could be made out, and the whole appeared to be a necrotic mass in which even the alveolar walls could not be distinguished. Cultures from the lung on blood agar yielded an organism of the pneumo-bacillus group. It is impossible that such an advanced degree of grey hepatization could have taken place in the eight hours in which the child lived, and its blueness and difficulty in breathing at birth, and continuing till death, are strong evidence in support of antenatal pneumonia. Another child, in whom the membranes had been ruptured three days before birth, died on the third day, and at *post-mortem* examination there was found pneumonia, double empyema, and septic endocarditis, the causal organism being the *Bacillus coli*. Breathing from birth had been wheezy and rapid.

I should like to draw attention to a type of pneumonia that would seem to be peculiar to the newly-born infant, and which occurred in six of my cases. This might appropriately be called "acute haemorrhagic pneumonia of infants," and its course is somewhat as follows:

A child is born, perhaps at the full time or a few days prematurely. It seems perfectly healthy at birth and afterwards, when, without any warning symptoms whatever, it is found dead in bed. The face may be blanched, there may or may not be a little blood staining about the mouth and nose, and nothing more is to be seen. Suspicion of overlying or of foul play may arise. What has happened is this: the child's lungs have become infected in some way and an acute and rapid congestion occurs. In the adult this would be the first stage of a pneumonia, the next stage would be consolidation, followed, if the patient recovers, by resolution. But in the young infant the fragile vessels cannot stand the strain thrown upon them by the engorgement, and they give way and blood is poured out into the alveoli and bronchi, and the child dies suddenly, drowned in its own blood, the whole process occurring with dramatic suddenness and probably not occupying longer than a few minutes.

This acute haemorrhagic pneumonia of infants, then, seems to be a distinct clinical and pathological type, and while the etiological factor in most cases is organismal, there is some evidence to support the theory that it may occasionally be of the nature of an anaphylaxis. The important points to be kept in mind are the necessity for guarding the newly born infant against infection, and of avoiding, when possible, the premature rupture of the membranes during labour.

VII. Suprarenal Haemorrhage.

There were 18 cases of haemorrhage into the suprarenal body. All were born dead except two, the cause of death being in most cases asphyxia. In one case the child lived four hours, the haemorrhage being severe and into the medulla of the left suprarenal body. Of the 16 cases that were born dead, the suprarenal haemorrhage was the probable cause of death in one, no other cause being found.

Site of Haemorrhage.

Into medulla of both	5
Into medulla of right	4
Into medulla of left	5
Under or into capsule of both	1
Under or into capsule of right	1
Under or into capsule of left	2

Six cases were delivered by vertex and 12 by breech. Of the 6 cases delivered by vertex, in 3 the haemorrhage was into or underneath the gland capsule, and in only one of these was it severe. Rejecting for statistical purposes the two slight cases, there remain 4 cases in which delivery was by vertex. In 3 of these the haemorrhage was into the medulla, in all into the right only, and in one beneath the capsule. Of the 12 breech deliveries, in 3 podalic version had been done after forceps had failed on the forecoming head. If we reject these 3 cases, as it might reasonably be supposed that suprarenal haemorrhage would have occurred had they remained vertex, and assuming again 3 per cent. as the normal frequency of breech presentation, we arrive at the conclusion that breech delivery is twenty-two times as likely to give rise to suprarenal haemorrhage as delivery by the vertex. In vertex presentations suprarenal haemorrhage only occurred in difficult forceps deliveries, while in breech cases it occurred also in labours in which no special difficulty was encountered. Again, of the 15 severe cases, 9 were at full time and 6 premature. Assuming 1 in 10 to be the normal proportion of premature to full-time labours, we find that suprarenal haemorrhage is four times as likely to occur in a premature labour as in a labour at full time.

Causes of Suprarenal Haemorrhage.

Various causes have been invoked from time to time to explain these suprarenal haemorrhages. It has been suggested that pressure upon the liver compresses the inferior vena cava between the liver and the vertebral column, thus damming back the blood into the suprarenal veins (Mather). Too early ligation of the cord has been suggested, but this seems to be ruled out by the fact that the increased pressure would not fall directly upon the inferior vena cava, neither would this cause operate more frequently in breech than in vertex presentation. Syphilis, being a frequent predisposing cause of haemorrhage in other organs, would no doubt also predispose to suprarenal haemorrhage by furnishing a capillary toxin, but it was not present in any of my cases.

It was found from a study of my tables that of the 16 cases in which the child was stillborn, 15 were associated with asphyxia, and it seems probable that this is an important factor in its causation. It is certain that haemorrhages over the cerebral hemispheres, around the small veins of the meninges, are frequently found as a result of asphyxia in premature infants, while from the same cause large subcapsular and even interstitial haemorrhages may be met with in the thymus, even in full-time infants. In the premature infant the vessels are extremely fragile and their muscular coats undeveloped, and it is possible that they give way easily under the strain of the sudden congestion of the internal organs in asphyxia. In no organ would this be more likely to occur than in the suprarenal, which is excessively vascular and in which there is a minimum of supporting fibrous stroma. The organ also is so situated, close to the termination of the superior vena cava, that it is likely to receive the full force of the backward pressure of blood from the distended right auricle. In discussing asphyxia, however, we found that breech delivery was eight times as likely to give rise to asphyxia as vertex delivery, while it is twenty-two times as likely as vertex to give rise to suprarenal haemorrhage. It would appear from this discrepancy that there must be some other factor at work in producing suprarenal haemorrhage, and coming much more prominently into play in breech than in vertex deliveries. This factor is probably the direct trauma incidental to the passage of the breech and abdomen through the comparatively undilated parturient canal and the pressure of the child's lower limbs against the abdominal organs.

VIII. Premature Labour.

Out of the 200 cases 95 were born prematurely. Bearing in mind that every child should be carried to full time unless there is some reason for the contrary, an effort was made to ascertain this reason by a co-ordination of the clinical history of the mother with the *post-mortem* findings in the foetus, with the result that in every case except two some cause for the premature onset of labour was discovered, the chief causes being, in order of frequency, syphilis 28, twins 16, induction of labour 12, albuminuria and eclampsia 11, placenta praevia 8.

Causes of Death in the Premature Infant.

In the 56 cases of neo-natal death among premature infants the causes were as follows:

Cerebral haemorrhage	22
Syphilis	12
Syphilis with catarrhal pneumonia	6
Catarrhal pneumonia	5
Septic peritonitis	2
Septic meningitis	1
Suprarenal haemorrhage	1
Omphalorrhagia	1
Moist gangrene of foot	1
Asphyxia (gasped a few times)	1
No cause found	4
	56

With regard to the 4 cases in which no cause for death was discovered, it can only be supposed that the infant had

insufficient vitality to maintain life, or that fatal cooling of the body had occurred through insufficient development of the heat-regulating mechanism. Examination of the causes of premature birth reveals the fact that the latter is, in a large percentage of cases, unpreventable as far as present knowledge goes. Thus the only preventable cases are those of syphilis and albuminuria, including eclampsia, comprising 39 cases, or about three-fifths of the entire number, and these might have been prevented by antenatal care.

An examination of the causes of death among premature infants, on the other hand, reveals the fact that most might have been prevented, (1) by proper supervision and treatment of the mother during pregnancy, (2) by the adoption of certain precautions to prevent injury to the foetus during birth, and (3) by improved care of the infant during the first month of post-natal life. This improved care can only be obtained by the provision of specially fitted rooms or *couveuses*, on the Continental principle, in which the child's body heat can be maintained until such time as its own heat-regulating mechanism is properly developed, and in which the necessary measures can be taken to guard against infections that are such a serious and constant menace to the life of the premature infant.

IX. Scopolamine-Morphine Narcosis.

There were three cases in which the cause of death would seem to have been twilight sleep—at least, asphyxia and other known causes of death were excluded. All three occurred in primiparae, and in all repeated doses of morphine had been given four-hourly, and hyoscine hourly. In all cases the thymus was much enlarged, but was specially so in two, in which it weighed 30 grams and 24 grams respectively, the normal being 10 grams. It seems more than a coincidence that these two thymuses should be the two largest I have met with in 350 necropsies on infants. Instances of increased susceptibility to the action of morphine are not infrequent in the case of infants and young children, and it does not seem unreasonable to suppose that a like idiosyncrasy may exist in the unborn foetus, or that the maternal metabolism in certain cases is slower than in others, thus allowing more of the toxin to pass over into the foetal circulation.

X. Miscellaneous.

There were a few cases in which the cause of death fell into none of the above-mentioned classes. They may be tabulated as follows:

Septic peritonitis from cord infection	2
Septic meningitis	1
Omphalorrhagia	1
Neonatal asphyxia	3
Encephalocele with malformation of the heart	1
Anencephaly	2
Double congenital hydronephrosis	1
Ruptured liver	1
Large thymus (status lymphaticus)	1
Deformed chest and rudimentary lungs ...	1

(The case of double congenital hydronephrosis has been reported by Dr. R. W. Johnstone and the writer in the *Transactions of the Edinburgh Obstetrical Society* 1920–21.)

Necessity of Expert Supervision of Pregnancy.

In conclusion, the great fact that emerges from this investigation is that a very large percentage of the stillbirths and neo-natal deaths could have been avoided by adequate antenatal supervision. Especially is this the case in deaths from craniotomy, asphyxia, and in cerebral haemorrhage occurring in breech and in difficult forceps deliveries. Only about 3 per cent. of the 200 cases had undergone adequate antenatal supervision.

Arguments directed against the preservation of the lives of the unfit certainly do not apply in these cases, for the child that is lost in birth from these causes is generally very large and well nourished, and it is usually just because of this large size that stillbirth occurs. Thus, in the cases of craniotomy the average weight of the child without a large part of the brain was 3,180 grams; of the cases of asphyxia in full-time foetuses the average weight was 3,480 grams the largest weighed 6,160 grams—and of the fatal cases of cerebral haemorrhage in full-time infants the average weight was 3,460 grams.

Nor do such arguments apply even in the case of syphilis. If we were certain that every syphilitic infant would be born dead it might reasonably be contended that such was the best possible solution of the problem; and if we were sure that every infant born with congenital syphilis would, if untreated, die, to allow it to do so might be the best course to adopt, both in the interest of itself and of the race as a whole. Fortunately, or unfortunately, however, we cannot be certain that such a termination will occur, either of the pregnancy of the syphilitic woman or of the life of the congenitally syphilitic infant. The latter may, even if untreated, live to bear in its body the major portion of the punishment of the sins of its parents, and therefore the only justifiable course to adopt is the early and adequate treatment of the expectant syphilitic mother, especially as such apparently excellent results in the case of the child are now being obtained with modern methods.

The ideal is antenatal supervision and care of every unborn infant by the compulsory, or preferably by the voluntary, notification of the pregnancy of every expectant mother. Parents of children of school age may be compelled to have remediable physical defects in those children treated. It would seem that such compulsory care of the child may begin too late if only undertaken after birth. Such conditions as mental backwardness due to small non-lethal cerebral haemorrhages or tentorial tears occurring during birth cannot be remedied in the child of school age. They could and should have been prevented. In short, it seems illogical that expectant parents should be allowed to risk the life of their unborn child with impunity, whilst the failure to provide even for its physical comforts after birth renders them liable, and rightly so, to the condemnation of the law and of public opinion.

I wish to express thanks to the head of the antenatal department and to the staff of the Royal Maternity Hospital for their cordial co-operation in this investigation; also to Professor Lorrain Smith for allowing the pathological part of the investigation to be carried out in his department in the Royal Infirmary, as well as for much invaluable advice upon difficult matters connected therewith.

THE PSYCHOLOGIST IN PUBLIC LIFE.

Being the Presidential Address delivered to the Metropolitan Counties Branch of the British Medical Association.

BY

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Experience in the great war has created, I think, a greater revolution in psychology than in any other science. That experience has, indeed, proved, as nothing else probably could, the enormous advances in surgery and in preventive medicine, but for this demonstration we were prepared. In psychology the effect of the war has been to establish a new view-point, to compel a new outlook. For some years before 1914 pioneers had been indicating new regions for exploration and marking out new roads; but either, as in the case of McDougall, those who followed the pioneer, in spite of the invaluable nature of his work, were disappointingly few, or, as in the case of Freud, the explorer himself, after brilliantly showing the new way, wandered slightly astray into a not very savoury swamp lying by the path. The great war has afforded abundant opportunities for the investigation of cerebral physiology and pathology and of the psychoneuroses, and the work of such investigators as Head and Rivers has directed us more and more to the new regions and has confirmed the fundamental truth of the teachings of the pioneers. Psychology has become not merely the science of mind, mainly concerned with the analysis of consciousness by the method of introspection, but the science of behaviour, whose subject matter is conduct in general and whose conclusions are based on wider observations and experiment than was formerly considered unquestionably legitimate. More and more the human mind is being studied in its biological and its social connexions. New conceptions have arisen of its evolutionary history and its driving forces as

well as of the possibility of a group mind transcending that of the individual. It is recognized that mind has a much wider content than that of consciousness, that human conduct is determined largely by a number of innate powerful instincts, and that no individual mind can be considered as existing apart from the social and environmental reactions which form it and make it what it is. The mind of a human baby should be thought of no longer as a blank tablet on which experience may write what it will, but rather as a network of strong threads already formed by countless generations, on which the effect of experience will be merely to make some regions more closely woven or to connect some parts with new strands. The foundations of human conduct are not reason and intelligence, but a number of pre-formed psycho-physical dispositions. These instincts may be placed in three groups—those relating to self-preservation, including those concerned with response to hunger and to danger; those relating to species preservation, including those connected with sex and with parenthood; those relating to the life of the herd, with their threefold aspect of intuition or suggestion, of sympathy, and of imitation. Intelligence and reason are but the workmen—relatively newly engaged—who on these foundations, and with the materials afforded by them and by the manifold experiences of life, build up human personalities and those combinations of human personalities which form groups, or societies, or nations. This does not belittle the importance of these higher mental faculties, for it is precisely their increasing development and use in this way which differentiates human mentality from that of lower animals.

Psychology, then, has emerged from those somewhat arid regions in which it formerly worked almost exclusively, and has brought itself into a more intimate relationship with the life both of the individual and of the race. The psychologist is a worker who can predict for us human activity with reasonable certainty, and can formulate laws and principles whereby man's actions can be controlled by organized society. Much of his abundant material, gathered from the whole of mental life, past and present, normal and abnormal, is not yet scientifically developed, so that there is still too much room for the unscientific amateur, the metaphysician, the quack, and the charlatan to pretend and to deceive. The credentials and training of anyone claiming to be a psychologist may well be inquired into; the rigid scientific method should always be insisted on; and, in this as in other sciences, the degree of advance and reliability of the science may be judged by the use which is made of careful experiments and of accurate measurement whenever such methods are applicable. Fortunately in several branches of psychology these methods are applied.

In the attempt to secure a harmonious adaptation of man's conduct to organized society, or of human societies to one another or to the whole of which they form a part, two methods are adopted—training and control. They are not mutually exclusive, for, of course, control is one of the necessities of training, and training in many cases and in some ways goes on through the greater part of life. But, broadly speaking, to train the immature from the earliest possible moment up to maturity in that mental attitude and line of conduct which will best suit the society in which the mature life has to be spent is the most effectual method of securing suitable social behaviour, and is a method which can be distinguished from control of the adult mal-adjusted or more developed group. Such control may be necessary either to restrain antisocial conduct or to ensure the highest usefulness of the services which the individual or the group can render. What is the place of the psychologist in this training and control? In order to give them their most effective direction it is desirable to gauge as accurately as possible four things. We require (1) a measurement of *attainment*, (2) a measurement of *intelligence*; (3) a measurement of *aptitude*; (4) a measurement of *character*. This is not the logical order, or the biological order, but merely the order in which, as a matter of practice, the attempt at measurement has been made.

We are none of us strangers to the attempt to measure scholastic attainment by means of competitive examination. It is not a perfect method, but in the hands of skilful and conscientious examiners it may be a fairly accurate test of the degree in which the examinee possesses that something less than real knowledge and something more than mere information which it is desirable that he should be proved to have. It is by no means necessary for such a test to be conducted by a trained psychologist, and, although it is eminently desirable that all teachers and examiners should have a sufficient knowledge of psychology, we may still leave to the teaching profession, as such, the measurement of scholastic attainment.

No doubt the competitive examination may serve also in some degree as a rough measure of intelligence as well as of attainment. It will at least enable us to separate the very intelligent from the very unintelligent; but beyond this the method cannot be trusted overmuch. A public examination, too, merely measures the individuals of a group against one another; it does not enable any comparison to be made with other groups or other individuals by reference to a standard scale. This is the real difficulty of the measurement of intelligence. It is not the test that is so difficult, but the evaluation of the result, the giving to it a score on a graduated scale, which, allowing only a small margin of error, would be the same in the hands of any skilled tester. Mental tests are old, mental measurement is new, and it is well known that it was Binet who discovered the scale. He did not merely bring together a number of heterogeneous tests by which he could detect feeble-mindedness; he devised a scale by which intelligence could be measured. It proved not to be a perfect scale, and Binet himself revised his series of tests three times. Others have continued the work since his death in 1913, and now, in what is generally known as the Stanford revision, we have what I think may be regarded as a final arrangement on Binet's lines. It was made by Terman, Professor of Education in the Stanford University in America, and is described in his book entitled *The Measurement of Intelligence* (Harrap, 1919). These tests are individual, and the average time taken for each case is at least half an hour. In the examination of the recruits for the American army a valuable addition was made. Group tests were devised which could be applied simultaneously to large numbers of men with reasonably accurate results. A still later addition has been made by Mr. Cyril Burt in the shape of simple but carefully graduated reasoning tests. All these tests are arranged in series corresponding to the normal intelligence of each year of age from 3 to 14, with others beyond this which are called by Terman "average adult" and "superior adult." The method of application and of marking is very carefully arranged, so that we can get an "intelligence quotient" for each person, found by dividing the real age by the mental age as revealed by the test.

It must be borne in mind that what we set out to measure in these ways is general intelligence only. Special ability in a particular direction may incidentally be discovered, but, in spite of the fact that some eminent specialists may be distinctly lacking in common sense, it is true that high relative ability in one direction is usually accompanied by high ability in others. Certain abilities may be encouraged and others neglected, and some specific abilities may be present in a much larger degree than others, but we are forced to assume general intelligence as a common factor. It is an inborn capacity which probably cannot be cultivated. The only things to be done with it are to measure it and to use it to its full extent. If it is not there the only thing to do is to be sorry for and to protect the deficient being. An ancient writer has told us, "Though thou shouldest bray a fool in a mortar among wheat, with a pestle, yet will not his foolishness depart from him," and the modern law directs us to discover the idiot, the imbecile, the feeble-minded person, to separate the educable from the non-educable, to deal in special fashion with those who are educable until their limit of educability is reached, and afterwards to supervise them in various degrees. If it be true that not far short of 2 per cent. of children are mentally defective in this sense; that from 30 per cent. to 50 per cent. at least of the inmates of reformatories and rescue homes, and a large proportion of those in workhouses, prisons, and inebriate homes are mentally defective; that such persons are almost certain to hand on their defect to their offspring; and that their fecundity is not far from double that of the normal population, the gravity of the social problem is evident, and the importance of dealing with it scientifically in its earliest stages needs no proof. The detailed investigations

into the history of the members of certain families—the Kallikak family, the Nam family, the Jukes, and others—bring home to us the possibilities in a most alarming fashion. Economically the results are almost equally disastrous. The last-named family alone is said to have cost directly the New York State 1,300,000 dollars in seventy five years, and its indirect cost in disease and social influence must have been enormous. More than one-tenth of the educational expenditure of the United States is said to be devoted to re-teaching children what they have already been taught but failed to learn. It is not necessary to emphasize the public importance of the functions of the psychologist in investigating such a problem as this, and in discovering accurately those children who ought to be specially cared for.

The psychologist is needed also to supervise this special educational work. The establishment of special classes, into which all kinds of troublesome material are shot as mental rubbish, is a blunder. Differential diagnosis and classification are as important here as anywhere.

There are at least two other ways in which the scientific measurement of intelligence by a psychologist is of great value in the schools. Grant-aided secondary schools in this country are required to take 25 per cent. of their pupils each year as free-place scholars from the elementary schools. The examination of the applicants for these free places presents some difficulty if those are to be selected whose further education will be of the greatest individual and national advantage. If 50 scholars are required out of, say, 150 applicants it will usually be found quite easy by the ordinary examination and teachers' reports to select the first 30 or so and to exclude definitely about one-half of the total number. It is the relative intelligence of the remaining candidates that we require to know much more than their present level of scholastic attainment, and on several occasions within my own experience the strict application of psychological tests has enabled us to resolve the contradictions between teachers' opinions and varying examination results.*

Again, in all classes of all kinds of school the picking out of children of superior ability for attention and advancement is most important, not only for the pupils themselves, but for the future welfare of the country. Such children are often misunderstood at school, and their teachers, for several reasons which are not unnatural, very frequently fail to recognize the superior intelligence which they possess, or at any rate to point them out as requiring speedy promotion; or, still better, special grouping with others of like ability for more rapid systematic progress.

These points are together of such importance that I believe the time is not far distant when every education authority will find it necessary to have the services of a skilled psychologist to devote himself to this work. The teacher and the school medical officer should each of them have sufficient knowledge of the problems involved and of the methods of dealing with them, but they have too many things to do to become experts in a subject which requires special qualities and the practice of which entails a large expenditure of time. The psychologist need not be a medical man at all, but there are advantages in his being one, for conditions of physical disease may easily complicate and require to be distinguished from the defect of intelligence which is being observed. It is obvious that all three officers concerned must work together in the interest of the child and of the study. Given such co-operation, and in skilled hands, I believe that the exact diagnosis of the degree of intellectual health may now be made with no greater margin of error than is found in regard to physical condition.

Success with the exact measurement of aptitude, though considerable, has not been so ample as with the measurement of intelligence. Many of the tests, indeed, used in vocational psychology are not strictly mental at all, but are really physical or physiological. These tests—such as those for steadiness of hand, accuracy of movement, rapidity of reaction, quick recognition of size and shape—lend themselves to exact measurement. But even when we have added to them the tests for general intelligence we still have other factors, such as persistence and instinctive interest, which cannot as yet be so accurately measured. Fortunately the practical circumstances for which these vocational tests are useful do not necessitate such exact measures as the educational conditions in which intelligence tests are most commonly employed. It is obviously important that a youth in whom the herd instinct is dominant should not be put to work in a lighthouse or to farming in a new colony, or that one in whom acquisitiveness is markedly deficient should not enter on a business career, but in such cases all that is necessary is the broad diagnosis of strength or weakness in the various instinctive qualities rather than the exact estimation of their amount. Nevertheless, even in these directions, tests of fair accuracy are being devised and applied. Already salesmen, street-car drivers, and others have been chosen by the industrial psychologist for appointment; but the most considerable successes of vocational psychology may be said to lie, first, in distinguishing the low-grade worker from those of a more intelligent type; secondly, in fitting low-grade workers into those positions in the industrial machine most suitable in each case for such mechanical aptitudes as they possess. Mr. F. W. Taylor was the initiator of industrial selection on these psychological lines; and though it is to be hoped that the majority of factory workers in this country do possess intellectual energy and instinct fitting them for something higher than this both in industry and in life, yet undoubtedly there are many who may be placed in the complete Taylorist organization just as semi-automatic attachments to a machine. Even for these it is something to be able to choose the right kind of machine; and the elaboration of new tests may yet eventually enable the psychologist to fit the worker of high mental qualities into positions which suit his particular aptitudes, and which will therefore bring most satisfaction to the worker himself and the greatest benefit to the public weal.

Clearly, the higher we get up in the vocational scale the more the measurement required becomes one not of mere aptitude but of character. In the investigation of intelligence, of aptitude, and of character, it is alike true that the qualitative and quantitative examination cannot be entirely separate; but whereas in the case of intelligence we direct our observations primarily to the degree of mentality, so in the case of character we direct them primarily to the quality. Nevertheless, in the latter case as in the former, a large portion of the work is concerned with detecting and assessing defects. Though the measuring of defects of character by more or less exact laboratory or experimental methods has not advanced to nearly the same degree as the measurement of defects of intelligence, and probably never will advance so far, yet there are already a considerable number of mental tests which in skilled hands have proved of great value in discovering and gauging such defects. On the whole, however, the best guide for the diagnosis of temperamental deficiency, or for an inquiry into the basis of abnormal conduct indicating moral defect, must be expert judgement and methodical skilled observation. Such observation will be directed towards the inherited instincts and emotions, and to the acquired sentiments and complexes, to the discovery as to whether these are repressed or unrepressed, as to whether they are properly co-ordinated and controlled, and as to whether they are grouped round some dominating passion or aim. Such analyses of character are necessarily elaborate, and can be satisfactorily conducted only by psychologists of proper training and skill.

Such a measurement of character, as well as of intelligence, is eminently required (1) for the discovery of the so-called "moral imbecile"; (2) for the appropriate dealing with juvenile or first offenders. The official definition of moral imbeciles is "persons who from an early age display some permanent mental defect, coupled with strong vicious or criminal propensities on which punishment has had little or no deterrent effect." They present the most difficult problem to the lawyer, the doctor, the teacher, and the social worker. Mercier has described them as "clever fools," but the emphasis should be on the noun rather than on the adjective, for although they have a certain superficial ability in adapting their acts to the requirements of the moment they are perpetually bungling their offences and perpetually being caught. Dr. Tredgold describes their basic mental defects as two: (1) they are lacking in the higher faculty of control or wisdom; (2) they have no conception of any social obligation. The official definition requires that these

* An interesting report on the selection of children for higher education at Homburg on these lines will be found in the *British Journal of Psychology* (General Section) for January, 1921.

defects should (1) have existed from an early age; (2) be apparently permanent; (3) be uninfluenced by punishment. The great social and public importance of detecting such persons before the law gets hold of them requires no demonstration. The school psychologist will be able to find them early in life; and to enable them to deal properly with the cases that came before them—especially with the weaklings who were either moral imbeciles or feeble-minded persons of the more ordinary type—the Birmingham justices appointed Dr. Potts as their psychological expert. "The essential feature of the Birmingham scheme," says Dr. Potts, "is that every prisoner in whose case there is any possibility of such an explanation, or who in any other way is unlikely to be benefited by imprisonment or fine, should be examined by an expert medical investigator either before or after conviction, but in any case before sentence is passed. The report of this investigation is taken into consideration before sentence. In a number of cases the prisoner is placed on probation and the treatment suggested by the investigator made a condition of the probation." Such a scheme should be taken as a model for the administration of justice all over the country.

Juvenile or first delinquents are not necessarily or always of these types of mental defect. There are genuine as well as spurious cases of discharged soldiers suffering from so-called "shell shock" or some form of psychoneurosis which leads to abnormal conduct calling for magisterial attention, and there are other, or the same, forms of mental conflict arising in civilian life which may have similar results. For an example, there is the classical case of the young lady of Bicester. Perhaps you remember it:

> There was a young lady of Bicester;
> One day, when her lover had kissed her,
> She felt so perplexed
> That, to show she was vexed,
> She gave a great slap to her sister.

History does not record for us whether this case came before the local bench of justices of the peace, but it cannot be doubted that they would deal differently with it if they regarded it as a purely wanton attack upon an unoffending near relation than if they regarded it as an almost natural result of the conflict between the sex instinct and the effects of a severely puritanical upbringing.

No scientific inquiry into the real cause of delinquency or crime can be conducted in court. To quote Dr. Potts again: "One often hears magistrates asking a prisoner what is the reason of his going wrong; in a public court it is very unlikely that the prisoner will state what is the cause, even if he realizes it himself. In the majority of cases the cause can only be elicited after long and careful examination and a private interview. The springs of conduct are in the unconscious mind, and therefore often unsuspected by the individual himself; their discovery requires experience in mental analysis." The habitual criminal always starts at an early age, not later than 15 to 20 years. A woman who is not a prostitute by the time she is 20 rarely becomes one. There is something seriously wrong with a method of dealing with crime and delinquency which has failed to stay the development of habitual offenders. The law punishes, largely on a vindictive plan, the particular offence for which the prisoner is charged, and rarely or never concerns itself with its basal causes in the nature or the nurture of the individual. The psychologist—and here, I think, the medical psychologist—is necessary to reform and to complete the legal procedure, and also to supervise a form of punishment which shall be not only a discipline but a training.

We can go further even than this. In the cases just considered an offence has been committed. Life has already applied a test at which the individual has failed. If the skilled investigation were carried out while the delinquency was yet only potential the stigma of guilt and arrest might be avoided and the community would gain by the prevention of criminal acts. Such potential delinquents come to the notice of the medical profession in various ways, but too few medical men are scientific psychologists, and it would be a great public advantage if there were sufficient psychological clinics to which might be referred, amongst other cases, those borderline cases of deficiency or instability of mind and character in which expert early attention would prevent the crime, and perhaps cure the patient.

I imagine that to estimate the varieties of excellence of character, and to investigate the causes of super-excellence, may be of at least equal national or public importance as to detect or to measure its defects. In many directions this need is felt, but it is never adequately met. We have all of us had both to seek and to give those unsatisfactory documents known as testimonials or as certificates of moral character. It is, of course, to be remembered that all such documents have to be used with reference as much to what they omit as to what they say, but they are really of no value at all without a considerable knowledge of the persons who have written them, and sometimes they reveal the character of the giver as much as that of the holder. How much more valuable would be the report of a scientific investigation by a skilled psychologist standardized by reference to a recognized scale, especially if such a report were universally required for entrance into any of the professions or for the holding of any position of responsibility and trust! I am not suggesting that the proficiency of the psychologist in this direction has yet reached such a degree of scientific precision as would justify this; nor is it possible to ignore the enormous practical difficulties that would present themselves in application. But, seriously, it is quite possible that what is now true of the measurement of intelligence may some day be true of the measurement of character, and then the exact method would be preferable to the haphazard and the omission of certain important bodies of public persons from these tests would be unjustifiable. There is no test at present either for a member of Parliament or of the Government, minor or major. It is true that the test would not have to be a severe one, for we have to find more than 700 of them; but, if imposed, what might it not save us from! It is perhaps as well that we should occasionally be forcibly reminded—as we have been lately—of the calibre of the intelligence with which we are ruled, if only to make us think of the psychologist as our possible future protector.

Public problems, as well as public persons, require his attention. There are really very few public questions which do not contain a psychological element worthy of useful consideration. Here it is the mind of the group rather than of the individual that has to be studied and weighed. The conclusions of the older economists were largely vitiated because they neglected to take human psychology into proper account; and the conclusions of politicians, and even of statesmen, have often been proved to be radically at fault for the same reason. It is almost a truism to say that if the leaders of the nations before and during the great war had known how to read and to gauge more clearly and certainly the national mind of their opponents there would have been no war at all, or it would have ended much sooner. Many an industrial dispute, too, would have been avoided or have taken a different course if its psychological aspect had been studied as closely as its economic. Psychology, indeed, lies at the root of all the social sciences.

The stage of evolution at which mankind has now arrived is one in which the individual is seeking a closer and more stable adjustment to the human society of which he is a part, and in which such societies are seeking a closer and more stable adjustment to one another. The adjustments required are mainly adjustments of mind. Biological progress has become predominantly psychological in character. We need to recognize that the psychologist has become a person of paramount importance in our social and public life. Properly to train the child so that his adjustment shall be easy and as far as possible automatic; appropriately to restrain the adolescent so that his antisocial actions shall be controlled and his liability to antisocial behaviour lessened; wisely to direct adult activities so that specific abilities may be of the greatest use to the community, are functions which without the psychologist cannot be performed. Without his aid no statesman can safely attempt to reconcile the interests of different classes or to reorganize international relationships. A closer knowledge of the collective mind of the medical profession (not its opinions on a particular subject so much as its general characteristics) would smooth the path of many a Minister of Health. Psychology as an abstract science and as an applied art is becoming more and more a matter of intimate concern

to every one of us; the status of its student, its research worker, its practitioner will become more and more acknowledged.

America is wiser than the rest of the world in this. The first thing she did on entering the war was to mobilize her psychologists. It was they who sifted the recruits so that instead of the 50,000 cases for which previous experience showed provision should be made in military prisons there never were so many as 5,000. They graded the accepted men, so that those best suited for commissioned work, for non-commissioned work, for special work of various kinds, were pointed out. They arranged the units so that the men of more than average intelligence were appropriately distributed to leaven the whole, and so that the men of technical ability and skill were not improperly risked. In preparation for the industrial competition of the near future America is pursuing the same methods. The methods are not perfect, but they are being improved. The tests are themselves constantly being tested and the skill of the psychologist increased. A suitable use of the psychologist in the public life of this country so that at certain stages of his career each citizen would submit himself to a test of health, of intelligence, of temperament or character, would result in a gain in industrial efficiency, in economic advantage, and in spiritual outlook which would be incalculable. We have learnt to apply the truths of natural science: it is time that psychological truths should be applied with the same courage and conviction.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

MALAYA BRANCH.

A MEETING of the Malaya branch of the British Medical Association was held in the Singapore Garden Club on April 21st, 1921.

Relation of Ankylostomiasis to Malaria.

Dr. D. BRIDGES of Ipoh read a paper on the relation of ankylostomiasis to malarial fever in the hospitals of the Federated Malay States. He said that the part played by ankylostomiasis in relation to other diseases did not appear to be generally taken notice of, but this relation was an important factor and a real danger. For the last ten years he had been devoting attention to this question; he hoped to show the relation of ankylostomiasis to malaria.

The returns showed that malarial fever in the Federated Malay States was as bad, if not worse, than it was five years prevously; the death rate had risen from 31 to 51.5 per 1,000, in spite of various antimalarial measures which had cost a lot of money, though it must be admitted that these measures had been, in many instances, far from thorough. The ankylostomiasis cases had undoubtedly increased in number. The following figures —taken from about 2,000 patients as they were admitted to one hospital (Kuala Kangsar), regardless of their complaint—showed a general increase.

Ankylostoma Ova Present in Fæces.

	1908-9.	1917-18.
	Per cent.	Per cent.
Chinese	53	80
Tamils	73	92
Malay and Javanese	21	43

Since the first figures were taken the district had been "opened up" a great deal, and on account of rubber the natives could now afford to spend a good lot of their time in towns or travelling about, and did not keep to their compounds as they used to. The hospital returns did not help in any way; all that could be gathered from them was that about 3,000 cases were diagnosed as ankylostomiasis annually in the Government hospitals of the Federated Malay States. This was accounted for by the fact that a great many cases of obvious ankylostomiasis come into hospital for some other complaint, especially malaria or bowel trouble, and were diagnosed as such; this statement is upheld by his figures, which showed that 75 per cent. of cases admitted for malaria are also cases of ankylostomiasis, and were not merely harbouring ankylostoma. The same might be said also with regard to bowel complaints, especially amœbic dysentery.

It was known that on healthy tissues could resist a certain amount of parasites; (*b*) the virulence of an organism was modified by the condition of the patient into whose tissues it was introduced; (*c*) the opsonic index of the blood was lowered in disease; (*d*) in a mixed infection the virulence of the more active organism was increased, and the resulting disease was more severe, with one or two exceptions. Cases having ankylostomiasis nearly all suffered from loss of vitality; there was a general slackness both organically and physically, which increased as the case progressed, and in addition anæmia was more or less marked. The cause of all these was probably a toxin secreted by the ankylostome worm. It was easy to understand that a man in this state of health was a good field for other parasites, such as that of malaria. Not only was he more liable to infection, on account of loss of vitality, but the resulting disease was more severe, this increased severity being again increased by the difficulty of treating malaria in ankylostomiasis cases. This accounted, no doubt, for the large malaria death rate.

From the above observation it was reasonable to argue that as 75 per cent. of the malaria cases were also ankylostomiasis cases, there might have been 75 per cent. less deaths from malaria had ankylostomiasis been absent. We might go further and suggest that the ankylostome worm was as much responsible for malaria fever as the mosquito.

The difficulties of treating these complicated cases were: (1) Quinine could not be given in large or continuous doses without the risk of ill effects such as further complications from the heart, kidneys, eyes, or stomach; (2) these cases did not react to quinine treatment as well as uncomplicated cases did; (3) quinine, if given in addition to ankylostomiasis treatment such as beta-naphthol, often caused severe collapse.

As regards measures that might be taken to treat ankylostomiasis Dr. Bridges suggested the following: (1) That every Tamil coolie who arrived at the dépôt should be treated twice before he was sent to his estate, either before he left India or after his arrival in this country. (2) That this treatment should be properly given by qualified medical men; eight days would be sufficient time in the majority of cases. (3) That as 90 per cent. or more of estate coolies were infected they should be treated on the estates in batches of twenty or fifty according to the labour force; sheds might have to be put up and the treatment should be given under medical supervision. (4) That instead of ordinary latrines as now were put up on estates and which are not used by the coolies, cement drains, with a good flow leading into a pit, should be used—the coolies could squat over these and they would use them; these drains could be swilled with strong disinfectants twice daily. (5) That a severe fine be inflicted should the Health Office or inspectors discover any faeces about the coolie lines. (6) Sand should be spread around all coolie lines, say a distance of twenty yards, and renewed from time to time. This would enable coolies to have more or less clean feet after returning to their lines.

As regards treatment he had tried many drugs and methods of administering them. The best results were got from beta-naphthol and oil of chenopodium, provided a preliminary dose of salt was given to dissolve and cleanse the duodenum of mucus.

(1) At 6 a.m., sodium bicarbonate and sodium sulphate, of each 1 drachm in 1 oz. solution; at 7, 7.30, and 8 a.m., beta-naphthol gr. 10, in emulsion or capsules, and one mouthful of milk. At 9 a.m. a good purgative. The patient was kept on reduced diet the day before, and on the day of treatment. He was kept lying quite still during treatment.

(2) At 6 a.m. a dose of sodium bicarbonate and sodium sulphate, 1 drachm of each. At 7 a.m., oil of chenopodium 2 c.cm., castor oil 1 oz., with the same precautions as in the first administration.

Dr. D. J. GALLOWAY, who presided over the meeting, opened a discussion on the paper, in which Dr. HOOPS, Dr. GIBBS, Dr. DAWSON, and Dr. VAN DORT joined.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

ARRANGEMENTS have been made to publish full reports of the discussions in the Sections of the Annual Meeting at Newcastle-upon-Tyne during the next few months. Meanwhile, the brief notes of the first day's sessions which follow will enable those who were not present to gain a general view of the proceedings. Any errors to which attention may be drawn will be corrected in the full reports.

SECTION OF MEDICINE.

VISCERAL SYPHILIS.

THE first session was devoted to a discussion on visceral syphilis, especially of the central nervous system and cardio-vascular system. In his opening remarks the President, Professor Thomas Beattie, recalled that when the last discussion of this subject by the Association took place in 1893, owing to the fact that syphilis was then largely an untreated disease, aneurysm, general paralysis and myelitis were much more frequently seen than at the present time; he prophesied that owing to the earlier recognition and efficient treatment nowadays, fewer and fewer cases of visceral syphilis will be met with in the future.

Sir Clifford Allbutt began by discussing the histology of syphilis, insisting on the importance of vascular changes, even in the primary sore, and their similarity in primary and tertiary lesions. He emphasized the rapidity of generalization of the virus by way of the lymphatics; a syphilitic septicaemia was soon set up associated with fever, rashes, anaemia and leucopenia; some of the rapid deaths reported in syphilis after salvarsan might be due in reality to syphilitic rather than arsenical poisoning. The disease as it attacked the vessels began in the adventitia and involved the intima, where it might spread upwards or downwards. In 70 per cent. of cases of syphilis the aorta showed histological evidence of infection, and it might be at a very early stage. Angina pectoris might be an early symptom. In the ventricles syphilitic disease was not common, but there might be an atrophic fibrosis as the result of coronary disease. In the lungs fibrosis and bronchiectasis might result. Bronchitis after syphilis should be carefully watched. The alimentary canal below the oesophagus escaped as far as the rectum. Gumma of the kidney was rare. Was there a definite syphilitic nephritis? The central nervous system might be infected very early, often in those cases with little "secondary" manifestation. A periarteritis was essential; the Wassermann reaction might be positive in the cerebro-spinal fluid and negative in the blood, and a positive test might be found in the absence of nervous symptoms. Lumbar puncture should be performed at every stage, and if necessary treatment by intraspinal as well as intravenous injection. In general paralysis of the insane the vessels were affected long before any symptoms were manifest. Nervous lesions occurred in about 40 per cent. of the cases of congenital syphilis, the signs being rarely delayed till adolescence. In all diseases of the spinal cord the cerebro-spinal fluid should be examined.

Professor Reynolds (Manchester) discussed the subject from the clinical standpoint. He considered that in any disease which did not run a typical course syphilis should be suspected. The skin and the eye not infrequently showed signs of previous syphilitic disease. In syphilis the lesions were more often multiple than single. The Wassermann reaction was to be regarded as a piece of evidence and not as a verdict, and if doctors were better educated lumbar puncture would not be so often required; a positive Wassermann reaction in the cerebro-spinal fluid did not necessarily mean that the patient's trouble was syphilitic. In syphilitic disease of the nervous system spasticity when it occurred was always very intense. He enumerated the syphilitic affections of the spinal cord.

Dr. John Cowan (Glasgow) stated that syphilitic disease of the pulmonary artery occurred as in the aorta, and in the early stages of syphilis diffuse fibrosis of the myocardium might occur. Lantern slides were shown illustrating fibrosis and gumma of the heart and aortitis. The Wassermann reaction was to be regarded as an aid to diagnosis. He gave a table showing the incidence of syphilis in a series of cases of heart disease. Antisyphilitic treatment was urgently required in vascular syphilis, but too much was not to be expected of it; small doses of salvarsan with long courses of mercury and iodide were preferable to large doses of salvarsan.

Dr. A. G. Gibson (Oxford) stated that in hospital practice some 7 per cent. of the medical cases gave a positive Wassermann reaction. He discussed the diagnosis of aortitis and considered that its treatment by salvarsan in ordinary doses was contraindicated, but that repeated small doses should be given over a long period; some did well on mercury and iodide. Dr. Ivy Mackenzie (Glasgow) had seen two cases of what he believed were true nephritis occurring with the rash. In outdoor treatment of syphilis vascular symptoms were rare, but nervous symptoms were relatively common. He related a case of syphilitic disease of the heart in which death took place in six weeks. Dr. I. Harris (Liverpool) showed electro-cardiograms from two cases of syphilitic myocarditis, one of which showed evidence of interference with the conduction in the right branch of the bundle of His. Potassium iodide in three weeks removed the symptoms and the cardiogram became normal. He considered iodide very effective in localized affections of the myocardium, while mercury was the better in generalized arterial disease.

Dr. John Eason (Edinburgh) discussed the question of syphilitic anaemia. He described cases showing the blood picture of "pernicious anaemia" in a child fourteen months of age, in which the Wassermann reaction was positive, as also in the mother. Three cases with the blood changes of "pernicious anaemia" occurring in the secondary stage of syphilis were mentioned. In the tertiary stage a blood picture like that of "pernicious anaemia" might occur, or Banti's disease with splenic enlargement might be simulated.

Several specimens illustrating the subject under discussion were on view in the pathological museum. In the afternoon clinical demonstrations, which were very well attended, were given by the honorary medical staff in the wards of the Royal Victoria Infirmary.

SECTION OF SURGERY.

ACUTE PLEURAL EMPYEMA.

THE opening meeting of the Section of Surgery was attended by a large and appreciative audience drawn from all classes of the profession. Professor Rutherford Morison was supported in the chair by the officials of the Section. A discussion on acute pleural empyema was opened by Mr. Henry Wade (Edinburgh). His main thesis was that in dealing with this common disease of civil life there was an admirable opportunity of adapting the lessons learned in the war in the various modes of treatment of thoracic and knee-joint injuries. It had been found before the war in civil practice that in acute peritoneal infections the less drainage and the more rapid closure of the cavity, broadly speaking, the better the results. In the thoracic and knee-joint surgery experience had taught them that the same general principles were applicable. He was led to offer as a basis of discussion a series of suggestions in the hope that the results of surgical treatment of acute pleural empyema would improve and methods would become more standardized. A combined cytological and bacteriological examination of the fluid withdrawn should be more widely employed as offering the prospects of affording fuller and more accurate data on which to found operative treatment. Suppuration within the pleural cavity was specially suitable for treatment by methods which obviated the necessity for opening that cavity, or by methods where an immediate or early closure after it had been opened were carried out. He thought that the value of treatment by aspiration alone should again be carefully reviewed, and that consideration should be given to the value of methods introducing antiseptics, such as Murphy's 2 per cent. formalin in glycerin, into the emptied cavity. Aspiration would require to be frequently performed. If simple drainage were practised the ideal opening was one which both allowed free escape of the pus at the time and permitted ready closure after the tube was withdrawn. The benefits to be derived from a free opening of the pleural cavity by major intercostal

thoracotomy warranted its employment in cases which gave promise of developing into chronic and persistent cases. The value of disinfection and immediate closure in these latter cases should be more fully tested. The Rutherford Morison technique, described in the JOURNAL of October 20th, 1917, employing "bipp," was that recommended by him.

The discussion proved lively and informing, and was taken part in by no fewer than eighteen members of the Section. Naturally, considerable variety of opinion was expressed. The question of employment of drainage tubes bulked largely, and while some speakers, notably Mr. Lucas, Sir William Macewen, Mr. Childe, and Mr. Souttar, condemned their use; others, Mr. Edington, Mr. Cuthbert and Mr. Martin of Cardiff, thought the drainage tube, carefully used and closely watched, had a place in the treatment. All the speakers were agreed that the anaesthesia question was of importance, and if anything a preference was expressed for a local anaesthesia. To promote expansion of the lung the modes most emphasized were free drainage and getting the patient early out of bed. Professor Rutherford Morison regarded the discussion as a most fruitful one, and he thought Mr. Wade's paper a contribution of the highest value and of fundamental importance.

Two short papers filled up the rest of the morning. Sir Hamilton Ballance, in his paper on the best method of operative approach in cases of acute appendicitis, advocated an incision to reach the appendix which would cut the internal oblique and transversalis transversely to the line of their fibres. By this incision the operation area was completely under the eye of the surgeon; if drainage were required the tube was inserted at the lowest angle of the wound; the rest of the wound was sutured in layers. He had not seen any but the most easily dealt with herniae result. These views were directly controverted by Mr. Russell Coombe, who always employed the semilunar line incision, opening the rectus sheath, and by Mr. Souttar and others, who always employed the muscle splitting incision and no other. Mr. G. H. Edington read an analysis of a series of cases of intussusception. He had had a series of thirty-six cases, and the anatomical findings, mode of operation, and results were put before the meeting. Some remarks on the paper were made by Mr. McAdam Eccles, Mr. Childe, Mr. Cooke, and Dr. Greenfield.

SECTION OF NEUROLOGY AND PSYCHIATRY.

BORDERLAND CASES.

THE proceedings of the Section opened with a discussion on the diagnosis and treatment of borderland cases. Professor Ashley Mackintosh (Aberdeen), President of the Section, took the chair, and opened the meeting with a brief speech of welcome to the members.

Professor G. M. Robertson (Edinburgh) opened the discussion. He pointed out the difficulty of drawing a hard-and-fast borderline between cases of neurosis and those which had progressed to definite mental disease, and that in consequence the borderland was really a very extensive domain. He wished to exclude from consideration cases of certifiable insanity, which were definitely over the border. He proceeded to emphasize the importance of the mind and of mental symptoms even in diseases commonly regarded as being of purely physical nature, and reminded his audience of the value of psychotherapy in removing mental symptoms such as pain. He deplored the absence of a psychiatrist from the medical staff of all large general hospitals, and was of opinion also that many neurologists had suffered from lack of training and experience in mental diseases. The type of borderland case which he wished to discuss particularly was that whose chief symptom was mental depression. He strongly emphasized the fact that every melancholic was at one stage or another of this disease a potential suicide, and added that the risk was greatest when the patient was least deranged—that is, in the early stage or in convalescence. Melancholia was the commonest form of psychosis, and the form most often treated outside a mental hospital. He advised every doctor not a psychiatrist to call into consultation, if only for his own sake, some expert in mental disease, when he was responsible for the treatment of a depressed person. Were his audience to forget all that he said with the exception of the one statement that every patient with melancholia was a potential suicide, then his lecture would not have been in vain. He finally entered a plea for the emancipation of the mental hospital. The present Lunacy Acts had, he said, outgrown their usefulness. Patients suffering from curable mental disorders should be able to enter mental hospitals and receive early treatment without being certified as lunatics. Simple notification would provide them with all the legal protection needed.

Dr. Ivy Mackenzie (Glasgow) described the results of treatment in his observation wards, where patients were allowed to remain for six weeks. Out of 1,200 cases in one year 560 had to be certified. With regard to the diagnosis of so-called shell-shock cases, he had come to the conclusion that in Glasgow, at any rate, from 50 to 70 per cent. of these were mental defectives. From an etiological point of view he would classify them into three groups: (1) Toxic, (2) Amnesic, and (3) Defective. Dr. Helen Boyle, after referring to the fact that she saw cases from a somewhat different angle, at a hospital for nervous diseases and not a regular mental hospital, emphasized the amount of unhappiness, domestic and otherwise, in the world, and its bearing on mental diseases. While appreciating the value of psycho-therapy, she insisted on the importance of rest and adequate feeding, especially with reference to the body weight. An educated public opinion, she declared, was one of the greatest desiderata in the problem of treatment.

Dr. Edward Pierce (York) referred to the difficulties of expense in connexion with treatment, and urged that it was right to take risks at times in the interests of the patients themselves, and not to insist on a confinement and attention which was sometimes inimical to the patient's recovery. Dr. A. E. Carver (Birmingham) thought that removal from home surroundings, while necessary in many cases, should be as short as possible, and emphasized the value of work. Dr. Ruxton spoke of the difficulties of the general practitioner in dealing with cases, and said that there should be an institution reserved for the treatment of voluntary cases only. Dr. Mary Sturge (Edgbaston) spoke of the importance of correcting visceral prolapses, and of the value of vaccines in suitable cases. Dr. Middlemass (Newcastle) hoped that rate-supported institutions would accept mental cases as voluntary patients. Dr. Mackie Whyte (Dundee) described the work in connexion with mental cases at the Dundee Infirmary. Dr. Dawson (Inspector of Lunatics, Ireland) referred to the possibility of treating mental cases in the wards of a general hospital. Dr. Harry Campbell (London) and Dr. W. H. Bryce (Fife) also spoke. The President referred to the deplorable frequency with which cases of acute melancholia were labelled as hysteria or neurasthenia. Professor Robertson replied briefly, and concluded an animated and highly successful discussion.

In the afternoon a clinical demonstration of neurological cases was arranged at the Royal Infirmary by Dr. George Hall and Dr. Horsley Drummond, when many cases of great interest were seen.

SECTION OF PATHOLOGY.

AT the opening of the session on Wednesday, July 20th, Professor Matthew Stewart said that they had two important subjects to discuss that morning, and his opening remarks would therefore be brief. He was speaking in the place of Professor Stuart Mackenzie, who was absent owing to sudden bereavement. Professor Stewart then outlined the programme and thanked those who had come forward to help in the discussions.

HAEMOCHROMATOSIS.

Professor Shaw Dunn opened the discussion on haemochromatosis. The term was applied to a peculiar morbid condition, characterized by accumulation of free iron-containing pigment in certain organs or in the skin, associated with interstitial fibrosis of the liver and pancreas and, in certain cases, with the development of glycosuria. The skin appeared greyish-brown and gave the Prussian blue reaction. The liver was often enlarged and of a rusty colour, and there might be ascites. The pancreas and retroperitoneal glands were likewise rusty in appearance and reacted strongly to tests for iron. Many other organs, as for instance the spleen, heart, thyroid, stomach, kidney, and intestines, also contained iron. Histologically the cells contained a brown granular pigment which gave the

Prussian blue reaction. If, however, the test was performed with cold hydrochloric acid some of the pigment gave the deep blue colour, but some gave only a faint blue or greenish colour. The explanation appeared to be that the iron was in a chemically free condition when first deposited but afterwards became more firmly combined, and therefore was accessible to reagents. In the pancreas degeneration of glandular tissue was met with, but pigmentation was not as marked in the islets of Langerhans as in the rest of the gland. There was no evidence that the pigment itself produced degenerative lesions, and in his opinion neither pigmentation nor cirrhosis were primary factors in the disease, but both were due to some unknown cause. In haemochromatosis the liver contained 100 times as much iron as in health, and considerably more than was present in cases of pernicious anaemia with siderosis. Iron was proportionately increased in other organs, but there was no increase in the blood. It would appear that the tissue had an undue affinity for iron. Normally as much iron was excreted as was ingested, but in haemochromatosis iron was retained. None was excreted in the urine and very little in the faeces. There was no excessive breakdown of red cells and the bone marrow was normal. Probably iron was retained during the whole lifetime of the individual.

Dr. Maxwell Telling was unable to attend owing to an accident, but his paper was read by Dr. Shaw. He said the disease occurred from the ages of 30 to 60, and was almost exclusively confined to males. It lasted two or three years, and there was not infrequently an alcoholic history. The patients were curiously listless and apathetic, and the condition in this way resembled Addison's disease. There was progressive cachexia ending in death. As regards the pathology, there was some evidence that haemochromatosis was due to defective iron elimination. It was very doubtful whether irritation by pigment could cause cirrhosis. The fibrosis was sometimes followed by cancerous degeneration. He had collected four such cases. Further investigation would probably show that the disease was not as rare as was thought. Every case of cirrhosis should be examined with a view to finding out whether iron pigment was present.

Dr. Gaskell described the histological changes in a case which he and Dr. Mackenzie Wallis had investigated. He thought that the tissues were avid for iron and seized upon it before it could be excreted. Fibrosis was secondary to the accumulation of pigment. Dr. Mackenzie Wallis said that various forms of pigmentation occurred in diabetes. Not every diabetic with pigment in the skin had haemochromatosis. The question as to whether cirrhosis or pigment was primary needed further study. Dr. Cruikshank described his findings in a recent case not yet fully worked out. Golden-brown pigment was present in many situations, but some did not contain iron. Professor Beattie spoke of a case in which diabetes had been present three years before bronzing. Professor Stewart said that haemochromatosis was not such a rare disease as was thought. Surgeons might be able to diagnose cases by the examination of the abdominal glands when doing a laparotomy. Professor Dunn replied.

THE STREPTOCOCCI.

Professor Beattie confined his remarks to the discussion of haemolytic strains of streptococci. Haemolytic streptococci were found with great frequency in the human throat, especially in the tonsillar crypts (92 per cent. of cases). They remained there usually as saprophytes, but they played an important rôle as secondary invaders in many diseases. They were commonly found in scarlet fever, measles, lobar pneumonia, and influenza, and were a frequent cause of complications. According to Gordon, a haemolytic streptococcus was the organism of scarlet fever. Acute primary invasions by haemolytic streptococci could be rapidly fatal. It was therefore of great importance to recognize the type of organism, and to study methods of destroying it. It was difficult to find a satisfactory basis for classification. Morphological and cultural reactions had no relation to pathogenicity. More recently classifications had been based on haemolytic and immunological reactions, but the technical difficulties to be overcome were great. Success had been attained in the treatment of meningococcal meningitis by serum. Professor Beattie's experiments encouraged the hope that a similar result would be obtained in streptococcal infections. Dr. Warren Crowe proposed to widen the discussion so as to include the non-haemolytic streptococci such as the pneumococci and *S. viridans*. Professor Beattie had stated that rheumatism was caused by streptococci. Those who had experience of the use of vaccines in rheumatism would agree with that statement. Dr. Warren Crowe showed a medium composed of heated blood which would enable streptococci to be differentiated into a large number of types. Dr. Dible said that the problems confronting investigators were numerous and difficult. He suggested that in classification the tests used must be (1) simple, (2) have sharp lines of division (3) be of definite significance as regards pathogenicity. He divided streptococci into haemolytic and non-haemolytic, with four subgroups in each division. Dr. McLeod described his experiments with haemolytic streptococci grown in undiluted rabbit's serum. Certain strains possessed marked virulence towards rabbits, and retained this characteristic for a very long time. He was sceptical as to the value of specific serums. They did not have any effect on inoculated rabbits, although normal horse serum delayed the fatal result. Dr. Ford Robertson disagreed with the present lines of classification and showed a scheme of classification which he considered satisfactory. Professor Beattie, in reply, said that he distrusted schemes of classification based on one or two characteristics only. The most useful type of classification was one which gave an idea of the pathogenicity of the organism and whether a homologous serum could be used. Experiments to be of any value must be performed with a large number of organisms.

PHYSIOLOGY, PHARMACOLOGY, THERAPEUTICS, AND DIETETICS.

BEFORE commencing the business of the first day's session two eloquent tributes to the memory of the late Professor Menzies were paid by Dr. Dale and Professor A. V. Hill. It was decided that a resolution expressing the deep sense of the loss sustained by medical science should be conveyed to the authorities of the University and to Mrs. Menzies.

In the first of the four papers of the morning Professor A. V. Hill described his new methods of recording the movements of the pulse and of the muscles of man during voluntary contraction. The movements of the pulse and of the muscles are caused to force jets of air on to a very thin spiral of platinum wire, heated by an electric current to a dull redness. The jet of air cools the hot wire, and thereby lowers its electrical resistance. The change of resistance can be recorded by string galvanometer and photographed in several different ways. The advantage of the method is that it records the actual movement of artery or muscle very clearly, with very little time lag and without any extraneous vibrations superimposed by the movements of the different parts of the recording instrument themselves. As Dr. Dale pointed out, this procedure could be easily and cheaply undertaken in any hospital which already possessed an electrocardiograph. Several interesting clinical applications, which we have no space to describe here, were suggested.

Dr. Groves and Mr. Vines next gave a short account of their improved treatment of varicose ulcers. Former measures, such as bandaging and external application of lotions, designed to promote the better nutrition of the tissues affected, they do not consider to strike at the real root of the complaint. This they believe, and furnished good evidence for believing, to be due to a deficiency of the calcium metabolism of the body, which shows itself in a diminution of the ionized calcium of the blood. After various trials of intramuscular injection of calcium chloride, feeding with calcium chloride and parathyroid extract, etc., they decided that parathyroid extract alone was most efficacious—one-tenth of a grain of parathyroid substance given daily for a week to a fortnight, till a maximal effect, as estimated by the increase in ionic calcium of the blood, is produced. When this stage has been reached, the dosage is reduced to twice a week until complete healing has been achieved. A very interesting discussion ranging round the pathological mechanisms at work then took place.

Dr. H. H. Dale gave an admirable paper dealing mainly with the recent work of himself and collaborators on the mechanism of anaphylaxis. Of the two rival theories, the first holds that the reaction between the second dose of

antigen and the antibody takes place in the blood itself. An "anaphylatoxin" is thereby produced and is responsible for all the well known features of anaphylactic shock. The second theory holds that the antibody and antigen actually react in the living cells themselves; that in the anaphylactized animal there is no appreciable antibody present in the blood, while in the immunized animal there is plenty of antibody in the blood, so that in immunity all the antigen combines with antibody in the blood, where combination does no harm. In recent experiments, which will shortly be published, Dale and Kellaway had found no evidence of proteolytic change when guinea-pig serum was made toxic by digestion with starch or agar. On the anaphylatoxin theory such toxic serum should act directly on a guinea-pig's muscle in absence of the blood, while the anaphylactic antigen should act only if blood is present. The opposite is the case. "Anaphylatoxins" act immediately on the blood and produce in it changes indicated by agglutination and disappearance of the platelets which make the blood toxic while they have no action upon isolated plain muscle, which can account for their effect *in vivo*. On the other hand, isolated blood-free plain muscle from an anaphylactic animal is even more sensitive to the antigen than it is in the whole animal. The protective action of the excess of antibody in circulation (immunity) can be demonstrated *in vitro*, and was illustrated by lantern slides.

The last paper, which was read by Professor Potter, was of decidedly a novel kind. He has investigated the electromotive forces developed during enzyme actions; and, indeed, these electromotive forces would seem to be ubiquitous in living phenomena. For instance, the breath is negatively charged with electricity, whereas the body is positively charged therewith. If further work confirms these early findings, it will be most interesting and important, but it does not appear at present that sufficient precautions have been taken to ensure that the observed electromotive forces are not caused by extraneous influences, such as the Newcastle electric power stations.

SECTION OF OPHTHALMOLOGY.

Causes and Prevention of Blindness.

THE President, Professor J. D. Wardale (Newcastle-upon-Tyne) in opening the proceedings, said that he was glad that the exceeding difficulties that faced them when they first contemplated the arrangements for the annual meeting had been overcome, and that they were able to gather in such good numbers to the meeting of this Section.

Mr. N. Bishop Harman (London), in opening the discussion, said we needed a sound knowledge of the causes of blindness, else we could not take effective steps to prevent it. We needed to prevent blindness because of the cruel hardship it entailed upon the blind person, and because a blind person was directly or indirectly a heavy charge upon the resources of the community. He proceeded to give data of the causes of blindness, based upon a collection of 4,288 persons. These came from three sources: (1) A home for blind infants, (2) schools for blind children, (3) private cases of all ages. Reviewing the figures obtained from these sources he showed that the causes of blindness varied greatly according to the age group examined. In infants, ophthalmia neonatorum headed the list, and produced a full half of the blindness. In school children ophthalmia neonatorum fell from first place by the appearance of blindness due to inherited syphilis; so that these two main sources of blindness together accounted for rather more than half the blindness of school children. When blindness amongst persons of all ages was examined there was a great change in the leading causes—senile degenerations, vascular diseases, choroiditis, glaucoma, cataract, and the end-changes of high myopia, took precedence. Examining these leading causes of blindness with a view to their prevention, he urged concentration of attention upon (1) ophthalmia neonatorum, (2) syphilitic diseases, (3) accidents, (4) myopia. Blindness from ophthalmia neonatorum, he showed, was declining, but it would never be extirpated until pre-natal maternal infections were effectively treated. That was a practical proposition. In the treatment of affected infants he urged more expedition. Each area should have a mobile diagnostic unit —a kind of medical "fire brigade"—ready on the instant to visit a suspected case, make a bacteriological examination, and advise on treatment. Then our hospital treatment would be effective, for cases would be seen at the outset. The cure of syphilitic parents would stamp out inherited syphilis and its heavy tale of blindness. Industrial accidents could be reduced by "safety first" arrangements, in which workpeople should have a direct and tangible interest. The extension of myope classes for children with high myopia would spread the knowledge of the risks of these diseases, put the youths into suitable work, and prevent their entering clerical occupations and endangering their frail eyes. The discussion was continued by the president of the Section, Dr. J. Alexander (Glasgow), Mr. E. H. E. Stack (Bristol), Mr. A. S. Percival (Newcastle-upon-Tyne), Dr. Harold Scurfield (Sheffield), Dr. George Foggin (Newcastle-upon-Tyne), Dr. Inglis Pollock (Glasgow), Dr. J. V. Paterson (Edinburgh), Dr. Marion Gilchrist (Glasgow), and Dr. Herbert Caiger (Sheffield); Mr. Bishop Harman replied. The following resolution, moved by Dr. Scurfield, seconded by Mr. Harries Jones (Northampton), was passed unanimously:

> That, with a view to the prevention and adequate treatment of ophthalmia neonatorum occurring in lying-in hospitals, such hospitals should have upon the active staff an ophthalmic surgeon.

Dr. Inglis Pollock read a paper on the advisability of early operation in strabismus convergens, which was discussed by the President, Mr. Harries Jones, Mr. E. Stack, Dr. Caiger, Dr. D. Wilson (Huddersfield), and Dr. E. C. Moore (Gateshead). Dr. Pollock replied.

SECTION OF ORTHOPAEDICS AND DISEASES OF CHILDREN.

Acute Anterior Poliomyelitis.

THE meeting was opened on Wednesday, July 20th, by Mr. Alfred H. Tubby, President of the Section, who welcomed the members and thanked the local medical profession for their efforts in organizing the meeting. He referred to the distinguished foreign visitors who were present, and thanked the Section for electing him to the office of President for a second time.

The discussion on "The early diagnosis and treatment of acute anterior poliomyelitis" was opened by Dr. Farquhar Buzzard. He referred to the importance of the early diagnosis of these cases by the general practitioner, though giving it as his opinion that this was of more importance to the doctor than to the patient. He then elaborated some of the important points in the early diagnosis of the condition. It was only recently that acute poliomyelitis had been recognized as belonging to the class of acute specific fevers, and it was owing to a failure to appreciate this previously that many diagnostic failures had occurred. In the differential diagnosis scurvy, acute epiphysitis, toxic polyneuritis, Landry's paralysis, and encephalitis lethargica were considered. Dr. Farquhar Buzzard gave details of a method of serum diagnosis which had been put forward, though he did not consider that it had proved to be of definite value. He confessed that diagnosis still essentially depended on the clinician. He divided the question of treatment into two definite stages. In the early acute period he advocated a passive line, the most important factor being rest. In the later convalescent period, which could be regarded as commencing at about six weeks from the time of onset, the treatment of individual muscles became important. Posture, massage, and electrical treatment were adapted to this stage.

Mr. R. C. Elmslie followed. He considered that accurate early diagnosis was of the greatest importance, and that in the acute stage the essential feature of the treatment should be complete rest. He did not allow the use of massage or electricity for about six weeks from the onset. He advocated the use of a plaster bed as the best method of securing adequate rest. In the convalescent period he emphasized the value of posture and attempts to aid the restoration of function by means of small active movements through a slight range. Nutrition was best maintained by means of warmth. Mr. McCrae Aitken emphasized some points in relation to the importance of posture in the restoration of function. He agreed in condemning massage and electrical treatment in the early stage. Mr. W. R. Bristow drew attention to the nature and value of electrical treatment in the convalescent period of these

cases. He considered the faradic current alone to be of value; a minimum stimulus should be employed, and splints should not be removed during treatment. He did not consider the electric bath to be of use, but the ordinary hot-water bath was useful in maintaining nutrition. Dr. Howard Humphris was of the opinion that the value of electrical treatment in various forms had been underestimated by the previous speakers, and gave details of the methods which he advocated. Dr. Tulloch made some observations from the point of view of the laboratory worker. Dr. Brooker Mills gave some interesting details of epidemics which had occurred in America. He gave some salient examples which disproved most of the theories which had been put forward to explain the method of conveyance of the disease. He gave an outline of the diagnostic points which had proved of value, and discussed the prevention of the spread of the disease during epidemics. Dr. L. A. Parry, Mr. Harry Platt, Mr. A. E. Morison, Dr. G. Parker, and Dr. Mitchell Smith followed.

The President summed up the discussion, and made some observations on his experience of the disease. Dr. Buzzard replied, reaffirming the importance of early rest, and commenting adversely upon the elaborate electrical treatment proposed by Dr. Humphris.

A short paper was contributed by Professor Mark Jansen (Holland) on the polyarticular muscles as the cause of arthrogenetic contractures, and he also made some interesting observations on osteogenesis imperfecta. Mr. H. Platt read a paper on birth palsy.

PREVENTIVE MEDICINE WITH INDUSTRIAL DISEASES.

EFFECTS OF HEALTH LEGISLATION.

THE first meeting of the Section of Preventive Medicine with Industrial Diseases was opened by the President, Sir Thomas Oliver, with a few introductory remarks of welcome, in which he referred to the overcrowding that occurred in Newcastle during the war owing to the influx of munition workers. He then invited Dr. I. G. Modlin (Chairman of the Sunderland Health Committee) to occupy the chair. Dr. Modlin appealed to medical men to take a deeper interest and a more active part in municipal government. He referred to the problems now awaiting solution by local authorities, and expressed doubts as to the benefits resulting from recent schemes in connexion with tuberculosis, maternity and child welfare, and venereal diseases, having regard to the expense involved.

Captain Walter E. Elliot, M.P., opened a discussion on "The effect of health legislation on the health of the people." He said that not only was prevention of enormous value as compared with possibilities of cure, but prevention could only be brought about by the compulsion of some statutory enactment. He gave an outline of the history of public health legislation in England. The enormous increase in population during the nineteenth century compelled the passing of sanitary legislation. We were greatly indebted to the influence of Lord Shaftesbury. The extinction of the great fevers and the reduced infant mortality were largely due to legislation. The death rate had decreased from 37.2 per 1,000 in 1854 to 12.4 in 1920. The expectation of life had greatly increased and the saving occurred during the younger and more active years of life. Public health legislation led to water supplies, washing, killing of lice, disappearance of typhus, and as the water supplies became purer to the decrease in enteric fever. Factory legislation was inspired by laymen, and the resultant benefits could not have been secured by private enterprise. The value of Government action supported by public funds was shown in the marked drop in the deaths from typhus in Poland as the result of organization and compulsion. As regards the outlook for the future, in tuberculosis the number of deaths from the pulmonary form had dropped from 39,000 in 1911 to 33,000 in 1920 after a temporary increase during the war period. This war increase did not occur to the same extent in Scotland, and it was difficult to account for the rise in England. The number of notifications was also falling. It was also a remarkable coincidence that the marked drop in infantile mortality coincided with the grants of money made by Parliament to support organized schemes. In spite, also, of the high percentage of unemployed, the health of the people was not appreciably suffering, and possibly the State dole was in part responsible. As regards the cost of recent schemes for dealing with tuberculosis, maternity and child welfare, and venereal diseases, Captain Elliot stated that in Burnley, Manchester, and elsewhere the cost was under 3d. in the £, or about 2 per cent. of the rates. Dr. Eustace Hill (M.O.H. Durham County) said that legislation must not be too much in advance of public opinion. There was an urgent need for the codification and consolidation of the Acts relating to public health. The present tendency towards piecemeal legislation should be discouraged. Dr. A. E. Cope (District M.O. Westminster) urged the importance of securing public assent and co-operation through education to legislative measures. Dr. Millar (County M.O.H. Radnor) complained of the burden of correspondence, returns, etc., associated with recent health legislation. Dr. Coles (London) emphasized the importance of attention to slight accidents in factories and of co-operation on the part of workpeople in observing regulations. Dr. J. F. Walker (Southend) considered that quality was more important than quantity, and that the reduced birth rate amongst the middle and upper classes was due to the heavy financial burdens. Dr. Johnson Smyth (Bournemouth) suggested that the decrease in tuberculosis followed improved ventilation, and that there was some antagonism between gout and tuberculosis. Dr. Mackail (Glasgow) claimed credit for the work of municipalities in health matters. Dr. Dearden (M.O.H. Port of Manchester) claimed that it was the agitation to reduce the hours of labour in factories that drew attention to the insanitary conditions. Factory legislation needed the stimulus that a body of experts could give. The existing staff was too small. The President suggested that the reduced infantile death rate in times of food scarcity might be due to the deprivation of unsuitable articles of diet. After a few remarks by Dr. A. Forbes (Sheffield), Captain Elliot briefly replied.

SECTION OF OTO-RHINO-LARYNGOLOGY.

MENINGITIS IN AURAL CASES.

ON Wednesday, July 20th, Sir Charles Ballance read a paper entitled "Problems in connexion with the early diagnosis and treatment of meningitis occurring in aural cases." The speaker quoted a number of cases to illustrate various important points on the diagnosis of such cases, and drew a realistic picture of the clinical aspect of meningitis in its several forms. The indications for treatment in different circumstances were outlined. Sir Charles Ballance expressed the view that in cases of very acute mastoiditis the operation for relief of the disease was not complete until lumbar puncture had been performed. For cases in which meningitis was already established still more extensive measures were advocated. The paper was discussed by Sir James Dundas Grant, Dr. Samuel Whillis, Dr. Dan McKenzie, Mr. Sydney Scott, Mr. Frank Wilson, Mr. Hunter Tod, Mr. O'Malley, Dr. Ritchie Rodger, Mr. Woodman, and Dr. MacNab. Sir Charles Ballance replied, and laid special emphasis on the danger of lumbar puncture in cases of tumour or abscess of the brain.

Sir James Dundas Grant contributed an account of a case of suppuration in a subdivided maxillary antrum with nasal ganglion neurosis suggesting malignant disease; operation was followed by recovery. The paper was illustrated by an excellent skiagram of the case by Dr. Knox; it was discussed by Mr. Hunter Tod and Mr. Sydney Scott, who related cases of similar character.

Sir James Dundas Grant read a paper entitled "Remarks on ossiculectomy," in which he outlined the indications for this operation and related several successful cases. Dr. Samuel Whillis gave a demonstration of his method of removing tonsils. Dr. Douglas Guthrie gave a demonstration of plastic operations on the nose, combined with cartilage transplantation. A number of photographs of cases before and after operation were shown to illustrate how saddle-nose could be remedied. In reply to Dr. Don, Mr. Guthrie said he thought the operation should not be done before puberty. Dr. Salisbury-Sharpe read a paper entitled, "Some further remarks on ionization in otitis media." Mr. A. R. Friel read a paper entitled, "Zinc

ionization in the treatment of certain forms of suppuration in the maxillary, frontal, and sphenoidal sinuses, with special reference to technique."

SECTION OF PROCTOLOGY.

TREATMENT OF HAEMORRHOIDS.

A DISCUSSION on haemorrhoids was opened by Sir Charles Gordon Watson. He said that out of 904 cases of haemorrhoids at St. Mark's Hospital only 593 had to be operated upon as in-patients, therefore about 40 per cent. of these cases could be satisfactorily treated in the out patient department. He first considered the treatment by means of injection; he only had a limited experience of this method—namely, 49 cases; of these 33 were cured, 9 were improved, and operation was subsequently required in 7 cases—a proportion of 14 per cent. He thought that it was only satisfactory when there was a single bleeding pile, not for multiple piles. Although abscesses were well known as a complication of this method of treatment, they were probably due to faulty technique, and he considered that it deserved further trial. As regards the type of operation employed, he personally rather preferred the clamp and cautery, although ligature was more popular with others. The advantages of the clamp and cautery were absence of pain, quicker return of sphincteric control, the fact that the catheter was seldom necessary, and that sepsis was most infrequent. Retention in hospital was advised up to twelve days, for he found that in cases discharged earlier there was some tendency to contraction. The chief points in the preparation of the patient for operation were very thorough cleansing of the lower bowel and an injection of one-sixth of a grain of morphine just before the operation, and avoidance of eggs and fruit in the diet. He regarded the ligature operation as suitable for all cases, clamp and cautery especially to be recommended for strangulated cases, and in aged and debilitated subjects. He was not much in favour of Whitehead's operation, especially for general practitioners.

Dr. D. Wilkie (Edinburgh) pointed out that internal haemorrhoids were almost always associated with dilatation of the external haemorrhoidal veins. He said that the dangers of the operation were very slight, but he had seen fatal cases of septic phlebitis giving rise to pulmonary embolism and septic cellulitis of the wall of the rectum. The chief point he emphasized in the preparation of the patient was that nothing should be done to the bowel within twelve hours of the operation, thus ensuring that the operation would be performed on the bowel at rest. He, too, considered that while professional proctologists would get good results from any operation, the general practitioner should stick to the method of ligature, and above all things avoid Whitehead's operation.

Dr. Louis J. Hirschman (Detroit, U.S.A.) brought the greetings of the American Proctological Association. He described the method of injection as employed in America, where, instead of carbolic acid, a 5 or 10 per cent. solution of the double salt of quinine and urea hydrochloride was more commonly employed, but its use was confined to cases in which in-patient treatment was unsuitable or operation contraindicated. From one to four injections were required usually, and the whole treatment lasted fourteen to twenty-one days. The operation with clamp and cautery was reserved for cases with large mucous prolapse. He believed in suturing as little as possible in the neighbourhood of the anus. He pointed out that local anaesthesia was much more used for rectal surgery in America than in this country. He claimed for it excellent results, and pointed out that it much shortened the after-treatment. Ninety-five per cent. of his cases were treated under local anaesthesia only. In the preparation of the patient they used in America enemata of sodium bicarbonate instead of soap, because it washed out the bowel as efficiently as soap and water without irritating it.

Mr. Ernest Miles (London) considered that the operation for internal haemorrhoids was simple and safe, and should be free from failure. He thought that the reasons of the failures which did occur were: (1) That early piles were obscured sometimes during the operation by others more fully developed. (2) That search was not always made systematically for the seven piles which might occur, and thus some were missed. (3) They were not exposed adequately, and thus not removed completely. (4) That a bad operation was chosen, and he advised that Whitehead's operation and the method of injection should always be avoided. He pointed out that in France he had seen no less than 139 unsatisfactory results from the attempted injection of haemorrhoids at thirty-seven different hospitals. He believed first in the method of ligature, and secondly in the clamp and cautery.

Sir Charles Ryall (London) complimented the opener on his address. He considered the simplest operation—namely, ligature—must be the best, condemned Whitehead's operation, and said that injection should be reserved for the aged and debilitated and only employed by skilled hands. He recalled a fatal case to which he had been hurriedly summoned by the doctor who had done it, in which the fatal issue had been brought about by tissue necrosis and subsequent haemorrhage. Mr. Cecil Rowntree (London), after having made trial of many methods, was now a devoted advocate of the method of ligature as performed by Mr. Miles. He considered that Whitehead's operation gave a large percentage of unsatisfactory results. He advocated spinal anaesthesia as the ideal method.

The President remarked that this meeting had obviously given the *coup de grâce* to Whitehead's operation, a fact which he personally regretted, as he had derived a certain profit from the performance of corrective operations on patients who had previously been submitted to Whitehead's operation at the hands of others. He regarded injection as a mere palliative, not as a substitute for operation; still there was no doubt that it gave great relief to those who either could not or would not face operation. He believed in the more extensive use of local anaesthesia, and was employing it in increasing degree in his own practice. Pain after operation he regarded as entirely a question of sepsis. He was entirely against a post-operative diet of slops, but gave his patients solids immediately. Sir C. Gordon-Watson, in his reply, expressed gratification that the sense of the meeting was in substantial agreement with him. He said that at St. Mark's carbolic acid had been found the best medicament for injecting. He also criticized the American habit of getting the patient up three to seven days after the operation, pointing out that occasionally, although very seldom, secondary haemorrhage occurred between the sixth and tenth day.

SECTION OF VENEREAL DISEASES.

MEETINGS of the Section of Venereal Diseases were held on Wednesday and Thursday, July 20th and 21st, with Colonel L. W. Harrison, D.S.O., R.A.M.C., in the chair. The following papers were read: "Treatment of syphilis in man," by Dr. R. MacKenna; "Syphilis in women and children," by Professor Walter Swayne; "Treatment of gonorrhoea in man," by Mr. David Lees, F.R.C.S.; "The standard of cure in gonorrhoea," by Dr. Townley Clarkson. In the discussion following the opening papers the following took part: Dr. James Buckley (Nottingham), Dr. John Elliott (Chester), Dr. Edward Harrison (Hull), Mr. E. B. Turner, F.R.C.S. (London), Dr. Hudson (Newcastle), and Mr. Kenneth Walker, F.R.C.S. (London). At the invitation of the Section, Lieut.-Colonel Ritchie, of the League of Nations Red Cross Societies, and Dr. Gordon Bates, of the Canadian Council for Combating Venereal Diseases, spoke of the work being done in their respective spheres for the combating of the disease. In the afternoon of July 21st a special demonstration was made of instruments used in the treatment of venereal disease. An excellent collection of water-colour paintings of syphilitic lesions was lent for the occasion by Dr. R. A. Bolam. Amongst other exhibits were the following: outfit for the diagnosis and treatment of venereal disease and model of venereal clinic, supplied by National Council for Combating Venereal Diseases; pathological specimens of livers from fatal cases of arsenobenzol poisoning, lent by Dr. T. W. Shore; exhibits of catheters and genito-urinary instruments by various manufacturers. The demonstrations were carried out by the President of the Section, Colonel L. W. Harrison, and were well attended. At the meeting of the Section held on the morning of July 21st the following resolution was proposed and passed unanimously: "That this meeting desires to bring before the Council of the British Medical Association the necessity of taking such action as will ensure the inclusion of instruction in venereal diseases in

the curriculum of every medical student, together with the institution of a test of proficiency in diagnosis and treatment as a condition of qualification. It desires also to draw attention to the advisability of encouraging by every means possible the carrying out of post-graduate instruction in these subjects amongst general practitioners."

AMBULANCE AND RED CROSS.

FIRST-AID WORK.

DR. ROBERT ANDERSON, one of the Vice-Presidents, was in the chair at the meeting of this Section on Wednesday, July 20th. Apologies for absence were read from Sir George Beatson, M.D., and Major-General Sir George Evatt, Vice-Presidents. Sir James Cantlie opened the subject of first-aid work. Forty years of teaching ambulance, he said, had brought home the fact that it was in the interests of the public during peace as well as for the soldier in war that the work of ambulance teaching should be raised from out of the haphazard methods of instruction which up to the present had prevailed. He described how Esmarch, the founder of military ambulance, after seeing in 1881 the meaning of civil ambulance in Britain, returned to Kiel and there raised the subject to the higher platform of university teaching. In Britain, Sir James Cantlie urged, this had never been done. We had been content to let ambulance be taught in the noise and dust of the railway goods shed. He recalled his own early lectures in a shed at Charing Cross, with a candle stuck in a beer bottle as an illuminant. It was the result of forty years' experience that induced him in 1914 to open the College of Ambulance in London, the initial funds being a present from the pupils who crowded into the ambulance classes at the Regent Street Polytechnic. The weekly attendances at the college for three years amounted to over 900. The college was now incorporated, and was a national institution regulated by a governing body with Sir Rickman Godlee as president. It had become a great centre of teaching ambulance, and it was hoped to secure a site and building for the establishment of a technical college at which ambulance workers might be educated in a manner worthy of this important department of practical medicine and surgery. The response to the appeal for support had been most generous and encouraging. Ambulance was not a question of to-day but of all time. Dr. Robert Anderson was also able to speak with forty years' experience of ambulance work. He described how he gave his first lectures on the subject in Northumberland in 1881, and gave some interesting illustrations of the value of the instruction given to miners in a large area around Newcastle. Sir James Cantlie then showed a map of Great Britain marked out into districts in connexion with the idea of utilizing the *x*-ray motor ambulance, which originated in a conversation between Major Robert Mitchell, Dr. Robert Knox, and himself. He explained how the Eccentric Club contributed the funds for the purchase of the motor ambulance wagon which worked in the London district with the College of Ambulance as a centre. A demonstration of the value of the new yoke slip for stretcher-bearers was then given by Sir James Cantlie. Dr. George Locke described the excellent motor ambulance in use at Hastings, and expressed his intention of furthering in that locality the interests of the new Motor Ambulance Society.

A remarkable demonstration was then given of Thomson's machine for armless men. Sir James Cantlie described how Mr. George Thomson of Edinburgh came to devise this machine, which so marvellously imitated hand or arm movements. An armless man sitting at a table fed himself, lighted a cigarette, washed his face, and did many other things with astonishing ease, and the demonstration was loudly applauded. In the afternoon a demonstration of rescue work was given by Mr. F. P. Mills at the Miners' Rescue Station in Newcastle.

APPLIANCES AND PREPARATIONS.

An Improved Surgical Needle.

MR. H. S. SOUTTAR, F.R.C.S. (Director of the Surgical Unit, London Hospital), writes: It must have occurred to every surgeon that it would be a great advantage, especially for intestinal work, if the doubling of the suture necessitated by the ordinary needle eye could be avoided. After a series of experiments we have succeeded in producing a needle with a tubular end into which the suture can be firmly fixed. In the case of catgut, owing to the swelling which occurs on immersion in water, the result is a needle and suture of the same diameter throughout, any catch in drawing them through the tissues is entirely avoided, and the performance of delicate intestinal suturing is greatly facilitated. The needle is being manufactured for us by Messrs. Charles Spencer of Redditch, who will shortly be able to supply it in every form, straight or curved, round or cutting, and in every size. Threaded with "London Hospital" catgut, packed sterile in tubes, and ready for immediate use, they can be obtained from Messrs. Allen and Hanburys, the sole distributing agents for the London Hospital.

INTERNATIONAL CONFERENCE ON TUBERCULOSIS.

NEARLY forty countries, from China to Peru, were represented at the second Conference of the International Union against Tuberculosis, which took place in London from July 26th to 28th. There was an impressive variety of language and complexion when the delegates were presented one after another to Sir Robert Philip, the President, and said a few words about the zeal of their respective countries in the eradication of the white scourge. Recent enemies like Italy and Austria joined in a common sentiment, and the voice of Haiti was heard equally with the eloquence of America. Unfortunately, the chief spokesman of France, M. Léon Bourgeois, President of the French Senate, could not be present; his place was taken by M. André Honnorat, lately a member of the Government. An official welcome was tendered to the Conference by the Marquis Curzon of Kedleston and Sir Alfred Mond. The Foreign Secretary brought with him a message from His Majesty, who wrote that the encouraging success already manifested from co-ordinated efforts in the cause of health led him confidently to hope that further advances would take place as a consequence of the work of the Conference, in which, following the example of his father, he had a deep interest. On his own behalf Lord Curzon said that the Conference appealed to him, not merely because of the work which its constituents were doing in combating disease, but because it afforded one more illustration of the ever-growing brotherhood of thoughtful and active men in all countries; neither philanthropy nor science knew anything of frontiers. The Minister of Health devoted himself to a recapitulation of the labours of his department. In England and Wales, he said, there were now 341 tuberculosis officers, 412 dispensaries, and 18,050 sanatorium beds. These beds had increased by 4,000 during the last two years, and during the next two years, with the completion of the buildings now in progress, 3,500 additional beds would be available. In 1914 there were 99,000 notified cases of tuberculosis and 50,000 deaths; in 1920, 73,000 notified cases and only 42,000 deaths. Two main discussions occupied the Conference: one on the modes of diffusion of tuberculosis throughout the races of the world, which was opened by Professor Calmette, of the Pasteur Institute, and the other on the part the medical profession played in the prevention of tuberculosis, opened by Sir Humphry Rolleston and Sir George Newman. Of these discussions we shall give some account in our next issue. On the first day of the Conference the annual meeting of the National Association for the Prevention of Tuberculosis formed part of the proceedings, when an address was given by Dr. Armand Delille, of Paris, on the system of the late Professor Grancher for protecting children against a family predisposition to tuberculosis. When a parent is found to be affected, the children, while still healthy, are removed to a new environment in the country, where, lodged with peasants, they remain for several years. Out of 2,300 Parisian children who have been thus dealt with since 1903, only seven have become tuberculous, and two have died from meningitis. The work is carried out on the basis of a private charity, subsidized by the French Government and the municipality of Paris. A number of keen questions were asked at the close of the address, particularly as to the willingness of parents thus to surrender their children, and Dr. Delille admitted that it was difficult at first, but became easier as the result of propaganda.

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THE NEWCASTLE MEETING.

In a note written last week when the Annual Meeting had scarcely run half its course, we ventured to speak of its success as already assured. The events of the closing days gave ample justification for that opinion. All who attended the meeting of the British Medical Association at Newcastle-upon-Tyne are agreed that from start to finish everything went well under the genial presidency of Professor David Drummond. In the first place, the numbers were highly satisfactory; by Friday morning more than 800 names had been registered. More important, however, than mere numbers was the keenness and spirit of good fellowship which prevailed. The North Country is famous for its hospitality, and the genuine warmth of Newcastle's reception will stand out in the memory of every visitor.

The scientific and clinical work of the meeting, to which the presidential address formed a fitting prelude, was carried out in a larger number of Sections than in the previous year; but interest was well maintained, and many of the papers and debates opened up topics of much importance in medicine, surgery, and pathology, or brought professional opinion to a focus. We begin elsewhere a running account of the proceedings, which gives in the form of a series of outline sketches some idea of the scientific and clinical discussions. In subsequent issues we shall publish full reports of the work of all the Sections. Following the plan initiated at the special meeting in London in April, 1919, and further developed last year at Cambridge, demonstrations, organized by Mr. H. Brunton Angus, were given in the afternoons of each of the three days on which the Sections met. The success attained in this direction in London, Cambridge, and Newcastle has been so great that it may well be hoped that demonstrations will form a permanent feature of the annual meetings; medicine is so largely objective that an opportunity for examining cases, specimens and technical processes, and of seeing experts at work is needed to supplement discussions and verbal descriptions. Keen interest was shown, too, in the excellent pathological museum arranged on the ground floor in the College of Medicine; of it we propose to give an account in an early issue.

In connexion with the work of the scientific sections acknowledgement must be made to Sir Theodore Morison and the Council of Armstrong College, who placed the whole building at the disposal of the Association. Fourteen Sections met there, and the King's Hall was made use of for the Representative Meeting, for the General Meeting, and for many of the evening functions. In the same way Professor Drummond and the Council of the College of Medicine lent the whole of that building for the purposes of the meeting. The thanks of the Association are due also to the House Committee of the Royal Victoria Infirmary for endless facilities, more especially in relation to the afternoon demonstrations held there; and to Colonel Grieg, C.M.G., Medical Superintendent of the War Pensions Hospital, for a like service.

Four days were as usual set apart for the transaction of medico-political business by the Representative Body of the Association, and each day was fully occupied. The report of the proceedings of the first two days and a half appeared in last week's SUPPLEMENT, and the conclusion is reported in the same detail this week. From these accounts it will be seen that the work was heavy, and that several difficult and urgent problems were debated at length. The question of professional secrecy was gone over anew in the light of recent events, and the very strong feeling that exists on the subject was manifest. This expression of the Representative Body's opinion will carry great weight both with the profession at large and with the public, but a year must elapse before the resolution adopted can become in the strict constitutional sense a declaration of policy by the British Medical Association. Time is thus given for fuller study of a very difficult subject in all its bearings, and the Council will no doubt make a further report on the subject. The Birmingham motion, as amended and carried by a large majority as a substantive resolution, was: "That the Association use all its power to support a member of the British Medical Association who refuses to divulge, without the patient's consent, information obtained in the exercise of his professional duties, except where it is already provided by Act of Parliament that he must do so."

The debate on the question of federation was noteworthy for the full and clear statement made Dr. R. H. Todd, who had come to England in order to represent the Association in Australia at the Conference of Overseas Delegates held in London on July 5th. His message in brief was that the Australian Branches desired to have a corporate existence, while remaining within the Association; speaking as a lawyer, he indicated a way in which legal obstacles could be overcome. He carried the meeting with him, and the recommendation of the Council that, if possible, provision be made in the regulations of the Association to allow the Overseas Branches to retain the character and status of Branches, although incorporated, was agreed to with acclamation. It is the earnest hope of us all that a way will soon be found to put this into effect. We have not space here to go further into the work of the Annual Representative Meeting this year beyond noting the warm vote of thanks accorded to Dr. Garstang on his departure from the chair after three arduous years of service. Dr. Macdonald well said that Dr. Garstang's steadfastness and judicial firmness in handling the meeting were evident to every one; we may be allowed to add that few know the extent of his devotion day in, day at—to the work and welfare of the Association throughout his period of office.

We have mentioned the abounding hospitality of Newcastle, to which was due the success of the social side of the Eighty-ninth Annual Meeting of the Association. Every day had its sequence of delightful entertainments; some account of them appeared last week or is given in our present issue. The evening functions in particular were attended by very large numbers. The varied programme of excursions and visits of inspection was brought to a close on Saturday, July 23rd, by a whole-day expedition to the Roman Wall, in which more than 120 visitors took part. A notable feature of the meeting was the civic welcome given to members of the Association; the Lord Mayor, Councillor Rowe, paid an early visit to the Representative Body and entertained a large company to dinner at the Mansion House, and the garden party given by the Lord Mayor and Corporation in the lovely grounds

of Jesmond Dene was one of the pleasantest events of the week. A special convocation was held during the meeting in the Castle Hall, Durham, for the conferring of honorary degrees, and afterwards the President and Council of the Durham Colleges welcomed a large party in the Fellows' Garden of University College; a more beautiful setting for such a function can scarcely be imagined. There were many other social events, and brief acknowledgement to those who provided or organized them is made in another column; some reference to this subject will also be found in the speeches at the annual dinner, fully reported in the SUPPLEMENT.

From what has been said it will be plain that the Annual Meeting was admirably organized. For many months beforehand a team of willing workers had spent themselves in perfecting the local arrangements. Among the local executive a few outstanding members only can be mentioned here. One name in particular will always be identified with the Annual Meeting of 1921. It is true to say that every visitor is under a debt of gratitude to Mr. R. J. Willan, the Local General Secretary, for his splendid staff work. Mr. Willan's energy and good-humour pervaded every part of the organization, and nothing was too big or too small to escape his watchful eye. High praise must be accorded also to Dr. Farquhar Murray, Secretary of the Hotels and Lodgings Committee; to Dr. G. Hall, Treasurer and Honorary Secretary of the Finance Committee; to Mr. G. Grey Turner, Chairman of the Printing and Publishing Committee; to Dr. Neil Maclay, Secretary of the Dinner and Luncheon Committee; to Dr. F. G. Nattras, who organized the evening functions; and to Dr. H. L. Rutter, Honorary Secretary of the Reception Committee. For their work in connexion with the Ladies' Club, special acknowledgement must be made to Mrs. R. A. Bolam, Dr. Mabel Campbell, and Mrs. W. Martin. Dr. Edgar Babst earned general thanks for his work in conducting parties to industrial works, and Dr. W. J. Durant was responsible for the excursions. Finally, let it be said that Dr. Bolam, Chairman of Council, spared no pains to render the visit of the Association to his native city agreeable. He was ubiquitous but self-effacing, and his few public utterances were admirable in form and matter.

HOSPITAL POLICY.

IN the SUPPLEMENT of this issue will be found a report of the proceedings of the Representative Body in regard to the hospital policy of the Association. Many new conditions are taking shape in hospital affairs, both in voluntary and in Poor Law hospitals. Hospitals that were charities free to the indigent now take patients who pay their way to a greater or lesser extent. Contributory schemes frankly based on the promise of hospital benefit as of right are being pushed into prominence. Poor Law infirmaries, the former refuge of the sick pauper, are being advertised as highly desirable hospitals with a scale of charges that leaves no thought in the minds of the patients of a vestige of pauperism. These new conditions affect the position of medical practitioners everywhere, and not least those who are members of hospital staffs. In the autumn of 1920, on the decision of the Minister of Health to appoint the committee which sat, under the chairmanship of Viscount Cave, to inquire into the financial position of the voluntary hospitals throughout the country, the British Medical Association took steps to ascertain the opinion of the members of hospital staffs. A conference held in London on December 1st was attended by representatives from twenty-seven London and seventy-one provincial hospitals; in most instances a hospital was represented by both a physician and surgeon from its staff; they were not necessarily members of the Association. At that conference a series of resolutions were agreed upon with remarkable unanimity, and formed the basis of the evidence given by the representatives of the Association before Lord Cave's Committee. Many of them were included among the recommendations of that Committee and are now being put into practice by the Government. At the meeting of the Representative Body of the Association at Newcastle they were submitted as recommendations from the Council for the formation of a hospital policy so far as voluntary hospitals are concerned; in every essential point they were approved by the Representative Body by large majorities.

The first of these resolutions defines what is meant by a "voluntary" hospital; this was very necessary since the term is often used with a looseness that is not a little inconvenient. The hall mark of a voluntary hospital is its independent and voluntary administration. As institutions they are free to develop their own special characters, they come under no law but the law of life, and in this atmosphere of freedom and independence there grows a fine flower of medical knowledge and experience that is the envy of every other hospital system in the world, and an invaluable medical asset to the country.

Finance is the next point. Some would hold that doctors are not concerned with hospital finance. The denial is strange, seeing that not a few of the voluntary hospitals owe their foundation to the energy and philanthropy and sometimes also the munificence of doctors, and that many members of the profession serve on hospital governing boards. The Representative Body held that aid from local rates was undesirable, but that greatly extended support should be given by employers of labour and insurance companies, seeing that they benefit largely by the services of these hospitals. It recommended also that every patient who is able should make a contribution during treatment to the cost of maintenance, unless the contributory method of subscription is adopted as essential in industrial areas.

The difficulty of the situation so far as the terms of service of the medical staffs are concerned is due to the admission of patients of this part-paying or contributory class. The profession in the past has viewed the voluntary hospital as a charity, using the term in the old and lovable sense—the exemplification of the chief of Christian graces. It was a place maintained by the benevolent, where all the patients were empty of this world's goods but full of the claims of suffering, and where the doctors gave their free service. Though this view is still widely held, there has been a change, and it is a change economically for the better. Poverty is diminished, ability to pay increased. The voluntary hospitals must change to meet the new conditions. The coming of patients who pay little or much initiates a policy which may profoundly alter the character of these hospitals; and that change, even in its beginnings, must be met by the recognition of an equivalent change in the conditions of service of the medical staffs. The profession is as fully prepared to-day as of old to do philanthropic work in at least equal proportion to other sections of the community, but if that work be no longer wholly philanthropic, the necessity for remuneration of the medical staffs, if only as a token, must be conceded. This necessity is summed up in a resolution drafted to meet these new conditions by the medical

staff of a large provincial hospital, and accepted unanimously by the conference on voluntary hospital staffs in December last. It has now been approved by the Representative Body of the Association, and sets out that "in the event of decisions being taken which would lead to patients paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allotted in any manner which the honorary medical staff may determine." At first sight the attitude outlined in this resolution may seem ungenerous and to be a claim for a share in the pittance paid to the hospital by the poor. But it is not so. It is the enunciation of a principle which needs recognition at the outset of the part-payment era lest trouble arise in the possible whole-payment era. So long as these part payments are inconsiderable a token payment to the medical staff fund is all that is needed in recognition of this principle, and that is a matter of arrangement between hospital boards and medical staffs. It is the more necessary seeing that the era of whole payment, either by direct payment or by provident and contributory schemes, may be not far distant, and when these arrangements exist the scheme of the medical staff fund in its fullest implications is indubitably just.

This recommendation, which was submitted in evidence to Lord Cave's Committee, is commented upon somewhat adversely in its report (para. 50), and upon grounds that appear to us inadequate. "If the system of carrying a percentage to a staff fund," the report states, "is confined to cases where the full cost of maintenance and treatment is paid by or on behalf of the patient, not much objection can (we think) be taken to it; but any extension of the practice beyond those limits appears to us to endanger the future of the voluntary hospitals." That paragraph came under review by the Representative Body, and its implications were directly challenged as erroneous by the adoption of a resolution which specifically declared "that the essence of the voluntary hospital system is the independent and voluntary management, and that this is in no way related to the conditions of service of the medical staff."

The policy of the Association as regards Poor Law infirmaries aims at bringing these hospitals into the main stream of the medical practice of the country. Some of these institutions possess excellent hospital buildings, and it is our desire to see them used to the fullest possible extent. New social conditions have reduced the number of those formerly eligible for admission. Schemes are being developed by boards of guardians which tend to make these institutions hospitals for paying patients. These schemes are viewed with favour provided they are planned in conformity with certain principles now approved by the Association. The first is that before a scheme is formulated in any area the local medical profession must be consulted, for it would be most affected and in its hands the success or failure of the scheme would lie. The second is, that if these hospitals are thrown more widely open and are made available for persons who do not come by way of the relieving officer, these patients (except in emergencies) should only be admitted on the recommendation of the practitioners attending them. The third is, that arrangements should be made whereby, under the administrative control of the medical superintendent of the infirmary, the local practitioners could follow their own patients into the infirmary and attend them professionally. Lastly, it is desired that the closest possible working arrangements should be entered into between the voluntary hospitals and Poor Law infirmaries, so that the treatment of patients may be expedited and the facilities for teaching extended. Voluntary institutions established by the benevolent led the way in hospital experience; the State hospitals have followed, but upon other lines. The policy of the Association aims at such a close working connexion between these two forms of enterprise that the best of each may be preserved and developed for the good of future generations.

The whole hospital policy of the British Medical Association is based upon experiences obtained in many different parts of the country through the energy of the practitioners of those areas; it is therefore a practical policy. To bring it into effect in other quarters needs a similar development of energy; we commend this consideration to the Divisions of the Association and to members of hospital staffs.

ANNUAL MEETING NOTES.

THE ADDRESS ON INDUSTRIAL HYGIENE.

A special address on industrial hygiene, its risks, progress, and opportunities, was delivered in the King's Hall of Armstrong College on the evening of July 20th, by Sir Thomas Oliver. The address, which was printed in full at page 108 of last week's JOURNAL, was listened to with evident interest by a distinguished audience. The President of the Association, who was in the chair, said that in Sir Thomas Oliver's address they had the considered views of a scientist and an expert who had devoted much of his life to the hygiene of the worker. In Newcastle they were very proud to have among their number one who enjoyed a great reputation in this field, a reputation which extended beyond the confines of his own country.

At the close of the address, Captain W. E. Elliot, M.P., moved a very hearty vote of thanks to Sir Thomas Oliver. It was a pity, he said, that owing to another function, the address had had to be cut a little shorter than was intended, for nothing could be more helpful or useful than to spend a little time considering these enormous problems. When one heard the considered judgement of Sir Thomas Oliver that this country led the world in preventive legislation, particularly with regard to lead poisoning, one felt not merely how great was the honour of such a position, but also how great was the responsibility of continuing in the van of progress. Fortunately, in that further effort, they who had anything to do with legislation would still have the advice, the sympathy, and the wide outlook of Sir Thomas Oliver to inspire and counsel them. Nothing was truer than what Sir Thomas had said, that new industrial processes, necessitating ever new adjustments in hygiene, would be forthcoming, for the incurably restless spirit of man was always running his poor body into perils of which he took no heed at the time, until presently the scientific mind became alive to the situation and found a means of rescuing him from the jeopardy in which he stood. An illustration might be drawn from medicine itself, some of whose followers had suffered from the power of highly penetrating x rays to affect the bone marrow, and efficient methods of protection were only devised after much injury had been wrought. It must be taken for granted that these great mass experiments of labour would continue to be made, and these huge risks would continue to be run, so that it was urgently necessary, first, that employers should realize that there was to be found in medicine something which was of the utmost advantage to themselves as employers if they would call it into their councils, and

secondly, that medical men, when their advice was asked by the great industrialists, should have something wise and skilful to tell. When the great industrialists who were using labour *en masse* brought their problems to the medical profession that profession must be able to reply, not merely with laboratory tests and experiences, but, as Sir Thomas Oliver had said, with the results of their study of the reaction of human beings to these novel and terrible stimuli.

The vote of thanks was seconded by Dr. I. G. Modlin, of Sunderland, and heartily accorded. Sir Thomas Oliver, in reply, said that the question he had dealt with was one which was very much before the public even now, and would be more so in the future. They would all have to face these problems at some time or other, and if in any way he had contributed to their better elucidation he was very proud.

The Popular Lecture.

The Popular Lecture was delivered on Friday evening in the King's Hall by Sir Arthur Keith, whose subject was "Evolutionary wounds, their healing and rôle in the evolution of the human body." In opening the proceedings Professor Drummond said that he thought the very large audience might be divided into three parts. The first would consist of those members of the Association who were present on the previous day at the Convocation at Durham, when Sir Arthur Keith received the honorary degree of Doctor of Science. These members, having heard the eloquent words which were used in presenting him, would not require a further account of his great attainments. The second part of his audience consisted of fellow scientists, people like Sir Arthur himself, who had read all his books and knew all about them. But the most considerable section of the audience was the general public who, in their daily lives were less familiar with the subjects that occupied Sir Arthur Keith's researches and imagination, and to these he would only say that Sir Arthur was one of the most distinguished of our scientists. He had asked his guests at dinner that evening to give him a name with which he might describe the lecturer. One of them said that he was best described as an osteologist, another as an anthropologist, but one distinguished physician said, "I don't know what you would call him, except the right man in the right place." It was as the right man in the right place that he would introduce the lecturer. Sir Arthur Keith then delivered his lecture, which was illustrated by lantern slides, and was followed by the audience with very close attention. The lecture is printed in full at p. 137.

Sir Charles Parsons proposed a vote of thanks. It had been, he said, a most brilliant discourse on one of the most difficult subjects it was possible to conceive, and yet a subject which was more important to the human race than all the theories of Einstein. He remembered years ago hearing that Huxley had a vague idea that a wound healed as the result of the work of some minute and beneficent organisms in the system; these, it was said, were able to work collectively for the rebuilding of the human frame. The speaker was an engineer and physicist, not a surgeon, but he felt that those who were occupied with the intimate study of the life structure were on the verge of discovering some cause or source of energy which produced these wonderful transformations and built up living matter. The discovery of the mechanism must surely lead to results of incalculable value to the human race. When it was understood that the brain was like a barracks, sending out little pickets to regulate the various functions of the body, surely we were approaching towards the elucidation of what Sir Arthur Keith had hesitated to call a miracle. As an engineer he had a great desire to know more about these changes, to feel, behind the demonstrable result, towards the secret process. Of the lecture itself he would only say that it went again to prove that all great men who succeeded were very humble men, and were not afraid to confess their lack of knowledge. Sir Arthur Keith had told them that certain things were unknown. To realize that was the beginning of progress. Mr. Percy Corder, a member of the Council of Armstrong College, seconded the vote of thanks, and said that a great debt was owing first of all to the Council of the British Medical Association for allowing members of the general public like himself to hear this wonderful address, and, secondly, to Sir Arthur Keith for delivering it. Many men of science were learned, but not all were luminous.

The Newcastle Medical Institute.

A very interesting function took place during the Annual Meeting at Newcastle, when the Right Hon. Sir Clifford Allbutt, K.C.B., F.R.S., formally opened the Medical Institute (J. Wilkie Smith Memorial), 7, Windsor Terrace, on Tuesday, July 19th. Professor David Drummond presided. Sir Clifford Allbutt emphasized the importance of the action of Dr. J. W. Smith in founding such an institution. He had felt all his life, especially in his younger days, the isolation of medical men, particularly in country districts. Town men also were busy, hours were uncertain, and they, too, got isolated, with the consequence that misunderstandings and jealousies arose which could only be cleared up by meeting each other in such an institute as this one. The wish of the founder was that in addition to the social side it should have a scientific interest also, and although it was not fitted with laboratories it could be made a clearing house for scientific material. Courses of lectures and demonstrations might be given. Sir Clifford remarked that it was a great pity that a good deal of knowledge possessed only by general practitioners never got into any book simply because the author was ignorant of it. He then formally declared the Institute open, and expressed the cordial thanks of the profession to Dr. J. W. Smith for his gift. Dr. J. W. Smith said that no one more appropriate than Sir Clifford Allbutt could have been found to perform that ceremony; he was the head of his profession, was well versed in science and higher culture, in short, he was the embodiment of what the Institute stood for. Votes of thanks to Sir Clifford Allbutt and Professor Drummond concluded the meeting. Those present were afterwards entertained to tea as the guests of Dr. Smith.

Receptions and Entertainments.

On the evening of Tuesday, July 19th, after the President's Address in the King's Hall, Armstrong College, a reception was given by the President and Mrs. Drummond in the Assembly Rooms Club, which was attended by the Bishop of Newcastle and Mrs. Wild, the Lord Mayor and Lady Mayoress, and a large number of medical men and women. At this, and at the other main social functions, many wore academic robes. On the following afternoon a large garden party was held in Jesmond Dene, on the invitation of the Lord Mayor and Corporation of Newcastle, and in the evening a reception was given by the North of England Branch Council in the Hancock Natural History Museum, kindly lent for that purpose by the trustees. The guests were received by the President of the Branch, Dr. T. Eustace Hill, of Darlington, M.O.H. for the County of Durham, and Mrs. Hill. A musical programme was provided by the Elswick Concert Party and the Wallsend Male Choir, and the first of several dances was afterwards held in the Assembly Rooms Club. On Thursday evening, whilst the annual dinner of the Association was in progress, a musical entertainment was provided at the Hippodrome, and many ladies attended; it was followed by a dance in the King's Hall. On Friday evening a reception and dance was given in the Grand Assembly Rooms by the proprietors of the *Newcastle Chronicle*. The guests were received by Sir Arthur Sutherland, Bt., K.B.E., and Mrs. Joseph Reed, together with Miss Kathleen Sutherland, Mr. A. Munro Sutherland, and Colonel Joseph Reed. More than 800 were present at this the closing function of the week.

Earlier in the course of the meeting Mrs. Ranken Lyle entertained the wives of representatives to an enjoyable garden party, and Mrs. J. J. Gurney gave an At Home to medical women visiting Newcastle, while the Durham University Union Society lent the whole of its rooms, together with the services of its staff, free of cost, for use as a ladies' club. On Friday afternoon a considerable party made a tour of the River Tyne, from Elswick to the Tynemouth Piers, in the S.Y. *Sir William Stephenson*, courteously lent by the Tyne Improvement Commissioners. This excursion afforded an opportunity of seeing the Tyne industries on the river and banks, including the great shipbuilding yards, and the party was entertained to tea by the Tyne Port Sanitary Authority in their floating hospital. On the way back a ship launch was witnessed; this had been specially arranged by Sir G. B. Hunter, through whose kindness the great shipbuilding yard of Swan, Hunter and Wigham Richardson had been visited on Wednesday afternoon. Other afternoon excursions during the week included visits to the large Electric Supply Works at Carville; to the Redheugh Gas Works, Ferry's and Davidson's Glass Works, the Team Valley Paper Mills, Carr's Confectionery Works, Allhusen's Chemical Factory, and Sowerby's Glass Works, all at Gateshead; to Robinson's Printing and Lithographic Works, Newcastle-upon-Tyne, and the Wholesale Co-operative Works, at Pelaw. The North-Eastern Railway Company arranged for a visit to their locomotive works at Gateshead, and, in addition to that and other acts of courtesy, the company sent each day an inquiry clerk to the reception room for the benefit of medical visitors. On Saturday a large party made an expedition by rail and car to the Roman Wall. The thanks of the Association are due to Mr. W. Parker Brewis, F.S.A., and Mr. Gerald Simpson for giving up so much time to those who attended this excursion, and for conducting a series of parties over the Old Castle, the Black Gate, and Trinity House. Throughout the week the Royal Automobile Club supplied five scouts who were entirely responsible for the parking of the motor cars during the meetings and functions. Many opportunities for golf and other games were provided; the Ulster Cup Competition, of which an account is given in the SUPPLEMENT, was ably organized by Dr. J. N. Gover.

MEDICAL MISSIONS MEETING.

A MEETING was held at the Kinnaird Hall, Newcastle, during the week of the Annual Meeting, to consider the work of the medical profession in the mission field. Representatives of all the missionary societies which have medical auxiliaries were present. Tea was provided by Mr. and Mrs. Stanley Dalgleish, and afterwards, with the President of the Association in the chair, an address was given by Mr. J. Howard Cook, F.R.C.S., for twenty-one years a medical missionary in Uganda, and now secretary to the Medical Committee of the Church Missionary Society. He described the wonderful development of hospital work in Uganda, telling of a well-equipped base hospital which, with four branches, dealt with 90,000 out-patients in one year. The scenes which Mr. Cook encountered in Uganda on first going to places where no qualified medical man had been were most distressing. One man with elephantiasis, for example, would take a razor and cut slices out of his tumour, nearly dying of haemorrhage in consequence. Women in pregnancy were largely doctored with poisonous herbs. Little wonder, when one considered the conditions as to pregnancy and childbirth, that the proportion of stillbirths in parts of Uganda should be 33 per cent. and the infant mortality 70 per cent. of the infants born alive. The native treatment of cases was as a rule either futile or fatal. He described a native medicine man who gained a reputation for curing sleeping sickness by making parallel cuts in the patient's skull, rubbing in a mixture of cow dung and other materials, wrapping banana leaves round the head, and leaving the victim for a week. At the end of that time he would tear off the coverings and point to the wounds as evidence that the disease was coming out. Professor Harold Balme, F.R.C.S., Dean of the Shantung Christian University, described the building up of a medical profession in China. The older China, he said, had failed to develop what we in this country had come to regard as a medical fraternity. Such knowledge as was obtained by the shrewd old Chinese physicians became the private monopoly of the individual practitioner, so that as long as these conditions obtained no medical profession in the western sense could ever develop. Thanks, however, to the work of pioneers like Thomas Richardson Colledge, a new era had opened, and the Chinese to-day were starting medical schools of their own, of which there were seven or eight in existence. The development of nursing had also been a very remarkable feature of recent years. In China there were now between fifty and sixty training schools for nurses, and these had the approval and increasing interest of the Government. The President said that as a teacher of medicine he had been concerned with the equipment of the medical missionary; such equipment should be every whit as efficient as that of his colleague who practised at home. In seconding a vote of thanks (which was proposed by the Bishop of Newcastle) Dr. Percy Wigfield assured the President that societies which had medical mission auxiliaries were not content to send out any sort of doctor to represent the Christian Church; the standard set up was the highest possible.

NATIONAL TEMPERANCE LEAGUE BREAKFAST.

THE National Temperance League breakfast took place at the Grand Assembly Rooms, on July 21st; Sir George B. Hunter, a vice-president of the League, acted as host, but the chair was taken by Professor Drummond, the President of the Association. In a brief address, Sir Alfred Pearce Gould said it was a matter of common knowledge that the use of alcohol as a therapeutic agent had greatly lessened during the last thirty years, and in its diminished field to-day it was used only as a narcotic, not as a stimulant. The medical profession had a very special responsibility in reference to the widespread drinking customs of the people, a responsibility which it had not yet adequately realized or shouldered. The alcohol question was really a problem in biology, and Medicine was the only organized profession whose entire concern was with human biology, and the only profession which by its training and confidence in the methods and results of experimental research, as well as by its knowledge of the facts, was able to guide the State and the individuals composing it in the solution of what was undoubtedly a very grave problem. Medical men were not only concerned with the care of the sick—they were the rightful guardians of the health of the community. They came short of their duty if they failed to learn for themselves and to make known to the limits of their ability the well ascertained facts which bore upon the maintenance of the fullest health and physiological vigour of the community at large. It was a responsibility which began at home. Members of the profession did not really believe in the ascertained facts of science, however earnestly they might try to teach them, unless they allowed those facts to influence their own personal conduct. If the medical profession was to act up to its responsibility as a teaching profession, it must as a preliminary be willing itself to follow the teaching. A full and complete knowledge of the influence of alcohol upon the human organism was certainly lacking, but the same must be said of the law of gravitation, though this did not prevent the teacher of physics from making sure that the chair was beneath him when he wanted to sit down. Sir A. Pearce Gould appealed to his colleagues in the profession not to come short of their highest personal duty in this matter. Lady Barrett

proposed a vote of thanks to the host, the President, and the speaker, and this was seconded by Captain W. E. Elliot M.P., and supported by Dr. Courtenay C. Weeks, who said that the spirit of Sir Victor Horsley still seemed to dominate that gathering; and he recalled, as an inspiring theme for the League itself, Sir Victor's parting words to Lady Horsley before going to Mesopotamia, "I cannot live for ever; it is the young who matter." The President, in closing the proceedings, said that while not himself entitled to wear the blue ribbon of total abstinence, he could assure them that he and the whole profession in Newcastle and district were in entire sympathy with the aims of the National Temperance League. There was probably no industrial district where alcohol was less used by the local profession, either for their own consumption or for recommendation to their patients.

Irish Medical Schools' and Graduates' Association.

THE annual summer general meeting of the Irish Medical Schools' and Graduates' Association was held on July 20th at Newcastle. The chair was occupied by Dr. J. A. Macdonald, LL.D., President-elect, in the absence of the President, Major-General Wallace Kenny, C.B., A.M.S. The Chairman said that the numbers who had assembled at the lunch which preceded the meeting showed that the society was fulfilling the principal object which its founder (Dr. James Thompson of Leamington) had in view when it was started forty-three years ago—namely, to give the alumni of Irish medical schools the opportunity of foregathering from time to time and renewing the friendships formed as medical students in Dublin, Belfast, Cork, and Galway. The war had more or less interfered with another object, but if the success of the Development Committee that had been formed was what he anticipated, the resources of the association would soon be such that they would be able to resume the effort to break down the monopoly which still prevented those holding the highest Irish diplomas from becoming candidates for honorary appointments on the staffs of large public general hospitals in England. Such exclusiveness was in his (the Chairman's) view unworthy of justice-loving Englishmen. He felt sure that the majority of the governors of the hospitals referred to would cease to brand by their advertisements the Irish Fellows as inferior to their English brethren if the matter were brought to their notice. They had altered the exclusive rule in several cases when the association showed them how unjust it was to Irishmen who happened to be practising in England, and future efforts of a similar kind would, he felt sure, be equally successful. The honorary secretary of the Development Committee having stated what the latter was doing the meeting adjourned.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE duties of a medical officer of health were first specifically laid down in a minute of the General Board of Health dated December 20th, 1853; included in them was the production of an annual report "on the sanitary transactions of the year (especially as to the removal of former evils, or the creation of new establishments for sanitary purposes), on whatever incidental changes have been wrought in the physical state of the district, and on the sickness, mortality, and atmospheric conditions of the period; using for the report, as far as convenient, tabular forms and other compendious arrangements; and in every case where he refers to an existing evil stating what sanitary rule, measure, or appliance he deems best for its mitigation." This obligation to make an annual report was repeated from time to time in General Orders issued by the Local Government Board; in the latest of these, which was dated December 13th, 1910, there is a long list of matters concerning which information is required to be given in the report. In addition to these statutory instructions the Ministry of Health, in two successive years, has issued an eight-page foolscap memorandum "as to contents and arrangements of the annual reports of medical officers of health." The task of compiling his annual report has become very onerous and takes up a great deal of time which could more profitably be spent in other directions, and in our opinion the time has come when the Ministry of Health should seriously consider the desirability of [illegible] this task. Before discussing the means by which this may be brought about let us inquire what is the object aimed at in producing the report. It is in effect a chronicle of the work of the medical officer of health and his department during the period to which it refers, from which is to be deduced the present and future requirements of the district. The report is primarily for the information of the local authority—to whom, indeed, it is addressed—and of the inhabitants, who are entitled to be informed periodically of the sanitary condition of their district. Secondly, it is for the use of the Ministry of Health, and for this reason it is necessary to include in the report details which would be redundant if it were intended for local perusal alone. Thirdly, except when the report relates to a county borough, it is for the information of the county council in order that that body may ascertain whether the Public Health Act (1875) has been properly enforced or if any other matter affecting the public health of the district requires to be remedied by appropriate action taken under Section 19 of the Local Government Act, 1888. Many reports already issued could be abridged and still comply with the above requirements. Moreover, much of the information asked for in the Memorandum of the Ministry of Health does not vary year by year, and no good purpose is served by repeating it. For example, an account of the physical features and general character of the district, of the social conditions and the chief occupations of the inhabitants might very well be given every five or six years instead of annually as at present, and in other ways which we need not indicate in detail the reports could be curtailed without in any way decreasing their value. The greatest economy both of time and money would perhaps be achieved by the issue of a short report annually and a more comprehensive one every five years—say, in the year following the census, for we trust it may be assumed that the Ministry of Health will make use of the power given by Parliament to take a quinquennial census. The Ministry might formulate the minimum requirements and leave it to individual medical officers of health to give such additional information as local conditions render necessary. We cannot leave this subject of annual reports without a reference to the great need there is for what may be termed better sub-editing. The absence of an index to its contents makes a valuable report useless for reference, and yet of the last twenty reports we have received only nine are provided with an index, and one of these consists of 190 foolscap pages. About the same number are undated, one is unsigned, and throughout the pages of this report there is no indication of the name of its author. Another report is addressed to the "District Council," but we are left to guess whether the document refers to an urban or a rural district. Loose phraseology is found where it is least expected, and statutory enactments are given titles which have never belonged to them, so that we come across the "Dairy and Cowsheds Act" instead of the "Regulations under the Dairies and Cowsheds Orders," and the "House Inspection Act" instead of the "Housing Regulations." The lack of cross references detracts very much from the value of many reports; it is irritating, for instance, to be referred to "a former report," or to "another part of this report," or to be told that the author has dealt with his subject "elsewhere" without any further indication. There is perhaps no better way for a

medical officer of health to improve his own report than by reading those of his colleagues, more especially if he does so in a critical spirit, and with a desire to benefit by the defects he discovers.

THE Voluntary Hospitals Commission, appointed by the Minister of Health in accordance with the recommendation of Lord Cave's Committee, held a preliminary meeting on July 14th; a second meeting took place on July 26th.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Lord Cave's Report on Hospital Finance.

Debate in the Lords.

VISCOUNT BURNHAM, in the House of Lords on July 20th, raised a debate on the Cave Report on Hospital Finance by asking what further steps the Government proposed to take to put voluntary hospitals on a more satisfactory footing. Speaking in no antagonistic spirit to the Committee, he pointed out that its report was provisional, and designed to meet urgent necessities. He thought there was a clear case for the renewal of the mandate of this Committee, and for an extension of its reference. What had been done now would not do much more than cover the year's deficit, and the causes lay so deep that, unless the problem be promptly considered as a whole, the waste of public money would be great. He rejoiced that the Committee had emphatically approved the voluntary principle, but there was a clear case for asking the Committee to report on two subjects, the consideration of which was long overdue. These were the relation that the system of National Health Insurance bore to the rest of the problem of national health, and the relation of the Poor Law infirmaries to the voluntary hospitals.

With regard to insurance (Lord Burnham continued) Lord Cave's Committee definitely said that hospital benefit was not provided for in the Act of 1911 or amending Acts. The Committee took the view that all that the insured person could expect was the treatment and relief the general practitioner could give. But that, he thought, was an understatement of the case. The Act laid down that approved societies, as well as municipal and local authorities, could contribute to the support of hospitals. It was recognized that hospital treatment was necessary as part of the general relief given to insured persons, many of whom were well within the category of the "sick poor." He thought the Committee had not appreciated how the burdens of hospitals had been increased by the National Insurance Act. The health of the country had been vastly bettered and National Insurance had greatly advanced the operation of the Act, and hospital treatment had been absolutely necessary to the attainment of these results. The Exchequer was getting indirectly the benefit of a vast amount of hospital expenditure, which would neither have been necessary nor demanded but for the Insurance Act. He believed that a clear case existed for obtaining a contribution out of the surpluses of the approved societies such as might not be possible at present without an amendment of the law. Lord Cave's Committee rejoiced that one approved society was applying part of its surplus to this purpose. It was doing so voluntarily and legally under the Act. What was good in the case of the National Deposit Friendly Society would be good, he thought, in the case of the other approved societies. But many of them preferred, with the keen competition that existed in obtaining members, to distribute their surplus in casual benefit. He could not believe that when the changed conditions of medical and surgical treatment were considered the Ministry of Health would be satisfied to leave the hospitals without a large contribution from such great surpluses. Moreover, during the war, the bulk of the people, especially those who had served in the Forces, got to demand a higher standard of medical treatment. They were not content with the panel doctor, but frequented the out-patient department of the hospitals in greater numbers than formerly, and thus, even though in some cases they paid a small fee, the insurance fund benefited by being relieved of demands upon it. He asked, therefore, for a further investigation of the problem. It was unlikely, in London and the London area, that the system of mass contributions would bring very large receipts. The twelve general hospitals with schools attached did a great work not confined to their own area or the bounds of the metropolis, and they provided means of enabling medical students to obtain the necessary practical demonstrations. It was left also for them to take upon themselves the whole of the medical research, which was increasing in importance every day. These hospitals, with others in Edinburgh and other great cities, had enabled medical skill and genius to be developed, so that in these matters we were ahead of the rest of the world. There was a clear case because the equipment of the general practitioner was being raised each year by the experience of what was being done in the hospitals, and by the knowledge imparted to him directly or indirectly through the medical journals—that they should receive fair payment out of approved societies' surpluses.

Lord Burnham next dealt with the relation of the Poor Law institutions to the voluntary hospitals as requiring further investigation. He quoted from the Report of the Royal Commission on the Poor Law in 1909, to show that it was even then held to be a matter of urgency. The report also brought out that in the past local authorities had contributed considerably to the voluntary hospitals, because these authorities had been responsible for the treatment of some of those cared for by the hospitals. He would remind the House that that report also brought out the fact that Poor Law infirmaries were doing work, especially in dealing with casualties, which was supposed to be performed by voluntary hospitals, and that the Committee had hoped there might be closer co-operation between the voluntary hospitals and these State-supported hospitals. By the use of these Poor Law infirmaries up to a point a saving would be effected.

The Earl of Onslow (Parliamentary Secretary to the Ministry of Health) complimented Lord Cave's Committee on their admirable report, and remarked that the British Medical Association, at its congress at Newcastle, endorsed the principal finding that the voluntary system should be maintained. The Government had fully considered the recommendations and had issued a White Paper as to the course to be taken upon them. The constitution of the Commission would be as advised in the report, except that one more member had been added for Wales, in the person of Lord Clwyd. It was hoped to get the most representative committees—namely, representatives of all those who were in touch with the voluntary hospitals—representatives of the medical profession, of the hospital boards of management, of employers and employed, of local authorities, and of women. In the last-named category they had a field of administrators as yet not drawn upon. He referred especially to ex-commandants of hospitals.

Dealing with the financial aspect of the question, Lord Onslow said that the Government had decided not to contribute towards building schemes at present, when hospitals were not paying their way and while the cost of building was steadily falling. The Government, therefore, did not accept the recommendation of Lord Cave's Committee to make grants on the pound-for-pound system for hospital expenses, but they had agreed to contribute £500,000 towards the deficit of £1,038,318 on running expenses. As to the immediate work of the Commission, it would be their duty to make such advances from the fund as would enable hospitals—mainly in London, he thought—which had been obliged to close beds, to carry on. They had already asked the authorities concerned to make inquiries with regard to hospitals which were in immediate need of assistance. He wished to say emphatically that the Commission and the local committees were in no way intended to exercise control over the hospitals. The Government wanted to save the voluntary system, but not in any way to run the hospitals. The intention was that the grant should be so administered that its necessity should disappear as quickly as possible. The whole question of hospital areas, sufficiency of beds, etc., would be considered first by the committees and then by the Commission. The question of building extension would come before the committees as a means of carrying out those extensions, and would be reported upon by them, as well as the necessity for beds in various areas; and that brought in the point how far Poor Law infirmaries could be utilized. There were 92,000 beds in the Poor Law infirmaries, but many were attached to workhouses. Of the total number of beds, an average of 20,000 were vacant during the winter and 30,000 during the summer. There were 36,607 beds in separate infirmaries, and on January 1st last year 9,150 of those beds were vacant. He did not know how many were suitable for the reception of patients; some might be in districts adequately served by hospitals, and other matters had to be considered. But the accommodation in the infirmaries might prove a great relief to the hospitals. Some arrangements had been made to that end, but the existing statutes imposed certain limitations on the powers of Poor Law guardians, and it would be necessary to legislate before these difficulties could be entirely removed. What Lord Burnham had said would be most carefully considered; but he should be disinclined to press the Commission to ask the local committees to submit proposals until they had fully considered local circumstances.

As to approved societies, Lord Onslow recalled that the Cave Committee had issued an interim report recommending that the Ministry should make any necessary amendment in the Regulations under the National Insurance Act, and should bring the matter to the notice of the societies. The Ministry had done this, and the Committee of the Approved Societies and hospitals were in consultation on the subject.

Lord Somerleyton, speaking from experience in connexion with the Central Fund for Hospitals in London, expressed warm appreciation of the report. He thought that the central authority for London would obviously have to take into consideration the availability of Poor Law infirmaries for hospital use.

Lord Dawson of Penn said that all who had read the report of Lord Cave's Committee must have felt that its members were firmly imbued with the need for economy, and that their advice as to grants was actuated by the urgent necessity of the hospitals. When their first recommendation of one million was reduced by half by the Government, it was clear that the latter made this cut only on account of the cogent pressure of financial difficulties. But in view of such reduction he thought the question arose, Would it not be wise to reconsider the basis of distribution? If one took roughly the number of hospitals which should be helped, and put side by side with them the

money available, it would be seen that the sum thus divided amounted to very little in individual cases. He thought it was an important matter to put the teaching hospitals of the country into an entirely different schedule. Their work and functions were entirely different from those of the other hospitals. The voluntary hospitals throughout the country had each a local function. They were, no doubt, institutions of the greatest utility; if they were closed or if their work deteriorated it would be a great calamity to the district in which they were situated, but the calamity would be limited to that district. If, on the other hand, anything interfered with the efficiency of the teaching hospitals, the whole nation would suffer. These hospitals provided not only the doctors and the nurses for the coming generation, but they set the standard of work, and anything which impoverished them lowered that standard. This might easily happen in a short space of time, so as to lower the standard of medicine in this country for twenty years. He urged, therefore, as the money was limited, that far more important than to consider the needs of this and that hospital—and he said this without prejudice, because at his own hospital 200 beds were closed—was to consider the question of the teaching hospitals. He supposed they numbered about thirty throughout Great Britain—he thought there were twelve in London.

Lord Dawson then took up the subject of the Poor Law infirmaries. That was a question, he considered, which should not be allowed to rest longer. While they were waiting for the spare time, which never came to Governments, for trying to solve the problem of the Poor Law, this country was prevented from utilizing to the extent it could the resources of these institutions. Lord Burnham had referred to the sick poor, but that was not a wide enough view to take. All were poor now, and many were sick. It was not only the poor people technically called sick who needed institutional treatment; the number requiring it steadily increased year by year. The whole tendency of modern life was to make such an increase. The reasons were various and worthy of attention. First of all there were the scientific reasons. The diagnosis of disease was no longer the work of a single individual; it was done by the co-operation of several. Co-operation required equipment and organization, and these things required provision. The next was the economic reason. It was a curious thing that every time knowledge advanced it increased the complexity in investigation of illness, and this increase of complexity added to the cost. Every new invention cost an institution an increase in expenditure. So the cost of treatment went up, and the number of persons who could defray the whole cost of their illness went steadily down. The only solution therefore of the efficient investigation of disease was the increased provision of institution treatment. The third was the social reason. Homes were much more difficult to manage than they were, and the more narrow and restricted the income the greater the difficulty. In some parts of the country, if the lady of the house wished to have a baby the servants very often desired to leave. Domestic difficulties were so great that that tendency would force an increasing number of persons into institutions for treatment. He thought that the infirmaries of the country could be used to assist voluntary hospitals in two ways. In certain districts they could by arrangement be made to supplement the work of the general hospitals, but it should be a condition that they should not start business on their own. That was the criticism directed against the recent suggestion at Bradford, which aimed at starting a hospital system of its own in its infirmary—not to supplement, but rather to rival the work of the voluntary hospitals. That was an evil which led to great expense. He knew of nothing so calculated to destroy the voluntary principle as to allow a Poor Law hospital, supported by the rates, to start as a rival institution. Another reason why such institutions should supplement and not supplant was a professional one. The medical talent of a district nearly always centred round the voluntary hospitals. What contained the greater talent should give a lead in treatment and policy. The second way in which the infirmaries could be used was by setting aside wings or plots of beds for paying patients. Something must be done to provide for the very large class of people with small means. Here were infirmaries actually in existence which could be adapted at a small cost. Beds could be opened on a self-supporting basis for people with small means. There were certain pitfalls to be avoided. All the guardians should do would be to provide the hotel part of the business and the nursing equipment and machinery. The important thing was that the patient's own doctor should follow the patient into the institution. Thus would be supported what he considered the central principle of all medical progress in this country—the provision of the fabric side by side with the freedom of relations between doctor and patient. If they allowed the guardians to provide medical aid they would be on the slippery slope of the municipalization of medicine.

Lord Dawson next came to what he called the larger policy. Despite the straitened financial circumstances of the country, it would be very helpful if the Ministry of Health would lay down the outlines of a policy to guide the health services, and especially the curative services, during the lean years when expenditure must be cut down to a minimum. He suggested there were two lines to be followed: to maintain all essential services, and to utilize these lean years to lay down the foundation of a constructive policy to be commenced when conditions admitted it. The utilization of infirmaries might be carried through, as was done at Manchester, with the complete co-operation of the medical profession. As for the difficulties which stood in the way of boards of guardians, who were ready to make arrangements, he suggested that the Government should introduce a short bill which would, he thought, be non-controversial and would settle doubtful points. At the present time he believed it was doubtful whether a board of guardians could legally charge more than the exact cost of any inmate. It had been found, too, that where infirmaries were attached to hospitals it had been very difficult to transfer patient from the hospital to the infirmary, if the patient lived in another Poor Law area. Troubles of that kind might be met by legislation.

Viscount Cave was confident that the Hospitals Commission would be able to take a wide view of these services, and after the experiences of a year or two might be in a position to make recommendations which would have a permanent effect on the future health of the country. He wished that the Government had found it in their hearts to recommend a larger grant. All the members of his committee were "anti-waste" members, and had cut down their recommendations as much as possible; but he was sure the hospitals would do their best with what the Government would provide. A suggestion had been made to him that this half-million was for the current year, and that a question might arise again with regard to the year 1922. It was a point he was content to throw out without desiring an answer at the present time. He agreed with Lord Burnham that the insured person had no less claim to hospital treatment than those uninsured; and that the insurance societies owe a great deal to hospital work, and were morally bound to recognize that help by making contributions to hospital funds. With regard to co-operation between Poor Law infirmaries and the voluntary hospitals, Lord Cave said he knew that they differed very much in quality. In some small infirmaries attached to workhouses the duties were not, perhaps, very adequately carried out, but in great infirmaries like those of Paddington, Lambeth, or Birmingham admirable work was being done. The committee had been struck with the amount and quality of the work. These institutions could supplement what was being done in the hospitals. If some small modification of the law was needed to enable co-operation to take place in the fullest degree he hoped the Government would not wait for the general reform of the Poor Law to secure this.

Medical Research Awards.

Mr. Briant inquired, on July 21st, whether, in view of the vital importance of medical research to the health of the nation, there could be provided a fund from which could be paid awards for discoveries or inventions which contributed to the general health of the community, and which were placed gratuitously at the service of the public—such awards to include pensions for those who had become totally or partially incapacitated in the course of research; and pensions for dependants who needed it. Mr. Balfour (Lord President of the Council) said he saw no grounds for differentiating medical from other forms of scientific research which might be of equal value to the community, and he doubted whether any system of pecuniary rewards would, in the long run, be beneficial to science or medicine. The difficulty of apportioning merit for even the greatest of discoveries was often overwhelming; monetary rewards would lead to jealousy instead of co-operation among research workers, and might prove to be an incentive to work for results which were sensational rather for the advancement of scientific knowledge. The question was fully discussed at a deputation which he received on March 7th, 1920, at the Privy Council Office. Mr. Briant asked whether Mr. Balfour recognized that in one branch alone—research into the value of x rays—a great number of medical men had lost their lives, and their dependants had got no recognition from the nation. Mr. Balfour said he believed that in the early days of x-ray investigation some medical men lost their lives. Their dependants were, of course, eligible for pensions. The Royal Bounty Fund was available for the purpose. Whether this fund was large enough was a question to which he was not competent to give an answer.

The Licensing Bill.

Not the least remarkable fact in connexion with the Licensing Bill introduced for the supersession of the Central Board of Control is that it obtained in the Commons, on July 23rd, a second reading without a division. The proposals represent—subject to certain changes made by the Cabinet—a compromise reached at round table conferences of parliamentarians of opposing views as to liquor trade restrictions. These meetings were held under the chairmanship of Sir Gordon Hewart (the Attorney-General), who produced the measure for the Government.

As regards London, it is intended that the hours of opening, which for week-days has been from 12 o'clock to half-past 2 and from 6 to 10 in the evening, shall be from half-past 11 o'clock to 3 in the afternoon and from half-past 5 until 11 o'clock at night; and that for hotels and restaurants an hour's extension shall be given for the sale of drinks with food, the houses to remain open until half-past 12 o'clock—

that is, for half an hour after the limit of time fixed for the sale of liquor.

For districts outside the metropolis the hours of opening are to be from half-past 11 o'clock until 3 in the afternoon and from half-past 5 in the afternoon until 10 at night; there is the same concession for hotels and restaurants of an extra hour.

For Sundays the permitted hours for the whole country are to be between half-past 12 and half-past 2 o'clock and between half-past 6 and 9 o'clock in the evening—subject to the operation of the Sunday Closing Act for Wales and Monmouthshire.

It should be said that while these times are indicated the fixing of the hours of opening and closing is left to the justices so long as they do not go beyond the maximum limit of nine hours in the metropolis for weekdays and eight for the rest of the country, and five hours for Sundays, with the concessions already noted for hotels and restaurants. The restriction on the strength of spirits is to be removed. As the bill stands the number of hours to be permitted for Scotland would be the same as for England; but as Scotland has hitherto had a less number there will probably be an amendment by Scottish members of the committee with the object of maintaining this difference. The powers of the Board of Control as to State management are to be vested for England and Wales in the Home Secretary and for Scotland in the Secretary for Scotland. The phrase used in this connexion is "for so long as Parliament may determine."

Infectious Diseases Notification Fee.

Mr. Jellett asked, on July 22nd, whether, in view of the serious loss involved to medical practitioners in Ireland, immediate steps would be taken to restore the fee to be paid for the notification of infectious diseases to its pre-war amount of 2s. 6d. Sir H. Greenwood said that having regard to the temporary character of the provisions of the Local Government (Emergency) Provisions Act, 1916, under which the reduction of fees was affected, no special action appeared to be called for at present.

Death Certificates.

Sir A. Mond, in reply to Mr. Waterson on July 19th, said it was not possible to state the number of deaths certified by registered medical practitioners, or the number which were not so certified. The available statistics were derived from death registration; and a death which was the subject of an inquest was registered on the certificate of the coroner whether it had, or had not, been previously certified by a registered medical practitioner. The figures of death registrations respectively on the certificate of a registered medical practitioner, on the certificate of a coroner's inquest, and without either a medical certificate or an inquest, were as follows:

	Registered on Certificate of Registered Practitioner.	Registered on Coroner's Certificate after Inquest.	Uncertified Deaths on which no Inquest was held.
1911	483,944	37,200	6 666
1912	443,938	36,668	6,333
1913	462,396	36,419	6,160
1914	472,768	37,695	6,279
1915	515,441	39 128	7,684
1916	463,929	36 760	7,528
1917	456,666	34,704	7.552
1918	570,605	33,012	8,244
1919	466,017	31,488	6.698
1920	429,426	30,995	5,709

On a further inquiry Sir A. Mond said that registrars of births and deaths had been required, since March 2nd, 1914, to report all cases of uncertified deaths to a coroner, but complete information as to the number reported in the previous years was not available.

The Length of the Session.

Mr. Chamberlain, in announcing, on July 20th, the arrangement of business to be made with the hope that the Prorogation might take place not later than August 26th, reminded the House that the passage of the Licensing Bill and of the Criminal Law Amendment Bill must depend upon general assent. Amongst the measures which he stated would be dropped was the Clinical Thermometers Bill, introduced last week.

The Supply of Optical Glass.—In Committee on the Safeguarding of Industries Bill, on July 20th, Mr. Acland moved to leave out "optical glass" from the schedule of goods chargeable with duty. He had yet to learn, he said, that the protection to be given in regard to optical glass would enable the industry to be set up in this country on anything like the scale on which it was conducted on the Continent. Sir Philip Lloyd Graeme, Parliamentary Secretary to the Board of Trade, urged in reply that if the optical glass industry in this country was not protected, we could not begin to build up a scientific instrument industry, and that when we were again landed in war, we should be cutting off the eyes of the army and navy and air services. Sir Donald Maclean held that to develop the industry we should need a special class of workman, and the proper course of the Government was to subsidize a sufficient number of men in a specific place and to keep them going at an adequate standard of excellence and otherwise leave the whole trade free to the world. He read an appeal signed by forty-two scientists representing universities and university colleges through England, Scotland and Wales, being interested in promoting chemical research and scientific inquiry: they protested against the restrictions of free imports embodied in the bill. They maintained that this policy would ultimately hinder the advance of scientific knowledge in this country and place us at a disadvantage with Germany. Dr. Murray said that a scientific optician in a city had told him that he was trying to patent an optical instrument which would be most valuable in scientific research in protecting the eyesight of those who had to use optical glass. But the price of optical glass in this country was so high as to make the invention impossible as a commercial proposition, at any rate until he could find out if he could get the glass on the Continent. This tariff of 33⅓ per cent. would fall upon much that was used in the hospitals and so put a serious burden upon them. It would be a tax on learning in prejudicing the position of the students. Sir William Pearce related the urgent circumstances under which the Government on the outbreak of war encouraged British firms to make the necessary output, and he held that in all the circumstances the tariff was advisable. Dr. F. E. Fremantle also defended the proposal. For the medical and scientific work which was going on in Great Britain it was desirable to have the manufacturers of optical glass working out their problems side by side with those who were working in laboratories. He did not think that it would exclude the importation of optical glass, but it would give a chance to our manufacturers to carry on. Mr. A. M. Samuel, Sir J. Greig, and Mr. G. N. Barnes supported the Government's intention, and on a division the amendment was rejected by 200 votes to 77. Mr. A. Williams then moved another amendment to exclude "ophthalmic lenses." Sir P. Lloyd Graeme answered that the men who were engaged in the manufacture of these things were the only men to whom the Government could turn in war time, and therefore they should be maintained. The amendment was rejected by 202 to 75. Mr. Hogge next moved to leave out the word "microscopes." Sir P. Lloyd Graeme renewed his previous argument. The time above all others when microscopes would be needed was when research work was being carried out in war. In past wars an enormous number of diseases had cropped up, and it had been essential to make the most minute examination of bacteria. Many men's lives had been saved by injection of specially prepared serum calculated to fight the bacteria. These serums would not have been prepared except by the use of the microscope. The amendment was rejected by 202 to 74.

The Grant for Hospitals.—Mr. Briant asked, on July 20th, whether if grants out of public funds were made to hospitals there would be provision for representatives of the public to serve on the governing bodies. Sir A. Mond said he would bring the suggestion to the notice of the Hospitals Commission, but he doubted whether a non-recurrent grant would justify requiring hospitals to make a permanent change of this kind in the constitution of their governing bodies.

Dr. Addison's Resignation.—A vote of £15,245,098, to complete the grant for the Ministry of Health for the current year, was taken in Committee of Supply on July 21st, to allow of a debate on the changed policy of the Government in regard to housing, and the circumstances of Dr. Addison's resignation of the office of Minister without Portfolio. Mr. Asquith moved the reduction of the vote by £1,000, to criticize the Government on the ground that it was not fulfilling its obligations, and this motion was seconded by Mr. Clynes, the leader of the Labour Party. The case of the Government, as put by Sir Alfred Mond and Mr. Lloyd George, was that the present commitments would occupy the building trade in England and Wales for eighteen months, and in Scotland for nearly two years; that the financial condition of the country absolutely required a halt in the making of fresh contracts; and that the effect of the decision would be to make prices easier. Dr. Addison, in the course of an earnest speech, insisted that the Government was making a great betrayal in stopping its housing programme, and that it was economizing to the detriment of the health of the people, while it was spending vast sums in Mesopotamia and in other ways. There would be, he said, a very grave waste in the compensation which would have to be given to local authorities and various persons in respect of preparatory work such as the laying out of roads and the making of sewers, undertaken in anticipation of schemes going through. Dr. F. E. Fremantle supported the Cabinet in the course it was taking. If housing contracts were to be made with the determination to see schemes through whatever they cost, if builders were to be sure of their profits and labourers of their wages at whatever expense, it was inevitable that they would put as little work into the business and get as much profit out of it as possible. With the sharp cut now being made labour would realize that it had got to put in work and employers to take diminished profit.

Then it might be possible to get better conditions, and it would be for the local authorities to produce their schemes under which such losses as had to be borne would be borne to a considerable extent by the local authority, who would thus be interested in seeing that it got value for money. Mr. Asquith's motion was negatived by 254 votes to 67.

Income Tax Assessment.—On report on the Finance Bill on July 19th, Sir Frederick Banbury moved the omission of the clause introduced into this year's bill by the Chancellor of the Exchequer "For the purpose of removing doubts," in regard to the three years' average assessment. It is a declaratory statement to the effect that certain reliefs were actually not continued in force for the year 1920–21 but were repealed and stand repealed. It further lays down that where through decisions of Commissioners any persons were relieved under the impression that the relief was legal, they are to pay the back money. It will be remembered that the whole controversy arose on the question whether a repeal of Sections 43 and 44 of the Income Tax Act of 1918 was necessary, or whether the fact that they were not included in the Act of 1919 carried repeal. Sir Robert Horne insisted that there was really no room for the misapprehension which had arisen, but in the debate opinions differed on this subject. On the division the clause was retained by 244 to 76.

Naval and Military Hospitals.—In reply to Commander Bellairs, on July 22nd, Mr. Amery stated that the total possible number of beds in Haslar Royal Naval Hospital was 1,118. During the period January 1st to June 30th, 1921, the maximum number occupied was 549 and the minimum 370. In reply to Commander Bellairs Sir L. Worthington Evans stated that there were 200 beds in Cosham Military Hospital; the maximum number occupied during the first six months of 1921 was 104 and the minimum number was 39—on one day only. The distance from the Naval Hospital of Haslar was twelve and a half miles by road and seven by road and ferry.

Criminal Law Amendment Bill.—When the second reading in the Commons of this measure (after passage in the Lords) as noted in last week's issue, was taken in Standing Committee on July 26th, Mr. Rendall was chairman. On Clause 1 (consent of young persons to be no defence) an amendment by Major Christopher Lowther to alter the age from 16 to 15 was rejected. Mr. Rawlinson moved an amendment to add to the clause the words, "but the party so consenting shall be guilty of a misdemeanour." Mr. Shortt (Home Secretary) and Dr. Farquharson (on behalf of the promoters of the bill) opposed the qualification as cutting at the value of the measure. Earl Winterton thereupon proposed that the qualification should apply in cases of young persons 15 years of age. He argued in favour of this limited provision as a protection against blackmail. On a division the amendment thus constituted was carried by 17 votes to 12. On Clause 2 an amendment by Mr. Rawlinson to omit Subsection 1 (laying down that reasonable belief that a girl was 16 years of age should be no defence under Sections 5 and 6 of the Criminal Law Amendment Act, 1885) was rejected by 21 votes to 4. On the motion of Sir Ryland Adkins, Subsection 2 was omitted. This proposed to extend to twelve months after the date of an alleged commission of an offence, the period within which proceedings might be taken. On Clause 3 (to enlarge the maximum penalties that might be imposed on brothel keepers), the Committee accepted an amendment, submitted by Sir Robert Thomas, that such person, if not a British subject, might be, on conviction, recommended for deportation, in addition to other punishments. A new clause, brought forward by Sir Robert Thomas, that any alien found guilty under summary jurisdiction of procuring, or attempting to procure, might be recommended for deportation, was also agreed to.

War Pensions Bill Through Committee.—The War Pensions Bill was taken in Grand Committee in the House of Commons on July 19th and 20th. Clause 1 as amended, requires the Minister, before making an Order setting up a War Pensions Committee, to consult persons and bodies, including local committees affected thereby, and to set forth the conditions of appointment, the conditions of removal and the period of office. The Minister (Mr. Macpherson) said that he intended that a scheme should be drawn up by an advisory committee composed mainly of men and women, independent of the Ministry. In Clause 2 amendments were inserted, at the instance of Sir Henry Harris and Mr. Neville Chamberlain, to include among the functions of the War Pensions Committee, the making of recommendations as to the administration of pensions within their area; the reception of reports from officers as to the state and progress of applications in the area, and the securing of assistance and co-operation of voluntary workers. A new clause was inserted, requiring the Minister to appoint a central advisory committee consisting of officers of the Ministry (Local and Central), ex-Service men, and representatives of the War Pensions Committee.

Arrears of Insurance Payment.—Sir A. Mond, on July 20th, informed Mr. Jesson that insured persons who had fallen into arrears through unemployment were given an opportunity of making a comparatively small payment to avoid reduction or suspension of benefit. In view of the great amount of unemployment during the past twelve months the time during which such payments might be made had been extended to November 30th next, and approved societies had been empowered to make a special concession in the case of members who had been unemployed for more than twenty-six weeks in the year.

Disability Retired Pay.—Colonel Milbank asked, on July 21st, whether pensions granted to regular officers under certain Articles were regarded as disability pensions or as service pensions, in cases where the officer's service had been too short to entitle him to a pension unless previously passed as permanently unfit. Mr. Macpherson said that retired pay under the Articles quoted was regarded as disability retired pay, but for purposes of relief from income tax under the Finance Act, difficulties of interpretation had arisen on which it had been necessary to obtain a legal opinion. It was hoped to adjust all doubtful cases shortly. The Royal Warrant of July 2nd, 1920, allowed of the increased part-pay rate laid down by the War Office in 1919 being given under certain conditions and without any additions of any kind as minimum disability rates to regular officers disabled by service in the great war. As from January 1st, 1919, a bonus was allowed to an officer in receipt of a wound pension and in receipt of the 1914 half-pay rate, the pension being reckoned at 20 per cent. of the sum of the two awards, subject to a maximum of £350 a year. In other cases of regular officers disabled by war service a disablement addition was added to the 1914 rate, together with a bonus of 20 per cent. reckoned on a corresponding rate for a temporary officer and subject to the same maximum.

Health and Unemployment.—Sir B. Chalwick asked the Minister of Health, on July 21st, whether, in view of the official report of his chief medical officer calling attention to the already apparent traces of the lowering of vitality in the health both of mothers and little children, due mainly to unemployment and its effects, he was taking any special precautions to ensure assistance, so far as it could be given this winter, to those victims of industrial unrest. Sir A. Mond replied that he was having this matter carefully watched, and would give whatever assistance was possible within the limits of his financial resources.

Medical Appeal Board Chairmanship.—Mr. Hayward asked whether in the Easington District, County Durham, appeals against decisions of the medical board were heard before another tribunal having the same chairman as the medical board whose decisions were being appealed against. Mr. Macpherson replied that the personnel of a medical appeal board should be entirely different from that of the board whose assessment was challenged. He was having inquiries made.

Sanitary Condition of Post Office Buildings.—Mr. Wignall asked, on July 21st, whether in 1920 a special officer was appointed to visit post office buildings and report upon their sanitary conditions; and whether the staff had, in many instances, complained, and the local medical officers had also reported direct to the chief medical officer of the post office. Mr. Pike Pease said he was unaware that many post offices were in an insanitary condition. In some cases the inevitable postponement of structural alterations and building works, had delayed the carrying out of desirable improvements, but cases of complaint by the staff, or representations by the medical officers, were the subjects of investigation. No special officer had been appointed to visit offices and report upon them.

Wages in Hospitals.—Mr. Thomas Griffiths asked, on July 26th, whether the attention of the Secretary to the Treasury had been drawn to a resolution passed by the Pharmacists' Branch of the National Drug and Chemical Union to the effect that no grants from public funds should be made to any hospital or other institution unless the provisions of the fair wages clause were observed in the payment of the employees, and whether he would make the fair wages clause applicable in connexion with grants to hospitals. Sir Alfred Mond (Minister of Health) said he would bring the matter to the notice of the Hospitals Commission.

Milk Supplies.—On July 18th the Minister of Health stated, in reply to Major Kelly, that local authorities are supplying milk in considerable quantities to children under five. Subject to conditions under the Maternity and Child Welfare Act, where liquid milk cannot be readily obtained, dried milk is provided. He had no evidence of such a shortage of liquid milk as to make further action necessary.

Small-Pox in Glasgow.—Mr. Munro informed Mr. R. Young, on July 18th, as to the outbreak of small-pox in Glasgow in 1920 that no case in the list of unvaccinated persons had been vaccinated before exposure to infection. Of the 128 cases classified as unvaccinated, 19 who were contacts with previous cases were vaccinated during the outbreak, but after exposure to infection.

Anthrax in Brushes.—The Minister of Health states that samples of imported shaving brushes have been examined from time to time, but so far only brushes of Japanese origin have been found to be infected with anthrax. The further importation of Japanese shaving brushes was prohibited in February, 1920, by an Order in Council, which remains in force.

Shell Shock Cases.—In reply to Brigadier General Surtees, on July 12th, Sir A. Mond said that the Board of Control was unaware that any ex-service men were confined in asylums or hospitals for the insane, other than those men who had been certified as insane, amongst these were cases in which insanity had supervened upon shell shock. There were several neurological hospitals under the control of the Ministry of Pensions where ex-service patients whose mental symptoms did not amount to confirmed insanity, were being treated.

England and Wales.

British Hospitals Association.

VISCOUNT CAVE and the members of the Voluntary Hospitals Committee were entertained to luncheon on July 20th at the Royal Automobile Club, London, by the British Hospitals Association, Sir Arthur Stanley, president of the association, presiding.

The Chairman said that the British Hospitals Association wished to express to Lord Cave and his committee its gratitude for the work the committee had done on behalf of the voluntary hospitals. The committee had gone to the heart of the matter, and had tried to find the hospitals a way out of their difficulties. Speaking for himself, Sir Arthur Stanley said that he was one of those who had always believed that, given a little time, the voluntary system could reassert itself and become as successful again as it was in the past. The fact that time was being given was in no small degree due to Lord Cave and his excellent committee. Mr. Wade Deacon regretted that the Government had not seen its way to adopt the report of Lord Cave's Committee in its entirety. Instead of giving a million for each of two years and a quarter of a million for improvements and alterations the Government had given only half a million altogether, and that not as a free gift but on the understanding that pound for pound was to be raised. He thought it would be wise at once to fix a basis on which the money would be distributed. Viscount Hambleden considered that some of the suggestions made by Lord Cave's Committee had already been considered by representatives of the London hospitals and of King Edward's Hospital Fund, and he hoped that before long the upward curve in receipts would prove that the hospitals could act in the way Lord Cave's Committee had recommended. Viscount Cave, in responding, said that the Voluntary Hospitals Committee had had very great advantages, for the problems with which it was entrusted interested many people; it had had the support of the great body of those who had done real work in connexion with the hospitals, and had had also the constant support and help of the Ministry of Health. He was interested to learn that three of the London hospitals were combining to make an experiment of what was known as the "Sussex scheme." The great mass of the population had the duty of contributing, as he had found they were willing to do, their share towards the maintenance of the hospitals, but employers of labour should not forget that they also had an obligation. He believed that if hospitals were to prosper they would have to work together more in the future than they had in the past. The Marquess of Linlithgow proposed the health of the Chairman and of the British Hospitals Association, and the Chairman, in responding, mentioned the valuable work of the Secretary to Lord Cave's Committee, Mr. L. G. Brock, who was to continue as secretary of the new Commission.

London County Council.

The London County Council has appointed Mr. E. S. Littlejohn, M.R.C.S., L.R.C.P., to be resident medical superintendent of the proposed Manor institution for defectives. The use of the Manor mental hospital has been certified for the reception of 1,000 cases of mental defect under the Mental Deficiency Act. The remuneration attached to the appointment is £1,000 a year (on pre-war economic conditions—that is to say, carrying a bonus), with an unfurnished house, and rates, taxes, and water supply free. The Council, which had previously decided to grant occasional daily leave for medical officers at mental hospitals in order that they might attend a course for a diploma or degree in mental disease, has now decided that this study leave can be granted to cover the taking of a diploma or degree in any branch of medical or sanitary science; the necessary leave, with full pay, for the period of examination is also granted. The by-laws for the regulation of licensed establishments for massage or special treatment in the County of London have come up for revision, and the London County Council is making application to the Home Secretary for confirmation of new by-laws. These follow generally those previously in force, except that one of the by-laws has been extended to prohibit the employment of persons of known immoral character and the giving of treatment behind locked doors. An attempt was made to frame a by-law as to the technical qualifications to be possessed by persons giving massage and other treatment, but this proved to be a matter of considerable difficulty; and reliance is placed upon the former by-law giving the Council general power to refuse a licence to any establishment "in which massage or any curative treatment is or may be administered by any person who does not possess such technical qualifications as may be reasonably necessary."

Nursing at the Leeds Union Infirmary.

During the last quarter of a century there has been going on very quietly, very unobtrusively, but with great efficiency a highly important work in connexion with the improvement of the nursing in the Leeds Union Infirmary. About twenty-five years ago Dr. James Allan, who has been the medical superintendent for some forty years, instituted a course of training for the nurses. With untiring zeal he has carried on this work aided by his subordinates and by the matron; specimens and diagrams have been procured and systematic tutorial instruction has been provided. A member of the honorary staff of the General Infirmary was invited by the guardians to act as examiner. The first examination was held in June, 1896, and examinations have been held annually without a break since that date. The examination is conducted by written questions and by a *viva voce* interview in which the candidates are separately examined by the external examiner in the presence of the medical superintendent and the matron. In sending in his last report in May of this year the external examiner mentioned that this was his twenty-sixth annual report, that on the first occasion there were only three candidates, but that since then the number had increased and has been as high as 32. The total number of candidates examined during the twenty-five years was 455. There are projected improvements in connexion with the work of the Union Infirmary which will lead to a fuller and more varied training for the nursing staff. The standard of general education shown by the candidates has been remarkably good, and increased opportunities for medical, and especially for surgical, training will be attended with the best results. By those who have been able to follow the development of the training of the nursing staff at this infirmary Dr. Allan's work is regarded as beyond praise.

Scotland.

The Census.

FROM a written answer to a Parliamentary question it appears that the preliminary examination of the reports of the recent census shows that the population of Scotland has increased by 121,253 persons, or 2.5 per cent. This increase consists of 39,457 males and 81,796 females, the larger disproportion than usual being accounted for probably by the loss of men in the war. The largest percentage of increase appears to be in the county of Bute, which includes the islands of Arran, Bute, and the Cumbraes, and shows an increase of 85 per cent. This is a curious result, and probably the reason for it may be ascertained after the census returns have had a final revision and examination. It may be explained, perhaps, by an increase in the number and an improvement in the financial circumstances of that part of the working population of Glasgow and its industrial suburbs which prefers to make its home farther down the Clyde. The county of Lanark, with a population of 1,539,307, shows the largest actual increase—namely, 53,189. Some of the northern counties show a very striking fall in population, for instance, Caithness, with a population of 28,284, has a decrease of 11.6 per cent.; Sutherland, with 17,800, a decrease of 11.8 per cent.; Ross and Cromarty, with 70,786, a decrease of 8.5 per cent.; and Aberdeenshire, with 300,980, a decrease of 11,197, or 3.6 per cent. Among the burghs, Glasgow, with a population of 1,034,069, has the largest increase, 25,582, or 2.5 per cent., while Dundee, with a population of 168,217, shows the largest decrease, 8,134, or 4.6 per cent. Those districts of the country

which are industrial (the town of Clydebank, for instance, has an increase of 23.9 per cent.) and mining suburbs (Dunfermline, with an increase of 36.5 per cent.) are those which show the largest increase in population, while the agricultural and Highland counties show a considerable decrease. The decrease in the large industrial city of Dundee may be because the jute trade, which was adversely affected during the war, has not yet recovered, and its very large female population may have found work in other districts; while Aberdeen (the metropolis of the fishing industry) and Edinburgh, which also show considerable decreases, are, like Dundee, situated on the East Coast, and must therefore have suffered financially from the effects of the war more severely than other towns. However, the result as a whole may be taken as satisfactory, but such statistics of a census must have a much more thorough sifting and consideration before general conclusions of real value can be drawn from them.

The Professorship of Midwifery in the University of Edinburgh.

It would appear that the University authorities in Edinburgh are finding some difficulty in filling the Chair of Midwifery. Sir Halliday Croom's intention to resign was intimated several months ago, and yet we understand that the chair has now been placed "in commission," and a temporary appointment of a lecturer on midwifery for the winter term has been made pending the making of a permanent settlement. Sir Halliday Croom, it will be remembered, has been lecturing on obstetrics to the male students; Dr. Barbour has been the lecturer on gynaecology to the same, whilst the women students have been taught both these subjects by another lecturer in a separate class. Dr. Barbour's appointment terminated (by age limit in the Royal Infirmary) last spring, and this, associated with Sir Halliday's resignation, made it possible for the Medical Faculty and the University Court to reconsider the advisability of conjoining the teaching of obstetrics and gynaecology under one professor, an arrangement which held good until 1906 or so. It is understood that the Medical Faculty, the University Court, and the Curators of Patronage have had this question under consideration, but that no decision has been reached. A subsidiary question which seems to call for thought is whether in future the subjects of obstetrics and gynaecology should be taught as a mixed class or separately (as at present).

Portrait of Lord Lister for Edinburgh.

At an extraordinary meeting of the Royal College of Surgeons of Edinburgh, held on July 18th, the President, Dr. George Mackay, presented to the College a portrait of the late Lord Lister. The picture is a full-sized copy made by Mr. Dorfield Hardy of the portrait painted by W. Ouless, R.A., in the possession of the Royal College of Surgeons of England. In accepting the portrait on behalf of the College, the Vice-President (Dr. McKenzie Johnston) expressed the satisfaction the College had in acquiring this memorial of its most distinguished Fellow through the generosity of their President. Joseph Lister entered upon his great surgical career as house-surgeon to Professor Syme in the old Royal Infirmary of Edinburgh. Later he acted as a lecturer on surgery in the Extra-mural School in connexion with the Surgeons' Hall and as assistant surgeon to the Royal Infirmary, and subsequently he succeeded Syme in the chair of clinical surgery in the university. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1855, and on the occasion of the celebration of the fourth centenary of the College in 1905 was elected an honorary Fellow, the diploma being presented by the President, Sir Patrick Heron Watson.

Scarlet Fever in Edinburgh.

The report by Dr. Maxwell Williamson, Medical Officer of Health for Edinburgh, on the recent scarlet fever outbreak, shows that the epidemic, which reached a total of 337 cases with one death (that of a man 59 years of age), was confined to a comparatively small area of streets of tenement dwellings at the Leith boundary of Edinburgh. From the characteristics of the epidemic it was evident that the milk supply was involved, but it was remarkable that the infection was traced to no fewer than four separate milk supplies

Ireland.

Irish Medical Committee.

At a meeting of the Irish Medical Committee, held in Dublin on June 30th, with Dr. J. M. Day in the chair, Mr. R. J. Johnstone was unanimously re-elected chairman and Dr. Power vice-chairman, Dr. T. Hennessy being re-appointed medical secretary and Mr. C. H. Gick secretary. The draft new regulations and by-laws of the British Medical Association were considered, their purpose being to provide machinery whereby the Association could admit into co-operation with itself any Irish or Overseas Branch which considered that dissolution of the Branch, establishment of an independent body, and subsequent affiliation with the Association would be the best way of obtaining complete independence such as might be secured by the formation of an Irish Medical Union or Association. Mr. R. J. Johnstone and Dr. W. O'Sullivan were appointed to represent the Irish Medical Committee at a conference with representatives of the Council of the British Medical Association in London on July 5th.

The resolution passed by the Royal College of Surgeons in Ireland in connexion with the military order regarding reports on wounded persons admitted to Irish hospitals for treatment was approved and adopted. It was resolved to form, with other Irish medical bodies, a committee for the purpose of organizing the profession on the question of obtaining adequate remuneration for life insurance.

Grants to Irish Hospitals.

The following resolution was unanimously passed:

> The Irish Medical Committee is unable to find any justification for the decision of the Government to refuse to give any aid to the Irish voluntary hospitals, while granting a sum of £500,000 to the British hospitals; the grant is intended to assist hospitals out of the financial difficulties arising out of the abnormal economic conditions of the past few years, conditions which have pressed as heavily on Irish hospitals as on British; moreover, the Irish hospitals injured their resources, like hospitals elsewhere in the kingdom, by their services to soldiers and sailors during the war.

It was directed that the resolution should be forwarded to the Chief Secretary and several members of Parliament.

Correspondence.

BIRTH CONTROL.

SIR,—Dr. Scharlieb is happy in the faith that the uncontrolled propagation of the species is the pleasant duty of man. Fortunately for the human race most women crave the refined joys of motherhood. The anxieties, forethought, thrift, and self-denial which children occasion provide an outlet for woman's finest qualities, and keep her mind intellectually and morally sound. If the natural functions of a married woman are frustrated artificially or from inherent sterility the nervous system may suffer. But provided a woman has the number of children she is able to rear—and life in these days means more than hard work and hard fare—artificial limitation of the family is harmless to the woman and is no great menace to the race.

When this planet was an empty land and the mansions in the skies awaited occupants there was no need to restrict the population. But it is fatuous to assume that the earth was set going for the benefit of man, or that it will maintain him regardless of numbers. Lecky in his wise way tells us "that it is a moral offence to bring children into the world with no prospect of being able to provide for them." If this statement is true a large section of humanity is guilty of gross immorality and is responsible for much avoidable misery. So long as the means of livelihood are ample and large families no handicap in the struggle for existence the reproductive instinct has full play; when the people multiply so fast that the food is inadequate the reproductive instinct comes into opposition with the instinct of self-preservation and the birth-rate is checked. It is not perhaps good taste to consider the means employed to this end, but assuredly continence is not, and never will be, the principal one. Whatever the

means employed, and whether righteous or not, the propensity to limit the highest form of life operates silently and steadily amongst the more thoughtful members of all civilized countries.

Many women of the educated classes revolt against the drudgery, anxieties, inconveniences, disease, and disfigurements which attend the yearly child-bearing advocated by the moralist. The wonder is they have not revolted before. They prefer a small family, which can be well brought up, to an unlimited progeny which carries them to the limit of their physical and financial resources. Reckless and improvident child-bearing does not add to the health and prosperity of the nation; it increases the infant mortality, and places an unfair burden on the State. The socially efficient are asked to fill the coffers of the State to support the luckless offspring of those who think the least and procreate the most. This is harmful to all sections of society.

Moreover, it is conceivable that to be fruitful and multiply will not always be the sound advice it is now thought to be. If medical science exterminates the more destructive diseases, as it hopes to do, and if brotherly love breaks down national frontiers and abolishes war, reproduction and self-preservation may come into grave conflict; the unrestrained multiplication of the race may then become a criminal offence.

Dr. Scharlieb's contention that the wise limitation of families wrecks the nervous system of women, inflames the passions of men, and fosters the gratification of lust, with or without marriage, is not proven.—I am, etc.,

Birmingham, July 18th. G. A. WILKES.

SIR,—There is a great difference between that which has been well termed "constructive birth control" and the general and indiscriminate use of "contraceptives." In certain circumstances, under certain conditions, both hygienic and economic, the family can be limited and "spaced," under medical advice, with great and direct benefit both to the State and the individual. In my opinion, the knowledge of the means by which this result can be safely and properly obtained should be imparted to those who are most likely to derive benefit from it—the poor and the feeble. The upper classes and the rich are sufficiently instructed. But the widespread advertisement and public display in shop windows of "contraceptive" appliances can do nothing but harm. The number of young girls who go wrong and are more easily led astray trusting in these methods as a sure shield against impregnation is legion. I have had experience in these matters for forty years, and I am convinced that the standard of practical morality among young women has steadily deteriorated during that time in which the doctrine of prevention of conception has been preached. The policy of the British Medical Association that the public display and advertisement of "contraceptives" should be prohibited by law is absolutely right, and I hope it may soon prevail.—I am, etc.,

London, W., July 22nd. E. B. TURNER.

SIR,—The advocates of birth control are so honest in their convictions that they boldly adopt an attitude of intellectual anarchy. Artificial birth control is against the laws of nature, and anything against these laws was held by the ancient pagan world to be vicious. Moreover, the use of preventives involves the doing of an act without being prepared to accept the natural consequences, and this mankind has generally considered to be wrong. Without attempting to dispute the truth of these two propositions, those who favour birth control seek to prove that its practice is beneficial to humanity, or in other words, that the end justifies the means. That is a doctrine which has been universally repudiated by mankind, and incidentally there is a legacy of 1,000 Rhenish guilders awaiting anyone who, in the judgement of the faculty of law in the University of Heidelberg or of Bonn, is able to prove that any Jesuit ever taught this doctrine or anything equivalent to it. Nevertheless, if birth control, although an offence against moral and natural law, was beneficial to humanity, then at least there would be an argument in favour of the end justifying the means, and in favour of intellectual anarchy towards what has hitherto been accepted as a moral law.

But those who advocate birth control have neither proved that it is beneficial, nor have they disproved the generally accepted clinical opinion that these practices lead to physical disabilities. Dr. Killick Millard sent a question paper to 100 medical practitioners selected at random, and the majority of replies received stated that two forms of contraceptives were not injurious. Now we are not told how many replies were received, and, as doctors do not include amongst their virtues the answering of polemical letters, I hazard the guess that Dr. Millard was fortunate if he received twenty answers. Although the majority of those who did reply, presumably because they held strong views on the subject, were in favour of birth control, it is unwarranted to suggest that the majority of those who did not reply were of the same opinion. Nor do a few opinions culled at random outweigh the evidence of Dr. Mary Scharlieb and of many other gynaecologists and physicians that these practices are harmful to women and to men.

Dr. Millard states that sterility is so common that it may have no relation to birth control, but against this we know that sterility is less common in countries such as Ireland and Spain where birth control is not practised. Moreover, amongst the poorest peasants in the West of Ireland, where there are neither infant welfare clinics nor societies for preventing parents being cruel to their children, the infant mortality rate is lower than it is in the city of Leicester. Furthermore, the people of those countries are very much happier than the people of Great Britain. To avoid the possibility of sterility Dr. Millard would advise all young couples to make sure of some children before beginning birth control. This is ingenious. Unfortunately, it is during the early days of married life that most sacrifice and self-denial is demanded of parents in the interest of children, and if the parents have prospered in the world there would be less reason to limit the family later on.

Malthus, who was so concerned about the birth rate that he forgot that every one of us must die, would have welcomed the views of Dr. Binnie Dunlop, because he repeats his economic and statistical fallacies, long since disproved. The number of inhabitants that a country can support does not depend on the amount of food that the country can produce, but on the industry and culture of its people, and a high birth rate is not of necessity associated with a high death rate.[1]

Even if birth control gave rise to no physical disabilities, its psychological results require to be considered, because mankind is something more than the appanage of a testicle or of an ovary. It may be asserted without fear of contradiction that no ordinary man or woman approaches or begins the practice of birth control without experiencing at first an unpleasant feeling of repugnance and shame. Later on these feelings may be overcome by habit, but what is their effect on the relation between husband and wife, on their emotions towards each other, and towards the whole sexual nisus? Mr. Bernard Shaw recently stated at the Medico-Legal Society that when people use the most usual method of birth control they are engaging, not in sexual intercourse, but in reciprocal masturbation. That is the plain truth of the matter. Again, as a friend in the Church of Scotland once remarked, "The man who adopts these measures is simply using his wife as he would use a prostitute." What, then, is the psychological effect of these practices on the mutual love—if an old-fashioned word be not here out of place—and on the self-respect of two people? Does birth control make for happiness, or does it place mutual love at the mercy of an irresistible animal desire which is neither denied nor satisfied?

Dr. Millard states that "There is room for full and thorough scientific research." If that be true, it is a thousand pities that any one should advocate birth control without first having made a thorough investigation into all its consequences.—I am, etc.,

London, N., July 23rd. HALLIDAY SUTHERLAND.

SIR,—From the Imperial point of view the artificial limitation of the family is much to be deprecated. The Government of the British Empire is in the position of the man with a large estate, which, however, is poorly developed, because he has neither children nor servants sufficient to work it. In England the population is very dense in the large towns and adequate in the country

[1] Notter and Firth's *Hygiene*, sixth edition, pp. 411 and 419.

districts, but in Australia, Canada, and South Africa the population is totally inadequate to the effective occupation of the land: therefore their mineral treasures and possible corn harvests are not produced, and the lands themselves are a constant temptation to their neighbours. There is no wonder that Japan casts longing eyes on Australia, and that the frontier of Canada would prove no bar to invasion by her great neighbour. Viewed from this point, the problem of artificial limitation of the family becomes complicated with many other questions into which I must not enter now: but we must remember that the movements of the British race within the territorial limits of the British Empire ought to be described as *migration*, not *emigration*, and that much care and thought should be given to the best means of encouraging our people to occupy a larger area of surface, and to avoid the great evils dependent on excessive urbanization in one part and insecurity of tenure in another part of our empire.—I am, etc.,

July 20th. MEDICUS.

MEDICAL IMPRESSIONS OF THE MINERS' STRIKE.

SIR,—During the sitting of the Sankey Commission, and in the various disputes between the Government and the miners since that time, it has been the practice of the miners' leaders to indulge in somewhat extravagant language when describing the hardships and dangers of the miners' calling, and to paint in the most sombre colours his miserable existence, his wretched house, the general sordidness of his whole environment, etc., all with the view of strengthening the appeal for any increase of wages being made at the time. As advocates of the miners' case they did their work exceedingly well, and if sometimes they "overdid the part" nobody was deceived—it was all in the game.

But when a colliery doctor of experience, as "General Practitioner" claims to be (July 16th, p. 94), makes statements and advances proposals on the miners' behalf that would put any miners' leader to the blush, the matter is more serious and calls for investigation.

"General Practitioner," who works in a large colliery district in South Wales, has been impressed during the recent strike with the paucity of sickness among the miners, the improvement in their general condition and appearance, and the remarkable results of open-air treatment in a few cases of pulmonary disease which came under his care. This of course is not surprising, since during the whole period of three months, in exceptionally fine weather, the miners were being fairly well fed, and had unlimited leisure for play and recreation in the open air. It does not strike "General Practitioner" that any other class of workers in the same circumstances would have shown a like improvement in general condition and appearance, but because, in this case, they happened to be miners he draws the inference that the miners' work is injurious to health, and advances the amazing proposition, "Would it not be economically and even morally profitable to give the collier fourteen days' rest from work, with full pay, after every three months' period of full time work?"

What a splendid thesis for a miners' leader to develop at the next demand for an increase of wages—"The suggestion of a medical authority," "quoted from the columns of the BRITISH MEDICAL JOURNAL"!

But the case that "General Practitioner" puts forward will not stand investigation. His reasoning is faulty. I suggest to him that it is very unwise to draw inferences as to the harmful nature of the miner's work from observations made during a long period when the miners were at play. Why does he not give us facts and opinions gained from his experience of the miners in their ordinary workaday life, and under continuous exposure to the conditions incidental to their underground occupation, and draw his conclusions therefrom?

As he has not done so, perhaps he will allow me to give some of my own, gathered in a much longer acquaintance with the miners than he claims for himself; gained, however, not in South Wales but in the county of Durham. I confidently affirm that as a class the miners in this county are strong, hardy and vigorous; in physique, general good health and freedom from disease they compare favourably with any class of workers in the country. Despite the arduous and dangerous nature of their work their mortality is below that of many other workers: they make capital soldiers, and excel in all athletic sports requiring strength and endurance, for example, football, swimming, etc. In temperament they are happy, hearty and optimistic.

Now these are facts and opinions about the miner, facts which can be substantiated by statistics, opinions which I can undertake to have endorsed by scores of colliery doctors in this county. I advance them against the inferences of "General Practitioner," and offer them as a sufficient answer to the four questions he asks. Can it be said of these men that they do not get as much sunshine and fresh air as they need, that they do not get the necessary rest from work and sufficient opportunity for healthy recreation, or that it is necessary or desirable on economic or moral grounds "to give them fourteen days' rest from work, with full pay, after every three months' period of full-time work"?—I am, etc.,

Co. Durham, July 19th. AN OLD COLLIERY DOCTOR.

CAPILLARY PRESSURE.

SIR,—If Dr. Gillespie will use an ophthalmoscope he will find at the disc an unqualified confirmation of Professor Leonard Hill's views. Before doing so I would ask him, however, to revise his erroneous conception of what Professor Hill has really stated.

Professor Hill has never, either in his lecture or any of his writings, "assumed that the pressure in the cerebral arterioles, capillaries, and venules was no greater than that of the cerebro-spinal fluid," but what he has demonstrated is that the venous pressure in the torcular Herophili stands at the same level as the intracranial pressure. The reference to this in the lecture could not have been put more concisely. Professor Hill stated:

"I found the pressure of the cerebro-spinal fluid, cerebral venous pressure, and the pressure of the brain against the skull were the same and varied together, and I concluded that the cerebral capillary pressure is only some 5-10 mm. Hg and is practically the same as the pressure in the cerebral veins; only the least difference is required to maintain the flow."

Now in the eye this equilibrium between venous pressure and fluid contents can be demonstrated by the aid of the ophthalmoscope, as I have detailed in a paper on the clinical proof of the venous level of the intraocular pressure (*Trans. Ophthal. Soc.*, xxxiv). All that is necessary is to observe the retinal veins at the disc, and while doing so touch the lid with as light a touch as possible. Instantly the proximal portion of the retinal veins will show a constriction, demonstrating that a pressure on the lid, so light that it might not be thought possible for it to be transmitted through the lid to the intraocular contents, nevertheless does so, and in so doing disturbs the existing level of equilibrium between intraocular and venous pressure. Equilibrium between the two is still maintained, but at the fractional higher level of the applied pressure, slight as it is, and the venous wall falls in in response.

The conditions in the brain and eye are identical. The pressure of the cerebro-spinal fluid and aqueous always balances the venous pressure, as measured experimentally at the torcular Herophili, or viewed clinically at the disc. This venous pressure is admittedly fractionally less than capillary pressure, but when this difference is translated into mm. Hg it is a negligible figure, as shown by Professor Hill in the quotation given above.—I am, etc.,

Nottingham, July 25rd. THOMSON HENDERSON.

SIR,—I do not propose to desist from answering Dr. Gillespie's letter (in your issue of July 16th) because he has discovered a lack of intelligence in Dr. Hill and myself. I am at least intelligent enough to know that argument on a difficult problem in physiology is not assisted by the introduction of personal remarks. I feel ready to make every allowance for the somewhat excitable and hyperbolic atmosphere that prevails occasionally in the city (Belfast) from which Dr. Gillespie dates his letter.

I do not propose to follow Dr. Gillespie from soap bubble films to garden hose-pipes. I am not concerned with how the tension of the soap bubble film or the tension in the wall of a hose-pipe is created. Experimental evidence already quoted by Dr. Hill and myself proves that a

capillary wall in normal conditions is under no such tension, however created. Dr. Gillespie wrote:

"When he (that is, Dr. Hill) makes a slight increase in the outside pressure in his modification of the Roy and Brown apparatus described in paragraph 17, this causes a diminution of the tension in the capillary wall resulting in a diminution of calibre which causes a slowing of the current, although he may not have made the outside pressure anything like as great as the inside pressure, as he wrongly assumes he has done in paragraph 19."

It is a perfectly fair deduction to make that Dr. Gillespie considers that the capillary wall under its tension is striving to narrow its lumen, and is prevented from doing so by the intracapillary pressure, precisely as a soap bubble wall is striving to narrow the diameter of a soap bubble, and is prevented from doing so by the internal compensating pressure in the bubble. Consequently, Dr. Gillespie holds that a pressure that is applied to the outside of a capillary wall narrowing the capillary lumen is not equal to or greater than the intracapillary lateral pressure. Experimental evidence shows clearly that there is no such tension in the walls of a capillary, and that the outside pressure which, when applied to the capillary wall, narrows the capillary lumen, overcomes the intracapillary lateral pressure.

Normally there is no intracapillary pressure high enough to create such tension in the capillary walls. The old measurement of intracapillary pressure of 30 to 50 mm. of Hg as measured on the finger at heart level is founded on a most inaccurate method. That is common knowledge to be found in every textbook. The arteriole pressure as measured on the finger at heart level is normally about 10 mm. of Hg; the capillary pressure is less, and approximates to the venous pressure. These low figures are the sum not merely of the lateral pressure but also of the kinetic energy of flow. Consequently the lateral pressure in a capillary is still lower and is in all likelihood balanced by the tissue fluid pressure outside the capillary wall. Consequently the capillary wall cannot be under tension.

Had those physiologists who wrote largely upholding pure physical theories of the production of lymph and urine not found that the measurement of 30 to 50 mm. of Hg as representing capillary pressure sufficed to overcome the osmotic pressure of blood protein, progress towards accurate capillary blood-pressure measurement would have been made sooner. I have been for several years perfectly familiar with the application in physiology of the formula quoted by Dr. Gillespie. It has already been used by those who maintain physical theories of lymph production to buttress up the inaccurate intracapillary pressures that lie at the very foundation of all their writings.

If Dr. Gillespie chooses to assume $p_1 - p_2 = 50$ mm. of Hg, by aid of a simple equation, he can prove another assumption. But it remains an assumption, not a fact. Dr. Gillespie writes:

"Dr. McQueen reaches a point of still greater absurdity, for he imagines he has proved that the pressure at a point in a capillary through which blood is being forced is less than the pressure at the point immediately opposite on the outside of the capillary."

I supplied actual figures for an equation of Dr. Gillespie's choosing. The figures were chosen *because I regard for Dr. Gillespie's assumptions*. The result was such a minute negative quantity that to all intents one may state no tension existed in the capillary wall. What is the use of writing the formula at all when we know that the best data available shows in all probability $p_1 = p_2$? Dr. Gillespie's figure of $p_1 - p_2 = 50$ mm. of Hg is as inaccurate as it is possible to be. The result I obtained, even when yielding to the assumptions of Dr. Gillespie, is in accordance with experimental findings. The result Dr. Gillespie obtains is simply a repetition of his original assumption and has no experimental proof to confirm it. Dr. Gillespie fails to quote Dr. Hill correctly. Dr. Hill wrote:

"An artery, big or small, when compressed by a surrounding fluid pressure is shut up by a compressive force *practically* equal to that of the pressure which is maintaining the flow through the artery and which is measured directly by a manometer connected with the lumen of the artery."

Dr. Gillespie omitted the word "*practically*," which means that the external compressing pressure is at most 1 mm. of Hg higher than the internal distending pressure. Further, Dr. Gillespie fails to appreciate that in measuring such pressure by the armlet method or by a terminal manometer, not merely the lateral pressure distending the artery but the pressure due to conversion of the kinetic energy of the blood flow into lateral pressure is measured. Consequently a flow of blood can be maintained through a vessel (capillary) whose lateral pressure balances the external tissue pressure and the blood vessels would not be shut up.

When Dr. Hill reduces the bulging of the brain at a trephine hole, with the animal in a horizontal position, he balances the lateral pressure in the arteriole-capillary venous network. The brain protrudes from the unbalanced bulging of the capillary venous network, and recedes when the calibre of these vessels is restored to normal. When the heart ceased beating these vessels collapsed to a greater or less extent, the external tissue fluid pressure tending to close them, which tissue fluid pressure can be balanced by altering the position of the animal and bringing gravity into play. Dr. Hill's method does not measure total pressure, lateral and kinetic, in the capillary venous vessels of the brain but the lateral pressure only. When he restores the volume of the brain to normal by counterbalancing pressure he restores the calibre of the capillary venous system to normal and measures the lateral pressure, the kinetic energy fraction still maintains the normal flow of blood in the capillaries. There is no analogy here whatever to the pressure of water in a garden hose-pipe and the pressure of the atmosphere.—I am, etc.,

Halesowen, July 18th. JAMES M. MCQUEEN.

SIR,—Dr. James McQueen has been good enough to submit the above letter to me before publication, and as it fully answers Dr. Gillespie's letter of July 16th it is unnecessary for me to make any further reply.—I am, etc.,

July 19th. LEONARD HILL.

TREATMENT OF ACUTE TOXAEMIA.

SIR,—I do not know whether sweating "not improbably corresponds to a revolutionary change in protein metabolism, and may be considered a part of the process of adjustment to altered biochemical states, analogous also in some way to tears in emotion." These abstruse problems always puzzle me. But I do know three things: (1) If Dr. King gives the dose I suggest to a pneumonic on, say, about the fourth or fifth day of illness, he will get the surprise of his life. The patient, if not too far gone for redemption, will be vastly relieved and not improbably will recover there and then. (2) Glands are fractionally distilling organs. (3) Toxins, if present in the sweat, can be detected there—for example, in diphtheria. Bacteriologists are looking for them at this moment.—I am, etc.,

Southsea, July 19th. G. ARCHDALL REID.

WOMEN DOCTORS AND PEDIATRICS.

SIR,—In the current issue of the JOURNAL the medical officer of health for Doncaster has an advertisement for an assistant for *maternity* child welfare and schools. Applications are invited, by *males*.

Surely this is a retrograde step. If there is one branch of medicine for which women are, at least as well as men, fitted it is the care of children—ante- and post-natally. On Wednesday morning I saw 28 babies officially and treated 16 of their mothers unofficially. Out of the 16 mothers I discovered that 3 were pregnant under three months, and another five months pregnant I already knew of. Surely this is important, as admittedly the ante-natal and neo-natal periods are the ones we have been able to safeguard least. Few pregnant women can continue suckling and be healthy, and there is so much one can do to help them. It may be early Victorian and it may be silly, but the fact remains that, had I been a man, the fact of pregnancy would not have been disclosed. Nor would the mothers' health have interested a man, unless she was very obviously ill. It is useless treating babies apart from their mothers. An ill mother is not a suitable custodian for a child. What I call the *pre*-ante-natal period is as important as any. One does not want to wait till the next pregnancy, when it is often too late for vigorous treatment, though it would appear that,

just as one thought some headway was being made, the Ministry of Health has decided only to allow milk for necessitous expectant mothers during the last three months. The early months are just as, if not more, important, especially when the mother has several young children and is exhausted by prolonged lactation. This economy, together with that of allowing no baby more than one pint of milk a day, till it becomes ill enough for a certificate for more, is one which might well have been made on something else—say telephones.

To get back to the point, which is that the British Medical Association should use its powers to prevent women being denied equal opportunities of service in such eminently suitable posts as those of pediatrics and venereal diseases of women.—I am, etc.,

Leeds, July 16th. MARION E. MACKENZIE.

NATIONAL PROVIDENT SCHEME FOR HOSPITAL AND ADDITIONAL MEDICAL SERVICES.

SIR,—I am afraid Mr. McAdam Eccles's comments on my previous letter to you are far from convincing, and I should like the opportunity of dealing further with the subject.

1. *Statistics.*—I fully realize that the scheme is intended primarily for the purpose of overcoming the present financial difficulties of the 113 voluntary hospitals in London, but if a bait must be thrown out to attract the money, why not make it an attractive one in the nature of a useful scheme instead of an expensive one which will be of very little use either to the general practitioner or to the public. If more than 1,200,000 persons subscribe it will certainly be a great success, especially from the consultant's point of view. I suggested that by the elimination of a certain class of case from the hospitals the deficit would diminish largely. Mr. Eccles's objection to this elimination, on the ground that it will interfere with the teaching of medical students, I will deal with in another paragraph.

2. *Facilities offered to Patients.*—I realize that the facilities will be available solely through the general practitioner, but what I urge is that the facilities should be available directly to the doctor. If a patient thinks that he or she should see a consultant, and the doctor thinks it unnecessary—and I can assure Mr. Eccles that patients will force their views on the subject on the doctor—the goodwill and harmony existing between doctor and patient is going to be seriously disturbed.

3. *Consultations at the Homes of the Patients.* Of course I admit that these are necessary at times, but I fail to see why such a large proportion of the sum collected should be set aside for this purpose. The scheme provides for one bedside consultation for every forty of the population per annum, probably ten times as many as are likely to be required.

4. *Facilities for the Doctor.*—Mr. Eccles states that if the scheme is a success, and sufficient money is forthcoming, "primary centres" will be established. If such is contemplated, why not go straight ahead and formulate a scheme which will provide these centres forthwith? However successful the scheme is, the cry later will be, "The sickness incidence is not increased by the existence of the scheme; no more clinics or institutions are required." A post-graduate college is also suggested. That will be extremely nice, but if you are going to teach your doctor and keep his knowledge up to date you should give him an outlet for using his brains and skill should he feel so disposed.

5. *Medical and Nursing Education.*—I have not overlooked the fact that material is needed for the education of the medical student. There are 113 voluntary hospitals in London. The material of twelve only is being used for teaching purposes. Surely some scheme could be devised whereby the enormous mass of valuable material passing through the other 101 hospitals could be made available for this purpose. Some form of co-operation such as exists between St. Mary's Hospital and the allied institutions could surely be arranged whereby this valuable material which is now wasted could be utilized for the benefit of future generations of medical men.

To sum up: the scheme as it exists at present will, if successful, be of undoubted value to the hospitals, although the "primary centres" scheme (which should include beds for cases where home treatment is unsatisfactory) would also relieve the strain on the hospital funds. The advantages to the average subscriber will be very small. The advantages to the general practitioner will be doubtful, and the advantages to the consultant will undoubtedly be the greatest of all.

The scheme has already been commenced in connexion with certain of the London hospitals, and it will be interesting to note with what measure of success it meets.—I am, etc.,

London, W., July 16th. S. CAPLAN.

DEATHS FROM PLUMBISM.

SIR,—In his interesting address on industrial hygiene Sir Thomas Oliver quotes Home Office statistics on the cases of plumbism and deaths therefrom for the years 1900–1919. The interest of the numbers lies not in their undoubted decrease so much as in the different rate of decrease in the two columns and the cause of this difference. The ratio of deaths to cases is as 2 to 57 (roughly) in the first quinquennial period, and as 2 to 23 in the last similar period.

Why should this be? Is it due to some medical cause? or has some fallacy crept in due to the ever-present human factor? for example, is there greater skill in the diagnosis of fatal cases, or greater slackness in the notification of mild cases, or greater reluctance on the part of the "mild case" to attend the doctor?

Admittedly the case for regulation, as opposed to abolition, of dangerous trades rests on statistics. Hence it is of some interest to inquire whether the large drop in the case rate or the small drop in the death rate is the more accurate measure of the benefit conferred on the lead industry by regulation.—I am, etc.,

July 25th. STATISTICUS.

Obituary.

F. W. N. HAULTAIN, M.D., F.R.C.P.E.,

Physician, Royal Maternity Hospital, Edinburgh.

DR. FRANCIS WILLIAM NICOL HAULTAIN, whose death occurred in Edinburgh on July 20th, will long be remembered as a gynaecologist of unusually alert mind, as a brilliant operator, as a successful and popular teacher of obstetrics and gynaecology, and as a man of the most kindly disposition. His many friends will sincerely mourn his death. As a consultant in his own speciality he was always in great request, and among his patients were to be counted many bearing famous names.

Born in Colombo, Ceylon, on June 6th, 1861, he received his education at Craigmount School and Edinburgh University, graduating M.B. and C.M. in 1882. For a few months after graduation he was interested in asylum work, but he soon found his way into the specialities of obstetrics and gynaecology, which he was to make so conspicuously his own, and after study at Prague, Vienna, and Berlin, he commenced practice in Edinburgh. He became a Member of the Royal College of Physicians in 1887, and proceeded to the Fellowship in the following year; in 1889 he graduated M.D., and in the same year he published—in association with Dr. Haig Ferguson—the *Handbook of Obstetric Nursing*, which has enjoyed great popularity, and has passed through several editions in this country and in the United States of America. During these early years Dr. Haultain had been acting as assistant to Dr. (afterwards Sir) Halliday Croom, but he began his individual career as a lecturer on midwifery and gynaecology in the Extra-mural Medical School in 1893. How well arranged and compact his lectures were could be surmised from the *Practical Handbook of Midwifery*, which he published in 1894, and which contained the substance of his teaching.

Meanwhile he had been appointed an assistant physician to the Royal Edinburgh Maternity Hospital (in 1900), and one of the assistant gynaecologists to the Royal Infirmary. The latter post he relinquished in a short time on account of the pressure of his rapidly increasing private and consulting work. He retained his post, however, as gynaecologist to the Church of Scotland Deaconess Hospital, which he held from its beginning up to a few months before his death. The nursing home which he established in

Lauriston Place, and later in Archibald Place, developed in process of time into the Hospital for Diseases of Women, with a full staff, upon which Dr. Haultain had always remained. In the special department of the treatment of fibroid tumours of the uterus by hysterectomy the success which he attained was for the time phenomenal, and many other gynaecologists found inspiration in his work and profited greatly by his example. How successful his operative practice was may be recognized from a reading of the many contributions which he made to the *Transactions* of the Edinburgh Obstetrical Society, of which he was President in 1910. In 1904 he took his place on the senior staff of the Edinburgh Royal Maternity Hospital, and served that institution actively till 1919, when he was appointed one of the consulting obstetricians. Dr. Haultain's services were also in great request as an examiner. He acted in this capacity for the Membership of the Royal College of Physicians of Edinburgh and for the Licence of the Triple Qualification; and later he was appointed an Examiner in Midwifery and Gynaecology for the Universities of Aberdeen, Edinburgh, Oxford, Manchester, and Durham, and for the Indian Medical Service. In 1917 the College of Physicians showed their confidence in him by appointing him one of their two representatives on the Board of Management of the Edinburgh Royal Infirmary, and had he lived a little longer he would inevitably have occupied the presidential chair of the Royal College of Physicians.

Dr. Haultain was one of the first in this country to test and then to advocate the practice of early rising in the puerperium; he did not, it is true, find that all were of his mind on the matter, but his confidence in the procedure was strong and the arguments which he brought forward in its support were weighty, whilst the results which he obtained in his own hospital and private practice were strikingly good. On the pathological side of his speciality his research on chorion-epithelioma was accurate, and gave a lead to British obstetricians and gynaecologists in their understanding of this most malignant and interesting neoplasm. Of late years he became a strong partisan of the so-called "twilight sleep" method of alleviation of the pains of labour. Here again he tested first and wrote afterwards, showing an enthusiasm which no one could regard as unfounded or as unsupported by clinical facts. He wrote upon the subject in the BRITISH MEDICAL JOURNAL of October 14th, 1916, and his last contribution to the literature of obstetrics was an article on "A further experience of the conduct of labour under twilight sleep," which appeared in the July number of the *Edinburgh Medical Journal*. It may be predicted that the enduring worth of Dr. Haultain's many services to the subjects of medical and surgical practice which he pursued will be associated mainly with these three things—the treatment of fibroid tumours, the practice of "twilight sleep," and the shortening of the resting period in the puerperium.

Outside his professional duties and activities Dr. Haultain was a keen fisherman, he played an uncommonly strong game of golf, and he interested himself in cricket, tennis, and football with enthusiasm. He always took a friendly interest in the younger generation; he was a prominent member of the University Athletic Club all his life, and for many years he served on the University Union Committee.

Until the past few months Dr. Haultain enjoyed good health, but then he began to suffer from asthmatic attacks. He sailed for the Canary Islands in June, but on the voyage he had a serious heart attack and was brought home in a critical condition. He rallied somewhat on his return to Edinburgh, but the improvement was transient. He is survived by his widow, who was the daughter of Dr. W. Lauder Lindsay of Perth, and by one son, Dr. W. F. Theodore Haultain, who was recently appointed assistant to the professor of midwifery in the University of Aberdeen.

Dr. J. LAMOND LACKIE sends the following personal appreciation:

Although not unexpected, the news of Dr. Haultain's death came as a great blow to countless friends. He enjoyed to an almost extraordinary degree the confidence and the affection of not only innumerable patients, but also of a host of professional colleagues. Haultain was a great obstetrician and gynaecologist; he was careful and accurate in diagnosis; he was a really brilliant operator, cool, courageous, and resourceful in emergency and at his best when difficulty arose. He loved his work and gave himself whole-heartedly to it. His hospital patients no less than those in private had a great regard for him; his interest in them all was real and personal, and he gave to each his most devoted service. He was an excellent teacher, both as a systematic lecturer and as a clinician. He infused into every subject and into every "case" just that touch of the unexpected and of the humorous which so attracts the student and holds his attention.

And yet when a friend thinks of Haultain it is at first on his outstanding personal qualities rather than on his professional success that he naturally dwells. The prominent feature of his character was his wonderfully cheery temperament; he seemed always in happy mood and in the best of spirits, no matter what professional worries he might have. It was impossible to ruffle him; he was never irritable, and no assistant or nurse ever found him hasty in word or deed. His keen sense of humour often led him to see cause for laughter when others could see nought but trouble and anxiety. Withal he was a man of strong opinions and he could uphold them when occasion arose. He was very jealous of the honour of the profession and of the reputation of the Edinburgh medical school, for which he himself did so much, and he was always ready to uphold them by speech and action. Men valued his judgement in public and private affairs, while the young graduate ever found him ready with good advice in the shaping of his career.

It is a matter of wonder that Haultain found time for so much outside his work. No keener sportsman ever lived, and his interest in sport of all kinds was unbounded. He excelled in all games: at one time he was a great cricketer, at another he was in the front rank of golfers, while throughout his life he was never happier than when out with rod or gun. He was an expert fisherman, and knew many waters in every part of the kingdom. He was a very good shot, and for many years before the war he had a shooting on the Borders, to which he repaired for many week-ends throughout the season. There he welcomed his friends, and many will recall those delightful parties with the happiest memory. Haultain by his constant humour, his flashes of wit, his ready pun, and his fund of story was the life and soul of every gathering. He was a most genial, kindly soul with a broad generous outlook on life and a deep sense of the brotherhood of our profession. He will be long and sincerely missed by all who knew him.

DOUGLAS VERNON COW, M.A., M.D. CAMB.

THE Medical School of the University of Cambridge has suffered a great loss in the death of Dr. Douglas Vernon Cow, at Redruth, Cornwall. He left Cambridge at the end of the Lent term for a holiday at Mullion, and there his fatal illness occurred.

Dr. Cow was the only son of Mr. and Mrs. Douglas Cow, of Streatham Common. He was educated at Harrow, Trinity College Cambridge, St. Thomas's Hospital London, and Vienna, obtaining the degrees of M.A. and M.D. and the D.P.H.Cantab. From 1910 onwards he devoted his life to pharmacology, and was well known throughout the world of science as a distinguished and enthusiastic investigator. His more important publications dealt with the action of the suprarenals and pituitary, though his earlier work was on the kidneys. He produced evidence for believing that water taken by the mouth was more effective as a diuretic than water injected into the tissues, because in the former case the water during its absorption from the alimentary canal caused the absorption of certain hormones which acted as specific diuretics on the kidney. He was also the author of a small textbook on pharmacology.

Dr. Cow had many interests outside his profession; he was for some time President of the Cambridge Swimming Club, was a well-known golfer, an enthusiastic motorist, and an ardent disciple of Sir Clifford Allbutt as a purist in the English language. With his colleagues and pupils Dr. Cow was always a good companion, and his lectures were amongst the most popular in the medical school. At the time of his death Dr. Cow was assistant to the Downing Professor of Medicine (Dr. Bradbury). He was entirely responsible for the teaching of pharmacology in Cambridge during the war, and from time to time had conducted

courses of lectures in London at King's College and the Middlesex Hospital. His disappearance from active academical life leaves a gap in Cambridge which it will not be easy to fill, for he was beloved alike by colleagues and students.

Dr. Cow leaves a widow. W. E. D.

Dr. LOUIS COBBETT writes: The death of Dr. Douglas Cow removes prematurely a genuine worker in the field of pharmacology. Just before his fatal illness he was engaged in some delicate experiments on anaphylaxis. Cow was not one of the thrusting sort, and was content to remain in the background. His work on the suprarenals and the pituitary gland, however, are well known. He was an experimenter of great skill, an excellent teacher, and a trusted colleague. He was most appreciated by those who knew him best, and his death is a severe loss to the medical school.

THE LATE SIR GEORGE SAVAGE.

SIR FRANCIS CHAMPNEYS, Bt., M.D., writes: The obituary notice of Sir George Savage deals with the main facts of his professional career, but fails to give a picture of his personality. Savage was a much more remarkable man than such an account would indicate. His individuality was striking. His chief characteristics were widespread interest, abundant energy, intense sociability, transparent candour, and whimsical humour. He was interested in everything, but especially in mountaineering (until the end of his life), in gardening and botany, in fishing, in fencing, and, of course, in golf. His mental activity was only equalled by his bodily activity. To sit next him at dinner was always a pleasure, for one was sure to find topics of common interest, and he was not a man who forced information upon his neighbour for his own glorification. He loved games, and played them as the first end in life—for the time being. He was, I think, the most clubbable man I ever knew; no wonder that he was always dining out! He hated pose and humbug, and cant could not breathe in his presence. One thinks of him now, naturally, with a smile on his face, a smile not of patronage, nor of sarcasm, but always of good fellowship. When he was ill (which was not often), he was generally the more humorous—often at his own expense. He did not, it is true, like growing old, but indeed his body became a misfit for a soul which always retained something of the boy. One will always remember him as a man of remarkable force of character, and in that sense certainly far above the average of his contemporaries; and as a prince of good fellows, his friends will not forget him.

J. WALKER DOWNIE, M.B., F.R.F.P.S.GLAS.,

Consulting Aural Surgeon, Western Infirmary, Glasgow.

WE regret to announce the death, on July 21st, of Dr. James Walker Downie, the well-known oto-laryngologist of Glasgow. Educated at Glasgow High School and University, he graduated M.B., C.M. in 1881. After holding resident posts in the Glasgow Royal and Western Infirmaries, and at the London Hospital, he commenced the practice of his speciality in Glasgow, and obtained the appointment of lecturer on diseases of the nose and throat in the Western Medical School, and of aural surgeon to the Western Infirmary. Subsequently he held the posts of lecturer on diseases of the throat and nose in Glasgow University, and surgeon to the ear, nose, and throat department of the Royal Hospital for Sick Children, and for some years he was consulting laryngologist to the Ochil Hills Sanatorium. Soon after graduation he had become a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow, and he was appointed one of the examiners for the Fellowship; he presented to the Faculty a handsome mace for use on ceremonial occasions. He was a former president of the Glasgow Medico-Chirurgical Society and of the Scottish Otological and Laryngological Society, a vice-president of the British Laryngological Association, and a member of many other medical societies, including the British Medical Association. Dr. Walker Downie was the author of a *Clinical Manual of Diseases of the Throat*, which reached several editions, of a *History of the Glasgow Medico-Chirurgical Society*, and of many papers on his speciality in the medical journals. There is no doubt that his health was affected by the loss of his only son in Mesopotamia during the war. He is survived by his widow and one daughter.

GEORGE PURVES SMITH, M.B., C.M.EDIN.,

Laoling Hospital, China.

WE regret to record the death, on April 28th, of Dr. George Purves Smith, of the English Methodist Mission, Laoling, North China. Born in 1850, Dr. Purves Smith was educated at Edinburgh Institution, and afterwards entered the Royal Agricultural College, Cirencester, where he obtained the diploma of the Royal Agricultural Society of England, and he subsequently became a farmer in Berwickshire. The scientific side of agriculture suggested to him the study of medicine, and he sold his farm, entered Edinburgh University, and gained the M.B., C.M. at the age of 32. In his university days he was one of the founders and the first secretary of the Student Volunteer Movement, and not content with appealing to others on behalf of missionary work, he himself became a medical missionary in China, under the London Missionary Society, going out to Tientsin in 1887. In 1905 he resigned from the staff of the L.M.S., and was appointed ophthalmic surgeon to the Imperial Chinese Railways. This post he resigned in 1913, when he returned to England, but almost immediately he proceeded to Nova Scotia, where he practised as an ophthalmic surgeon. His heart, however, was in China, and in 1917 he accepted the invitation of the English Methodist Mission to take charge of the Laoling Hospital and Medical Mission. A skilful general surgeon and physician, he always emphasized the fact that he was a missionary, and he died, as he wished, in harness. To quote a paragraph from his hospital report, published only a week before he died: "When we have made everything ready to the best of our ability, and just before we put the patient under chloroform, we call the patient's friends forward; we tell them that we are God's servants and that we must ask His help and blessing. Having prayed, we go ahead. All the major operations healed by first intention." For many years Dr. Purves Smith had been a familiar figure in Northern China, and much sympathy has been expressed by the foreign and Chinese community there with his widow and three sons.

WE regret to announce the death of Dr. JAMES SMART of Aberdeen, which occurred suddenly on July 13th when on holiday at Rothesay. Dr. Smart, who was 49 years of age, graduated at Aberdeen University in arts in 1894 and in medicine in 1899. He had an extensive medical practice in Aberdeen, where he acted as physician to the Aberdeen Infant Consultation Clinic. He was a member of the British Medical Association and of the Aberdeen Medico-Chirurgical Society. He held the rank of lieutenant-colonel R.A.M.C.(T.), and during the war commanded in turn for different periods the 1st Scottish General Hospital, Aberdeen, the Edinburgh War Hospital, Bangour, and the 4th London General Hospital. He is survived by his widow and one daughter.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on July 21st the following medical degrees were conferred:

M.CH.—J. B. Hunter.

M.B., B.CH.—B. K. T. Collins, H. T. Culshaw, L. B. Maxwell, K. Playfair, S. D. Sturton.

B.CH.—W. Shaw, N. D. Dunscombe, J. Whittingale.

UNIVERSITY OF LONDON.

At a meeting of the Senate held on July 20th Dr. F. S. Langmead was appointed as from August 31st, 1921, to the University Chair of Medicine tenable at St. Mary's Hospital Medical School. Dr. Langmead has held a number of posts at St. Mary's Hospital since 1902, and is assistant physician to the Hospital for Sick Children, Great Ormond Street.

The Rogers Prize of £100 for 1921 was awarded to Mr. Lambert Rogers, M.R.C.S., L.R.C.P., for an essay on "The surgical treatment of hyperthyroidism."

The following candidates have been approved at the examinations indicated:

M.D.—*Branch I, Medicine*: S. C. de Soysa, W. Wickramasinghe, G. B. Dowling, W. Lehmann, P. Harvey, W. A. P. Kerr-Pearse, G. M. J. Slot (University Medal), *J. H. Spencer, J. G. Wardrop.

A. Williams-Walker, A. Wills. *Branch IV, Midwifery and Diseases of Women:* Kathleen M. Coxon, Maud Gaskar, D. H. Geffen, Hilda G. Johnson, Muriel E. Landau. *Branch V, State Medicine.* Lena C. Adam, H. M. C. Macaulay, A. B. Portcous, R. W. Revell, P. S. Selwyn-Clarke. *Branch VI, Tropical Medicine.* J. Faustone, C. H. Heppenstall.

M.S.—*Branch I, Surgery:* A. L. Abel, A. W. Adams, J. A. W. Ebden, C. H. S. Frankau (University medal), R. J. McN. Love, H. W. S. Wright.

* Qualified for the University medal.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony held on July 14th the following degrees were conferred:

LL.D. (HONORARY).—William Maddock Bayliss, M.A., D.Sc.Oxon., B.Sc.Lond., F.R.S., Professor of General Physiology at the University of London.

M.D.—*J. Kirton, *G. F. Mitchell, A. J. Will.

M.B., CH. B.—‡ Annie Thain, ‡§Elsie J. Mann, ‡§G. O. Thornton, §C. A. Allan, A. B. Clark, R. Dawson, D. R. Dugan, Frances M. Duguid, L. I. Duncan, Margaret F. Fraser, Barbara M. Geddes, J. W. Gill, Ethel E. Gray, C. Joiner, Patricia H. Low (or Cassie), §M. Mindé, F. H. Mollière, R. M. Savege, Elsie J. Scorgie, Jenny H. A. Simpson, Francis M. G. Sinclair, Elizabeth M. Walker, Nora I. Wattie, F. Wilson.

The John Murray Medal and Scholarship and the Lyon Prize for the most distinguished graduate in Medicine (M.B. and Ch.B.) of the year 1921 have been awarded to Annie Thain.

D.P.H.—Emily M. Badenoch, C. A. Harvey, F. D. R. Keyt, Winifred M. A. Kindness, Mathilda F. Menzies, D. I. Walker.

* Commendation for thesis.
† First class honours.
‡ Second class honours.
§ Completed final medical professional examination with distinction.
‖ Completed final medical professional examination with much distinction.

UNIVERSITY OF GLASGOW.

AT a graduation ceremony held on July 18th the following degrees were conferred:

M.B., CH.B.—*J. R. Learmouth, †G. W. St. C. Ramsay, †W. L. Templeton, †J. M. M. M'Kenzie, T. F. Arnott, J. Barlow, A. K. Bowman, T. M. Burton, D. S. Campbell, T. C. Christie, P. B. Farrar, L. M. Johnston, A. A. Kirkland, W. M. M'Cash, A. H. M'Lean, G. L. Mitchell, Rebecca E. Roulston, E. J. T. Thompson, J. Watt, J. C. Watt, Jeanie L. D. Wilson, R. M'L. Wilson.

* With honours. † With commendation.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following having passed the requisite examination have been admitted Fellows:

A. D. E. Bayliss, K. P. Brown, R. S. J. Fitzgerald, A. Fowler, W. J. Grant, D. F. Hegarty, A. Langwill, J. J. Lynn, J. S. Robinson, J. J. McI. Shaw, R. W. Smith, Q. Stewart, W. R. Stewart, P. P. Wright.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—*Medicine:* L. R. Bergson, F. Walwyn, H. W. Amyes, R. R. Waters, A. R. Rellum, H. P. Samuel, V. P. Menon. *Surgery:* J. K. Son, H. W. Amyes, L. H. Perics, J. Hagard, V. P. Menon. *Midwifery:* J. G. Collee, F. Walwyn, R. R. Waters, H. P. Samuel, J. Hagard. *Medical Jurisprudence:* R. W. P. Hall, G. G. King, I. B. Cummings, A. W. Buchan, J. B. Hendry, J. S. Allan, J. M. Cockburn, W. L. Murray, H. G. F. Cubitt, H. W. Amyes, A. M. Samarasinghe, S. A. Ho Asjee, A. S. Wickremesinghe, F. P. Lisboa Pinto, A. R. Rellum, Jemima M. McK. Calder.

The following candidates, having passed the Final Examination, were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

W. B. Stott, E. S. Godlieb, O. P. Fox, J. H. Bain, V. H. L. Anthonisz, R. E. O'Keeffe, J. S. A. Rogers, R. N. Nanda, A. Shakur, H. E. C. Cezair, J. Pedris, A. G. Thom, A. Y. Khan, E. J. Swirsky, J. McN. Campbell, D. M. Scrimgeour, R. Abramsky, Jane Copes, E. W. Johnson, J. Connal, J. K. Holmes, H. Brown, A. W. Hart, H. McKerlie, G. ap V. Jones, D. P. Dewar.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following were successful at the examination at the termination of the sixty-sixth session—May–July, 1921:

*Surgeon Commander S. Dudley, R.N. (winner of "Duncan" and "Lalcaca" Medals), *Dr. K. S. Nigam, Flight Lieutenant T. C. Morton, R.A.F. Medical Service, *Dr. A. C. Vardon, *Captain J. P. Litt, R.A.M.C., *Dr. Lee Ee Liat, *Dr. J. Kilian Clarke, *Dr. K. A. Gandhi, *Dr. E. T. C. Stedeford, *Wing Commander H. M. Stanley Turner, R.A.F. Medical Service, Dr. H. C. Sinderson, Major W. B. Borden, U.S. Army, Surgeon Commander S. Roach, R.N., Dr. A. M. Walcott, Dr. J. Singh, Dr. R. Hunter, Dr. F. Dahlerup, Dr. W. Milne-Tough, Dr. L. B. Perry, Dr. R. M. Bharucha, Dr. E. J. Clark, Dr. R. L. Symes, Dr. J. A. Anklesaria, Captain P. M. Antia, I.M.S., Dr. L. W. Barlow, Dr. S. N. Bardhan, Dr. J. C. Callanan, Dr. H. G. Holdbrook, Dr. E. Matthai, Dr. W. J. McClintock, Dr. J. S. Nicolson, Dr. A. C. Paterson, Dr. P. Popoff, Dr. W. S. Ratnavale, Dr. J. A. Ross, Dr. A. D. Soares, Dr. R. H. Turner, Dr. S. de Vos, Major N. M. Wilson, Dr. J. A. A. Duncan, Dr. J. Grell, Dr. P. R. Lentin, Dr. Hassan A. Soud.

*Passed with distinction.

The Services.

DEATHS IN THE SERVICES.

SURGEON-MAJOR ROBERT MACNAMARA COWIE, D.S.O., late 1st Life Guards, died suddenly of heart failure at Godshill on July 6th. He was the fourth son of the late Mr. Hugh Cowie, Q.C., and was educated at King's College, London, where he took an open scholarship, qualifying as M.R.C.S. and L.R.C.P. Lond. in 1897. After holding the posts of house-surgeon, surgical registrar, and tutor at King's College Hospital, he went to South Africa as a civil surgeon, and he served in 1900–01 in the Second Cavalry Brigade of the Natal Field Force, taking part in the operations in Natal, including the action on the Tugela heights, the relief of Ladysmith, and the action at Laing's Nek; in operations in Natal, including the action at Belfast; and operations in Cape Colony; and received the Queen's medal with five clasps. After his return to England he joined the Household Cavalry as medical officer of the 1st Life Guards on October 15th, 1902, retiring on March 13th, 1920. He served in France during the late war, was mentioned in dispatches in the *London Gazette* of June 15th, 1916, and was gazetted D.S.O. on June 3rd, 1916.

Medical News.

THE house and library of the Royal Society of Medicine will be closed during the whole of August for repairs and cleaning.

THE annual old students' dinner of St. Thomas's Hospital will be held on Friday, October 28th, at the Wharncliffe Rooms, Hotel Great Central. Dr. H. W. G. Mackenzie will be in the chair. The usual notices will be sent out early in October.

THE summer school of civics is being held this year at Guildford from July 30th to August 13th. Among the courses is one on the welfare of infants and young children.

THE Central Society of the Association Générale des Médecins de France has resolved to raise the annual subscription, commencing in 1922, from Fr.20 to Fr.30.

A COURSE in exotic pathology and medical parasitology will be held at Hamburg on September 29th. Lectures will be given by Drs. Nocht, Füllcborn, Giemsa, Martini, Mühlens, Paschen, De Rocha-Lima, and others.

THE new Rumanian University at Cluj in Transylvania now contains 2,000 students. Three chairs in the medical faculty are occupied by French professors, namely, Dr. Champy (histology), Dr. Thomas (biological chemistry), and Dr. Guiart (history of medicine).

DR. K. MUIRA, professor of medicine in the Imperial University, Tokyo, has been elected a foreign correspondent by the Académie de Médecine of Paris. Professor Muira, who accompanied the Japanese delegation to the Peace Conference in Paris in 1920, has lately been in Europe as a member of the staff of the Crown Prince of Japan.

THE annual report for 1920-21 of the Manchester and Salford Invalid Children's Aid Association, the object of which is to bring delicate and crippled children into touch with agencies which prevent and cure disease, contains an interesting medical report by Dr. A. A. Mumford on the work at the Recovery Home. Dr. Mumford applies the measurement of respiratory capacity as a test of the ultimate effect of hospital and convalescent treatment upon the children, as he considers that it bears reference to subsequent as well as to immediate health, and is a mental standard of will power as well as of bodily health.

THE second congress of the Italian Society of Medicine and Natural Science will be held at Bologna in September.

A NEW Institute of Clinical Medicine has been opened at the University of Pisa.

ACCORDING to the *Lyon Médical* more than twenty German medical men figure among the war criminals to be tried at Leipzig.

THE number of women students of medicine in the University of Paris has increased from 213 in 1915 to 512 in 1920.

LORD DAWSON, who, as we announced last week, had given notice to call attention to recent rulings as to the privilege of medical men with regard to evidence in courts of justice, and to move that the matter be referred to a Select Committee of the two Houses of Parliament, announced in the House of Lords on July 27th that he had received an intimation from the Government that it would be more convenient if the motion were postponed. He assented to this, but hoped the delay would be short.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and reports, documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary is stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the EDITOR at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams, *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"A. M. M." inquires what effective rate of tax is payable on the combined incomes of himself and his wife.

The total tax payable is as follows:

Earned [illegible] 1921-2 10 per cent., i.e. £521 – £92				£429	0 0
Investment income (self)				211	0 0
Investment income (wife)				2	0 0
Total "assessable income"				£1,724	0 0
Allowances: Personal			£225		
" Children (three)			£90		
				£315	0 0
Total income chargeable to tax				£1,409	0 0
£225 at 2s.			£35 15 0		
£1,092 at 6s.			£327 12 0		
				£363	7 0
Deduct life assurance allowance, £10 at 4s. 6d. ...				£9	0 0
Net tax chargeable				£352	7 0

Of which amount £171 19s. has been paid by deduction from income. As the total of the combined incomes is £1,724, it follows that the effective rate payable is approximately 4s. 1d., as that is the rate which would yield the amount payable—namely, £352 7s.

LETTERS, NOTES, ETC.

CALOMEL IN DIARRHOEA.

DR. W. E. FELLOWES (Nuneaton) writes: I feel it my duty in view of the present heat wave to again call the attention of the medical profession to the unappreciated value of calomel as a remedy for summer diarrhoea, especially in infants. I have had over thirty years' experience of its use, and where it has been fairly administered have never known it to fail. Calomel is not the poisonous drug it is popularly supposed to be. I have given it in large doses to infants of a few weeks old and upwards without noting any deleterious effects. The secret of success seems to me to lie in the quantity administered; so much so, that I have come to the conclusion that if calomel fails to cure diarrhoea it is because sufficient of the drug has not been administered. I give infants 2-grain doses every two hours until the symptoms subside. In cases of vomiting where the drug is rejected I add an equal quantity of oxalate of cerium. I think that this remedy should be on hand in tablet form at all baby centres. For adults I prescribe 5-grain doses with or without cerium oxalate in equal quantity, according as vomiting is present, every two hours until the diarrhoea subsides. I have had a limited experience of the use of calomel in the early stage of enteric fever with marked success. I had a case some time ago of a soldier returned from abroad with diarrhoea giving a dozen or more evacuations daily, from which he had suffered for some months in spite of treatment. This case under the calomel treatment recovered in a few days. I wish some medical man resident in a place where Asiatic cholera occurs would give this treatment a trial and report results. I should advise commencing with 5-grain doses every hour and increasing the quantity to 10 grains or more if necessary. I have only met with salivation in those cases where the bowels were confined in adults, but have never seen it occur in cases of diarrhoea. I never use calomel alone for adults as a purgative, but always combine it with some other laxative agent.

AN APPEAL FOR RUSSIA.

DR. B. BELILOVSKY, M.D. Petrograd, L.R.C.P. and S. (Edin.), writes from 8, Eccleston Street, London, S.W.1: As a member of the British Medical Association, I appeal to all my colleagues in the British Isles and the British Empire, imploring them to hear the cries and groans of the millions of my countrymen who are dying from starvation, cholera, typhus, dysentery, and malaria. The women and children are waiting for our help—not merely your sympathy, but your real and material help. We who are physicians know that to infectious disease there are no boundaries, no nationality, no rich, no poor, no strong, no weak. Infectious disease in its march destroys all that it meets. I ask the British Medical Association—the most powerful society in the world in its spirit, organisation, and traditions—and all physicians to raise aloft the banner of humanity for speedy help to my country by sending medical sanitary detachments, medicaments, and hospitals to the areas of distress and famine. I shall be happy to furnish all particulars on application.

LONDON "TOLL" EXCHANGE.

THE Postmaster-General announces that in order to relieve the pressure on the London Trunk Exchange, a new telephone exchange is in course of erection and is expected to be opened towards the end of the summer. The new exchange will be known as the London Toll Exchange. It is of a new type and has been designed so that the telephone traffic between London and the nearer provincial towns may be handled with greater dispatch. At the date of opening, the trunk lines between London and provincial towns within a distance of approximately twenty-five miles radius from the City will be transferred to the Toll Exchange from the London Trunk Exchange. The area served will contain about 300 exchanges and rural call offices and will include the following towns: Aylesbury, Luton, Dunstable, St. Albans, Watford, Brentwood, Dorking, Leatherhead, Woking, Weybridge, Hertford, Ware, Maidenhead, Uxbridge, and Slough. Additional trunk lines are being provided and other measures adopted so that subscribers may effect calls with as little delay as possible. An explanatory circular will be sent shortly to each subscriber in the London telephone area.

FACTORY GIRLS' COUNTRY HOLIDAY FUND.

WE have received the following letter, signed by the Bishop of Kensington, the Countess of Sandwich, Mrs. Creighton, Lady St. Helier, the Chief Rabbi, the Rev. R. F. Horton, D.D., Mr. Frank Lloyd, and Mr. J. F. Green: "Will you kindly allow us to make a very urgent appeal for funds to send working girls and women away for a short holiday? Many of those who are hoping to go during the next few weeks have never slept out of London for a single night. We are almost at the end of our resources, and the need for our help is probably more urgent than ever before. Trade depression has resulted in the girls being the main support of thousands of families, who but for their earnings would be on the verge of starvation. The general standard of comfort in the average home is lower than it has been for many years, and the health of the community in the crowded and airless factory districts of London has deteriorated considerably. Nor has it been possible for the girls to save for a holiday as they have done in former years. Good food, rest, and fresh air for a short time will make it possible for many to continue their work through the winter, who would otherwise break down under the strain and privation they have had to bear for so many months, and the short holiday will give them fresh hope and courage." Contributions may be sent to Mr. J. F. Green, M.P., 75, Lamb's Conduit Street, W.C.1.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 30, 31, 33, 34, and 35 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32 and 35.

THE appointment of certifying factory surgeon at Tisbury (Wilts) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
Each additional line	0 1 6
Whole single column (three columns to page)	7 10 0
Half single column	3 15 0
Half page	10 0 0
Whole page	20 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so made.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning previous to publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-NINTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF MEDICINE.

Professor Thomas Beattie, M.D., F.R.C.P., President.

DISCUSSION ON VISCERAL SYPHILIS, ESPECIALLY OF THE CENTRAL NERVOUS SYSTEM AND CARDIO-VASCULAR SYSTEM.

INTRODUCTORY REMARKS BY THE PRESIDENT.

The President, in introducing the subject, recalled the discussion in 1893. Newcastle then, as now, was a seaport, an industrial centre, and a military dépôt, and in those days, as syphilis was a disease which rarely received adequate treatment, they saw a large number of cases of visceral sequelae. In the army, for instance, a man with venereal disease was either in hospital or in the ranks; if he had syphilis he was treated in hospital during the primary and secondary stages and then returned to duty, no further treatment being given. When in due course he became a reservist the strain of physical labour on the inadequately treated disease led to the frequent development of aneurysm, general paralysis of the insane, tabes, transverse myelitis or peripheral neuritis, and, more rarely, syphilitic disease of the pleura, lung, liver, or pancreas. At the present time syphilis was detected by the blood test in many cases in which it was formerly missed owing to the absence of a history of previous disease. In the future the incidence of visceral syphilis would be diminished, as there was less chance of these complications occurring in efficiently treated cases. Syphilis could be eradicated by modern treatment.

OPENING PAPER

BY

The Right Hon. Sir T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S.,
Regius Professor of Physic, University of Cambridge.

The subject of Visceral Syphilis is so large and manifold that you will expect me to deal with it after a fragmentary fashion. I propose to indicate certain problems which are obscure and need inquiry, and to dwell on those parts of them on which from my own experience I am least unfitted to speak, and here and there even to express an opinion.

With the insight of genius Hutchinson showed us that Syphilis was to be ranged with the ordinary infectious diseases; having like them its periods of incubation, of pyrexia and eruption, and of sequels.

Although our subject is to be Visceral Syphilis—that is, these sequels—yet I hope I may not seem perverse if notwithstanding I begin with the primary sore. The primary sore is a sharply defined hard papule which on section presents histological features of which I may briefly remind you. We note—unless there be some impurity of virus—the prevalence of lymphocytes over polynuclears, a fibroblastic proliferation of plasma cells and spindles, a push of endothelial cells, a giant here or there; and so forth. We may perceive also hyaline spaces, perhaps of the nature of rudimentary gumma. Moreover we may perceive granulations, perhaps many, consisting of these fibroblastic elements, more or less isolated by fibrous zones from the surrounding unaffected tissues. But, before all this, we detect an arteritis—an *arteritis and periarteritis*—and an infiltration of the lymph spaces, to which I would call especial attention. Along the blood vessels—and within this term I include the veins and venules, often overlooked in this research—along the blood vessels in the chancre we see especially this infiltration of round cells and plasma cells with fibroblasts. These appearances, together with coagulable intercellular exudate, and heaps of necrotic cells, have the characters of gummatous elements, and are the same in nature. The affection of the blood vessels is well seen in the superficial network of an early sore; in a later sore these and the deeper network affected in like manner, form two arteritic layers. In the lymphatic channels we observe also a like process: infiltration, cell increase within and without, and new vascular twigs—a peri- and endo-lymphangitis. The primary sore slowly disappears in three or four weeks, ending in a scar with proportionate loss of normal substance.

Now *gumma*, which is a lump of stuff of this kind, and in bulk comparatively rare, differs not in nature from this irritative process, but in the accidents of time and opportunity only. In gumma likewise, which may be massive or miliary, we find a repetition of the histology of the primary papule, but perhaps becoming caseous in its extra-vascular centre; otherwise it is fibrous, with inflamed vessels, lymphoid and epithelioid cells, spindles, and so forth, making for scar. The mass may be drier than tubercle, or it may throw out a gelatinous exudate. The process is less disposed to caseation than tubercle, the granulation of which is not unlike it, because it is much richer in new vascular twigs. It has little tendency to calcification.

The next and immediate event is *syphilitic sepsis*. The poison, with how much concurrence of the treponema it is hard to say, courses along the lymphatic channels to the neighbouring glands; thence presumably to the thoracic duct, and so into the vena cava and the systemic blood current. We have not been sufficiently awake to the swiftness and extent of the travels of syphilis from the moment of infection. Neisser insisted upon this wide dissemination. In his Javan apes he found the parasite in the central nervous organs within ten days of inoculation, even before much of a local sore. Opportunities of measuring this time coefficient are few; they depend on the chances of the death of an individual soon after infection, and on the promptness and skill of the investigation. Eicke and Schwabe,[10] who justly remark that in syphilis we are "too well content with first and last," have collected some extant testimony of this kind. They quote, from Fournier, from Finger (1885), and from Valda (1875), cases of infection shortly before an accidental death. They contribute one case of their own; to this I will allude, and to one of Valda's. Valda's young man died of pneumonia while the chancre was fresh on the penis; on necropsy he found the lymphatic glands infected up to the mediastinum and thoracic duct. Their capsules were still intact, but there was active cell increase in the lymph channels and in the alveoli. Their own patient was aged 21; chancre recognized three weeks before; bubo in left groin; spirochaetes present. Wassermann reaction negative, though performed three times and with increasing precautions. The third injection of salvarsan was followed by death within a day or two. Glands were infected in mesentery, mesocolon, retroperitoneal region, and anterior mediastinum. The spleen was a little enlarged (330 grams). Liver, kidneys, adrenals normal. Thus we see that the microbes, or at any rate their effective toxins, arrive at the thoracic duct and vena cava during the "primary stage." Spirochaetes were found in the chancre only. No analysis of the cerebro-spinal fluid is given.

"In the "Secondary stage" appear the pyrexia, the rashes, the mucous patches, and so forth. If we examine a mucous patch there also we find the same process of lympho-arteritis. Under its various guises of chancre, gumma, aortitis, etc., this nature of the syphilitic process is uniform: an arteritis, or lymphar teritis, with irritative processes around them, varied only by the accidents of time, place and mass. Therefore when we speak of syphilis of organs such as the liver, brain, or skin, we must not suppose an active and specific co-operation of each or any of these organs in the result. This is a foreign invasion, not a conversion, nor a morbid activity of the organ itself. Pathologically, visceral syphilis, like syphilis in the primary sore or skin, is a disseminated lymph-arteritis; by which term I beg the question of the relative bearing of each—of lymphatic or blood vesssel—on the result. I will venture however upon the postulate, or guess, that as the arteritis begins as a periarteritis, advancing gradually to the complete arteritis obliterans, the virus takes first the way of the lymphatic channels. About the arteritis itself there is no peculiar character; *caeteris paribus*, it is the same process as we see in vessels

involved in other inflammatory lesions, in tuberculosis, and so on.

As Professor Andrewes says in his well-known research,[4] although there is something characteristic about syphilitic arteritis on the whole, yet as we proceed from the aorta and large elastic arteries to the smaller, it is less and less easy to distinguish it from that which may arise under other conditions; or to define it. We note the invasion of all coats, but the beginning from the adventitia; as in the nervous trunks from the perineurium. If the treponema be found it will be in the adventitia. Even in the intima the deposit is more fibrous, and disposed to scar and not to calcify. And the disease attacks the vessels in shorter lengths; it is even more patchy than atherosclerosis. In the adventitia this knotty and patchy lesion is after the kind of gumma, and works up to the intima through a newly vascularized and inflamed media. The intimal thickening corresponds in area to these outward, often half-moon shaped, patches; and this coat may thicken until the lumen, in a small vessel, is choked, or becomes thrombosed. Disease of the media is more active than in atherosclerosis; it is more vascular, not a mere damage. At the beginning we may catch the adventitia affected alone, especially in the meningeal vessels (Turnbull[24]); or the process may be just beginning thence to penetrate the media; the new vessels pushing into it. The veins are affected in like manner, from their outer coat inwards. Thus we shall realize how universally lymph spaces lined with endothelium surround all vessels, arterial and venous; and see the lymph channels running in the walls of all the larger vessels and onward from the adventitia between the muscular bundles of the media; channels which are invaded by the treponema, or its toxins, much more rapidly than we have supposed. Aschoff[5] has demonstrated in them also how the cell infiltration of the wall begins in the adventitia. We may trace the same specific process in the vessels that penetrate from a gummatous periostitis into the underlying bone. To learn these incipient changes, and their early date, it is well to take a scrap of tissue from a secondary cutaneous papule. The descriptions of Aschoff[5] and other eminent pathologists, excellent as they are, being taken in the main from cases of death in old syphilis, lead them to date the visceral—for example, the cerebral—infections too late; the clinical observer likewise is not consulted until some outbreak becomes manifest; that is, at a late and generally incurable stage. Let me urge on the contrary that the specific lymphar teritis, starting as a local sepsis, soon becomes universal; and that, if specific treatment is to be effectual, it must be betimes. To postpone the date of cerebral syphilis to a year and a half after infection, and onwards, is a dilatory and perilous practice. From the first the seed spreads secretly; and when the circulatory system, or parts of it, are clotted up by the parasite or its poisons the time for effectual intervention is past. "Take these foxes while they are little."

Are syphilitics liable not only to this patchy arterial disease but also to general arteriosclerosis of the atherosclerotic sort; or perchance to some more fibrous kind of general arterial degeneration? Professor Andrewes says,[4] and I agree with him, that a general arteriosclerosis is frequently absent. An earlier appearance of it may be favoured by the syphilitic or any other infection, or by a dissolute life; and we shall remember that in comparatively young men, who have been engaged in laborious occupations or strenuous sports, the arteries of the limbs are prone to atherosclerosis.

I am indisposed to agree with Carnegie Dickson[8] that periarteritis nodosa is of syphilitic origin.

We have seen then how the virus reaches the blood and so introduces the "secondary stage." The blood of the syphilitic, if often poor in leucocytes—even down to 3,000—has a tendency to lymphocytosis (say 40 per cent.); any relative excess of polynuclears suggests pyogenic contamination. The colour index of the blood is lower than normal, and the red cells fewer. Thus in congenital cases lymphaemia might be suspected; especially if associated with unstable temperature, and debility. The tests for occult syphilis would probably indicate the diagnosis. Globulin is in positive excess in the serum. We find the same changes also in the cerebro-spinal fluid; these however will occur in tuberculous and other kinds of meningitis. But to this subject I will return.

Here let me tarry for a moment to reflect upon the swift deaths which every now and then are reported in syphilis, and are often attributed to the salvarsan. I do not feel sure that this attribution is to be confidently accepted. It may be that some of these deaths are by acute syphilitic septicaemia. At the necropsy of every such case the utmost pains should be taken to distinguish between arsenical and syphilitic poisoning.

In my early days at the Leeds Infirmary our sagacious seniors used to treat *syphilitic anaemia* with large quantities of sarsaparilla. The remedy seemed to us then to be efficacious. The simple decoction, made in the dispensary was used; and of this the patient was directed to drink from one to two pints a day.

I may now take the organs, or some of them, severally; and begin with the aorta, as the chief of the blood vessels. I am not so conceited as to suppose that many of my hearers have read my large book on *Diseases of the Arteries*[1]; still, not to repeat myself, I must be content to emphasize a few points of immediate relevancy. For instance, in *syphilis of the aorta*, and of the other elastic arteries, we have on a large scale the process which by the microscope was seen in the smaller vessels; namely, a process of lymphar teritis. About the b se of the heart, where the pericardium is reflected upon the aorta and forwards upon the ascending limb and the ar h, runs a lymph irrigation system which is richer in affluents than elsewhere in that region (Klotz[15] and others). Thus the virus, reaching the vessel by this route, attacks it from without as a peri-aortitis; and penetrating its coats is apt to appear on the inward face, and there also to spread upwards and downwards. By chronic fibrotic inflammation the aorta is thus liable to be bound down by new connective tissue to its mediastinal bed. Not only so, but, as the vasa vasorum, which here are abundant, are themselves also the seat of lymphar teritis, the aorta suffers from atrophy as well as from inflammation. Here again the process presents itself in patches: the media, in spite of new arterial twigs, and plasmatic cell growth, perishes; and with it wanes the resistance of the vessel to the blood pressure; while at correspondent areas the thick aortic intima is much increased, especially by nucleated connective tissue cells in the subendothelial layer. In the aorta, and other elastic vessels, the channel is large enough to remain patent; but in the smaller vessels the intima is so thickened as to obstruct the lumen, and even to choke it (arteritis obliterans). Small gummatous nodules may frequently be detected in media or adventitia. Thus we see how easily in these yielding coats, yielding especially in the media and elastica, a general crumpled buckling of the wall comes about. How the medial degeneration, by softening and destroying the coat here or there, may bring about saccular aneurysm has been ably demonstrated by our President Dr. Drummond, and others. Atheroma is no cause of aneurysm. Dr. Fildes[11] of 18 cases of syphilitic aortitis found 17 positive to the Wassermann reaction.

Thus the aspect of a syphilitic (Hodgson-Welch) aorta, even in an incipient stage, is characteristic. I show you two specimens in which the process is incipient; its fuller manifestations are too well known to need further description; for which however I may refer to my *Diseases of the Arteries*. But I must insist upon the distinction between this disease of the aorta and atheroma; a distinction far from generally recognized or admitted, although Sir Frederick Mott,[18] Marchand, and others have pointed it out very clearly. In both kinds the vessel is thick and dilated, and the coats are evidently diseased; moreover the syphilitic and the atheromatous process may, and often do, coexist, especially in elderly persons; the combination indeed is often to be seen in the aortas of old general paralytics. A little attention serves to disentangle the two, even when they overlap. The syphilitic disease advances from without inwards; the vessel is stiffer, more nodular and anfractuous, more disposed to fibrosis and scar; the atheromatous process arises in the intima, and proceeds to fatty and calcareous degeneration. Professor Turnbull describes the syphilitic aorta as "pearly in tint (a tint we may often see patchily in the stiff gaping vessels of the circle of Willis), rubbery in consistence, crenated in outline, pitted on the surface, and passes into scar; calcification, if any, being scarce." In places it is more thinned and translucent, is crinkled, and bulges so irregularly as to become extremely deformed and baggy. I think the syphilitic process never

deviates into atheroma; but the one often edges into the other. In syphilis the media is more vascular and the adventitia more leathery.

Now let me insist farther upon the frequency of syphilitic invasion of the aorta in those early phases of it in which recognition is more apt to be missed. To put this event, as is usual, at ten years from the infection is a misconception; it is to be blind to the peril until it has broken into its clinical phases, or is incurable. If the myocardium be suspected of disease, no pains seem too much for its investigation; but too often the aorta is inspected only from within and, unless visibly diseased, is neglected; no one makes careful histological sections of this limb unless the morbid changes in it are conspicuous, and even then only in special circumstances. Yet syphilis is said to attack the aorta in 70 per cent. of infections; Francis Welch, in 1875, demonstrated aortic syphilis in 34 out of 56 cases, and demonstrated its adventitial origin. Professor Turnbull's 60 necropsies[24] of syphilis gave a ratio of 76 per cent. Sir Frederick Mott's testimony[18] is to like effect. In tabes it is frequent; the proportion of the disease in the ascending aorta to that in the arch and descending is about as four to three; to the abdominal about four to one. The left subclavian seems to suffer about six times as often as the right. What we have seen of the beginnings of syphilis tell us that it is to the outer coat of the vessel that investigation must first be directed. Still, if the aorta be touched at all, careful comparison will nearly always show some degree of bulging; and, if the inner lining be minutely scrutinized, early signs of syphilis may be detected even by the naked eye; signs such as slight stellate or dotty puckers, and angular or twisted grooves not quite like congenital grooves. I have brought such a specimen to show you; but the change may be less than this, yet just perceptible. Sections then should be made of the aorta in all cases of luetic infection; for, as search made in cases of accidental death soon after infection proves, the vessel is probably invaded secretly at a much earlier stage than we suppose, while the virus is travelling up the lymph channels in the mediastinum. The minute gummous masses—granulations—which may grow in the outer coat, or in the media, of the elastic arteries, may, as they melt into the more diffused process, elude definition. In these luetic aortas the treponema has been found by many experts in some abundance.[26]

Upon the inner aspect of the aorta the first visible manifestation of the penetrating virus from without, appears as a raised, pink, semi-translucent patch, situated as a rule a centimetre or two above the valve. This corruption will spread upwards on the ascent, may ring the vessel round, and may extend as far as the diaphragm, where usually it stops. Occasionally it extends below this line; cases are recorded indeed of syphilis of the abdominal aorta only; a limit of which I have no experience. But I have a memorandum of a case of congenital syphilis, in a girl, aged 16, in which a syphilitic aortitis was confined to the abdominal aorta. Although the disease is disposed rather to travel upwards in the arch, nevertheless only too often it travels downwards, and thus endangers two critical areas—that of the valve, and that of the mouths of the coronary arteries. The aorta may pass into extreme deformation and yet leave the valve unharmed; indeed this not rarely happens: but on the contrary it may drop down on the valve early in its progress. A regurgitant murmur, often extremely soft and elusive, and perchance intermittent, may appear at any moment. Stenosis does not happen. Encroachment upon the mouths of the coronaries—the right generally first—is of course a more occult event, but an event fraught with even graver issues. For this cause it is, as Broadbent insisted, that cases of syphilitic regurgitation generally do badly; the ill-fed heart cannot grow up to the need, nor even maintain itself under the stress. Or the coronaries, like the cerebral arteries, or the superior mesenteric, may be plugged by detached morsels of the degenerate matter. Besides, the aortic valve may be invaded immediately; in a preparation I now show you the disease may be seen creeping through directly to a cusp; and doing what is very characteristic of it, namely, severing the cusp from its attachment; a process characteristic of syphilis. You see also that the right sinus of Valsalva is perceptibly dilated. Good pictures of these lesions are published in Professor Cowan's book on *Diseases of the Heart*.[7] Not only so, but, as in one of his pictures you may see, the lesion may show itself also as nodular opacities on the cusp, or cusps, of a valve, aortic or mitral; now syphilitic deposits can be absorbed, it is true, but hardly without some scar and retraction.

When the aorta is grossly affected, diagnosis is not difficult; although even then it is continually overlooked during life; hence my emphasis upon it. The pupils may show the light-stop; or an inequality, or an irregular outline. Angina pectoris is often an early symptom; I was surprised, in our heart hospitals during the war, to find how often men, when indifferently questioned, very readily recollected attacks of substernal pain or oppression, which crossed the upper thorax, or passed on into the arm or arms. In later stages, when the sensory apparatus of the proximal part of the aorta, the part I have called elsewhere the "tambour of the systemic blood pressure,"* is abated by disease, these pains may and often do cease. The closure of the coronaries, common as this event is in syphilitic aortitis, has nothing to do with the pain; atheromatous closure of these vessels does not produce pain, though it may determine its mortal effect. Vaquez,[24] Wenckebach, and many other authorities have now accepted my doctrine that angina pectoris is generally due not to coronary but to aortic disease.

The terrific attacks of suffocation seen in syphilitic aortitis, as in other kinds of mediastinal disease, are due, of course, to irritation of the recurrent nerve. Violent attacks of dyspnoea ("asthma") recorded in a few of these cases were probably uraemic. Such they were in the only case of syphilitic aortic disease in which I remember their occurrence.

Besides the "physical signs," such as dullness at the manubrium, and a centimetre or two on each side of it; the "*bruit de Taboorka*"; scars, often a little below the knee, circular, depressed, white, silky; and so forth, radiography is a valuable though not an unfailing aid to diagnosis of syphilitic aortitis. If the vessel do not seem broader or longer, it, or patches of it, may be less transparent; and it may seem relatively motionless, especially when it is tied down to its bed: but the rays cannot betray the incipient stages; these can be but a matter of inference; in all cases of syphilis we have to assume a probable infection of the great vessel, actual or potential; and this at a much earlier stage than we have generally supposed. In the military hospitals syphilitic arterial disease, as of the aorta, subclavians, etc., was frequently manifest among the older men; in the younger, if they had already incurred infection, and even if the aorta were already touched, clinical evidence of it was very much less; years might pass before the damage gave rise to symptoms.

Syphilitic disease of other large arteries is too well known to need description here. It is usually latent unless and until it issues in aneurysm—for example, of the femoral or popliteal; or in gangrene of the foot, as in disease of the posterior tibial, and so forth.

The disease of the lymphatics, apart from that of the blood vessels, though almost universal, rarely betrays itself by clinical symptoms.

The pulmonary artery is attacked very rarely; I have no notes of my own on the point.

In *syphilis of the heart* it is well to begin with the pericardium; we have seen that the toxic process rapidly attains the lymphatic network that bathes the duplication of the pericardium upon the aorta and the base of the heart. The rest of the membrane is not rich in vessels. Pericardial gumma, in bulk or as scattered granuloma, is for the most part a *post-mortem* discovery (Ricord, Virchow, Wilks, Oppolzer, Lancereaux). The usual seat of it is in the septum—auricular or ventricular; and below the aorta behind the tricuspid valve, whence the process is prone to invade the *a v* bridge, and to give rise to heart-block. Naturally the clinical effect of cardiac syphilis depends upon the seat of it. In the substance of the ventricles it is not very common in any form; it prefers the left ventricle, and may project inwards or outwards, or lie latent in the myocardium, and be not very sharply defined from it. Oval or round fibrous callosities may not interfere very much with the heart's action; or dense tough greyish-white strands may traverse the muscle and hamper its action; or by softening lead to cardiac aneurysm; or again give rise to embolisms.

* Rise of blood pressure is not usual in syphilis, whatsoever the state of the vessels; as in most infections, it is liable to fall a little.

But this is common knowledge; is there however in syphilis a more diffuse fibrosis of the myocardium, as in the infantile liver? If tiny granules—round cell aggregations, abundant but each perhaps small enough to elude the eye—be disseminated through the muscle, they might result, as von Dusch and Virchow supposed, in a general interstitial "myocarditis" or fibrosis. I think there is no definite evidence of this quite possible diffuse process of cardiosclerosis, save of course as an atrophic result of coronary occlusion from any cause. The syphilitic arteritis then, and the products of toxic irritation, may conglomerate as visible gumma; or scatter as multiple granuloma; or, again, by arteritis obliterans in the coronary tree, set up a general atrophic fibrosis. This process of fibrosis we see particularly in tracts around and along the vascular twigs; it is, I suppose, incidentally, not essentially, luetic.

The ganglions and tracts of the cardiac nerves lie for the most part superficially under the epicardium, and so are implicated in many kinds of infection; for example, in diphtheria, enterica, pneumonia; and under poisons such as alcohol and otherwise. From Guéneau de Mussy and Péter onwards, many physicians have thus explained pains which they attributed to the heart.[21] We hear of swelling of these ganglion cells, proliferation, and exudation; but *post-mortem* changes and artefacts may deceive us: in any case nothing is known of consequences to the function of the heart. These nerves are motor, not sensory; I repeat that, as I have said, the pains in syphilis of this region are of aortic not cardiac origin.[1a]

Concerning syphilitic disease of the valves and orifices I need not repeat that the virus falls chiefly on the aortic valve. This incidence would appear to be about 30 per cent. of all cases of syphilitic aortitis, slight and severe. In many such cases the aortitis may be extreme, even such as to cause perilous pressure and other symptoms, without descending to the valve. Unless by dense fibroid subvalvular thickening around the base of the heart, syphilis does not cause aortic stenosis; this is rather a feature of atheroma, which on the contrary very rarely ends in regurgitation.* When in any person of middle age, who has not suffered from rheumatic fever, aortic regurgitation is discovered, the odds are heavily in favour of syphilis; and this pre-eminently if the mitral valve were not primarily affected. I had to give this opinion the other day in the case of a married woman, aged 50; as I expected, the Wassermann reaction proved strongly positive. The grave alternative is subacute bacterial endocarditis; for I would repeat that the course of cardio-aortic syphilis, combined, as too often it is, with coronary disease, may be stealthily swift. It is indeed a kind of subacute microbic endocarditis. Stolkind[22] records a case of valvular disease in which the effects of both rheumatic fever and syphilis were apparent and distinct.

It is said that some cases of "verrucose" valvulitis are syphilitic; I cannot say; but the suspicion should be borne in mind. A case of erosion and rupture of a papillary muscle by syphilis is on record.[9]

Of *congenital syphilitic disease of the heart* we may guess much but we do not know much. The malformation clinically known as the "Blue Disease" has been found in the children of syphilitics. Mitral stenosis has been attributed to the same cause by Hutchinson, Virchow, Landouzy, Eger, and others. Some of our unaccountable cases of mitral stenosis may be due to a parental syphilis, as Professor Cowan's specimens suggest.[7] So likewise of stenosis or atresia of other orifices—for example, of the pulmonary artery. Accurate differential work is needed in this field; in such cases it is not sufficient to suspect syphilis in the parents, nor even to prove it; more than one cause may have been at work, as, for instance, in the not infrequent association of tuberculosis and syphilis.

In *pulmonary diseases* therefore we shall not forget that syphilis may make one of a party of causes; as for example in fibrosis with bronchiectasis. Syphilis is taken to be rare in the lung; so it may be. Nevertheless, in chronic indurative affections of the lung it is always well, in our therapeusis, to remember this possible ingredient. Physical signs are at best equivocal; syphilitic disease may affect the apex, may caseate, and soften into cavity; and the spirochaete is not above keeping company with the tubercle bacillus. It is true that massive gumma, or even miliary granuloma, is rare in the lung; but some chronic thickenings of amorphous character may be luetic; at necropsies on such cases—for example, in pulmonary disease in tabes—the lung should be well sliced, and meticulous tests, clinical and technical, performed. Syphilitic invasion is prone to occur at the root about the large vessels and big bronchi, whence it may spread to the bifurcation of the bronchi and the substance of the lungs. Presumably the *x* rays would hardly suffice to distinguish this from peribronchial tuberculosis? It is said that, in acquired lues, a kind of pneumonia may arise, with the production of new products in the alveoli (Bériel[6]). Of this I know nothing. As to gumma, Robertson of Harvard reported a case of collapsed lungs consequent upon aneurysm of the aorta in a man of 42, in which, near the hilum towards the bases, were found five oval nodules, each of about 2 cm. in diameter; two were in the left, three in the right lung. Syphilitic invasion, with scarring and puckering, is likely to set up a compensatory emphysema and dilatation of the bronchial tubes which will obscure the original process. In these phases again the *x* rays may hardly give much differential help. An appearance of bronchitis after a luetic infection should therefore be closely watched, lest, while in a curable phase, such irreparable mischief be done. Tripier is very confident that in these fibroid lungs syphilis is by no means infrequent.[23] Syphilitic lesions, not extensions from the bronchial glands, are found in infants; and the "white pneumonia" of congenital syphilis, first described by Hecker in 1874, needs no more than an allusion.

In the costal pleura multiple granuloma has been recorded occasionally.

The *liver* I may pass by quickly. The enormous lumps and strands of gummatous and fibrous growth, usually of capsular origin, or more scattered granuloma, arising in its substance, which may invade and pucker up this organ, or establish discrete star-like scars in its substance, are well known; though, unless they strangle the portal circulation, they are often latent until necropsy. For the same reason I will but allude to the cirrhosis of the liver in syphilitic infants due to widely disseminated granulomata, which absorb, necrose, and shrink; or to mere fibrosis (set up by the toxin or by atrophy?). The virus travels by the umbilical vessels to the liver, and the artery and vein are thickened, and often thrombosed. Thus diffuse atrophic connective tissue proliferation arises all through the organ. So everywhere we are met by the essential and governing lesion—the lymphar teritis—and its direct and indirect irritative associations. "Foul foetuses," atrophied, dead and macerated, owe their fate to placental lymphar teritis. It is easy to explain, by the closure of vascular areas, how in these foetuses abdominal viscera often escape infection, or are affected but lightly.

Of the intestines: the mouth and throat, the oesophagus, the stomach and the bowels seem generally, in the acquired disease, to escape till we reach that common seat—the rectum. I am enabled however, by the kindness of Professor Elliott and Dr. McNee, to allude to, and show you a photograph of, a remarkable case of syphilitic disease of the stomach, in a man aged 57. During life the case was almost inevitably taken to be one of carcinoma; and this diagnosis might have passed unchallenged, even at the necropsy, but for the absence of glandular enlargement. The Wassermann reaction test was not tried. There was no lesion elsewhere. Free hydrochloric acid was absent. Arteritis obliterans was "very typical and advanced." In an acute block of the ulcer spirochactes were found in abundance.

Vesical syphilis seems as rare as the testicular is frequent. The adrenals, which suffer often in congenital disease, are said to be rarely attacked during an acquired infection. Massive gumma may be rare, but I suspect that in organs which are supposed to have escaped, a closer inspection would often have revealed lymphar teritis, and probably the parasite. Indeed, the treponema has often been demonstrated in the pancreas. The pancreas is said generally to escape; but I have been tempted again and again to regard a glycosuria as an indirect result of syphilis. Dr. Graham[12] quotes Warthin to the effect that fibrosis of the islands was found in 11 of 13 cases of syphilis; and hence a decrease of "sugar tolerance"; or, as I should put it, of sugar consumption. The spleen is often a little enlarged, and may contain gumma.

* In rare cases an intercurrent, and perhaps brief period of high blood pressure in an elderly subject of aortic atheroma may rupture the valve and set up regurgitation. I have seen this happen more than once.

Syphilis of the kidney, critical as it may be, is a very thorny problem, one on which I can but touch lightly. Many are the papers written upon the subject. The obscurity is not one of plainly specific products; it is admitted that gumma of the kidney is rare; but whether or no in certain circumstances diseased kidneys which present no apparent difference from ordinary forms of Bright's disease may nevertheless have been disintegrated by syphilis, directly or indirectly, is an unanswered question. Some kidneys thus suspected were of the glomerular group; others of the interstitial; others again parenchymatous. In congenital cases diseased kidneys, whether gummatous or not, naturally fall under suspicion. Furthermore, salvarsan, or mercury, is suspected of setting up a renal degeneration of its own. In the morbid anatomy the first step, if the serum reaction were positive, should be to determine whether or no the arterial lesions in the kidneys have the lymphar teritic characters suggestive of syphilis rather than of atherosclerosis; the second, if the histology be not decisive, to consider any more general effects on these responsible organs of an injurious toxin, of which the syphilitic is but one. Probably the arsenic, used under careful therapeutical conditions, may be left out of account. Albumin of course may appear in the urine in almost any infection. However, at present we cannot profitably pursue this obscure part of the subject.

Before passing on to syphilis of the nervous system I wish to make certain general reflections. It has been observed no doubt that hitherto I have ignored, or edged away from, the common division of Syphilis into three or four periods. Perhaps at no time have these periods been regarded as severally limited, but taken to be concatenated phases keeping some order of intermittent succession, however irregular; and perhaps few practitioners are prepared to discard these schedules altogether, as baseless and misleading. Yet I ask you to do so. We must admit that the parasite, or its toxins of which we know little or nothing, actively pervades the system from, or indeed before, that very stage which we call "secondary," and look upon as concerning only, or particularly, the skin and mucous membranes. It is on these surfaces that it comes to the top; *but the pyrexia, slight as it may be, is really the signal of a universal syphilitic sepsis.* Of the viscera the brain, the aorta, and the liver, in this order, are supposed to be the most frequently, or most manifestly, attacked. But we have seen, and shall see, reason to suppose that *the central nervous system* may be infected very early and, generally speaking, long before the infection is betrayed by any clinical symptom; though even these may occur much earlier than was formerly supposed. Dr. Thomas[20] reports cases of cerebral vascular syphilis five and seven months respectively after infection; and four others within a year. Usually, it is true, these symptoms become manifest much later; as a rule from four to five years after the infection. Thus they fall out mostly in the third and fourth decade of life. In women it is very difficult, for many reasons, to be sure of the facts of a syphilitic history. Elderly men also, if recently infected, are naturally very reticent about it; on the other hand they forget, perhaps are hardly aware of, an infection incurred twenty or thirty years before. One case I remember in which the primary infection was forty years before a syphilitic hemiplegia; the patient when questioned was quite frank about it, but not unnaturally supposed it to be out of date and irrelevant in an illness that to him seemed a totally different affair. Happily, in the possession of independent scientific tests, we are now spared much private questioning; and not only do such tests as Wassermann's and Noguchi's save us this trouble, but also throughout the course of the infection they may betray to us something of the seat and extent of the sepsis. Let me earnestly beg of you then not to omit to make a lumbar puncture in every case of syphilis, at whatsoever stage you may meet it.* By this means, and the proper tests, we may detect the virus in the central nervous system as soon as it arrives there, and deal with it at a curable stage; thus perhaps saving the patient a future tabes or luetic encephalitis. It is said that for disease of the nervous system Noguchi's butyric acid test is better than the Wassermann reaction; experts credit it with 98 per cent. of positives in definite cases.[19] Of the gold test I know little.

* That by the puncture we might excite spinal syphilis to activity seems to me a bogie. The cord would not be touched.

The evidences of infected cerebro-spinal fluid lie in its larger globulin content, in a lymphocytosis, and in a positive response to the Wassermann or Noguchi reaction. Dr. Fildes and his colleagues[11b] have proved that while the Wassermann reaction of the blood may be negative, that of the cerebro-spinal fluid may be highly positive, and constantly so; yet of Dr. Fildes's positive cases 80 per cent. presented no clinical signs of syphilis! The opinion of skilled observers is that salvarsan may rectify the Wassermann reaction so far as the blood is concerned while for the cerebro-spinal fluid it still remains morbid; another argument for systematic testing by spinal puncture, even in early cases. In the Fildes joint researches, of 41 cases in which no clinical symptoms had been noticed, 29 showed 100 lymphocytes per centimetre; 9 over 100; 3 over 1,000. In every case of cerebro-spinal syphilis the fluid was found positive. Ravaut's pioneer paper in 1903 was to the same effect: that the cerebro-spinal fluid was positive even at the outset of the secondary period. The globulin he estimated at 67 per cent.; it may be held by adsorption to a lipoid (McDonagh[16]). Professor Mott[18] attributes the excess of globulin to the degeneration of the nervous tissue; as it ought not to find its way to the theca through the epithelium of the choroid plexus. Sachs found lymphocytes in the fluid three weeks after infection.[16] The earliest symptoms were usually of a meningitis, which might coincide with secondary signs on the skin and mucous membranes; so that, from the first weeks after infection and onwards, recurrent headache, however slight, and whether nocturnal or not, should be carefully watched for and noted. It is wicked to wait inactively for a clinical explosion! Of search for the treponema I have said little; the difficulty of finding it in the brain, or its fluid, is well known. It is there; it has been demonstrated in tabes and general paralysis by Noguchi and others. It is hardly to be found about the vessels, but rather in the parenchyma, perhaps of the cortex, in small dispersed foci. This scantiness of the parasites perhaps explains the delay, often enormous, of the clinical phenomena. But this only puts the question one step back; why are the parasites scanty? Somewhere in a foreign journal, I forget where, I saw statements by more than one bacteriologist that, although the treponema needs its proper moisture, it dislikes wet ground. This assumption I give for what it may be worth. Now meningitis is an early phase of cerebral syphilis, and with it comes a sloppiness which may drown many of the microbes and weaken the rest.[13]

There are certain other apparent inconsistencies. The infrequency, for so it seems to be, of secondary symptoms in the history of cases of nervous sequels led our fathers to welcome an outbreak of cutaneous and other early conspicuous symptoms as of good augury. Perhaps the explanation lay in the more diligent therapeutics of both doctor and patient; or that a plenteous cutaneous eruption produced a plenty of antibody—a balance of poison and antidote. In like manner we are disposed to surmise some divergence between the meningeal type of encephalic syphilis, and such central events as tabes and paralytic dementia (Oppenheim, Marie, and others). These and such contrasts may reinforce Noguchi's and Sir F. Mott's suggestion that the treponema, like other microbes, may have its varieties with their several tissue affinities. Noguchi believes that two strains at least are distinguishable by the eye.

If then we are agreed that, although salvarsan and its allies may kill all spirochaetes in the skin and mucous membranes, yet may not go deeper, it may be our duty to institute both exospinal and intraspinal treatment from an early stage. The dormancy of malaria and of tubercle, whether in each by its own quiescence or under the defences of the body, seems to be a like experience. McDonagh and others surmise a resistant, resting, phase of the parasite. By the defensive forces of the body no doubt many of the microbes are destroyed, others weakened and held up. Colonel Harrison made however the unpleasant reflection that, within limits, the more parasites we kill the better time may it be for the rest! Or the more killed the less antibody? Therefore he did not approve of the practice of two or three big doses of the antidote, but recommended small repeated doses over a long period of time. At a meeting of the Royal Society of Tropical Medicine, held May 20th, 1921, Dr. Marshall of Uganda said that in sleeping sickness remedies injected into the circulation,

though they may sterilize the blood, probably do not reach the parasites in the central nervous system, as the trypanosomes damage the choroid plexus and so prevent the passage of drugs into the cerebro-spinal fluid. The present method is to inject neokharsivan into a vein and three hours later to withdraw three ounces of the patient's blood; 20 minims of the serum is then injected into the spinal canal. The results so far (since 1918) are promising. It is uncertain whether the good result be due to the drug or to an antibody in the serum.

When we study the histology of syphilis of the central nervous system we find here also that the disease is essentially one of lymphar teritis. We shall expect to find this process therefore in the meninges, in the pia mater, and penetrating thence into the fissures of the brain and into its substance. I cannot agree with Eichhorst's[9] division between "gummous" and obliterative arteritis; that the one begins in the adventitia and the other in the intima: these are surely but stages of one process, beginning from the lymph channels.

When in 1868 I first described syphilitic arteritis, with dispersed granuloma, in the brain,[8] it was in a specimen sent to me by Dr. (Sir) Crichton-Browne from the Wakefield Asylum. On section I noticed a patch in the deeper grey matter, encroaching on the white matter, which presented a rougher or granular surface, and was more slaty in colour than the neighbouring cerebral substance. The patch was a focus of diseased vessels and atrophied nervous matter. I pointed out then that the arteritis was first a periarteritis, and distinguished this syphilitic disease from atheroma. Heubner, in his far larger description in 1874, had not seen my paper and described this process as primarily an endarteritis; in his later papers he courteously referred to my observations and accepted the periarteritis origin. In early stages indeed, in the nervous organs as elsewhere, the periarteritis may be seen alone. This order of events has been accepted by Professor Mott.[17] But I will not detain you by any farther report on the now well known histology of cerebral syphilis, save to reiterate the general statement that all syphilis of the central nervous system likewise consists essentially in a syphilitic panarteritis, with its consequential round cell and connective proliferations, thromboses, and atrophies. Let me warn you, however, that such lesions are often small, and, unless the little greyish or reddish-grey rather translucent granules are carefully sought for, may escape recognition.

In the central nervous system, as elsewhere, solid outstanding gumma, as contrasted with gelatinous exudation in the membranes surrounding inflamed vessels, is relatively rare. The syphilitic foci and tracts also are unconnected, and irregularly distributed here and there; a caprice which explains the well known diversity of the clinical symptoms.

On another interesting point we may tarry a moment; we know how frequently individual nerves are attacked in this capricious malady, for instance the third or portions of the third, or the sixth, and so on; have we here an exception to the rule of specific arteritis? may the virus attack the nerve nuclei directly? I believe that this question awaits an answer. For my part I think—though in the midst of disorganized tissues the distinction is difficult to make out—that the arterial twig supplying the nucleus suffers first. If so, the general process of syphilis as a lymphar teritis still holds.

The conception of a direct invasion of the posterior columns of the cord by the virus has given way to that of an indirect penetration by way of the meningeal vessels about the tract of Lissauer. As the lateral columns seem to stand in like peril from such extension, we may inquire whether more cases of lateral sclerosis than we suppose may be due to this poison. In all diseases of the cord the cerebro-spinal fluid should be examined. In my experience the light-stop in the pupils, if it may be a constant test in advanced cases of central syphilis, in earlier cases has not proved constant; or a degree of insensitiveness to the pupil to light may be hardly definite enough for reliance.

Are certain cases of acute or subacute transverse myelitis syphilitic? The causes of this lesion are always obscure, but some of them are, I think, syphilitic; and perhaps, apart from corroborative evidence such as an orbital palsy or choroiditis, may be distinguished. These cases are not common; but, so far as I may argue from a few, I suggest that they begin with more or less evident meningitis, so that at first some spasm appears. The disease does not traverse the cord so rapidly as in cases of other origin; nor is it limited to a few segments. It breaks out within a year or two of the primary sore. The chronic cases—which are more frequent, are part of a longer story, and generally include some eccentric phenomena—are easier to read. In all cases of myelitis the cerebro-spinal fluid will of course be tested; and the optic nerve watched with the ophthalmoscope. Happily syphilitic disease of the vertebrae is rare.

Partly while as a Justice I was Visitor of the West Riding Asylums, and afterwards as a Commissioner in Lunacy, I became impressed by the prevalence of general paralysis of the insane in cities, in seaports, and near barracks. In the rural districts it was more sparse, and often introduced. If, as has been said, I was the first to guess at its syphilitic nature, it was because it is an endemic plague of such districts. In rural districts syphilis is not, or has not been, frequent. There fornication is less promiscuous. It was in the West Riding Asylum (in 18—), under Dr. (Sir) Crichton-Browne's generous encouragement, that I observed optic neuritis in a certain proportion of cases of this disease.[2] In general paralysis of the insane of course the cerebral blood vessels are unmistakably diseased; with meningitic and other consequences. In large areas of them the virus is in great activity; the perivascular spaces are cram full of its products. Here again arises the question of determination; is the disease swayed this way or that by the relative functional activity of certain vascular areas according to the stresses of the individual life, or by some more inherent affinity? Opinions on this subject depend much on the respective spheres of practice of observers; the observer whose experience is mainly in private asylums will see cases of mental disease in the anxious brain-worker; the frequenter of county asylums will see them among wage-earners. In either case alcohol may well be a co-operative, but not an essential, factor.

In general paralysis of the insane we learn again that the encephalic vessels are affected for long periods before clinical phenomena became manifest. It is remarkable in this, as in some other slow cerebral diseases, how little we miss our brains! Thus again the counsel is imperative, to keep watch with our tests not only on the blood serum but also upon the cerebro-spinal fluid; and to be guided by lumbar puncture from the first weeks of infection, and onwards.

On congenital syphilis there is not much for me to say. Socially woeful, the incidence of congenital syphilis upon the unfolding brain of children, well known as it may be to experts, needs public recognition. It is said that some nerve degradation falls upon about 40 per cent. of those that inherit syphilis. Cerebral syphilis attacks infants of six months old, and within their first year, and so forward to the fifth year and up, say, to the tenth. It is rarely postponed to adolescence. Sir Frederick Mott thinks that an inherited immunity may gradually die out, and the individual become susceptible to mild forms of the affection, even to paralytic dementia. Of the effects of syphilis in children we see only too much in the cripples and dullards of our out-patient departments. The universal perivascular infiltration, and ensuing arteritis, are well seen in these various cases and in the encephalitis neonatorum—a sort of precocious paralytic dementia. I do not see many necropsies in children, but in them gumma, particularly at the base of the brain, seems more frequent than in adults. The masses are apt to caseate and to resemble tuberculous lumps; but they are less separate from the surrounding structures, more matted in, than these.

It is said that, if not too far gone, these syphilized arteries may recover; that regenerative changes have been observed in them (1, p. 297). This is not unlikely, and may explain the prompt clinical amendments when active treatment has been started before much thrombosis and atrophy have ensued. Here comes the appeal again for early treatment; for recognition of the incontinent invasion of the system, anywhere if not everywhere, as septic diffusion sets in. Why then may we not expect affections of the central nervous system to vanish under systematic treatment as readily as, let us say, those of the skin or throat? It is true that in the one case the

virus is less easy to get at than in the other, but, with the new means of intrathecal attack, these fastnesses should be no longer inaccessible. If it be that from the early weeks of the malady intrathecal medication must accompany the intravenous—and it is coming, I think, to this—then surely, in view of the terrible consequences menacing the patient for his next quarter of a century, we shall no longer limit our therapeutical means. The cerebro-spinal fluid must be tested at short intervals till it becomes permanently negative. Syphilis can evade intermittent and precarious treatment better than any other virus. This is one, and the chief, of the principles I venture to urge upon you to-day.

The preparations and beautiful series of drawings exhibited in illustration of this paper I owe to the kindness of my friend and colleague, Professor Sir German Woodhead.

SUMMARY OF CONCLUSIONS.

I. That the syphilitic process may be seen in little in the primary sore.

II. That wherever it be found it consists in a lymph-arteritis with consequential irritative and atrophic effects.

III. That the division of syphilis into time periods—as primary, secondary, tertiary, and visceral—is based upon superficial characters, and is misleading.

IV. That the pyrexial phase, slight as it may be, indicates a general syphilitic sepsis, in which the cerebro-spinal system is soon involved.

V. That early necropsies have shown that in the pyrexial phase the aorta, brain, liver, and other viscera become infected; and that the cerebro-spinal system does not long escape.

VI. That lumbar puncture should be made soon after the onset of the pyrexial phase, and the cerebro-spinal fluid tested from time to time parallel with the blood testing.

Note.—Since this article was sent to press I have seen that Clifford Dobell (Medical Research Committee, Special Report Series, No. 19, p. 147, 1918) had decided that the name was to be *Spironema palladum* Schaudinn.

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N.B.—The pioneer work of Hodgson, Wilks, F. Welch, Heller, Doehle, Stadler, Chiari, and others is taken as known. See (1.) The apparently monumental work of Gennerich of Kiel on Syphilis of the Nervous System (founded on 8,000 cases) I have not yet seen.

P.S.—At a meeting of the Tropical Medicine Society on May 20th, 1921, Dr. Marshall stated that in sleeping sickness remedies injected into the circulation probably did not destroy the parasites in the central nervous system, as the trypanosomes damaged the choroid plexus and so prevented the passage of drugs into the cerebro-spinal fluid. The present method is to inject the drug into a vein, and three hours later to withdraw three ounces of the patient's blood, twenty minims of which is then injected into the cerebro-spinal canal. The results so far (since 1918) are promising. Whether the good results be due to the drug or to an antibody is uncertain.

For the beautiful series of slides and drawings which were exhibited in illustration of my paper at Newcastle I was indebted to my colleague, Professor Sir German Woodhead and the pathological department at Cambridge. For the specimen of syphilis of the stomach, and the three slides with it, I was, as I have said, indebted to Professor Elliott and Dr. McNee of University College.

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I WILL limit my remarks to some general observations taken purely from the clinical standpoint.

In the diagnosis of visceral syphilis the outstanding feature is the bizarrerie, the queerness, and the capriciousness of the signs and symptoms manifested. Whenever a patient is suffering from signs and symptoms which do not fit in with more or less standard manifestations of other diseases, syphilis should invariably be thought of. An accidental sore on the finger or on the lip, which surprises one by not yielding to ordinary treatment, is a typical instance of what I mean. By remembering this rule I have diagnosed irregular enlargements of the liver with great pain from perihepatitis to be syphilitic in origin. I have seen two or three cases of what at first looked like extensive chronic pulmonary tuberculosis, but in which the bases were more affected than the apices, and in which, by percussion and auscultation, one could picture the presence of indurative masses with extensive bronchiectasis, due to advanced pulmonary syphilis. In another recent case a lady had a peculiarly irritating cough and some signs of pressure on the left bronchus; on examining the back I found the punched-out scars with the base of thin skin so characteristic of syphilis; in this case there was almost certainly a gummatous mass near the root of the left lung and not an aneurysm. I am inclined to think that some cases of extensive albuminuria not otherwise accountable for are due to syphilis. The unusual appearance of true angina pectoris attacks in a comparatively young man is explained by a syphilis of the aorta.

In syphilis we see the raging headache, much worse at night, in which Bright's disease and brain tumour can be excluded; the sudden hemiplegia in a person under 50 years of age in which there is no high blood pressure and no source of embolism; the development of double vision or some lessened acuity of vision (but here we must not forget the probability of that common affection, disseminated sclerosis); a sciatica in which, however, atrophic paralysis supervenes, with perhaps some pain starting in the other sciatic nerve, in which malignant disease can be excluded, the cause being a gumma involving the cauda equina. In early stages of tabes dorsalis we may have queer symptoms: unilateral intercostal pain not due to herpes; pains in both arms or slight numbness in the area of distribution of both ulnar nerves; sudden painless swelling of a joint; sudden giving way of the leg without apparent reason while walking, causing a fall which is at once recovered from; periodic attacks of severe vomiting not due to definite stomach affection; the gradual onset of an optic atrophy.

In early general paralysis we may have a sudden apoplectiform seizure, apparently without cause, and which is entirely recovered from in a few days; the onset of an unaccountable mental depression, a gradual failure of business capacity not due to genuine neurasthenia, a frequent "revoking" when playing cards in a man who is usually a good player; a slight difficulty in speaking (two medical men have consulted me for speech difficulties, saying they could not understand it, as it seemed "so like G.P.I."; and they were both correct).

Besides this "queerness" of single symptoms such as I have mentioned, it is enormously important in the diagnosis of syphilis to examine the skin all over the body, and also the eyes, for in these structures one so frequently finds the result of earlier syphilitic manifestations, signs so undoubted that it is hardly necessary to ask the patient any questions about previous history.

Furthermore, in syphilis, lesions are often multiple, as in the brain or the spinal cord (I have had one case in which miliary gummata were scattered about in the spinal meninges); or there may be one lesion in one organ and another in a distant organ, as seen in tabes with disease of the aorta.

It may be said, "Why worry about these methods of diagnosis nowadays when the question of syphilis can be

so easily decided by the Wassermann blood test?" This is the very question I wish to answer. In my opinion far too much reliance is to-day placed on purely laboratory tests. They are most excellent servants (and the Wassermann reaction one of the most reliable and excellent of all), but they are extremely bad masters, and I have always refused to allow my diagnosis to be made by a laboratory worker; his report should be considered as a piece of the evidence only and not as the verdict. I am convinced, from a long teaching experience, that too great a reliance on laboratory tests is exercising a most deleterious effect on the powers of observation of the modern medical student. And further, I have had cases in which slavish dependence on the result of the Wassermann test has been most hurtful to the patient. Because a patient gives a positive reaction it must not be assumed that the signs and symptoms he has are necessarily syphilitic. I saw a patient with very typical fully developed disseminated sclerosis (which is essentially a non-syphilitic affection) who was said to have a Wassermann reaction. As a result he was given injections of mercury and salvarsan, to his great detriment.

Syphilis, and of course gonorrhoea, differ from all other diseases in the difficulties which may arise both in diagnosis and treatment, owing to the fact that they are, in the vast proportion of cases, "secret" diseases. This not infrequently causes great difficulty in asking questions, because of trouble which may arise with parents, with wives, and with husbands. On several occasions, on questioning husbands, I have felt convinced that it was the wife who was the moral delinquent, and I have suddenly had to direct the conversation into other channels before suspicion was aroused. For the same reason it may be very difficult to get an examination of the spinal cord fluid, and not easy even to give salvarsan injections.

In the matter of lumbar puncture I am not quite in agreement with Sir Clifford Allbutt when he says that "in all diseases of the spinal cord the cerebro-spinal fluid should be examined." In a very large number of spinal cord cases this is quite unnecessary, for it is only a small proportion of all spinal diseases which are syphilitic, and it must be remembered that the performance of lumbar puncture is not by any means so simple a performance, either for the operator or the patient, as exploring a pleural effusion. If medical men were more thoroughly educated in nervous diseases, relatively few lumbar punctures for diagnostic purposes would be required. Although I agree with Sir Clifford Allbutt that early and repeated examinations of the cerebro-spinal fluid are desirable in all cases of syphilitic infection, yet I think it is a counsel of perfection, and I see great practical difficulties in the way of its being done universally.

The same practical objection applies to intrathecal medication, which is moreover purely in the experimental stage. Furthermore, it is not known to what extent a positive Wassermann reaction in the cerebro-spinal fluid means any future affection of the central nervous system. Of Dr. Fildes's positive cases 80 per cent. presented no clinical signs of syphilis. I should much like to know how many of these with no sign of syphilis are subsequently going to develop any sign of nerve syphilis; for even before we had the delicacy of the Wassermann test it has, I think, always been assumed that not 10 per cent. of definite syphilitic cases developed either tabes or general paralysis of the insane.

Syphilis may affect the spinal cord in many ways. Disease of the vertebrae is rare—I can only recall one case; also rare is a localized pachymeningitis leading to pressure on the cord. Tabes dorsalis is, of course, the commonest condition, and next in frequency is a localized meningomyelitis, most frequent in the lower dorsal cord with a paraplegia of very marked spasticity, affection of the bladder reflexes, a very typical girdle pain, and some affection also of sensation below the lesion. Erb has described a systemic lateral sclerosis resulting from syphilis which is certainly not common. Sometimes acute paraplegia occurs, and this is due to acute localized myelitis secondary to syphilitic thrombosis of the spinal arteries, the symptoms produced varying according to its site. Sometimes such an acute thrombosis is unilateral, producing the usual Brown-Séquard syndrome. Gummata of the cord may occur in any part, with the usual symptoms of a tumour, and, as I have already said, I have seen one case with very numerous miliary gummata of the meninges. In some cases there is a pseudo-tabes from gummatous involvement of the posterior part of the cord in which ataxic symptoms with root pains may come on rapidly, and these cases can be relieved by energetic treatment.

SYPHILIS OF THE HEART.

BY

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We have but little to add to Sir Clifford Allbutt's admirable description of the pathological changes which may occur in the heart. We have, however, seen more than one example of syphilitic disease of the pulmonary artery in patients who died within a short time after infection. The lesions are similar to those found in the aorta but are much less common. We have, too, seen in a case of secondary syphilis a diffuse fibrosis of the muscle exactly comparable to that described by Warthin[1] as occurring in the hearts of children who had died from congenital syphilis, in which he found spirochaetes. The new-formed connective tissue is situated around the arteries, and is apparently inflammatory in origin and not dystrophic.

The *diagnosis* of syphilitic disease of the heart is by no means easy, whether on the *post-mortem* table or in the consulting room. Syphilis has no originality. It is merely a servile copyist. It can produce lesions in any situation and of any type, but these are merely imitations of lesions which are produced more frequently by other causes. It is true that the early syphilitic lesions found after death are characteristic. Warthin's fibrosis, gummata, and the dystrophic fibrosis due to specific arteritis of the coronary arteries or the occlusion of their orifices by syphilitic lesions in the aorta, are readily recognized, but the older lesions are not characteristic, as their appearance is governed by the situation of the lesions rather than by their nature. The chronic fibroses of the muscle and the chronic lesions in the valves of many years' standing are in no way distinctive. At the present time syphilis rarely kills in the early years of the disease, and in consequence its importance and its frequency as a cause of cardiac symptoms is apt to be underestimated.

Any disease of the heart may thus be due to syphilis, but the recognition of its specific origin in the particular case depends upon the recognition of a past infection, perhaps many years before, or upon the presence of specific lesions in other organs. Two or more infections may of course occur in the same individual. We have found a positive Wassermann reaction in patients who had had acute rheumatic fever, but the recognition of even a specific element in the case, and resultant specific treatment, will sometimes turn the balance in the right direction. The personal and the family history must thus be carefully scrutinized, and search made for such lesions as scars on the penis, the throat, and the shins, nodes on the bones, perforations of the palate, and alterations in the deep reflexes. Ocular abnormalities are often present, irregularities of the pupils, the Argyll Robertson pupil, an old iritis, a choroiditis or a periphlebitis of the retinal veins. In more than one of our patients the clue was found within the eye.

The Wassermann test, too, should be utilized freely. For, although it is not a specific reaction in the serological sense, its presence from the clinical standpoint has great value, as it is rarely met with in this country save in syphilis. A positive reaction is always valuable, but a negative reaction has not the same value, for it only occurs in about 75 per cent. of patients in the tertiary stage of the disease,[2] the stage in which most of the cardiac group come under observation. In one of our patients who had had syphilis the reaction was definitely negative.

We have tried to estimate the incidence of syphilis in a series of patients under our observation since the recent war. In a series of 104 patients who were suffering from disease of the aortic valves 32 (30.7 per cent.) gave a definite history of antecedent syphilis, or showed a positive Wassermann reaction or other evidences of syphilis of the

kinds already mentioned. Of these patients, 35.6 per cent. had suffered from acute rheumatic fever, and in the remaining 34.5 per cent. of patients the nature of the valvular lesion was undetermined. It is unlikely that the rheumatic incidence is under-estimated. It seems probable that the incidence of syphilis is greater than that shown, a conclusion which seems to be emphasized by the fact that a corresponding series of cases of aortic aneurysm, nineteen in number, showed a syphilitic origin in 63.1 per cent. The figures in a corresponding series of cases of mitral valvular disease show a very different picture. Only 0.8 per cent. had suffered from syphilis, 69.4 per cent. had suffered from acute rheumatic fever, and the remaining 29.7 per cent. from neither of these diseases. It is therefore clear that while aortic valvular disease is largely due to syphilis, mitral valvular disease is but rarely its result.

Two other facts are of interest. In the syphilitic group only 3.1 per cent. had coincident mitral disease, which was, however, present in 54.2 per cent. of the rheumatic group. The age-incidence, too, was different, the maximum incidence in the syphilitic group being between the ages of 30 and 50, and in the rheumatic group between 20 and 40. The combination of aortic and mitral disease, particularly in the twenties, thus strongly suggests a rheumatic cause, while the occurrence of pure aortic disease after 35, and the absence of a clear history of rheumatic fever strongly suggests a syphilitic origin.

The date of the occurrence of valvular disease in syphilis is usually late. The earliest in our series occurred three years after infection, the latest thirty years afterwards. The average duration was seventeen years. But we have seen it as early as the second year after infection, in a patient who had not received treatment for his chancre.

We have tried to estimate the incidence of syphilis in some other forms of cardiac disease, such as auricular fibrillation, heart-block, and myocardial disease. There does not seem to be a close connexion between them. Auricular fibrillation is most commonly associated with disease of the mitral valve, and the syphilitic incidence was merely 7.9 per cent. In heart-block and in myocardial disease it was slight. The latter group was composed of the most diverse elements, the most common of which was arterio-sclerosis. There seems to be little evidence of any close association between it and syphilis.

In the *treatment* of cardiac syphilis the two sides of the question—the cardiac side and the syphilitic—must be borne in mind. From the former standpoint the treatment is the same as in the non-syphilitic varieties. But in the cases which are due to syphilitic disease specific treatment is as urgently required as in other syphilitic diseases. Too much, however, must not be expected from such medication. The lesions are as a rule in an advanced stage when they are recognized. The most common is endarteritis, which is often accompanied by thrombosis, and as Sir William Gowers[3] pointed out years ago the final clotting in these cases is not syphilitic and is not affected by antisyphilitic treatment. Nor can the dead tissues be revived. But in the vicinity of the chief lesion there are often other vessels similarly affected but to a lesser degree, which if subjected to specific treatment are affected, their lumen increased in size, and their anastomotic possibilities developed to such an extent that some of the tissues may recover their pristine condition. In every case in which syphilis is known to have been present antisyphilitic treatment should be undertaken.

There has been considerable discussion as to the nature of the specific treatment. Should the organic compounds be used? Should the treatment be of the nature of a therapia magna sterilisans, or more limited in scope? It has been argued that the removal of a syphilitic mass upon a valve, or the healing of a valvular lesion, will increase the degree of a valvular flaw, and may thus be the immediate cause of sudden death.

A correct answer to these criticisms is difficult. We have seen patients who have been subjected to such treatment die suddenly, but the same issue has occurred in the absence of specific treatment, and in cases due to other causes. Advanced disease of the aortic valve not infrequently causes sudden death. In this connexion we always remember an experience of L. M. V. Mitchell in Sinai in the treatment of malignant malaria by intravenous injection of quinine. The first four patients treated by this method died shortly afterwards, somewhat suddenly, but the fifth patient died five minutes *before* his injection. It was not the injection but the disease which had occasioned death. And in his hospital an earlier use of quinine in this form soon notably reduced the mortality of this disease.

The majority of these valvular cases occur in the later stages of syphilis. In the comparable diseases, malaria and amoebiasis, the treatment of the early and the later stages is very different. In the former energetic treatment with quinine and emetine are efficacious, but in the latter are generally useless, and even harmful; and the best results are obtained by moderate doses of these drugs combined with general tonics. For this reason we have always refrained from heavy drugging with kharsivan and the like, using only moderate doses. Mercury, iodine, neo-kharsivan, Donovan's solution, have all proved of value. But the best results will be obtained if the nature of the disease is recognized at the outset, before gross cardiac failure has ensued, and the appropriate treatment instituted at that stage.

The following cases illustrate the variable features of cardiac syphilis. They have been chosen from our *post-mortem* series in order that the exact pathological conditions which were present might be described.

A dock labourer, aged 40, was admitted into hospital on account of shortness of breath and swelling of the feet. He stated that he had always been healthy until about six months prior to his admission. At that time he contracted influenza, which confined him to bed for three weeks. A week later he attempted to resume his work, but proved quite unable to do so on account of general weakness and shortness of breath. At this time he entered hospital, where he remained for ten weeks, being greatly benefited by his residence. But as soon as he returned to work all his discomforts returned, and he had again to take to bed. His symptoms continued, and he entered our wards in March. He was then very ill, with an anxious, tired appearance, full orthopnoea, and considerable oedema of the legs. He had an irritating cough, and a muco purulent sputum streaked with blood. His head shook visibly with each systole of the heart, and the bed at times quivered synchronously. The heart was much enlarged, the sounds were completely obscured by double murmurs of aortic distribution, and the pulse was full and of water-hammer type. The arteries were just palpable, but the brachial vessels were very tortuous. There were many râles at the bases of the lungs, and a copious albuminuria. The knee-jerks and the tendo Achilles reflexes were absent, and the pupillary response to light was poor.

The diagnosis in this case seemed plain. Aortic incompetence of unknown origin occurring in a man of 40, whose knee-jerks were absent and light reflex poor. The Wassermann test was frankly positive, though no history of chancre was obtained. Under treatment almost wholly of specific kind, improvement was rapid and good. The oedema disappeared, the chest cleared, the albuminuria became minimal, and he gained 24 lb. in weight. He himself was quite definite that he was, on his dismissal, in much better health than he had been since the onset of his symptoms ten months previously. He resumed his work, but four months later again entered hospital, but this time moribund, dying within a few hours of his admission. The *post-mortem* examination showed a very large hypertrophied heart, weighing 33 ounces, the enlargement being chiefly of the left ventricle. The aortic valve was notably incompetent. All the cusps were thickened, and the left posterior cusp was torn from its attachments along its junction with the anterior cusp. The aorta was very extensively diseased, typical syphilitic lesions extending from the origin right down to the bifurcation. The coronary arteries were normal. The patient had never experienced any pain in the chest.

In another patient, whose aorta presented an equally gross and extensive disease, of syphilitic origin, almost every artery in the body showed gross dilatation and thickening. The pulmonary and the splenic vessels were seriously involved, the coronaries to a lesser extent. The aortic valve was quite incompetent, the cusps being thickened and shrunken, but nowhere ulcerated or calcareous. The heart weighed 29 ounces. The kidneys showed a chronic nephritis. The chief symptom was breathlessness. This was his first symptom, occurring suddenly one night when he was in bed and asleep. Palpitation was also extreme at this time. Later on the usual symptoms of cardiac failure ensued. When he was admitted into hospital his breathlessness was extreme, and he had to sit bolt upright in bed. The breathing was frequent, difficult, and noisy, and he was barely able to speak. From time to time he had attacks of palpitation, during which his distress became exaggerated and he felt as if choking. His face flushed and his pulse became more frequent, and the whole head shook with each heart beat. Cheyne-Stokes breathing preceded the end. Pain was never experienced. He had suffered from gonorrhoea about sixteen years before his death, and from a chancre, which received no specific treatment, four years previously.

In some of these patients the chief complaint, at any rate for a time, is angina pectoris. This was the case in a man who died from cardiac failure at the age of 61. Four years previously

he had his first seizures, of short duration and moderate degree, occurring on exertion. After six months they became severe, and he entered hospital, where they rapidly ceased. He resumed his work as a labourer, and remained free from discomfort for three years. The attacks then recurred, and quickly became severe and frequent and of prolonged duration, sometimes lasting for three hours. They occurred at any time during the day or the night, sometimes awaking him from sleep. The site of the pain varied. At first it commenced high up in the chest and spread into the left armpit and down the left arm, but latterly it commenced in the armpit and spread to the chest, and only rarely affected the arm. Many attacks were observed during his last residence in hospital. When they ensued he sat up in bed with his shoulders bent forward. He was very restless and short of breath, and sighed frequently and sweated profusely. The abdomen was always tightly distended during the attacks, and relief rapidly followed movement of the bowels or the passage of flatus. He was a man of fair physique but much emaciated, with slight oedema in the feet. The heart was enlarged, and murmurs of aortic valvular disease were present. The radial, brachial, temporal, facial, femoral, and dorsalis pedis arteries were all thickened. The retinal arteries were thickened, and their lumen was narrowed. The veins of the legs were enlarged and varicose. His progress after admission was unsatisfactory, and his attacks recurred. About a week later his temperature suddenly rose to 101° F., and his pulse rate to 100. He was sick on several occasions. The pain in the cardiac region now became constant, and his general condition rapidly deteriorated. He died within the next forty-eight hours from cardiac failure. *Post-mortem* examination revealed advanced syphilitic aortitis, incompetence of the aortic valve, and enlargement of the heart. The orifice of the left coronary artery was nipped by a syphilitic plaque at its origin, and the lumen a little way further down the vessel was completely obstructed by thrombosis. Its branches and the right coronary artery showed gross local thickenings. A considerable portion of the anterior apical part of the left ventricle and the adjoining part of the septum was necrotic, from numerous small infarcts. The overlying pericardium was inflamed. There was no evidence during life of the existence of antecedent syphilis. The case is interesting in view of Sir Clifford Allbutt's theory of the cause of angina. During his last residence in hospital it was evident that he was suffering from myocardial weakness, from which he ultimately died. The constant pain experienced after the onset of fever was apparently due to the pericarditis, while the infarcts found after death were too recent to have been the cause of the pain experienced three months before. But it was at the same time evident that coronary narrowing must have existed to such a degree that it might have been the cause of his discomforts. The aortitis, of course, must have been present also at that time.

Another patient, who died at the age of 50 from cardiac failure, presented evidences of cardiac syphilis, though their relation to his illness was not clearly evident. He was a miner by occupation, and first came under observation ten years before his death. At that time he had a severe cardiac failure, the sequel to bronchitis, and quickly made a good recovery. In the following years he had many illnesses of similar kind, the result of bronchitis or severe exertion, but he worked, first at the face and subsequently at the pit head, for seventy-nine out of the 108 months before his death! During all these years the auricles were fibrillating. The heart was much enlarged, and on his early admissions a mitral systolic murmur was audible for a few days, rapidly disappearing as compensation was restored. For the last eight years of his life, however, it was permanently present. *Post-mortem* examination showed many lesions. The pericardium was uniformly adherent. The heart was much enlarged, weighing 37½ ounces, both sides being involved, the right more than the left. There was a minimal recent acute endocarditis on the aortic valve, which otherwise seemed sound. The mitral valve was much dilated, but the cusps were sound save for one small plaque of thickening on the anterior flap. So that the mitral incompetence known to have existed for at least the last eight years of his life was due to a functional dilatation! The aorta showed an almost obsolescent syphilitic aortitis, only one small lesion being active. But the coronary arteries were thickened in many places, and the orifice of the right vessel was narrowed by its implication in a patch on the aorta. The lungs showed a widespread anthracosis and interstitial pneumonia, and the kidneys an early cirrhosis. The syphilitic infection had occurred at the age of 17, and its activities as shown at the *post-mortem* examination were almost quiescent. But its influence, from the involvement of the coronary vessels, upon the nutrition of the cardiac muscle must have been the chief cause of the prominence of the cardiac symptoms through all these years.

The patient whose heart showed Warthin's fibrosis died from a subacute nephritis associated with pericarditis. He was a man of 27 years, and had suffered from syphilis a year before his death. The nephritis was probably its sequel.

The cases of cardiac gummata which we have seen have all been diagnosed upon the *post-mortem* table, the subjects having died unexpectedly while in apparently good health, or during an illness other than cardiac.

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THE ANAEMIAS OF SYPHILIS.

BY

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ALTHOUGH anaemia has for a great many years been acknowledged as one of the most constant features of the cachexia of syphilis, I have been unable to find anywhere a clear and adequate exposition of the anaemia and other blood disorders that are associated with or due to syphilis. Statements seem to be paraphrased from one text to another with little reference to recent clinical and pathological experience. Partly because of this, the general conception regarding the matter is hazy, comprising, nevertheless, a definite disinclination to attribute much practical importance to it.

Turning to the more important expositions of the subject, I believe that in inculcating the idea that the anaemia of syphilis is mild they will be regarded with general approval. On the other hand, it may be argued that we may scarcely presume to know the complete consequences of syphilitic infection in the human subject. The infection being fortunately amenable to great modification by treatment we have been unable to watch the unbridled course of the disease to its natural end. Yet, though our opportunities for measuring the potentials of syphilitic infection are greatly restricted, we may still faithfully record what we are permitted to see. I now come to my point and dilemma. What I read regarding syphilitic anaemia and what I observe in my cases do not sufficiently tally. Either I must believe what I read or I must trust what I observe. In a large measure it is possible to do both, but I cannot do both altogether. I venture to suggest that writers have succeeded too well in instilling the idea of mildness as being almost characteristic of this anaemia, but, on the contrary, the anaemia occurring in secondary syphilis may be grave, or even fatal.

Recent evidence clearly shows that the subject of acquired syphilis was usually untruthful, consciously or unconsciously. Consequently clinical investigation was hindered, and progress in a broad sense rendered impossible. Events which we now associate with or attribute alone to syphilis formerly seemed also to occur in those who were regarded as definitely non-syphilitic. For the same reason the share which syphilis had in the causation of such a condition as aortitis, for example, could not be accurately assessed. The view of twenty years ago and that of to-day are strikingly different.

So far as I have been able to learn, no similar change of opinion regarding the relationship of syphilis to anaemia has taken place during the same period, and I believe there has been no collation of the literature dealing with this subject since the introduction of the Wassermann test. The apparent increase in the incidence of syphilis, the frequency of anaemia in one or other form, the chronic course and severe nature of some forms, the need for further information regarding the anaemogenic processes in syphilis, and the no less important need there is for general agreement regarding the relationship of syphilis to some chronic major types of anaemia, are some of the reasons for my submitting a few facts from the recent literature and from my own experience.

As to the first of these reasons, the increase of syphilis is probably only apparent, although for reasons well known to everyone, the numbers of cases coming to the legitimate practitioners of medicine have certainly increased. The frequency of some measure of anaemia is very considerable. Gulland and Goodall (*The Blood*) state that evidences of anaemia are practically always a feature of the secondary stage. The chronic course and severe degree of some forms are aspects of the subject on which discussion may be very helpful in stimulating inquiry and leading to some form of general agreement. As to the anaemogenic processes in syphilis very little is known. The chief need at the present moment is for access to recent careful records. Old records would be of no greater value than they would be in obtaining statistical evidence regarding the causation of aortitis by syphilis.

Butler has found the fragility of the red corpuscles to hypotonic saline solutions to be normal in syphilis, and Bignold found the resistance to haemolysis by saponin increased. It may, however, be granted that there will be grades of corpuscles in different individuals affected by

syphilis varying in their resistance to haemolytic substances in the blood. We do not know how much this variation may be a factor in determining the degree of anaemia in syphilitics.

The Anaemia of Secondary Syphilis.

Speaking generally, writers agree in their descriptions of the anaemia in secondary syphilis. It really matters very little, therefore, which author one quotes. Gulland and Goodall say, "Diminution of red cells, and to a greater extent of haemoglobin, is practically always a feature of the secondary stage. There is generally a definite increase in the white cells, the lymphocytes being chiefly involved. Eosinophils are not diminished. In cases with no actual leucocytosis there is a relative lymphocytosis." The obvious deduction from this bald account seems to be that the anaemia of this stage is regarded by them as usually or always unimportant either from the point of view of the immediate disability or the ultimate prognosis.

In Osler and McCrae's *System of Medicine*, Richard Cabot, in 1915, wrote that only two cases in 1,200 cases of pernicious anaemia were found which presented the picture of typical pernicious anaemia occurring during the course of an active attack of syphilis. While admitting that anaemia of the ordinary type is not very uncommon in the course of syphilis, he states that he has never seen a case in which pernicious anaemia, properly so-called, has occurred in this connexion. He concludes, therefore, that it is probably safe to say that such occurrence is very rare.

Splenic enlargement in association with the earlier manifestations of syphilitic infection was first noted by Biermer in 1862. In 1915 Elliot and Wile found that the spleen was palpably enlarged in 36 per cent. of their early cases and that the enlargement might occur even before the secondary dissemination, and probably represented the earliest syphilitic visceropathy. In 27 of the above cases in which the blood was carefully studied, 14 showed a leucocytosis of over 10,000. The occasional anaemia in the early stage is possibly not a splenic anaemia, but belongs rather to the constitutional infection (*Arch. Derm. and Syph.*, February, 1921, vol. iii, No. 2). Wile at the same time points out that the relative insensibility of the organ under normal conditions and the absence of symptoms referred to it, often when it is pathologically affected, make it seem probable that it is the site of disease in connexion with syphilis more frequently than is indicated by the literature. Soukernik, in 1896, found splenic enlargement in 60 per cent. of his cases.

In addition to the features mentioned as characterizing the anaemia of secondary syphilis by the usual authorities, a number of cases under my observation have shown a much more severe degree of oligocythaemia and also poikilocytosis, anisocytosis, polychromasia and punctate basophilia. There were normoblasts and megaloblasts. Eosinophil and neutrophil myelocytes were found sometimes in fair numbers in one case. The colour index was definitely above 1 in all cases. The anaemia was grave with about 1,000,000 reds in each, and about 20 per cent. of haemoglobin. Enlargement of the spleen was a feature sooner or later in all cases. In the cases that died there was bone-marrow reaction but no haemosiderin reaction in the liver. An attempt to demonstrate the spirochaete failed in bone marrow and also in spleen. The facts are radically different from what one is led to expect in secondary syphilis, although it is practically certain that syphilis was the causal factor in all three cases.

While no doubt the morphological characters of the blood and the clinical course of the disorder in the tertiary stage are frequently those described in standard works, some adjustment and supplement seems now due. Certainly one meets with considerable variety of blood changes in this stage of syphilis to which in some measure the changes are attributable. There is simple anaemia without splenic enlargement, and the same blood condition with enlarged spleen. There are cases of polycythaemia, and also those with the blood picture of pernicious anaemia, both usually with enlarged spleen—the enlargement sometimes assuming enormous proportions. Lastly there is haemolytic anaemia of paroxysmal haemoglobinuria associated rarely with the picture of pernicious anaemia. The unusual combination of paroxysmal haemoglobinuria and polycythaemia has also been reported.

Anaemia with Chronic Splenomegaly in Syphilitics.

This chronic condition in its developed state occurs in the tertiary stage of acquired syphilis. In a case under my care the progress to the chronic condition has been watched from the early secondary period—six months before there was clinical evidence of splenic enlargement. A later stage is represented by cases, an example of which I have already fully described in the *Edinburgh Medical Journal* of 1918, in which both liver and spleen were much enlarged and probably sclerosed. This case demonstrated admirably the difficulties that beset one in arriving at the correct diagnosis, largely for the reason I have already given, that the subject is not treated in a clear and adequate manner by those to whom we are accustomed to look for a lead. The various diagnoses given to this case were: (1) Debility and slight D.A.H.; (2) N.Y.D. (greatly enlarged liver and spleen); (3) anaemia (chronic splenic), (?) Banti's disease; and, finally, (4) chronic splenic anaemia (syphilitic).

The morphological characters of the blood of this case did not present any abnormalities. The anaemia was moderate. The red blood corpuscles varied between 4,400,000 and 4,650,000; the haemoglobin from 60 to 65 per cent.; the white corpuscles from 4,375 to 6,400; eosinophils from 6.5 to 9 per cent.; mast cells from 3.5 to 4.5 per cent. There was a light lemon tint of the skin, and the temperature sometimes behaved in the same manner as in pernicious anaemia. The spleen and liver were both slightly tender—a sign distinguishing it from Banti's syndrome.

The last stage of the untreated condition is contracted cirrhosis of the liver, ascites, and melaena, etc. Throughout the entire tertiary period the sole clinical difference from Banti's disease as described by him may be the history or demonstration of syphilis, and of abdominal pain and tenderness in the cases to which I now refer. But even the pain and tenderness may not be a constant feature of the syphilitic form. In the spleen excised during the tertiary period spirochaetes are found.

In view of the fact that splenectomy is the only treatment which stays or prevents the otherwise fatal issue of Banti's disease it is necessary to learn if this form of treatment should be recommended in the syphilitic form, whether otherwise like Banti's disease or pernicious anaemia. So far as one can state at present the recommendation to operate cannot be based on quite the same grounds. It is not known whether the syphilitic cases run the comparatively brief and fatal course of Banti's disease or pernicious anaemia. Moreover, some of them do make a partial response to antisyphilitic treatment. Of six collected cases and one of my own treated in this way the Wassermann test became negative in one only. In one the general condition became less satisfactory; in two no benefit was derived; and in three some improvement occurred. In the few cases in which operation has been done the early result has uniformly been improvement after operation, but of course in some cases splenectomy is quite impossible. The literature so far as I know does not yet give any of the late results, and sufficient time has not yet elapsed for a consensus of opinion on this matter. The only case of the kind that can be quoted is one operated on by Mr. Pearce Gould in 1886, the patient dying two years later with melaena, haematemesis and ascites. The liver was a typically scarred syphilitic one.

With regard to the management of these cases, I have seen no untoward result from thorough antisyphilitic treatment controlled after each injection of salvarsan by a complete blood examination. In the first instance all cases should be so treated. If the Wassermann test remains positive thereafter, the treatment may be renewed at a later period and the question of operation broached.

C. H. Browning and H. F. Watson (*International Clinics*, vol. ii, xxiii series) showed that syphilitic infection is practically invariably present in cases of paroxysmal haemoglobinuria *e frigore*. The occurrence of a positive Wassermann reaction in these patients is almost as constant a feature as in cases of general paralysis. Of the 59 cases collected by Browning and Watson, 53, or 90 per cent., gave a positive result.

Paroxysmal haemoglobinuria has apparently responded to treatment by antisyphilitic remedies such as mercury

(B. Sonnberg) and salvarsan (W. V. Brem), in the latter case with the disappearance of the characteristic blood reaction and of the positive Wassermann reaction.

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SYPHILITIC AORTITIS.

BY

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PROFESSOR TURNBULL, in his article on arterial structure and syphilis (*Quart. Journ. Med.*, 1914–15, viii, 201), says: "Syphilitic aortitis is not only the commonest inflammation of the aorta, but it is the lesion of acquired syphilis which is found most frequently in the *post mortem* room of a general hospital." Those seeking hospital aid in my district are syphilized to about 10 per cent., and in a recent series of routine Wassermann reactions in medical cases the positives are one in seven. If one considers these two items it is impossible not to feel that numbers of patients pass through one's hands in whom this condition is present. Anatomically there is a two-fold lesion: first, a mesaortitis with destruction of the elastic layers, which are replaced by weak scar tissue ready to give way under pressure; secondly, a periaortitis, upon which the Regius Professor has rightly laid stress. This last is important to remember on two accounts: first, radiologically the outline of the thoracic aorta tends to lack clearness and to be fuzzy; and, secondly, the spread of inflammation into the cellular tissue gives rise to pain and tenderness on pressure, whether exerted from within or from without.

In order to focus our attention on these two conditions still amenable to treatment by specific remedies, I propose to discuss the earlier effects and to omit aneurysm altogether. Even with this amputation the subject of aortic syphilis is an enormous clinical field.

From the clinical point of view the cases met with most frequently may be described under the following heads:

1. *Latent.*—A patch of unsuspected syphilitic aortitis is often discovered *post mortem* in cases dying from causes other than syphilis; the development of a syphilitic lesion such as an aneurysm or aortic regurgitation in middle life in the majority of cases has been preceded by an unsuspected patch of aortitis. It may be suspected in a patient otherwise in good health who may give a positive Wassermann reaction long subsequent to the active period of the disease. On the other hand, a small proportion of cases in which it is present give a negative reaction, though in some a series of tests or a provocative injection of salvarsan or a suitable substitute may reveal a positive reaction.

2. *Effort Syndrome.*—The stretching by exertion of a diseased aorta with periaortitis in one case of mine gave a typical picture. The patient, a pensioner, suffered from pain, discomfort, and perspiration after any unusual exertion. He has a wide aortic shadow with an indefinite outline, extreme tenderness on pressure over both the ascending and abdominal aorta as well as over the iliacs, and he has a positive Wassermann reaction.

3. *The anginal type*, from narrowing of the coronary arteries, is described as a cause of the principal angina of young men.

4. *Paroxysmal Tachycardia.*—This was present in an old gentleman of over 62 with many scars of old syphilis on the abdomen and a positive Wassermann reaction. The tachycardia appeared much less often when he was under mercurial and digitalis treatment. He lived ten years, and developed before death an aortic aneurysm of the second part, causing aphonia. The paroxysmal tachycardia in this case was probably due to the implication of the right coronary artery. In another case, a young man with persistent rapid pulse, a positive Wassermann reaction, and a diffuse shadow, I suspect a similar lesion.

5. *Aortic regurgitation* is the best known and most easily recognized of the manifestations of syphilitic aortitis. This, with the coronary artery types, really belong to the heart affections, but from anatomical evidence they imply much more widely spread aortic disease. I have watched the onset of the diastolic murmur with hypertrophy in a man over 60 with syphilitic arthritis under full antisyphilitic treatment.

6. We must recognize a *metastatic form* in a case of a man previously healthy who becomes the subject of a cerebral gumma, arthritis, or other gross affection. In two cases recently under my care there have been showers of petechial haemorrhages producing a purpuric rash, in the one case of the legs and in the other of the head region. These haemorrhages, it might be supposed, were the result of a secondary infection, though none could be detected on blood culture in either case. One of these cases is now in an early condition of general paralysis of the insane.

7. *Abdominal Symptoms.*—These may be as varied as there are organs and functions, but one does not see many cases in which one can recognize a syphilitic element in the aorta. One of my cases had renal pain, two others had occasional haemorrhages. Another case with aortic regurgitation has developed an enlarged liver and spleen.

In all groups the physical signs to be particularly sought for are pain whenever the blood pressure is raised, as, for instance, on exertion, through the stretching of the affected artery; tenderness on deep pressure over the ascending aorta and the abdominal aorta and its main branches, and finally an increased width of the aortic shadow by the x rays which can sometimes be determined by percussion. The atheromatous aorta, on the other hand, is not enlarged.

The treatment of syphilitic aortitis is not satisfactory, and especially so in middle-aged or elderly men. Salvarsan and neo-salvarsan in ordinary doses may be dangerous, and therefore contraindicated. I have seen a fatal result following twelve days after the first injection of 0.45 gram novarsenobillon in a case of syphilitic aortic regurgitation. Even in small doses it may be associated with unpleasant symptoms, and no improvement, or even a retrogression, may be the result.

Nevertheless in all cases it should be given a careful trial in repeated small doses, repeated because the lesion can only be influenced slowly; and in small doses, because continued over a long period there is less likelihood of the toxic effects of arsenic. There is no fixed method of oral medication in these cases, some do well on one, some on another method. In my experience cases do best on potassium iodide and mercury in solution, but some, despite the most vigorous persistence, do badly. Digestive disturbance by this method is a disadvantage. We must recognize that any extensive aortitis can seldom be completely cured, and that the aim should be, while recognizing the condition, to prevent the onset of symptoms or their increase by continuous antisyphilitic treatment.

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THE route of spread of infection is by the perivascular lymphatics. The general symptoms are probably coincident with the discharge of infective material through the thoracic duct into the venous circulation. In the outdoor clinic at the Victoria Infirmary, Glasgow, two cases have been observed in which nephritis would appear to have been the result of such embolic spread; this conclusion was confirmed by the disappearance of the nephritis and cutaneous lesions consequent on salvarsan treatment. A striking feature of the experience of this clinic is that no case with vascular complication has so far been seen, although observations have extended over eight years. On the other hand, 40 cases of nervous complications were observed in the first 500 cases, although among these there was no case of general paralysis or of locomotor ataxia. A case was referred to in which acute gummatous infiltration of the heart produced partial heart-block and a fatal issue six weeks after the first symptoms of disease supervened.

True angina may be distinguished from pseudo-angina, which is common in toxic states, such as neurasthenia and so-called soldier's heart. In true angina the pain is probably due to chronic irritation of the sympathetic and vagal sensory endings in the aorta and base of the heart.

A case of aortic syphilitic disease was referred to in which the anginal pain was referred to the third branch of the trigeminal nerve and the nerves of the outer aspect of

the arm. The presumption is that the irritation in this case was conveyed to the medulla by the vagus and reflected from the centres of the medulla and spina to the face and outer side of the arm.

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Sir Clifford Allbutt's opening paper and the other speakers' remarks have rather exhausted the subject, and I am afraid I am unable to add much to the discussion.

I intend showing one or two cardiograms taken from patients suffering from syphilis which may be of some interest. The first two cardiograms were taken from a patient who had been admitted to the Liverpool Northern Hospital exhibiting symptoms of gastric ulcer, a man 41 years of age, a steward by occupation. The most striking symptoms on his admission to the hospital were epigastric pain and vomiting. There was a history of loss of weight and difficulty in breathing on exertion. But the gastric symptoms were so pronounced that a surgeon was called in with a view to operate. There was, however, also definite evidence of heart trouble, such as forcible apex beat, diastolic murmur in the aortic area, accentuation of the second pulmonary and aortic sounds, an arterio-sclerosis, and a high pulse pressure, the systolic being 120, the diastolic only 50. But, as I said before, the most striking feature of the case were the gastric symptoms. A cardiogram taken soon after his admission to the hospital revealed a defect of one of the branches of the auriculo-ventricular bundle. It was then found that the patient had contracted syphilis twenty years ago, and a Wassermann test was positive. Potassium iodide was administered. Three weeks later all the symptoms had disappeared. A cardiogram taken revealed normal conductivity of the bundle.

There are one or two points of interest in connexion with this case. First of all, the existing relation between the gastric and cardiac trouble seems to be more than accidental. But the most striking feature of the case is that syphilis contracted twenty years ago should suddenly give rise to a local lesion of the heart and respond to treatment so rapidly and so effectively. One must remember that a defect of one of the branches of the bundle in non-syphilitic cases is, with few exceptions, practically a fatal disease, and it is probable that this case too would have terminated fatally had antisyphilitic treatment not been administered.

The second case, a cardiogram of which I intend to show, is less striking. The patient was suffering from vomiting and gastric pain, but the heart symptoms were pronounced. The patient was suffering from cardiac asthma, and a cardiogram revealed a dense shadow on the right base of the heart. The cardiogram is of a different character from the foregoing. Antisyphilitic treatment or rest relieved the symptoms somewhat, but the patient looked extremely ill when he left the hospital, and there was no alteration in the character of the cardiogram as a result of the treatment.

Incidentally, I have seen a number of cardiograms taken from advanced cases of disease of the heart with a history of syphilis which exhibits similar features. However, I do not believe there is such a thing as a characteristic cardiogram for specific diseases; the character of the cardiogram as a rule varies in accordance with the different part of the heart affected. But I cannot help thinking that syphilis of the heart is a very common affection. It is very common to find different degrees of delay in conductivity and various aberrations of the Q.R.S. complex, not to say of complete block, in patients who give a definite history of syphilis and a positive Wassermann reaction. As there are, however, non-syphilitic affections which give rise to the same clinical symptoms and the same cardiographic signs, it is sometimes difficult to be certain whether a particular feature is due to syphilis or not. So far as treatment is concerned, my impression is that a localized lesion of the heart reacts best on potassium iodide, whilst in general affections of the arteries mercury is more useful. Of course, "606" is usually administered later on.

The two cases mentioned above have been in charge of Dr. Bligh, the senior physician, Liverpool Northern Hospital, and I am obliged to him for permitting me to refer to them.

SECTION OF MEDICAL SOCIOLOGY.

Sir Jenner Verrall, LL.D., M.R.C.S., President.

THE RELATION OF THE MEDICAL PROFESSION TO LOCAL AUTHORITIES IN RESPECT OF RATE-PROVIDED HOSPITALS AND CLINICS.

OPENING PAPERS.

I.—Sir George Newman, K.C.B., M.D., F.R.C.P.,
Chief Medical Officer, Ministry of Health.

It is obvious that my remarks on this large and complex question must be relatively brief and of a general character only. I can indeed do little more than offer suggestions for your consideration. At the outset I wish to make two general observations. We have at the present time two kinds of hospitals in this country. The first group, consisting of general and special hospitals, are voluntary, and though in some degree State-aided are not rate-provided. They supply something like 45,000 beds. The maintenance of many of these beds is subsidized by grants-in-aid from public moneys in regard to the treatment of ex-soldiers, or the treatment of such diseases as venereal disease, tuberculosis, and certain maladies of infants and school children. The second group are non-voluntary and are rate-provided. They include Poor Law hospitals and infectious diseases hospitals, and supply 135,000 beds (excluding 18,000 sanatorium and hospital beds for tuberculosis). There are, in addition, the institutions for the custodial care or treatment of lunatic and feeble-minded persons, which for convenience we may exclude from the present discussion (which number 128,000 beds). Thus, we have already in England and Wales two-thirds of our hospital accommodation rate-provided. In other words, we are not now faced, as it is sometimes suggested, with a wholly new issue of a medical service in rate-provided institutions. We have had such a service for many years, and the problem before us is rather one of adaptation to new factors and circumstances than the introduction of a new system. At the same time it must be borne in mind that up to the present the type of patient admitted to rate-provided hospitals has been determined by mutual consent, generally on the basis of the character of his disability. Now the question of expansion, which is a question only new in degree, is in substance a question different in kind, because of its intimate bearing on the future conditions of general and special medical practice and on the future development of the voluntary hospital. For even earlier in foundation than these rate-provided institutions stands what we think of as the voluntary system of hospitals, which beyond all doubt or dispute has proved invaluable both to the well-being of the community and to the advance of medicine.

Thus we have in existence the two parallel principles expressing themselves in various forms. They both possess substantial advantages, and it is common sense that we should not lose these advantages, but find some way of preserving them and making them mutually helpful to each other. The Poor Law and isolation hospitals have performed an essential service, and their organization was designed only after the most careful consideration and has been abundantly approved. But now expansion becomes necessary. The voluntary principle has also been abundantly approved. Unhampered by State control, it has contributed in many ways to the progress and freedom of Medicine; it has brought into the enterprise an immense volume of gratuitous and altruistic service on the part of many skilled and devoted persons; and it has saved the ratepayer heavy taxation. These are unquestioned advantages which it would be wrong to lose or sacrifice. I have held this view, as you all know, for many years.

The second general observation I wish to make is that in considering this subject we must retain and cultivate our historical sense, which is our sense of proportion. In social evolution we are always passing through a transitional stage, but at the present juncture we need to recognize that fact more clearly than is usually necessary and walk circumspectly. (1) A variety of circumstances

* Joint Discussion with the Section of Preventive Medicine and Industrial Diseases.

have led to a deplorable shortage of hospital accommodation, and an equally deplorable absence of differentiation in function of hospitals; (2) the national insurance system, affecting 12,000 doctors and 14,000,000 insured persons, is hardly yet in being (for it was only introduced immediately before the war), and certainly has not yet had anything which can be described as a fair trial, either in time or conditions; (3) the exigencies of the war and the ravages of certain diseases have led the State to call for emergency action in regard to maternity and child welfare, tuberculosis, and venereal disease, and these necessary but *ad hoc* movements have in some sense complicated the issue; and lastly, (4) there has been an immense revolution—"a new birth"—in the science and art of medicine itself, both on its curative and preventive sides, which has profoundly affected men's minds and coloured their aspirations. It is in the midst of these tremendous changes that we have to deal with certain questions, important in themselves, and far-reaching in issue, medically and socially, in medical education, and in the reconstruction, and possibly reform, of the Poor Law and of the local unit of sanitary government. Whilst, therefore, we may have in mind ideal national arrangements as our final goal, we have as practical men to move a step at a time, conserving what is good and discarding what has proved to be injurious or useless, having regard always to our resources of men and money, and "cutting our coat according to our cloth," and having regard both to the relative value of experiment and precedent. We are citizens first and doctors afterwards.

Bearing in mind this situation I propose to put to myself three questions in regard to the subject we are discussing together here to-day—recognizing that I am not presuming to attempt a solution of the problem but confining myself within somewhat narrow limits. The first question is this: What does the local authority require?

The Requirements of the Authority.

The local authority is elected by certain ratepayers to discharge on behalf of the whole local community certain duties imposed upon it by Parliament or the ratepayer, and among those duties is the provision, wholly or in part out of the rates, of certain medical services. I suggest that in this matter the local authority require or should require an adequate medical service, which is regular, economical, and available to all ratepayers on certain specified conditions and terms. The adequacy must clearly depend upon the needs of the district and the accommodation and equipment in existence; and the regularity is a matter of organization. Economy and availability necessitate, as it seems to me, first, a proper co-ordination between institutions and public and voluntary medical agencies in the area for which the authority is responsible; secondly, the selection of patients on grounds of urgency of physical need, necessity for skilled medical, surgical, or nursing treatment, home circumstances, and priority of application; and thirdly, the payment by or on behalf of the patient for part or all of the services rendered.

The Desirability of a Whole-time Service.

The second question is this: Can the local authority meet its obligations as regards institutions by a whole-time medical service? One thing is quite certain—namely, that a local authority cannot meet its obligations without the aid of the medical profession. They are the engineers of the machine, the crew of the ship, the doctors of the patients—their service is therefore essential. But I want to go further. It is in the interest of the patient that the authority (*a*) should secure the *goodwill* of the profession—something much more than a business deal—and (*b*) should have a *mutual understanding and partnership* between the elected municipal representatives responsible for the governance of the institution and the medical men carrying it on. Now should the liability be exclusively met by a whole-time service? I think not. For whilst such a plan appears to the authority to have substantial administrative advantages it sacrifices as a rule, and in greater or less degree, certain guarantees of success—the goodwill of the medical practitioners of the area, the co-operation of the voluntary institutions and agencies of the area, and the partnership in working—above all it sacrifices a substantial measure of local medical experience and of freedom and mobility for the institution, for its staff and for the medical profession in the area.

The Medical Safeguards.

The third question I ask myself is this: How best can the authority's medical requirements be met? The duty of the authority is clearly, first and last, the interest of the patient and his speedy and complete recovery. The ship must be brought to port; but the doctor is the navigator. Thus, the interest of the patient is secured through the doctor, and the authority is wise to put him in a position where he can render his best service. I suggest that in rate-provided institutions the authority should give consideration to the practicability of the following means:

1. That representatives of medicine should be associated directly, by co-option or otherwise, with the Public Health Committee or other governing body.
2. That there should be a Medical Staff Committee for the medical administration of the institution.
3. That the services of general practitioners of the area should be obtained for the institution, on the staff or otherwise; such an arrangement would secure their interest and support, provide facilities for post-graduate study, benefit the patients directly, and increase co-operation between the consulting staff of the institution and the practitioners of the neighbourhood.
4. That the medical staff, both consultant and practitioner, should be paid for their professional services, either by the authority or by the patient, on a fixed basis mutually agreed between the authority and the staff; that the tenure of office should be fixed; and that such part-time staff should recognize the suzerainty of any whole-time medical officer.
5. That there should be a local Medical Advisory Committee appointed by the medical profession in the district, which should be consulted by the authority on important medical propositions affecting the institution.

Some such arrangements as these would, I think, meet the case, and provide for suitable safeguards of the reasonable claims of the profession, without prejudice to the essential principle that the ratepayer who pays the piper may call the tune.

The view set out in this paper would appear to be as applicable to the governance of clinics as to that of hospitals. Above all, the surest guarantee of the wise maintenance of the medical profession and the safeguarding which is necessary to render it effective in the interest of the patient is an alert and well informed, outside independent body of medical men, free to afford the authority useful constructive criticism and assistance. This is the invaluable opportunity of the British Medical Association or other representative body of the medical profession.

II.—Councillor DAVID ADAMS, J.P.,
Newcastle-upon-Tyne.

(*Abstract.*)

MR. ADAMS'S paper was read in his absence by Dr. H. KERR. The author believed that a State medical service would ultimately be evolved, and that, notwithstanding present hostility, it would come about with the consent and co-operation of the medical profession itself. He also believed that eventually the voluntary hospitals would be absorbed in the general scheme of publicly maintained and controlled institutions; pending this inevitable though distant day, Government grants in aid of hospitals should be made through the principal municipal authorities, and these authorities in return must have representation on the boards of the institutions.

The foundations upon which the new health service of the future would be erected had been well laid in the National Insurance Act, but the Act must be amended to extend medical benefit to the wives and children of insured persons, to relieve from direct personal contributions those workers who earned less than a certain income, to provide early treatment for all sick persons and make tuberculosis sanatoriums available for all suitable cases, to compel every educational authority to establish medical and dental school clinics, and to transfer from the Poor Law authority to the local health authority the whole care of the sick not otherwise provided for.

A unified medical service should follow broadly the lines indicated in the interim report of the Consultative Council. The author's view was that the new health

authority should not be an *ad hoc* body; long civic experience had convinced him that a statutory committee of the existing local authority would prove a far more efficient instrument. This body would report to the local authority, which alone possessed the power to levy rates. To this committee a limited number of representatives of the medical and allied services should be co-opted. These representatives, although in a minority, would have full power to bring forward proposals and to vote. He also favoured the idea of setting up in each local health area a medical advisory council, which should have power to make recommendations and issue reports for the consideration of the local health authority and the public. This advisory council would set up its special committees, co-opting thereon representatives of the allied professions and services. The functions of the two bodies would not overlap; the local health authority would be concerned largely with matters affecting administration, while the advisory council would have as its main province the initiation of new and extended health organization. Through the efforts of both bodies combined, preventive and curative work might be blended and co-ordinated.

With regard to the relation of the medical profession to rate-aided hospitals and clinics, the author thought that although the part-time official was more costly than the whole-time, part-time service would not be ruled out in the communal hospital. In all the larger institutions a certain proportion of the clinical staff should be part-time private practitioners and consultants, and in addition there should be reserved in every communal hospital a ward available for the private patients of general practitioners. In purely rural areas it would most frequently be found inadvisable, even if it were at all practicable, to engage whole-time officials, for the public interest would be found to be better served under schemes by which the general practitioner devoted a fixed proportion of his time to hospital or clinic, whether communal or rate-aided. The staff of rate-aided clinics should, where possible, consist of a whole-time administrative head aided by part-time clinical officers. A whole-time officer blended more readily with the general administration, while, on the other hand, the clinical side was better left largely, if not entirely, to the part-time practitioners, whose knowledge of the history, characteristics, and environment of patients would be of great value.

In conclusion, the author deprecated slavish adherence to any mere system, and regarded it as of fundamental importance that in this great task all scope should be given for the introduction of new methods and varieties of treatment and opportunities for radical change.

III.—J. Middleton Martin, B.A., M.D., D.P.H.Camb.,
County Medical Officer of Health, Gloucestershire.

No more apposite subject could have been selected for discussion at the present time by the Section of Medical Sociology, for of no branch of social work could it be said more truly that we are at the parting of the ways.

The provision of medical services has been examined most closely by the Medical Consultative Councils for this and other parts of the British Isles, taking into account the varying conditions of the different localities; in their reports, and particularly in that of the English Medical Consultative Council, issued in May, 1920, we are given the principles that should guide development in the circumstances of this country. Sir George Newman gave consideration to the matter from another point of view in his comprehensive Memorandum of August, 1919, to the Minister of Health entitled "An Outline of the Practice of Preventive Medicine."

We have available, therefore, abundant material from which to draw information—up to date—and on which to build up a constructive policy for the future. Yet more, we have the advantage of different proposals brought forward to meet the special circumstances of different localities—for instance, the Municipal Hospital Scheme in Bradford, the Clinic System of St. Andrews, the Provident Scheme of Sussex, and the Scheme for the Extension of Medical Services in Gloucestershire. While no one of these has been long enough in operation for extensive practical results to be demonstrated, yet much valuable experience has been gained.

It is because of my association with the last scheme, I understand, that I have been asked to write this paper for the consideration of the Section in conjunction with other papers from more experienced pens. My contribution will therefore be mainly an explanation of the principles underlying the Gloucestershire scheme and of its operations in practice. Before dealing with the scheme in detail it will be convenient to review briefly the circumstances which led to its production. In the course of the present century, not yet a quarter gone, there has been very great development of special medical services for the community, preventive in their principles, but largely of a treatment character in practice, such as medical inspection and treatment of children attending public elementary schools, schemes with a view to the treatment and prevention of tuberculosis, arrangements for dealing with venereal diseases, and the development of maternity and child welfare work. With the addition of each new service, the simplest and most obvious method of making provision for its execution seemed to be the opening of special places of treatment for each group and the appointment of whole-time special officers, also for each group. In this manner, doubtless, in densely populated areas all requirements can be met in a satisfactory manner, but in scattered county areas, which form the greater part of the country, the provision of special places and the appointment of special whole-time officers for each service cannot, under any economic proposals, bring within reach of the whole community the opportunities for which all pay.

Looking at the matter from the point of view of the medical profession, such a practice has very serious disadvantages, as was pointed out by the British Medical Association many years ago, and very clearly by the opener of this discussion, Sir George Newman, in his Hunterian lecture on October 13th, 1920; his words, as given in the British Medical Journal of October 23rd, 1920, read:

> "The thing to do was to load up the individual responsibility of the private practitioner, and not to diminish it; to assist him to help himself, to provide for him the necessary facilities for efficient practice, and to secure for him his full measure of preventive work in medicine."

As a matter of history the Gloucestershire scheme dates its origin from the reply on April 16th, 1918, to a request from the Committee for the Survey of Institutional Accommodation of the Ministry of Pensions, in which the skeleton of the scheme was given, though thereafter it was improved and adapted in detail until it reached the form in which it is now in operation. The need for some such arrangements was felt by the county council in order that they might carry out certain statutory duties in an area of 1,260 square miles with a population of about 330,000. These duties are largely of a treatment character, and are primarily in respect of tuberculosis, chronic defects of school children, venereal diseases, and conditions of expectant and nursing mothers and their infants. It is mainly out-patient work, except in regard to tuberculosis, for which special residential institutions are also provided.

Two alternative courses presented themselves: First, the development of whole-time services as for tuberculosis, and secondly, the possibility of utilizing existing agencies. The first course was very attractive from the simplicity of putting it into operation and the ease of administration, but, as already mentioned, such a service can, at its best, reach effectively only parts of the area of a county. The second is much more difficult to bring into operation, partly from the fact that the co-operation of different Government departments and different committees of the county council has to be secured, and partly from the need of co-ordination of the work of voluntary bodies and medical practitioners scattered over a wide area. The second course was favoured, and that the necessary co-operation and co-ordination have been successfully obtained is due entirely to the hearty support the proposals received locally.

The existing agencies to which the council looked for assistance were the large general hospitals at Bristol, Cheltenham, Gloucester, and the smaller one at Stroud, the cottage hospitals, eleven in number, the medical practitioners, and the district nursing associations, and the council consider themselves fortunate in having secured their services. Particular acknowledgement is due to the Cheltenham General Hospital, from which valuable suggestions were received, and which gave much encouraging assistance from the earliest days of the scheme.

The actual arrangement of the scheme was given in the interim report of the Medical Consultative Council for England to the Minister of Health, and follows in great measure the proposals there laid down, although, from the more limited scope, the Gloucestershire scheme is not nearly so comprehensive as that of the Council. It was, however, given in the interim report as an illustration of their ideal, and on it, as will be explained later, can be grafted any additional services.

The basic centres are the voluntary general hospitals, and the county is divided into hospital areas for which the respective hospitals provide services. In each of these areas are local centres called out-stations of the general hospitals, which are opened at the cottage hospitals, tuberculosis dispensaries, and suitable existing buildings, and where no existing accommodation can be found, a sectional military wooden building (60 × 15 feet) gives all the space required. At present ten of these out-stations have been opened, but when the scheme is complete the number will be about fifty, and then there will be an out-station within, on the average, three miles of every part of the county. The service will therefore be really available for the whole community.

Primarily, these out-stations are of a very simple character, but make convenient provision for out-patient treatment, in-patient accommodation being found in the general hospitals or cottage hospitals; a wooden building, however, of the size mentioned provides sufficient space for an emergency room for, say, a difficult maternity case under circumstances probably better than those of the patient's home, and in a place near both the doctor and the nurse.

Though the arrangements are not yet complete with respect to all the special hospitals, the scheme provides for their co-ordination so that any case may readily be passed to the special institution suited to the needs. Such special hospitals include the tuberculosis institutions, eye, ear, and throat hospitals, and hospitals for women and children.

The personnel consists of: (1) The visiting staffs of the general hospitals, who give consulting services; (2) the local medical practitioners, who take duty as medical officers of out-stations—in turn for six months when there are two or more practitioners; and (3) the local nurses.

The out-stations are open at a convenient hour on one day a week for the attendance of the medical officer; the nurse is also present, and gives treatment under his direction, not only at this time but on intermediate days, at times arranged to suit the convenience of the locality.

The groups of cases for which this service is available are limited, at present, to those above mentioned. The method of working may be instanced by particular reference to the school cases; these may be divided into two groups—defects of special senses and organs (vision, hearing, throat, and nose), and skin affections, so common amongst children. At the time of the medical inspection of the children in the schools, the school doctor will advise the parent of a defective child to consult his own doctor, who will either treat the case himself or will refer it to the nearest out-station. There the child will be seen by the medical officer, and treatment for which the out-station in question is suitable will be given. A number of cases—such as defects of vision, or enlarged tonsils—will be reserved for consultation with the appropriate member of the general hospital staff, who will visit the out-station (and probably one or two in the neighbourhood) by arrangement with the medical officer. Cases requiring operation are admitted to hospital.

From the point of view of the medical profession, one of the most important features of the scheme is that all medical matters in connexion with it come before a medical advisory committee composed of equal numbers of representatives of the hospital staffs and of the medical officers of out-stations. The whole of the working arrangements were considered and approved by the committee before they were put into operation, and the further duties of the committee embrace: (*a*) ensuring that all treatment is effective, and (*b*), advising the board of management on all medical matters, including all difficulties arising in connexion therewith.

The manner in which the committee has assumed their responsibilities and in which the board of management has accepted their recommendations augurs well for the success of the scheme.

The board of management is a lay body consisting of representatives of the county council and its committees, of the hospital committees, and of the Gloucestershire branch of the British Red Cross Society.* The suggestion of the Medical Advisory Committee that they should be represented by their chairman—or, in his absence, the vice-chairman—was cordially accepted by the board, and the reports of the committee are presented by him. Though it may be thought by some persons that the medical profession should form a large proportion of the board, the present procedure is probably the best and the most effective from the point of view of both the profession and the community.

The statutory body finally responsible is the county council, who provide the funds and receive the grants from the Government departments, and the board of management controls the scheme on lines approved and within estimates sanctioned by the council.

Such is, briefly, the scheme adopted in one county area, and it is hoped that the experience gained from it may be helpful to those who have the duty of providing similar services. The main objections urged against it, as against that of the interim report of the Medical Consultative Council, were that it was idealistic, impracticable, and prohibitively costly.

It was certainly found to follow closely the ideals laid down by Sir George Newman in his classic Memorandum to the Ministry of Health—"An Outline of the Practice of Preventive Medicine"—when this was issued in August, 1919, the month after the scheme had been adopted by the county council. That it is not impracticable is demonstrated by the fact that it is in operation, and that it is not prohibitively costly is shown by the estimate for the first year (with twelve out-stations) being £5,000, and for the whole scheme £15,000—less than one shilling per head of the population.

It has the further advantage of lending itself to developments such as the provision of improved services for the sick and infirm, now under the care of the Poor Law authorities, when their duties are transferred to the county council, and the excellent Sussex Provident Scheme for the wider provision of consultant services for the community.

Finally, the scheme meets the principles so concisely stated by Sir George Newman in the extract from his Hunterian lecture given above, whereby alone we shall reach the fullest measure of prevention of illness and disease through the person who meets it in its earliest stages in the home, namely, the private medical practitioner. Local authorities and their officials can do much, but without his close co-operation their efforts must fall far short of the ideal.

It is fully realized that an extended experience will show very many directions in which the scheme can be amended and improved, and towards the end of the first twelve months the whole of the procedure will be reviewed by the Medical Advisory Committee and a report made thereon to the board of management, but sufficient evidence has already been gained to prove the practicability of close co-operation of voluntary hospitals and the medical profession with a local authority in the provision of rate-aided and rate-provided clinics.

DISCUSSION.

State Provision and the Medical Service.

Dr. NATHAN RAW, M.P., said that the hospital system was in a tangle. The State had never seriously developed a complete health service for the country, and for many centuries it had been content to leave the treatment of the sick to voluntary hospitals. These voluntary hospitals were doing splendid work, but they could not continue this good work without money, and the position could only be remedied by a system wherein all patients paid for their treatment according to their means. The Poor Law hospitals should be taken over by the local health authority and converted into municipal hospitals, where all citizens could receive adequate treatment, on payment where possible, but those persons who were unable to pay should be treated at the public expense. The great industrial classes were opposed to receiving charity, and naturally disliked the idea of Poor Law assistance. The State provided every possible facility for the prevention

* On September 15th, 1919, this society made a generous grant of £7,000 (half the estimated capital cost of the out-stations.

and treatment of infectious diseases, including tuberculosis and venereal diseases. Infant welfare centres, clinics, and maternity schemes were all in the national interest, and were supported out of imperial funds. The co-operation of the medical profession was essential to all legislative provisions, and having regard to this fact he was opposed to a State medical service. The National Health Insurance scheme would in course of time have to be amended, when the national finances permitted, so as to provide hospital treatment for all the insured persons. A municipal system of hospital treatment was urgently necessary to establish a proper and adequate health service for all classes of the community.

A Woman Councillor's Point of View.

Councillor Mary Laverick (Newcastle) said that she was the wife of a working man, but also a member of the City Council, and she felt it her duty to give her views. The working people of England, she believed, would refuse to have anything to do with charity or with Poor Law assistance. They, the wives of working men, would not have their husbands tainted with the Poor Law, and many working-class mothers would rather die than go to a Poor Law institution. She stood as an advocate of the rate-aided hospital, and her faith in this class of institution had been increased as a result of what had taken place in Newcastle in connexion with the Barrasford Sanatorium. Since the corporation took over that institution many improvements had been effected, including a new sewerage system. Again, two years ago in Newcastle, when they were putting into operation a scheme for maternity and child welfare, they were confronted with the big cost of building, and therefore, instead of rearing a separate institution, they carried out their scheme in association with the existing hospital, and the result had been very successful. It was agreed to give the lying-in hospital in Newcastle £1,000 a year out of public funds, and the corporation had also agreed to spend £3,800 on extensions, the hospital committee to collect a further sum, and the control to be a joint one, voluntary and municipal. Up to now there had been no crossing of swords on that joint control board. In Newcastle the Royal Victoria Infirmary had a waiting list of 1,500 patients, and the Poor Law institutions had empty beds. A small subcommittee had been formed with the object of coming to some working arrangement between these two institutions, but she did not know yet what form such an arrangement would take. If the municipal authorities were not sufficiently well fitted from the medical point of view to carry on the work of the hospitals, she wondered how the idea of a specially elected medical committee would appeal to the medical profession and to the general public.

The General Hospital.

Mr. R. H. Orde (Secretary of the Royal Victoria Infirmary, Newcastle) read some extracts from a letter recently received by him from the Town Clerk of Newcastle, who wrote informing him that the guardians viewed with dismay the statement that on May 15th last the waiting list at the hospital consisted of 1,539 persons, and had instructed him to direct attention to the fact that at Wingrove Hospital (under the control of the guardians), with 600 beds, the average number of beds occupied was only 470, and to add that it was their opinion that discussion between the Royal Infirmary and the guardians would lead to the disappearance of all technical difficulties if there was goodwill on both sides. The general hospital (the speaker continued) served a large area, and consequently accumulated a large waiting list, a very sad document, which was disadvantageous to the hospital staff as well as the prospective patients because it caused the staff to work under exceptional pressure, and sometimes led to patients being discharged sooner than they ought to have been. The financial position made it impossible to extend the hospital or to build another. Besides this, he thought there was a size which, economically, a hospital should not exceed. He believed a hospital of 600 beds large enough for efficient management. In every hospital area, however, there were many Poor Law institutions with hospital accommodation, much of it unutilized. To the ordinary man the solution seemed obvious—namely, that the Poor Law provision should be made use of, and that opinion would be confirmed if the ordinary man went round these Poor Law institutions and saw the class of accommodation afforded. The general public, if they knew what that accommodation was, would never authorize the spending of another penny on the extension of voluntary hospitals or the building of new ones until they had satisfied themselves that there was something in the nature of things which made it impossible to utilize the Poor Law accommodation. He had had the advantage of inspecting types of these institutions in the metropolis and elsewhere. Many of them were equal in every respect to first-class general hospitals, others required only a small amount of money to fit them to do the work required. The first difficulty was that if, in one area, 200 beds were required to supplement the hospital accommodation, while these might perhaps all be found in a single Poor Law institution, it might not be possible to send the waiting patients there because they would not all come from the particular Poor Law area which that institution had to serve. That, however, was a difficulty capable of adjustment. The second difficulty was that many patients were on the waiting list because they wanted treatment at that particular hospital and no other, but this again could be got over by some simple affiliation between the two institutions. The third difficulty was the pauper taint, but in any case the association of the Poor Law institution with the voluntary hospital would go far to remove it. A hospital bed accommodated twenty patients in a year, and therefore even a waiting list of 1,500 would only mean the additional provision of seventy-five beds; probably fifty beds would greatly relieve the situation. It must not be imagined that it was a case of providing 1,500 additional beds. Certain of the waiting-list patients would be quite willing to pay for accommodation in the Poor Law hospitals, and he would also suggest that if approved societies could make grants to voluntary hospitals it would be equally right and proper for them to make grants to Poor Law hospitals which supplemented the voluntary institutions.

The Position in Bradford.

Dr. J. J. Buchan (Medical Officer of Health, Bradford City) said that in the past there had been little or no relation between the medical profession and the local authorities, and this had given rise to a vast amount of misunderstanding on both sides—both on the part of the medical profession, who did not quite appreciate the objects of the new institutions set up by the local authorities, and on the part of the local authorities themselves or some of their members, who did not quite clearly understand the ideals of the medical profession. The profession was only very slightly represented on the local authorities. For the most part the people who sat on those bodies were business men or labour men. Their ideals of management were different from those which the profession entertained, although they attributed to the medical profession very much the same aims and objects which they themselves possessed. A friction therefore arose which undermined the good work it was intended to carry out. He did not think either side was entirely right; there was a want of understanding on both sides. The medical profession had to understand the mind of the members of the local authority who were promoting schemes of this kind, and the local authority similarly had to understand the mind of the medical profession. The attempt must be made to educate those who sat on local authorities in the medical and scientific ideals necessary to the success of the work. The speaker had had a good deal to do recently with Poor Law hospitals and infirmaries. He came from a community where the subject had been a "live" one. It might be said that the eyes of England were upon Bradford. He was not there to justify Bradford; he believed that Bradford could very well justify itself. He would put only a single fact before the Section. In the city of Bradford, previous to the institution of the municipal hospital, there was not one general hospital bed per thousand of population—only about two-thirds of a hospital bed—and in this respect Bradford did not differ markedly from other industrial towns in the north. The position with regard to hospital accommodation in Bradford was urgent; the people knew it was urgent, and were determined to find some solution. In Bradford the question of Poor Law hospital accommodation was gone into very carefully. It was found that there was a good deal of vacant accommodation which could be utilized for the purpose of the city. An agreement was arrived at with the guardians, with the

result that eighteen months ago the Poor Law hospital was made the Bradford municipal general hospital. The Poor Law hospitals in the past were challenged by a sentimental objection, and the opening of this institution as a municipal hospital not only did away with that objection, but, by so doing, made for the proper and efficient use of the institution. The old Poor Law infirmary was run by a whole-time medical staff, but the Bradford Corporation in the case of the municipal hospital had freely accepted the position with regard to the part-time service of an expert staff, and an understanding had been arrived at on this subject. Any misunderstanding in Bradford to-day was less than it was a year ago. The profession and the local authority had recognized each other's earnestness, and the result was altogether a good one, and would, he believed, make for the hospital's ultimate great success.

The Experiments of Socialism.

Dr. Charles Buttar (London) said that he proposed to deal with general principles, and at the outset would be obliged to touch on some of his political views. The proposals of the openers were insinuating and captivating, but before accepting them as ideally the best it would be wise to examine the general principles, even if in so doing one appeared in the light of a hopeless reactionary. Mankind in trying to establish relationships between the individuals in a community was guided by one or other of two extreme principles. At the one end was Socialism, the perfect system of government, in which the interests of the individual were completely subordinated to the good of the community. The only communities on earth in which this perfect system prevailed were the ants and bees. At the other extreme was the principle of anarchism, which allowed perfect freedom to the individual, and in its undiluted form prevailed at present only amongst the lower animals. The advocates of this system thought that in a sublimated form it was applicable to the human race, but so far the professors of the system had only succeeded in demonstrating its results by throwing bombs at their opponents. The philosopher who examined these systems impartially would probably decide that ideally each system had its merits, and that if all men were possessed with the spirit of contentment the complete bureaucracy of Socialism would be more than tolerable, while if all men were good the freedom of anarchy or absence of government would not involve the destruction by force of those with whom they disagreed. This illustrated the truth of the adage that extremes meet, and explained why it was that apparently thoughtful men confused the opposing ideas of socialism and anarchism. But not all men were content or good; consequently between these two extremes there were established innumerable systems of government which were of the nature of compromise—tyrannies, monarchies, aristocracies, oligarchies, democracies, soviets—all of which leaned sometimes to one extreme and sometimes to the other. In each case the bone of contention was that misused word "freedom," extremists on either side claiming the monopoly of the word. To come to the subject under discussion, local authorities were, of course, purely socialist institutions. They existed for the purpose of controlling individual freedom and promoting the interests of the community as a whole. On the other hand, the medical profession was anarchic in nature; its members were all individualists. Therefore the problem of the discussion was again to make extremes meet, and to induce the anarchist lion to lie down with the socialist lamb. With many of the conclusions of Sir George Newman's paper the speaker was in complete agreement; everyone recognized the way in which Sir George Newman's admirable writings and activities had paved the way to many reforms. Those activities had shown that at heart he was an individualist. His (the speaker's) remarks were not directed against these proposals; they were dictated by the fear lest at some future time there might be a less sympathetic occupant of Sir George Newman's distinguished office. In the first place, socialism was with us, and had been so for countless years, probably since the advent of civilization. Any man who took service under government, central or local, was bound to sacrifice some measure of his individual freedom; those of them who were outside such service must see to it that his freedom was not too severely restrained. In the second place, all government departments were bound to formulate their rules and regulations with an eye to the weakest member of the profession engaged in the particular branch of work. In the third place, the constitution required that there should be public control of public funds; consequently a lay element must be introduced, and it was necessary that the medical profession should not only raise its own standard but should be well educated in order to teach the lay element the limits of its control. Any man who undertook any form of State or municipal work was bound to become to a certain extent a civil servant, with such limitations as the status of civil servant imposed. He had not the same theoretical freedom as existed in the relationship of private patient and doctor. In many cases the satisfaction of a fixed income without the necessity of collecting it would be sufficient compensation. But the man of initiative and ideas would be better out of State or municipal service; he was likely to find his position irksome unless able to impress his ideals on the authority. The members of the local authority and its medical officers were mostly utilitarian in their objects, and desired to achieve the greatest happiness of the greatest number. But all might not assent to their definition of happiness. Dr. Buttar urged that in this matter of municipal hospitals and clinics the activities of the extreme believers in an ordered system of Government control should be limited as far as possible. Such limitation was best effected by a round-table conference of moderates on both sides. The views of the advocates of freedom could only be properly presented by free and independent bodies outside the Government machine; a consultative council which was part of the administrative machinery could never be as effective as a body outside the authority. Therefore the outside body should keep itself free from entanglements with Government departments as far as possible. Such an outside body represented people whose interests might clash with the ideas of the bureaucracy or of the leaders of opinion amongst the people; therefore the independent medical man should be the first care of the outside body. There was ever-increasing need for a highly educated medical profession, whether employed outside or inside Government departments, so that an endeavour might be made to effect sympathetic enlightenment of the darkness of a socialized community, and so that the medical man might lead even when serving. Their utmost efforts should be concentrated on breeding and educating a race of medical supermen. Socialism was an effort to find a means of materializing the philosophy of utilitarianism. Until philosophy shifted its ground again and adopted another and possibly a better ideal than happiness, they would not be able to free themselves from socialistic experiment. But if they were sufficiently educated to know their own principles they would be able to curb the worst excesses of which a socialist bureaucracy was capable, and ultimately to lead it into better paths. The solution of the problem of the relation of the medical profession to local authorities was to be found in the single word—Education!

Maternity and Child Welfare Centres.

Miss J. Halford (National League for Health, Maternity, and Child Welfare) called attention to the importance of the preventive aspect of the work of the maternity and child welfare centres. The linking up of these centres with hospitals was of secondary importance, as they existed less for curative than for educational and preventive work. She suggested that more use might be made of these centres than was made at present—no matter whether the centres were rate-provided or voluntary—for training medical students in the hygiene of infancy. All students should be attached for a short time to such an institution. She also urged the establishment of centres, on a paying basis, for middle-class "new poor" mothers, who were as much in need of the help they could render as were the working-class mothers, but could seldom afford to consult a doctor in order to keep their children well.

The Medical Officer of Health.

Dr. Eustace Hill (M.O.H. County of Durham) referred to the relation of the medical practitioner to the communal or State-aided clinics, and especially to the report of the Medico-Sociological Committee of the British Medical Association, which indicated that the difficult question as to the staffing of these clinics by whole-time or part-time medical officers was in the way of being

satisfactorily settled. In his opinion all thoughtful medical officers of health and most medical practitioners who were aware of the difficulties of the situation, would agree with the views expressed in that report, and they might be made applicable to the staffing of other communal clinics than those concerned with maternity and child welfare. As regards the setting up of advisory medical committees, that was a proposal strongly objected to by the Society of Medical Officers of Health, on the ground that it prejudiced the position of the medical officer, who was the expert adviser of the authority on health matters; but if the medical officer of health was tactful and considerate of the position of the medical practitioner, and if the medical practitioners on their part would consult with the medical officer of health and realize his difficulties, he thought that this medical advisory committee would do much good and would lead to the better education of the general practitioner in preventive medicine. He agreed with Dr. Buchan as to the importance of utilizing the vacant beds in Poor Law hospitals, provided they were co-ordinated with the beds in existing voluntary hospitals. It was a disgrace that while thousands of patients were needing treatment these valuable beds in Poor Law hospitals should be lying empty. His experience was that the question of "Poor Law taint" did not arise where the beds were utilized for patients sent in by the local authority by agreement with the guardians. In his county (Durham) there was a great deficiency of hospital beds, and, although arrangements existed between his council and most of the voluntary hospitals in the area, it was often impossible to get accommodation for such urgent cases as ophthalmia neonatorum, and they had now, with the approval of the Ministry of Health, an arrangement for admitting on reasonable terms cases of ophthalmia to a Poor Law hospital when there was a resident medical staff or visiting consultant ophthalmic surgeon and excellent administration. They had no difficulty in obtaining immediate admission of such cases to the hospital, and it had been already a great benefit to the county.

The Wiltshire Scheme.

Dr. C. E. S. Flemming (Bradford-on-Avon) said that he had no wish to criticize Dr. Middleton Martin's scheme, but simply, by speaking of what was being done in Wiltshire, to show that there were more roads than one to the Mecca of medical service. This was important, because no local authority would now permit the expenditure that Gloucester had undertaken. The Gloucester scheme was engineered at a time when the cry was "Get there, and hang the expense." A service had now to be promoted when the cry was "Stop where you are, and hang the Ministry." Both Gloucester and Wiltshire were hoping to get to the same place, but in Wiltshire they were starting through the voluntary hospital and the medical practitioner and not through the local authority. Briefly, the method in Wiltshire was to form an association of all the voluntary hospitals, with three representatives from each hospital, one of them being a member of the medical staff, and to co-opt on to this body representatives of the County Council and its Health Committee and other persons of independent position, including those who were most immediately interested in the success of the service, namely, the working classes. There was a standing subcommittee of the medical men on this body, with co opted members, who would be representative of the medical associations in the county and the medical officers of the local authority. While organizing, co-ordinating, and developing the work of the hospitals and medical practitioners, this body or council would go to the local health authority, tell them that they were providing means in every cottage and general hospital for the carrying out of the communal services they required, and suggest that these facilities might be used by the local authority and might be assisted with money and staff where necessary. Maternity wards would, it was hoped, be provided in each hospital. The promoters of the scheme did not intend to interfere with any work which could be done efficiently by the medical man in his home or his domiciliary practice. It was not their opinion that in Wiltshire it would be necessary to provide out-stations, such as they had in Gloucester, first, because of the improved transport services now existing, including motor omnibuses and a complete ambulance service, and secondly, because in such a minute subdivision of medical service there was a danger of lessened efficiency and increased expense. As for the larger question, the perennial disagreement between the supporters of the voluntary hospital system and those who wished for rate-provided hospitals—a disagreement which must, while it lasted, be injurious to the progress and efficiency of all medical service—he believed that if they put aside all prejudice a settlement could be arrived at by mutual conference, and the wants of both sides could be met, as both were working for the same goal.

The General Practitioner.

Dr. J. Clarke (Woolwich) suggested that medical officers of health should call together general practitioners in their areas and explain new health legislation—in particular, how far health authorities could go; also how funds might best be used for the good of the community in general—that is to say, in hospitals, clinics, and welfare work. He also suggested that a report or summary of the work and aims of the Medico-Sociological Committee be drawn up, with suggestions as to the part the medical profession could take in furthering such objects for the benefit of the community.

Boards of Guardians.

Mr. J. W. Coulson (Clerk to the South Shields Board of Guardians) said that the suggestion in Sir George Newman's paper for dealing with Poor Law hospitals should be put in practice without delay. It was quite out of the question, in the present condition of the country, to expect that any great scheme of reform or transfer of administrative duties from one authority to another could be carried out, and it was therefore the duty of every one concerned to make the most of the existing facilities. There were undoubtedly large numbers of beds available at many of the best Poor Law infirmaries which—but for the wretched sentimental objection which had so greatly hindered progress in the past—could be made use of with great benefit to those requiring hospital accommodation, and he heartily supported the suggestion to arrange matters with the goodwill of the general practitioners. The proposal was, as a matter of fact, already being carried out by several boards of guardians, notably at Manchester, Liverpool, Rochdale, and some of the Metropolitan Poor Law infirmaries, and in every case was giving satisfaction. He took strong objection to the statement that the hospital services carried out by the guardians were the least satisfactory part of their work. Whereas the sanitary authorities—some 1,800 in number—had provided about 30,000 beds, the 630 boards of guardians had provided over 90,000 beds; many of these were in first-class well-equipped hospitals, and there could not be any sound reason why the fullest possible advantage should not be taken of any of these beds that were available for the general public. If this proposal were carried out, it would tend to remove the sentimental objections which had hitherto been a stumbling-block in the way of progress.

Mr. C. H. Leach (Darlington Board of Guardians) said that the question of the relation of the medical practitioner to the rate-provided hospital would remain, whether boards of guardians continued or not. In his view the "pauper taint" was quite gone. There was no difficulty in his experience in getting private patients to come into a Poor Law infirmary. At Darlington the first Poor Law institution in England was opened for sick and wounded soldiers; subsequently a voluntary hospital was opened in the town for the same purpose, but even the sons of well-to-do men, returning wounded, preferred the workhouse infirmary to the V.A.D. hospital. Sir George Newman's paper had suggested to him that Sir George was opposed to the whole-time medical officer. He took it that Sir George was only uttering his private opinion, and not the opinion of the Ministry when he said that he was opposed to the whole-time medical officer, and that there was no intention of reversing the present system of whole-time appointments.

Sir George Newman said that his exact words were, fortunately, in print. He was not talking about the advantage or disadvantage of having a whole-time officer at the head of an institution, and he had expressly laid it down in discussing medical safeguards that the suzerainty of any whole-time medical officer should be recognized by any part-time staff.

Mr. Leach repeated that he had understood Sir George Newman to say that he was against the whole time medical officer.

Sir George Newman: No.

Mr. Leach added that he held a brief for the whole-time officer. For a time in the North Riding they had attempted to do the school work by general practitioners, but a whole-time staff for the examination and for the treatment of minor ailments had to be reverted to. A whole-time staff was always more expensive, but all the benefits which had come of recent years had come as the result of the whole-time staff. The great improvement in nursing and the remarkable developments in many of the Poor Law hospitals were attributable to the employment of whole-time medical officers. The better education of the public was to be traced to the same source; almost entirely it was due to the modern development of whole-time men, who devoted themselves, without any other interest, to the work to which they had been appointed. Private patients were taken into his own infirmary, and were allowed to bring their own doctor with them.

Mr. Gladstone Walker (Clerk to the Newcastle Board of Guardians) said that, as Sir George Newman had pointed out, we were in the midst of tremendous changes, medical and social. We were shuffling through the aftermath of the war. We needed to recognize that fact, and not to lose our sense of proportion. England had long been the home of voluntary effort, but a State medical service, both domiciliary and domestic, for all people, was on its way, as shown by Lord Dawson's report. The larger provision of the rate-aided institutions, whether municipal or Poor Law, would inevitably lead to reduced voluntary service. Notwithstanding all the talk of recent years about the prejudice of the Poor Law, the Poor Law institutions, as Mr. Sidney Webb had said, were growing in popularity. Without the Poor Law infirmary the Insurance Act would have been unworkable. The Insurance Act had accentuated the hospital problem because the municipal authorities had never realized their responsibilities to the community by providing for the sick; they had left to the guardians the provision of hospitals for the sick poor, and to the voluntary charities the provision of accommodation for accidents and cases needing operation. Between 80 and 90 per cent. of those discharged from the Poor Law infirmaries were panel patients, and the country could not afford to pay 11s. per head to the insurance practitioner merely for recommending the patient to the hospital to be treated at the expense of the ratepayers, nor would the working man at one and the same time pay for his treatment in the Poor Law hospital, pay his rates, and subscribe to a voluntary institution. He did not understand the five points tabulated in Sir George Newman's paper as applicable to the management of the Poor Law hospitals. Was it practicable for general practitioners to be on the staff of Poor Law hospitals as part-time officers, or did Sir George Newman suggest that the panel doctor should complete his contract by treating the patient in the hospital? Sir Clifford Allbutt at last year's meeting said: "To range up the Poor Law infirmaries with other hospitals would enrich our clinical fields beyond anticipation." How many general practitioners, or even members of the staffs of general hospitals or medical schools, had the slightest acquaintance with the Poor Law hospitals of their district? The ignorance of the general public concerning the amount of good work done in the Poor Law hospital was only surpassed by the apathy of the medical profession to the institutional treatment afforded by boards of guardians. Boards of guardians would welcome the co-operation of the medical profession in all that appertained to the treatment of the sick poor, whether in institutions or not. The voluntary hospitals served a much wider area than either the Poor Law or the municipal boundaries, and therefore even a municipalized Poor Law hospital would not be able to relieve them of their waiting cases. Neither the county nor borough council bore the chargeability of cases from other rating areas making no contribution to the hospital's support. The claim to hospital treatment provided by boards of guardians was legal on the ground that the applicant was destitute, not of money but of medical service, and actually because the applicant was sick. It mattered not what the patient could afford to pay; if hospital treatment was necessary, and there was no accommodation in the voluntary hospital, and the fees in the nursing home were prohibitive, the patient must be admitted because he was sick. Therefore there was no distinction between the class of cases admitted to a voluntary or a Poor Law hospital, and in many cases the Poor Law hospital was preferred.

The President (Sir Jenner Verrall), in closing the discussion, said that if it had been a surgical or medical section where some simple but exceedingly important problem had been brought forward, it would have been his duty as Chairman to state plainly what had been the drift of the discussion and the conclusions of the majority, but with a theme like this that was not possible. The speakers had generally realized the great difficulties which must arise from the obvious necessity of increasing rate-provided hospitals. Some of the speakers had unconsciously, on account of their own view of the interest of the question, drifted a little from the strict line of argument, but there had been distinct suggestions made, both as to the difficulties and the means of dealing with them. At the next Representative Meeting, he did not doubt, this subject or subjects germane to it would come up not only for discussion but for decision, and the report of this discussion which would appear in the Journal would in that event prove very useful. He had to congratulate the Section on a really satisfactory attendance and a well-sustained discussion.

The Sections

BRIEF SUMMARY OF PROCEEDINGS.

(*Continued from page 195.*)

SECTION OF MEDICINE.

Asthma and Allied Disorders.

The subject of asthma and allied disorders was opened on Thursday, July 21st, by Sir Humphry Rolleston. In the group of "toxic idiopathies" he included hay fever, asthma, urticaria, angioneurotic oedema, Henoch's purpura, eczema and acute dermatitis, some forms of croup and acute gastro-intestinal disturbance, while migraine, epilepsy, cyclical vomiting, and possibly gout, were doubtful examples. The various guesses at the causation of an asthmatic attack were reviewed, and the evidence that it is in many instances an anaphylactic manifestation detailed. With regard to etiology, the importance of a hereditary sensitiveness to several different proteins was emphasized. Whether such hyper-sensitiveness could be acquired was considered; constant contact might appear to induce the condition, though it was improbable that it arose *de novo* from absorption of foreign protein through the subcutaneous tissues or an injured mucosa. Hypersensitiveness might first appear after acute infections; serum sickness might occur only in patients with a transmitted natural hypersensitiveness. The majority of the cases of asthma began before the forty-fifth year; the earlier the onset the more likely was the demonstration by a skin test of a sensitiveness to some protein, and when the symptoms began in infancy multiple sensitization was not infrequent, particularly to food proteins. The value of positive skin tests for hypersensitiveness was shown by success in treatment, but apparently not more than 50 per cent. of all cases gave a positive skin reaction and the percentage fell as the age of onset rose. The known forms of protein were very numerous; at the New York Hospital 130 test substances were employed. In the asthma cases giving a negative protein cuti-reaction bacteria played a prominent part. Specific treatment by desensitization, either by hypodermic or oral administration of the offending protein, was considered; a proportion of cases improved under autogenous vaccine prepared from the sputum. All infective foci which might possibly be the site of the production of foreign protein must be eliminated. On non-specific lines the intramuscular or intravenous injection of peptone was referred to, and finally the treatment by drugs.

Dr. John Freeman (London) considered that asthma was due to a mixture of hypersensitiveness and some reflex stimulation. A foreign protein was one link only in the chain. In hay fever the protein factor was the more important, but some nervous reflex—emotion, strong light, bad news, suggestion—was often the immediate exciting cause. Reflex action, protein sensitiveness, and hereditary

taint were all factors, and there were probably others. Asthma and hay fever tended to run in families, but a summation of stimuli was sometimes required to induce an attack—a horse asthmatic might only have attacks of asthma when pollen was about. In skin tests the grass pollen reactions were enormously greater than those of food proteins. Infections played a very important part, the focus being in any part of the body, and the exciting cause might be a bacterium, its toxin, or a product of tissue destruction. With regard to the grasses, any grass pollen could be used for the test, but the pollen of each kind of flower was different. Preparations of the proteins dried on paper were shown and the technique of the skin reaction described.

Dr. Mackenzie Wallis (London), in a case of intermittent hydrarthrosis associated with psoriasis, found the patient to be sensitive to her own synovial fluid. Many cases of asthma showed a periodicity in the attacks. A case of sensitiveness to tobacco was described, and one due to egg albumen in which an attack was precipitated by using an embrocation containing egg. The skin reactions of 500 cases of asthma had been tested. About 40 per cent. showed a positive reaction. The largest number reacted to pollens, then meat and fish proteins. Some cases of epilepsy gave a definite positive protein skin test. The proteins did not keep well in solution.

Mr. Frank Coke (London), speaking as a clinician, regarded asthma as an anaphylactic phenomenon, and mentioned several cases in support of that view. Histamine shock was very like anaphylactic shock, and the symptoms varied in different animals. It might be that histamine was concerned in the production of asthma, and that asthma was due to poisoning by protein or protein derivatives, or a specific ferment elaborated by the organism as a defence against some particular protein. Dr. A. E. Gow (London) remarked on the intradermal reaction with Witte peptone in asthma, and cautioned against the indiscriminate use of peptone by intravenous injection in the treatment of asthma and hay fever. Dr. Warren Crowe (Harrogate) related a case of a farmer who was free from asthma while in charge of horses in Salonica, but whose asthma recurred on returning to his own farm.

Dr. Chalmers (Sunderland) had hoped for more information on the treatment of asthma; he referred to several cases of asthma, and commented on surgical procedures in the nose. Dr. Hamilton (Glasgow) regretted that there had been no combination with the Section of Psychiatry in this discussion, as suggestion often played an important part in the cure; he considered that asthma in general practice was far more a nerve condition than he had been led to believe that day. Dr. Greenfield (Rushden) regarded the cutaneous tests as too delicate for general practitioners, but thought peptone treatment would be useful, and asked for details. Dr. John Stenhouse (Toronto) related several cases of asthma, and thought that the disease was probably due to toxic products. Dr. John F. Walker (Southend-on-Sea) asked for information as to the utility of the ophthalmic reaction, and expressed the opinion that information obtained by general practitioners in this condition should be collected in some way for consideration by experts.

Dr. Freeman and Dr. Gow, at the President's invitation, replied to various questions dealing with the ophthalmo-reaction and peptone treatment respectively; and Sir Humphry Rolleston summed up the main points of the discussion. In the afternoon a demonstration of the skin reactions in asthma was given by Dr. Mackenzie Wallis in the Pathological Department. At the Royal Infirmary, in addition to ward demonstrations by the honorary medical staff, the following were demonstrated: The negative pressure in the pericardium, by Dr. G. Arbour Stephens; the treatment of tuberculosis with an attenuated tubercle vaccine, by Dr. Nathan Raw; the value of tuberculin in the treatment of bone tuberculosis, by Dr. Camac Wilkinson; the technique of artificial pneumothorax, by Dr. F. G. Coley.

SECTION OF SURGERY.

Compound Fractures of the Lower Limb.

The largeness of the audience assembled in the Section of Surgery on Thursday, July 21st, was clear evidence that the interest in compound fractures of the lower limb, in methods of extension in their treatment, and in repair by bone graft, aroused during the war and in the years which have elapsed since its close, was still very much alive. Mr. A. M. Martin, a vice-president of the Section, presided, and introduced the speakers. Mr. Naughton Dunn of Birmingham inaugurated the discussion on compound fractures of the thigh and leg, basing his observations almost entirely on experiences gained during and after the war, and attempting to lay down certain definite lines on which compound fractures and their complications should be treated in civil life. Emergency treatment included immediate application of a sterile dressing, a tourniquet, if necessary, and a Thomas splint suspended at its end for comfort in transport. It was a safe rule to operate on these cases early. Their object was to remove all severely damaged tissue, muscle and skin and detached fragments of bone; to wash the wound thoroughly with an aseptic solution, then with spirit, and then to apply a film of bipp to all the wound surfaces; the wound was then to be sutured with drainage. Antitetanic serum was to be given as a routine in all cases of compound fracture. Alongside operation came treatment by splintage, and he believed that the Thomas splint met all the requirements for fractures below the upper third of the femur. He mentioned also the Jones abduction frame, Pearson's sectional bed for use with the Thomas splint, and the Sinclair net bed in the oblong wooden frame. At the end of ten or twelve weeks splints could be discarded and a caliper splint worn for weight bearing.

Mr. Dunn discussed also compound fractures involving joints, and their effect on the joints when not involved. In dealing with chronic sepsis following compound fractures he showed that, if operation were contemplated, it must be a radical one, and only to be carried out if the general health of the patient were good, if there were no signs of local reaction, absence of rise of temperature for three months, and a history of only slight reaction after previous operations. The operation consisted of excision of the sinus, long incision, free exposure of bone, removal of bone till all sequestra were exposed, and the cavity converted into a groove, spirit and bipp treatment as in the primary operation.

Subsequent speakers showed some diversity of opinion as to the value of the Thomas splint, the necessity for administration of antitetanic serum, the immediate and remote results of caliper extension. All were agreed that the compound fractures of civil surgery were in many respects different from those of war. Mr. Edington (Glasgow), Mr. Wade (Edinburgh), and Mr. Hamilton Russell (Melbourne) did not regard the extreme operative measures of the war as generally applicable to compound fractures of civil life. Mr. Fullerton (Belfast) recommended excision of the wound, avoidance of antiseptics, and extension of the calliper method.

Mr. Hamilton Russell in a short paper gave his views on theory and method in extension of the thigh. The muscles from the pelvis to the head of tibia and fibula prevented adjustment of the fracture, and it was of importance to overcome the resistance maintained by those muscles. This was best accomplished by a pulley arrangement whereby longitudinal extension of the leg was supplemented by vertical extension by a sling at the knee level, the resultant of these two forces being a pull on the lower fragment in the best possible line. He was by no means whole-heartedly in favour of the Thomas splint. It added to the weight of the limb, its extending force depended upon pressure on a portion of the patient's body; that meant it was uncomfortable, and if it was not uncomfortable it was not efficient.

Bone Grafts.

Mr. Marcus Mamourian (Ashton-under-Lyne) provided material for the liveliest interest of the meeting in his paper on bone grafts. He propounded the theory that all that the graft did was to supply the biochemical stimulus or irritant which had been abolished by trauma or infection, the new bone being formed by the diaphyseal ends, by periosteal and bony remains in the shaft zone and in the young by epiphyseal lengthening, and he supported the theory of Murphy that the graft was ultimately absorbed. A large number of *x*-ray photographs were shown to support the thesis, which he put shortly in three points: (1) That the bone graft acted as a stimulant to the surrounding tissues; (2) that when the graft did succeed in persisting in the presence of infection, the success was not

due to its own resisting power but to the fact that the infection was itself a stimulus; and (3) if there were no visible or palpable growth it was not evidence that there was no bone; it simply meant that the graft was dormant, its bone-forming properties inhibited by trauma or disease. It was important to note that a double action might be in process—bone formation at the proximal end and bone absorption at the distal end. Not much formal discussion followed the paper, but the author was heartily congratulated and submitted to a fusillade of questions as he explained many of the points in the photographs at close view which were not visible in the general meeting.

Intestinal Injuries.

The Section of Surgery was again fully attended on July 22nd by a keenly interested audience. Mr. Arthur Cooke of Cambridge presided, and all the officers of the Section were also present. Mr. G. Gordon Taylor (London) introduced a discussion on the diagnosis and treatment of injuries of the intestines. The recent history of the subject was very carefully traced, and future investigators and writers will be very grateful for the thorough and complete references provided. The intestinal injuries arising in the war were in a class separate from those found in civil life, and they had been very fully described by many surgeons. The most difficult cases undoubtedly were those found every day in civil life, and probably no better information on these cases could be found than in the paper by Mr. James Berry published in 1908. Mr. Gordon Taylor pointed out that the prognosis in intestinal injuries was so intimately related to early diagnosis and to early operation that the case should be kept under observation and the pulse counted at least every half-hour, and he submitted that whenever there was the slightest suspicion of any intestinal lesion the abdomen should be explored forthwith. Rapid operating was an essential; the liability of the duodenum to retroperitoneal injuries must be remembered lest an overlooked tear of this aspect of the bowel be followed by a fatal retroperitoneal extravasation and infective cellulitis.

The discussion was continued by Mr. James Berry (London), who limited his remarks to rupture without external injury, commonly found in civil practice. These injuries were crushing, tearing, or bursting of the bowel, brought about by the intestine being crushed between a hard object and the spinal column. There was in all cases one symptom of extreme importance—the intense localized pain, which came on very early and was continuous, accompanied by localized tenderness and muscular rigidity. Rupture of the intestine of itself did not necessarily produce shock and in the first few hours it was not attended by extensive escape of gas or other intestinal contents. He divided those cases clinically into three groups: (1) Rupture of all coats; (2) secondary rupture where the peritoneum was not torn—such patients often walked to hospital and the complete rupture took place secondarily; (3) cases of rupture of the intestines together with other severe lesions. The treatment adopted by him was operation within the first few hours, a long incision, simple suture rather than resection, sitting the patient up, giving nothing by the mouth for four or five days, and administering saline continuously by the drop method. Mr. Zachary Cope (London) pointed out that the two cardinal symptoms were pain and some alteration in the pulse, and even if one or other of these were absent, if a history of injury could be obtained, operation should be performed.

Professor Rutherford Morison's contribution to the discussion concerned itself with the urgent necessity of sending these cases under the care of the surgeon as soon as possible, and he thought their principal problem was to educate the practitioner. A message from this Section should go out to the practitioners of the country urging them not to hesitate to send any case of suspected abdominal injury, no matter how apparently trivial the injury were, to hospital. He reminded the Section that the general practitioner did not always recognize that a patient may actually have a rupture of a viscus and yet appear to be quite well. The condition of shock was frequently so transient and apt to be deceptive, as it was followed by a period of reaction, when one's anxiety for the case was apt to be lulled. The discussion was continued by Mr. Heaney (Liverpool), Mr. Wilkie (Edinburgh), Mr. Finch (Sheffield), Mr. Cuthbert (Gloucester), Mr. Childe (Portsmouth), Mr. Hadley (Western Australia), Mr. Souttar (London), and replied to by the leaders. A short paper was read by Mr. Childe on the employment of crushing instruments and the cautery in intra-abdominal operations, with demonstrations of some special instruments. The interest created by Mr. Mamourian's paper on bone grafts read at the first day's meeting was so great that a few speakers expressed the desire to carry on the discussion. Mr. Grey Turner and Mr. Cope spoke of the remarkable results obtained by Mr. Mamourian, and expressed their pleasure at the new idea of the stimulating effect on bone growth of the presence of the bone graft, even in infection of the wound. Mr. Mamourian explained again some of the points evolved in the question of bone graft. It was felt on all hands that the Section had been a most successful one and productive of very fruitful discussion on all the subjects brought before it.

Demonstrations.

The ordinary meetings of the Section were supplemented on each of the three days by demonstrations by the staffs of the Newcastle hospitals. On Wednesday afternoon a very large audience assembled in the War Pensions Hospital to attend the demonstration by Professor Rutherford Morison. He showed large numbers of cases illustrating the bipp method of treatment of infected wounds and the treatment of bone cavities (especially dealing with fat grafts); he also showed cases indicating the value of Lane's plates in certain bone-graft operations. On the second day, in the out-patient department of the Royal Infirmary, Dr. Hamilton Drummond demonstrated a series of cases illustrating the end-results of ileo-colostomy. These cases were mostly operated on for tuberculous disease of the caecum. Mr. F. C. Pybus showed some cases illustrating the treatment of tuberculous disease of the spine by the Albee bone-grafting method. On the third day of the Section Mr. Clay showed some cases after splenectomy for disease, Perthes's disease of hip-joint, and a case illustrating the value of jejunostomy in gastric haemorrhage, and Mr. Grey Turner demonstrated cases illustrating the late results of implantation of the ureter into the bowel. Many members of the Section had an opportunity of seeing operations performed in the afternoons at the Infirmary by Mr. Grey Turner, Mr. Clay, and Mr. Pybus.

NEUROLOGY AND PSYCHIATRY.

Short Papers.

The President of the Section (Professor Astley Mackintosh of Aberdeen) again took the chair on Thursday, July 21st. The work of the morning consisted in the reading, with discussion, of short papers. Dr. Harry Campbell, London, read a paper on the nervous diathesis and the blood. He wished to consider the plasmic environment of the neurone in relation to the evolution and dissolution of the neurone. This plasmic environment was chiefly responsible for diseases affecting the neurone, even its final senile decay resulted as much from extrinsic as intrinsic causes. As examples of the faults in plasmic environment interfering with the normal development of the nervous system the endocrine glands could be mentioned, cretinism and hypopituitarism, for example. The progressive deterioration of the nervous system which took place after, say, the age of 30, resulted largely from plasmic influences. The neurone, in fact, had senility thrust upon it by the plasma. Further, he considered that the inheritance of nervous diseases, both organic and functional, was due far more to the inheritance of plasmic defects than of a primary nervous defect. The sensitiveness of the neurone to chemical influences was well shown by the action of drugs, and the blood normally contained a number of substances having a similar action. He held that in all those congenital cases of craving for alcohol it was the blood which was essentially at fault. Nerve stimulants and nerve depressants both normally existed in the blood. Such substances were derived from (*a*) the endocrine glands, (*b*) the digestion of food. Many functional nervous disorders could be caused by defects or excess of these substances. He proceeded to emphasize the influence of the blood on the feelings and emotions. The mental temperament was the root factor in the causation of the minor psychoses, and this in turn was largely dependent on the habitual constitution of the blood. Dr. Helen

Boyle (Brighton), while agreeing as to the great importance of the plasma, insisted on the importance of the purely mental factor, and thought that the condition of the blood itself could be influenced by the mind.

Dr. Riddoch (London) read a paper on some points in the management and treatment of paraplegia. He dealt in detail with the measures for the prevention of septic complications of the skin and of the urinary system. He referred to the two stages of paralysis of the bladder and rectum, one of retention and the second where some degree of automatic action became established. During the stage of retention he favoured the tying in of a catheter coupled with irrigation of the urethra, and where cystitis had developed of the bladder as well. This latter procedure should be repeated four-hourly. Regarding the use of drugs he thought it best to try and keep the urine acid. In intractable cases of cystitis suprapubic cystotomy was required. In the prevention of bedsores he insisted on the value of friction of the skin and the importance of keeping the bed dry. Mr. McCrae Aitken (London) advocated dry polishing of the skin with soap in the prevention of bedsores. Paraplegic cases were treated better on a double Thomas frame than on a bed. Flexor spasms were best treated by overstretching of the muscles in a position of extension.

Dr. F. M. R. Walshe (London) read a paper entitled "Observations on the mechanism of symptom production in disease and injury of the nervous system." After referring to Jackson's theory of the dissolution of function in the nervous system, he proceeded to consider briefly the views of Head and Rivers, who held that release symptoms at the lower level represent primitive activities at an earlier stage of phylogenetic development. He deprecated the indiscriminate application of the psychological method in attempting to determine the origin of disorders of function in the nervous system. Turning to the physiological side, he discussed the question of anoxaemia in its bearings on disordered nervous functions, and suggested this as being a possible explanation of the "mass reflex." He concluded a closely reasoned and animated paper by emphasizing the importance of the physiological approach in the study of the problem of disorder of function in the nervous system. Dr. Harry Campbell and Dr. Riddoch discussed the paper, and Dr. Walshe briefly replied.

Dr. A. E. Carver (Birmingham) read a paper on epilepsy from the psychological standpoint. He wished to insist on the multiple etiological factors and upon a careful study of the individual. He proceeded to elaborate the psychological aspects of the patient, referring to the work of Pierce Clark in particular, and concluded by a short summary of the principles for a rational therapy. Dr. Douglas Adams (Glasgow) read a paper on the early diagnosis and treatment of disseminated sclerosis. He described interesting experiments made by himself and co-workers at Glasgow on the possibilities of the inoculation of this disease into rabbits. He emphasized the importance of serological tests, and placed a good deal of reliance on Lange's colloidal gold reaction. He was very impressed with the results of treatment by arsenic, mercury and iodides and intramine. Dr. Farquhar Buzzard, Dr. Feiling (London), Dr. Cruickshank (Aberdeen) and the President joined in a discussion on the paper.

In the afternoon a second admirable demonstration of clinical cases was held in the wards of the Royal Victoria Infirmary.

SECTION OF PATHOLOGY.

The Relation of Carcinoma to Infection.

At the second day's session Dr. Ford Robertson opened a discussion on the relation of carcinoma to infection. He said that in a series of published papers extending over a period of years he had maintained that carcinoma was an infection. He found rod-shaped bodies in cancer cells and he considered them as a stage in the life-history of a carcinomatous organism. Using special culture methods, he had been able to convert aerobic bacteria into anaerobes. If an anaerobe found its way into a living cell and multiplied, one of two things would happen: (1) The cell might die; (2) the cell might be stimulated to divide and might even acquire the habit of division. He had used four methods to test his hypothesis that cancer was caused by anaerobic bacilli. (1) A direct examination of epitheliomas by his palladium methyl violet method showed minute rods resembling bacteria in the cells. The rods were thrown out during division of the cell. (2) Artificial cultivation of these rod-shaped organisms was possible on special media. The bacteria grown belonged to the diphtheroid or streptothrix groups and resembled the rods seen in the sections. (3) Experimental production of cancer by inoculation of these organisms had been successful in mice. The incubation periods varied from six to eighteen months. Lantern slides of the tumours were shown. (4) A focal reaction in the tumour might be brought about by minute doses of vaccine from these organisms; sometimes the tumour regressed. From these experiments he concluded that cancer was due to a group of anaerobic organisms belonging to the higher bacteria. They were unable to act unless the cell was enfeebled from any cause. It was probable that cancer was dependent on a special mode of bacterial attack, rather than on any single type of organism.

Dr. J. A. Murray, in criticizing the views expressed by the opener, said that mammary tumours in mice are common, and this, together with the very great variability in the incubation period in Dr. Robertson's experiments, suggested that a definite relation between tumour formation and infection by the organisms described was not proved. There was also no constant relation between the site of inoculation and the site of the tumour, such as would be expected if the inoculated organism was the cause. Dr. Murray did not believe that the rod-like structures were bacteria. Mr. W. McAdam Eccles thought that carcinoma was probably caused by infection, and suggested that growths ought to be examined immediately on removal to exclude the possibility of contamination. Mice were extremely liable to mammary carcinoma, and might be a source of dissemination of the disease.

In a paper on the blood in scurvy Dr. S. P. Bedson said that various observers had described diminution in the number of platelets in various haemorrhagic diseases. His investigation was carried out to discover whether diminution of platelets was present in the scurvy also. Experimental scurvy was produced in guinea-pigs and monkeys. In both there was a slight increase of red cells and platelets during the incubation period but their numbers dropped to normal before death. In a case of scurvy in an infant there was no increase in platelets. This confirmed the author's results that although the numbers may fluctuate there is no great alteration in the number of platelets in scurvy.

Dr. A. G. Gibson, in a paper on the pathology of gastric and duodenal ulcer, described his experiments with a streptothrix which was obtained from a case of acholuric jaundice and injected into the peritoneum of monkeys. The monkeys showed failing health some months after the injection. They had occasional rigors, and there was tenderness of the splenic area. *Post mortem* there were several circular ulcers in the stomach. The spleen was fibrotic; the liver showed infarcts, and there were haemorrhages in the lungs. Microscopically, endophlebitis was present in veins and in all these organs. The gastric ulcers appeared to be produced by infective emboli passing to the viscus via the splenic veins. He did not suggest that all gastric ulcers seen clinically were produced in this way, but in certain conditions, as in septicaemia, bacterial emboli might be brought to the stomach, causing acute ulceration. Mr. Wilkie spoke of gastric ulcer caused by retrograde venous thrombosis after removal of portions of the omentum. Gastric ulcer could be produced in animals by injecting oily solutions into these veins, but ulceration following sepsis in the omentum was very rare in the human being. Dr. Gibson, in reply, said that his experiments only applied to the causation of gastric ulcers in cases of splenic infection.

Chronic Duodenal Ileus.

Mr. D. P. D. Wilkie said he was about to describe a pathological and clinical entity not usually recognized by the pathologists—namely, a dilatation of the first three portions of the duodenum with congestion of its walls. The patients had chronic vomiting and sometimes periodic attacks of acute pain and vomiting, which might be diagnosed as gall stones. The duodenum was dilated up to the point where it was crossed by the mesenteric artery. Where slight visceroptosis was present the

artery was pulled upon by the small intestine and compressed the duodenum. Some of his cases had occurred in children, which showed that the condition might be a congenital abnormality. It was associated with duodenal ulcer, acute pancreatitis, and possibly with lesions of the biliary passages. The treatment was anastomosis of the third part of the duodenum to the jejunum.

Dr. Cruikshank said he had discussed this condition with a surgeon, but had not observed it in his *post-mortem* examinations. Dr. Stewart asked whether hypertrophy of the duodenum was present in these cases. Dr. J. F. Gaskell had not observed the condition *post mortem*. He asked whether the condition was recognizable if the duodenum was not blown up with air. Dr. Dible suggested that laxity of the pylorus might have something to do with the condition. Mr. Wilkie, in reply, said that the intestine varied very much *post mortem*, and that it was doubtful whether pathologists would recognize the condition without a clinical history. Hypertrophy of the duodenal wall was present. He had seen two types of cases; in one the pylorus was relaxed, in the other it kept its normal tone.

Experimental Tar Cancer.

Dr. J. A. Murray gave an outline of the methods which had been used for producing cancer experimentally in mice. He found that when tar was applied to the skin of mice two or three times a week warty growths appeared after six months in a certain proportion of animals. Artificial metastasis could be produced by autologous inoculation. With benign tissues growth ceased on inoculation, but malignant tumours grew progressively. Dr. J. F. Gaskell asked whether experiments in the production of cancer could be carried out aseptically so as to eliminate the factor of infection. Dr. Ford Robertson said that Dr. Murray's experiments did not exclude the risk of infection. Dr. Archibald Leitch said that spontaneous tumours might always develop during experiments. He did not agree that only malignant tumours were transplantable. There was no hard and fast line between malignant and innocent tumours. Dr. Murray, in reply, said that sterilization would be an ideal method, but was impracticable in the animal body. He agreed with Dr. Leitch that there was no line of demarcation between malignant and innocent growths.

SECTION OF PHYSIOLOGY.

Much interest was aroused at Thursday morning's meeting of the Section of Physiology by the paper of Dr. Muir Evans upon the poison glands of fishes. After a brief summary of previous work, Dr. Evans proceeded to describe in a most lucid and complete manner the work he himself has undertaken. In the dog-fish and the weever poison glands are found in grooves on either side of spinous processes near the dorsal fins. The position varies in the other fish, which are also poisonous. A beautiful series of microphotographs illustrating the gross and minute anatomy of these glands was shown by the aid of lantern slides. That the secretion of these glands is responsible for the intolerable pain, severe local swelling, and other distressing symptoms found in fishermen who have been stung by weevers can be proved by making extracts of the glands and by studying the effects of inoculating other animals with such extracts. As regards treatment of cases who have been stung by the poisonous fishes, injection of potassium permanganate, chloride of lime, and chloride of gold rapidly destroys the poison, and relief from pain is at once felt. Dr. Evans has suggested that all smacks and trawlers should be provided with a Lauder Brunton snake-bite lancet (containing potassium permanganate crystals at one end), so that a really efficient remedy may be at hand. The haemolytic powers of weever's venom have also been studied. Dr. Dale voiced the feelings of the whole Section in congratulating Dr. Evans upon the enthusiasm and energy by which he has found time, during the duties of general practice, to carry out researches of such great interest and practical importance.

A severe attack upon physiologists in regard to their teachings about the function of saliva was made by Dr. Sim Wallace. He gave many reasons for doubting whether the function of saliva was to act as the first enzyme in the digestive process, though in fairness to physiologists it ought to be pointed out that they have hardly laid on this matter the insistence of which Dr. Wallace accuses them. He holds that the main function of saliva is to keep the teeth clean of débris, which it does mainly by means of its specially adapted constituent, mucin, though ptyalin helps by dissolving any starch granules which have got lodged in the crevices of the teeth. The physiologists did not take this attack entirely lying down, and propounded various criticisms and objections, to most of which Dr. Wallace made satisfactory replies. In particular, he expressed strong dissatisfaction with the work of the Mellanbys on the importance of an adequate fat-soluble A diet for the proper development of the teeth. The last paper was by Dr. C. H. Browning upon the "Chemotherapy of pyogenic infections, with special reference to the antiseptic properties of acridine compounds."

SECTION OF ORTHOPAEDICS AND DISEASES OF CHILDREN.

Blood Disease in Children.

A discussion on blood disease in children was opened on the second day by Dr. Hugh Thursfield. He reviewed the history of the advances which had been made in the subject in recent years. He noted that no great advance in knowledge had been registered since the discovery of leukaemia in 1841. None the less, a mass of detailed observations had by now made it possible to classify the subject with fair precision. He first discussed the definition of the term "anaemia," and drew attention to the fact that the method of investigation of these diseases was still mainly clinical, and that advance in future would be more likely to come from the experimental side. The lacunae in our knowledge were particularly striking in relation to the life-history of the various white cells in the blood. He laid down as a present-day classification of the anaemias three main types—namely, congenital, secondary, and primary anaemias. In relation to primary anaemia he challenged dispute by stating that there were only three types of severe blood disease occurring in children before the age of puberty. They were leukaemia, purpura, and "aplastic anaemia," or, as he preferred to term it, "the grave anaemia of children." He discussed the various problems of leukaemia in detail, and gave shorter notice to the rarer diseases belonging to the purpura group. He then discussed the treatment of the various types. His view was that at present prognosis must be pessimistic and treatment empirical. He had never seen a case of leukaemia recover permanently; in the other types of anaemia, unless a focus of infection were found, the disease progressed to death. In his experience blood transfusions were of no avail in impeding the march of these disorders.

Dr. H. Brooker Mills, U.S.A., considered Dr. Thursfield's classification as excellent, and referred to the tendency of late years to the linking up of marasmus as a blood condition. Dr. H. Morley Fletcher thought that the dogmatic position taken up by Dr. Thursfield should be an excellent stimulant to discussion. He referred to the comparative frequency of the occurrence of Mickulicz's syndrome in the lymphatic leukaemia in children. As regards the result of treatment of the grave form of anaemia in childhood, he was not so pessimistic as Dr. Thursfield. Dr. J. Thomson drew attention to some of the haemorrhagic diseases of infants. Dr. Findlay, Mr. Tyrrell Gray, and Dr. J. F. Gaskell also spoke. In reply, Dr. Thursfield stated that haemophilia and melaena neonatorum seemed to him examples of tissue diseases in which the haemopoietic function was secondarily disturbed. He welcomed particularly the information that research by new methods into the calcium of the blood was going on actively at Cambridge. New methods were pre-eminently necessary for progress in this sphere.

A short paper was read by Dr. Leonard Findlay of Glasgow on the "Prenatal treatment of syphilis." He gave an account of his experience of treatment of the mother during pregnancy and urged the importance of making not only stillbirths but also all premature births notifiable. Dr. McKenzie, Dr. Brooker Mills, Dr. Scurfield, and others took part in the discussion. Dr. John Thomson then followed with a short communication on "Hypertrophic pyloric stenosis." He gave a careful survey of the pathology of the condition, showing interesting slides of specimens and weight charts. Mr. Tyrrell Gray contributed a statistical statement and put forward theories to explain the causation of the condition. Mr. Max Page and Dr. Findlay also spoke on the subject.

Bone Tuberculosis in Children.

At the meeting on Friday, July 22nd, with Mr. R. C. Elmslie in the chair, Sir Henry Gauvain opened a discussion on the general principles of treatment in tuberculosis of bone in children. It was noted that the last occasion upon which this subject had been discussed by the Association was in 1912, when Sir Harold Stiles had very strongly advocated the radical treatment of tuberculosis in bones and joints. Shortly after this a campaign in favour of conservative treatment had developed, Mr. Tubby being a strong supporter of it. The opener felt that now the treatment on conservative lines was firmly established. It was generally appreciated that in cases of joint and bone tuberculosis the local manifestation was merely a symptom of a general disease, and that it was essential to treat the disease as a whole, while paying proper attention to the local conditions. He referred to the recent methods of detecting tubercle bacilli in the blood, but said that further experience was necessary before the value of the procedure could be adjudicated upon. Turning to the actual method of treatment he emphasized the importance of the local positional treatment of joints and the value of rest. He considered that secondary abscesses should never be opened and drained, but treated by aspiration. The main methods for improving the general resistance to the disease were heliotherapy and open air, sea bathing, and *x* rays. He was of the opinion that vaccine had a limited place and that possibly the newer chemio-therapeutic measures might prove of value. One type of disease in which he considered early and radical surgical measures desirable was tuberculosis of bones of the skull. He then showed an interesting series of slides representing children with tuberculous infections leading an open-air life at Alton and Hayling Island.

Mr. John Fraser referred to certain unusual cases of diffuse tuberculous osteitis of long bones. He thought the condition was usually due to a combination of tubercle and syphilis. Radical operation still remained necessary in a certain number of cases in Scotland owing to the very limited institutional accommodation necessary for the satisfactory carrying out of conservative treatment. Dr. Camac Wilkinson was of the opinion that the key to future progress in dealing with this disease rested with the general practitioner, who should diagnose the earliest form of tuberculosis. He considered that by means of tuberculin injections a diagnosis could be established in all cases in which the primary lesion was still limited to the bronchial glands. Mr. F. C. Pybus considered that the persistence of tuberculosis in this country remained a blot on our social system. He emphasized the difficulties with which the medical man was faced in his attempts to carry out conservative treatment on modern lines. In the Newcastle area the almost complete absence of beds for this class of case enforced the use of radical surgery.

Mr. Tubby said that Sir Henry Gauvain had realized the ideal towards which the speaker had worked for twenty years back. He referred to his part in the early campaign towards the climatic treatment of the condition. He asked Dr. Camac Wilkinson for details of his methods of treating bone and joint cases with tuberculin injections. Dr. Lockhart Stevens spoke of the spade work which should and could be done, both in the early recognition and treatment of tuberculosis in children by the general practitioner. He did not consider that large institutions were essential, but that a great deal could be done by the initiative of the doctor in country districts. Dr. Herzfeld noted that 60 per cent. of cases of bone tuberculosis in Edinburgh was considered to be bovine in type. In her experience a family history of tuberculosis was the exception. Mr. Martin said that in the Liverpool area the single Thomas splint was never used to control the tendency to deformity in hip disease. In his hospital 84 per cent. of the cases admitted were discharged cured. Mr. McCrae Aitkin referred to the early radical treatment which he had seen and his conversion to more conservative methods. He spoke of the unsatisfactory results which he had experienced in the use of tuberculin in joint and bone tuberculosis. Dr. Camac Wilkinson, in reply to Mr. Tubby's question, showed charts of cases of joint disease successfully treated by means of tuberculin.

Sir Henry Gauvain replied, and noted that out of 150 cases of bone and joint disease investigated in his clinic, 27 per cent. had been demonstrated to be bovine in type; he had not noticed that the clinical course of these cases was very different from those in which the infection was due to the human bacillus. Giving the general results of these cases he said that in 2,280, 2,008 were discharged with the disease arrested; the total mortality for this group had been 2.5 per cent. Dr. Lilico then read (for Dr. H. M. Cargin) a short paper on milk control and tuberculosis; Dr. Scurfield and others joined in the discussion.

On Thursday a demonstration of some old cases of congenital dislocation of the hip, showing the late results, was given by Mr. A. M. Martin. Professor W. E. Hume also showed some unusual cases of heart disease in his wards in the infirmary.

SECTION OF OPHTHALMOLOGY.

Treatment of Corneal Ulcers.

On the second day, with Dr. H. M. Traquair (Edinburgh), Vice-President, in the chair, a discussion on the treatment of corneal ulcers was opened by Mr. J. Veitch Paterson (Edinburgh). Commenting on the vulnerability of the cornea, he thought the main liability arose from the lack of blood supply in the structure; a secondary liability arose from the tension of the eyeball which kept the corneal tissue tense and unyielding, rendering it susceptible to trivial punctures and abrasions, the starting point of ulceration. He dealt with two forms of ulceration: (1) those in which the causative agent came from without; (2) those in which the state of the patient's health was the main causative agent. Of the first group hypopyon ulcer was the chief exemplar, it presented extreme danger to sight. Immediate treatment was urgent, and treatment in hospital. Workmen were becoming alive to the danger of this form of ulceration, so that now women in domestic work often presented the worst and most neglected cases. He urged the desirability of open treatment without bandages, and delay in the use of caustics and cauteries. Of the second group relapsing ulcerative or strumous keratitis in children was of chief importance. His experience showed that as social conditions improved the disease lessened in frequency and severity. He urged that true economy would be served by the removal of affected children for treatment in country hospital schools. Those whose sight was seriously damaged were economically inefficient and sank in the social scale. He contrasted the success of treatment under satisfactory hospital conditions and the wastefulness and lack of success attending the usual intermittent out-patient treatment.

Dr. Traquair (Edinburgh) said the main difficulty with hypopyon ulcers arose with the severe ulcers. Cases seen in the early stages were usually readily amenable to treatment of a simple order. For the bad cases they needed a treatment which would be effective and leave a minimum of scarring. His greatest successes had been by the use of zinc ionization; he described the methods he had employed, and stated that these had been adopted abroad with equal success. The discussion was continued by Mr. A. S. Percival (Newcastle), Mr. D. M. Mackay (Hull), Mr. Bishop Harman (London), Mr. N. B. B. Flemming (London), Dr. T. L. de Courcy (Liverpool), Dr. John Hern (Darlington), Professor J. D. Wardale (Newcastle), Mr. E. H. E. Stack (Bristol), Dr. Inglis Pollock (Glasgow), and Dr. H. P. Bennett (Newcastle). Dr. Paterson replied.

Dr. J. Alexander Wilson (Glasgow) read a paper on auto-toxaemia in ophthalmology, which was discussed by Dr. Moore (Gateshead), Mr. A. S. Percival, Dr. Mackey, Mr. Hern, Dr. Inglis Pollock, and Dr. Traquair. Dr. Alex. MacRae (Corbridge-on-Tyne) read a paper on nodular keratitis in Southern Arabia, which was discussed by Mr. N. B. B. Flemming, Dr. Caiger (Sheffield), and Mr. Moore. Mr. Bishop Harman gave a demonstration of the direct record scotometer, and Mr. E. H. E. Stack showed a new sterilizing drum for surgical dressings, and the Bristol pistol for the introduction of ophthalmic tabellae. The proceedings closed with a vote of thanks to the President and officers of the Section.

In the list of those taking part in the discussion in the Section of Ophthalmology on the Causes and Prevention of Blindness, briefly reported last week (p. 153), the name of Dr. J. Alexander Wilson (Glasgow) was incorrectly given.

PREVENTIVE MEDICINE WITH INDUSTRIAL DISEASES.

Industrial Hygiene and the Community.

The business of this Section on the second day was entirely devoted to a discussion on the importance of industrial hygiene to the community. Dr. E. L. Collis (Professor of Preventive Medicine, University of Wales) opened the discussion, and said that medical service during the past twenty years had gradually changed its outlook. In addition to the treatment of the sick and the impersonal public services concerned with broad questions of sanitation, the personal note was being sounded in relation to the mother, the infant, the school child, as well as in the tuberculosis and venereal disease clinics. Means should be found to bring preventive medicine into direct personal relationship with adults generally, and industry provided a means whereby mutual benefit to the community and to industry would result. Marked differences in the health of those engaged in various occupations existed, whether measured by recruiting statistics, mortality figures, or age distribution in different industries. A definite responsibility lay with employers, who owed a debt to the community. Industrial medicine properly applied could effect a saving on a conservative estimate of £140,000,000 yearly on labour turnover, lost time, and industrial convalescence. Industrial re-education of those maimed in industry was needed. The failure of industries to meet their responsibilities might result in a serious industrial upheaval. Sir Kenneth Goadby (London) said that individual susceptibility to poisoning and power of tolerance varied within wide limits. Investigations had shown that in T.N.T., as in lead poisoning, signs of absorption and of poisoning occurred for the most part during the first three months of employment. During convalescence workers might safely be employed in some other part of the factory away from poisonous processes. The work of the certifying factory surgeon was well done, and he should not be superseded by a whole-time officer. It had been found that amongst painters in the Hearts of Oak Society the principal affections from which they suffered were respiratory, circulatory, and urinary, in this order, thus agreeing with the death returns of the Registrar-General. The nature of the lead poisoning occurring in painters was debatable, but it was agreed that dry rubbing down provided the main risk, and the inhalation of volatile products was important. The co-operation of the workers was needed, if the efforts of medical men were to be successful.

Captain W. Elliot, M.P., also emphasized the need for removal of the suspicion that the factory doctor was an employer's agent. He expressed doubts as to whether labour turnover and bad time keeping were not due to psychological rather than to pathological causes. Accurate information, as a result of studies in industrial hygiene, would be invaluable in the consideration of legislative proposals. Dr. Dearden (M.O.H. Port of Manchester) advocated an extension of the present industrial medical service, as had lately been accomplished in Belgium, and was in favour of utilizing the services of general practitioners. Dr. Kerr (M.O.H. Newcastle) referred to the need for more careful inspection of kitchens of public restaurants, etc., and was desirous that the responsibility for their inspection should be more closely defined. Dr. McKail (Glasgow) mentioned certain anomalies as regards the powers of factory surgeons. He was doubtful as to the extent of the labour turnover referred to by Professor Collis, and thought the same persons might be constantly changing their employment. Dr. Duncan (Stafford) made an earnest plea for the wider recognition of the services that might be rendered to the cause of industrial hygiene by general practitioners. Dr. Millar (M.O.H. Radnorshire) was in favour of closer co-operation between the factory surgeon and the school medical officer. Sir Thomas Oliver referred to certain experiments illustrating variations in tolerance, and advocated caution in accepting patients' statements. Dr. Inglis (Hebburn) had found no difficulty during his forty years' experience in gaining admission to factories by the exercise of tact.

At the close of the session a resolution was unanimously passed, on the motion of Dr. Wynne (M.O.H. Sheffield), seconded by Dr. Kerr, recommending the Council to take into consideration the need for increased powers to be conferred upon local authorities in connexion with houses let in lodgings.

The third day's session was held in conjunction with the Section of Medical Sociology. Sir Jenner Verrall presided. The subject under discussion was "The relation of the medical profession to local authorities in respect of rate-provided hospitals and clinics," and a full report appears at p. 189.

SECTION OF OTO-RHINO-LARYNGOLOGY.

Haemorrhage after Tonsil Operations.

At the morning session on Thursday, July 21st, there was a symposium on the various problems presented by haemorrhage occurring in connexion with operations on the tonsils. The President (Dr. William Hill) in a few introductory remarks drew attention to the fact that complete removal of tonsils was the most frequently performed of all surgical operations, and appealed for a sense of proportion in connexion with this subject. The opening paper was read by Dr. Brown Kelly (Glasgow) on statistical records of serious and fatal haemorrhage resulting from operations on the tonsils. The speaker gave a review of the literature of the subject since the year 1887, dealing in more detail with papers published since 1916. Mr. O'Malley read a paper entitled "General and local conditions predisposing to haemorrhage, contraindications to operation, and prophylactic measures." Dr. Whillis gave it as his experience that calcium lactate administered by the mouth was of no value as a prophylactic. He had found horse serum disappointing in its results when given after operation. He had never used it as a prophylactic. He advised taking an estimation of the coagulability of the blood in doubtful cases. Mr. Tilley and Mr. Woodman had a similar experience. Dr. Dan McKenzie gave a warning against the use of adrenaline as a local injection during the operation. This was confirmed by Dr. Whillis, but Dr. Brown Kelly had not found adrenaline dangerous.

Dr. G. A. H. Barton read a short paper on the rôle of the anaesthetist in the limitation of haemorrhage during tonsil operations. The paper was discussed by Mr. O'Malley, Mr. Perry, and Dr. Gordon Bell. Mr. Herbert Tilley read a paper entitled "The influence of operative technique in preventing or favouring serious haemorrhage." Mr. Musgrave Woodman followed with a short paper on the same subject, in which he related his personal experiences, and advocated ligature of the vessels supplying the tonsils.

Dr. Irwin Moore read a paper entitled "Local methods of arresting serious haemorrhage from the tonsil bed." Dr. Dan McKenzie read a paper entitled "Some practical considerations on the treatment of haemorrhage during and after operations on the tonsils." Mr. Sydney Scott gave a record of some personal experiences of post-operative haemorrhage. Mr. Watson-Williams showed a clamp for controlling haemorrhage. Mr. Gilbert Chubb showed a forceps for securing bleeding points; the instrument facilitates the application of a ligature. Mr. T. H. Just read a paper entitled "Is it ever necessary to ligature the external or common carotid vessels?" and Dr. Leighton raised the question as to whether tonsillectomy should be performed on out-patients. Colonel John Kynaston read a paper on the question of unnecessary operations for removal of tonsils and adenoids, with remarks on alternative methods of treatment. The paper was discussed by Messrs. Tilley, Sydney Scott, Hunter Tod, Whillis, O'Malley, Hill, Irwin Moore, Woodman, Frank Wilson, Gordon Bell, Clarke, and Hayton. Mr. Frank Wilson read a short paper on a fatal case of shawl-pin in the oesophagus. The paper was discussed by the President, Dr. Irwin Moore, Mr. O'Malley, Dr. MacNab, and Mr. Hunter Tod.

SECTION OF UROLOGY.

Cystitis.

A meeting of the Section of Urology was held on Friday, July 22nd, with Mr. J. W. Thomson Walker in the chair. A discussion was held on the diagnosis and treatment of cystitis, the subject being introduced by Mr. J. F. Dobson. Mr. Dobson said that he preferred the term infection of the urinary tract to that of cystitis, as the lesion was rarely confined to the bladder. The treatment of these cases was on the whole extremely unsatisfactory, a state of

affairs that was probably due to the fact that the examination of the patient was often incomplete and the diagnosis inaccurate. Thorough investigation of the urinary tract must be carried out, and a search made for a primary focus of infection elsewhere in the body. Sometimes as the result of an incomplete examination cases of urinary infection became labelled "nephritis," and were treated in medical wards. To avoid such mistakes microscopic examination of the urine must always be made for pus.

In the discussion following the opening paper the treatment of urinary infections was passed under review. The majority of the speakers showed great scepticism of vaccine therapy. Renal lavage, although it brought about temporary improvement, could not be regarded as a radical cure of the condition. Forced fluids were useful, as also, in certain cases, were alkalis, urotropine, and acid phosphate.

Mr. D. Clay then opened a discussion on renal trauma. As the result of having observed two striking cases in which death from haemorrhage had followed expectant treatment, Mr. Clay advocated exploration in all cases except those in which the trauma had been obviously very slight. When the kidney had been severely damaged it was occasionally advisable to retain the organ outside the abdominal cavity for a certain period, so that haemorrhage might be under control. Such a procedure would sometimes save nephrectomy. In the ensuing discussion Mr. Clay's policy of operation in all cases, except in those of an obviously trivial nature, was criticized as being unjustified.

Mr. Sydney McDonald introduced the subject of the treatment of bladder growths. He subdivided such growths into benign, malignant, and doubtful. Recurrence after diathermy was extremely common, and he cited several cases in which the recurrence had been obviously malignant in character, necessitating resection of a portion of the bladder wall. Altogether he was becoming doubtful as to whether diathermy should be used in patients over the age of 50. A similar tendency to distrust cases in which the response to treatment by diathermy was not immediately satisfactory was shown by other speakers. Diathermy, although of great value, was, in the opinion of the majority, to be used with great discrimination. The President (Mr. J. W. Thomson Walker) concluded the morning's session by a description of the scope and technique of the open operation of prostatectomy. In planning the operation he stated that he had aimed at bringing the removal of an enlarged prostate into line with other surgical procedures, and completing the operation under ocular control instead of in the dark. More cases died from haemorrhage after prostatectomy than had previously been admitted. By the open operation haemorrhage could be efficiently controlled and post-operative obstruction ensured against.

In addition to those responsible for the opening papers the following took part in the discussions: Messrs. Swift Joly (London), Andrew Fullerton (Belfast), Kenneth Walker (London), H. N. Fletcher (Brighton).

In the afternoon a number of interesting skiagrams were exhibited at a combined meeting of the Sections of Urology and of Radiology. The radiograms of biliary calculi were exhibited and explained by Dr. Robert Knox, and those of urinary calculi by Mr. Thomson Walker. Both meetings were well attended.

SECTION OF DERMATOLOGY.

Cutaneous and Visceral Tuberculosis.

After some opening words of welcome from the President, Dr. John Farquhar Christie, a discussion on the association of skin tuberculosis with visceral and other tuberculous manifestations was opened by Dr. S. H. Lancashire (Manchester). He drew attention to the frequent longevity of lupus cases in this country and their freedom from other varieties of tuberculous disease, points which were in marked contrast with the experience of Continental observers. He quoted in particular an investigation by Dr. Marsden, who reported that of fifty cases of lupus examined for signs of visceral tuberculosis there was only one definite case of phthisis, although twenty-one presented some evidence of tuberculous predisposition. He concluded that whereas the causal relationship of primary and visceral tuberculosis with secondary cutaneous tuberculosis is well established, the contrary causal relationship is not definitely established; that probably infection of the viscera does occasionally occur, but that the majority of cutaneous tuberculosis in this respect remain "good lives."

Dr. Haldin Davis was of opinion that the frequency of tuberculosis of one organ or another was greater in lupus cases than in the mass of the population, and he was, moreover, of opinion that Dr. Marsden's figures supported him to some extent. Dr. Kenneth Wills (Bristol) said that at one time he had thought that not more cases of phthisis were found among lupus patients than others, but he was not sure whether he might not have to modify that opinion. He was quite in agreement with Dr. Lancashire that it was an associated condition rather than a cause of visceral tuberculosis. Dr. Heath (Birmingham) drew attention to the frequency of lupus among dwellers in rural districts. Dr. Wells Patterson (Newcastle) and Dr. Dore (London) agreed with Dr. Lancashire that pulmonary phthisis was very rare in lupus patients. Dr. Cranston Low and Dr. MacCormac also joined in the discussion.

Sensitization and Focal Sepsis.

Dr. H. W. Barber (London) then opened the discussion on cutaneous sensitization and focal sepsis in the etiology of certain skin affections. After referring to the work that had been done previously on hay fever and the toxic disturbances due to food intolerance, he discussed the chief causes of protein sensitization. He showed that the influence of heredity was very important, and that sensitization to food and bacterial proteins was often acquired owing to gastro-intestinal disturbances. He regarded the condition as being closely allied to that known as anaphylaxis. It was quite possible for certain portions of the skin to become sensitive to certain external irritants while the remainder was still immune. He then passed to the question of focal sepsis. The commonest point of foci of infection would be found in the teeth, the tonsils, the nose and its accessory sinuses, and also the intestines. The chief conditions of the skin which he considered were due to septic absorption were—first, eruptions of the erythema multiforme type, examples of which he described, and showed that cure, or at all events striking improvement, followed the proper treatment of the exciting focal sepsis; secondly, certain cases of herpetic eruptions; and thirdly, many cases of eczema. He referred especially to eczema in children, which was often found to be due to sensitization to certain articles of diet, the commonest perhaps being oats, ingested in the form of porridge. In some cases brilliant results had followed the exclusion of this article from diet. In adults food sensitization was not so prominent as a cause of eczema. He also brought forward evidence to show that lupus erythematosus and alopecia areata were examples of disease due to focal sepsis. Most often the sepsis was found in the tonsils, and he had been able to cure some long-standing cases of both these diseases by removing the offending tonsil and the administration of autogenous vaccines.

Dr. Cranston Low (Edinburgh) related some interesting experiments. Assuming that dermatitis due to external causes was an anaphylactic phenomenon, he had attempted to produce it artificially, and had succeeded, by scarifying the skin of his arm and rubbing in the leaf of the *Primula obconica*, in producing sensitiveness to this plant, to which previously he had been immune. He succeeded also in producing the same result in his brother, but in five other individuals he had failed. He pointed out that his mother had been naturally sensitive to this plant, and that therefore the influence of heredity was thereby demonstrated. He added that the sensitiveness was limited to the skin, and did not extend to the mucous membranes. He had rubbed the noxious leaf into the inner surface of his lip without any effect. He considered that the sensitiveness was due to something in the epithelial cell. He distinguished between urticaria and eczema, the former being a generalized true anaphylaxis, the latter an anaphylaxis of the skin only.

Dr. Haldin Davis considered that focal infection was associated typically with an exudative type of eruption, and was not inclined to admit that lupus erythematosus and alopecia areata were examples of focal infection. Dr. Kenneth Wills discussed various modifications of eczema, especially follicular eruptions associated with pityriasis of the scalp, which he considered to be dependent on protein sensitization.

Skin Diseases in Pensioners.

Dr. Henry MacCormac (London) opened the discussion on dermatological patients among war pensioners. He divided them into three groups: 1. Diseases definitely due to war service. 2. Diseases where it is open to question how far war service might have caused or aggravated the condition. 3. Diseases where the condition should not be attributed to war service. He said that it was sometimes difficult to decide into which group any particular case should be included. When the first attack took place while the patient was on war service it was his rule to ascribe it to his service. When the patient had had a considerable period of freedom from the disease previous to enlistment he also as a rule considered that the disease was not merely aggravated but caused by service. The cases where the condition could not be attributed to war service included cases of feigned eruption and self-inflicted dermatoses, sometimes extremely difficult to diagnose, and still more difficult to treat successfully, but admission to hospital made the control of these patients much easier than it was in the out-patient department. It was extremely rare for the dermatologist to succeed in obtaining satisfactory evidence of real fraud on the part of the pensioner.

Dr. Cranston Low said that in some cases diseases were due to military service contrary to what might have been expected. He gave an example of a man who was vaccinated on joining the army and a fortnight later developed a spot of psoriasis on the vaccination area which subsequently spread all over him. He considered this was due to military service, for if he had not been re-vaccinated for military purposes he would not have contracted psoriasis.

RADIOLOGY AND ELECTRO-THERAPEUTICS.

Dr. Robert Knox presided over this Section on Friday, July 22nd, and in opening the proceedings referred to the late Dr. Ironside Bruce, the President-elect, who, he said, probably sacrificed himself in the prime of a most useful career by his devotion to research. The tragic circumstances of his last illness had drawn attention to the changes induced by penetrating radiations particularly upon the blood constituents, and these, when fully investigated, might lead to very important discoveries as to the method of action of the rays from the *x*-ray tube or from radium. Dr. Knox deprecated the recent lay press announcements of radical changes in the treatment of cancer by *x* rays, and said that it was greatly to be deplored that such announcements should have been made public before sufficient time had elapsed for a thorough testing of this method of treatment. From these announcements it might be presumed that no work had been done by British radiologists, and that they were hopelessly behind Continental workers, but the fact was that radium and *x*-ray treatment of malignant growths had been carefully studied in many centres in this country for years, and radiologists were fully alive to the value of these agents in treatment.

A paper was then read by Professor S. Russ on some contrasts in the effects of *x* rays and radium upon blood cells. Professor Russ's general conclusion was that both *x* rays and gamma rays might be expected to cause lymphocytes to disappear from the circulation. Dr. J. C. Mottram read a paper on the use of blood counts to indicate the efficiency of *x*-ray and radium protection. He entered briefly upon a general survey of the biological actions of radium in order to discover to what extent blood changes might be used as an indicator of over-exposure, and upon a detailed consideration of the blood changes in order to determine what constituted a small deviation from the normal, and then put forward certain conclusions based upon the changes to be found in the blood of *x*-ray workers. The subject was further discussed by Dr. Archibald Leitch, who criticized certain of Dr. Mottram's conclusions, and suggested that the part played by psychic phenomena in the changes should not be overlooked; by Dr. G. Lovell Gulland, who discussed the various blood diseases in turn, in particular the different varieties of leukaemia, of which chronic myelocythaemia was the most favourable form for radiation; and by Dr. Gamlen, Dr. J. B. Waters, Dr. Hope Fowler, and Dr. J. Metcalfe. The last named suggested certain means by which *x*-ray workers might diminish the evil effect of radiations upon themselves; these were the ventilation of workrooms, the protection of apparatus, limited hours of work, consumption of fluids (water or light lemonade), and fresh-air exercise.

A discussion on surgical diathermy was opened by Dr. E. P. Cumberbatch, who described his own clinical experiences of the method, and the types of malady in which it could be used to the best advantage, and by Dr. C. Saberton, who claimed for surgical diathermy certain advantages over cutting operations in particular instances. The papers were discussed by Dr. William Hill, who testified to the value of diathermy in certain cases, although he was not able to declare that the results were uniformly good. In the afternoon the Section met again, when the President and Mr. Thomson Walker gave an exhibition of lantern slides and prints to illustrate the value of radiology in the differential diagnosis of diseases of the urinary tract. Dr. Knox especially emphasized the value of the lateral position both in gall bladder and kidney work.

JOINT DISCUSSION ON RENAL EFFICIENCY TESTS.

The Section of Medicine held, on July 22nd, a joint discussion on renal efficiency tests with the Sections of Pathology and Bacteriology and of Physiology, Pharmacology, Therapeutics and Dietetics. Professor Hugh Maclean said that in recent years much attention had been given to renal efficiency tests, and we were now in a position to assess the condition of the kidney with considerable accuracy. The principal tests he used were as follows:

1. Estimation of urea or non protein nitrogen in the blood. The former was easy to determine, and from the clinical aspect as useful as a determination of non-protein nitrogen. Normally the blood urea varied from 20 to 40 mg. per 100 c.cm. Until three-quarters of the kidney substance was put out of action there was no accumulation of urea in the blood. Blood urea estimations were therefore chiefly of value in cases where the clinical condition had already given the information required. Concentration of urea in the blood had no relation to uraemia, except that both were the result of renal insufficiency. It was possible to bring down the blood urea to normal by cutting off proteins in the diet, but uraemia was not thereby averted. The test was, however, valuable in acute nephritis. When the blood urea rose steadily a fatal termination was probable, even in cases which appeared clinically to be doing well.
2. The diastatic test. Estimation of diastase in the urine was of some value, but should never be taken alone.
3. The phenolsulpho-phthalein test was useful but difficult to carry out with accuracy.
4. The urea concentration test was simple, it being only necessary to give the patient 15 grams of urea and then estimate its output in the urine one hour and two hours afterwards; if more than 2 per cent. was excreted the kidney could be considered fairly healthy.

The only useful test for salt tolerance was the presence of oedema. The kidney might be unable to excrete either water or salt; if water could not be excreted salt was retained, and conversely if salt was retained enough water had to be kept in the body to bring the concentration to 0.6 per cent. Neither high blood pressure nor the presence of albumin in the urine was necessarily associated with renal defect.

Professor F. D. Boyd discussed several of the best known tests. From the general practitioner's point of view a simple test was to examine the quantity and specific gravity of the urine at frequent intervals for twenty-four hours; in health less water and solids were excreted at night. Unfortunately a uniform excretion of salts and water which should indicate a damaged kidney was not always present in grave renal disease. Neither the potassium iodide or the phthalein was always reliable. As regards blood urea it was found that when it amounted to less than 50 mg. per 100 c.cm. the prognosis was favourable. Over this a stringent non-protein diet was indicated. If the urea rose above 100 mg. the prognosis was grave.

Dr. Mackenzie Wallis said that after a considerable experience of urea tests he had limited them to four or five which he considered useful. He placed the water test first owing to its simplicity; 500 c.cm. of water were given and the volume of urine measured every half-hour for four or five hours. A normal kidney would excrete the water during the first hour no matter how much were given. Secondly, the estimation of blood urea, which had already been emphasized by other speakers. Thirdly, he emphasized his belief in the diastatic test. Fourthly, he spoke of the usefulness of the urea concentration test. He had also made some investigations as to the amount of

sugar in the blood in different forms of nephritis. He found it was raised in proportion to the severity of the disease. The urine contained less than the normal amount of sugar. With the tests he had outlined a distinction could be drawn between eclampsia and chronic parenchymatous nephritis in pregnancy.

Dr. MacAdam spoke of his results in surgical cases where there was obstruction of the lower urinary tract. He did not think the urea concentration test was reliable in this class of case. Dr. D. Wells Patterson spoke of his experience among pensioners invalided from war nephritis. He agreed as to the importance of the water test and thought that inability of the kidney to excrete water was an argument against the "flushing out of the kidneys" which was taught as the correct treatment for nephritis. The urea concentration and diastatic tests gave great help in estimating the improvement in cases. He thought that the degree of damage and recovery of the kidney could be estimated to some extent by the cardio-vascular changes. Dr. R. Errington had worked along the lines suggested by Dr. Maclean in assessing pensions after war nephritis. The results of the urea concentration and diastatic tests had corresponded in 85 per cent. of 1,000 cases.

JOINT DISCUSSION ON ENCEPHALITIS LETHARGICA.

On July 22nd a joint discussion on encephalitis lethargica was held by the Sections of Medicine, and Pathology and Bacteriology. Lord Dawson of Penn presided.

Dr. Edwin Bramwell (Edinburgh) opened with a brief summary of the present state of our knowledge of the disease, commenting on its widespread incidence, serious mortality, and being a new disease in the experience of living man. The nomenclature was criticized, but there appeared to be graver objection to epidemic encephalitis. The onset varied: in some cases there were marked prodromal symptoms, while in others the onset was acute with no history of prodromata. Common prodromal symptoms were lethargy, insomnia, headache, tremors, diplopia, and difficulty in micturition; muscular pains, possibly of thalamic and not peripheral origin, might be very misleading. The onset might simulate apoplexy. Few diseases had such a variety of symptoms. Clinical experience showed it to be an infective process; pathological investigation showed infiltration of the central nervous system, oedema, neuroglial proliferations and infarction due to thrombosis. The nerve cells and fibres often showed but little change. All ages and both sexes suffered, but especially middle-aged adults, in the colder months of the year, when influenza was rife. There were very few instances of contagion. The disease had been reproduced experimentally in monkeys and rabbits, and there was evidence to show that the infection entered through an injured nasal mucosa. There was no evidence to prove that there were human carriers. The organism probably resembled that of poliomyelitis, but presumably no direct relationship existed between acute poliomyelitis and lethargic encephalitis; there was, however, probably a liaison between influenza and encephalitis lethargica. In diagnosis laboratory methods were at present of little help. The French symptom complex—lethargy, fever, and ocular paralysis—was seen in 1918, but, the type of disease having altered considerably, it should now be abandoned. Diagnosis must be made from mode of onset, presence of prodromal symptoms, febrile disturbance, and certain special symptoms—ophthalmoplegia, nystagmus, blurring of vision, lethargy, and the mask-like face seen only in this condition and in Parkinson's disease. Korsakow's psychosis and various forms of involuntary muscular movement might be met with; very little advance in treatment had been made, but Netter's results with turpentine fixation abscess were striking.

Dr. Da Fano (London) showed lantern slides of nerve cells containing granules surrounded by a halo which he and Dr. Helen Ingleby had described in cases of human disease. The same appearance was found in experimental monkeys, and similar granules were met with in the tissues around the infiltrated area or in wandering cells. In a very acute case a number of nerve cells in the medulla were surrounded by similar bodies. He showed similar bodies in the salivary gland and leucocytes, and some—free in the tissues—which appeared to be the same as those found in the central nervous system. Similar bodies occurred in rabies. He mentioned a correspondence with Dr. A. H. Booth, of Victoria, in which the latter stated that he had found minute actively motile bodies with a central granule in the blood plasma and gland juice of patients with encephalitis lethargica. Dr. Da Fano had been unable to stain these bodies in slides which Dr. Booth had sent him. Dr. C. H. Melland (Manchester) considered that the disease, though probably closely related to polioencephalitis, was not identical. Epidemic encephalitis was a better name, or, on account of the protean nature of the symptoms, encephalitis polymorphica would be a better name. Many minor cases of the disease were never recognized, and consequently the study of the epidemiology was very imperfect. It was probable that infection was spread by these mild undetected cases, which showed very few symptoms, especially no lethargy. He related a series of cases illustrating mistakes in early diagnosis and other mild examples of the disease which might have been missed. Dr. Da Fano exhibited in the pathological museum both macroscopic and microscopic preparations illustrating the pathology of the disease.

Reviews.

ENVIRONMENT AND ANATOMY.

One of the recent publications of the club called "Ye Sette of Odd Volumes" is entitled *The Influence which our Surroundings Exert Upon Us.* It is written by Sir Arbuthnot Lane, "chirurgeon to Ye Sette," who quotes the motto of the club, "Delightful, is it, to play the fool, when we're out of school," a free translation of *Dulce est desipere in loco.* Is Sir Arbuthnot Lane in the present instance out of school? If he is, he is playing the fool in a charming manner, and his foolery is all based upon keen observation and close thinking.

The author in this essay, which is printed for private circulation, sets out to show that every portion of the body, other than the brain, alters very definitely with any mechanical variation in the surroundings. He recalls his early observation that the skeleton and its joints undergo marked and definite changes when exposed to abnormal conditions, and illustrates this by the examination of the skeletons of men who have been engaged in the same laborious occupation during the whole of their working life. The result of such labour, pursued for a number of years, is that the bony system of some labourers differs more from the normal than does the normal from the higher ape. He lays down certain propositions to which he would give the form of laws: That (1) the skeleton represents the crystallization of lines of force; that (2) pressure produces change; that (3) strain produces change; and that (4) without the apparent exercise of pressure or strain a new mechanical condition may develop, or an old one may be modified in a manner advantageous to the individual in his special relation to his surroundings.

This last law is well known, for it has been shown long ago that changes involved by the great variability of all complex organic structures furnish material for endless modifications according to the various needs due to adverse customs and habits. Sir Arbuthnot Lane cites the coal-heaver, the coal-trimmer, the deal porter, the brewer's drayman, and the shoemaker, and points out variations in portions of the skeleton of men pursuing such occupations, variations brought about in accordance with the needs of their customs and habits. He shows that the skeleton may differ considerably from the normal, according to its mechanical relationship to its surroundings, and that this tendency to variability is associated with a considerable economy of function. From this he goes on to maintain that the soft parts are affected in similar ways, and brings an accusation against civilization for the frequent ill-working of the large intestine and the action upon this gut of constipation and gravity, so that instead of its being an honourable portion of the alimentary canal, its function has degenerated to be that of a mere cesspool. Sir Arbuthnot states that, in consequence, diseases such as rheumatism, rheumatic gout, tubercle, cancer, and a host of other complaints arise—being due to auto-intoxication from the cesspool—and states that in an individual whose

digestive processes are perfectly normal these diseases, save cancer, would probably not occur. He would cure them by the "effectual sterilization of the contents of the stomach and small intestine." He then discusses the effect on the intestines of the development of certain accessory ligaments, due, as he maintains, to the action of gravity and the abnormally low condition of the bowel; he makes the statement that "everything that develops during lifetime to enable the individual to accommodate himself to special surroundings tends to shorten life." It is possible that everyone will not agree with this, for frequently anatomical characteristics are modifications in structure due to function and exaggerated by habit.

Are the peculiarities which Sir Arbuthnot Lane has described in the skeletons of men pursuing these various occupations to be considered functional or pathological? It might be urged that the coal-heaver, if he did not develop the changes in his skeleton, might not be able to continue at his occupation, and so on in the others. Many years ago it was shown that in Eastern races[1] squatting habits conduce to the modification of the bones and intervertebral discs in the small of the back, as well as to certain changes in the knee, hip, and ankle joints. These are not pathological, they are functional, and they enable the individual to adapt the position of ease with much greater facility than the European. The vertical diameters of the anterior surface of the bodies of the lumbar vertebrae in the European are collectively greater than the vertical diameters of the posterior surface of the same vertebrae. The very opposite of this is found in Eastern races, for their bodies are thicker behind than in front. Amongst Europeans they are thicker in front than behind. Why these differences? They are conducive to a power of overflexion in the lumbar region, and the squatting habits conduce to the modification of the bones and intervertebral discs in the small of the back. Also a very common peculiarity of the fifth lumbar vertebra is the presence of large accessory processes in which the mammillary processes, though marked, are not very large. The costal and accessory processes form a mass of considerable strength, bifid at the extremity. These changes are also functional.

It is interesting to add that in the Punjabi female the lumbar region is more convex than in her country man, just as European females have the lumbar spine more convex forwards than European males. The gravid state is the probable explanation of the convex condition of the lumbar curve in women, whether of the light or, in the case cited, in the dark races. The man who carries the big drum holds back his shoulders and curves the small of his back; a woman with a pregnant uterus is also carrying a weight in front, and accommodates her spine so that the centre of gravity should fall in the most advantageous position whilst in the upright posture.

Where does function end and where does pathology begin? We are inclined to think that the one can run into the other; there is nothing more true than that our surroundings exert a most important influence upon us. Bernard Shaw put the position in a popular way when he said recently that "the great factor in evolution is use and disuse." Though we may not be able to accept his statement that "if you have no eyes and want to see, and keep trying to see, you will eventually get eyes," we may agree that his further proposition, "if, like the mole, or a subterranean fish, you have eyes and do not want to see, you will lose your eyes," expresses the truth, though in a rather topsy-turvy way, since the loss of the sense of sight is due not to the will but to disuse.

Sir Arbuthnot Lane goes on to apply to the brain the principles he has deduced from the study of the skeleton. He thinks it "fair to assume that a definite change analogous to that which takes place in the rest of the body in response to physical surroundings arises in the brain in response to variations in the mental surroundings of the individual." He frankly supports the doctrine of the transmission of acquired characteristics. "I believe," he says, "that the arrangement of the cells in the parent's brain, as the result of education and environment, being developed at an early age, long before those which result from labour, and before any of the offspring have been born, are much more readily transmitted than changes in the mechanics of the skeleton." Further, he holds that the proper appreciation of the great importance of mental environment throws a light on the value of education as carried out at the present time. It behoves us, he says, to determine very early in the life of the individual what combination the cells of the brain can make most readily to secure the greatest advantage. Considerations of this kind lead him to condemn the practice of subjecting girls to the same education as boys. Finally, he urges that the choice of the method of education should be much more seriously regarded than at present, and should be determined by scientific men specially trained for the purpose.

The delightful essay which forms this opusculum was, we understand, read to the Club after dinner, and we trust that the influence it exerted upon the audience was as euphoric as it must have been edifying.

[1] R. Havelock Charles: *Journal of Anatomy and Physiology*, vols. xxvi, xxvii, xxviii; *Scientific Memoirs, Medical Officers, Army of India*, vol. viii.

THE EARLY DIAGNOSIS OF THORACIC TUBERCULOSIS.

Dr. Clive Riviere's compact and well-written handbook on *The Early Diagnosis of Tubercle*[2] has evidently become recognized as a standard guide and source of reference, for a third edition has been called for within two years of the second, which was much modified, as was noted in the review published in our columns (British Medical Journal, 1919, i, 769). On the present occasion comparatively few changes have been found to be necessary; the work remains practically the same in size and the number of figures is unaltered. The author has made a few additions to the section on differential diagnosis, and a few alterations will be found elsewhere. Its two parts deal with intrathoracic tuberculosis in the adult and in the child respectively, and each of them contains full descriptions of the physical signs of tuberculosis of the lungs and of hilum tuberculosis, and also of special diagnostic tests, such as skiagraphy, examination of the sputum, tuberculin reactions, and complement deviation. Hence, while there is a complete account of intrathoracic tuberculosis, the diagnosis of tuberculosis elsewhere comes under consideration only by means of some of the special diagnostic tests.

The feature of Dr. Riviere's book to which we desire especially to call attention is the full account of hilum tuberculosis; in the first edition the account of this condition in the adult occupied two pages, but now, as the result of further experience and special interest, Dr. Riviere, finding that this condition which he formerly regarded as rare is in reality common, gives a valuable description covering eighteen pages. In children hilum tuberculosis is the common form of pulmonary tuberculosis, the disease starting in the lymphatic glands at the roots of the lungs and creeping into the lungs along the lymphatics accompanying the bronchi and vessels. There is a clear exposition of the means of diagnosing this morbid change which is usually bilateral and leads to well-marked shrinking of both apices, as shown by measurement of Krönig's area, which is described as the sign manual of hilum tuberculosis. In no other available handbook is the subject of hilum tuberculosis so fully and so lucidly described.

[2] *The Early Diagnosis of Tubercle*. By Clive Riviere, M.D., F.R.C.P. Third edition. London: Henry Frowde, and Hodder and Stoughton. 1921. (Cr. 8vo, pp. 334; 35 figures. 15s. net.)

GUTHRIE'S FITZPATRICK LECTURES.

During the last few weeks three volumes of the FitzPatrick Lectures have been issued by Sir Clifford Allbutt, Professor Browne, and the executors of the late Dr. Leonard Guthrie respectively. Seventeen volumes of these lectures have now been published, and Sir Norman Moore, who designed the lectureship at the Royal College of Physicians for the purpose of encouraging the study of the history of medicine, must be heartily congratulated on the success that has attended his efforts. The increasing interest shown in this branch of medicine is due largely to the establishment of these lectures, and it is fitting that the College of Physicians of London with its wealth of medical tradition and history should have been among the first to direct the attention of physicians to the importance of this subject. Great Britain, perhaps, has accorded a somewhat tardy recognition of the value of the study of medical history, but that reproach has been removed, and it is safe to say that the subject receives now in this country as much attention as it does on the Continent and in America.

We welcome the appearance of the FitzPatrick lectures of the late Dr. Leonard Guthrie on *Contributions to the Study of Precocity in Children*, and on the *History of Neurology*,[3] for they form a memorial of his learning and of his charming personality. Nor do we regard it as in any way detrimental to the memory of Guthrie that his executors have decided to publish the lectures as they existed in the manuscript left among his papers, for surely all will understand that Guthrie intended these notes to serve the purpose only of making one day a complete work. As they exist however, in this posthumous publication we have no difficulty in discerning the peculiar and excellent qualities that characterized all his work, for Guthrie was a literary artist, and he had in an unusual degree the capacity for presenting his scholarship and his wide knowledge in a pleasing setting. Unobtrusively he stood behind the curtain and, for the benefit of others, made his subjects on the stage exhibit their characters, and while they amused and interested the audience he also was enjoying the performance as much as any.

These lectures show the author's wide acquaintance with literature, and in that part devoted to the study of precocity in children it appears that he has laid under contribution the whole field of biographical knowledge for illustrations of the various forms of that abnormality. The section devoted to the history of neurology is, we think, by far the better, and we commend it as a complete review of the history of the subject. Particular mention should be made of the criticism of Galen's views of neurology, for it is a clear exposition of the state of knowledge regarding that subject in his time. From that period the progress of neurology is traced in a very able manner, and we doubt if a better account of the subject has been written.

The book is acceptable also because it recalls to us those excellences of mind and personality that won for Guthrie hosts of friends. It also brings home to us a deep sense of the loss sustained by us all in his untimely death.

"ENCYCLOPAEDIA MEDICA."

The sixth volume of the second edition of the *Encyclopaedia Medica*, under the general editorship of Dr. J. W. Ballantyne,[4] was reviewed in our columns on January 24th, 1920, and the seventh volume has just been published. Nearly half of this well-printed instalment is devoted to seventeen articles dealing with various aspects of Labour, and for no less than nine of these the indefatigable editor has made himself responsible. This section of the volume is copiously illustrated by 152 figures and contains five new articles, describing respectively the stages and duration of labour, its management, *post-partum* haemorrhage, *accouchement forcé*, and symphysiotomy and pubiotomy, all from the editor's pen.

The remaining half of this volume contains eleven main articles, all of which have been revised, and a number of short entries with cross references. Mr. Hurry Fenwick has rewritten "The surgical affections of the kidneys," and in summing up rather adversely on decapsulation remarks that the surgeon who carries out this procedure "in order to do something" leaves a very difficult kidney for any subsequent operation, as dense connective tissue rapidly embeds the kidney and renders subsequent dissection tedious and ligation of the pedicle hazardous. Medical diseases of the kidneys find their place in a later volume under nephritis. Mr. F. A. Juler's article on the iris and ciliary body is illustrated by four successful plates, three of which are coloured. Professor Alexis Thomson contributes two comprehensive articles on the allied subjects of diseases of joints and diseases in the region of the knee-joint, and Mr. Romanis has revised the account of injuries of the knee-joint. Dr. John Orr has been made responsible for the subject of invalid feeding, which was originally dealt with by Dr. Chalmers Watson. The editor must again be warmly congratulated on his success in an undertaking made exceptionally difficult by post-war uncertainties.

[3] *Contributions to the Study of Precocity in Children. The History of Neurology.* By Leonard George Guthrie, M.A., M.D., F.R.C.P. 1921. London: Eric G. Millar. (Demy 8vo, pp. 160. 6s.)

[4] *Encyclopaedia Medica.* Vol. vii: Intestines to Labour. Second edition. Under the general editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Edinburgh and London: W. Green and Son. 1921. (Roy. 8vo, pp. 611; 4 plates (3 coloured), 175 figures. 16s.)

NOTES ON BOOKS.

The author of the *Clinical Examination of the Nervous System*, Dr. Monrad Krohn, is a neurologist well known in Norway, his own country, and also one who has studied his subject in Great Britain and elsewhere. His book describes very clearly the system of examination of nerve patients which his wide experience has led him to employ in his own clinic. It includes, we note, due attention to the mental condition of the patient. The author, indeed, rather emphasizes the fact that neurology and psychiatry should work hand in hand. It seems not unlikely, therefore, that the prophecy of Dr. T. Grainger Stewart in his Foreword will come true—namely, that the book will be welcomed not only by students and those engaged in general practice, but by all who are interested in the study of the nervous system. The book is not a translation, but has been written in English by the author.

Dr. Coles's *Critical Microscopy*[6] is a small book the object of which is to explain how the maximum of efficiency can be obtained from the microscope. It is difficult to know for what class of worker the book is intended. Obviously a manual of less than a hundred pages is not meant for the very few who possess expert knowledge of the optics of the microscope. On the other hand, the style in many places is too technical for most medical men, who use the microscope only as an adjunct to their profession. Terms such as "Ramsden disc," "numerical aperture"—to mention two only—are introduced into the text, without any attempt to define them. This would seem to be the chief defect of an otherwise serviceable book. Good advice is given on the microscope lamp and colour screens—points too often neglected by casual users of the microscope. The sections on micrometry and the care of the eyes are excellent, while the type of simple camera for microphotography as used by the author merits attention.

[5] *Clinical Examination of the Nervous System.* By G. H. Monrad-Krohn, M.D.Christiania, M.R.C.P.Lond., M.R.C.S.Eng. With a Foreword by T. Grainger Stewart, M.D., F.R.C.P. London: H. K. Lewis and Co., Ltd. 1921. (Cr. 8vo, pp. 155; 12 figures. 6s. net.)

[6] *Critical Microscopy.* By Alfred C. Coles, M.D., D.Sc., M.R.C.P.Lond., F.R.S.Edin. London: J. and A. Churchill. 1921. (Roy. 8vo, pp. 108; 8 illustrations. 7s. 6d. net.)

APPLIANCES AND PREPARATIONS.

A High Tension X-ray Apparatus.

A high-tension transformer for use with the Coolidge *x* ray tube has been introduced by the Medical Supply Association, Limited (167 185, Gray's Inn Road, London, W.C.1). This "Radiometric" apparatus, as it is called, has been designed with the object of affording the *x*-ray worker increased facilities for the control and measurement of the variable factors which go to the making of an *x*-ray photograph. These factors are the voltage (governing the penetration of the rays), the current or milliamperage, the distance between the anode of the tube and the plate, and the time of exposure. It is obvious that if the first three factors are exactly known the results to be produced in a given unit of time can be accurately forecast. The instrument takes its name from the provision of a sliding-rule exposure meter which assists the user to arrive at a correct assessment of the time of exposure, having regard to the other factors involved. A feature of the apparatus is the adoption of a twin secondary winding which has the effect of producing a much higher voltage than would be possible if the same weight of wire were employed on a single secondary winding, and thus the heavy discharge necessary for rapid radiography is available when desired. The manufacturers claim that it is possible with this apparatus to obtain an *x*-ray photograph of any part of the body with a maximum exposure of one second. Among its subsidiary but quite practical advantages is its noiselessness, thanks to the absence of all moving parts.

Mr. Henry Kimpton announces for early publication *Diseases of Children*, by Herman B. Sheffield, M.D., and *Tuberculosis and How to Combat It*, by F. M. Pottinger; also a second edition of *Physical Diagnosis*, by W. D. Rose.

One of the principal streets at Puerto Orotava, Canary Islands, has been renamed after Dr. James K. D. Ingram, a native of Urquhart, Morayshire, and a medical graduate of the University of Edinburgh. The freedom of the city has also been conferred on him, and he has been presented with an illuminated address, to which over one thousand signatures were appended. On July 12th the Spanish civil and religious authorities marched in procession to the street, and speeches were made recalling Dr. Ingram's work during twenty-five years in the island, and referring especially to his devoted service to the poor during the severe outbreak of influenza in 1919.

SWISS HEALTH RESORTS.

In the Journal of July 23rd a short account was given of the baths and waters of Aix-les-Bains lately visited by a number of representatives of the British medical profession. Leaving Savoy and entering Switzerland by way of the Chamonix Valley and the Tête Noire Pass, the party made a few days' halt at Montana-sur-Sierre before proceeding to the spas at Leuk, St. Moritz, Ragaz, and Tarasp, and the climatic stations at Lucerne and Pontresina.

The opening up of Montana as a health resort in the past twenty years or so has been due largely to the initiative of Dr. Stephani. It stands in a sort of natural park, among pine trees, grassy slopes, and little lakes. Nearly 1,000 feet below is the village from which the plateau takes its name. The Palace Hotel, at a height of 5,000 feet above sea level, commands a magnificent prospect of the Rhone Valley, the view including the whole of Valais and a succession of Alpine peaks from Monte Leone to Mont Blanc. The open-air treatment of pulmonary tuberculosis is carried out at this and several neighbouring sanatoriums, and heliotherapy for surgical tuberculosis is now increasingly made use of there owing to the exceptional amount of sunshine enjoyed. Thus Montana, being open towards the south, east, and west, but protected from north winds by the lowest spurs of the Wildstrübel, has attained in recent years a leading position among the high-altitude winter resorts of Switzerland. Its climate is said to be milder than that of Leysin, Arosa, or Davos. A funicular railway connects it with Sierre in the valley below, and so with the main line from Lausanne to the Simplon Tunnel.

A few miles further east, but on the same side of the Rhone Valley and at almost the same altitude, stands the ancient spa of Loèche-les-Bains, or Leukerbad, nestling among steep mountains. The hot springs there are believed to have been known to the Romans, and bathing establishments were built in the fourteenth century. This spa is largely devoted to the relief of chronic skin diseases, and its treatment is characterized by the length of time—often as long as six hours—the patients stay in the baths. To the spectator the sight of a number of people in the water supported by small wooden rafts and taking déjeuner off floating wooden trays, is a striking one. The water is very abundant and issues from the mountains at a temperature up to 124° F.; it therefore needs cooling before use. Leukerbad also has winter sports, and for these the plentiful supply of hot water is a useful adjunct in a country where coal has to be imported. The hotels are old-fashioned and comfortable: the fittings of the baths are also somewhat old fashioned.

From Leuk the party travelled northward to Lucerne and rested there for a brief space before passing on to Ragaz and the Engadine. Lucerne is described in the guide books as "the tourist capital of Switzerland," and the beauty of its surroundings is well known to every traveller in that country. The scenery of the lake, with the Rigi and Pilatus in the background, is almost as familiar to English people as the conventional view of Chillon and the Dent du Midi from the rival lake of Geneva. The hospitable welcome given to the medical visitors at Montana and Leuk was repeated by the medical profession and municipality of Lucerne.

There are around Lucerne a number of climatic resorts at various heights up to several thousand feet above the level of the lake, which is itself nearly 1,500 feet above the sea; one of the most attractive of these is the promontory of Bürgenstock, whose base is washed on three sides by the waters of the lake. Hence the district has a direct medical interest, though there is force in the criticism made in Weber's standard work on *Climatology and Balneotherapy*, that some of the hotels around Lucerne are too much frequented by passing tourists to be suitable places for invalids requiring rest and quiet.

Switzerland is particularly rich in climatic health stations and watering places set amidst delightful scenery and provided with fine hotels and modern therapeutic apparatus. At the present time, however, they are suffering from neglect. The reason for this is mainly, though not entirely, economic; the rate of exchange is certainly against the foreigner. But, whatever the causes, past or present, the sight of so much admirable accommodation running to waste is saddening. It is to be hoped that before long a revival of medical interest in the Swiss spas will restore to them something of their former prosperity. In a concluding note we propose to describe shortly the mineral water stations of Ragaz-Pfäfers in the Rhine Valley, of St. Moritz in the upper Engadine, and of Tarasp-Vulpera in the lower Engadine.

THE INTERNATIONAL TUBERCULOSIS CONFERENCE.

The second Conference of the International Union against Tuberculosis was held in London from July 26th to 28th under the presidency of Professor Sir Robert Philip of Edinburgh. Some account of the first day's proceedings appeared in the Journal of last week. On the second and third days two general discussions took place, and there were two meetings of the Council of the Union, at the second of which resolutions were passed, on the motion of Professor Leon Bernard, urging all Governments to vote large sums of money to promote and foster preventive measures against tuberculosis, and, on the motion of Professor Renon, pressing for the establishment of tuberculosis as a subject of special teaching in the medical schools of all countries in order that physicians might be instructed in the precise diagnosis of the disease and the means of combating it. It was also resolved to meet in Brussels next year, and in Washington the year following.

Modes of Diffusion of Tuberculosis.

Professor A. Calmette, Associate-Director of the Pasteur Institute, opened the first of the principal discussions. He concluded a comparative study of the statistics of tuberculosis mortality and morbidity in various countries by saying that tuberculosis attacked all human races. Peoples who had been isolated geographically or commercially, and had thus been protected, proved on exposure to be the most susceptible, whereas the older civilized races were the more resistant. Tuberculosis, in the words of Krause, was the price paid for civilization. The unquestionable part played in the diffusion of tuberculosis throughout the world by healthy carriers of tubercle bacilli was a point on which Professor Calmette laid special emphasis. The recently acquired knowledge of this hitherto unexpected danger from individuals with occult tuberculosis made the organization of social defence much more difficult than when prophylaxis had to be based only on the education and isolation of phthisical patients. While it was true, of course, that these latter were by far the principal factors in the dissemination of the disease, humanity must be warned against the possibilities of infection from innumerable individuals, apparently perfectly healthy, and, in fact, only slightly infected with lesions limited to a few glands. Such lesions might remain indefinitely latent, yet those who harboured them might be capable of contaminating their environment. The possibility of efficiently protecting the children and the general population of countries which were still comparatively free from tuberculosis could only be contemplated on the condition of organizing, wherever possible, a system of detection (*dépistage*) based upon both the judicious use of tuberculin tests and clinical examination of the glandular system, mainly by means of radioscopy. Obviously it was out of the question to forbid suspected individuals from entering certain professions or from travelling or living with the healthy; but it might be hoped, through appropriate supervision and education, to render them harmless. This was the goal towards which organizations for the prevention of tuberculosis and the health departments of all countries should strive.

The subsequent discussion covered a wide field. Several delegates simply gave an account of the conditions prevailing in their own country. Professor Harbitz described the ravages of tuberculosis in Norway, especially among the various races in the north, where the economic standard was particularly low. Dr. C. L. Minor spoke of the Irish and Italian elements in the population of the United States, elements so strikingly similar in many respects, and yet with a tuberculosis mortality distinctly lower in one of them (the Italian) than in the other. Colonel F. A. G. Hutchinson, I.M.S., gave a graphic picture of the conditions in a certain area of India, embracing a population of twenty millions, and showing a death rate

from all forms of tuberculosis of 89 per 100,000 of the population, varying from 63 in the rural areas to more than 200 in some of the towns. Of the deaths 84 per cent. were due to the pulmonary form of the disease. Investigation into modes of diffusion was still in its infancy in India, but gross tuberculous lesions in cattle were very rare, and he could recollect only one case of advanced bovine tuberculosis. He was inclined to think that the family factor was of paramount importance, having regard to the conditions of the tenements. Dr. Gerald Webb (United States) said that while heredity in tuberculosis had been practically dismissed, it was still necessary to lay stress upon the fact that the disease ran in families. In an institution with which he was connected 50 per cent. of the patients suffering from tuberculosis had been exposed to family contagion. Another American delegate, Dr. H. R. M. Landis, thought that if tuberculosis was not hereditary there was at least, in many cases, a hereditary predisposition, and in this he was supported by a French colleague, Dr. Rizt, who was of opinion that some form of hereditary predisposition might play a minor though interesting part in the diffusion of tuberculosis. He gave some instances of families in which the occurrence of tuberculosis was only explicable on the ground of some hereditary taint which diminished the resistance. Dr. Hyslop Thomson described the tuberculosis occurring among the mentally defective in a large institution. The clinical appearance in these cases was quite distinctive; usually there was no cough nor sputum, but on *post-mortem* examination close on 50 per cent. of the cases revealed intestinal tuberculous lesions, suggesting that infection was conveyed by excreta, and not by the sputum at all.

Professor Lyle Cummins described the conditions prevailing among the labour contingents in France during the war, and urged that, tuberculosis being so slow in its development among civilized peoples, the question of attributability became correspondingly difficult, with the consequence that mistakes might be made which bore hardly upon the ex-soldier in assessing his pension. Dr. Halliday Sutherland defended the Pensions department from any reflection and described its generous method of dealing with late tuberculosis in the ex-soldier. The von Pirquet test was criticized by an Australian delegate, Dr. Wilkinson, as being unreliable. Sir German Sims Woodhead confined his contribution to the question of bovine infection, which accounted for from 6.5 to 10 per cent. of the fatal cases of tuberculosis. In bovine tuberculosis it was the lymphatic glands which were most sharply infected, the "lymphatic digestion," so to speak, was interfered with, and although the bovine was not as directly fatal as the human type, indirectly it accounted for an enormous amount of injury and waste. A claim for the Scots as being foremost in the handling of the tuberculosis problem was made by Sir George M'Crae, Chairman of the Scottish Board of Health. In 1911, when the Insurance Act was passed, the institutional accommodation in Scotland for the treatment of pulmonary diseases was 1,030 beds, or one for every 4,600 of the population, whereas to-day it was 3,232 beds, or one for every 1,500. The tuberculosis death rate in Scotland had markedly declined of recent years.

The Medical Profession and Prevention.

The second discussion was inaugurated by papers by Sir Humphry Rolleston and Sir George Newman, the reading of which occupied the greater part of the session. Sir Humphry Rolleston said that medical men were in a position to diminish and prevent infection, to improve the resistance of the people, and to promote hygienic education. The medical man in his ordinary practice was the first line of defence against this and all forms of disease. The worker in special branches of research was also of great potential importance in tuberculosis prevention, while the physician attached to the teaching hospital had a great responsibility in forming the outlook of the future general practitioner in regard to this question. But as a member, leader, and adviser of the general public and of municipal bodies, the medical man could also exercise a vast influence. The speaker thought it not too Utopian a counsel that a periodic census of all persons should be taken so as to classify them by means of von Pirquet's test, segregating those with open tuberculosis, not only temporarily in sanatoriums, but perhaps permanently in village industrial settlements, and placing those with latent infection under medical supervision.

Sir George Newman, after dealing with the particular grounds for State intervention, and reviewing the public health legislation of recent years, devoted the most important part of his paper to a summary of the principal factors in a complete scheme of public health administration in respect to tuberculosis, in the light of the report of the Departmental Committee of 1912 and of the experience of present-day requirements in Great Britain. Such a scheme must begin with the notification of the disease. The failure of a number of practitioners to notify their cases when first diagnosed was a serious handicap, and some steps would have to be considered for ensuring compliance with this compulsory regulation unless great improvement was effected. The dispensary, under the guidance of the tuberculosis officer, should be the consultation centre for the neighbourhood. One of its chief functions should be to afford facilities for early diagnosis; it should be also a centre for treatment in so far as the appropriate treatment for each case might be prescribed there, and also in so far as any particular treatment could not be properly undertaken by a general practitioner of ordinary professional competence and skill, or in so far as any patient was uninsured and not in a position to obtain adequate treatment from a private practitioner. Residential institutions would be included in a complete scheme, with sanatorium schools for the young and training sections where patients with more or less arrested disease might be "hardened up." After-care work was important, and included not only general supervision but study of environment. A complete Government scheme would also include research work, and every worker in the prevention of tuberculosis should regard himself as *ipso facto* an investigator. Finally, the medical officer of health had important functions, and there should be the most harmonious co-operation between him and the tuberculosis officer and a close co-ordination of the institutions and methods they represented.

At the close of Sir George Newman's address, Professor C. E. A. Winslow said that his countrymen in America looked to France instinctively for the theory of tuberculosis, and to England for ideas as to administration, and they were not disappointed. Colonel G. E. Bushnell, another American delegate, deprecated the too early devotion of the medical student to a speciality. He considered it a great mistake also that physical diagnosis was not first learnt on the normal chest. Mr. G. E. Gask reproached the profession for failing in its duty to the nation in that, knowing that this was a preventable disease, it had not insisted on proper preventive methods. Dr. Minor (United States) held that in the last analysis the problem was a social one even more than a medical one. It was the problem of educating a more intelligent race. The essential factor was not so much the strength of the invading organism as the resistance of the host. Several speakers appeared to think that the doctor should engage wholeheartedly in social and propagandist work. Dr. Antonio y Capo (Spain) included among the doctor's functions not only investigation work and clinical work in all its aspects, but popular education in all health matters, and a hand in the making and administration of sanitary law. Professor Meakins (Canada) suggested that the medical profession should discourage tuberculous individuals from having too many children, should endeavour to protect all children from liability to infection, whether from food, air, or other source, and should endeavour unceasingly to improve the economic and social condition of all classes of society. Dr. Eric Pritchard said that since a tubercle-free environment was a dream of Utopia, the best strategy was to aim at a population which should be tubercle-immune or resistant, and to do this a beginning had to be made with the infant. The opportunity at infant welfare centres of detecting cases of infection was so great that it should be an instruction to officers in charge of those centres to send such cases to the tuberculosis dispensaries. The last voice in the Conference came from Athens, and, appropriately, was a plea for the promotion of special chairs in tuberculosis in all universities. The speaker, Dr. Cawadias, also claimed that it was medical men, not public authorities, who should lead on all hygienic questions.

British Medical Journal.

SATURDAY, AUGUST 6TH, 1921.

THE DROUGHT AND THE PUBLIC HEALTH.

Of all the secular changes to which we in this country are subject the weather is perhaps the most influential in effect upon the public health. The seasonal variations in morbidity and mortality are among the most striking phenomena in vital statistics. The character of the seasons is a direct expression of the prevailing meteorological conditions, and the sterility of winter and bountiful vital exuberance of summer have an analogous reflex in the response of the human race to the seasonal changes of the weather. When, therefore, a type of weather is experienced which transcends all recorded data, it is natural to inquire what effect upon the health of the community and upon health conditions is to be observed in consequence of this unwonted circumstance.

The past twelve months have been characterized throughout by a greatly diminished rainfall, and this and the excess of sunshine are the outstanding features of the period. The winter, in addition to being dry, was remarkably mild and open, and these are circumstances highly favourable to health and to a lowered mortality. April showers were conspicuous by their absence, and the spring rainfall generally was well below the normal. These anomalies were an unfitting preparation for a summer which has established a record in the accentuation of the very features that have characterized this remarkable year. It should be remembered that it is the winter rainfall that provides the natural reservoirs, the soil storage which tends to equalize the flow of the rivers during the drier months. The proportion of the rainfall that is disposed of by percolation is then much greater than when the relative humidity of the air is lower and when vegetation, the heat of the soil and of the air all promote evaporation. The shortage of water which is now apparent has thus in part an origin more significant than that ascribable to the more recent phase of the drought. Since October of last year the temperature has been almost uniformly higher week by week than the average of well over half a century, while the rainfall for each month since July, 1920, has been almost as uniformly below the average. The dykes of February belied their proverbial character and were not replenished by rain, for February proved the driest month of this particularly dry year. The rainfall in the Thames basin was somewhat higher than that in London itself, but conformed to its general character.

With these facts in mind it can readily be understood that the resources on which we rely to maintain our population under conditions of sanitary efficiency have been severely taxed. We are apt to forget in the well-ordered conditions of modern urban life how dependent is the community for its bare existence upon the maintenance of a few simple but fundamental sanitary conditions. Among these of prime importance are a continuous and sufficient supply of pure water and the rapid and efficient removal of waste products, the accumulation of which among any aggregation of human beings is well known to be incompatible with healthy life. It is a tribute to our civic organization that the exceptional drought should have menaced no more than it has our security in either of these respects.

A real water famine would be a calamity of immeasurable gravity. Our great cities have grown to what they are because such a contingency has, by wise forethought, been rendered practically impossible. But apart from actual famine, serious shortage is of moment in the highly complex conditions of modern life. During the war it was shown to be possible for short periods to maintain in a healthy state small bodies of men on a water supply of a few pints a head a day. But what might be regarded as a liberal supply in small communities under selected conditions might well from its insufficiency prove disastrous in a highly organized city such as London. Quite apart from the interference with industry that would be entailed, the intensive conditions of city life could not be maintained unless the water supply were abundant. Fortunately no serious curtailment of the supply has yet been experienced. After a year of unexampled scarcity in the rainfall the public is almost unconscious of any restriction in the furnishing of its needs.

Voluntary economies and the avoidance of waste urged as a civic duty are a measure of the restraints hitherto imposed to meet such exceptional conditions. But it should be realized that the exceptional conditions are serious enough. The water abstracted from the Thames to meet the growing needs of London is an increasing quantity, and during the period of diminished rainfall the daily average quantity taken by the Metropolitan Water Board has been over 164 million gallons, and some 14 million gallons in excess of the decennial average. This has been accomplished at the cost of a seriously diminished flow of the river below the Board's intakes. The daily average flow over Teddington Weir fell from approximately 3,000 million gallons in January to 300 million gallons in May, and has continued to decline until the daily flow has become a negligible quantity. It is obvious, when the flow of the river above the intakes is no greater than the demand which is made on it to furnish our normal water supply, that a continuance of the drought would mean resort to the reserves which the Water Board has provided against such a contingency. With the prospect of a resumption of normal weather this would not be disturbing, but the uncertainty as to the continuance of the exceptional conditions is a factor which cannot be ignored. No one will quarrel with the Metropolitan Water Board for continuing to draw on the Thames to the full extent necessary to satisfy the prime needs of London in respect of its water supply, even at the cost of depriving the river of its flow below the intakes.

What has happened in effect is that the flow of the river has been diverted at the intakes, and, after circulating through London, is returned to the river some miles further down as sewage effluent. Between the points of intake of water and discharge of effluent the river virtually has ceased to flow. The river below Teddington being tidal, there is, of course, no apparent reduction in the volume of its flow, the diverted stream of fresh water being compensated in the river bed by the tidal flood. If the water used by the population in the London drainage area were not returned to the river as sewage effluent, all that would happen in the circumstances described would be that the fresh Thames water would be replaced by an equal volume of sea water, and this could in no

way be regarded as prejudicial to the healthiness of London. But the flood tide in its passage from the sea is met just below London by the great volume of the effluent from London's sewage, only very partially purified. This foul water mixes with the tidal flood, and it is this mixture which, in the existing absence of any normal river flow, through each tidal cycle moves up and down throughout the course of the London river. We can find no recently published figures as to what takes place as a result of this tidal backwash of sewage effluent, though some interesting observations as to what happens under normal conditions were made by Mr. Dibdin, late chemist to the London County Council, and published some years ago. It is obvious, however, that under existing conditions the retention of sewage effluent in the tidal waters must inevitably be cumulative. There is no obvious evidence of gross pollution of the river, at all events above London Bridge; but it would be a most unfortunate consequence of the drought were the section of the river which flows centrally through the most populous part of London to become a channel for the flow of any considerable volume of sewage.

In other directions also the effect of the drought is to cause an accumulation of waste products. Not only is there the loss of the cleansing effect of rainfall on the streets, the importance of which as a scavenging agency it is difficult to exaggerate, but the flushing of gulleys, drains, and sewers which heavy rainfall ensures is almost entirely in abeyance. In rainless periods there is always sullage in these conduits. These accumulations are very foul; they occur on an extensive scale, and are a serious insanitary condition impossible to avoid during a prolonged absence of rain. The chief evils of the drought, in fact, apart from an actual water famine, are the accumulation within the civic precincts of its excretory and other waste products. Their effect, as in the case of the human body in like conditions, is not immediately perceptible; eliminative organs such as the kidneys may insidiously deteriorate in function, and for long the patient be unaware that he is not in the best of health.

Judged by the death rates, the period of the drought has been one of exceptional healthiness. The unhealthy conditions to which we have referred will for the most part disappear with the cessation of their cause. But it would be wilfully to close the eyes to facts not to recognize that the seeming well-being has another side, which it will be safe to ignore only when a resumption of the rainfall shall have removed the disturbing conditions.

VISCERAL SYPHILIS.

The Section of Medicine at the recent meeting of the British Medical Association at Newcastle-on-Tyne devoted its first day to a discussion on visceral syphilis, with special reference to syphilis of the central nervous system and cardio-vascular system. An ambitious beginning, for the subject is wide, so wide, in fact, as to make appeal to nearly every branch of medicine and surgery. By a happy choice, the discussion was opened by Sir Clifford Allbutt, who possesses not only the rare knowledge required to cover so large a subject, but adds thereto, as any reader of his works well knows, a still rarer skill in its presentation. His paper is published in full in this issue of the Journal. Our advice is to "read, mark, learn, and inwardly digest" his wisdom. The clinical symptoms of syphilis are so diverse that the practitioner, who has, perhaps, forgotten the lessons of the microscope, will do well to note Sir Clifford Allbutt's exposition of the morbid anatomy of the disease and his insistence upon the essential similarity of the different visceral lesions. The occurrence of an arteritis and a peri-arteritis can be detected in the primary sore. Visceral syphilis may be regarded essentially as a disseminated lymph-arteritis. To the general invasion of the body by the virus Sir Clifford Allbutt has applied the useful title of "syphilitic sepsis." The extent and rapidity of the general infection has perhaps not been sufficiently recognized. Modern authorities, however, have repeatedly insisted upon this early dissemination, but the lesson was there before to those who could read it, for Sir Clifford Allbutt quotes the case published by Valda in 1875, when a young man died with the primary lesion still unhealed; at the autopsy the lymphatic glands were found to be infected up to the mediastinum and thoracic duct. With the hypothesis that the virus spreads first by way of the lymphatic system most observers are now agreed. Amongst the lesions of visceral syphilis aortitis holds an important place. The virus reaches the aorta by the lymphatic system in the pericardial attachments. Beginning therefore as a peri-arteritis, the inflammation spreads to the tunica media, which subsequently degenerates. Hence the overwhelming importance of syphilis in the etiology of aortic aneurysm. The characteristic appearances of the syphilitic aorta, as well as the features which distinguish it from the atheromatous one, are well described by the Regius Professor of Physic, who again emphasizes his well known views on the almost constant presence of aortic disease in angina pectoris.

The subject of syphilis of the heart itself was further discussed by Dr. John Cowan. As regards the valves, it is now well recognized that the aortic valve suffers far the most frequently. Aortic regurgitation is the rule and stenosis the exception. Indeed, aortic regurgitation in a patient of middle age, who has not suffered from rheumatic fever, nearly always spells syphilis. Dr. A. G. Gibson contributed a valuable share to the discussion in his paper on syphilitic aortitis. Even omitting the whole subject of aneurysm, he described no less than seven clinical types of this disease: (1) Latent cases in which an unsuspected syphilitic aortitis might only be found at autopsy; (2) "effort syndrome" cases, a very important group to be borne in mind, especially by those who have to treat war pensioners; (3) cases of angina in young men; (4) certain cases of paroxysmal tachycardia; (5) cases of aortic regurgitation; (6) a metastatic form in which a patient in previous good health suddenly becomes a subject of metastatic syphilitic lesions; (7) cases of abdominal type, where the abdominal aorta is the seat of the mischief. Dr. Gibson took the occasion to warn his audience against the possible dangers of intravenous arsenical medication. In cases of aortitis, particularly in elderly patients, he considers that salvarsan should best be given in repeated small doses. Dr. Cowan has been unable to find definite evidence of syphilis in many of the other serious forms of cardiac disease, such as auricular fibrillation, heart-block, and myocardial degenerations. In the auricular fibrillation group he found the incidence of syphilis to be only 7.9 per cent. Gummata of the heart have seldom, if ever, been diagnosed during life. Syphilitic disease of the pulmonary artery was referred to both by Sir Clifford Allbutt and by Dr. Cowan, and in this connexion may be mentioned the syndrome entitled Ayerza's disease, which is manifested clinically by chronic cyanosis, dyspnoea, and polycythaemia.

Syphilis of the lung is prone to be regarded more as a museum curiosity than as a clinical entity of any importance. Recently, however, cases diagnosed

clinically have been recorded, and opinion seems to be growing in favour of accepting certain cases of fibrosis of the lung as being syphilitic in origin. Among other viscera which recent work has accused of being the victims of syphilis must be mentioned the stomach and the kidneys. The existence of syphilis of the stomach must now be admitted as definitely proved; it is usually manifested by symptoms resembling those of carcinoma or chronic gastric ulcer. Syphilis of the kidney is still a vexed subject, but when occurring it has appeared to differ clinically in no very great respects from other forms of chronic nephritis. Syphilitic sepsis, to use Sir Clifford Allbutt's term, was further discussed by Dr. John Eason in a most valuable contribution on the syphilitic anaemias. The anaemia of secondary syphilis appears to be often grave and occasionally actually fatal. Certain cases under the care of Dr. Eason showed a severe anaemia recalling that of pernicious anaemia, with a high colour index, red cells numbering only about 1,000,000 per cubic millimetre, 20 per cent. only of haemoglobin, normoblasts, and megaloblasts, poikilocytosis, and enlargement of the spleen. In the fatal cases, however, there was an absence of the characteristic iron reaction in the liver. He further described a form of chronic splenomegaly in syphilitic subjects, the latter stages of which resemble closely those of Banti's disease.

Syphilis of the nervous system not unnaturally received a large share of attention. The whole trend of modern researches in syphilis has been to emphasize the early involvement of the central nervous system. For this advance in our knowledge we have to thank very largely the operation of lumbar puncture and the light thrown upon doubtful cases by the examination of the cerebro-spinal fluid. The important part played by this procedure in diagnosis, and consequently in treatment, was emphasized by Sir Clifford Allbutt, who, indeed, advised that a lumbar puncture should be a routine procedure in every case of syphilis, no matter at what stage it may be seen. Professor E. S. Reynolds demurred to this general rule, and in unskilful or inexperienced hands this simple operation may certainly be not only very painful but even harmful; it is important, therefore, to acquire the necessary skill. The actual changes in the cerebro-spinal fluid are now so well known that no reference is necessary to them here. Upon the treatment of syphilitic disease of the central nervous system no general agreement as to details is established. Those forms of involvement of the nervous system to which the name of "syphilo-meningo-vascularis" has been given should by universal consent be energetically treated by all the means at our disposal. It is in tabes dorsalis and general paralysis that doubt as to the value of anti-syphilitic treatment still exists and the practice of neurologists varies much. Probably the majority will prescribe it in cases of tabes dorsalis, although even here minor differences in detail are numerous. Regarding the treatment of general paralysis it must, however, be borne in mind that there are a certain number of cases where this clinical picture is strongly suggested by lesions which are wholly or in part a syphilitic involvement of the blood vessels and meninges only, without the characteristic neuronic degeneration of general paralysis. In such cases the possible benefits of active anti-syphilitic treatment should always be extended to the patient. Sir Clifford Allbutt is evidently a believer in the intrathecal form of treatment. Whether the intrathecal administration of salvarsanized serum or of mercurialized serum presents any material advantage over the more usual solely intravenous route is a point upon which the experience of neurologists is not fully agreed. In this country it is undoubtedly less practised than in America, though there, too, opponents are not wanting.

ANNUAL MEETING NOTES.

The Pathological Museum.

Time was when the collection and preparation of pathological specimens was a necessary undertaking for any man whose ambition it was to advance the science of medicine. The present generation have other lines of investigation open to them, and the study of morbid anatomy is in danger of falling into neglect in favour of some new thing. Some there are would even relegate it to the scrap heap of the past: disease, they say, should be classified according to its effect upon function. The very fine collection of specimens exhibited in the College of Medicine at the Annual Meeting of the British Medical Association in Newcastle was an opportune reminder that the study of structure goes hand in hand with the study of function; that alteration of structure is commonly associated with change in function, and that the study of either without a knowledge of the other is a barren and unprofitable task.

The collection arranged by Dr. A. D. Bernard Shaw was, for its size, perhaps one of the most remarkable that has been brought together of recent years. The exhibits were derived from various sources; some were lent by members to illustrate papers read at meetings of Sections, others were shown because of their intrinsic interest. To those with experience of teaching museums a very striking feature was the beautiful series showing typical morbid conditions, lent by the Pathological Museum of Durham University. They were chosen from among the specimens recently added by Mr. W. E. M. Wardell. The mounting of the specimens was perfect, and each was chosen to show a special type of lesion. Cards were appended giving the history of the case. For instance, among the group illustrating diseases of the central nervous system were a brain and cord from cerebro-spinal meningitis, a brain showing softening due to an embolus in the middle cerebral artery, with the heart showing the clot from which the embolus had been derived; multiple tuberculous tumours of the pons, and a cyst of the third ventricle which had produced symptoms resembling those of encephalitis lethargica. In the same way, in the lung series, a student could find perfect examples of the principal diseases affecting that organ. Among the larynges were shown side by side admirable specimens of diphtheria, tuberculosis, and a membranous laryngitis due to streptococci. One hardly knew which deserved the greater admiration—the beauty of the exhibits or the way in which they were arranged to show the similarities and distinctive features of each. Among the stomachs was a remarkable dissection of the lymphatics of the organ to show their infiltration by carcinoma—a wonderful piece of work, and one calculated to impress the mode of dissemination of cancer upon the student. Even better than the above-mentioned groups were the specimens illustrating the pathology of individual cases. The whole of the diseased organs were shown and a history and description of the patient appended. For instance, in a case of osteomyelitis of the femur of a child with separation of the great trochanter, the specimen of the femur was accompanied by the heart, showing acute infective endocarditis, and by the lung, kidney, and intestine, which contained septic infarcts. Next to this exhibit was a rare case of blood infection by the streptothrix of actinomycosis. The difference between the morbid appearances produced by actinomycosis and by the common pyogenic organisms was clearly shown. A case of status lymphaticus in a man aged 32 who died of ruptured cerebral aneurysm of congenital origin was illustrated in this way; alongside of this was exophthalmic goitre from a discharged soldier

in which lymphoid hyperplasia of the organs was also present. Further on were representative specimens from cases of blood diseases, and a very fine collection of bone-marrows where the pale aplastic anaemia formed a striking contrast to the deep red of pernicious anaemia and the grey of the leukaemias. On the surgical side there was a representative collection of tumours, some of extreme interest. Among them must be mentioned the exhibit from the West London Hospital of a lipoma glandulare. The fat in this tumour had the peculiar arrangement found in the hibernating glands of animals, and the tumour itself is thought to arise from a vestigial hibernating gland occasionally present in the human being. The specimens are so good that no trained eye is needed to pick out the lesions. It makes one reflect how often the student has to rely on the eye of faith when a specimen is explained to him or on his imagination when asked to "spot" a lesion. If all museum specimens conformed to the high standard set by the exhibits at Newcastle morbid anatomy would be an easier as well as a more attractive subject.

Among the exhibits illustrating special papers read at meetings of sections perhaps the most striking were Professor Stewart's collection from cases of that medical and pathological curiosity, haemochromatosis. A row of copper-coloured livers caught the eye. In three of them carcinomatous change had taken place—a very high proportion when one considers the rarity of carcinoma of the liver. The microscopical preparations placed next to them gave striking pictures of the iron granules in the cells of the various organs. A very beautiful collection, both macroscopic and microscopic, of visceral syphilis had been lent by Sir Clifford Allbutt. The collection of syphilis of arteries was remarkably complete, as indeed might be anticipated from one who is so great an authority on the subject.

One of the curiosities of the museum was a calculus hydronephrosis due to cystein calculi. The specimen showed a dilated pelvis containing a number of minute round calculi the size of pin's heads or larger, with one bigger stone in the ureter. More remarkable still was a unique case of malacoplakia of the kidneys and bladder. Only 22 cases of this disease have been recorded, and this is the only known instance of the kidneys being affected. The characteristic feature is the occurrence of small greyish, semi-transparent nodules in the mucosa of the bladder. Microscopically are seen characteristic cells with curious cell inclusions somewhat resembling the corpora amylacea of the prostate. The nature of the condition is unknown, but it is probably of infective origin.

A feature of the microscopical exhibits was the series of eighteen sections from cases of encephalitis lethargica shown by Dr. da Fano. The first four preparations illustrated the pigmented and non-pigmented granules first described by da Fano in this disease. Other specimens showed the perivascular and interstitial infiltration such as it appeared in typical cases. Of great interest were the preparations from a very acute case of encephalitis in which the infiltration consisted almost entirely of polymorphs and macrophages instead of the usual lymphocytes and plasma cells. One of Dr. da Fano's preparations of an inflamed salivary gland tends to confirm Netter's observation that, as in rabies, so in encephalitis lethargica these glands are frequently the seat of infection. Another interesting series of slides, also from encephalitis lethargica, was shown by Dr. Bernard Shaw. Focal oedema of the brain, perivascular haemorrhages and the presence of neuronophagia were well seen. Dr. Ford Robertson had a large collection of slides of carcinomata in mice inoculated with the diphtheroid organism which he claims is the cause of cancer. The rod-shaped bodies were seen in sections; films had also been made from cultures of the organism.

Besides the pathological specimens there was a comprehensive exhibition of *x*-ray plates and prints. Mr. Thomson Walker contributed a large number illustrating renal calculi. The prints showed the calculi not only from the antero-posterior aspect, but photographs had been taken from the lateral position as well. In this way renal calculi can be differentiated with certainty from gall stones. In days gone by gall stones were rarely seen, but, as the exhibits testified, the new technique of Dr. Knox reveals them with certainty. One photograph showed renal and biliary calculi present in the same case. Another interesting series illustrated bone deformities. Especially beautiful were the plates from cases of tuberculosis of the lung. In another section tubes of radium were shown, together with photographs illustrating the effects of radium treatment.

The Pathological Museum Committee is to be congratulated on bringing together a collection in which no one, whatever his speciality, could fail to be interested.

LOCAL VOLUNTARY HOSPITAL COMMITTEES.

The Voluntary Hospitals Commission has addressed letters to the clerks of county councils and county boroughs in England requesting the assistance of the councils in the constitution of local voluntary hospitals committees, as recommended by Lord Cave's committee. As a general rule the county, with those county boroughs situated within it, will be taken as a unit; but the larger county boroughs will be constituted units by themselves, and some of the counties containing but few hospitals will be combined into a single area. Should there be a general consensus of local opinion that local circumstances are such as to call for some variation of this scheme, alternative suggestions emanating from the area will be considered. Separate arrangements, though on analogous lines, are being framed for Scotland and Wales. As a rule the committees will consist of two members nominated by the county councils, and one by each county borough within the county. There will be two medical practitioners nominated by the local medical committees in the area—one to be on the staff of a voluntary hospital and the other a general practitioner; and two hospital representatives not medical practitioners, one for the larger general hospitals and one for the smaller and cottage hospitals in the area. The Commission will nominate not more than five additional members from among those resident in the area, one at least of whom will be a woman; the committee will select its own chairman from among its members or from outside. The local committees will act as local advisers to the Commission, will collect information as to the needs of their areas, will further co-operation between hospitals, co-ordinate appeals, prepare where practicable schemes of co-operative purchase, advise as to the adoption of a uniform system of hospital accounts throughout their area, organize systematic contributions both from employers and from employees in areas where no such systems at present exist, undertake the distribution of any contributions made by an approved society in cases where the society is purely local in character, and generally take every possible step to assist the hospitals in their area to maintain the present voluntary system. The committees will consider the possibility of arranging the transfer of patients where this can advantageously be done, and will advise generally as to the existing provision of hospital accommodation in their areas. The Commission has adopted the following definition of a voluntary hospital: "An institution (other than an out-patient dispensary) managed by a responsible committee, and wholly or mainly supported from voluntary sources (including income derived from endowments or investments), the object of which is to provide medical or surgical treatment of a curative character; an auxiliary institution (such as a convalescent home) being eligible for assistance only in so far as it increases the facilities of hospitals from which it receives patients." In the metropolitan area the King Edward's Fund will act as the local

committee, and will be responsible for advising the Commission on applications from voluntary hospitals within the nine-mile limit, which is the area now covered by the operation of the King Edward's Fund.

THE INFLUENCE OF THE GALL BLADDER AND BILE DUCTS ON THE BILE.

In continuation of their experimental work on the liver Drs. Peyton Rous and P. D. McMaster,[1] of the Rockefeller Institute for Medical Research, have investigated the influence of the gall bladder and the bile ducts respectively on the bile; their results are reported in two companion papers, the one on the concentrating activity of the gall bladder, and the other on the physiological causes for the varied character of stasis bile. In the first series of experiments dogs were used and an ingenious but rather elaborate operative technique was employed; the pigment content of the bile was taken as the index to the concentration in the gall bladder. Great and rapid concentration of bile takes place in a normal gall bladder; thus a gall bladder emptied and washed out with salt solution was left to fill with bile from the liver; it concentrated the 49.8 c.cm. of bile reaching it in twenty-two and a half hours to 4.6 c.cm.—that is, reduced its bulk nearly eleven times. The concentration is due to diffusion and osmosis; practically no bile pigment is absorbed, for repeated examination of the contents of the distended lymphatic coursing down the neck of the gall bladder failed to show the presence of bilirubin. The physiological uses of the healthy gall bladder, which is described as having "now become a favourite surgical trophy," appear to be little realized; it acts as a distensible bag interpolated into a rigid system of tubes, to minimize extremes of pressure when bile comes rapidly or in large amounts from the liver and its escape into the duodenum is prevented by tonic contraction of Oddi's sphincter at the lower end of the common bile duct. The capacity of the gall bladder is, as it were, greatly increased by its remarkable power of reducing the bulk of the fluid reaching it. Mucus is also secreted by the gall bladder and not by the ducts. The authors point out that the fact that few ills follow removal of the normal gall bladder merely means that the body has adapted itself to this loss, not that the loss is unimportant, and they warn surgeons that uncertainty as to function and confidence in readjustment are at best questionable motives for adventures in ablation. The experiments on the bile ducts were also mainly conducted on dogs, but some cats and monkeys were used. They throw a very interesting light on the puzzling problem why in different cases of biliary obstruction all gradations between a dark tarry bile and watery colourless "white bile" may be found. The experiments showed that the contents of an obstructed bile duct left in communication with a healthy gall bladder were deeply pigmented and syrupy, ropy or even tarry, according to whether the period of obstruction had been short or long; whereas in obstructed ducts cut off from a healthy gall bladder, or in communication with one so pathologically changed that its concentrating power has been lost, the fluid was thin, colourless, devoid of cholates and practically of cholesterin—"white bile." This was the case even when the animals were deeply jaundiced, the glands in the walls of the bile ducts thus behaving like those forming the tears and saliva, as contrasted with the sweat glands and the kidneys which excrete bile pigment. The ducts normally secrete a diluting fluid, and do not, like the gall bladder, add mucus or concentrate the bile. These opposed effects of the gall bladder and ducts on the bile have much to do with the site of origin and clinical consequences of calculi; the actively concentrating action of the gall bladder obviously must favour the formation of single cholesterin calculi, whereas, in the absence of gall bladder calculi, gall stones are rarely found in the hepatic ducts.

[1] *Journ. Exper. Med.*, Baltimore, 1921, xxxiv, 47-75; 77-95.

ANIMAL EXPERIMENTS IN 1920.

The annual return showing the number and nature of experiments on living animals performed under licences during the year 1920 has been issued. It is signed by Sir G. D. Thane, the Chief Inspector. The number of places now registered for the performance of experiments is 204, an increase of 21 over 1919; a number of places so registered are the laboratories of local health authorities. The number of persons who held licences during the year was 776, but 275 of them performed no experiments. Statistics of the experiments are given in a table, which is divided into two parts—A, experiments performed with anaesthetics; B, experiments in which anaesthetics were not used. Of the 6,993 experiments in Part A, 3,058 were performed under Certificate B and were simple inoculations. In experiments under Certificate B, the initial operations are performed under anaesthetics and the animal is allowed to recover. Except in a few instances, such as, for example, experiments on the efficiency of antiseptics, the operations were performed antiseptically, and if the antiseptic precautions failed the animal was required to be killed. The experiments included in Part B—63,374 in number—were performed without anaesthetics and were mostly inoculations; but some were feeding experiments, others involved the administration of various substances by the mouth or by inhalation, or the abstraction of blood by puncture or simple venesection. The operative procedures in experiments performed under Certificate A, without anaesthetics, are attended by no considerable, if appreciable pain, and the certificate is, in fact, not required to cover these proceedings but to allow of the subsequent observation of the results of the inoculation or injection. In a very large number of experiments the results are negative, and the animals suffer no inconvenience whatever after the inoculation. During the year 6,135 experiments were performed by eleven licensees in the course of cancer investigations; of these, 5,461 were almost all inoculations into mice, or exposure of animals to radiations. A large number of the experiments recorded in Part B were performed for public bodies for the better prevention, diagnosis, and the treatment of disease. Several county councils and municipal corporations have their own laboratories, and the bacteriological investigations carried out in them include the necessary tests on living animals; the Ministry of Health and the Ministry of Agriculture and Fisheries have laboratories registered for the performance of experiments having for their object the detection, prevention, and study of diseases of man and animals. A sewage farm is registered as a place in which experiments on living animals may be performed in order that the character of the effluent may be tested by its effects on the health of fish. Some public authorities have an arrangement by which bacteriological examinations are made for them in the laboratories of universities, colleges, and other institutions, and in these or other places experiments have been performed on behalf of the Medical Service R.N., the Army Medical Service, Royal Air Force, the Army Veterinary Service, the Ministry of Pensions, the Medical Research Council, the Joint Committee on Road Tarring and Fisheries, the West Riding Rivers Board, and the Metropolitan Asylums Board. Nearly 30,000 experiments were performed by 128 licensees for such official bodies as have been enumerated. For the preparation and the testing of antitoxic serums and vaccines, and for the testing and standardizing of drugs, 27,000 experiments were performed by twenty-eight licensees. The Advisory Committee appointed by the Home Secretary to advise in the administration of the Act consists of Sir John Rose Bradford, Sir Bryan Donkin, Sir A. Pearce Gould, Sir Seymour Sharkey, Sir Charters Symonds, and Mr. W. B. Hardy, F.R.S. Lord Moulton of Bank was chairman of the committee, and the vacancy caused by his lamented death has not yet been filled.

TONSILLAR TUBERCULOSIS.

In 1864 Virchow stated that tuberculosis of the tonsil had not been observed, and this authoritative dictum and the fact that the most frequent forms of tonsillar tuberculosis cannot be recognized by the naked eye are probably responsible for the comparatively late date of the now copious literature on this subject. The earliest observation appears to have been made by Cornil in 1875; in this country Dr. Hugh Walsham's paper in 1898 should be remembered. Recently C. V. Weller[1] has analysed the microscopical appearances of the tonsils in 8,697 consecutive cases operated upon in Michigan, representing the examination of both faucial tonsils and about a quarter the number of pharyngeal tonsils. He found that 204 tonsils, or 2.35 per cent., showed tuberculous infection which was slightly more common in females and occurred between the ages of 2 and 59 years; an interesting point was the large number of nurses, medical students and resident medical officers affected. Three main types of tonsillar tuberculosis are described: (1) much the most frequent is crypt infection, which is generally unilateral, with localized submucous tubercles; it usually does not invade the lymph follicles, and is due to infection from the mucous surface; (2) ulcerative lupus-like lesions due to extensive coalescence of multiple crypt infections—the only form recognized clinically; and (3) diffuse miliary invasion by the blood stream, commonly bilateral, and characteristically involving the lymph follicles; this form does not appear to have been previously regarded as a distinct type of lesion. Mixed forms may occur, especially in advanced tuberculosis of the lungs with copious sputum and generalized tuberculosis. The commonest microscopical change is epithelioid tubercle with or without giant cells; figures are given to show foreign body giant cells, which are surprisingly frequent in the tonsil, for comparison. Caseation is rare, occurring in 35 out of the 204 cases, and chiefly when the tubercles were sufficiently numerous to be confluent. The preponderance of epithelioid and giant-cell tubercles over caseating lesions suggests that the infecting organism is often of only moderate virulence and of the bovine type. As mentioned above, tonsillar tuberculosis can seldom be diagnosed clinically, because, except in the small percentage of cases showing extensive lupus-like ulceration, there is nothing characteristic to see. Although tuberculosis is found in not more than 2.35 per cent. of tonsils removed, it is far more frequent than the other chronic infective granulomas, such as syphilis and actinomycosis.

The annual meeting of the New Zealand Branch of the British Medical Association will be held at Wellington from February 27th to March 3rd, 1922; the list of sections includes medicine, surgery, gynaecology and obstetrics, endocrinology, and pediatrics. Members desiring to offer papers should forward the title to the honorary secretary, Dr. R. Campbell Begg, 301, Willis Street, Wellington, or to the convener of the appropriate committee, before September 30th. The general conference committee invites suggestions in regard to the programme and subjects for discussion.

At the celebration of its centenary the French Académie de Médecine determined to elect ten *correspondants étrangers;* the election was carried out last month, and among the foreign correspondents so elected are Sir Robert Philip of Edinburgh, and Sir Humphry Rolleston and Sir D'Arcy Power of London. The total was completed by the election of Dr. Brachet of Brussels, Professor Christiansen of Copenhagen, Professor L. J. Henderson of Harvard University, Dr. Lucatello of Padua, Dr. Dominguez de Oliveira of Oporto, Dr. de Quervain of Berne, and Dr. Soubbotitch of Belgrade.

[1] C. V. Weller, *Arch. Int. Med.*, Chicago, 1921, xxvii, 631-660.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

Housing Conditions in Scotland.

In Committee of Supply, on July 28th, on the vote for the Scottish Board of Health, Mr. Robertson moved a reduction of £100 to call attention to the housing conditions.

He quoted from the report of the Royal Commission which sat from 1912 to 1917 to show a grievous state of things, and cited the figures of the Census of 1911 (the last available official statistics for Scotland as a whole) to bring out that the percentage of mortality was highest in one-roomed houses, and said that in Lanarkshire alone there were over 100,000 persons living in one-roomed dwellings. In Lanarkshire, too, in the parishes for which returns had been made, the percentage of cases of tuberculosis coming from one-roomed houses was as high as 80. The lowest percentage was given as 75. Mr. Robertson read other figures as to crowding, and said the cruelty of it was that after sufferers from tuberculosis had been taken from such dens and they had made some recovery in sanatoriums they were driven back to the same habitations leaving people in this condition. This he regarded as the maintenance of barbarism of the lowest type. Mr. Robertson next related some observations he had made last month in one-roomed tenements in mining villages. The largest measurement he could get was a room 15 by 14 by 8 ft., from which had to be deducted 12 by 4 by 9 ft. for two beds. He described the family life in such circumstances. He asked the Government for absolute assurance that there should be no holding back in building.

Mr. J. Wallace recalled the finding of the Royal Commission, that if overcrowding were to be reckoned as meaning more than three persons per room, to relieve what existed and to replace houses that should be demolished some 121,000 houses would be required, and that to get the higher standard which the Commission recommended 230,000 would be needed. The Commission was unanimous. He asked the Secretary for Scotland to state definitely that house-building in Scotland would go on during the next three years as if there had been no change of policy; and also if the utmost was being done that could be done in the provision of framework and concrete houses.

Mr. Munro (Secretary for Scotland) in his reply said that tenders for the erection of 776 concrete houses had been approved, and over 100 had already been built. He agreed with Mr. Robertson that the conditions in certain mining districts were an outrage on decency and a blot on civilization. But he found notwithstanding these shocking facts that both infant mortality and tuberculosis had steadily declined in Scotland during the last ten years, and this went to show that though bad housing might be a cause, it was not the cause of these deplorable occurrences. Whereas in 1911 the infantile mortality in Scotland was 112 per 1,000, it had diminished to 1920 to 92 per 1,000; and while the death rate due to phthisis in Scotland in 1910 was 115 per 100,000, the figure had fallen to 88 in the year 1919. Mr. Munro defended the Government from the suggestion that it was lacking in concern as to the situation. It had, he said, made a larger contribution to housing problems in Scotland and England than any other Government in the history of this or any other country in Europe or perhaps the whole world. In the county of Lanark there were 3,912 houses either built, being built, or for which tenders had been approved; and the commitments reached three and a half millions sterling. The Minister touched on the cost of material and the shortage of labour, and stated that for two years at least there would be no change of policy in municipal house building in Scotland. Under all the schemes (including municipal and private subsidy) the total number of houses built, being built, or for which tenders had been accepted, was roughly 24,000, and this total was apart from the concession under which private builders who could secure Certificate A from the local authority by September 1st would be entitled to a subsidy for additional houses. He had arranged with the Chancellor of the Exchequer that Scotland's share of the £200,000 a year to be given by the Treasury for slum clearances in Great Britain should be £30,000 a year. Further special concessions were, moreover, to be made to crofters.

After further debate the reduction of the vote was negatived by 173 votes to 58.

Royal Assent to Government Bills.

On July 23th the Royal Assent was given to a number of bills, including the Dentists Act, the Public Health (Officers) Act, the National Health Insurance Act, the Coroners Remuneration Act, and the Health Resort and Watering Places Act.

Suicides from Neurasthenia.—Mr. Myers asked, on August 1st, what was the total number of suicides among the patients in pensions institutions for war neurosis; whether certain institutions had a higher record than others, and whether the staff was sufficient. Mr. Macpherson replied that out of the very large number of patients who had received treatment for neurasthenia in Ministry institutions, there had been eight cases of suicide, but in no institution had there been more than

one such fatality. In no case was it found that there was negligence or inadequate supervision.

Commutation of Pensions: Medical Fee. Major Glyn asked, on August 1st, whether the War Office would consider a revision of the cost charged as a fee for medical examination when an officer commuted his pension. These costs varied at present from £1 to £10, and a uniform charge of £2 seemed appropriate on the assumption that the medical examination was of the same character for all cases. Mr. Young, in reply, said he thought the method of charging a fee bearing some relation to the amount of the sum to which the pension is commuted, was, in all the circumstances, the most equitable method, and he was therefore unable to revise the charges in the method asked.

Medical Officers' Preventive Work in the Army.—On an inquiry by Commander Bellairs, on August 1st, Sir L. Worthington Evans said that the total number of medical officers in the army at home and abroad (excluding India) who were not practising their profession in the direct treatment of human ailments and injuries was 166, the whole of the remainder being engaged in the actual treatment of human injuries and ailments. The 166 officers included those employed as professors and instructors at the Royal Army Medical College and elsewhere, those employed in preventive medicine, hygiene, and other scientific subjects, and in the medical examination, inspection, and training of recruits, and also 26 officers doing duty in Territorial schools of instruction and in administrative medical posts with Territorial Divisions.

Naval Medical Officers: Administrative Appointments.—In reply to Commander Bellairs, on August 1st, Mr. Amery said that eight medical officers of the Naval Service held appointments of a clerical or administrative nature, where they were not called upon to undertake the direct treatment of human ailments or injuries. Their duties, however, included the examination of candidates for entry and survey of invalids, etc., which was essentially work for a medical officer. There were also five naval health officers whose work should be classed under the heading of preventive medicine.

Poor Law Children.—On inquiry by Major Birchall, on July 26th, Sir Alfred Mond gave the following information as to the number of Poor Law children in separate institutions on January 1st, 1921:

	Not Mentally Infirm.	Mentally Infirm.	Total.
In separate Poor Law institutions for the sick	7,086	99	7,185
In separate Poor Law institutions for the mentally infirm	—	1,329	1,329
In non-Poor Law institutions (not being lunatic asylums)	8,550	689*	9,239

* Including 630 in separate institutions for the mentally infirm.

Compulsory Vaccination.—Mr. Bromfield asked the Minister of Health, on July 27th, whether he would consider the desirability of abolishing the compulsion to submit to vaccination, seeing that the number of cases of small-pox and the number of vaccinations during the last ten years had been, respectively, the lowest ever recorded, while vaccination had been four times as fatal as small-pox to children under 5 years of age. Sir A. Mond said he was aware of the facts stated in the first part of the question, but conclusions as to the efficacy of vaccination could not properly be drawn from them without taking into account other facts which were not stated. He was not prepared to act as suggested, in view of the danger to the health of the community which would be involved in it.

National Insurance.—Mr. Lyle asked, on July 27th, whether about 2 million insured people, entitled to medical benefit under the Health Insurance Acts, do not appear at all on doctors' lists, from which the inference is drawn that they pay their own doctors; and what is the type of workers mainly represented in this total and their annual aggregate payments under the Acts. Sir A. Mond said that the hon. member had been misinformed. There were, of course, always at any given moment insured persons who had not then taken steps to select a doctor, but the number, of which no close estimate could be made, would be, at any rate, only a fraction of the 2 million mentioned, and the inference to be drawn was not that such persons paid their own doctors, but that too often they delayed selecting a doctor until they required treatment.

Medical Staff of the Ministry of Health.—In answer to Sir J. Remnant, on July 28th, Mr. Parker, for Sir A. Mond, stated that sixty-eight doctors had been appointed in the Ministry of Health since July 1st, 1919, and of these eight were no longer in the service of the Department; twenty-four of the total were appointed for a term of years—one for one year, one for three years, and twenty-two for five years. The total salaries of the sixty officers still serving was £60,950, exclusive of war bonus.

Regional Medical Officers.—Correcting an assumption by Sir J. D. Rees, Sir A. Mond, on July 28th, said that of the thirty-two regional medical officers fifteen were established and received salaries on the scale of £1,400 inclusive.

Ex-Service Men in Mental Institutions.—Mr. Macpherson stated, in answer to Colonel Wedgwood, on July 27th, that by the courtesy of the Board of Control a medical officer attached to the Pension Ministry headquarters now visited in conjunction with the Commissioners of the Board of Control mental institutions in which ex-service men were under treatment as private patients.

Training in Psycho-therapy.—Mr. F. Roberts asked, on July 28th, whether a medical man trained as a psycho-therapist by the Ministry of Pensions and refused work as a neurological specialist would be accepted for work on the neurological boards in London in place of one of the untrained ordinary members or neurological members of such board, or whether such training was to be allowed to go to waste. Mr. Macpherson responded that the scheme of training medical men in psycho-therapy was instituted by his Department to meet urgent need, and until the demand in the different areas had been fully met the question of employing these men on medical boards did not arise. Mr. Mills asked whether the medical course of training in psycho-therapy, according to the Minister of Pension methods and as carried out by its institutional medical officers was still being continued; whether the results were commensurate with the cost of the course; whether the medical men so trained were to take precedence and have preference of employment in the various clinics and institutions in the different regions to those medical men not so trained; and, if not, why not; whether such trained men were still available for this work in London and other regions and were unemployed, while the untrained medical men continued in employment; and whether trained men were being sent to outlying clinics on limited sessional work, while untrained men were being employed in almost full time in London. Mr. Macpherson said that the answer to the first three parts of the question was in the affirmative, and to the remainder in the negative.

Shell Shock Cases.—Mr. Macpherson informed Mr. Mills, on July 28th, that there were approximately 3,400 pensioners under treatment in institutions for war neurosis and other shell shock conditions. About 900 were awaiting admission, and, if unable to work, were receiving treatment allowances. There were a large number of cases in which out-patient treatment was found to be sufficient.

Vaccine Lymph.—Sir A. Mond stated in answer to Mr. Mills, on July 14th, that the carcasses of the calves used for the production of vaccine lymph at the Government lymph establishment were hired, and after slaughter were examined by the veterinary surgeon of the establishment. The carcasses sold for food were subject to further examination by officers of the local sanitary authorities. He was advised there was no evidence whatever that vaccinated calves were unfit for food.

Education Grants for Medical Students.—Captain W. Benn asked, on July 14th, whether it was intended to cease the subsidy to ex-officers who were finishing their course of training for doctors at the various hospitals. Mr. Fisher replied that if the reference was to the grants made by the Board of Education in respect of courses approved under the scheme for the higher education of ex-Service students, the answer was in the negative.

Deaths Due to Vaccination.—Mr. Waterson asked, on July 12th, whether the letters addressed to medical men who had certified deaths as due to vaccination, and the visits of medical officers of the Ministry to inquire into the circumstances, had resulted in an alteration of the death certificate; and, if so, in how many cases had this occurred. Sir A. Mond said the answer to the first part of the question was in the negative and the second therefore did not arise.

Sanatorium Benefit.—Sir A. Mond informed Lord Henry Cavendish Bentinck, on July 13th, that the amount spent in England and Wales upon the provision of sanatorium benefit for insured persons under the Insurance Acts from July, 1912, to April 30th, 1921, was approximately £6,380,000. Mr. Briant asked if that included the value of services rendered for domiciliary treatment as well as sanatorium treatment. Sir A. Mond replied that he thought not.

A MEDICAL EXHIBITION in connexion with the First Esthonian Medical Congress is to be held from November 30th to December 7th, 1921, in the rooms of the Hygienic Institute of the Dorpat University. The object is to acquaint the population of Esthonia with the achievements, resources, and aims of medical science. The exhibition will comprise the following sections: (1) Anatomy, physiology, medicine, and forensic medicine; (2) hygiene, epidemiology, bacteriology, climatology; (3) clinical medicine, therapeutics, surgery, obstetrics, health resorts, and sanatoriums; (4) venereal diseases; (5) drugs; (6) apparatus and instruments; (7) medical literature. Foreign associations, firms, and individuals are invited to take part, and applications from abroad will be accepted up to August 15th. The Esthonian Government will grant the following facilities to those desirous of participating in this exhibition. Exhibits from abroad will be free of custom duty if not sold in Esthonia; no space fee will be charged. Free visas will be granted to intending visitors to the exhibition. Further particulars may be obtained from the Esthonian Legation, 167, Queen's Gate, S.W.7.

England and Wales.

Health of London in 1919.

It is nearly thirty years since Sir Shirley Murphy, the incumbent of the then newly created post of medical officer of health for the Administrative County of London, submitted the first of a long series of annual reports on public health to the County Council. It was not merely a record of administrative accomplishments, but it dealt with matters of extreme importance far beyond the confines of the administrative county. Sir Shirley Murphy kept up the high standard which he set for himself, and it has been upheld by his successor, Dr. W. H. Hamer, whose report for 1919[1] has recently been issued.

Vital Statistics.

The Registrar-General estimated the civil population of London in the middle of 1919 at 4,358,309, an increase of 403,755 over 1918. This estimate was not produced by the usual mode of calculation, but was based upon the national register of 1915, supplemented by information obtained in connexion with food rationing. The marriage rate of 22 per 1,000 of the population was higher than that of any previous year except 1915, when it was 26 per 1,000. The birth-rate was 18.2 per 1,000, compared with 16.0 in 1918. A rapid increase in the births registered occurred in the latter half of the year, and in the closing weeks the registrations far exceeded even pre-war figures. The death rate from all causes among civilians was 13.6 per 1,000, compared with 19.2 in 1918. Epidemic influenza was a direct or contributory cause of about 5,000 deaths in February–March, 1919, but the total number of deaths in the year was nevertheless below that of any previous year since 1856. The infant mortality rate of 85 per 1,000 births was the lowest ever recorded in London. The factor which mainly contributed to this low rate was the remarkably small number of deaths due to measles and whooping-cough; the number of deaths from tuberculosis was also very low, and those from respiratory diseases, notwithstanding the influenza epidemic, were well below the average. On the other hand, as compared with 1918, the number of cases of premature birth and the number of deaths from diarrhœa both showed slight increase, the latter being associated with a short period of high temperature late in the summer.

The total number of cases of infectious disease notified was below the average of previous years. Of small-pox 26 cases were notified, but in 2 the diagnosis was not confirmed. Four of the patients died. There were 18 cases found to be directly or indirectly connected, the origin of which was attributed to unrecognized cases among colonial soldiers. As a result of a circular letter addressed by the county council to medical practitioners the services of the council's small-pox expert, Dr. W. McC. Wanklyn, were claimed in 47 suspected cases, of which number 7 were diagnosed as small-pox. Nearly 13,000 cases of scarlet fever were notified, almost double the number of 1918. The deaths numbered 147, giving a death rate of 0.033 per 1,000 compared with 0.030 in 1918. There was no sudden and widespread outbreak such as is associated with a milk supply. There were notified 9,459 cases of diphtheria, or about one thousand more than in the previous year, the deaths numbered 775 compared with 669 in 1918. The mortality from measles was only 0.08 per 1,000, a rate far below any hitherto recorded in London.

In his report for 1918 Dr. Hamer suggested that influenza, cerebro-spinal fever, poliomyelitis, and polioencephalitis might be manifestations of one and the same influence, and he urged that the cause of the change of type observed in these epidemic manifestations must be sought in the degree and extent to which the particular population concerned is exposed to infection on the one hand, and susceptible or immunized by previous attack on the other. In support of this view he brings forward in his present report some further evidence.

Typhoid Fever.

Dr. Hamer did not agree with those who, in 1914, were of opinion that there would be a rise in the incidence of typhoid fever when convalescents returned from the war, and his anticipations appear to have been fulfilled. There were only 342 cases of the disease in London in 1919, or about the same number as in 1918. In 1912 there were 1,022 cases. He deals with the causation of the disease at some length, and puts forward some convincing evidence in support of his views that a principal cause is the consumption of sewage-polluted shellfish or other kinds of fish. Of the influence of carriers he is sceptical, and he states that careful inquiry in London during the past twenty-five years has only brought to light one outbreak of typhoid fever in which a primâ facie case against milk has been clearly established, and even greater degree of suspicion must, he considers, rest upon outbreaks ascribed to ice-cream, watercress, etc. It seems clear to him that among the factors operating in producing the great fall in typhoid prevalence in the past twenty years the amelioration of conditions obtaining in connexion with the harvesting of fish and shellfish from inshore waters must have played a not inconsiderable part.

Tuberculosis.

The deaths from phthisis among the civil population during 1919 numbered 5,332, a decrease of 1,716 from 1918. From other forms of tuberculosis there were 992 deaths in 1919 and 1,398 in 1918. The number of "primary" cases of phthisis notified, though not exclusively among the civil population, was 12,356, and of other forms of tuberculosis 3,231 cases were notified. Dr. F. N. Kay Menzies reports at some length on the arrangements for the treatment of tuberculosis in London. He prefaces his remarks by summarizing in an informing manner the various views concerning the influences which have been held to favour tuberculosis prevalence. There were thirty-three tuberculosis dispensaries in London in 1919 and two branch dispensaries, staffed by thirty-two full-time and nine part-time medical officers. Dr. Menzies appears to consider that there is a tendency in these institutions to lay stress far more on the question of treatment than on that of prevention. As regards treatment by the general practitioner, he writes:

> "Formerly many tuberculosis officers wished to treat every tuberculosis patient who came under their notice. At the present time this attitude is not so generally adopted. The alteration in view appears to be due to two reasons:
>
> "(1) Tuberculosis officers realize more fully that it is essential, if maximum efficiency is to be secured, that the general practitioner should not be excluded from treatment of this disease.
>
> "(2) The recognize that their treatment of the individual case does not yield materially better results than the treatment by general practitioners."

With regard to institutional treatment, an account is given of existing available accommodation and of future needs under various heads—early cases, chronic and advanced cases, surgical cases, etc. It would appear that while some additional accommodation is needed, for the present it is desirable that stock should be taken of that which is already available, so that it may be reapportioned under the heads of the several classes of cases requiring treatment. Nearly 1,000 samples of milk taken from churns consigned from the country to London railway stations were submitted to the Lister Institute for bacteriological examination, and 6.5 per cent. yielded tubercle bacilli. In connexion with these samples a veterinary inspector examined 2,145 cows on 58 farms and found 32 cows showing signs of tuberculosis.

Venereal Diseases.

The London County Council in 1916 arranged a scheme for the diagnosis and treatment of venereal diseases jointly with the county councils of Bucks, Essex, Hertford, Kent, Middlesex, and Surrey, and the county boroughs of East and West Ham and Croydon; 26 hospitals undertook to work under the scheme; 20,908 new patients were treated, 240 practitioners were on the approved list, and 8,258 pathological examinations were made for practitioners in 1919.

The West Riding Medical Charitable Society.

This most beneficent society, which has carried on its useful work for ninety-three years, held its annual meeting at Sheffield on July 28th. The meetings of this society are not only of great importance in the administration of the funds of the society, they afford also a pleasant means of bringing together members of the profession, in addition

[1] *Annual Report of the London County Council, 1915–1919.* Vol. III: Public Health (including the Report for the Year 1919 of the County Medical Officer of Health and School Medical Officer, Main Drainage and Housing). London: P. S. King and Son. No. 2,077. Price 2s. 6d.

to those afforded by the British Medical Association and the Leeds and West Riding Medico-Chirurgical Society. After the business meeting there is always a dinner, to which many of the members remain. The annual meeting is held in July at one of the West Riding towns in rotation. The objects of the society are to help any member who is disabled by illness, accident, or age, and who has not adequate means of support, and to help the widows or children of members dying in indigent circumstances. Requests for grants are also entertained when they come from the mother of any such member, who is a widow, or from a sister who is single or a widow, who has acted as his housekeeper for not less than five years immediately preceding the death of such member. Finally, grants are made to assist in the education of the children of members who are disabled in any of the ways mentioned above. Those who are eligible for election to the membership are regular medical practitioners residing in the West Riding, who are in good health, provided they are under 40 years of age and have not been in practice in the West Riding for more than fifteen years without subscribing to the society. The subscription is one guinea a year. All applications for grants must be made in respect of not less than five consecutive annual subscriptions immediately preceding the application. The officers of the society include a certain number of stewards who are representative of the districts into which, for convenience of working, the West Riding is divided. Upon the whole-hearted work of these stewards much of the success of the society must of necessity depend. It is their duty to obtain new members and to collect subscriptions and donations and remit them to the treasurer or the bankers. Their most onerous duty is to secure accurate information as to the circumstances of all those who apply for grants, and their most pleasant the distribution of these grants.

It is gratifying to record that the annual subscriptions of the members, who now number about 850, are not the only source of income. There are some fifteen persons who, though not members of the society, give annual subscriptions; these are mostly the widows of medical men who are impressed with the good the society is doing and who happily are not themselves in want. Donations and legacies are received from time to time, and the interest from the invested funds amounts to about £1,250. So well have the affairs of the society been managed, and with so great a regard to economy, that from the time when the council deemed it safe to begin to make any grants at all the large sum of £69,197 has been distributed. This year the sum of £1,843 has been allocated for forty-five grants. Many of these grants have been running for long periods, some for twenty, some for thirty, and one for forty years. If the good work which this society has been carrying out so judiciously were fully known and appreciated, it is amost inconceivable that there should be any practitioner in the West Riding who did not deem it a duty to become a member, if eligible. Motives of wisdom as well as of altruism alike make an eloquent appeal to all who love their profession.

New South Wales.

[From our Correspondent.]

Vital Statistics.

The vital statistics of this State for the year 1920 show some interesting features. The birth rate was 26.64 per 1,000 of population, which is 0.8 per cent. above the average for the last five years. Previously to 1920 the rate had decreased regularly from 29.90 in 1912 to 24.71 in 1919, with slight improvements in 1914 and 1917. The number of illegitimate births was 49 per 1,000 births; proportionately to population illegitimate births represented 1.30 per 1,000, which is 3 per cent. below the average of the last five years. The number of marriages corresponded to a rate of 9.96 per 1,000 of the population, which is 25 per cent. above the average of the previous five years. The death rate was 10.35 per 1,000 of the population, or 2.8 per cent. below the average for the previous five years.

Housing and Infantile Mortality.

In an address before the Health Society of New South Wales, Dr. J. S. Purdy, Medical Officer of Health for Sydney, gave several instances of gross overcrowding in houses in the city, and stated that sufficient progress in dealing with the housing problem was not being made. It was very difficult to find suitable accommodation for tenants who were asked to move from these overcrowded houses. It was estimated that in the year 1950 there would be 2,800,000 people in the metropolitan combined sanitary districts, and if the problem of housing was not soon satisfactorily settled it would be enormously intensified in the near future. Referring to the rise in the infantile mortality rate, he said he did not regard it as more than a passing phase, but even so, it pointed to a very unsatisfactory state of affairs; New South Wales had rather an unfavourable record with regard to maternal mortality, which was higher last year than usual. One of the most important reforms for which the society should press was the registration and supervision of midwives and more extensive accommodation for lying-in women in the metropolitan area.

Pulmonary Tuberculosis in New South Wales.

The annual meeting of the National Association for the Prevention and Cure of Consumption was held recently, when Dr. Palmer, medical superintendent of the State Hospital for Consumption at Waterfall, urged the necessity for an active campaign against this disease, and the importance of arousing public opinion on the question. In Australia, in the year before last, over 4,000 deaths took place from tuberculosis of the lungs. He strongly advocated thorough notification throughout the Commonwealth, the early identification of cases, the immediate dealing with all contacts, and the separate treatment of all classes of cases. He also advocated the establishment of dispensaries in largely increased number for the diagnosis and segregation of cases, and also the founding of farm colonies for those who had to look for a suitable climate and occupation after active treatment had ceased. The eighth annual report (for the past year) showed that the number of patients attending the dispensary had increased steadily until it reached over 4,000, the new patients treated totalled 251. The need for dispensaries in other districts was pointed out, and the unsuitableness of the present quarters of the chief dispensary was more evident every day. At present the number of patients under treatment was 125; patients visited in their own homes numbered 413; separate houses visited were 207; patients sent to sanatoriums were 15 in number, and deaths were 3. Examination of contacts revealed the fact that of those who were apparently healthy 52.4 per cent. were found to be infected with tuberculosis.

His Excellency the Governor recently visited the sanatorium at Wentworth Falls to open a recreation hall which had been erected there as a memorial to the late Sir Philip Sydney Jones, whose work in connexion with sanatoriums in New South Wales generally, and particularly with this special institution, was of great importance. A sum of £1,000 was contributed by his daughter to defray the cost of the erection of this recreation hall to commemorate the long association of her father with the work of the Queen Victoria Homes. A considerable amount of money has been expended on the equipment, and the directors hope to secure a further amount for the maintenance of the building and for entertainments. The hall contains a full-sized billiard table and a gramophone; and the main door was opened by His Excellency with a gold key presented to him for that purpose.

A German-Spanish medical club has been founded, under the direction of Dr. Susviela Guarch, Ambassador of [illegible] at Berlin.

The death rate in Amsterdam during 1920 was remarkably low, 10.81; the infant mortality was 4.74 per 100 born alive.

Qualified midwives in Prussia are henceforward to be known as midwifery sisters and to wear nurses' uniform. They are forbidden to recommend anti-conceptional methods to their patients or to help in their application.

The Manila Medical Society, aided by a grant from the Philippine General Hospital, has recently issued the first number of the *Journal of the Philippine Islands Medical Association*.

Correspondence.

INSTITUTIONAL TREATMENT IN SURGICAL TUBERCULOSIS.

SIR,—Following Mr. Telford's suggestion in the BRITISH MEDICAL JOURNAL of July 2nd, 1921, I give some facts indicating the result of treatment of cases of surgical tuberculosis at the King Edward VII Hospital, Sheffield. The hospital has only been in existence since 1916, and it is therefore still too early to be sure of the ultimate results of treatment. But the institution has been favoured by the possession of exceptional facilities for the "following up" of cases by means of the out-patient clinic described below:

Results in 273 Cases.

No recurrence of disease	229
Recurrence of disease	10
Hopeless cases	3
Died in hospital or after discharge	31
	273

The figures I give refer only to patients treated in the hospital, which is able to take children from any age up to 16, so that it does not suffer from the disadvantage, mentioned by Mr. Telford, of being unable to deal with the large number of cases in which the disease begins about the age of 3 years.

I agree with Mr. Telford about the importance of long, continuous treatment (if possible in an institution), but the average stay in this hospital has only been about 562 days, for two reasons: (1) The difficulty in getting parents to consent to their children remaining longer, when they are apparently convalescent, especially in an institution where they are able to visit the children frequently; (2) if the limited number of beds available were occupied as long as would be ideally desirable, it would mean that many early active cases could not be treated until too late.

On discharge from the hospital patients are visited at their homes and attend at a central clinic for re-examination as often as necessary. I am assisted in this out-patient work by a number of women health inspectors, each of whom is a fully trained nurse, and has in addition completed a course of training for three to six months at the hospital. These means of after-care, supervision and treatment make it possible to discharge patients as soon as active disease has been certainly arrested, since one is quite sure that any recurrence of activity will be noticed at once, and the necessary steps, including readmission if necessary, taken immediately. In this way I feel that the limited number of beds are used to the greatest advantage, although the number of recurrences will perhaps not compare favourably with those obtained in similar institutions where the patients have longer institutional treatment, and where a smaller number of cases are kept under observation for years after their discharge.—I am, etc.,

C. LEE PATTESON, M.B., B.S.Lond.,
Medical Superintendent, King Edward VII Hospital for Crippled Children, Sheffield; Surgical Tuberculosis Officer, City of Sheffield.

July 12th.

BIRTH CONTROL.

SIR,—Dr. Mary Scharlieb overlooks, I think, the value of preventives to the nation as a whole. We are, as a nation, in a perilous condition of over-population, coupled with disadvantages connected with the home production of our food supplies. We are not likely to become heavily depopulated by emigration, since no adequate compensation has been instituted on behalf of the old country for the loss of her sons to the colonies. What shall the people do—shall they multiply until there is no foothold in the land, and then by famine, revolution, and disease cut off the surplus population? Or shall they use "preventives," or shall the men rest continent? The easiest way out of the dilemma is the artificial restriction of the family.

Men could possibly rest continent, but it would require an extraordinarily powerful moral effort on the part of most men. It would require in a large proportion of cases that men should live entirely apart from their wives and indulge in no caresses. If wives negatived the approach of their husbands the way would be opened for an abundance of prostitution.

We interfere with nature at every point—we shave, cut our hair, cook our food, fill cavities in our teeth (or wear artificial teeth), clothe ourselves, wear boots, hats, and wash our faces, so why should birth alone be sacred from the touch and play of human moulding?

Then, at least women ought to be able to protect themselves from husbands who cannot be continent, if such women be suffering from contracted pelvis, uterine tumours, phthisis, Bright's disease, heart disease, puerperal disabilities (insanity, etc.), anaemias, to mention a few conditions. Then surely a couple with a strong family presumption in favour of tuberculosis would be wise to restrict the family, or better, to have no children whatsoever. These facts weigh so much heavier than the neurotic signs exhibited to Dr. Mary Scharlieb and interpreted by her as being due to the use of "preventives."

No one denies the danger of this new knowledge (if it be new, for Malay women, and no doubt other native races, are conversant with methods of their own to prevent conception), but it is a danger only in respect of what Dr. Scharlieb calls "outside conscience," not of true spiritual life, though it is serious enough. But the fact remains that individual life ought to be lived in direct relation to the requirements of life as a whole, to the requirements in England of a country overcrowded and in danger of losing its commercial supremacy.—I am, etc.,

Pensilva, Liskeard, July 16th. J. C. JONES, M.B.

SIR,—Ought we not first to look at national rather than individual needs? Do we, or do we not, wish to increase the population of the British Isles? If the former, we should eschew birth control and discourage emigration; if the latter, our policy should be reversed.

Now the world population, as a whole, has been kept down in the past by war, famine, and epidemic disease; factors which have operated chiefly upon the less civilized portions of humanity, which have probably remained more or less stationary, whereas the more civilized countries have been less affected, whilst our own country and others have actually increased in population. Scientific birth control will, on the contrary, result in a diminution of the more civilized communities, and will be non-operative in respect of the inhabitants of, say, Central Africa. We shall thus merely be lowering the proportion of civilized to uncivilized inhabitants of the world. Can we regard this as anything but disastrous?

To take again a more limited national view. The greater the number of Englishmen the better for England; the more backs to bear the burdens of our army, navy, and air force the smaller the individual burden, or, *per contra*, with the same incidence of taxation, the greater our armed forces, prestige, and ability to guard and defend our commerce and importation of foodstuffs in war time. I have not, of course, lost sight of the fact that we cannot feed ourselves, but this is of but little importance (provided we can control the sea sufficiently to import the necessary food in war time), as the larger population will produce more exports to pay for our imported food.

To turn to what I consider the less important side, that of the individual: it is not so much the repeated parturitions that wear out the woman with a large family as the cares and anxiety of looking after her large family, with its ceaseless round of cooking, cleaning, and clothing. The remedy for this is, I suggest, a radical alteration in our social ideas with regard to responsibility, financial and otherwise, for the children of the nation. Let the unmarried share the financial burden of the upkeep of the nation's children, and let every wage-earner pay a tax to be spent either on feeding the school children or even of supporting them entirely in a boarding school, thus relieving the mother of a large family both of the work and worry of caring for so many children.

Surely this is a better and more rational way of assisting her than by teaching her birth control. I am, of course, advocating the application of this principle to all classes, not merely to the working classes.—I am, etc.,

West Drayton, July 23rd. P. K. MUSPRATT.

SIR,—I take it that Mrs. Scharlieb does not condemn this practice absolutely; she recognizes that, as things are at present, it is in certain cases inevitable. The same holds of alcoholic and other drug addictions. Mrs. Scharlieb doubtless desires that the practice more or less euphoniously called "birth control" should not

spread, and, above all, that our people should not be taught that they can suffer no harm from it. She is indeed right. That way madness lies. If the gullible and aboulic public of our day once believe they have the doctors' sanction for indulging their lusts *ad lib.*, we shall all be plunged but the more deeply and inextricably into that mire of moral flabbiness and psychical and social disintegration wherein the war has left us wallowing (this is what Mrs. Scharlieb means by "damage to the nervous system").

Nature cannot be baulked in this way. If we are not to have children, then there is only one thing else for it: we must develop the more self-control. "Birth control, not by 'contraceptives' but by self-control"—that must be our slogan. The Freud cult has much foolishness to answer for, but let us all agree that it has emphasized at least one concept of pre-eminent value—namely, that it is almost at all times feasible to "sublimate" the sexual appetite, diverting its energies into various paths of self-expressive and socially valuable activity.—I am, etc.,

Edinburgh, July 25th. Arthur J. Brock.

TREATMENT OF ASTHMA BY AUTOGENOUS STREPTOCOCCAL VACCINES.

Sir,—The good results obtained in cases of asthma from the use of autogenous vaccines of streptococci recovered from the sputum, as recorded by Sir Leonard Rogers in the British Medical Journal of July 16th, induce me to give my own figures to date as they are not very different from his.

Out of twenty-four cases treated, four proved complete failures, one of these was an alcoholic. Five cases were apparently cured, and all of the remainder were improved, the majority of them very much so.

I found that cases in which streptococci were almost the only organism present in the sputum did best; in some of these cases the nasal chambers yielded a pure growth of streptococci. One of the patients, apparently cured for over a year, told me that on the night following his first inoculation he was able to go to sleep without the aid of asthma powders for the first time for twenty years. In most cases, however, the improvement was gradual. I hope to publish my results in detail at a later date.—I am, etc.,

Cheltenham, July 23rd. J. Rupert Collins.

DEFECTS IN TUBERCULOSIS ADMINISTRATION.

Sir,—As Dr. Paterson has pointed out (July 9th, p. 60), the want of unification in public health administration is not confined to tuberculosis, but extends to maternity and child welfare work and supervision of midwives; I would add mental deficiency, venereal diseases, and factory hygiene, including work done by the certifying factory surgeon.

Local unification should at once follow central unification. Where the tuberculosis regulations and supervision of midwives is carried out by the county council, the work in many instances, owing to the distance of the local district from the office of the county medical officer of health, is, practically speaking, done by a nurse. The right form of administration would be that the tuberculosis regulations and supervision of the midwives, etc., should be carried out by the local medical officer of health, if whole-time, with nursing help. The medical officer of health, with his health visitors and other staff under him, is well acquainted with local conditions, and could co-ordinate maternity and child welfare work, school medical work, tuberculosis work, etc.; and by improving environment in individual cases, and dealing with each case on its merits, much better work would be done than by leaving part to the medical officer of health and part (in practice) to a nurse, or to a tuberculosis officer who spends a few hours weekly at the dispensary. The Tuberculosis Regulations place the onus on the M.O.H. and advise the tuberculosis officer to act locally as his assistant to carry out the regulations; let the Ministry of Health substitute for the words "it would be desirable that the tuberculosis officer should" the words "the tuberculosis officer shall," and a very necessary reform and one productive of a vast amount of good will have been effected. Over nine years have passed since the suggestion was first made.

Let the supervision of the midwives and other work be dealt with in a similar way, and without any additional cost (in fact, there might be a saving by no postage being spent or time lost by writing to the county council offices) public health could be very generally improved.

The county medical officer at present generally supervises all the work of the local medical officers, and in addition there are Ministry of Health inspectors. That should be sufficient for all practical purposes.—I am, etc.,

July 7th. Whole-timer.

PREVENTION OF PUERPERAL INFECTION.

Sir,—Having attended well over 4,000 midwifery cases in unopposed practice, in a genteel town, in a working-class town, and now in a London suburb, I may claim to have some experience, and I am sure the whole body of general practitioners would agree that Dr. Bell's ideas are absolutely impracticable. If they could be adopted I do not believe they would materially reduce the mortality. I have lost two patients with puerperal fever—one I did not see until nearly two hours after the birth; the other a primipara, aged 42, had a history of tubal trouble and was frequently troubled with boils and abscesses. I believe both cases were autogenetic. My routine course is to give a dose of ergot when the head is born, to ensure as far as possible the greatest cleanliness in the room as well as the person of the patient, to stitch the least tear, and not to allow the patient to become exhausted before using forceps. Two years ago I was present at the only instance I have seen of a labour conducted by a hospital obstetric man, and he treated the case as a major operation. The patient's temperature was never under 103° for the first week. I suppose if this had been in the hands of a general practitioner it would have been considered to be a case of puerperal infection. The few cases I have seen which have been confined in hospital have not impressed me favourably, and I feel sure would have been better treated outside. Can one imagine a more disgusting practice than the one, twenty-five years ago when douching was in vogue at lying-in hospitals, of instructing nurses to douche from a chamber utensil? Personally, I never allowed it. I quite agree with Dr. Hogarth that the armchair official dictation to experienced practitioners is very much out of place. I doubt with Dr. Hogarth whether these great men would show half the manipulative dexterity the ordinary general practitioner does on many occasions.—I am, etc.,

A General Practitioner of Forty-two Years' Standing.

July 9th.

Medico-Legal.

PROTRACTED GESTATION.

A Period of 331 Days Accepted.

On July 29th, in the Probate, Divorce, and Admiralty Division, the Lord Chancellor delivered his judgement in the divorce suit of Gaskill *v.* Gaskill, in which the question at issue was whether gestation could be prolonged for 331 days. The case was first heard on April 22nd and adjourned for expert medical evidence until July 19th, and at the conclusion of the hearing the Lord Chancellor reserved his judgement. The facts appear sufficiently from the judgement, which was as follows:

The Lord Chancellor said that in this suit Leonard Henry John Gaskill petitioned for divorce from his wife, Kathleen Ethel Gaskill, alleging that she had committed adultery with a man unknown. The facts were unusual and raised a question which was both curious and difficult. In September, 1918, the petitioner was serving with the Royal Engineers and was granted leave of absence from September 29th to October 3rd. He spent his leave at home, overstayed it by one day, and returned to duty on October 4th. On that day he had sexual intercourse with his wife for the last time, and then went back to camp, and sailed on October 12th for Salonica. On September 1st, 1919, his wife gave birth to a child. The child was exceptionally large, the head so far exceeding the normal that labour was prolonged. The period between the last coition and birth was thus 331 days. There were no other relevant circumstances to be considered. It was true that respondent admitted that soon after her husband's departure she went visiting and stayed with a girl friend, and something had been made of this, but he (the Lord Chancellor) declined to draw from this circumstance any evidence unfavourable to the respondent. An allegation of adultery must be properly proved, and the petitioner was unable to associate his wife with any lover or any act of indiscretion. There was no evidence of adultery whatever. The petitioner asked the court to give him a decree on an inference which he (the petitioner) maintained

was scientifically irresistible, that it was impossible that so long a period as 331 days should intervene between coition and parturition, and that consequently he was not the father of the child, to whom a spurious paternity must be inferred. The respondent had consulted Dr. Monroe on May 9th, 1919, and Dr. Monroe came to the conclusion that the foetus would be delivered in July. His opinion must have been founded upon the statement of the respondent that the last menstruation took place in October, 1918. His conclusion was based on certain tabular data which were considered by medical men to indicate the probable date of birth. The respondent underwent a monthly period either in October or November, 1918—that is to say, after the last coition.

The Lord Chancellor went on to say that he had adjourned the case after the first hearing for further scientific evidence. In doing so he did not reflect upon the medical evidence which had been already tendered. The point was of such importance that it was proper that the most specialized medical advice should be available. He directed the attention of the Attorney-General to the case, with a request to him to attend, in view of the humble position of the parties, as *amicus curiae*, to argue the matter and to call further evidence. The cases which had been already decided did not afford much guidance. Four cases were cited by the Attorney-General, including the Gardner peerage case (1824), but with one exception the issue in these cases was not limited to the single point of length of gestation. There were other factors in three of the cases, apart from the length of gestation, from which adultery could be inferred, and the judgement rested, not only on expert medical evidence, but on evidence as to the conduct of the wife in the interval. In the Gardner peerage case the last opportunity for intercourse by the husband was on January 30th, 1802, and the child was born on December 8th, 1802, a period of 312 days, and the decision was against legitimacy. The report[1] was a mass of medical and lay evidence as to the conduct of the mother from which adultery could be inferred, and it was clear from the opinions expressed that the Committee (the Committee of Privileges of the House of Lords), in finding that the child in question was illegitimate, acted not only on medical expert evidence but on evidence relating to the woman's conduct. In Bosvile *v.* Attorney-General (1887) the child was born in wedlock 276–7 days after the last opportunity of intercourse, but intercourse was improbable on that date because the periodical menstruation had begun. There were other circumstances in this case which decided the judge against legitimacy, and the lapse of time was not sufficient to negative the possibility that the husband was the father of the child. In Burnaby *v.* Baillie (1889), Mr. Justice North, in considering not only the medical evidence but also evidence that the relations which had existed between the wife and another man had been adulterous, decided against legitimacy. The period in this case was 279 days. These cases all turned on the question of evidence as to the wife's conduct; the length of the pregnancy was not the sole factor. In another case, however, that of Bowden *v.* Bowden (1917) there was no evidence of adultery. In that case the parties slept together on December 19th, 1915, and the next day the husband left for Egypt. The child was born on October 22nd, 1916, or 307 days after the husband had left England. The medical evidence given during the hearing of that case was that the average period was 275 days, and the normal duration 273 to 280 days, but that there were instances of pregnancy of 298, 306, and 309 days. Upon this evidence Mr. Justice Horridge came to the conclusion that the child was legitimate.

In the present case (the Lord Chancellor continued) three experts had been called before him. Professor Henry Briggs, Professor of Obstetrics at Liverpool, had stated that he had known one instance of gestation lasting for 306 days, dating from the cessation of menstruation. In his (Professor Briggs's) view, a period of 331 days was improbable, but not impossible. It was not within the range of present scientific knowledge to allege such impossibility. His reason was that the actual date of conception could not be discovered. In obstetric practice the date of the pregnancy was reckoned usually from the menstruation. The time between the proof of coition and the proof of conception was usually only part of one menstrual cycle. It might possibly be assumed in the present case that the ovum was fertilized after the menstrual period which ended on October 17th, but there were no means of ascertaining how soon after the cessation of menstruation on that date conception actually began. Dr. J. S. Fairbairn, who had held very important positions in midwifery, was also of opinion that a considerable delay might occur between coition and the union of the male and female cells (pronuclei) which marked the commencement of pregnancy. There were also other factors which might prolong pregnancy, such as the size of the child and the maternal passages. Calculations were usually not dated from insemination. It was usual to calculate from the cessation of the last menstrual period. The mean duration of pregnancy, according to Dr. Fairbairn's evidence, was from 275 to 280 days from the cessation of menstruation, and 265 to 275 days from coition. Having regard to the fact that the moment of fertilization could not be ascertained, and might conceivably be twenty days or more after coition, it was impossible to say what period did in fact elapse between fertilization and the commencement of labour, and whether it was constant or varied with the individual woman. In this Dr. Fairbairn was supported by Dr. Eden. Dr. Eden had known a child born on the 289th day, and he cited cases in which, if the patients were to be relied upon, gestation had been prolonged to 298, 300, and 305 days. Dr. Fairbairn admitted the possibility of a long menstrual period affecting the date of pregnancy. The same expert also dealt with the question of menstruation during pregnancy; two, or even three, menstrual discharges were not inconsistent with pregnancy, for the changes in the lining of the womb might not be sufficient to check menstruation until the third month. The placenta functions usually came to an end at the ninth month, and this being the case, if the child was not born, it expired *in utero*. Dr. Fairbairn added that normally he would expect the child to be more developed than usual when the time was delayed. There would be more advanced ossification and greater firmness and rigidity of the skull and body. The actual number of cases in which pregnancy, as reckoned from the last coition, was prolonged from four weeks over the normal period was, in the opinion of these witnesses, so small that a physician in hospital practice might never meet with one. Dr. Fairbairn had said that he had not met with many cases of protracted gestation. The longest case within his experience lasted, if the patient's dates were correct, for 315 days from the last menstruation, and the labour in that case was prolonged, and the child had to be delivered by Caesarean section. The child at birth was 22½ in. long, and weighed 11 lb. He cited another case in which the period was 293 days; this woman had had two previous pregnancies, and in one case the child was born 308 days after the last menstruation, and in the other case labour was artificially induced at the end of 266 days. Dr. Fairbairn had also cited other cases from literature. Sir James Simpson[2] mentioned four cases dating for 336, 332, 319, and 324 days after the last appearance of the catamenial discharge. Dr. Playfair had also written of a case in which labour began after 301 days. The great difficulty with regard to reported cases was the difficulty of proof. Another case mentioned by Dr. Playfair dated 317 days from menstruation and 301 from coition. There was also a case on record dating for a year from the last menstrual period. Dr. Fairbairn had drawn his attention to the conclusions of Von Winckel,[3] who had recorded a case where a birth had occurred 336 days after menstruation, and this was calculated to be 315 days from conception. Von Winckel stated on the basis of a very large number of cases that 11 per cent. of pregnant women had a pregnancy of over 300 days. Dr. Fairbairn had also cited other authorities, and both he and other expert witnesses had discussed the question of protracted gestation in relation to the over-development of the child. Dr. Fairbairn's considered opinion, based on the known scientific data as well as his own experience, was that considerable protraction of gestation extending to 331 or 332 days from coition was not impossible, but the child might be expected to show some effects of such prolonged pregnancy. Dr. Eden gave cases in which gestation had been prolonged for 305, 302, and 298 days from the last menstruation as the longest in his experience, and the children born were all large. In Dr. Eden's opinion the methods of calculation adopted were necessarily inexact. To reckon from coition was possible only in a restricted number of cases. Even then an error of twenty-one days was possible. To reckon from the cessation of menstruation might itself be to admit error. Conception might occur during the menstrual period following, and the intramenstrual period might be extended. All these errors would tend to antedate conception. Nor was the menstrual period necessarily the same for all women, or always the same for a particular woman. Although, in Dr. Eden's opinion, the great majority of cases terminated between the thirty-eighth and forty-first week after menstruation, it was not uncommon for gestation to last 300 days after menstruation. Dr. Eden gave certain weights of children born as the result of pregnancies reported to have lasted 323, 324, and 336 days; the weights respectively were 12½, 14, and 16¾ pounds. The weight of the child born after an unusually long pregnancy would be above the average weight of a child at birth.[4]

After this review of the evidence and authorities, the Lord Chancellor proceeded to pronounce his judgement. He stated that he had no doubt that the principles on which he should act in coming to a conclusion of fact upon the evidence in this case were laid down in Morris *v.* Davies (1837), when Lord Lyndhurst, sitting as a judge of first instance, cited with approval the opinion of the judges on the Banbury peerage case:

> That in every case where a child is born in lawful wedlock, the husband not being separated from his wife by a sentence of divorce, sexual intercourse is presumed to have taken place between the husband and wife, until that presumption is encountered by such evidence as proves to the satisfaction of those who are to decide the question that such sexual intercourse did not take place at any time, when by such intercourse the husband could, according to the laws of nature, be the father of such child.

Lord Lyndhurst went on to point out that all that the case of Head *v.* Head decided was that the court must be satisfied that sexual intercourse did not take place, not upon a mere balance of probabilities, but upon evidence which must be such as to exclude all doubt—that is, of course, all reasonable doubt—in the minds of the court or jury to whom the question was submitted. On appeal his decision was affirmed. Lord Lyndhurst again stated his opinion that presumption of law was not lightly to be repelled. It was not to be broken in

[1] Report on the Claims to the Barony of Gardner. By Denis Le Marchaund. London, 1828.

[2] *Obstetric Memoirs*, by Sir James Simpson, 1855.

[3] "Neue Untersuchungen über die Dauer der menschlichen Schwangerschaft. (Samml. Klin. Vortr., Leipzig, 1901, No. 292-3.)

[4] It was stated in evidence at the hearing that the child in this case was 10½ pounds at birth.

upon or shaken by a mere balance of probability: the evidence for the purpose of repelling it must be strong, distinct, satisfactory and conclusive. He (the Lord Chancellor) need only mention that Lord Lyndhurst referred to a sentence of divorce pronounced in accordance with the law as it then existed, and the rule he stated must be modified to accord with the present state of the law; but no point arose here on this aspect of Lord Lyndhurst's judgement. It was true that the observations were made in reference to a legitimacy suit, but he could not conceive that in the present case any different principle could apply, otherwise it might happen that the mother would be condemned for adultery which would not disentitle the child to be declared to be the legitimate issue of her husband.

The only evidence of adultery in the case before him was the admittedly abnormal length of pregnancy. No other fact or circumstance had been adduced which in the slightest degree cast any reflection upon the chastity or modesty of the respondent, who had on oath denied the alleged adultery. "I can only find her guilty if I come to the conclusion that it is impossible, having regard to the present state of medical knowledge and belief, that the petitioner can be the father of her child. The expert evidence renders it manifest that there is no such impossibility. In these circumstances I accept the evidence of the respondent and find that she has not committed adultery; and accordingly I dismiss the petition."

Universities and Colleges.

UNIVERSITY OF LONDON.

LONDON HOSPITAL MEDICAL COLLEGE.

THE following prizes and certificates were recently presented to the successful students by Mr. W. M. Pryor, D.S.O., Chairman of the College Board:

"Price" Entrance Scholarship in Science, £100, R. W. Thomas; "Price" University Scholarship in Anatomy and Physiology, £52 10s., W. R. Brain. Entrance Science Scholarship, £50, W. A. Taylor. Duckworth Nelson Prize in Practical Medicine and Surgery, £10, L. R. Fifield and Miss G. H. E. H. J. Jones (equal, prize divided). Sutton Prize in Pathology, £20, Miss D. S. Russell. Anderson Prizes in Elementary Clinical Medicine, £5, (1) Miss K. E. Fresthon and J. L. Cox, (2) Miss D. Waterfield and W. R. Brain (equal, prizes divided); honorary certificates, N. Gray Hill, F. C. Hunt, L. O. Lindsay, E. G. Smith, Miss E. W. Morris, Miss M. C. N. Hadley, K. W. Todd and J. R. M. Morris. Arnold Thompson Prize in Diseases of Children, £15, Miss J. V. Good; honorary certificates, Miss D. J. Fox and Miss D. S. Russell. Paxton Prize in Anatomy and Physiology, £51 10s., H. W. Taylor and K. W. Heritage (equal, prize divided); honorary certificates, F. B. Byrom and D. Frost. Letheby Prizes, (1) Organic Chemistry, £15, W. A. Taylor; honorary certificates, R. W. Thomas, C. P. Dennison, J. T. Fathi and E. C. Hudson; (2) Chemical Pathology, £10, R. T. Brain. *Clinical Medicine*, £20 Prize, Miss G. H. E. H. J. Jones; honorary certificates, Miss M. E. Kennedy, L. R. Fifield and Miss D. J. Fox. *Clinical Surgery*, £20 Prize, Miss G. H. E. H. J. Jones; honorary certificate, L. R. Fifield. *Clinical Obstetrics and Gynæcology*, £20 Prize, Miss D. S. Russell and C. S. Cloake (equal, prize divided); honorary certificate, Miss H. R. Ashton. *Elementary Clinical Surgery*, £5 Prizes, (1) L. R. Fifield, (2) A. Barker, (3) W. R. Brain and (4) S. A. Grant; honorary certificates, F. H. Mather, C. R. McClure and R. M. Morris. *Minor Surgery*, £5 Prizes, (1) M. F. B. Lynch, (2) G. King; honorary certificates, E. C. Hudson and D. J. Martin. *Practical Anatomy*, £5 Prizes, (1) F. Byrom, (2) Miss F. C. Nicklin.

UNIVERSITY OF MANCHESTER.

PROFESSOR H. R. DEAN has been reappointed representative of the University on the General Medical Council.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly Comitia of the Royal College of Physicians of London was held on Thursday, July 28th, at 5 p.m., the chair being taken by the President, Sir Norman Moore, Bt. Dr. J. Beresford Leathes was admitted a Fellow of the College.

Membership.

The following candidates were admitted as Members, having passed the required examinations:

Sunil Chandra Basu, M.B.Calcutta, John Vernon Cannadine Braithwaite, M.B.Lond., L.R.C.P., John Crighton Bramwell, M.B.Manch., William Brown, M.D.Oxford, Archibald Edmund Clark-Kennedy, L.R.C.P., Richard Longford Thorald Grant, M.B.Adelaide, Donald McEdwards Kilgour, M.B.Toronto, Norman Kletz, M.B.Manch., Hubert Musgrave Oddy, M.B.Oxford, L.R.C.P., Hugh Spear Pemberton, M.B.Liverpool, Alfred Piney, L.R.C.P., Richard James Reece, M.D.Camb., L.R.C.P., Lewis Rudall Shore, M.B.Camb., L.R.C.P., John Heatly Spencer, M.D.Lond., L.R.C.P., Alfred Frank Tredgold, M.D.Durham, L.R.C.P.

Communications were received from Dr. Frederick Edge, who was permitted to resign the Membership, and from Dr. J. J. MacWhirter Dunbar, to whom the Membership which he resigned in 1881 was restored.

National Board of Examiners, U.S.A.

The following resolution addressed to the Conjoint Board in England, and passed at the last annual meeting of the National Board of Medical Examiners, U.S.A., was read:

Whereas: A specially appointed committee, consisting of Colonel L. A. Lagarde, U.S.A., and Dr. W. L. Bierring, after a visit to London, England, and a thorough investigation of the requirements and character of the qualifying examination conducted by the Conjoint Examining Board of England (comprising the Royal College of Surgeons of England and the Royal College of Physicians of London), have reported that the same is satisfactory, and the standards of this Board are equivalent to those of the National Board of Medical Examiners of the United States, it is resolved: That whenever a candidate appears before the National Board for examination presenting a certificate from the Conjoint Board in England, the same shall be accepted as a satisfactory qualification for admission to Part III (practical) of the examination required by the National Board of Medical Examiners.

Awards.

A letter was read from the Dean of the Faculty of Medicine of the University of Edinburgh stating that the Murchison memorial scholarship for the current year has been awarded to Miss Jessie McCrirrie Craig. On the recommendation of the Council the Bayley medal was awarded to Dr. Henry Hallett Dale, and the Moxon medal to Sir Thomas Clifford Allbutt. The Parkes Weber prize and medal was awarded to Dr. Louis Cobbett for his researches in tuberculosis as embodied in his book entitled *The Cause of Tuberculosis*.

Election of Censors.

The College Officers, Members of Committees and Examiners were elected for the ensuing year on the nomination of the President and Council. The Censors elected were: Sir Humphry D. Rolleston, K.C.B., Sir James Galloway, K.B.E., C.B., Dr. John Fawcett, M.D., and Dr. Horace George Turney, O.B.E.

Appointments.

The President announced that he had appointed Sir John Rose Bradford to represent the College on the "Hospitals Commission," established on the recommendation of the Voluntary Hospitals Committee. Dr. Drewitt was elected a Representative of the College on the Committee of Management of the Chelsea Physic Garden, vice the late Sir George Savage. Dr. Sidney Martin and Sir Arthur Newsholme were re-elected Representatives of the College on the Imperial Cancer Research Fund.

Recognition of Institutions.

The following institutions were recognized for instruction in Chemistry and Physics: The Technical College, Cardiff; the High School, Nottingham; the Streatham High School; Dean Close Memorial School, Cheltenham, and the Grammar School, Wisbech. The following schools, already recognized for instruction in Chemistry and Physics, were recognized also in Biology: The Grammar School, Bedford, and the Grammar School, Holt. The Public Health Laboratory of the University of Bombay was added to the list of laboratories at which the course of instruction for the Diploma in Public Health, Part I, may be completed, and the Municipal Infectious Diseases Hospital, Bombay, to the list of fever hospitals recognized for the Diploma in Public Health.

Regulations for Medical Examining Candidates.

The Committee of Management presented a report advising that the following recommendation of the General Medical Council is not one that should be adopted in the examinations of the Examining Board in England:

"That in the regulations for the several examinations it shall be provided that the examiners be empowered in assessing marks to take into account the duly attested records of the work done by the candidates throughout the course of study in the subject of the examination."

The report pointed out *inter alia* that the candidates examined by the board came from a large number of medical schools and institutions in this and other countries. The report was adopted.

Licences.

Licences to practise physic were granted to 114 candidates.

Diplomas.

Diplomas in the subjects indicated were granted in conjunction with the Royal College of Surgeons of England to the following candidates:

PUBLIC HEALTH.—W. F. W. Betenson, J. F. C. Braine, D. Campbell, G. Cochrane, H. A. Haig, J. W. Healy, G. O. Hempson, E. L. Hopkins, G. R. Lynch, A. A. McNeight, A. Mearns, A. R. Mehta, W. E. Morgan, R. Narayan, C. G. Pandit, R. L. Portway, C. L. Sahni, L. Sen, C. H. Stringer, D. J. Thomas, C. D. Tiwari, J. E. A. Underwood, Elizabeth S. Walker.

TROPICAL MEDICINE AND HYGIENE.—W. Allan, J. A. Anklesaria, P. M. Antia, S. Bardhan, W. B. Borden, E. J. Clark, K. Comyn, S. D. de Vos, S. F. Dudley, K. A. Gandhi, L. E. Liat, J. P. Litt, T. C. St.C. Morton, J. S. Nicolson, K. S. Nigam, W. S. Ratnavale, S. Roach, Alice I. Shaw, H. C. Sinderson, E. T. A. Stedeford, W. M. Tough, H. M. S. Turner, A. M. Walcott, T. B. Welch, N. M. Wilson.

OPHTHALMIC MEDICINE AND SURGERY.—G. M. Ali, M. D. Anklesaria, C. R. Athavale, E. R. Chambers, F. B. Chavasse, R. M. Dikson, G. C. Dixon, J. McC. Gibson, E. W. Ingle, R. D. Kamdin, T. L. A. R. V. Koil, Ida C. Mann, R. R. Mishra, S. S. Mohamedi, R. B. North, F. H. Robinson, C. Rudd, N. L. Sheory, C. N. Shroff, H. J. Taggart, J. N. Tennent, T. H. Whittington.

PSYCHOLOGICAL MEDICINE.—W. S. Dawson, J. T. Fox, P. K. McCowan, L. H. Wootton, A. Wilson, J. Macarthur.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary council was held on July 26th, when Sir Anthony Bowlby, President, was in the chair.

Diploma of Membership.—Diplomas were granted to 107 candidates (25 of whom were women), found qualified at the recent examination.

Diploma in Tropical Medicine and Hygiene. Diplomas were granted to 25 candidates, jointly with the Royal College of Physicians.

Diploma in Ophthalmic Medicine and Surgery.—This was granted to 22 candidates found qualified.

Professor Sherrington.—Professor Charles Scott Sherrington, M.D., President of the Royal Society, was admitted a Fellow of the College, under the rule relating to members of twenty years' standing.

Recognition of the Conjoint Examination in the United States.—The resolution of the National Board of Medical Examiners of the United States of America, quoted above in the report of the meeting of the Royal College of Physicians, was read.

CONJOINT BOARD IN ENGLAND.

THE diplomas of L.R.C.P. and M.R.C.S. have been respectively conferred upon the following 107 (including 25 women) who have passed the final examination of the Conjoint Board and complied with the by-laws:

G. K. Arthur, A. W. Austen, Martha F. Barritt, Frances S. Barry, Geraldine M. Barry, Marjorie M. S. Bartlett, Hylda C. Briscoe, Lorna P. Brown, G. G. Bruce, E. M. Burrell, A. V. Campbell, F. C. W. Capps, Christabel L. M. Charlesworth, J. C. Churcher, L. E. Claremont, Marion C. V. Clarke, C. S. Cloake, I. J. Corbett, R. D. Cowan, J. M. Craig, E. Cuerel, J. J. da Gama Machado, H. C. De Penning, E. C. Dodds, J. R. Dow, T. W. K. Dunscombe, E. R. D. Eastman-Nagle, Doris K. Emery, F. T. Evans, J. C. Evans, J. Franks, H. Freeman, L. St. C. Gainer, P. P. Gandhy, B. Gould, Marjorie P. C. Greene, J. F. Hackwood, A. H. Hall, G. A. M. Hall, M. Hall, B. J. Hallows, G. H. C. Harding, S. Hartley, S. E. Harvey, Marjorie C. Hawkins, M. S. Hashish, A. D. Hepburn, I. Hipshon, R. J. Hodgkinson, C. A. Horder, Erna H. Jebens, L. M. Jenning, Margaret G. Jones, R. C. Lightwood, D. M. Lloyd-Jones, Eva Lonnard, Muriel J. Lough, A. G. Mackay, D. McClean, C. G. Martin, Enid M. Moore, L. S. Morgan, J. N. Morris, R. E. Murray, M. Newman, T. S. North, H. A. Osborn, Alice Owen, A. Pain, D. B. Pauw, Winifred Peacey, L. S. Perera, E. Philbin, Mary W. Pitt-Lewis, J. H. Porter, R. V. Powell, J. G. Reed, L. M. Rice, G. H. Roberts, A. Robertson, Mary F. Roope, E. Savage, T. Seshachalam, H. Shannon, W. Shaw, A. H. Shelswell, S. S. Shri-Kent, O. L. C. Sibley, A. I. Silverman, S. R. Simaika, L. Smalley, H. K. Snell, Dorothy M. Stewart, Y. A. Sunnibai, Muriel A. Sutton, Marjorie P. Taylor, Wenefride Thompson, A. W. Tibbetts, Doris L. Veale, A. Verwey, J. G. Walker, W. J. G. Walker, L. K. Watson, L. R. A. Wells, E. T. Wright, J. E. Wright, C. F. Young.

The Services.

COLONELS-COMMANDANT.

THE King has approved of the appointment of Colonels-Commandant to the following administrative corps: Royal Army Service Corps, 3; Royal Army Medical Corps, 4; Royal Army Ordnance Corps, 1; Royal Army Veterinary Corps, 1. Similar appointments already exist in the Royal Regiment of Artillery and the Corps of Royal Engineers. The posts are purely honorary. In future four distinguished senior officers of the Army Medical Service will be appointed Colonels-Commandant of the Royal Army Medical Corps.

Obituary.

WE regret to record the death in tragic circumstances, on May 24th, of Dr. WILLIAM JOHNSON, one of the senior medical practitioners of Bloemfontein. He was on a holiday with his family, and was drowned while bathing. Dr. Johnson took the diplomas of L.R.C.P., L.R.C.S.Edin. in 1882, and had latterly confined his work mainly to ophthalmology. He was a member of the Medical and Pharmacy Council of the Orange Free State, and president of the Orange Free State and Basutoland Branch of the British Medical Association. He is survived by his widow and four children.

Medical News.

WE are asked to state that the announcements recently appearing in the public press with regard to the memorial to Lord Lister are quite unauthorized; the site for the proposed memorial has not yet been decided upon. The statement referred to did not appear in the BRITISH MEDICAL JOURNAL.

THE Ministry of Health and the Scottish Board of Health are prepared to receive applications from voluntary hospitals for grants in respect of payment of duty involved by the use of duty-paid spirit or drugs containing duty-paid spirit for medical and surgical purposes in these hospitals during the year 1920. Forms of application have been sent to those hospitals to which grant was paid last year. Any other hospital which desires to make application should communicate immediately with the Secretary to the Ministry of Health, Whitehall, or the Secretary to the Scottish Board of Health, Edinburgh, as the case may be.

THE annual luncheon of the Irish Medical Schools' and Graduates' Association which, as mentioned last week, took place at Newcastle on July 20th, under the chairmanship of Dr. J. A. Macdonald, President-elect, was attended by fifty-six members and guests, including many ladies. Apologies for absence were received from the President of the British Medical Association, the Editor of the JOURNAL, and several of the officials, but Drs. Bolam, Cox, and Wallace Henry represented the British Medical Association, and among the guests were distinguished members of the medical and other professions. Unfortunately the multitude of other engagements necessitated the curtailment of the usual toasts, but the racy wit of the Chairman and of Dr. Cox was much enjoyed.

A THREE weeks' course of post-graduate study for general practitioners will be given at the St. Andrews Institute for Clinical Research, commencing Tuesday, October 4th. The course will consist of lecture-demonstrations dealing with methods for the investigation of disease in its early stages, and will be supplemented by demonstrations on matters of clinical interest in anatomy, physiology, chemistry, bacteriology, ophthalmology, and radiology. Graduates desirous of attending this course should communicate as early as possible with the Secretary, the Clinical Institute, St. Andrews, who will send them full particulars, and will be glad to advise them with regard to securing rooms in St. Andrews.

THE annual dinner of past and present students of St. Mary's Hospital will take place on Monday, October 3rd, at the Connaught Rooms, at 7 p.m. Dr. E. G. Graham Little will be in the chair; tickets, the price of which, exclusive of wine, will be 12s. 6d., and other information may be obtained from the honorary secretary, Dr. A. Hope Gosse, 15, Queen Anne Street, W.1.

THE annual meeting of the General Council of the Save the Children Fund was held on July 25th, Lord Weardale (chairman) presiding. The annual report stated that the Fund had succeeded in making the needs of the children widely known throughout the United Kingdom and the British Empire, with the result that during the financial year £554,937 was collected, making a total to the end of the second year of the Fund's work of £950,639. Gifts of new and second-hand clothing and other gifts in kind, distributed through the Fund, amounted to over one hundred tons in weight. Side by side with the Foreign Fund, a Home Fund had been established, but the two Funds are kept entirely distinct; both are distributed in grants to existing agencies. Sir William Plender, the honorary auditor, paid a tribute to the business control of the Fund, and appealed to all who looked to the future position and happiness of the world to support the Save the Children Fund. The office is at 27, Golden Square, London, W.1.

H.R.H. KING HUSEIN of the Hedjaz has been pleased to confer the Order of the Nahda (3rd Class) on Major R. G. Gayer-Anderson, M.R.C.S., L.R.C.P. (late R.A.M.C.), of the Ministry of the Interior, Cairo, for services rendered by him as political officer in Arabia during the war.

THE twenty-fourth annual meeting of the American Medical Library Association, the members of which include officials of all the larger medical libraries of the United States, was held at Boston from June 6th to 8th. The recommendations of the report of a committee on standard classification, and the system used in the Boston Medical Library, was adopted as affording the most practical solution of the perplexing problems of classification.

THE Rockefeller Foundation has given 35,000 dollars to New York University to increase facilities for teaching preventive medicine, hygiene, and sanitation at the University and Bellevue Hospital Medical College.

IT is reported that influenza is sweeping through the eastern provinces of South Africa, and that many thousands of persons have fallen victims to the disease.

THE usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been prepared and printed. They will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C.2.

Letters, Notes, and Answers.

N.B., owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

"VICTIM" asks for advice for curing himself of the tobacco habit, particularly inhalation of cigarettes. He finds tremor, general jumpiness, and loss of co-ordination in finer movements, more especially writing, becoming increasingly marked. He has tried, without success, to cure himself by an exercise of the will and by auto-suggestion.

INCOME TAX.

"L. M. N." inquires as to the basis of calculating expenses for income tax purposes.

*** The expenses to be taken are those incurred in the three years the receipts of which form the average gross income for assessment purposes. We are of opinion that subscriptions to societies and the cost of books are admissible expenses to the extent to which they are incurred in maintaining the practitioner's relative standard of professional ability.

"C. F." bought a practice as from July 1st; on what basis should his return be made for the year ending April 5th, 1922?

*** As regards his earnings, the amount to be returned is three-quarters of the average profits of the practice over the three years ending December 31st, 1920. If the earnings for the nine months to April 5th, 1921—after making a fair allowance for outstanding debts—should fall short of the amount so returned by reason of some specific cause, then "C. F." can claim an adjustment of his liability and any repayment arising thereout.

"J. L." inquires as to certain expenses as stated below:

(1) The cost of visiting practices with a view to purchasing one represents capital outlay, and cannot be deducted as an expense incurred in earning income. (2) The cost of hiring a public car for the purpose of visiting patients is deductible, whether a private car is kept or not. (3) "J. L." had a car which cost £450, sold it for £75, and has now purchased one for £300. The deductible expense is £300 – £75—that is, £225.

"BRIGHTON" and "G. W."—The basis of assessment for this financial year is still the average of the three previous years.

LETTERS, NOTES, ETC.

THE LORD DERBY WAR HOSPITAL.

MAJOR GERALD SICHEL, F.R.C.S. (late Officer in charge Surgical Division, The Lord Derby War Hospital, Warrington), writes: At the recent annual meeting of the Medico-Psychological Association, Lieut.-General Sir John Goodwin paid a well deserved tribute to the mental side of the above hospital, the largest of its kind during the war. There were in all about 3,000 beds, of which 500 were medical, 1,000 mental, and 1,500 in the surgical division. Sir John's praise was awarded to the mental division only. I could have wished that at some time some slight appreciation had been vouchsafed to the medical *and* surgical sections as well.

TREATMENT OF WHOOPING-COUGH.

"COUNTRY DOCTOR" writes: For some time I have treated pertussis with full doses of carbolic acid, belladonna, and ipecacuanha, with one minim a day for each year of the child's age of adrenalini chloridi 1 in 1,000. In many cases the vomiting and whoop cease within a week, and all I have tried in two or three weeks; among about 70 cases last autumn there was not a single case of pneumonia. In every case the whoop was present before I started treatment.

EVAPORATION TO DRYNESS.

"SEPTUAGENARIAN" writes: Will anyone devise a boiling-down process for all the circulars and notices sent to long-suffering doctors these hurrying days? It is difficult to enumerate all the papers sent every week requiring careful study and observation, whether from the Insurance Committee, the district council, the British Medical Association, or the regulations relating to venereal disease. Is there not a process of concentrating all these wordy notices, called *précis* writing? And could not the extract thus obtained be written on a postcard? I say nothing of the wastage of paper and expenditure in postage. If my weary brain cannot follow all the orders sent to me, then the quietness of a prison may be a great relief.

MADEIRA.

DR. J. GEDDES SCOTT, M.R.C.S., L.R.C.P.Lond. (Madeira), writes with reference to the statement in the BRITISH MEDICAL JOURNAL of July 9th that in Madeira "hotel charges for board and lodging might be ten guineas weekly without extras": Will you allow me to correct this statement; there are at least three well found hotels where very good accommodation can be obtained for 15s. a day, the only extras being early morning tea and hot baths; this works out at practically half the sum you mention. As to the difficulty in getting away, this was a post-war condition which no longer exists; there is ample steamship accommodation for everyone. What you say as to Madeira having the most equable climate in the winter and being particularly appropriate for chronic bronchitis is correct.

"THE HARLEY STREET SLUMP."

"M.D." writes: It has occurred to me and to some of my colleagues to whom I have spoken on the subject that amongst all the reasons given in the press for the so-called "Harley Street Slump" there is no mention of one which I think has more to do with it than any other, and that is a disinclination on the part of a large number of the members of the profession to send their patients to consultants and specialists in town, on account of a practice which seems to be growing on the part of some of the latter of undertaking the advice and treatment of patients without communicating with their medical man. I have been in practice over forty years and have had a good deal of experience, generally most satisfactory, of the ways of London men during that time, but some of the younger rising men seem to be adopting methods quite different from those of their predecessors, and this will certainly be ultimately to their great loss.

A DISCLAIMER.

MR. H. S. SOUTTAR (London, W.) writes: My attention has been called to certain notices in the lay press regarding a new form of surgical needle in which my name has been used in a manner which I do not consider consistent with professional etiquette. The information on which the notices were based was given by the London Hospital, who never contemplated that it would be used in this manner. On my calling the attention of the secretary to the matter he immediately tendered to me a very ample apology, the copy of which I enclose.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, 30, 31, 33, and 34 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32 and 33.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
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All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF ORTHOPAEDICS AND DISEASES OF CHILDREN.

A. H. Tubby, C.B., C.M.G., M.S., F.R.C.S., President.

DISCUSSION ON THE EARLY DIAGNOSIS AND TREATMENT OF ACUTE POLIOMYELITIS.

OPENING PAPER

BY

E. Farquhar Buzzard, M.A., M.D., F.R.C.P.Lond.,
Physician, St. Thomas's Hospital.

All who are interested in diseases of children must realize the importance of recognizing at an early stage the symptoms and signs which distinguish acute poliomyelitis from the other ailments of infancy and childhood, and the victims of this crippling disease must always look to the orthopaedic surgeon for help in reducing their disabilities to a minimum. The diagnosis of acute poliomyelitis, if it is to be early, must usually rest with the general practitioner, and its treatment is of physico-therapeutic and orthopaedic rather than of medicinal concern. But it may be within the legitimate sphere of a physician to discuss and emphasize certain principles in diagnosis and treatment which have not yet received sufficient recognition, even if he leaves the elaboration of details to those who follow him.

Mistakes in the early diagnosis of acute poliomyelitis have their chief origin in a defective conception of the disease. Until the last fifteen years or so it was usually regarded as a mysterious affection of the nervous system belonging to the province of the neurologist. It was not included, as it should be, among the acute specific fevers, comparable to small-pox, varicella, measles or enteric. As a consequence of this mental disorientation the possibility of acute poliomyelitis rarely entered the mind of a doctor when he was confronted with a child suffering from fever, headache, vomiting and convulsions. He was prepared for and even welcomed the development of a rash which provided the clue to a diagnosis, but he was quite unprepared for the appearance of paralysis. Its onset came as a shock not only to himself but to his reputation as a diagnostician. The diagnosis of acute poliomyelitis is not likely to be made early, therefore, until its place among the acute specific fevers has been firmly established in the mind of the profession.

The teaching of twenty years ago was at fault in another respect, and led to many mistakes in diagnosis. It was generally accepted that acute poliomyelitis was a painless disease. The presence of severe pains in the limbs, increased by movements and handling, complained of by a child suffering from an acute febrile illness, has again and again been responsible for a diagnosis of acute rheumatism, which has not been dispelled until the subsequent discovery of paralysis has disclosed the gravity of the position.

Conversely, the picture presented by an infant under two years of age suffering from scurvy may resemble closely that of acute poliomyelitis. The avoidance of all voluntary movements consequent on the pain they provoke suggests a flaccid paralysis, and only a careful investigation of the condition of the reflexes may enable the observer to decide whether the patient's immobility is or is not due to organic disease of the nervous system. A flaccid paralysis limited to one limb in an infant with an epiphysitis of syphilitic origin may also simulate acute poliomyelitis, and the diagnosis may depend on careful clinical examination, supplemented, if necessary, by radiography. But poliomyelitis is liable to be confused also with other acute infective diseases of the nervous system, such as meningitis, toxic polyneuritis, Landry's paralysis, disseminated or ascending myelitis, and lethargic encephalitis.

Meningitis.

It is not so long since acute poliomyelitis, or acute anterior poliomyelitis, as it was then called, was regarded as a disease confined to the anterior horns of the spinal cord. Modern investigation of acute fatal cases has established it as a more general inflammation of the tissues of the central nervous system in which the leptomeninges, especially those on the anterior aspect of the cord, are almost invariably involved. It is not surprising, therefore, that symptoms and signs which we have come to regard as suggestive of meningitis may be present in the early stages of the disease. Convulsions, vomiting, head retraction, photophobia, and increased resistance to passive movement in the limbs may strongly suggest a diagnosis of meningitis. Examination of the cerebro-spinal fluid is then a matter of great diagnostic importance. In cases of poliomyelitis evidence of some meningeal reaction may be found in the presence of increased fluid pressure and a mild lymphocytosis, but the cellular content is never sufficiently high to give the fluid the turbid appearance so characteristic of most forms of meningitis. Microscopical and bacteriological investigation will serve further to establish the cause of the inflammation in which the meninges have been involved.

Toxic Polyneuritis.

The discrimination between toxic polyneuritis and acute poliomyelitis is of importance especially in regard to prognosis. In neither condition is the mortality rate high, but in the former disease complete recovery from all disability in non-fatal cases is a much more probable event than in the latter. The onset of polyneuritis is usually insidious as compared to that of poliomyelitis and the full development of the disease is longer delayed. Moreover, the symmetry of the paralysis in polyneuritis is in marked contrast to the asymmetrical involvement of the limbs in poliomyelitis. The absence of sensory disorders, except for some tenderness of muscles, may be noticeable in both conditions and examination of the cerebro-spinal fluid may give little information of value. Speaking generally, the initial constitutional disturbances in polyneuritis are less severe than those which are present in cases of poliomyelitis with widespread paralysis.

Landry's Paralysis.

This is a rare disease which generally affects young adults at an age when poliomyelitis is relatively uncommon. Many cases of poliomyelitis in adults have been recorded as cases of Landry's paralysis chiefly because the course of the disease has been of the acute ascending type. In Landry's paralysis there is little or no constitutional disturbance, pain and tenderness are absent, and the cerebro-spinal fluid shows no noticeable changes from the normal. In acute poliomyelitis with general involvement of the muscles there is often retention of urine for a day or two, a symptom which is very rare in Landry's paralysis. An acute ascending paralysis, whether belonging to the Landry's group or due to poliomyelitis, is generally fatal.

Disseminated Myelitis.

The diagnosis of this disease, even when it takes the ascending form, from acute poliomyelitis is not difficult, owing to grave sensory and sphincter disturbances which accompany the motor paralysis.

Lethargic Encephalitis.

There can be no doubt that we are now faced with two infective diseases of the central nervous system, in both of which the chief incidence of inflammatory reaction may be cerebral or spinal. In that disease for which the virus of poliomyelitis is responsible the spinal cord is more often attacked than the cerebrum. But polio-encephalitis and poliomyelitis are not uncommonly present in the same patient, or, in epidemics especially, a certain number of individuals only display symptoms referable to inflammation of the higher centres. Practically all cases of lethargic encephalitis present cerebral symptoms and signs, but a small minority are characterized by evidence of spinal cord involvement as well.

No surprise need be occasioned by the fact that there are many similarities between the bedside phenomena of these two diseases in spite of the fact that experimental, epidemiological, clinical, and even histological investigations have proved them to be quite distinct from one

another. Until some laboratory test is evolved which can determine with certainty and rapidity the responsible virus, cases presenting difficulties in diagnosis must occasionally be met with.

From the etiological point of view poliomyelitis is a disease of infants and children, the incidence rapidly declining as age advances. It prevails chiefly during the summer months, is acute in its onset, and runs its course in a few days. Lethargic encephalitis, on the other hand, attacks impartially persons of all ages. It is more prevalent during the winter and varies enormously in its mode of onset and in the duration of its attack. Although the presence or absence of any particular symptom or sign is insufficient to differentiate the two diseases, seeing that inflammation of any part of the central nervous system is a factor common to both, yet there are certain features in many cases of lethargic encephalitis which are to some extent characteristic. These are lethargy, the mid-brain symptoms, and the involuntary movements and muscular contractions which have drawn so much attention to the disease.

Diagnosis.

It may be asked whether, away from the bedside, there is any method of determining the presence of poliomyelitis before the clinical manifestations of the disease abolish all doubt as to its identity. In other words, can the diagnosis be made at the stage when appropriate treatment would be likely to exert an influence on the course of the inflammatory process in the spinal cord? The answer to this question, it must be confessed, is in the negative. It is true that a serum diagnosis is possible, but the length of time involved in its elaboration renders it of little practical value, and there seems to be doubt as to its reliability in very early cases. The serum from the patient who is the subject of the test is mixed with an equal quantity of an emulsion of spinal cord containing the active virus. A quantity of this mixture, after standing for several hours, is injected into the brain of a monkey at the same time as an equal quantity of the emulsion unmixed with serum is injected into the brain of another animal. Should the latter develop the disease and the former escape, it may be assumed that the serum of the patient possessed some viricidal property. It has been shown, however, that this property is only active *in vitro* and that the injection of serum from a poliomyelitic patient directly into an animal has no preventive or curative effects.

The early diagnosis of acute poliomyelitis therefore still remains largely in the province of the clinician, whose recognition of the disease at the first possible moment will depend chiefly on his having mentally orientated its position among the acute specific fevers, and on his being prepared for paralytic symptoms supervening in a child presenting the characteristic features of that group.

Treatment.

The treatment of acute poliomyelitis may be conveniently considered under three headings: (1) The treatment of the patient who is ill with the disease, (2) the treatment of the patient during convalescence, and (3) the treatment of resulting disabilities.

Before dealing with the first two stages it may be profitable to recall the knowledge we have gained from the examination of fatal cases. The condition of the brain and spinal cord when it is acutely inflamed and while that inflammation is subsiding, the state of the nerve cells and their axons, and the reparative processes which are going on within the nervous system, should never be absent from the doctor's mind, and should influence his management of the patient at every turn. The presence of one or more paralysed limbs must not divert attention from the disease and the healing processes which are running their course, not in the disabled members but in the hidden depths of the nervous system.

What are the outstanding anatomical features of the disease which deserve our profound attention? In the first place it must be remembered that the invasion of the brain and spinal cord is of much greater extent than appears on the surface. I have often been struck by this fact when examining fatal cases. For instance, a patient presenting paralysis of certain limb and trunk muscles dies from respiratory failure. Clinically the incidence of the disease has been on the spinal cord. Histologically there is abundant evidence of inflammation extending throughout the brain-stem and probably into the cerebral hemispheres. Let us recognize, therefore, that the whole of the nervous system has been subjected to an infection only some of the results of which may be manifest.

In the second place we must consider in detail what has befallen the cells of the anterior cornua before we set out on the muscles which they innervate. Take a typical section from the cervical or lumbo-sacral enlargement. The whole mass of grey matter is swollen, its vessels are engorged and its tissues are the seat of abundant serous and cellular exudation, with here and there a capillary haemorrhage. Your critical eye tells you at once that such an inflammation, even under the best conditions, would take weeks to subside, and that the healing process demands rest above all things for its favourable development. Examine each group of cells. You will find some have disappeared finally and irrevocably; others are damaged beyond repair; others again, swollen and with displaced nuclei, may be considered hovering between life and death; while the remainder, few or many, constitute the only real survivors in the midst of the surrounding devastation.

Such a picture gives one food for thought when we are considering how to treat a patient who has passed through the febrile stage of his illness, who has regained his appetite, and who says he feels quite well except that he cannot move his arms or his legs. Handicapped as we are by having no efficient weapon with which to fight the infection, it is only reasonable that every effort should be directed towards assisting nature in the combat. The patient must be nursed with the greatest care, every unnecessary mental and physical effort should be saved him, and this policy of inactivity followed assiduously long after the constitutional symptoms have faded away. But masterly inactivity may be supplemented by more active measures in certain directions. The fever and malaise must be treated on the usual lines, and pain relieved by suitable methods, if necessary by morphine.

In the course of an epidemic it may be worth while trying the effect of an immune serum introduced into the spinal canal if the diagnosis has been made at a sufficiently early stage. It cannot be stated with assurance that this method is of proved value, but some success has been claimed by several observers. For the purpose it is necessary to find someone who has passed through an attack of the disease, who is free from syphilitic taint, and who is willing to give 20 or 30 c.cm. of his blood. The serum is separated, and at body temperature is injected into the spinal theca after removal of a corresponding quantity of cerebro-spinal fluid. Injections of 10 c.cm. may be repeated daily for several days. Obviously the conditions favourable for carrying out this treatment in practice can rarely be met with, and its employment after paralysis has once been established is not calculated to be of any value.

Hexamine is usually given in the acute stage of poliomyelitis, as in other infective diseases of the nervous system, on the ground that it reaches the spinal fluid in the shape of formaldehyde, but it is at least doubtful whether it exerts any beneficial effect.

Retention of urine needs to be met by the use of the catheter, but this complication is usually of short duration. Constipation is common in the early stages, but can be dealt with by means of aperients and enemata. It is apt to be obstinate when the abdominal muscles are paralysed.

If rest is the first essential in the acute stage of poliomyelitis and during the first three or four weeks of convalescence, the posture maintained during this period is a good second. There is no one posture which is applicable to every case, but there is a principle which must decide the question of posture not only of the patient as a whole but of each portion of his body. This principle has been evolved from the knowledge that relaxation of a muscle is an imperative factor in its recovery, and that stretching a muscle is inimical to that desired result. Every case, therefore, needs to be studied in detail, the relative strength and weakness of antagonistic muscles operating on every joint accurately measured, and means adopted to maintain every segment of each affected limb in the position most favourable to recovery and least favourable to the development of deformities. At the same time the paralysed parts must be kept warm and their local circulation and nutrition promoted by rubbing. During these first few weeks it is quite unnecessary to have a trained masseur to

carry out this treatment, and any nurse should be able to do all that is required.

A month or six weeks having elapsed since the onset of the disease the time has arrived when the condition of the patient's musculature should be carefully studied with a view to further treatment. It will now be found that certain muscles previously paralysed have begun to respond to volitional stimuli. They do not present evidence of much atrophy, and they have not lost their response to faradism. These muscles will not give us any cause for anxiety in regard to their recovery. On the contrary, we may find it necessary to control their increasing activity lest by their contractions they may stretch other muscles which have been less fortunate.

A certain number of muscles will be found wasted and presenting the reaction of degeneration. The question of their recovery is one which cannot be answered at this stage, and we must be content to keep them in a condition as favourable for future activity as the circumstances permit. We know that some of these muscles may never contract again at the bid of their owner, that their innervating cells have been destroyed. Remembering the anatomical picture I have described, we realize that other muscles apparently in the same plight have more favourable prospects. Their innervating cells have been badly damaged but not destroyed. In time they may recover their function and be prepared to resume control over the muscle fibres to which their axons are distributed. It is our business to be prepared for this contingency at the end of a period which may be of a year or eighteen months' duration.

How is this time to be employed? We are ignorant of any therapeutic measure by which the recovery of the nerve cell and its axon can be facilitated or hastened, and must therefore be content to maintain the patient's health at the highest possible level. We are more actively concerned with preserving the paralysed muscle in such a condition that the advent of nervous impulses may find it capable of regeneration and without obstacles in the way of performing its natural function.

Experiment and experience has taught us that this end is best attained by keeping the muscle in a position of relaxation, by keeping it warm, by promoting its nutrition and by preserving its contractility. It is with the last two measures that massage and electrical treatment are concerned, and they must be employed regularly and almost daily throughout the period of waiting.

The object of electrical treatment is to make the muscle contract, and it is waste of time as well as harmful to put the affected limb in a bath of water through which an electrical current is passed. Each muscle must be stimulated by the make-and-break of a galvanic current, care being exercised that the latter does not spread to antagonistic muscles the contraction of which would stretch the paralysed fibres.

At the end of eighteen months of appropriate treatment on these lines the patient may be regarded as having reached the stage when any further mitigation of his disablement must depend on artifice or operation. It is to the orthopaedic surgeon that he must turn for help, and, in view of the great advances made in this special branch of surgery during recent years, he will not turn in vain.

R. C. ELMSLIE, O.B.E., M.S., F.R.C.S.,
Orthopaedic Surgeon, St. Bartholomew's Hospital.

DR. FARQUHAR BUZZARD has made such a complete opening to the discussion that there is little left to the followers except to emphasize particular points. I venture to differ from him when he says that early diagnosis is of more importance to the doctor than to the patient. In view of the importance which we now ascribe to rest in the early stages, I think that it is impossible to over-emphasize the value of early diagnosis. Three points in diagnosis have particularly struck me: (1) the frequency of a loose diagnosis of meningitis, without accurate investigation, in cases which turn out to be poliomyelitis; (2) the common diagnosis of "convulsions," without defining what the convulsions are due to; and (3) the occasional difficulty in diagnosis between poliomyelitis and acute scurvy.

Treatment may be divided into two stages: (1) that of rest; (2) that of restoration of function. The stage of rest, I should say, ought to last about six weeks. We should remember that in poliomyelitis there is an acute inflammation in the central nervous system. Following up the old principle of resting all inflamed structures, we should adopt as our principle of rest the avoidance of all active movement and the avoidance of all unnecessary peripheral stimuli. At as early a stage as possible the child should be fixed upon a splint or in plaster-of-Paris, moved as little as possible, washed as seldom as possible. I prefer for this purpose a plaster-of-Paris splint or a plaster bed. To make it necessitates a certain amount of handling of the child, but such handling is no more than that involved in fixing the limbs in plaster-of-Paris. Of the different forms of physical treatment the one of importance at this stage is the maintenance of posture, of such posture as will prevent over-stretching of weakened or paralysed muscles, and will prevent the initiation of contracture and deformity. Massage—that is to say, friction, kneading, etc.—and electrical treatment, are undesirable at this stage, they necessarily involve peripheral stimuli which are undesirable.

After the period of rest, the first essential is still the maintenance of posture. In the restoration of function the most important point is the restoration of active use of the affected muscles by active exercises. It is unnecessary to call upon these weakened muscles to act through their full range and to lift the limb segment against the action of gravity. They should be exercised at first through a small range, without being stretched, and whilst the limb is supported. Moreover, much can be done by using eccentric movements, allowing the muscle to relax slowly whilst the limb is supported.

Dr. Buzzard has dealt sufficiently with electrical treatment; a word must, however, be said about appliances. On the one hand, some surgeons do tend to overload children with instruments to an unnecessary extent without sufficiently careful thought; on the other hand, some physicians desire to discard all instruments, allowing the child to walk about with the limb in any position. Instruments should be used with thought, and every one should serve a definite purpose: (1) to prevent the over-stretching of weakened muscles; and (2) to allow of use of the limb in as nearly as possible a normal way.

In the later treatment massage should not be applied diffusely but thoughtfully to the muscles which require it, and re-educational exercises should be carefully thought out in each case, so that every exercise serves a purpose. One other point requires mention: the maintenance of nutrition. The best way of maintaining nutrition is to bring the affected limb into active use. Other methods, such as special baths and electrical methods, have their uses, but it is difficult to apply them in the case of poor children in their own homes. I have found that the use of a simple prolonged hot bath, which can be given in any home, is as good a method as any.

D. MCCRAE AITKEN, F.R.C.S.,
Surgeon, Orthopaedic Hospital, Shepherd's Bush, and Shropshire Orthopaedic Hospital.

I PROPOSE, in the time at my disposal, to confine my remarks to the part that posture plays in the early treatment of poliomyelitis, but must first express my entire agreement with Mr. Elmslie's plea that rest must be absolute, and that no massage or electrical stimulation is permissible in the earlier stages of the disease.

Dr. Farquhar Buzzard has pointed out that it is only after a month or six weeks from the onset of the disease that voluntary power begins to return to some muscles, leaving the state of the others doubtful, and from this stage onwards we work with our eyes open to know which muscles to conserve by keeping them relaxed. Before this stage we must be guided largely by experience of those deformities and disabilities which most commonly come to the orthopaedic surgeon for treatment at a later stage. He has given us a vivid picture of the congested and oedematous state of the affected portions of the spinal cord. As already mentioned, some cells recover life and function spontaneously, others are killed by the disease and are of no interest to the orthopaedic surgeon except at a later stage. It is with the nerve cells that are hovering between life and death that we are concerned.

When I was a person liable to be examined in physiology, I learned that if a group of muscles be excised from a monkey's limb, the corresponding motor cells in the

anterior cornua of the cord undergo chromatolysis and die. The life of the motor cell is therefore partly dependent on the muscle which it innervates. We must therefore be careful not to think of the disease as one of the cord alone; we must think of the motor cell, the efferent nerve fibre, the muscle, and the afferent nerves from the muscle as a working unit, the integrity of whose parts are dependent on the integrity of the whole nerve muscle cycle.

Consider now the state of affairs when the oedema is beginning to disappear from the cord: the cells are beginning to struggle back to life and function, and send very feeble efferent impulses to the muscle. If the muscle is overstretched it makes no response, but if its state of elasticity and nutrition has been conserved by keeping it suitably relaxed and rested, any response it makes, however feeble, initiates a muscle afferent to the cord, which must have a physiological action in assisting to revitalize its recovering motor cell. In pursuance of this idea, and in an attempt to discover how far posture in the acute stage influenced the nature of the recovery, I have tried to get from mothers the exact details of how they nursed their children during the acute stage. Many could give no details, but others who nursed their children themselves reduced their daily ministrations to a routine.

It was in the state of the upper limb that I particularly looked for information, for among the many varied forms of paralysis two particular types occur with frequency: (1) the type in which the muscles of the hand have recovered but there is no power of flexing the elbow; (2) the type in which there is power to flex the elbow, but a dropped wrist and flexed fingers. Either group may be associated with inability to abduct the arm at the shoulder. Comparing these conditions with the stories told by the mothers I found sometimes that the mother explained that after attending to her helpless little sufferer she arranged the child with the arms down by the side with the hands lying on the bed. In this position the flexors of the elbow are fully extended, but the wrist and fingers are left in a relaxed position.

Other mothers gently bent the elbows and crossed the hands over the child's chest, thus relaxing the flexors of the elbows, but letting the wrists get into a dropped-wrist position. There was a definite relation between the occurrence of the two types of paralysis and the routine daily position. I never found any mother who made a habit of spreading out the arms so as to relax the deltoid. As in later stages we find inability to raise the hand to the mouth, to abduct the shoulder, and to rotate the humerus—a condition which prevents the child from feeding itself, fastening its collar-stud, or brushing its hair—I should recommend putting the arms in this position as a routine in the early stages, in order to try to avert some of these very crippling conditions.

Turning briefly to the lower limbs we find the most common contractures are flexion adduction and internal rotation at the hip, flexion at the knee, and a variety of deformities at the foot and ankle which are afterwards much modified by weight bearing. Now a patient with a fractured neck of the femur lies in bed with the limb rotated outwards. How can we account for flexion and internal rotation? If you try to make a patient lie with the knees flexed supported on a bolster—a position commonly used by nurses to make the patient "comfortable"—you will find that the weight of the bed-clothes on the dorsum of the foot is much more likely to rotate the limb in than out. Further, the habit of nursing these cases on water-beds, which allows the hips to sink into the bed in a flexed position, should be abandoned. These patients should be splinted with hips fully extended to relax the gluteus maximus, with the knees straight and the foot carefully moulded into its arched position to relax the tibialis anticus.

Finally comes the question of future growth. The sooner the child is fixed up so as to walk, even if it be with a calliper, the less will be the loss of growth. I had an interesting lesson in this some years ago. A boy, 9 years old, was admitted to one of my cripple hospitals; his lower limbs were flexed, and very small in proportion to his body. It took about six weeks to correct his deformities, and he was then got up on two walking callipers. These splints had to be lengthened three inches in the first four months on account of the rapid growth of the limbs as soon as he began to walk on them.

W. ROWLEY BRISTOW, F.R.C.S.,
Orthopaedic Surgeon, St. Thomas's Hospital.

I WOULD first of all express myself in agreement with Dr. Buzzard and the preceding speakers on the general lines of treatment to be adopted—rest in bed in the acute stage, the stage of pain and illness. Relaxation of the paralysed muscles should be ensured, even in this stage if pain and general symptoms will allow. In the convalescent stage the treatment is conveniently considered under two headings: (1) Treatment by posture, which aims at relaxation of the paralysed muscles, and the avoidance of deformity; (2) treatment directed towards maintaining and improving nutrition in the paralysed limb by (*a*) heat, (*b*) massage, (*c*) electrical stimulation, (*d*) exercises and re-education.

Time does not permit my discussing all these various agencies as aids to treatment, but I would like to focus attention on certain of the physical methods for a few moments. First, what is the rôle of electricity in this connexion? Dr. Buzzard has already covered the ground in about half a dozen lines in his opening paper. Electrical stimulation of the paralysed muscles is employed during the convalescent phase in order to improve nutrition and prepare the muscle so that it may react again to voluntary impulses, if and when the anterior horn cells recover sufficiently. It is the contraction and relaxation of the muscle, with the attendant chemical and circulatory changes which of necessity follow, which we wish to obtain. Stimulation with the interrupted galvanic current will enable us to get this result. No other form of electrical treatment will help us at this stage. Electricity is the stimulus. The passage of an electrical current up or down the nerve will not, so far as is known, affect either the rate of recovery in that nerve or its completeness.

Now the treatment by interrupted galvanic stimulation must be carried out without affecting the posture of the limb, and without causing contraction of the non-paralysed muscles. The method which allows of this most easily is that of using two electrodes placed longitudinally on the affected muscle—one on the muscle belly and one near the tendon. The smallest amount of current which will produce a contraction is used. If no contraction can be obtained in the paralysed muscle, and with increasing intensity of current the spread of this stimulus causes contraction in the healthy muscle, electrical treatment should be discontinued. Preliminary soaking of the limb in hot water will be advantageous in that it lowers skin resistance to the passage of the current. No advantage is to be gained by the use of the "paraffin bath" or the more elaborate forms of water bath such as the "whirlpool."

With regard to the interrupted or faradic current, stimulation is only of use for muscles not completely paralysed, or recovering. Care is needed when faradic stimulation is utilized because a recovering muscle is quickly fatigued by work. It is therefore better to do too little rather than too much with faradic stimulation as with exercise. Indeed the two are the same, at any rate for our present purpose, and faradism should be regarded as electrically provoked exercise and nothing more.

I would strongly endorse Dr. Buzzard's remarks about electric baths. They are always useless, and in many cases actually harmful. This refers to the bath as ordinarily given in which the patient or the limb is immersed and a current—faradic, galvanic, or sinusoidal—allowed to pass through.

Splints maintaining correct posture need never be removed for electrical or massage treatment. The forearm muscles are stimulated with the wrist in dorsiflexion, the deltoid with the shoulder abducted, and so forth. The masseuse, or whoever is carrying out the details of treatment, must be firmly impressed with the absolute necessity of this.

There is one further point which really affects diagnosis and prognosis, and it is this: because a muscle possesses a faradic response it does not necessarily mean that it will recover sufficiently for functional purposes. The regeneration of a few axons will be sufficient to ensure that some fibres will respond when stimulated with the interrupted current—not of necessity sufficient fibres to allow the patient to use the muscle.

The whole question of electrical treatment in dealing with poliomyelitis merits serious consideration in order

that it may be rationally used and its use be based on sound physiological principles. It is a useful aid to treatment. It is not in itself or when combined with massage the whole treatment, but only a part. The subject should be taught—or at least its outlines—in the medical schools, because professional men themselves are often not clear in their own minds as to its uses and its limitations. It is partly in consequence of this and partly owing to the undue optimism of some enthusiasts that the general public clamour for electricity, which they believe is a panacea for paralysis.

I have devoted myself during the time at my disposal to this one point—not that I think for a moment it is the most important part of treatment; it is not; but because its uses and limitations are so ill defined in the literature generally, and because it has a use as part of physical treatment in the convalescent phase of the disease which we are considering.

F. Howard Humphris, M.D., F.R.C.P.Edin.,
London.

Very gratifying have been the results of the use of electricity in this disorder, both by improving the general condition and modifying or curing the resultant paralysis. The earlier the treatment is commenced the better the results will be, and the more readily will they be obtained, and permanent paralysis should be an uncommon result. Our distinguished President once wrote in a chapter on this disease: "By a proper appreciation of the available therapeutical and mechanical agencies we need rarely, if ever, encounter any paralytic deformity."[1]

There would appear to exist some difference of opinion as to when electrical treatment should commence, some advising waiting for weeks until after the fever subsides. The reason for this delay is not clear, and the reason against it is that compression is progressing in the cord and destroying cells and causing paralysis. The time to begin electrical treatment is the hour when the paralysis is first noted, whether the temperature has returned to normal or not. Much good, of course, can be effected at later stages; but the longer the delay the more treatment will be necessary and the chance of complete recovery is proportionately lessened. Few diseases require more care and thought as to electrical treatment than infantile paralysis, and each case must, to a great extent, be judged on its merits; but as a general guide the following scheme might be suggested for treatment. If the patient be seen early and be still in bed, a high candle-power light, followed by a high frequency effleuve or condenser electrode, should be applied throughout the length of the spinal column, this with a view to relieving the congestion and reducing compression of the nerve cells in the cord. A few days later the muscles themselves should be treated to prevent the muscle fibres from atrophying. Here the coarse wire faradic current rhythmically interrupted is excellent. Two sponge electrodes should be used, one at the origin of the muscle involved and one over insertion (sometimes this may be varied by placing one of the electrodes over the motor point). For instance, in treating the peronei, the leg should be supported, the foot flexed as much as possible so as to relax the muscles, one electrode placed over the middle third of the outer side of the fibula, and the other over the insertion of the muscle on the outer side of the foot.

The strength of the current should be the weakest that will produce contraction—three minutes is enough for each muscle, and fifteen minutes should be looked upon as the maximum time for the muscle stimulation, even if several muscles or groups of muscles have to be treated.

Later, when the child is able to leave home and visit the physician, static electricity in the form of the static wave to the back should be used. This current is one of the most efficacious in the whole science and art of electrotherapy. Broadly speaking, the current is applied to the spinal region by means of a metal electrode made of bottle-cap composition (a mixture of lead and tin), or one of lead alone could be used, the essential being perfect apposition. This is connected to the positive sliding terminal of the static machine by means of a copper wire, the negative sliding terminal being similarly attached to a good earth connexion. The terminal balls are slowly drawn apart and sparks allowed to flow between these terminals, forming a spark-gap which should be increased to the toleration of the patient; the muscles underlying the electrode contract during the intervals between the sparks at the spark-gap, the size and vigour of the contractions being in direct proportion to the length of the gap and in inverse proportion to the area of the electrode. It is, of course, impossible to give all the details of the treatment in the short time that I have at my disposal.

The rationale of the current seems to me that it relieves the deep-seated congestion, and Dr. Farquhar Buzzard has given us a picture of the congestion which might have been drawn by a special pleader for the use of the high candle-power light and the static wave current. As he says, "the whole mass of grey matter is swollen, its vessels are engorged, and its tissues are the seat of abundant serous and cellular exudation." Such is the picture drawn in electro-therapeutic textbooks as an indication for these two methods of treatment. With the filling of the capillaries by the action of the high candle-power light a depletion of the deeper structures follows. The engorgement is removed, and there is a tendency to the promotion of normal circulation. The pathology as laid down makes it even stronger for the use of the static wave current. This current induces physical activity. It causes tissue contraction, not only the contraction of surface structures which can be seen, but also of the deeper ones below. These contractions so produced vary from a coarse muscle to the finest cellular and protoplasmic changes of form. Therefore it is not difficult to understand why it should improve conditions of faulty metabolism and lessen and remove the stasis and exudation described by Dr. Buzzard. As he says, there are certain cells damaged beyond repair, others may be considered as hovering between life and death. It is these latter, with the pressure being removed, which will tend towards life, and those cells not yet in danger will not become imperilled from the threatened increased congestion.

There should be no pain caused to the patient, and he should never be frightened or made tired. It is unfortunately not always that the disease is attacked from its onset, and it happens that the patient is not seen until the paralysis has been existent some time. Here static electricity should be employed as soon as the patient is seen, both to spine and possibly to the muscles at fault, or perhaps these latter may be left to a carefully educated mother to attend to at home with the faradic apparatus.

The counsel of perfection is that very early in this disease the static wave current should be applied to the spine, even in the first week of the disease if possible, so that atrophy of the spinal cells may be averted. The current should be pushed to the toleration of the patient, and it is wonderful to see how long a spark these little patients will stand when they get used to it. Great gentleness and some coaxing and much patience will be needed to get the child accustomed to the static machine; but it can be done and the reward is great. In the absence of a static machine muscle stimulation should be obtained by the interrupted galvanic current in the ordinary manner, the electrode being applied as with the faradic battery. When, however, the muscles have sufficiently recovered to respond to faradism that current should be substituted for the galvanic current. Precautions, already mentioned by Dr. Buzzard, as to antagonizing muscles must be taken, whatever form of electrical stimulation is used.

Mr. Elmslie advocated absolute rest for six weeks, perhaps in plaster, with no handling, no electrical treatment; but during this time, if we give this rest and withhold treatment, those "swollen cells hovering between life and death" are being contracted out of activity and their function destroyed. They are not given that chance of life which stimulation of the circulation by the means I have described would give them. With great diffidence, but based on personal experience, I submit that the whole theory of the treatment of stasis by rest is open to doubt, whether it exists in a sprained ankle or in the disease under consideration.

Mr. Bristow stated that where no response could be obtained to the galvanic current electrical treatment was useless; but is it not possible that the galvanic current—liberating as we believe it does hydrogen ions within the muscle structure—may improve or maintain the nutrition

[1] Tubby and Jones. *The Surgery of Paralysis*, p. 41.

of the muscle? Considering how small our knowledge of electricity really is, and if it be the only agent which has any chance of doing good, would it not be worth while to persevere just a little longer than after the moment when the muscle fails to respond to the galvanic stimulus?

I do not wish to be taken as saying the treatment of anterior poliomyelitis should be purely electrical; muscle education and massage are of great importance. Dr. Henry Frauenthal, an eminent orthopaedic surgeon of New York, in whose clinic may be seen some of the most astonishing and brilliant results, once told me that the percentage of good accomplished from the different agents he used would be: electricity about 55 per cent.; muscle education with mental concentration on the physical effort, 25 per cent.; and 20 per cent. from muscle stimulation by massage.

The question is often asked, Up to what stage in the disease is it worth while to attempt to restore muscular function? It has been said that muscles which will not respond to faradism are unlikely to recover. But this is far from a safe prognosis, and so long as muscle tissue persists, so long as it is not replaced by fibrous tissue, other conditions being favourable, treatment may be persisted in and hope may be encouraged.

W. J. TULLOCH, O.B.E., M.D.,
Lecturer in Bacteriology, St. Andrews University.

WHILE I fear I can add but little to the discussion, I should like to give a word of warning concerning the hope—remote perhaps—held out by Dr. Farquhar Buzzard, that the laboratory may assist in the early diagnosis and treatment of anterior poliomyelitis. In the present state of our knowledge of the ultra-microscopic viruses the laboratory is not in a position to assist materially in arriving at a definite diagnosis, though it may aid indirectly by excluding other conditions which may be confused with the malady under consideration.

In the matter of treatment, too, I fear that we as laboratory workers can do but little. So far an adequate serum has not been elaborated, and the employment of serum from convalescent cases is bound to be of but limited application. I would point out, however, that an adequate serum, could this be prepared, might prove of great value by reducing the inflammatory disturbance, lessening the time during which the nerve cells are exposed to pressure from oedema, thereby reducing to a minimum the irreparable changes that are manifested as permanent paralyses. It should be noted that such a serum will not eliminate, though it may limit, paralysis, for the diagnosis of the disease can only be made with certainty at a stage of the infection when neuronophagia has already taken place.

For these reasons, and in view of the work of American investigators, who show definitely that the reservoir of infection in this disease is the upper respiratory tract of contacts, I feel that further laboratory research should be directed mainly to the prevention of the disease.

H. BROOKER MILLS, M.D.
Philadelphia.

DR. BROOKER MILLS stated that in the United States there were 24,000 cases of this disease in 1916; only four States escaped. It was said to spread along the lines of travel; against this was the fact that the New Jersey epidemic of 1907 did not reach Philadelphia, while during the epidemic of 1910 in Washington and a smaller one in Philadelphia at the same time, Baltimore, which lies between them, practically escaped. It was said to be a summer disease; but one of the worst epidemics ever known was in Norway in mid-winter. It was said, too, that epidemics rarely recurred in the same place within two years; but against this were the recent cases in Lancaster and Newcastle. Poliomyelitis, again, was believed to be spread by contact; yet more than one case in a family was rare, and stray cases were more often found in scattered country districts than in cities. Because it was fifty times more common in children than in adults milk had been suspected; but the charge was not proven. Stable flies, too, had been strongly suspected of carrying the infection; but this had since been disproved. The value of quarantine was shown by the fact that among 28,000 children in institutions in New York in 1916, where no visitors were allowed and no new patients admitted, only two developed the disease, and both of these had come in contact with the outside world. Dr. Brooker Mills then quoted the following instance as showing how small a part hygienic conditions played in the spread of this disease:

> Barren Island, situated in Jamaica Bay, is a place to which all the city garbage is brought by boat. All the city's dead animals, often two or three thousand a day, are brought there; it has no public water supply, no sewerage system, the houses have no cellars, no garbage collection, and the people have few garbage cans, the household waste being thrown on the ground about the shanties. There are 17,000 people on the island, 350 of them being children, but there was no case of poliomyelitis on that island all summer. Smells, flies, and insanitary conditions have prevailed, but because of its geographical position and the social condition of its people the island is more or less isolated. While not a case developed from these conditions, had an infected person gone to the island an epidemic would doubtless have started that would most likely have produced hundreds of cases.

Early symptoms were irritability, fever, loss of appetite, bowel disturbance (usually severe constipation), extreme sensitiveness of skin, drowsiness, sore throat, headache, profuse sweating, vomiting, and (later) loss of motion of some part of the body. The mildest cases often resulted in the most marked paralysis. The ultimate outlook for any case, as to life and amount of paralysis, was always doubtful, but the younger the child the higher the mortality.

Preventive treatment consisted in prompt isolation of suspicious cases; screening of houses; cleansing of nose and throat; removal of diseased tonsils and teeth; daily bowel action. Any dead or decayed material placed in the ground should be buried more than 4 ft. The colour blue should be used about the house as much as possible because of the fly's dislike for this colour. Other measures were intelligent quarantine, hospital treatment of patients, and muzzling of the press.

HARRY PLATT, F.R.C.S.,
Orthopaedic Surgeon, Ancoats Hospital, Manchester.

THE correctness of the early treatment by full and complete physiological rest to the spine cells and to the locomotor system cannot now be controverted. One of the most disabling conditions encountered in the late stage is the flexion deformity of the hips; this offers considerable difficulties in surgical treatment. For this reason, in the early stages, the position of rest should include fixation of the lower limb and spine with the hip-joint in hyperextension. This is accomplished most easily by the use of a Bradford gas-pipe frame. It has been suggested that electrical methods of treatment should be applied from the day of the onset of the paralysis. Such treatment is entirely empirical, and its wide advocacy cannot, in my opinion, be too strongly condemned.

A. E. MORISON, O.B.E., F.R.C.S.Edin.,
Honorary Surgeon, Hartlepool Hospital.

THE question I would like to raise is whether in cases of acute poliomyelitis the surgeon should not be called in earlier. Surgeons know from experience during the late war that the degree of paralysis or disability resulting from head injuries, especially hernia cerebri, depends upon the rapidity with which the swelling and oedema of the brain due to sepsis is got rid of. It has occurred to me that much destruction of the nerve cells in the cervical or lumbar enlargements of the cord might be saved by trephining over these areas, and thus relieving the oedema due to organismal infection that is present in the cells of the anterior horns.

L. A. PARRY, M.D., F.R.C.S.,
Senior Surgeon, Royal Alexandra Hospital for Sick Children, Brighton.

I THINK a box splint to secure rest in the early stages might well take the place of the plaster-of-Paris splint and bed suggested by Mr. Elmslie; it can be readily and rapidly obtained, and is surely more convenient. If we accept as a principle of treatment absolute rest of mind and body from the very onset—and I for one do this unhesitatingly—I should like to insist on the very great importance of skilled nursing. You have generally a young child with an acute illness, and it is necessary

to keep this child perfectly still and its mind as little as possible disturbed, for a period of perhaps six weeks. For this purpose a really skilled nurse, who is patient, tactful, and who can keep the child quiet, still, and free from worry and anxiety, is absolutely essential.

A last point is that the orthopædic surgeon who can invent a new walking instrument without the many disadvantages which the best of those now in use possess, will be conferring an enormous advantage on these unfortunate patients.

REPLY OF OPENER.

Dr. FARQUHAR BUZZARD, in replying, remarked on the general unanimity among those who had taken part in the discussion in regard to the importance of rest in the early treatment of acute poliomyelitis. The only exception taken was by Dr. F. H. Humphris, who gave a lurid picture of a child in the acute febrile stage of this terrible disease being subjected to wonderful lamps which were going to stop the inflammation in the depths of the spinal cord, and to spark waves from a static machine which would do incredible feats in the way of preventing degeneration of muscle. If this was to be the early treatment of acute poliomyelitis, the later the diagnosis was made the better, in the speaker's opinion, for the patient.

SECTION OF MEDICINE.

Professor THOMAS BEATTIE, M.D., F.R.C.P., President.

DISCUSSION ON ASTHMA AND ALLIED DISORDERS.

OPENING PAPER

BY

Sir HUMPHRY ROLLESTON, K.C.B., M.D.,

Emeritus Physician, St. George's Hospital; Senior Physician, Victoria Hospital for Children, S.W.

THE conditions allied to asthma, in that they are manifestations of hypersensitiveness and members of what Dr. John Freeman[13] has happily called the toxic idiopathies, are probably numerous, but with the present limitations of our knowledge it is certainly wise not to spread the net of an attractive hypothesis too widely. The following may be accepted: Hay fever, urticaria, angioneurotic oedema, Henoch's purpura, eczema and acute dermatitis, and some forms of acute gastro-intestinal disturbance; some cases of croup have been referred to this cause by Talbot.[45] Doubtful examples are migraine, epilepsy, cyclical vomiting, and, I am tempted to add, gout. In opening the discussion I propose to speak largely but not exclusively of asthma, and shall not discuss the hypersensitiveness to certain drugs as its mechanism is probably the formation of a new foreign protein.

Ten years ago the late Dr. G. A. Gibson[14] introduced in this Section at the Birmingham Meeting of the Association a discussion on the varieties and treatment of asthma, which overflowed as a vigorous correspondence, especially on "cardiac" asthma, into the pages of the JOURNAL for several months. In this interval of ten years our conception of the pathogeny of asthma has undergone a radical change; at Birmingham asthma was regarded as a reflex neurosis, and the sole reference to the present-day opinion was contained in Gibson's introductory address:

> "Many of these cases for which no cause can be found manifest a rhythm or periodicity, as if some central nutrient were stored up in the nervous centres and exploded at the end of a latent period. It is possible that in [illegible] theories of anaphylaxis may, in the future, afford us [illegible] understanding of the reasons which lead to the perpetuation of such a rhythm."

It is no doubt easy to be wise after the event, but the exciting causes of asthma, such as the emanations of animals, were so well known to physicians of the past, such as Salter who also recognized the asthmatic tendency, that we wonder why they did not think as we do, and indeed it is possible that some of them very nearly did, though with a different terminology. But however this may be, the suggestion made independently by Langlois[23] and by Wolff-Eisner in 1906 that hay fever was anaphylactic in nature, and S. J. Meltzer's[31] paper in September, 1910, "on bronchial asthma as a phenomenon of anaphylaxis," though almost unnoticed at the Meeting in 1911, have been followed by a change of opinion which may possibly be too exclusive; thus, in a very recent work on medicine, J. L. Miller[32] defines bronchial asthma as "An anaphylactic manifestation characterized by recurrent attacks of paroxysmal dyspnoea, due to spasm of the bronchioles, developing as a result of exposure to a foreign protein to which the individual is sensitized," and considers that nasal polypi, which might still be thought to act reflexly, excite asthma by favouring the growth of bacteria or possibly by the new growth acting as a foreign protein. From the other point of view, Sir James Mackenzie,[28] in his recent edition of *Symptoms and their Interpretation*, in which he insists on the principle that the vast majority of the symptoms of disease are disturbances of normal reflexes, maintains the frequency with which asthma is the outcome of reflex stimulation from the nasal cavity and other parts of the body; he also regards "cardiac" asthma as clinically similar to spasmodic asthma and due to an insufficient supply of blood to the respiratory organs. But another and more attractive interpretation of the nocturnal attacks of dyspnoea, called "cardiac" or "renal" asthma, is put forward by Sir Thomas Lewis[24] and his co-workers[25] to the effect that the phenomena are due to a non-volatile acidosis caused by defects in renal function, and that the blood may be so suddenly invaded by acid products and in such amounts as to endanger life. Vagotonia or excessive excitability of the vagus and parasympathetic was regarded by Eppinger and Hess as especially well exemplified by asthma; more recently Lian and Cathala[26] have supported this on the ground of exaggeration of the oculo-cardiac reflex in asthma, and Curschmann[11] believes that the ductless glands by increasing vagotonia favour the production of asthma. Alexander and Paddock,[1] however, found in 20 cases abnormal sensitiveness of the two opposing divisions of the involuntary nervous system, in other words, both vagotonia and sympathicotonia. Walker[47] considers that although neurotic conditions are often associated with asthma they do not deserve a place as a genuine cause, and that though cardiac and renal patients may have true asthma these are entirely independent coincidences. Dr. Hurst[20] has recently given a much more inclusive definition of asthma as the reaction of an over-excitable bronchial centre to blood-borne irritants and to peripheral and psychical stimuli.

Leaving aside the cases of "cardiac" and "renal" asthma, are we in a position to exclude a reflex explanation of some cases of asthma and to consider that they are all due to hypersensitiveness? This is the first question that I would suggest for discussion. Among the cases of asthma which do not give a positive skin reaction a large proportion are those arising comparatively late in life and associated with bacterial infection of the bronchial tubes (asthmatic bronchitis); now even if a vaccine does good it might be interpreted to act by merely removing a reflex cause—bronchitis. On the other hand, a reflex cause of asthma, such as intestinal worms, may really be due to sensitization to a foreign protein derived from the worm. The precipitation of an attack by smelling an artificial rose is difficult to explain on any grounds other than psychical stimulation.

[illegible]

Heredity.—The importance of heredity is universally acknowledged in asthma and the allied conditions.

Out of 504 cases of [illegible] of various kinds Cooke and Vander Veer obtained [illegible] of some form of [illegible] in 244, or 48 per cent. [illegible] cases of asthma Rackemann found that 72 per cent. had such history; Seidelsohn's 80 cases of sensitization 47, or 59 per cent., showed heredity; and of Talbot's [illegible] 62 per cent. gave a family history of sensitiveness. Heissen[18] of Rostock, however, is exceptional in reporting only 8.5 per cent. in 91 cases.

It is probable that heredity is much more often present than available figures indicate, for a parent without any clinical symptoms may transmit a tendency to sensitization derived from his ascendants, and in such cases the history may well appear negative. The hereditary influence is more often shown as a sensitiveness to several different proteins than to a single protein, as in the case of artificial sensitiveness; in other words, the descendants exhibit a protein sensitiveness but not necessarily of the same kind as the ascendants. The hereditary factor recalls that of gout—a disturbance of protein metabolism. There may be a sensitization to groups of proteins, and

Longcope[27] has made a classification on these lines of cases reacting to (1) the serums of animals, (2) the eggs and serums of fowls, (3) the extracts of shell-fish, and (4) the protein of plants. A broad view of the influence is taken by Hurst,[20] who considers that in some cases an irritable bronchial centre, in others a toxic idiopathy, and in some again both these factors, are inherited.

Heredity and the Age of Onset of Symptoms.—From an analysis of 500 cases Cooke and Vander Veer[9] found that the more marked the hereditary influence the earlier the symptoms appeared; thus in 44 cases with both paternal and maternal inheritance the highest percentages of cases occurred within the first five years of life, in cases with inheritance from one parent only between the ages of 10 and 15 years, and in cases without any family history between the ages of 20 and 25 years. Though it may apparently be present from birth, sensitiveness may take some time to develop, and in the infants observed by Blackfan[4] and by Schloss[41] the time thus taken was estimated. It is easy to imagine that such a delay might be much prolonged, and this contingency should be taken into account in considering the view that sensitiveness is acquired *de novo* in later life. Further, when appearing early this liability to protein sensitiveness has a special tendency to become multiple as time goes on; and a sensitiveness manifested in one direction—for example, eczema—in infancy may be succeeded later by sensitiveness in another direction, such as asthma.

Acquired Hypersensitiveness to Proteins.—In a number of cases of asthma arising for the first time late, or comparatively late, in life it is natural to assume that this hypersensitiveness has been acquired and has not remained latent. Further, in other allied conditions of hypersensitiveness, such as urticaria, the history may show that the hypersensitiveness has only lately become evident. Constant contact may appear to induce hypersensitiveness—for example, in bakers, from inhalation of flour; out of 11 patients who became sensitive to protein after the age of 40 Walker[47] found that four were bakers who reacted to wheat protein. Rosenbloom[39] records the case of a man, aged 44, who had been a baker for twenty-six years, and for fourteen years had suffered from chronic bronchial asthma; he was tested with no less than 113 proteins, including eleven of bacterial origin, and gave positive skin reactions to the proteins of rye and wheat only, the significant point being that these were the ones with which he was constantly in contact. Experimentally guinea-pigs have been rendered sensitive to foreign protein given by the mouth (Rosenau and Anderson, Wells, Schloss); and there is reason to believe that, although the intestinal mucous membrane of normal infants is impermeable to undigested foreign protein, this protection is impaired in abnormal conditions of the alimentary canal (Schloss and Worthen[42]).

Schloss[41] mentions two infants in whom subsequent sensitiveness to egg albumen and milk was ascribed to their administration during diarrhoea.

Open wounds on the surface of the body and lesions of the mucous membrane of the alimentary canal have also been thought to allow foreign protein to enter the circulation in an unaltered condition and so to induce hypersensitiveness. On the other hand, ulcers of the gastro-intestinal tract are common and asthma a very infrequent sequel, and though horse serum was at one time given by the mouth for peptic ulcer, and also applied to chronic ulcers of the leg, to accelerate healing, I have never seen or read of serum sickness or other manifestations of protein sensitiveness in these cases. Some additional factor would appear to be necessary, and it may be suggested that this is an underlying though latent natural hypersensitiveness, and that it is improbable that sensitiveness arises *de novo* from absorption of foreign protein through an abraded or ulcerated mucous membrane.

After infections—especially influenza, though very likely merely because it is the commonest—hypersensitiveness to some protein becomes manifest; this may be ascribed to some residual bacterial infection and to the absorption of the foreign protein thus provided. It is also possible that the infection so alters metabolism in the liver and elsewhere that protein bodies of so abnormal a character as to be "foreign" are produced. The hypothesis of acquired hypersensitiveness due to metabolic changes initiated by infection is open to the criticism that after all this sequence is seen in only a very small minority of sufferers from infections and that the reason why these are affected is that they were latent or slight cases of hereditary hypersensitiveness. Gouty persons are subject to many idiosyncrasies, and although the manifestations of gout usually occur in middle or advanced life, this disturbance of protein metabolism is notoriously hereditary.

The speculation that some cases of asthma not otherwise explained may be related to the status lymphaticus, usually regarded as an inborn defect, though Dr. Cameron[5] argues that it is due to chronic infection, may be mentioned. Alexander and Paddock[1] noted the frequency of status lymphaticus in their twenty cases of asthma. D. Symmers[44] ascribes sudden death in status lymphaticus to an anaphylactic reaction due to sensitization by the repeated liberation of nucleo-protein from necroses in the germinal centres of the lymphatic glands It is at any rate conceivable that some instances of metabolic asthma are due to a similar though slighter process of auto-sensitization. Dr. Auld, indeed, regards the great majority of asthmatic cases as due to auto-sensitization resulting from defective metamorphosis of foreign protein.

It would be interesting to know the frequency of sensitization in normal people: Cooke and Vander Veer[9] estimate that the frequency of human sensitization *with* clinical manifestations is probably not over 10 per cent. But are there any figures to show what percentage of persons who have not had clinical symptoms give positive skin reactions and so may be regarded as latent or potentially sensitive cases and liable to manifest symptoms under favourable conditions? Longcope, Cooke and Vander Veer, and Caulfield[6] refer to cases of the kind.

Although it appears to be generally assumed that asthma and other manifestations of sensitiveness coming on late in life are definitely acquired independently of a transmitted tendency, there are some difficulties, possibly superficial only, in at once accepting this view. It might be argued that, if this were true, acquired hypersensitiveness as the result of therapeutic injection of horse serum should be extremely common instead of being rare, for a very large number of the population have been injected with serum, especially males with antitetanic serum during the war. The proposition is therefore put forward for discussion whether in man sensitization is acquired in the absence of a transmitted tendency which, often latent and not well marked, is crystallized by repeated stimulation into a specific hypersensitiveness to the foreign protein.* This proposition is perhaps supported by the following speculation to the effect that serum sickness is also a manifestation of latent natural hypersensitiveness.

Serum Sickness: a Manifestation of Latent Natural Sensitiveness?—Since the time when serum sickness in man, which follows one injection of serum, was compared to anaphylactic shock occurring in animals after a second injection of serum, the relation between the two has been much discussed. Coca[7] insists on the difference between them; in animal anaphylaxis the symptoms occur directly after the second injection, whereas in serum sickness they follow the first injection, but with an interval of ten days or so. He definitely says that the symptoms of serum sickness are not those of true anaphylaxis, but those of human hypersensitiveness. Now, this can be expanded into the further hypothesis that serum sickness occurs only in persons with a transmitted natural hypersensitiveness. But there is an obvious distinction between the manifestations of ordinary serum sickness and the sudden collapse, or even death occasionally, seen in man after a first injection of serum, and explained as due to the presence of well marked natural sensitiveness (Coca's allergy).

In 1909 Gillette[15] collected 30 such deaths, and in 22 of them there was a history of asthma or some respiratory disorder. In 1917 Kolmer[22] estimated that there were 40 such cases on record. According to Park,[35] death occurs in one case out of 5,000 injected, and chiefly in cases of status lymphaticus, thus recalling Symmers's view.

Kolmer,[22] after discussing the cause of the long incubation period in ordinary serum sickness, says that serum

*After this was written I came on a footnote in Freeman's paper (*Proc. Roy. Soc. Med.*, 1920, xiii, 145) to the effect that a bacterial anaphylactic reaction may be obtained in cases of bacterial intoxication (for example, severe pyorrhoea) without symptoms of asthma, urticaria, etc.; and that such symptoms would have occurred if the patient had had a toxic idiopathy but may develop rheumatism or gout instead, if the diathesis happen to be in this direction.

sickness and sudden collapse or even death after a first injection of serum are fundamentally the same. It might therefore be suggested that they both depend on the presence of natural hypersensitiveness which, however, is present in very different degrees in the two cases; it may be assumed to be so slight in ordinary serum sickness that it might otherwise never have given rise to any clinical symptoms. In the fortunately rare case of sudden collapse or death after a single injection of serum the natural hypersensitiveness must be high, as indeed is shown by the frequency of pre-existing asthma in Gillette's figures. It may be added that Mackenzie and Leake[29] put forward as one of three possible explanations of insusceptibility to serum sickness the hypothesis that the tissue cells in these individuals are impermeable to the foreign protein.

Age.—From analysis of 400 cases of asthma Walker[47] found that the number of first attacks in the quinquennial periods from 5 to 45 years of age was about the same; after 45 there was a great fall, and after 60 there were only 3 cases; a large number (16.5 per cent.) of Walker's 400 cases were in the first five years of life, a period when the existence of asthma is often unsuspected and therefore unrecognized. Age has a very distinct influence on sensibility to skin tests; of the patients who began to have asthma under 2 years 83 per cent. were sensitive to some protein, of those between 2 and 5 years 90 per cent., and then the percentage diminished until, among the cases in which the first attack occurred after the age of 50, none were sensitive (Walker). Multiple sensitization is much more frequent in cases in which the symptoms begin in infancy, and its incidence diminishes as the age of the first attack increases. In infancy and childhood foods, especially milk in the first year, are mainly responsible for asthma; according to Walker the association of asthma and eczema in early life points to food as the etiological factor. In early adult life hay fever and asthma due to emanations from horses and other animals come to the fore and may persist throughout life; and in later life bacterial infection is the main initial cause.

Season.—Asthma confined to the summer is usually hay fever due to sensitization to pollens. Winter asthma is usually due to bacterial infection, and hay fever in the summer may leave behind it bronchitis and bacterial asthma, so that the patient suffers all the year round.

Occupation.—By exposing a sensitive person to the corresponding protein, occupation, such as in stables or farms, is obviously of the greatest importance and needs no further discussion, though interesting instances of cases at first obscure can thus be explained. Of prolonged exposure to a foreign protein as a cause of acquired hypersensitiveness there appears to be less evidence than might naturally be anticipated; bakers are known to develop asthma; Walker[47] records sensitization to the protein in green coffee and to that of boxwood dust used in polishing jewels in men whose work exposed them to these excitants.

Limitations of Skin Tests.

Although reliance must mainly be placed on skin tests for the diagnosis of protein sensitiveness, since there is no clinical or laboratory test to be compared with them for differential accuracy, they have at present considerable limitations. The value of positive skin reactions is shown by the success of treatment (desensitization, avoidance of the food protein, or vaccines) based on the information thus provided in 100 cases with relief from asthma in 82 per cent. (Walker[46]). Not more than 50 per cent. of all cases give a positive skin reaction:

Out of Walker's[47] 400 cases of asthma 191, or 48 per cent., gave a positive reaction; out of Sanford's[40] 500 cases more than 500 were negative; out of Caulfield's[6] 161 cases of asthma 47, or 29 per cent., were positive.

The percentage of positive reactions falls as the age of onset of symptoms rises: thus none of Walker's[47] cases commencing after 50 years of age gave a positive reaction; and it is significant that a high proportion of the cases arising in later life are ascribed to sensitization to bacterial protein. Individuals are often sensitive to more than one protein, and in estimating the significance of a positive reaction the clinical bearing of this should be remembered; a patient may give a positive cutaneous reaction to a protein which is not responsible for asthma at that time; thus a positive reaction to a pollen in the case of asthma active in the winter should not without further consideration be accepted as a proof that an asthmatic attack is undoubtedly due to this cause. Out of 74 cases with a positive skin reaction Rackemann[37] found that 40, or 54 per cent., were compatible with the patient's history, and so justified a diagnosis.

As at least 50 per cent. of the cases of asthma do not give a cutaneous reaction to available proteins, the question arises, What significance should be attached to a negative reaction in the presence of symptoms referable to a specific sensitization? There would appear to be several explanations of a failure to obtain a positive skin reaction. The known forms of protein that may cause sensitization are very numerous. At the New York Hospital[2] 130 test substances are employed, and in one case Rosenbloom[39] tried 113. Gottlieb[17] investigated 32 patients with an average of 66 tests each. But there are probably many still unrecognized, and as their reactions are so specific the existence of any one may easily be missed. This would appear to be particularly true of the intrinsic forms of asthma—namely, those due to changes in the patient's body, such as infections of the mouth, tonsils, nose, throat, bronchi, alimentary canal, and other parts.

Walker's[47] classification shows that of the asthma cases giving a negative skin reaction to proteins those ascribed to bacteria take a very prominent place: Sanford[40] carried out 365 tests with *Staphylococcus pyogenes aureus* and *Staphylococcus albus* with constantly negative results. Caulfield[6] states that positive skin reactions in bacterial asthma were so seldom observed at the Soldiers' Civil Re-establishment Clinic at Toronto that the test was practically discarded. These skin reactions to bacterial protein undoubtedly contrast with those obtained to other proteins, especially those of epidermic origin, and on this ground, and on want of success with vaccine treatment as compared with other forms of protein therapy, Caulfield doubts if bacterial protein has an etiological importance in asthma equal to that of other proteins.

In performing skin tests on cases of asthma with bronchial infection, protein from the predominant organisms—such as streptococci or staphylococci—would obviously be advisable, as in Rackemann's series of forty cases; or, if an autogenous vaccine is not employed, the protein of the organisms usually present in such cases should be used in preference to a single strain or a combination of the known types of strains (Walker and Adkinson[49]). This same reason for negative skin reactions would also apply to the rather hypothetical cases of metabolic asthma due to production of abnormal proteins by disordered action of the alimentary canal, liver, pancreas, or ductless glands; for the proteins thus formed would be unknown, and so could be employed only by chance in the skin tests. Another possible fallacy in the application of skin tests is that in cases of infection of mucous membranes proteins other than those of the bacteria present may pass through the damaged mucous membrane (*vide* McNeil[30]) and sensitize the patient. In such cases the bacterial protein need not give a positive skin reaction, though a vaccine might, by curing the inflammatory state of the mucous membrane and so obviating absorption of other foreign protein, prevent further symptoms. As Kolmer[21] points out, the chemical nature of the protein used for testing the skin sensitiveness may undergo a change in the course of its preparation, and so fail to elicit a reaction. It is fully recognized that sensitiveness may be local; and the varying sites of clinical symptoms due to hypersensitiveness seen in asthma, hay fever, and urticaria make it reasonable to believe that in some cases of bronchial sensitiveness the skin may escape or only become sensitive after an interval. In the early and acute stages of such a condition sensitization may not yet have spread to the skin. Temporary desensitization to a protein may occur after attacks, especially when well marked, excited by this protein; Schloss refers to cases in infants with disappearance of previously positive skin reactions for periods of twenty-six to forty-four days after urticaria; but more information is required as to the occurrence of this event in other forms of allergy, especially asthma.

On the other hand it must also be borne in mind that a skin reaction which is not really specific may imitate and be regarded as positive. Thus a traumatic skin reaction may be due to a preservative in the testing fluid, such as carbolic acid or tricresol, or to a preformed toxin as in the diphtheria toxin used in Schick's test. A pseudo or non-specific protein reaction due to interaction in the skin of

protein of any kind, especially in large quantity, with non-specific proteolytic ferments, is usually avoided by the small quantity of the material used for testing and by control tests. But drugs, particularly iodides and bromides, increase these non-specific reactions, and this fallacy should be borne in mind. The intradermic tests, though more delicate than cutaneous tests, have the accompanying disadvantages that they are more likely to bring out a non-specific or pseudo-reaction, and are more difficult both to perform and to interpret.

Treatment.

1. *Prophylactic Treatment.*—The avoidance of the foreign protein to which the patient is sensitized is too obvious to require insistence. In Walker's[47] hands attempts to desensitize asthmatic patients against food proteins by their subcutaneous injection or by giving gradually increased amounts by the mouth have failed, and he believes that prolonged abstinence is automatically followed by desensitization. In infants of a stock showing a history of protein hypersensitiveness immunity to cow's milk may be cultivated during the period of suckling by the administration of cow's milk at intervals of ten days or longer (Talbot[45]), and Blackfan[4] recommends the administration of egg protein in capsules.

2. *Specific Desensitization.*—Patients very frequently show multiple sensitization; thus, among 551 cases of sensitization Cooke and Vander Veer[9] found 42 per cent. to be multiple; in such cases successful treatment depends on the selection of the offending protein and thus may take some time. The desensitization may be carried out by hypodermic injection or attempted by oral administration. While there are some points of general agreement, there are several debatable questions. Cases of pollen fever are, as a rule, successfully immunized by hypodermic injection, and the treatment should be begun and mainly carried on out of the season, or if in the season or when the symptoms are present with much smaller doses. Goodale[16] points out that knowledge of the phylogenetic relations of plants saves much specialization; thus one grass pollen will suffice for all grasses, one rose pollen for all members of the rose family, and ragweed pollen (not present in Europe) for all the Compositae. Caulfield,[6] however, disputes this. Noon,[33] in 1911, selected timothy grass (*Phleum pratense*), and later in that year Freeman[12] decided that it was unnecessary to select different pollens for treatment of different patients.

Failure may be due to several factors: bacterial infection may complicate pollen fever and a vicious circle result, each factor favouring the incidence of the other, so that for a cure it will be necessary to employ vaccine treatment for both these factors. There may be errors in the dosage which, if too large, may excite an attack; and Caulfield throws out the warning that the use of commercial multivalent solutions of pollens may sensitize patients to pollens other than those to which they were previously susceptible.

Patients shown by skin tests to be sensitive to the protein of animal hair, such as horse dandruff, cat, dog, and cow hair, and feathers (and often they are sensitive to more than one), are readily desensitized by subcutaneous injection of the protein. On the other hand, Walker[47] found that in patients sensitive to food proteins subcutaneous injection was not satisfactory, and, as already pointed out, he relies on their exclusion from the diet. Infants intolerant to their mother's milk or that of cows, and suffering mainly from vomiting, have been cured by subcutaneous injection of the milk that upsets them (Weill).[50]

Vaccine Treatment.—The results appear to depend, as would naturally be anticipated, on whether the patient gives a positive skin reaction to the protein of an organism which is then administered, or whether reliance for the choice of the vaccine has to be placed on the predominant organism in the sputum or other discharge.

Thus out of 178 asthmatic patients treated with vaccines by Walker,[48] 28 were sensitive to bacterial protein, and when treated with the corresponding vaccine 75 per cent. were relieved and 21 per cent. improved; whereas of the cases in which no skin reactions were obtained, 40 per cent. were relieved and 20 per cent. improved by vaccines from the predominant organism. Rackemann,[37] dealing with 40 cases, confirmed this.

The most important micro-organism in Walker's experience was the *Staphylococcus pyogenes aureus*, but Rackemann, and Montgomery and Sicard regard streptococci as more often responsible. If sputum is not available the secretions of the throat or the faeces should be investigated. It seems generally agreed that autogenous vaccines are more effective than stock vaccines. A vaccine may act non-specifically, or it may exert a beneficial effect indirectly by removing infection of a mucous surface through which some other protein had previously gained an entrance.

Desensitization by the oral administration of the offending food protein, such as that of eggs, milk or meat, in small and increasing quantities, has given rise to some difference of opinion. As already mentioned, Walker considers it useless in asthma; but it has been recommended, especially in other manifestations of sensitiveness, by Schloss, Talbot and Gottlieb as a means of bringing about lasting immunity. Rectal administration of the offending protein, recommended on experimental grounds by Besredka, has not often been employed; Cordier[10] had two successes and two failures.

Under the name of digestive antianaphylaxis, Pagniez and Vallery-Radot[34] describe a method of preventing the onset of symptoms due to a food protein by the ingestion of a very small quantity of this protein an hour before a meal containing that protein, and report considerable success. But here the immunizing dose remains the same and has to be constantly repeated.

3. *Non-specific Treatment.*—It is not always easy to draw the line between the specific and the non-specific action of a protein. It seems clear that peptone may act as a non-specific desensitizer; but is it certain that a protein to which the patient is sensitive always acts specifically and not in the same manner as peptone? In a series of papers since 1917 Dr. A. G. Auld[3] has advocated the intramuscular (especially in children) or intravenous injections of peptone for asthma and other manifestations of sensitiveness. Peptone is regarded as acting as a non-specific desensitizer, and, as far as the peptone treatment is concerned, it is therefore unnecessary to determine by skin tests the exact protein that is the antigen. The injections are given slowly so as to avoid any reaction; and the cases of asthma fall into two groups—the old-standing cases with bronchitis which do not respond to peptone, and those of comparatively shorter duration which are rapidly relieved and remain fairly free from the attacks. The administration by the mouth of a small quantity (0.5 gram) of peptone an hour before a meal at varying intervals, as the patient's idiosyncrasy may direct, has been found by Widal, Abrami, and Brissaud[51] to prevent manifestations of sensitiveness, such as urticaria, angioneurotic oedema, migraine, and asthma. They find that complete desensitization can be obtained by the prolonged oral administration of peptone, and add that, should this fail, hypodermic injection of other proteins may be employed. Pagniez and Vallery-Radot had little success in asthma and none in epilepsy.

4. Symptomatic treatment by drugs or other means that relax spasm or act centrally on the sensitized nerve cells may be briefly referred to.

Atropine, adrenaline, amyl nitrite, and benzyl benzoate may relieve the symptoms by relaxing spasm of the bronchial muscles. Of the last and most recent of these Miller has already formed a disappointing opinion. With regard to adrenaline, Dr. A. F. Hurst[19] pointed out that the amount usually injected hypodermically was, at any rate as far as he was concerned, excessive, and that 3 minims of 1 in 1,000 solution, though it instantly relieved the asthma, made him ill with tremor and tachycardia. These manifestations correspond fairly well with the effect of adrenaline in the rather hypothetical condition of sympathicotonia described by Eppinger and Hess, who, however, regarded asthma as a pre-eminent example of vagotonia. Adrenaline, cocaine, novocain, and orthoform emulsion have also been applied endobronchially.

From Besredka's experiments on guinea-pigs showing that by anaesthesia with ethyl chloride, ethyl oxide, or chloral anaphylactic shock can be prevented, it would appear reasonable to employ chloral, and though it is not often used and Miller[32] finds it unsatisfactory, it has had a remarkable effect in controlling some cases of asthma. Comparatively large doses of common salt were shown by C. Richet, Brodin, and Saint-Girons[38] to prevent anaphylactic shock, and were thought to act by impregnating the nerve cells and so prevent them from being affected.

It does not appear that this method has been tried in human sensitiveness, but it is worth consideration. Sea voyages, which obviously remove hay fever and other patients from exposure to antigens, may conceivably also exert some effect by this means. Calcium chloride, however, has been used clinically though without any remarkable results, and possibly potassium iodide, which has long had some reputation in asthma, may act in a similar manner to sodium chloride, though it is supposed to act on the bronchial muscles and secretion. Quinine, on the other hand, apparently in virtue of its powerful influence on ferment action, and not by causing bronchial spasm, or possibly in forming with the body proteins a new and foreign protein, has in animals exaggerated anaphylactic shock (Smith[43]), and so might conceivably do harm in asthma.

Treatment of patients not giving skin reactions must depend largely on their own knowledge of the factors apparently responsible for their attacks. The elimination of infective foci, for example, in the tonsils or mouth, should be effected. In some instances their blood serum agglutinates an organism, an autogenous vaccine of which may act beneficially; in other cases an autogenous vaccine of the predominant organism in the sputum does good.

Points for Discussion.

1. Is all asthma, excluding cardiac and renal dyspnoea, due to hypersensitiveness, or is there a residue of true reflex asthma?

2. Is there a metabolic asthma due to auto-sensitization?

3. Is hypersensitiveness, apart from that due to injections of serum, ever acquired *de novo* and without an underlying inborn tendency?

4. What is the relation of asthma associated with bronchial or other infections and not giving positive skin tests to the more characteristic cases in earlier life? Are they acquired?

5. What percentage of normal persons who have never had any clinical manifestations of protein sensitiveness give positive skin tests?

6. Limitations of the skin tests. The reasons for failure—antigen unrecognized or altered in preparation; local sensitiveness; desensitization by an attack.

7. Treatment. Specific. Limitations of subcutaneous desensitization of alimentary sensitiveness. Non-specific peptone treatment.

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JOHN FREEMAN, M.D.,

London.

DR. JOHN FREEMAN took the first point suggested for discussion by Sir Humphry Rolleston, Are all asthmas due to a protein sensitization or are some of the cases due to nervous reflexes? He said they were due to both. There was no single cause, but a chain of circumstances, of which three links at least were necessary in every case—the protein sensitization, the hereditary diathesis, and precipitating nervous reflexes. Hay fever was to him the standard type of toxic idiopathy. In this the protein element, the grass pollen, was very evident, yet even here a patient would tell you that attacks were precipitated by nervous reflexes such as emotion, light, smell, change of temperature, and so on. Suggestion alone was sufficient in some cases, but of course only when the grass pollen was about. Osler's story of producing hay fever by smelling an artificial rose could be capped in the speaker's experience, where an acute attack was induced by graphically describing a field of mustard to a man who believed this plant to be the cause of his trouble. Conversely, suggestion treatment did tend to stop many types of asthma by controlling the emotions.

With regard to the question: Should bronchial asthma be put in the same category as the other types of asthma? the speaker thought that it should. They were connected by the same hereditary taint; thus, for example, a family might contain one or two hay fever subjects, a horse asthmatic, a food sensitive, and, may be, one or two bronchial asthmatics; or a number of these disabilities might descend on one single individual. Furthermore, these different toxic idiopathies in one person would "summate" in producing asthma. An instance was given of a woman with well marked cat asthma and bronchial asthma, and after the bronchitis had been removed by appropriate vaccines the cat asthma disappeared also. Similarly there were cases where bronchial asthmatics were also either potato-sensitive or horse-asthmatic or feather-sensitive; or hay fever could be combined with a green-pea-sensitiveness or a strawberry-sensitiveness or with horse-asthma. In such cases of summation, the removal of one factor might stop the other factor from producing asthma. If bronchial asthma could summate with undoubted toxic idiopathies, it must belong to the same category. Lastly, though bacterial skin reactions were usually insignificant or absent, they sometimes did occur.

The speaker then demonstrated a small cabinet in which filter papers impregnated with various test proteins were conveniently filed away on the card index system.

R. L. MACKENZIE WALLIS, M.D.,

London.

THE subject of protein hypersensitiveness was one that offered a wide field for investigation. His interest was aroused in the subject by investigating a case of intermittent hydrarthrosis, where there was sensitivity to proteins from the synovial fluid. This sensitivity offered a possible explanation of the symptoms and the periodicity exhibited by this disease. In carrying out investigations on asthma and allied conditions this periodicity had been borne in mind.

The tests had been applied in about 500 cases of asthma, and 40 per cent. were found to react to one or more of the skin protein tests. Those which did not react were largely cases of chronic bronchitis, and probably infective in origin. Of the cases where a positive reaction was obtained extracts of pollen proteins were found to be the most frequent type, and the next in frequency were the meat proteins. Cases of asthma reacting to fur and feathers, horse dandruff, eggs, and vegetable proteins were also detected by these tests. It was important to realize that the proteins must be carefully prepared, attention being paid more particularly to avoidance of heating and the use of Jena glass vessels for extraction and preservation. The tests had also been applied in cases of urticaria, hay fever, epilepsy, and various forms of gastro intestinal diseases. With regard to the question of hypersensitivity acquired later in life reference was made to the occurrence of asthma in a seed merchant and of horse asthma in a soldier enlisted in the Veterinary Corps.

The tests were applied to cases of asthma and allied conditions, and it was found that hypersensitiveness

varied at different times. After a severe attack the reactions might be quite negative for three weeks, and after this interval positive results were obtained. With regard to treatment in cases of food protein sensitivity the most effective and simplest remedy appeared to be the removal of the particular food from the dietary. In cases of sensitivity to pollens desensitization with small graduated doses of pollen extract should be tried. A word of warning might be given as to the avoidance of large doses of pollen extract, since alarming symptoms might follow its use.

FRANK COKE, F.R.C.S.,
London.

IT is unfortunate that life is not long enough to embody in one individual the physiologist, the biochemist, and the bacteriologist, together with a specialist who sees a multitude of these cases of asthma, hay fever, skin troubles, and other allied affections, so that, speaking purely as a clinician, one has to rely on the advice, the lectures, and the published accounts of the experimental work of the physiologists and other scientists, to give an explanation of the practical facts of asthma, as we see it in the consulting room or at the bedside.

I am convinced that the work on anaphylaxis, or as von Pirquet calls it, allergy, does represent a solid platform on which we can build much of practical value in the treatment of asthma. I attach the greatest importance to the skin reactions, which must be carried out fully and thoroughly. I think the following cases will show their usefulness:

45. A small boy, who had only had asthma during the winter holidays, was sensitive to almonds when tested with thirty different proteins.

93. A young man, who occasionally had severe attacks of asthma, was positive to tomatoes out of forty-three tests.

261. A young man, in the office of a firm who milled various cattle foods, had, from time to time, severe attacks of asthma at his work: he was sensitive to beans and peas, each attack being then found to synchronize with the milling of haricot beans.

269. A lady, who has always suffered from gastro-intestinal disturbances, has had a gastro-enterostomy performed and every movable appendage in her abdomen taken away. She appeared to be a typical case of gastric ulcer, with tenderness over the stomach and sickness after most meals. She gave a large reaction to wheat, oats and eggs. Since leaving these off she has been entirely normal, except recently for a night's sickness after eating raspberry soufflé which contained bread-crumbs.

513. A young man had a patch of angio-neurotic oedema each morning on waking. He was sensitive to chicken feathers.

In each case their symptoms have entirely disappeared as long as they have kept away from the offending protein.

If we can identify the proteins at fault, and they are such that can be eliminated, a cure is easy and certain. One may see many score of cases before one sees two even approximately alike; nevertheless, rough groupings soon become evident. First, there are those who give skin reactions and those who do not, the border line depending obviously on the efficiency of the examination. Chandler Walker groups these into what he calls typical bronchial asthma and atypical asthmatic bronchitis.

This is all very well after you have done the skin test, but in the majority of cases one is utterly unable to classify them beforehand or to say which will give a reaction and which will not. There is a group of patients who always have asthma and always have had it. There is another group of patients who only get asthma but who always get asthma after a cold: this is apart from the non-infective "colds," which are a symptom of the true asthmatic attack. Perhaps they are only sensitive at these times. An interesting point on this is the fact that Weil of Lyons, who uses injections of milk to desensitize babies who are intolerant to milk, finds that after being cured they again become intolerant to milk should they catch measles or other infectious complaint. Many date their asthma from an infectious complaint, especially whooping-cough in children and pneumonia in adults.

There are the thin asthmatics and the fat asthmatics. There is a large group of patients who get their asthma whenever they eat too largely or too late at night. Asthma week-end type. Others are particularly affected by barometric changes, or perhaps more rightly electric storms. There is the east wind group, who have a miserable time each spring. Many of these are sensitive to some common protein, and these weather changes merely give them exacerbations. So ghastly are their big attacks that they will overlook the fact that they have really always got it. This must be remembered in taking their histories of attacks and localities. But no matter how, when, where or why they get their attacks, the essential lung change is the same: an obstruction to respiration caused by a narrowing of the bronchioles by the spasm of their muscular tissue. Subsequent inflammation, bronchitis, and microbic infection may alter this picture, whilst in certain cases the mucus membrane may be in an urticarial condition as well, owing to the protein being inhaled directly on to it, comparable to the nasal mucus membrane in hay fever or to the skin reactions. Patients who have a slight chronic asthma from eating oats or wheat will have stupendous attacks if they go threshing or milling. It may take a week to cough the flour out again.

But the main condition is the bronchial spasm, a spasm which one sometimes sees disappear absolutely instantaneously with a heavy dose of adrenaline. The bronchial spasm is typical of experimental anaphylaxis, and if we admit the connexion in this case, can we find no other causes of bronchial spasm to explain those cases which do not appear to be anaphylactic?

On searching through back literature we can find other causes of bronchial spasm, just as closely connected with anaphylaxis, as are those cases of asthma which do not give skin reactions with those that do. In each case these substances are protein derivatives. Dale and Laidlaw have investigated the physiological properties of β-iminazolyl-ethylamine, or histamine. It is formed when CO_2 is split off from histidin, or by the action of putrefactive organisms. Dale has obtained it from ergot of rye, from which it is formed by the *Claviceps purpurea*. Berthelot and Bertrand have isolated organisms from the intestine which have an especial power of forming histamine. Histamine is an extremely powerful poison; its chief action is to cause a violent spasm of plain muscle. The bronchial spasm produced is so great that air cannot be forced either into the lungs or out of them, and the appearance is exactly the same as that found by Auer and Lewis in the lungs of guinea-pigs who have been killed by anaphylaxis. A slip of the uterus in Ringer's solution gives a contraction when histamine is added in the strength of one part in 2,500,000. Histamine gives a skin reaction exactly similar to a *plus* five skin reaction given by a horse asthmatic to horse dander. If it is of any interest to the Section to see a typical skin reaction, I will produce one now on my own arm with histamine.

The symptoms of anaphylaxis vary in different animals; the symptoms of poisoning by histamine vary in exactly the same way. Eustis found histamine in the stools of three asthmatics out of ten. It is certain that histamine can be formed in the intestine and perhaps in other parts of the body. It is present in commercial extracts of pituitary gland and in commercial peptone and proteoses. It does not therefore require any great stretch of imagination to see in the presence of histamine an explanation of one class of asthma—that connected with a dirty tongue, an ill digestion, or a torpid liver, for which a purge and starvation make such an effective cure.

On scanning the literature further we find the fact noted by the Vaughan family that all proteins contain a poison group, which can be split off from all forms of protein, whether microbic, animal, or vegetable. The poison group is quite different from the bacterial toxins; it is just as poisonous whether it be split off from the protein of the typhoid bacillus or from an egg. After the poison group has been split off, an animal can be sensitized with the non-poisonous residue, but to get anaphylaxis with a second dose the poison group must be left in the protein. The presence of the poison group is therefore essential to the phenomena of anaphylaxis.

Now, if the poison group be administered alone to the animal, we are told that exactly the same symptoms occur as with histamine or with anaphylaxis. The minimal lethal dose is the same as that of histamine. Again, the symptoms vary in the different animals exactly as those of anaphylaxis. Heart and blood-pressure symptoms predominate in the rabbit, asphyxial symptoms in the guinea-pig, and gastro-intestinal disturbances in the dog. We have, then, three methods by which bronchial spasm can be produced in animals: by anaphylaxis, by histamine, and by the poison group.

I take as my contribution to this discussion the argument that we may go a step further than saying that asthma is due to sensitization to a foreign protein, and say that asthma is due to poisoning by protein derivatives, whether they be liberated parenterally by anaphylaxis or formed in the gut by bacterial or other faulty digestion. All foreign protein introduced into the body has to be broken down into simpler elements before the animal can pick and choose from which to build up its own specific proteins. Now the way proteins are broken down into more simple substances is by means of enzyme action. It is not difficult to imagine, at any rate in theory, how these poison groups become split off.

Elaborating my suggestion of a digestive substance mentioned in my paper on asthma and anaphylaxis published in the British Medical Journal on March 12th, 1921, we have then, on the entrance into the body of a foreign protein, a specific ferment made to deal with the specific protein that has gained entrance to the body. Two or three factors seem especially active in causing a protein to sensitize a patient. A course of albumin water given to a baby during a bout of diarrhœa will find a ready road of entrance through the inflamed mucus membrane. A short course of unusual food which does not become a regular article of diet is another. A mother who is nursing her child may, for some reason, put it on cow's milk for a week and then return it to breast feeding. That child will be liable to become sensitized to cow's milk. I think this factor is especially important in common sensitization to strawberries, mushrooms, crabs, and lobsters. One has a good feed of them and no more for some months. Hay fever is similar. The next seems to be prolonged contact with a protein in unusual amount—to wit, the cat or dog that sleeps on the bed, and the occupational asthmas of the ostler, or the butcher, or baker. Sensitization is especially prone to occur when the protein comes into contact with mucus membrane of the lungs or nose directly, as with the animal hairs, powdered foods in mills and factories, or again, with the hay pollen.

Underlying all this there is often some predisposition to become sensitive to something. I am at present testing the blood groupings of these people to see if that throws any light on the subject. However introduced, the protein is digested and disappears, and I think the theory that a specific enzyme is formed to deal with it is the correct one. This takes some time to do. There is an incubation period of some ten or fourteen days. Towards the end of this time the protein is at last rapidly digested, so rapidly that a quantity of the poison group is thrown off, giving us the serum rashes and the joint pains, etc. If we talk of enzyme action we must call the antigen protein substrate and the antibody the enzyme itself.

Enzymes have many properties. One is the fact that they can be brought to equilibrium, or in other words their action is slowed down or stopped by the accumulation of their end-products. Fermentation of wine ceases from the presence of the end-products, alcohol and CO_2. I think it is the presence of end-products that prevents an ordinary serum rash from being a severer anaphylaxis. Anti-anaphylaxis is merely a temporary affair, and I think it is the bringing of the specific enzyme to equilibrium by the formation of end-products from a small digestion of the protein substrate.

But to return to more practical points. Many patients give a history of having had a course of vaccine treatment that caused considerable improvement for a time. Now, although entirely unspecific, I think they do good, for this reason—namely, that in digesting them end-products are formed which also act in bringing the specific ferments to a point of equilibrium. Peptone probably works in this way. CO_2 will bring the ferments in your champagne to equilibrium, no matter how the CO_2 is formed. As we should expect, the cure is only temporary, and when these non specific end-products cease to work the specific enzyme again gets busy, with the resultant asthma.

We may therefore look to cure asthma if we can discover, by the skin tests, the article of food or environment which is the specific protein substrate from which the specific enzyme in the patient's body will split off the poison group, and, having found it, remove it; if we can remove the specific enzyme; if by easily ingested end-products we can bring it to equilibrium; if we can prevent the formation of histamine in the bowel; if we can maintain a healthy liver to break up any improperly digested products that may enter the portal system; or if we can administer an antidote to these poisons in the intestine, the blood, or the bronchial muscle, should we be unable to prevent their formation.

A. E. Gow, M.D., F.R.C.P.,
London.

The treatment of asthma by peptone has been referred to. You, Mr. President, have honoured me by a request to speak on this subject, and though I have very little information to offer, your commands must be obeyed.

The fashion in which many asthmatics react to Witte peptone appears to furnish strong evidence that there are at least two factors in the production of the disease—the state of hypersensitiveness is not the only one. An asthmatic subject, when injected with Witte peptone, is prone to develop a transient urticaria or angio-neurotic oedema, which shows, I think, the close causal relationship of these conditions. The majority of the subjects of bronchial asthma that I have tested with Witte peptone give a positive intradermal reaction; but not all individuals who give a positive test have a manifest toxic idiopathy. It seems that though the best results of peptone treatment are obtained in those cases which do show a well marked intradermal reaction, some of the others may be benefited. A well marked intradermal reaction, one in which the redness spreads perhaps all round the forearm and persists for more than six hours, is a sign that the initial therapeutic dose for intravenous injection must be very small; such a reaction presumably indicates a very high degree of sensitiveness, and the small quantity of the 10 per cent. solution used in the test may even be sufficient to induce urticaria. In ordinary cases I begin at present with the intravenous injection of 0.2 c.cm. of a 2 per cent. solution of Witte peptone, increasing the dose by 0.1 c.cm. or 0.2 c.cm. every five to seven days, if necessary, until a mild "immediate" reaction is produced—a transient feeling of fullness in the head or slight oppression in the chest. Too large a dose is followed either immediately by palpitation, dyspnœa, and giddiness, or later by a rigor, usually in from half to one hour. Treatment should not be begun during an attack.

Some cases of asthma and hay fever are remarkably sensitive to intravenous injection of Witte peptone. Having found his intradermal test positive, I recently gave 0.2 c.cm. of a 2 per cent. solution as a first dose to a patient who has had asthma for many years. Within a minute he vomited, his eyes became suffused, and in less than five minutes his back was covered with urticaria: Another man, now nearly 50 years of age, had suffered from asthma since the age of 6 months. Much emphysema and bronchitis was associated, the sputum containing both streptococci and the *Micrococcus catarrhalis*—the infection which, in my experience, is the most likely to yield to vaccine therapy. However, in his case a prolonged course administered by Dr. Lawrence of Gravesend through the last winter but one did no good. He proved unusually sensitive to Witte peptone—1 c.cm. of a 1 per cent. solution has been followed frequently by a rigor, but fortunately ½ c.cm. is sufficient to keep him free from attacks. In a lady with hay fever to whom it has been advisable to give only very small doses, each injection is followed by a little urticaria.

Another peculiarity about these cases, in my experience, is that they do not develop any "tolerance" to peptone injections—that is, when a dose is given once a week or so. There are many different brands of "peptone" on the market, of which some are doubtless more toxic than others, and I do wish to utter a word of warning. Peptone in many of these "toxic idiopathies" is a dangerous drug; it should not be given during a paroxysm and its indiscriminate use will lead sooner or later to disaster and bring discredit on what I believe to be, in certain cases, a valuable remedy.

DISCUSSION.

Dr. Warren Crowe (Harrogate) related a case of a farmer who was free from asthma while in charge of horses in Salonica, but whose asthma recurred on returning to his own farm.

Dr. Chalmers (Sunderland) had hoped for more information on the treatment of asthma; he referred to several

cases of asthma and commented on surgical interference in the nose.

Dr. HAMILTON (Glasgow) regretted that there had been no combination with the Section of Psychiatry in this discussion, as suggestion often played so important a part in the cure, and he considered that asthma in general practice was far more a nerve condition than he had been led to believe that day.

Dr. GREENFIELD (Rushden) expressed the opinion that the cutaneous tests were too delicate for general practitioners, but thought peptone treatment would be useful, and asked for details.

Dr. JOHN STENHOUSE (Toronto) related several cases of asthma. He thought that the disease was probably due to toxic products.

Dr. JOHN F. WALKER (Southend-on-Sea) asked for information as to the utility of the ophthalmic reaction, and expressed the opinion that information obtained by general practitioners in this condition should be collected in some way for consideration by experts.

Dr. FREEMAN and Dr. GOW replied to various questions dealing with the ophthalmic reaction and peptone treatment respectively, and Sir HUMPHRY ROLLESTON summed up the main points of the discussion.

Demonstrations.

In the afternoon a demonstration of the skin reactions in asthma was given by Dr. MACKENZIE WALLIS in the Pathological Department. At the Royal Infirmary, in addition to ward demonstrations by the honorary medical staff, the following were demonstrated: The negative pressure in the pericardium, by Dr. G. ARBOUR STEPHENS; the treatment of tuberculosis with an attenuated tubercle vaccine, by Dr. NATHAN RAW; the value of tuberculin in the treatment of bone tuberculosis, by Dr. W. CAMAC WILKINSON; the technique of artificial pneumothorax, by Dr. F. G. COLEY.

ADOLESCENT TETANY AND ITS RELATION TO GUANIDIN.

BY

F. J. NATTRASS, M.D., AND J. S. SHARPE.

(From the Royal Victoria Infirmary, Newcastle upon-Tyne, and the Institute of Physiology, University of Glasgow.)

IN 1917 Noël Paton and Findlay[1] showed that the symptoms of tetania parathyreopriva and of tetany are similar to those produced by the subcutaneous administration of salts of guanidin, while Burns and Sharpe[2] demonstrated that in the former condition in dogs the amount of guanidin in the blood and urine is increased, and that, in the latter condition in infants, a marked increase occurs in the urine. It was impossible to get sufficient blood from them for analysis. In 1918 Burns and Watson[3] showed that parathyroidectomy produces similar effects on the heart to those produced by the administration of guanidin.

The conclusion seemed inevitable that the symptoms of tetania parathyreopriva and of idiopathic tetany of children are both due to some error in the metabolism of guanidin in the body.

Findlay and Sharpe[4] in 1920 recorded a case of adult tetany in which the excretion of guanidin in the urine and the faeces was markedly above the normal. We are now able to record another case of the same kind in which the excretion of guanidin by the urine and the faeces was estimated. The clinical features of the case are of no little interest.

The patient, a girl of 15, first came under observation in January, 1920, complaining of attacks of painful spasm of the hands. From her description of the seizures tetany was suspected, and subsequently on many occasions typical attacks of tetany have been observed.

History.

The attacks commenced suddenly and without warning about a year before she came under observation. At first the spasms occurred at intervals varying from a week to a month, but they gradually increased in frequency until finally they occurred two or three times daily. The duration of each attack also became progressively longer, and the later attacks lasted for two or more hours.

In severe and prolonged attacks usually both hands, but sometimes one only, became red, hot, and painful.

The patient was occasionally wakened at night by cramp in the feet, but this was the only indication of any affection of the feet similar to that of the hands. Apart from the spasms she felt in perfect health. She was habitually constipated, but not severely. Menstruation commenced a month or two before the first attack in the hands, and was irregular and of excessive duration (frequently lasting for twelve days with intervals of only a fortnight), but she had felt no ill effects of the heavy losses. Her mother stated that the patient never had any similar attacks as an infant, nor any convulsions nor child-crowing. She had never had any serious illness.

Her father and mother were healthy, but her maternal grandmother suffered from generalized spasms which the mother (a very intelligent woman) described as being like the patient's. A great aunt on the paternal side was treated for some condition with thyroid extract. A sister, now aged 22, suffered from the age of 14 to 19 years from attacks exactly resembling those of the patient. The patient has also two brothers, who are healthy. No evidence of infantile convulsions or laryngismus stridulus in any member of the family was obtained.

Present Condition.

The patient is healthy in appearance, well nourished (weight 7 st. 7 lb.), and intelligent. There is a slight uniform enlargement of the thyroid gland, no greater than that often seen in girls at puberty, and no signs of hyperthyroidism. The left thumb is deformed, the terminal phalanx at the interphalangeal joint being deviated to the ulnar side at an angle of about 20 degrees. Examination reveals no other abnormality in any part of the body.

The attacks of tetany occur with no apparent cause, and do not appear to be influenced by nervousness nor capable of being produced by suggestion. An attack in one hand can be induced by pressure on the corresponding nerve trunks in the upper arm (Trousseau's sign), and a very severe attack in the right hand followed shortly after galvanic testing of the right ulnar nerve.

There is very marked twitching of all the muscles on one side of the face on percussion of the corresponding facial nerve near its exit from the stylo-mastoid foramen (Chvostek's sign). The irritability of the peripheral nerves to galvanic stimulation is much greater than normal, and the characteristic reactions to the opening stimuli are strikingly manifest (Erb's sign). The reactions of the right ulnar nerve stimulated behind the internal epicondyle of the humerus, in the patient and in a control case at the same time under the same conditions, were as follows:

	Patient.	Control.
A.O.C.	0.6 ma.	3.5 ma.
K.C.C.	0.8 ma.	1.0 ma.
A.C.C.	1.0 ma.	1.4 ma.
K.O.C.	2.0 ma.	over 7–8 ma.

Examination of the Patient's Family.

The sister, who without doubt had tetany which ceased three years ago, appears in every respect normal. The electrical reactions are normal and Chvostek's sign is not present.

The younger brother, aged 17 years, shows Chvostek's sign of quite marked degree, but much less than in the case of the patient herself. The elder brother, aged 24 years, shows a slight degree of the same sign.

THE EXCRETION OF GUANIDIN.

The patient was admitted to the Royal Victoria Infirmary, Newcastle, on April 10th, 1920, under Dr. Beattie. She was placed upon a creatine-free diet for one week, during which time the whole of the urine and a watery extract of the whole of the faeces were collected, each being evaporated daily to a small bulk with the addition of a few drops of thymol in chloroform. They were sent to Professor Noël Paton at the Physiological Laboratory of the University of Glasgow and the guanidin content was estimated by one of us (J. S. S.).

During this week of special dieting the patient had three attacks of tetany of average severity. No laxative or other drug was given during the week, and the bowels moved naturally on six days out of the seven.

Chemical Examination.

The urine and extract of faeces, each amounting to almost a full Winchester quart, were treated by the method described (Findlay and Sharpe[4]). The results were calculated as guanidin in milligrams per diem.

TABLE I.

By urine...	305.0
By faeces	17.0
Total per kilo of body weight ..	6.1

The examination of the picrate precipitates gave the following results:

TABLE II.

	Found	Calculated as Dimethylguanidin.
Total nitrogen ...	24.0 %.	26.5 %.
Melting point ...	226° C.	225° C.

This indicates that the guanidin is chiefly in the form of dimethylguanidin, as it was in the case of adult tetany previously recorded (loc. cit.). In that case the excretion by the urine was 4·8 mg. per kilo a day, against 6·7 mg. in the present case. In the case of active idiopathic tetany in children recorded in 1917[2] the excretion of guanidin by the urine (determined by the aurichloride method) averaged 0·49 mg. per kilo a day, in latent tetany 0·47 mg., and in a case recovered from tetany 0·12 mg., while in five cases free from tetany the average was 0·116 mg. per kilo a day. In dogs suffering from tetania parathyreopriva the average excretion in the urine (determined by the aurichloride method) was 1·0 mg. per kilo a day.

Later experience has shown that results obtained by the aurichloride method are lower than those by the picrate method, and that the yield depends largely upon the concentration of the solution from which crystallization takes place. While of use in giving comparative results in a series of simultaneous determinations it is somewhat unreliable, and it has been abandoned for the picrate method, which has proved more accurate and much more rapid.

Subsequent observations have shown no excess of ethereal sulphates in the urine when the attacks are frequent. There is no evidence of pancreatic deficiency as tested by Loewi's adrenaline mydriasis test, the amount of diastase in the urine, and the fat, starch, and protein content of the faeces.

Treatment.

A prolonged trial has been made of parathyroid tablets (Armour), gr. 1/20, by the mouth, the dose being increased gradually to three tablets three times daily. No curative action can definitely be ascribed to this treatment, for though remissions have occurred, similar remissions have been seen when the tablets were omitted. The addition of thyroid tablets, gr. v once daily, has so far produced no appreciable effect.

A definite remission followed the week in which the patient was in hospital on a meat-free diet. But in spite of limiting subsequently the amount of meat and meat extracts in the diet, and ensuring regular action of the bowels, the attacks continue to recur at very variable intervals. There is, however, no doubt that their frequency and severity are considerably less than they were. The administration of salol by the mouth has not appeared to influence the attacks. Trial is now being made of calcium salts.

The estimation of the urinary sulphates, and the examination of the faeces for evidences of pancreatic defect, were carried out by G. J. Crawford.

REFERENCES.

[1] Noël Paton and Findlay: *Quart. Journ. of Exper. Phys.*, 1917, vol. x, p. 203. [2] Burns and Sharpe *Quart. Journ. of Exper. Phys.*, 1917, vol. x, p. 345. [3] Burns and Watson *Journ. of Physiol.*, 1918, vol. lii, p. 88, and 1920, vol. liii, p. 385. [4] Findlay and Sharpe: *Quart. Journ. of Med.*, 1920 vol. xiii.

THE SACHS-GEORGI PRECIPITATION TEST FOR SYPHILIS

AND A COMPARISON WITH THE WASSERMANN REACTION IN OVER 1,500 CASES.

BY

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THE formation of precipitate in a mixture of syphilitic serum with lipoids or other reagents has been frequently recorded. But it was not until the work of Sachs with Georgi, and Meinicke[1] had defined more precisely the conditions necessary for eliciting the phenomenon that it appeared to compare with the Wassermann reaction in point of specificity and constancy as a test for syphilis. It has been found that with a suitable antigen (alcoholic extract of human heart reinforced by the addition of cholesterol according to the principle for the Wassermann antigen established by Browning, Cruickshank, and Mackenzie), when appropriately diluted and incubated at 37° C. for eighteen to twenty hours, precipitates are produced in the presence of heated syphilitic serums, whereas non-syphilitic serums in similar conditions fail to cause precipitum formation.

Method of the Test.

Antigen.—1 gram of minced human heart muscle (nature of case immaterial), freed from fat, is extracted at room temperature with 5 c.cm. of absolute alcohol for forty-eight hours, shaking at intervals, and finally filtered; the clear filtrate is kept in the dark at room temperature. To prepare an emulsion for use in the test 1 c.cm. of this extract is diluted with 2 c.cm. of absolute alcohol; to 1 c.cm. of this diluted extract 0.045–0.05 c.cm. of 1 per cent. alcoholic solution of cholesterol is added. Then 1 c.cm. of cholesterolized extract is placed in a 3 by ½ in. test tube and 11 c.cm. of 0·85 per cent. NaCl solution ("saline") is rapidly poured into it from a similar tube (when greater volumes are required correspondingly larger tubes are used): after the mixture has stood for five minutes at room temperature, 4 c.cm. more of saline are added rapidly in the same fashion as before and the emulsion is used for the test after standing for five to fifteen minutes at room temperature. The antigen should appear opalescent, but without flocculi when examined with a hand lens. (When the antigen has stood by itself for a longer time—for example, more than twenty minutes at room temperature, visible precipitation sometimes occurs in the antigen control on incubation.)

Serum (within seven days after withdrawal of blood) is tested after standing for several hours at room temperature, subsequent to heating for thirty minutes at 55° to 56° C.

As *controls for a series of tests* (1) negative, weak and strong positive serums are used as in carrying out the Wassermann reaction; (2) a tube containing the lipoid emulsion and saline is included as the antigen control.

The reagents are measured in the following order into 3×½ in. test tubes in the amounts shown. The contents of each tube

Main Test.		Serum Control.	Antigen Control for each Series of Tests.
First Tube.	Second Tube.	Third Tube.	
0·9 c.cm. saline	0.9 c.cm. saline	0·9 c.cm. saline	0·9 c.cm. saline
+	+	+	+
0·05 c.cm. serum	0.1 c.cm. serum	0·1 c.cm. serum	0·5 c.cm. antigen
+	+	+	
0.5 c.cm. antigen	0.5 c.cm. antigen	0.5 c.cm. 16.6 per cent. dilution of alcohol in saline	

are immediately mixed by gentle shaking and then placed at 37° C. for eighteen to twenty hours; the results are read on withdrawing the tubes from the incubator. The antigen and serum controls and also the mixture of known negative serum with antigen should all show no flocculation.

The *reading of results* is carried out as in the case of bacterial sedimentation tests. In order to detect weak reactions it is advisable to use a hand magnifying lens; but in estimating such weak reactions it is essential to compare carefully the control with a known negative serum, as slight flocculation may occasionally occur in the latter. Provided the negative control and the serum control show no flocculation, then precipitation which is just visible with the magnifying glass constitutes a suspicious reaction, while flocculation visible to the unaided eye constitutes a positive result.

Results Compared with the Wassermann Test.

In a series of 1,575 serums (including 296 cases already investigated by Taniguchi), comprising cases submitted to the laboratory from the wards of a general hospital, as well as the venereal diseases centre, the following results were obtained:

Parallel results:		
No. of cases	1418	90%
Reaction positive in both tests in ...	553	
,, negative in both tests in ...	845	
,, doubtful in both tests in ...	20	
Discrepancies:		
No. of cases	157	10%
Positive Wassermann, but negative or doubtful Sachs-Georgi in	23	
Negative or doubtful Wassermann, but positive Sachs-Georgi in	77	

When cases of syphilis which have undergone specific treatment are grouped by themselves it is seen that the proportion of positive results with the Sachs-Georgi test is greater than with the Wassermann reaction.

Results in 296 Serums from Treated Cases.

Parallel results:	
No. of cases	256 = 81%
Reaction positive in both tests in ...	152
,, negative in both tests in ...	97
,, doubtful in both tests in ...	7
Discrepancies:	
No. of cases	60 = 19%
Positive Wassermann, but negative or doubtful Sachs-Georgi in	5
Negative or doubtful Wassermann, but positive Sachs-Georgi in	44

[1] The Wassermann reactions were carried out as described in Browning and Watson's *Venereal Diseases* (London, 1919) using human heart cholesterol antigen.

Points of Practical Importance in Performing the Test.

1. Heated serum should be used; unheated serums from positive cases may fail to cause precipitation in any concentrations (a wide range of concentrations has been tested).

2. The concentrations of serum recommended should not be exceeded, since heated normal serums in large amounts—for example, 0.2 to 0.3 c.cm.—may cause precipitation. No positive case has been met with in which the usual amounts of heated serum employed failed to show precipitate, but the reaction may be more marked with 0.05 c.cm. of serum than with 0.1 c.cm.

3. The mixture must be kept at 37° C., as precipitate may form with non-syphilitic serums at lower temperatures. Sometimes, however, it is advantageous in the case of weak reactions to record the results after the tubes have stood for thirty minutes further at room temperature, but the behaviour of the negative control must be carefully scrutinized.

4. The results should be controlled by including in each series of tests known negative, weak and strong positive serums, just as in the case of the Wassermann reaction.

REFERENCE.

[1] Taniguchi, T. (1921 : *The British Journal of Experimental Pathology*, 2, 41.

TYPHOID FEVER IN AN INFANT COMPLICATED BY SUPPURATIVE ARTHRITIS.

BY

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THE following case, in which a double subacute suppurative arthritis supervened in the case of a child, aged 9 months, suffering from typhoid fever, seems to me worthy of recording in some detail:

On May 14th, 1921, I was called to see a baby, aged 9 months, as the mother noticed it was very hot; up to this date it had been quite well. I found the axillary temperature was 102°. Careful examination disclosed no other abnormality. On May 15th the morning temperature was 104.8°, and the evening temperature 104 . The blood was negative as regards malarial parasites. The pyrexia continued, and on May 19th four rose spots typical of typhoid fever appeared, the spleen was palpable, and the abdomen distended. Typhoid fever was diagnosed. The Widal test was not done as the diagnosis appeared to be clear and the mother resented any active interference.

On May 20th slight rigidity of the neck was observed; there was no squint, and Kernig's sign was not present. The cervical rigidity lasted twelve hours only. On May 21st several new rose spots appeared and the spleen was still more enlarged, and on May 23rd there was a further copious crop of fresh rose spots. On May 25th (eleventh day) the pyrexia ranged from 100.2° to 102.2°. It was noticed that the baby made little use of the right arm. The hand grip was normal, and careful examination showed no sign of any epiphysitis or joint trouble.

On May 31st (seventeenth day) the temperature dropped in two hours from 103° to 95°. The infant was very cold and sweated profusely, but the pulse was only 84. Brandy was administered and hot bottles applied. Perforation was feared, but the abdomen appeared to be normal, and although the necessity for laparotomy was considered I decided not to operate. In a few hours the temperature had risen to 102.2°. From this date the pyrexia showed a tendency to diminish, and the temperature was slightly subnormal on the morning of June 4th. The paresis of the right arm continued, but the hand grip remained firm, and repeated examinations revealed no tenderness or swelling over joints or epiphyses. The infant, however, appeared to be generally hyperaesthetic, and resented movement or handling of any part of the body.

On June 5th severe diarrhoea began with some mucus in the stools; the temperature was 99° in the morning and 100.4° in the evening. On June 7th (twenty-fourth day) the right shoulder-joint was slightly distended; there was no redness of the skin over the joint. On June 8th the right shoulder-joint was explored with a needle and syringe; a considerable quantity of thick greenish pus was withdrawn.

Operation.

On June 9th the baby was anaesthetized. The *left* shoulder-joint, though distension was scarcely appreciable, was very fortunately aspirated and pus discovered in it. Both shoulder-joints were then opened anteriorly between the deltoid and pectoral muscles. A considerable quantity of pus was removed from both joints. (Incidentally this shows the futility of hoping to empty a joint of pus by aspiration. I had thought I had emptied the left joint completely by aspiration, but on opening the capsule I found more pus remained than I had removed.)

The joints were thoroughly irrigated with mercury biniodide, 1 in 4,000, and the capsules closed with catgut. The skin was sutured with silkworm gut. The infant stood the operation very well and there was no appreciable shock.

After the operation the temperature only once exceeded 99°, on the fifth day rising to 102° in the evening. The skin sutures were removed, and the wounds, which were slightly septic, were dressed with acriflavine and allowed to granulate. From this day the baby caused no anxiety. No extension or splint was applied. By June 26th the wounds were healed. Movement of both joints was quite free in all directions. On July 4th the baby was in excellent condition, taking its food well and using the shoulder-joints freely.

Bacteriology.

From the pus a culture on agar was made. The result was a pure culture of a Gram-positive diplococcus. The pathologist reported that he believed the organism to be the "enterococcus" isolated and described by Thiercelin in 1899. In the *Précis de Bacteriologie*, by Dopter and Sacquépée, 1914, this organism is described as causing secondary arthritis following tuberculosis, paratyphoid, etc.

The following points appear to me to be of interest:

1. The age of the patient. Osler and McCrae (1907, p. 81) give the incidence of typhoid in the first year of life as 0.013 per cent., and state that in the first year the disease is rare. On p. 176 they state, however, that: "Formerly regarded as rare, we have learned that typhoid fever during the first years of life is not uncommon. . . . Griffith and Ostheimer collected 325 undoubted cases under the age of 2½. Of these, 111 were in the first year. Of those in the first year recovery was noted in about 25 per cent. . . . The mortality of the published cases is high, but the milder cases are often overlooked or not reported." Although blood culture and Widal's test were not done, the course of the illness, the rose spots, and the enlargement of the spleen left no doubt in my mind but that the diagnosis was correct.

2. The sudden fall of temperature on the seventeenth day strongly suggested perforation; Osler and McCrae state that this may denote the onset of suppuration.

3. The disuse of the right arm was first noticed on May 25th (eleventh day), and arthritis was presumably present at that time. Nevertheless, from the seventeenth to twenty-fourth day the temperature came down as in a typical uncomplicated attack of typhoid.

4. Although there was pus in the left shoulder-joint, no limitation of movement and very little swelling of the joint was observed. Had I not known that the right shoulder-joint contained pus I would have seen no indication for exploring the left. As it was, it was more due to good fortune than to accurate diagnosis that I explored the left joint on the operating table. I certainly never expected that unimpaired function of the affected joints would be preserved.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANAPHYLAXIS DUE TO ANTISTREPTOCOCCAL SERUM.

MRS. X, aged 23, primipara, gave birth on June 7th to a child, which was born naturally, without any manipulation; the placenta and membranes came away quite intact; chloroform was administered during the birth of the head.

On the third day the temperature rose to 100° F., the breasts were very full of milk; on the fourth day the temperature was 101° F. and the lochia very foul. I gave her 10 c.cm. of antistreptococcal serum, polyvalent (P., D. and Co.), half an hour afterwards an urticarial rash appeared with oedema of the eyelids; this cleared away in a few hours. Next day I gave her 5 c.cm. of serum, the temperature came down and the lochia became less offensive; the vagina was washed out with a solution of mercury perchloride. Everything seemed to go well, the patient ate her food and enjoyed it, until the twelfth day when she suddenly became ill. The rash recurred with generalized intensity, the temperature fell to 96° F., and she became very faint but revived after the administration of brandy. Headache was very bad, and 10 grains of phenalgin were administered; calcium chloride was prescribed, 40 grains being given during the next twelve hours. On the morning of the fourteenth day the rash

had gone and the patient appeared better, the calcium chloride was continued until the evening, when it was stopped owing to severe headache. About 9 p.m. the rash reappeared, and in six hours was thick and universal, oedema of the larynx and tongue developed, and there was cyanosis and difficulty of breathing; adrenaline was sprayed on the fauces and 5 minims administered hypodermically; she vomited twice and felt relieved, and the rash diminished, but she was very collapsed.

From this time the condition of the patient improved. On the evening of the fifteenth day she complained of severe pains in her limbs. Calcium lactate was now given instead of calcium chloride (10 grains every four hours until 80 grains had been taken). The temperature and pulse became normal on the sixteenth day, the pains in the limbs disappeared, and convalescence since has been uninterrupted.

This case is of considerable interest from the fact that fifteen years ago antidiphtherial serum was administered during an attack of diphtheria without any reaction. It is probable that this injection rendered her, even after the lapse of so long a time, peculiarly susceptible to the effects of an injection of horse serum. Although no doubt a rare case, this is one of considerable moment and interest to the general practitioner in view of the modern and successful treatment of puerperal fever.

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CAESAREAN SECTION.

I HAVE read with interest the article entitled, "A plea for more frequent use of Caesarean section," in the BRITISH MEDICAL JOURNAL of July 16th (p. 75), and heartily endorse the remarks made by Dr. Arnold Jones. At the same time I think the latter may be interested to hear the experience of others, particularly from the point of view of future pregnancies.

Of a series of seven cases operated on for various causes I have had the opportunity of observing later pregnancies in two. I may mention that living children were obtained in all cases.

CASE I. Operated on in October, 1913, and again in September, 1920. After the second occasion the patient was sterilized.

CASE II.—May, 1917. Fourth pregnancy. Obstructed labour. Attempts to deliver by forceps both at home and in hospital having failed, Caesarean section was performed. A large child with a big head was born. December, 1919, the same patient was delivered of a normal child without aid.

On all occasions I have used a longitudinal incision through the anterior uterine wall at about its middle, and closed the wound with deep and superficial catgut sutures, the deep sutures including the uterine muscle, but, of course, passing beneath the decidua, erring on the side of too many rather than too few sutures.

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Reviews.

HEART AND KIDNEY.

THE subject of the interesting little book by JOSUÉ and PARTURIER[1] is one of daily importance in general practice; in it close observation at the bedside is combined with careful laboratory analysis. Readers will recognize but too well their experience of cases half renal half cardiac, cases in which the patients suffer from horrible dyspnoea, from dropsies, from hepatic and pulmonary congestion and scantiness of urine, and of the difficulty in many of them to decide how much of the fault is to be attributed to the kidney, how much to the heart. The purpose of this book is to aid us to determine this distribution.

When Ambard's estimation of degrees of non-protein nitrogen in the blood were first published many of us hoped that in this method we should find a constant which would enable us to decide in each case on the proportions of renal and cardiac default. Unfortunately these hopes were soon dashed; the uraemic concentrations proved to be far too variable to serve as a standard for kidney values; the "constant" was a widely fluctuating inconstancy. The azotaemia was low when we expected it to be high, and high when we had rightly supposed that the renal element of the case was but secondary. The authors tell us that so long as oliguria, relative or positive, persists, so long estimates of azotaemia cannot help us; high as, within limits, the degree may be, it may fall rapidly as soon as free urinary flow is re-established.

The ruling condition is the rate of renal circulation. If the rate falls, then, be the kidneys sound or unsound, retention of urea in the blood will ensue; but if, by therapeutic means, the heart be invigorated a large liberating flow of urine should follow, and thereupon the nitrogen load in the blood would be lightened. If the kidneys be sound it will fall to normal, unless the hepatic function of uric formation be also in default. In this last case of course the azotaemia of the blood may fall below normal, and the patient's life be in the greater peril. But this is another story. The authors' point is the physiological "solidarity" of kidneys and heart, and the infinite gradations between the cardiac and the renal extremes. It is not until an equilibrium be obtained between these organs that we can be in a position to decide their several responsibilities. This anxious question of the degree of renal fault, or of cardiac fault, in these cases comes home to all of us.

Happily, a little patience, and the aid of that wonderful drug digitalis, give a way out, or at worst a means of discrimination. While the authors do not forget to warn us not to begin the use of the drug until by some unloading of the liver and intestinal tract, and perhaps by a venesection, the system is prepared for it, yet then let it be used boldly, and not laid aside until the end is gained. On two points the present writer is in agreement with them—namely, in a preference for digitalin before the leaf or the tincture, and in the need, in some cases, of a continuous use of the drug over long periods of time, subject, of course, to incidental vigilance and intermittence as occasion may require. They urge also that we are not to be content with a "normal" urinary response; the diuresis must be in proportion to the arrears, continuously copious and liberating. In case of kidney default coming into view the authors advise the addition of theobromine as a stimulant to the renal epithelium and blood vessels. They urge, rightly enough, that the collection and measurements of the urine should be made by the physician himself, but few of us are in a position to follow this counsel of perfection.

The authors do not forget the alternatives of renal tests, and discuss some of these; but rightly, in our opinion, they relegate them to a secondary place in diagnosis. In any case their use will be to the best advantage after some equilibrium has first been obtained by the cardio-tonic methods. They remark incidentally how little, if at all, in these fluctuations the urea disturbs the osmotic tension of the cells.

In respect of blood pressures the authors make some valuable observations. They do not express an opinion as to the condition named "hyperpiesia"—high pressures without renal disease; but they properly insist on the importance of records of diastolic pressures and of the relation between systolic and diastolic. It is during periods of high pressures, generally with cardiac hypertrophy, that lapses of myocardial efficiency may gradually steal in unnoticed; and it is in such phases that the digitalis acts so efficiently in restoring diuresis, and that appreciation of kidney values may best be undertaken. In "granular kidney," likewise, a slight lassitude of the heart may first reveal the renal default. An azotaemia of more than 1.50 is suggestive of renal disease. The authors administer also sugar—they use lactose—in cases of failing myocardium. They have never found the confident use of digitalis of any harm in the renal cases, but, on the contrary, of service in promoting elimination.

The behaviour of salt in the dropsical cases is fully discussed; the authors are of opinion that there is a rivalry for the kidney path outwards between the uric and the saline constituent. But, in conclusion, the authors very rightly urge that in all cases the treatment shall be carefully adapted to the needs of the individual patient.

In some allusion to angina pectoris, as a feature of some of these cases, it is of interest to note that they accept the doctrine of the aortic causation of this malady. They say (p. 134): "Certains auteurs attribuent à l'insuffisance du

[1] *Les Cardio-rénaux. Étude Théorique et Pratique.* Par le Docteur O Josué et le Docteur M. Parturier. Paris: E. le Francois. 1921. (Post 8vo, pp. 225. 12 francs; post free 13 francs 20.)

cœur gauche les crises d'angine de poitrine. . . . Nous pouvons dire que telle n'est pas la cause de l'angine de poitrine. Celle-ci est en realité la douleur de l'aorte ascendante, malade et momentanément distendue, par suite d'une augmentation passagère de la pression arterielle." "Many authors attribute attacks of angina pectoris to insufficiency of the left heart. . . . We are in a position to say that this is not the cause of the angina; it is in reality pain in the ascending aorta, diseased and momentarily distended owing to a temporary rise in arterial pressure."]

This little book may be confidently recommended to every practitioner of medicine; it is highly practical, while also fortifying practice with laboratory verifications. It is written in the lucid and logical manner of our French colleagues, and if rather full of reiterations, well, as teachers they are aware of the importance of repetition in driving their teachings home. C. A.

IN-BREEDING AND OUT-BREEDING.

THAT the effects of in-breeding are of necessity bad, particularly when the in-breeding takes place among human beings, is an idea that has been long and persistently held. Marriage between first cousins is very generally condemned. The idea is largely based on prejudice arising probably from the fallacy of arguing from the particular to the general. The progeny of some cousin-marriages are sometimes defective, and such cases are cited as "terrible examples," but other cases, equally if not more numerous, in which the progeny are normal, pass unnoticed.

The whole problem of cross-breeding is ably discussed by Drs. E. M. EAST and D. F. JONES in one of the monographs on experimental biology appropriately entitled *In-breeding and Out-breeding*.[2]

After giving a summary of the probable evolution of the asexual and sexual methods of reproduction in plants and animals, followed by the usual statement of the elements of the principles of Mendelism, the authors proceed to give an account of numerous in-breeding experiments, both in plants and animals, describing the effects on sterility and on the production of heterosis or hybrid vigour. These chapters will be of interest to the agriculturalist and to the stock-breeder. To medical men and sociologists the introduction and the two concluding chapters will make a particular appeal; it is here that the effects on the individual of in-breeding and out-breeding in man and the results of the intermingling of races are discussed. The reader must not be disappointed if he finds no hard and fast statements laid down. In the present very imperfect state of knowledge such statements cannot be made. The problems are too intricate, the evidence too uncertain, and the inability to control experiments makes the difficulties almost insuperable. But the real interest lies in the authors' statement of the problems themselves and the avenues of thought and suggestion which are opened out in the practical treatment of all social questions dealing with race betterment.

As a result of the experimental evidence in the breeding of horses and cattle, the authors conclude that "crossing followed by in-breeding has been the touchstone of success," "cross-breeding to furnish a variety of character combinations from which to select . . . in-breeding to provide the opportunity to isolate the combinations desired." Such statements, valuable as they may be to the agriculturalist and stock-breeder, cannot be applied to the human race since matings cannot be controlled. Nevertheless, the examination of such evidence as exists points in the same direction as the wider and more accurate information derived from horses and cattle.

Heredity and environment are the two potent factors in human evolution. Social reformers are too apt to rely on the latter to the exclusion of the former; they follow the line of least resistance. According to Galton, ancient Attica provided the ablest race in history, and here there must have been much in-breeding. On the other hand, it is difficult at the present time to realize how different was the environment, for we are told that "the great poet was valued more highly than the wealthy merchant." Heredity and environment undoubtedly played their parts in the production of so high a percentage of illustrious men. The authors of the volume under consideration fully recognize the importance of both factors, while drawing particular attention to that of heredity. It is just this which is so eminently necessary and which they do so successfully.

The text for the book may be summed up in their own words: "All we would ask is that the physician, the clergyman, the social worker, the penologist, the statesman, give conscientious consideration to the facts of heredity as a guiding principle in the solution of the problems of the family with which they have to do." The book should appeal to a wide circle outside the limited ranks of the professional biologist for whom it is primarily intended.

WORK IN MENTAL HOSPITALS.

DR. JOHN MACARTHUR, Senior Assistant Medical Officer, London County Mental Hospital, Colney Hatch, has written a *Mental Hospital Manual*[3] to meet the needs of the medical man who is taking up work for the first time in a mental hospital. There is room for a book of the kind, for the work in a large hospital for the insane necessarily differs in many respects from that in a general hospital, and the assistant medical officer finds himself in an atmosphere to which he is quite unaccustomed, and in which he feels the need of definite guidance. The wide experience of the author of this volume has well fitted him to understand the difficulties of his junior colleagues, and the administrative details therein contained and the practical advice given will be found distinctly serviceable to those for whom it is intended. No attempt is made to give a systematic account of mental disorder. The book is essentially practical and contains a number of useful facts not included in the ordinary textbook of insanity.

An account of the design and structure of a mental hospital is followed by a detailed summary of the duties of the assistant medical officer in relation to the staff and patients. Several chapters are devoted to treatment, both general and medicinal, with particular reference to the routine management of excited, irresponsible and suicidal cases. Dr. Macarthur rightly insists that the medical officer should acquire an intimate individual knowledge of the patients under his charge; there is perhaps no branch of medicine in which the personal influence of the physician is so important. Due emphasis is laid upon the benefit derived from dental treatment in mental hospitals—often sadly neglected—and it is most satisfactory to read in a footnote (p. 100) that the London County Council has recently appointed dentists to all their mental hospitals. A full account is given of the duties of the medical officer in regard to the admission of patients, the various methods of certification are described, copies of the certificates are printed, and the statutory regulations in connexion with lunacy administration are summarized. Certain omissions are perhaps inevitable in a book of this kind, and we miss especially any reference to the parole system which has been utilized with much success in many mental hospitals.

This book may safely be recommended to the assistant medical officers of mental hospitals; a knowledge of its contents will do much to help them in the routine of their daily work.

MEDICAL JURISPRUDENCE.

IN reviewing earlier editions of Dr. AITCHISON ROBERTSON'S *Manual of Medical Jurisprudence and Toxicology*[4] we described it as an excellent short textbook for students. Perusal of the fourth edition induces us, while still recognizing its merits, to suggest that it now stands in need of revision, at any rate for the use of English students. It is not correct to say that in a case of murder or manslaughter the magistrate depends upon the medical evidence already sworn before the coroner. The statement that the dissipated habits of the lower classes play a large part in the death of infants from overlying has, we believe, been

[2] *In-breeding and Out-breeding: Their Genetic and Sociological Significance.* By Edward M. East, Ph.D., and Donald F. Jones, Sc.D. Philadelphia and London: J. B. Lippincott and Co. 1920. (Post 8vo, pp. 285; 46 figures. 10s. 6d. net.)

[3] *Mental Hospital Manual.* By John Macarthur, L.R.C.S., L.R.C.P. London: Henry Frowde and Hodder and Stoughton. 1921. (Pp. vi + 215; charts and diagrams. 15s. net.)

[4] *Manual of Medical Jurisprudence and Toxicology.* By W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E., F.R.S.E. Fourth edition. London: A. and C. Black, Limited. 1921. (Cr. 8vo, pp. 424, 29 figures. 12s. 6d. net.)

disproved. It is not correct to say that the majority of suicides from poisoning in Great Britain are due to carbolic acid, nor that arsenic is a common poison used by suicides, for it is responsible for only about three such deaths a year. The statement that the Mental Treatment Act, 1915, allows the detention for not longer than six months of cases of temporary insanity without certification and permits the detention of cases of mental disorder traceable to wounds, shock, etc., due to warfare, needs revision. There is in fact no such Act. While it may readily be admitted that the coroners' procedure is susceptible of improvement, still if it is "notorious" that "great discredit" is thrown upon the system by ridiculous findings, the author should have supported his indictment by instances more recent than those quoted.

The section on insanity has become out of date. No mention is made of Kraepelin's work on manic-depressive insanity, and acute confusional insanity is omitted. "Moral" insanity, "impulsive" insanity, and the "insanity of pregnancy" are described as though still recognized as definite forms of psychoses. The description of paranoia is inadequate. Under the heading of dementia the author describes dementia praecox (in four lines) and also "acute dementia or stupor" in young persons and adults, which he ascribes chiefly to sexual over-indulgence or masturbation, and may, he states, produce a condition similar to idiocy or imbecility. It is not clear what difference the author draws between dementia praecox and acute dementia in young persons, while stupor is, we believe, usually regarded as a form of melancholia.

We hope that in a future edition the author will deal with the points we have mentioned, for he writes clearly and concisely, and there is room for a book which gives a more complete account of Scottish procedure than is contained in most works on the subject.

CHINA AND MODERN MEDICINE.

In *China and Modern Medicine*,[5] by the Dean of the School of Medicine of Shantung, is to be found an attractively written summary of the development in China of medical mission work and of Western medicine. Reason is shown for believing that the pioneer of both was Thomas Richardson Colledge, but whether at the time he began his work he was merely an able, well trained pupil of Sir Astley Cooper, or a formally qualified medical man, can be determined neither from this volume nor yet from the account of Colledge's life in the *Dictionary of National Biography*. What alone seems certain is that the initial stimulus was the sight of so much unrelieved suffering when he first landed in China as a ship's doctor; that in 1827, when he must have been aged about 30, he succeeded in opening at Macao a hospital for eye cases; and that some ten years later he joined hands with Peter Parker, a Yale graduate and newcomer, in founding "The Medical Missionary Society in China." These two and those who followed them were indubitably very successful, as have been so many medical men elsewhere, in putting the outcome of Christianity and Western civilization in an attractive light. These workers recognized, too, from the beginning that their aim must be not alone to treat the Chinese, but also to teach the Chinese how to treat themselves. The extent to which this second aim has been attained is well brought out in the later half of the volume. The general impression left is that eventually the Chinese will adopt the principles of modern medicine as heartily as their neighbours the Japanese and apply them not less skilfully. It will be a great result considering that many even of the present pioneers of scientific medicine in the Far East—the medical mission hospitals—must be severely handicapped in their labours by inadequate equipment. This, however, does not prevent them from offering a fine field for medical men who really love their profession and are thoroughly trained therein.

Also of interest are the sections dealing with nursing questions. The importance of establishing nursing as a reputable and definitely trained profession has not been overlooked. The present outlook in this connexion seems to be promising, and one may readily concede that to help to shape the traditions of the Chinese nurse of the future, and thus to inspire the whole profession with noble ideals, is a task worthy of the very best nurse that the Homelands can produce.

Interspersed in the text are a number of wise observations on the best way of dealing with Chinese patients, and some stories, one of which makes it clear that, however ignorant of medicine he may be, a purely native physician may yet have nothing to learn in respect of the art of gaining the confidence of a patient's friends. By no means the least useful part of the volume is a series of six appendices, of which one supplies a well arranged bibliography of publications concerning medical and surgical work in China, and another specifies the qualities which should be possessed by any medical man or woman who proposes to take up work in that vast country. On the inside of the cover at each end is an outline map which facilitates comprehension of the written contents of the volume by those indifferently acquainted with the geography of China. The same map also shows the present distribution of all existing medical schools, whether Chinese, Japanese, or Anglo-American.

The book, in short, is well devised and thoroughly worth perusal. Probably its initial purpose was to inspire an active interest and to attract recruits: if that be the case, it deserves, and is likely, to be successful.

HISTOLOGY.

Professor Jordan's *Textbook of Histology*[6] shows no little individuality when compared with the other textbooks on this subject in the English language. For not only are the facts of microscopic anatomy set out in a very lucid manner, but their relation to function and theoretical significance are interestingly discussed. And what is more, controversial points, instead of being slurred over as is usually the case in such books, are candidly admitted. The result is that the subject matter is of value not only to the student but to the research worker also. The chapter on the different types of connective tissue and ossification—subjects usually presenting special difficulty to beginners in histology—is a model of clarity. Excellent, also, are the sections on the alimentary canal and the blood vascular system. The book has individuality in another respect. Those who write manuals on histology are usually content to describe tissues without pointing out the differences between them. From the student's standpoint this is no small defect, for his main difficulty consists not so much in recognizing tissues under the microscope, but in distinguishing between those that are superficially similar. Now Professor Jordan has succeeded in writing what is truly a medium-sized textbook of differential histology. Thus he points out how the different types of muscles should be distinguished from one another, also how not to confuse smooth muscle and dense fibrous tissues. All this is reinforced by excellent differential tables. But legitimate criticism can be made regarding some of the microphotographs. The author in his preface to the second edition says that he has "substituted drawings for some of the less satisfactory photographs of the first edition." One can only regret that he did not carry the process further. For while many of the microphotographs are excellent, it is no exaggeration to say that a professional histologist would have difficulty in the exact identification of some of them—were it not for the explanations! There is a very useful section at the end of the volume dealing with technique. Directions for practical work are also provided. We hope that when a third edition is called for Professor Jordan will provide good wash drawings in place of many of the high power photographs; the illustrations will then be up to the level of the text in excellence.

Professor Piersol's *Normal Histology*[7] (twelfth edition) is a standard volume in the United States and is already well known in this country. It is primarily a handbook of microscopic anatomy, and as such furnishes facts rather than ideas. The author rightly contends that readers

[5] *China and Modern Medicine.* By Harold Balme, F.R.C.S., D.P.H. With preface by Sir Donald MacAlister, K.C.B. London: The United Council for Missionary Education. 1921. (Post 8vo, pp. 224. 5s. 3d. post free.)

[6] *A Textbook of Histology.* By Harvey Ernest Jordan, A.M., Ph.D., Professor of Histology and Embryology, University of Virginia. New York and London: D. Appleton and Co. (Double fcap 8vo, pp. 845; 594 figures, 1 plates. 25s. net.)

[7] *Normal Histology.* With Special Reference to the Structure of the Human Body. By George A. Piersol, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania. Twelfth edition. Philadelphia and London: J. B. Lippincott Company. (Roy. 8vo, pp. 425; 438 figures. 21s. net.)

(student and author) of histological manuals are often lacking in adequate anatomical knowledge. The result is that they are unable properly to correlate what they see under the microscope with what they have dissected in the body. Therefore Professor Piersol has freely interspersed descriptions and figures of a purely anatomical nature in the text. The exposition is concise and the illustrations excellent. The chapter on the brain and spinal cord is particularly good, and its value is enhanced by the introductory section on the gross anatomy of the brain. But there are certain curious omissions—possibly intentional. Thus only the histology of the normal nerve fibre is described, no reference being made to the changes following its section. Again, the chapter on blood formation is somewhat sketchy when compared to the other chapters in the book; a subject of such importance surely merits an account fuller than can be given in less than two pages. It is a pity that short references to points of physiological importance are not made when occasion arises. The book is of medium size, and one consequently expects to find as much information as is provided in manuals of even smaller calibre. There is an appendix in which limited examples of histological methods are set out in a serviceable manner.

CHILD WELFARE WORK IN VIENNA.

ADVANTAGE was taken of the meeting in Vienna of the Women's International League Congress to hold an informal conference, under the auspices of the Friends' Relief Mission in that city, on "International aspects of child welfare work." The conference took place on July 18th, and at the first session there was a discussion on child welfare work as a factor in the promotion of international friendship and co-operation, while the second session was devoted to the excellent work for children which is being done by the Austrians themselves.

At the second session, presided over by Dr. HILDA CLARK, the head of the mission in Vienna, one of the speakers was Professor VON PIRQUET, who said that the years of under-nourishment had given a new lease to tuberculosis, always rife in the Austrian capital. Ninety per cent. of the children examined at the welfare centres reacted to his cutaneous test, which meant that they were in a condition to become tuberculous if their powers of resistance were sufficiently lowered. It was true that the death rate from tuberculosis among the young had fallen since the conclusion of the war, but it was still greatly above the pre-war normal. Austria, especially the new Austria, lacked sanatoriums; but the situation had been met to some extent by the use of hospital roofs, where, under overhead shelter, many tuberculous patients spent the whole of their time in the open air, winter and summer, with quite amazingly good results.

Miss DALYELL, a member of the mission sent to Vienna in 1919 by the Accessory Food Factors Committee, which was appointed jointly by the Lister Institute and the Medical Research Committee, said that the object of the mission was, in the first place, to find out what results had followed from the extreme scarcity of fats in the diet of the infants of Eastern Europe in the years 1917 to 1919, and to undertake as far as possible remedial measures. It had been of the greatest use to the investigators to have access to the system of exact food measurements worked out in Professor von Pirquet's clinic. The study on a large scale was only started last year, and it would be continued until the results were definite, for it had to be remembered that the deficiency diseases took a long time to develop. The two diseases which had taken the greatest toll of the infant population of Vienna were scurvy and rachitis. The prevalence of these diseases was due to the lack of milk or the unsatisfactory conditions of its supply more than to any other factor. Simple measures, such as using the raw juice of cheap vegetables throughout the winter, had been employed to prevent scurvy, and work had also been carried out on milk substitutes and on seasonal variations in the value of milk itself; but whether these measures had been instrumental in bringing about the marked decrease in rachitis which had taken place within the last year still remained to be proved. It was hoped that from this investigation in Vienna there would be such an increase in the knowledge of infant feeding that the problem of securing the normal growth during the first year of life would be brought appreciably nearer solution. The experience and statistics collected in Vienna would be of use in every country in dealing with infant nutrition.

Dr. POERNER, principal physician in charge of welfare work for infants and young children in Vienna, said that the death rate for infants was still fifty times, and the death rate for young children five times, that for older children. Study of the death rates during the last decade would help to determine the lines that welfare work should follow.

	1910.	1920
Infant mortality (per 1,000) ...	216.8	168.6
Mortality of young children ...	21.8	24.4
Mortality of school children ...	3.1	4.05
Mortality of adolescents ...	4.3	6.5
Mortality (all ages)	11.5	18.5

The chief causes of death of infants and young children in Vienna during the last decade were given as follows:

	Infants.		Young children	
	1910.	1920.	1910.	1920.
Digestive diseases	28.1	29.2	3.7	5.9
Diseases of respiratory organs	26.5	25.2	28.5	23.9
General weakness	20.4	25.3	-	-
Epidemic diseases	6.5	9.8	23.5	31.0
Tuberculosis (all kinds) ...	4.0	3.7	25.0	28.3
Nervous diseases	5.4	4.1	2.5	4.4
Syphilis	1.2	1.7	0.1	0.07
Rickets	0.4	0.3	1.3	1.9

Dr. Poerner explained the decrease of digestive diseases as mainly due to the fact that in view of the fatal scarcity of fresh milk a far greater proportion of mothers nursed their babies now than in pre-war times, despite their own state of under-nourishment. The decrease of mortality from nervous diseases was attributed to the reduced consumption of alcohol on the part of the parents. General weakness now ranked first among the causes of infant mortality, suggesting an embryonic debility, the result of the war. Infant welfare work (the speaker continued) started in an organized form in Vienna in 1905. Ten years later, under the pressure of war conditions, a large organization was called into existence to help the families of mobilized soldiers, and this so-called *Kriegspatenschaft* established fourteen welfare centres, all of them attached to children's hospitals. In the year of the revolution (1918) the various organizations were safeguarded by uniting all their activities in a common and neutral agency, the Central Board for Children's Health Welfare Work. During the last year, under the auspices of this body, 85,000 young children had been examined in 70 welfare centres and the more under-nourished of them supplied with food rations out of British and American generosity. Fifty-eight of these welfare centres were still continuing their activities, the staff of each centre consisting of a doctor, two lay workers, and an attendant. With the help of the American Red Cross more welfare workers were to be employed in home visitation, and sixty welfare centres were projected for the provinces.

Dr. HORNECK, a chief magistrate, then gave an interesting account of the municipal Jugendamt, or department of child welfare, established in 1916, with branches in every district of the city. The central Jugendamt is a body of lawyers, doctors, teachers, and welfare workers, which is duly recognized as one of the municipal authorities and is given charge of all Government affairs relating to children; the branches, Bezirksjugendämter, carry out the administration locally, keeping in touch with the infant welfare centres, which are under medical control, and with the fifty-five municipal kindergartens.

At the other session of the conference child welfare was discussed as an asset in the movement towards peace and internationalism. Dr. HILDA CLARK spoke of the extraordinary response that the appeal for help for children had called forth, alike from countries recently belligerent

and from those which had remained neutral. She looked to child welfare work to raise a bulwark of good feeling which should be sufficient to resist national animosities. Mlle. Ferrière, of the Union Internationale de Secours aux Enfants, which is the central organization in Geneva of all the "Save the children" funds in the different countries, said that this body was now shaping for itself a more permanent structure, with the object of maintaining interest in child welfare in every country. Mme. Duchêne, of the French Committee of this organization, spoke on similar lines, and nobly said that if there was danger of pauperism in the countries which received assistance, this was more than counterbalanced by the gain in education to the countries which gave it. Fraulein Hlamann, of Germany, said that relief work in her country also had assisted the international ideal, and she thought that the children who had benefited from this real Samaritanism would later on become apostles of humanity and peace. Frau Hilzfelder, of Austria, said that the children's protection societies in that country had always had an international standpoint, which the war had not entirely effaced. Miss Jane Addams, President of the Women's International League of Peace and Freedom, urged the setting up of an international standard of child welfare which should make it impossible for children to starve on one side of a frontier when there was bread to spare on the other. Other speakers to the same effect were Danish and Swedish ladies. Miss Alice Fitzgerald, head of the department of nursing of the League of Red Cross Societies, made the interesting statement that under the auspices of the League eighteen nurses from as many different countries had been sent to London for post-graduate public health training. The honorary president of this successful conference was Frau Marianne Hainisch, a famous Austrian social worker, and mother of the President of the Austrian republic.

THE PHARMACOLOGICAL VALUE OF COD-LIVER OIL.

Clinical observers have always been positive of the therapeutic value of cod-liver oil, but have been unable to give any explanation of its superiority to other oils.

It was believed formerly that the special value of cod-liver oil depended upon its high content of unsaturated fatty acids, and on this assumption substitutes for cod-liver oil have been prepared from vegetable oils, such as poppy seed oil or soya oil, which contained a large amount of unsaturated fatty acids. Substitutes for cod-liver oil have even been prepared from olive oil.

Cod-liver oil suffers from the disadvantages of having an unpleasant taste, and of readily becoming rancid, and manufacturers have devoted their energies to producing highly refined preparations of the oil so as to eliminate these unpleasant qualities. Doubt has frequently been expressed, however, whether the purified forms of the oil were as efficacious in therapeutics as the older and cruder preparations.

Recent research upon vitamins has thrown an entirely new light upon the action of cod-liver oil, for it has been shown that crude cod-liver oil is peculiar in containing a far larger amount of the fat-soluble vitamin A than any other foodstuff. At the present time it is difficult to form a correct estimate of the importance of vitamin deficiency in the production of disease; there is fairly conclusive evidence that such deficiency causes scurvy, infantile scurvy and beri-beri, and there is a very strong probability that it is the chief cause of rickets; and, finally, there is the possibility that vitamin deficiency may produce a host of other chronic disorders ranging from dental caries to amenorrhoea and reduced resistance to infections.

The degree to which vitamin deficiency affects the health of the community is at present uncertain, and it is very necessary to steer a course between the two extremes of an uncritical enthusiasm which attributes every disorder to lack of vitamins, and an equally irrational scepticism which denies any importance to vitamins because they are a new discovery, and because their importance is exaggerated by others. Vitamins are not exceptionally mysterious substances; it is true that they have not been isolated, and that they are readily destroyed by chemical treatment, but these properties they share with bacterial toxins and antitoxins.

Young animals die fairly rapidly on a diet deprived of vitamins, and the addition of vitamins in small quantities to such a diet enables the animals to grow normally, and in this way the existence of vitamins can be demonstrated as certainly as can the existence of an antitoxin.

The demonstration of a vitamin involves, however, prolonged feeding experiments with very careful controls. Such experiments are very difficult to perform; it is difficult to obtain a diet which is free from vitamins and is non-toxic and adequate in all other respects. Moreover, the experiments are always liable to be upset by epidemics. Finally, the reaction of different animals to vitamin-lack varies enormously; animals of different species react in very different manners; young animals are far more affected by vitamin-lack than adults; and, finally, animals of the same species and age fed upon the same diet often show considerable individual differences. Work upon vitamins is therefore bound to be extremely slow and laborious; the number of possible errors is extremely large, and it is therefore not surprising that many questions concerning vitamins are still matters of controversy.

Three vitamins are known, namely: (1) the fat-soluble vitamin A, (2) the antineuritic water-soluble vitamin B, and (3) the antiscorbutic vitamin C. These three vitamins have different distributions, different chemical properties, and different physiological actions. It is possible, and even probable, that other similar factors exist, which also have the two important characteristics of being necessary in minute amounts for animal nutrition, and of being easily destroyed.

None of the vitamins have been isolated, and therefore it is not possible to say for certain that any two deficiency diseases are produced by the lack of the same substance; all that it is possible to prove is that two diseases are caused by the lack of factors which have an identical distribution. The statement that any disease is caused by the lack of any particular vitamin only means, therefore, that it is caused by the lack of a factor which has the same distribution as that vitamin.

Animals are unable to synthesize the vitamin A contained in their fats; they obtain supplies from vegetable foods and store the vitamin in their fat. Adult animals contain a large reserve of the vitamin in their fat, and can live on these supplies for prolonged periods; and therefore it is not easy to produce any very obvious effects upon adult animals by deprivation of vitamin A. Young growing animals require much larger amounts of this vitamin and have smaller reserves, and in these deficiency of vitamin A produces effects in a few weeks or months.

Vitamin A is contained in the green leaves and the growing parts of plants, and it is from these that the animal world ultimately obtains its supply of vitamins. Vitamin A is stored by animals in their fats, and occurs in large quantities in milk fat and in egg yolk. The fats and oils of fishes and of whales also contain an exceptionally large amount of this vitamin.

All of the vitamin A present in milk is contained in the milk fat; there is therefore very little in skimmed milk; the vitamin A content of milk depends entirely upon the diet of the animal, and vitamin A may be almost completely absent from the milk of stall-fed cows. Similarly, it may be absent from the milk of women fed on a diet free from vitamins. Vitamin A is a more stable substance than the antiscorbutic vitamin C, but it is fairly readily destroyed by heating in the presence of oxygen. Hopkins[1] and others have shown that butter can be rendered vitamin-free by heating to 120° C. for four hours, provided that a current of air is passed through it.

The vitamin content of milk is reduced by pasteurization or by boiling, and both condensed and dried milk contain smaller amounts of the vitamin than does fresh milk. Lard as ordinarily manufactured contains no vitamin, and all of the vitamins of whale oil are destroyed by hydrogenation; vegetable oils and fats contain little or none of the vitamin.

The absence of vitamin A from the diet can be shown to produce in animals the following effects:[2]

1. Lack of growth in young rats (Hopkins, Drummond, and others).
2. Rickets in puppies (Mellanby).
3. Disorders of dentition in puppies (M. Mellanby).
4. Diminished resistance to infections.
5. Failure of the nutrition of the cornea resulting in xerophthalmia.
6. Tendency to oedema.

McCarrison[1] has carried out extensive observations on the effects of lack of vitamins in pigeons and in monkeys: most of these experiments were conducted with diets deficient in more than one vitamin; they proved that vitamin lack induces a whole series of gastro-intestinal disorders, including diarrhoea, dysentery, and gastric ulcer. Vitamin lack also caused profound derangement of the functions of the endocrine organs. McCarrison's results showed that lack of vitamin A was responsible in monkeys and pigeons for excessive production of adrenaline, and that in pigeons lack of this vitamin produced oedema.

The following diseases are all believed to be related to lack of vitamin A in man: rickets, osteomalacia, keratomalacia, and war oedema.

The etiology of rickets is a question of enormous sociological importance, and controversy has arisen concerning Mellanby's conclusion that rickets is a deficiency disease caused by deficiency in a factor which has the same distribution as vitamin A.

Mellanby[2] found that young puppies fed on a diet which contained no vitamin A but was sufficient in every other respect developed typical rickets after about six weeks. The bones showed typical signs of rickets on inspection, and also on radiological and histological examination. The addition of 10 c.cm. of cod-liver oil to the above diet prevented the occurrence of rickets, and cured rickets in cases in which it had already been established.

The results of Mellanby were very definite and positive, but he noted many possible sources of error. Rickets could be produced only in puppies under four months, and could be produced much more rapidly in rapidly growing than in slowly growing animals; the addition of large amounts of carbohydrates to the diet increased the liability to rickets, and the addition of large amounts of meat decreased the tendency to rickets.

Paton[3] denies that rickets is a deficiency disease and attributes it to bad housing, and has obtained negative results with feeding experiments.

The possible sources of error in experiments upon deficient diets are so numerous that it would appear proper to attach more weight to positive than to negative results.

The tragic experience of Central Europe furnishes a striking proof that rickets is a deficiency disease, for Dalyell states that 100 per cent. of infants of nine months in Vienna have rickets, and since the climate and housing conditions of Vienna are the same as in 1914 this result must be due to malnutrition; moreover, since a large proportion of the Viennese children are breast-fed the rickets must be due to maternal malnutrition.

Striking beneficial results have been obtained from the administration of cod-liver oil in all of the diseases attributed to lack of vitamin A.

1. *Deficient Growth.*—The addition of cod-liver oil to the diet of the mother in breast-fed infants in Vienna produced a most striking beneficial effect upon the rate of growth (Dalyell).[4]

2. *Rickets.* Hess and Unger[5] found that 90 per cent. of the negro children in a New York district developed rickets, but that out of 32 infants given 54 oz. of cod-liver oil in six months only 2 developed rickets. Hess[5] believes that rickets is primarily a dietetic disorder, and admits that a lack of vitamin A plays a part in its pathogenesis, but he believes that other factors are involved and that the salt content of the diet is of importance; he is, however, convinced that cod-liver oil given in full doses, and not rendered impotent by excessive refining, is almost a specific in the treatment of rickets.

3. *Keratomalacia.* Bloch showed that this disease, which occurred in Danish children during the war, was cured by cod-liver oil, and similar results were obtained in Vienna.

4. *Oedema.*—Menzies[6] observed hunger oedema in Poor Law institutions in England in the winter of 1917–1918 and found that it was cured by cod-liver oil.

There is a great amount of clinical evidence of the very valuable action of cod-liver oil in all the above cases; in none of them is a similar effect produced by vegetable fats, and the only probable explanation is that the specific action of cod-liver oil is due to its high content of vitamin A.

The most striking results with cod-liver oil have been obtained in the starving populations of Central Europe, but there is strong evidence that lack of vitamin A is an important factor in producing disease in urban populations under normal conditions.

Vitamin A is widely distributed in nature and can be easily preserved in fats, but various causes have led to its gradual elimination from the food of the people.

This vitamin is contained in whole-meal bread and in butter, but is absent from white bread and margarine. The whole milk of grass-fed cows contains large amounts, but less is contained in the milk of stall-fed cows. The quantity is diminished by boiling; it occurs in diminished quantities in condensed and dried milk, and skimmed milk contains very little. Vitamin A occurs in fresh meat, but tinned meat contains little or none.

A diet of white bread, margarine, jam, and salt fish or tinned meat is therefore almost free from vitamin. The chief sources of vitamin A in a normal diet are green vegetables, eggs, butter, milk, and meat fat.

The effects produced upon adults by deprivation of vitamin A are uncertain; the chief effects of deficiency of this vitamin are observed in babies and children, but they can be noted also in women during pregnancy and lactation.

Deficiency of vitamin A is the probable cause of rickets and osteomalacia, and is very possibly an important cause of dental caries and of impaired growth. The recruiting results in the war suggested that the urban population of England is undergoing physical degeneration, and if this view is accepted, an important contributory cause may be found in vitamin deficiency.

The clinical results recorded with cod-liver oil show that it must be regarded as an extremely important drug, but since the whole importance of the oil is due to its vitamin content, only those preparations of the oil which contain large quantities of vitamin can be considered as therapeutically active.

Hitherto the efforts of the manufacturers of cod-liver oil seem to have been directed to the preparation of as purified and tasteless a product as possible, and no regard has been paid to the vitamin content.

Zilwa and Miura found that crude cod-liver oil contained no less than 250 times as much vitamin A as butter, but that the refined oil contained much less vitamin, although its activity was superior to that of butter. The vitamin of cod-liver oil is fortunately fairly resistant to chemical treatment, and a degree of heating and oxidation sufficient to destroy all the vitamin of butter does not deprive cod-liver oil of all its vitamin.

The estimation of the therapeutic efficiency of cod-liver oil is at present a very difficult matter, for the qualitative demonstration of vitamin A takes over three weeks, and the quantitative estimation takes several months.

Two samples of cod-liver oil are now before us. Both are excellent preparations in that they are of a good colour, of pleasant taste, and give all the correct reactions of cod-liver oil, but unfortunately these facts give no information about the all-important question of vitamin content.

The manufacturers of the Gadus cod-liver oil claim that the purity of their compound is due to the fact that the livers are treated on the same day that the cod is caught, and point out that as the fishing is conducted in the cold weather any chance of putrefaction is prevented. Such precautions are of obvious advantage, since they tend to reduce the amount of treatment necessary to produce a palatable oil.

Messrs. Allen and Hanburys have also sent us a specimen of cod-liver oil, of pale colour and very slight odour and taste. It is, they say, prepared from fresh, carefully selected cod livers, with the minimum of exposure to oxidation, which they recognize tends to diminish the amount of vitamin A.

Cod-liver oil may be crude and unpalatable owing to one of two causes: the oil may have undergone no refining process, and therefore contains the full vitamin content; on the other hand, it may be unpalatable because excessive putrefaction of the livers has been allowed to occur before extraction, so that the resulting oil is so impure that it cannot be fully purified; such an oil will probably contain no vitamins at all. This point is of some importance, because it must not be assumed that the vitamin content of an oil is necessarily indicated by its dark colour and high flavour.

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British Medical Journal.

SATURDAY, AUGUST 13TH, 1921.

WHAT IS TO BECOME OF MEDICAL STUDENTS?

The first words of an address entitled "What becomes of Medical Students?" delivered by Sir James Paget at St. Bartholomew's Hospital in 1869, were: "It is said that, on entering the anatomical theatre for one of his introductory lectures, Mr. Abernethy looked round at the crowd of pupils and exclaimed, as if with painful doubt, 'God help you all! What will become of you?'" To day we may ask Abernethy's question with even more anxiety, for the number of medical students in England and Scotland has increased during recent years at a great rate.

A correspondent in South Africa, whose letter is published elsewhere, thinks that the public ought to be made to understand that the numbers of medical students who are coming forward threaten so to overcrowd the profession that it will become difficult for many of them to make a living. The risk of overcrowding may be particularly evident in South Africa, but the remarks of the President of the General Medical Council in several of his recent presidential addresses are sufficient to show that it exists also in Great Britain. In 1913 the total number of new registrations on the *Students' Register* was 1,480. In 1914 it was 1,600; in 1915 it was 1,935 (of these, 456 were women). In his address to the Council in May, 1919, the President stated that between May, 1918, and January, 1919, the number of first year students had increased from 2,043 to 2,907; in his address on May 24th, 1921, he informed the Council that "the registrations of medical students, which in 1919 rose to 3,420, fell in 1920 to the more manageable number of 2,531." He added that the number was still higher than in any year prior to 1919, and stated that in his opinion "it would be in the interest of sound professional education were the numbers still further reduced. They impose a severer strain, educational and financial, on the schools and hospitals than the necessary recruitment of the profession demands, and in present circumstances the teaching institutions are less able to meet the strain. To raise the educational standard for admission and to increase the fees for professional tuition would thus seem, from all points of view, to be prudent and justifiable."

The over-pressure in some schools has been very serious; in certain of them the classes have had to be duplicated, and in Glasgow we believe it has been necessary in some subjects to give the same classes and deliver the same lectures three times over. Sir Donald MacAlister is particularly interested in this aspect of the matter, as becomes the Principal of a University and President of the General Medical Council, which is concerned with education; but to others the probable effect of so large an influx into the profession on its fortunes in the next generation may well seem of at least equal importance. When every allowance is made for the increase which has taken place in the number of appointments available to young medical men and women the prospect still seems distinctly discouraging. A salary which may appear adequate or even liberal at the age of five-and-twenty or thirty, begins to present quite a different aspect ten or fifteen years later. We are very much afraid of the multiplication of these blind alleys, and look forward with apprehension to a time when the intra-professional competition may be so serious that men and women who have once entered one of these alleys may feel compelled to pursue their monotonous path to old age. This will be good neither for the profession nor for the public.

VENEREAL DISEASE CLINICS.

This is an age in which it is common to witness attempts to combine two incompatibles—campaigns and economy. Campaigns are the most effective means of attracting public attention, but they are costly. Therefore, in reviewing the report Colonel L. W. Harrison and Dr. F. N. K. Menzies have drawn up on the joint venereal disease scheme for London and the Home Counties, which has been in operation for four years, we must be pardoned if our admiration for the strenuous work they have done in the investigation of the clinics is tempered by some thoughts on the subject of economy. It is easier to go with the stream of enthusiasm than to throw out hints that rocks lie ahead. We write in a spirit of sympathy, and if we sound a warning note we hope at least to be impartial.

Colonel Harrison, who was nominated as the representative of the Ministry of Health, and Dr. Menzies, who represented the London County Council, set forth in quest of information on the working of venereal disease clinics. The inquiry might have been undertaken for two somewhat different purposes: The inquiry might have been directed to ascertaining how far these clinics were contributing towards the elimination of venereal diseases, or it might have been limited to the question whether the clinics were dealing satisfactorily with individual patients. We gather that the investigators chose the first object. But the elimination of venereal disease is a task of such magnitude, and in the opinion of many so doubtful of attainment within a measurable time, that its adoption is bound to raise at once the question of the economic position of this country. Moreover, the matter is complicated by the existence of two schools of thought with regard to the prevention of these diseases; so that a public authority which embarks on a campaign with prevention as its aim has the difficult task of avoiding the appearance of indulging in propaganda. In the document before us the question of self-disinfection and ablution centres is definitely ruled out; but support is given to what is described as an established fact—that by early and efficient treatment venereal disease can be brought under control and reduced within narrow limits. It is from this point of view, therefore, that the publication of the London County Council must be considered.

The investigators seem to have come very early to the conclusion that the present conduct of the clinics in London is inadequate to achieving the purpose of exterminating the scourge of venereal disease. The reasons they give may be grouped under three headings, according as they arise from (*a*) defects in organization, (*b*) inexperience of the staffs, (*c*) idiosyncrasies of the patient.

Defects in organization are stated often to be due to unsuitable premises, with the result that the time and energy of the medical officer are wasted, while the patients suffer the inconvenience and discomfort

of waiting long periods for treatment. In many instances also these defects prevent privacy in examination. A case is quoted of a single room in which some patients were waiting, others were having instruments passed, others were having prostatic massage, and the remainder were irrigating. Another defect is found in the limitation of the hours for attendance of the patients, which leads to overcrowding and to hasty work by the medical officer, and also precludes what is called intermediate treatment. Where the clinics are conducted in the out-patient departments of hospitals the premises are available only at certain hours on certain days in the week. In many clinics no provision is made for attendance on Saturdays; and no clinics are available for any form of treatment on Sundays. The investigators throw doubt also on the value of the practice of seeing cases of venereal disease at the same time as patients suffering from other diseases, such as skin diseases or genito-urinary and gynaecological conditions, but this plan was strongly recommended in the early days of the establishment of clinics. With regard to the staffing of clinics the report is somewhat severe. It is stated that there has been an unfortunate tendency in some cases to regard the position of medical officer to the clinic as the rightful possession of one or more members of the honorary staff, without regard to their ability to do the work properly or to give up the necessary time to it. The investigators deprecate also junior and insufficiently experienced medical officers as assistants, and express the opinion that the time has come to establish the venereal disease department as a specialist department, comparable to ophthalmological and radiological departments. Adverse comments are made on the failure of many members of the staff to record results and to make statistical returns, and on the fact that the majority of medical officers had no clearly defined standard of cure.

As is usual in all systems aiming at ideal perfection—at what the authors describe as 100 per cent. efficiency—that very human person, the patient, is largely responsible for upsetting official calculations. This he does by irregular attendance, by disappearing at an early stage of treatment, by wandering about the world or the country if he is a seaman, a commercial traveller, or a race-meeting follower, and by attending two or three clinics at the same time (on the principle that you cannot have too much of a good thing). A case of this kind which had its amusing side was that of an in-patient at a hospital, who was allowed out two afternoons each week. He utilized his time by putting in attendances at another clinic! At least 30 per cent. of the patients fail to complete the course of treatment. Attempts to track down the defaulter usually lead to the discovery that he has left a false name or address or both; and even where successful the process has been found to have a prejudicial effect on the attendance of patients.

Dr. Menzies has not attempted to summarize the recommendations he and Colonel Harrison would make for meeting these difficulties, but they lay stress on "maximum efficiency" as the goal, than which they say there may be no other under the public health venereal disease scheme. The object of the clinics, they submit, must be to attract for treatment the maximum number of infected persons; the staff must work with a minimum waste of time and energy; intermediate treatment by nurses and orderlies must be given; the staff must be under one head; the hours of attendance must suit the convenience of the patients; the patients must be rendered permanently non-infectious. One clinic—that at St. Thomas's Hospital is held up as a model in fulfilling these requirements. We gather that the authors' recommendations are as follows: All the clinics should be organized on lines similar to those obtaining at St. Thomas's Hospital. Difficulties with regard to capital expenditure should be met by arrangements for the provision of capital grants. The clinics should be open from 8 a.m. to 10 p.m. on weekdays, with provision for intermediate treatment on Sundays. The staff should consist of expert specialists, with specially trained nurses and orderlies. A scale of remuneration for medical officers should be fixed. Treatment, records, statistics, tests of cure, should be standardized. Rescue workers and various voluntary bodies should be brought into the scheme. Reception houses and hostels for girls should be established, a period of residence possibly as long, in individual cases, as eighteen months or two years being contemplated. Finally, the introduction of a system of education and training in the hostels is advised.

In contemplating this comprehensive and ambitious scheme for the extirpation of one of the scourges of mankind, filled with astonishment at the labour which must have been spent in compiling this report, and with admiration for the ideals of its authors, we feel diffidence in venturing any criticism. The authors imply that for the efficient treatment of venereal diseases highly trained specialists are necessary. But provided the clinic be well equipped and organized, is this indeed the case? The work of treating the early communicable stages of these diseases tends to become a matter of routine; the scope for initiative is small. Therefore we are not so sure of the unwisdom of that hospital which changed the staff of its clinic annually. Is it not also illuminating that the provision of teaching facilities in the clinics has proved a failure? There is no doubt, say the authors, that, broadly speaking, the medical practitioner and the medical student take very little advantage of the facilities available. Both practitioners and students attend occasionally, perhaps two or three times, and then disappear. Can it be that the experience on those two or three occasions has failed to create a desire to give up some weeks or months to the continuous study of the diagnosis and treatment of venereal disease? The main question, however, is whether the extermination of venereal diseases by means of clinics is so certain as to justify the standardization of the work forthwith, at whatever cost to the community. May it not happen that a little diversity of method at different hospitals may lead to further discoveries in a field not as yet completely mapped out? At the same time it is most proper to circulate information of what is achieved at successful clinics; in calling attention to the work at St. Thomas's Hospital this report is undoubtedly most valuable. The example should stimulate to better efforts elsewhere. The report is, perhaps, a little out of the common in that it dwells on the importance of rescue work as a possible means of preventing the spread of venereal disease. Whether it is wise to embody in the report of a public authority stories from the diaries of rescue workers, and to point the moral of these stories with quotations from *Downward Paths* and Flexner's *Prostitution in Europe*, is another matter.

However these things may be, we come back to our original theme, the incompatibility between campaigns and economy. And in this connexion we turn to the thought of Sir Eric Geddes and his committee of business men. Suppose for a moment that the London County Council Health Department were one of the ministries. The Economy Committee on entering

would be introduced to a number of interesting and desirable health schemes. There would be a housing scheme, a tuberculosis scheme, an infant welfare scheme, a venereal disease scheme, a school clinic scheme, possibly a municipal hospital scheme. Each scheme has presumably been evolved in some sub-department; each has possibly emanated from a different brain, and is all-important to its author; each has a staff of clerks, typists, and other subordinates to foster its development. Would Sir Eric Geddes be able, by docking the salary of a minor official or two, to make any important economy? Or would it not perhaps be necessary to massacre some of these innocents? We have no desire to belittle an excellent movement in regard to venereal disease. We have the greatest admiration for the conscientious work of Colonel Harrison and Dr. Menzies. But we hold it to be our duty to point out that the campaign against venereal disease is only one of many campaigns; that the proposals of the report would be costly if attempted with any thoroughness; that economy in our public spending departments is supposed to be essential at the present time; and that consequently there is some need to walk warily with regard to these schemes. On the whole, we think that the authors of the report would have shown more worldly wisdom had they restricted their investigations to the smaller question whether the venereal diseases clinics are dealing satisfactorily with individual patients.

THE TEACHING OF MIDWIFERY AT LEEDS.

THE great importance of a sound knowledge of obstetrics and the acquisition by the student of practical experience under skilled instructors has been inculcated by the recommendations of the General Medical Council and is being given a fuller measure of recognition year by year in the various teaching centres. The development of the teaching in practical midwifery in the Leeds School is therefore of interest. Prior to 1885 most of the students obtained certificates of having attended the requisite number of labours from a private or from a Poor Law practitioner; some few went to special lying-in hospitals, such as the Rotunda in Dublin. In 1885 the Leeds General Infirmary, at the special request of the teaching body, started an extern maternity district and special wards for gynaecology. This department was placed under the charge of the late Dr. James Braithwaite, and a resident obstetric officership was also instituted, the first occupant of the post being Dr. E. O. Croft, who is now the Professor of Obstetrics in the University. The development of the new extern department was carried out by Dr. Croft, and no one who is acquainted with his early administrative efforts can be unmindful of the great benefit his work conferred upon the school. In this way the students had no difficulty in securing the necessary number of cases, but more than a mere compliance with the regulations was secured and the teaching was sound and eminently practical. Special obstetric cases were admitted into the infirmary gynaecological beds, though this practice was not encouraged. In 1905 the Hospital for Women equipped and worked a small in-patient department, six beds being reserved for difficult and complex cases. This was utilized for the instruction of the students and was recognized by the University; it provided a valuable addition to the teaching facilities. About the same time there was started in Leeds a new charity, the Leeds Maternity Hospital. Beginning in a small way with 16 beds, it has grown to a well-organized and well-housed institution, and takes its place among the recognized charities of the city. The present building was opened in 1910 with 33 beds, which have now increased to 70. During the year ending December 31st, 1920, 1,314 births took place in the hospital, but as a certain number of patients are admitted for complications directly arising from delivery, the number of patients treated was 1,540. In connexion with the hospital there are at present five district homes in different parts of the city through which the extern department is worked; the confinements in the extern department have numbered 1,366. The average daily number of patients in the hospital has been 70.16, and during the seven months of the present year it has risen to 70.50. The hospital has taken an active part in the training of midwives. The number of such pupils admitted during 1920 was 98, and the certificate of the Central Midwives Board has been gained by 83. As an indication of the appreciation the teaching has won, it may be mentioned that the General Infirmary has instituted twenty scholarships which are allotted to selected nurses to enable them to undergo a course of study and work at the Maternity Hospital. After this hospital had been in existence for some years its value as a teaching centre was grasped, and its governors felt that the more it was used for teaching, and the more it was identified with the work of the Faculty of Medicine, the better would its position become. The attendance of students, at first purely voluntary, was made a part of their regular education, and all are now required to attend the intern Maternity Hospital practice for a period of one month before doing their work in the extern department of the infirmary. It has been arranged that this extern department of the infirmary shall be handed over to the Maternity Hospital, whose work will therefore in this respect become considerably enlarged. The same applies to the intern maternity department of the Women's Hospital, so that centralization, which is one of the great Leeds ideals, will be secured. The matter therefore now stands as follows: the University has entered into an agreement with the Maternity Hospital to undertake the practical teaching of obstetrics. A resident obstetric officer and tutor has been appointed to carry on the work of instruction on behalf of the University under the direction of the honorary staff, of which the Professor of Obstetrics is *ex officio* a member, in association with the Dean of the Faculty of Medicine. To this joint position the University and the hospital, who work together in this respect, have appointed Mr. Lane Roberts, M.S.Lond., F.R.C.S., who comes to Leeds with a first-class record. It is fully grasped that it will soon be necessary to appoint a junior resident at the Maternity Hospital, and this post will afford a valuable opportunity for young newly qualified men and women to qualify for the senior position in Leeds or elsewhere or to gain experience before settling in general practice. Before the scheme can be regarded as complete even on its present small scale, it is fully understood that accommodation must be secured in the immediate neighbourhood of the hospital for the students during the time they are attending the intern work of the charity.

PROTECTIVE INOCULATION AGAINST TYPHUS AND SCARLET FEVER.

THE second number of our new contemporary, the *Japan Medical World*, contains two interesting articles—one on experimental protective inoculation against typhus, and the other, putting into practice the principles enunciated in the first article, on prophylactic inoculation against scarlet fever in man. From two years' work, involving experiments on more than 200 Japanese monkeys, Kusama[1] has found that the incubation period of typhus fever in monkeys varies according to (1) the method of injection, (2) the virulence, and (3) the amount of the virus employed, being shortened by intravenous injection, high virulence, and a large dose of virus. Further, the severity of this artificially produced disease varies inversely as the

[1] Kusama, *Japan Med. World*, Tokyo, 1921, i, No. 2, pp. 1–4

length of the incubation period, so that a sufficiently small dose will prolong the incubation period, cause a very mild reaction or none at all, and confer a certain degree of active immunity. Then, employing small quantities of a virus (diluted blood of a typhus patient) which had not been rendered less active by animal passage or other ways, Kusama produced in monkeys active immunity without any preceding febrile reaction; one hundred thousandth part of the smallest dose that caused symptoms was thus capable of protecting against five times the minimum morbid dose. These observations obviously open up the way to similar prophylactic measures in man; but before this is attempted further information must be obtained as to the virulence of the infecting agent in prevailing typhus and about man's susceptibility to the virus, which is probably much greater than that of monkeys. Working on the conclusions arrived at by Kusama as regards protective inoculation against typhus and measles, Takahashi[1] has practised prophylactic inoculation against scarlet fever. Estimating the minimum amount that will produce symptoms, during the existing epidemic of scarlet fever, as 0.1 c.cm. of blood from a scarlet fever patient, he gave hypodermic injections of 0.0001 c.cm. or less of such blood to his five children, aged between 10 and 3 years; after five weeks, during which there was no reaction, four of the children were given hypodermic injections of 0.15 c.cm. of blood (the youngest received half this amount) from a scarlet fever patient, without any reaction; and later the throats of two of the children were, in addition, smeared with a mixture of faucial secretion and blood from a scarlet fever patient; here again the result was negative, though control monkeys injected subcutaneously with the same material showed the symptoms of experimental scarlet fever in monkeys.

MEDICAL EDUCATION IN EARLY NEW YORK.

IT is indeed appropriate that on the 150th anniversary of the Society of the New York Hospital's Organization, and at a time when Columbia University is much occupied in reorganizing medical education and research, two addresses, delivered, at an interval of fifty years, in 1769 and 1819, should be reprinted in their original form. Their author, Dr. Samuel Bard[2] (1742-1821), was professor not only of the theory and practice of medicine but later of chemistry, natural philosophy and astronomy in King's College, New York, which after the War of Independence was renamed Columbia University. President Murray Butler in his brief introduction says truly that these two addresses establish Professor Bard's reputation as a leader in medical education, and justify his position as prophet and seer. "The Discourse upon the Duties of a Physician with some Sentiments on the Usefulness and Necessity of a public Hospital, delivered before the President and Governors of King's College, at the Commencement held on the 16th of May, 1769, as advice to those Gentlemen who then received the First Medical Degrees conferred by that University," was humbly dedicated to Sir Henry Moore, Bt., Captain-General and Governor-in-Chief in and over the Province of New York; it warned the newly qualified that their studies, far from ceasing, were in reality but just beginning, and should be continuous throughout life. A negligent practitioner is held up as one likely to break the sixth commandment and to commit murder. Some of his injunctions, such as to avoid a blind and slavish attachment to the medical teaching of Hippocrates, coupled with the pedantry of affecting to despise the moderns, hardly applies now; but there is much sound direction as to conduct which can never be out of date, and indeed recalls the oath of Hippocrates. The advice, "whenever you should be so unhappy as to fail in your endeavours to relieve, let it be your constant aim to convert particular misfortunes into general blessings, by carefully inspecting the bodies of the dead, inquiring into the causes of their diseases, and thence improving your own knowledge and making further and useful discoveries in the healing art," is as necessary now in America as it may have been then, and, indeed, is fresh in our ears from Professor D. Drummond's recent Presidential Address to the British Medical Association. The dictum that the good effects of a hospital should not be confined to the poor, but extended to every rank, and thereby contribute to the safety and welfare of the community, has rather tardily found partial fulfilment in "group medicine." The second "Discourse on Medical Education, delivered on the sixth of April, 1819, at the Medical Commencement of the College of Physicians and Surgeons of the University of the State of New York, by Samuel Bard, M.D. LL.D., President of the College," deals with the training most suitable for an accomplished physician and surgeon. Like Dr. Walter Leaf more than a century later, Dr. Bard regarded the elements of classical learning as the most generally and truly useful preparation for the liberal professions, not excluding merchandise, and far superior to modern languages in the formation of character—a matter of much greater consequence than utility. In a subject so intricate as medicine private study alone is of little value, and practical work is alike essential in chemistry, anatomy, and in the study of disease.

[1] Takahashi, *Japan Med. World*, Tokyo, 1921, i, No. 2, p. 4-7.

[2] *Two Discourses Dealing with Medical Education in Early New York.* By Samuel Bard, M.D. New York: Columbia University Press. 1921. (Roy. 16mo, pp. 51, 1 plate.)

THE ORIGINATOR OF THE MOSQUITO THEORY.

THE *Archives de parasitologie*[1] dated October 31st, 1919, which has just reached us, has a very special interest, for it contains an obituary notice of its eminent founder and editor, Professor Raphaël Blanchard, and an attractive life from his pen of Louis Daniel Beauperthuy; this sympathetic account of an almost forgotten pioneer in tropical medicine can hardly fail to suggest to the reader the resemblance between the labours and mental attitudes of the two men. Professor Raphaël Anatole Emile Blanchard (1857–1919), whose handsome features and distinguished personality at once marked him out in a crowd as someone of note, was familiar to many in this country from his visits to medical congresses and meetings. At his sudden death on February 7th, 1919, within two weeks of his sixty-third birthday, he left behind a list of 603 publications covering the wide field of parasitology, hygiene, teratology, medical history, ethnography and numismatics; his untiring devotion to science was shown also by his tenure of secretarial posts, for which his wide culture and knowledge of languages undoubtedly fitted him in a pre-eminent degree; thus in 1876 he was one of the founders, and for twenty-two years (1879—1900) the general secretary of the Zoological Society of Paris; in 1889, strongly impressed with the need for international agreement in scientific nomenclature, he became general secretary of the international congresses of zoology. He was an enthusiastic pioneer in parasitology and tropical medicine, a vigorous advocate of education in these subjects, and the active mover in the establishment in Paris of an institute of colonial medicine. In 1908 Aristides Agramonte, now the sole survivor of the famous Yellow Fever Commission of 1900 to Cuba, the other members being Walter Reed, James Carroll, and Lazear, drew attention to Beauperthuy as a pioneer in yellow fever research, and showed that he had anticipated Dr. Carlos J. Finlay of Havana, who, in 1881, had promulgated the theory that the mosquito transmitted yellow fever. The late C. Louis Taylor in one of his serial Nova et Vetera,[2] utilized the material provided by Agramonte, and remarked that there is some truth in the saying that no accepted discoverer, whether in the world of science or of travel, is really the first in the

[1] *Arch. parasit.*, Paris, 1919, xvi, i-iv; 503-545.

[2] BRITISH MEDICAL JOURNAL, 1908, i, 1505.

field, and that in practically every case he has been forestalled by someone whose voice has failed to reach the public or has fallen on unheeding ears. In 1909 Rubert Boyce, Chauffard, and Leechman of Demerara followed suit in doing honour to this neglected worker. No doubt the idea is generally in the air some time before a discovery is made, and in 1848, or about six years before Beauperthuy made his views public, J. C. Nott of Mobile, in an article on the cause of yellow fever, disputed the then accepted miasmatic doctrine, referred to the transmission of disease by insects as no novelty, mentioning Kircher (1659) and others as supporters, and reviewed a number of facts characteristic of yellow fever and malaria that were explicable only on the hypothesis of insect transmission. Beauperthuy was born in Guadeloupe in 1807, and was so drawn to natural science that he interrupted his medical course in Paris for four years (1833–37) to work at insects in South America. In 1839 he read his inaugural thesis on climatology, in which he insisted that the most important factor modifying the human system was climate, and put forward views which, then somewhat heretical, have now long been accepted. Then for about three years he worked as a travelling naturalist in America, and his labours and struggles are well told by his letters and long lists of objects, ranging from fossils to living animals, that he transmitted to the Paris Museum of Natural History. In 1841 he abandoned his favourite work and started practice in Venezuela, becoming professor of medicine and surgery at Cumaná; there he worked at malaria, yellow fever, dysentery, and leprosy; his reputation in the treatment of the last mentioned by frequent baths, generous feeding, a liniment of cashew nut and mercury internally, gained him the post of director of the Leper Hospital in British Guiana, which he held till his death in 1871. His conclusion that yellow fever is not contagious, but is transmitted by the bites of mosquitos, was published in 1854; he, however, believed that a poison, not a germ, was thus conveyed. In the following year he argued that cholera was also due to the bite of a nocturnal insect. In dealing with malaria he controverted the popular belief in miasmas, and insisted that marshes were dangerous because they bred mosquitos, drily remarking that miasmas are chimerical. Blanchard compares Beauperthuy's views as to the transmission of yellow fever, malaria, and other diseases by the mosquito with Sir Patrick Manson's description of the mosquito's part in the transmission of filarial disease, and it will be remembered that Manson prophesied that malarial infection would be proved to be similar in its mechanism. Beauperthuy believed that leprosy was transmitted by various insects; it is interesting that his biographer, quite unaware of this, independently came to the conclusion, some thirty years after Beauperthuy's death, that this disease is transmitted by the bite of mosquitos. Beauperthuy left a voluminous manuscript which was not published for twenty years and then suffered from the editing of his brother and son, neither of whom were medical men. Blanchard paid a high tribute to his scientific enthusiasm, and defended his claim to be the originator of the now accepted theory that yellow fever and malaria are transmitted by mosquitos.

A LEGISLATIVE PROPOSAL FOR THE PREVENTION OF VENEREAL DISEASE IN LIVERPOOL.

In his annual report for 1920 Dr. E. W. Hope, the medical officer of health for Liverpool, deals in a very sensible manner with the question of the prevention of venereal diseases. He points out that for obvious reasons they cannot be controlled merely by adopting the same measures which have been found to be successful in the case of other infectious diseases. Moreover, measures of control which may be suitable for a moderate-sized inland town or a health resort would be inadequate for a great town or large seaport or a military or naval centre. The promotion of a private bill by the Liverpool corporation was thought to be an opportunity for obtaining fuller powers than already existed for dealing with these diseases, and draft clauses having this end in view were approved by the parliamentary committee of the corporation. Apparently, though we are not told why, they were not included in the bill when it was introduced. The main provisions in the draft clauses would have made it incumbent upon every person who knows that he is infected with venereal disease to consult a doctor and to conform to his requirements; would have facilitated continuity of treatment until freedom from infection was achieved; would have made it the duty of parents or guardians of feeble-minded infected persons or of infected persons under 16 years of age to place them under treatment; and would have made it a penal offence for any person knowingly to infect any other person with a venereal disease. The maximum penalty suggested was a fine of £100 or imprisonment with or without hard labour for twelve months or both penalty and imprisonment. There are already in active operation in Liverpool free venereal clinics at five of the hospitals in the city, and two were established nearly three years ago. During 1920 there were treated at these five institutions 6,227 new cases. Of this number 61 per cent. were discharged soldiers and sailors, and 37 per cent. of the total number were seafaring people; 15 per cent. of the latter were not natives of the British Isles. The experience of the clinics in Liverpool is the same as that of clinics elsewhere—namely, that though the facilities for treatment are very fully used, yet there is great difficulty in getting patients to continue treatment until they are cured or free from infection. The abortive proposal of the Liverpool parliamentary committee would have made this discontinuance an offence, but the difficulties in the way of enforcing such a provision are so great that it is doubtful whether at the present time any good purpose would be served by such legislation.

THE NATIONAL INSTITUTION OF INDUSTRIAL PSYCHOLOGY.

Measures for combating infant mortality, for early dental treatment to prevent the otherwise inevitable occurrence of disease, hygienic housing, and a more congenial and healthy environment are all calculated to raise the standard of national efficiency. But given all these things, the problem still remains of how best to provide full scope to the potentialities of workers; and here the problem is a psychological one. An individual may be well enough suited to a particular occupation, but unable to give sufficient play to his inherent bent in any other, so arises the need for "vocational guidance." This can be achieved only by the detection of specific propensities; and to effect this psychological investigation applied to industrial problems is required. The aim is the utilization to the fullest extent of individual capacity. Dr. C. S. Myers, F.R.S., who is Director of the Psychological Laboratory at Cambridge, is recognized as a pioneer in this important work, and it is to him that the inauguration of the National Institute of Industrial Psychology is mainly due. It is conducted at 329, High Holborn, London, and has already established a wide field of activity. The chiefs of the various university and technical college laboratories, whose attention has already been engaged on this matter, have formed a scientific committee to co-ordinate the experimental work done in various departments. Psychological problems which have already arisen in various industries have been submitted to the institute for investigation and advice. A course of training has been initiated for the benefit of welfare workers, on whose appreciation of the psychological factors concerned in the manifold problems encountered much of the success of work of this kind must depend. We have no doubt that the results of future investigation will justify the initiation of this institute and hasten the solution of problems which hitherto have been a bar to national progress.

THE MEDICAL OFFICER OF HEALTH OF THE CITY OF LONDON.

A curious position has arisen in connexion with a proposal of the Common Council of the City of London to increase the salary of Dr. W. J. Howarth, C.B.E., their medical officer of health, from £1,500 per annum to £2,000. A motion to this effect was duly carried at a meeting of the Council by 84 votes to 64, but the Town Clerk subsequently stated that a two-thirds majority was required. His ruling appears to have been disputed, and the whole question was referred to a special committee with authority to obtain counsel's opinion. We shall await with interest the report of this committee, who must of necessity be guided in the decisions they arrive at by the purely legal aspect of the question. As to whether an important official such as the medical officer of health of the City of London should be in receipt of the higher salary named there cannot be two opinions, and the present holder of the office has a reputation which fully entitles him to it. This is the view apparently held by a substantial majority of the members of the Council, and it would appear to be singularly ungracious to refuse Dr. Howarth his due on a mere technical point which, in all probability, was never intended to apply to circumstances such as those to which we have referred.

ASSOCIATION OF BLIND MASSEURS.

THE Council of the Association of Certificated Blind Masseurs has issued its second annual report describing the work of the association for the year ending June 30th, 1921. It has 146 members, of whom 88 are blinded soldier masseurs, 30 civilian masseurs, and 28 masseuses. Under the charter granted to the Chartered Society of Massage and Medical Gymnastics provision was made for the appointment of a special standing committee for the blind to ensure careful consideration of all matters relating to or affecting blind masseurs and masseuses. The committee consists of six persons—three nominated by the Council of the Chartered Society, and three by the Council of the Association of Certificated Blind Masseurs. A certain proportion of the cases treated by the members of the association have been directly allocated to them from among those applying to the secretary, but the majority have been sent by medical men who have become acquainted with the work of the association. We are confident that that work has only to be better known to ensure a steady flow of work. Judging from the statement of accounts, the association is very economically managed, but the funds are small, and the Council may well feel some anxiety as to the best method of advertising; in this respect it is helped by St. Dunstan's and the National Institute for the Blind. Probably the most efficient method would be by frequent short advertisements giving the address—224, Great Portland Street, London, W.1.

THE SHROPSHIRE ORTHOPAEDIC HOSPITAL.

THE Orthopaedic Hospital founded at Baschurch by Miss A. G. Hunt, R.R.C., in 1900, having outgrown the improvised premises where so much good work has been done during the last twenty years, has been removed to the buildings formerly known as the Park Hall Military Hospital, Oswestry. The site cost £1,390, and the buildings and equipment £26,000. The British Red Cross contributed £25,000 towards the cost of the buildings and equipment, and a sum of £9,000 was set aside by the Shropshire War Memorial Committee. The new buildings were formally opened on August 5th by the Marchioness of Cambridge. Lord Kenyon, treasurer of the hospital, said that there were at present about 200 children and about 100 pensioners in the hospital. Miss Hunt's name was world-renowned, and though the hospital had been transferred to Park Hall, and was known as the Shropshire Orthopaedic Hospital, it would never lose the name of Miss Hunt's Hospital or the memory of the work done at the surgical home at Baschurch. It now had about eighty patients from Shropshire, but there were others from Cumberland, Cheshire, Lancashire, Derbyshire, Warwickshire, Devonshire, Staffordshire, Oxfordshire and London. The hospital, it was hoped, would be a permanent institution, and become the greatest open-air children's hospital in the kingdom. Sir Robert Jones, honorary surgeon to the hospital, in the course of a very brief speech, said that the hospital was becoming a national institution. The home at Baschurch was really the first open-air hospital in the world. From every country visitors had come to watch its operations and learn how the work was done there. During recent visits to America he had seen hospitals which had been built and were worked on the same lines as those on which his friend Miss Hunt had done her orthopaedic work. Miss Hunt would not rest until she had set this hospital on its feet, and had fired its executive with her own enthusiasm; he was convinced that there was a promise of a great future for it. There were very many cripples to-day, but there hardly need be one cripple if united efforts were made. The charm about the Shropshire scheme, which he hoped would grow into a national scheme, was that when the patients left the hospital they were treated at a number of clinics in various parts of the county. In this way patients after discharge were followed up and guided to recovery. In the past it too often happened that when a child had been made straight in a hospital and went back to the courts and alleys of cities the continuity of treatment was lost and the disease or deformity which had been arrested recurred.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Criminal Law Amendment Bill.

THE report stage of this bill was taken in the House of Commons after 11 o'clock at night on August 4th, and was completed shortly before 3 o'clock a.m. on August 5th.

At the instance of Mr. Macpherson, a new clause was added making any act of gross indecency between female persons a misdemeanour, punishable in the same manner as any such act committed by male persons under the Criminal Law Amendment Act, 1885. Dr. Farquharson accepted the clause on behalf of the promoters of the bill.

On Clause 1 (consent of young persons under the age of 16 to be no defence) Sir Robert Newman moved to omit the words, "But the party so consenting shall be guilty of a misdemeanour if he or she is of the age of 15 years." This amendment was defeated by 167 votes to 27.

Sir E. Wild proposed the rejection of Clause 2 that reasonable cause to believe that a girl was of or above the age of 16 should not be a defence to a charge under Sections 5 and 6 of the Criminal Law Amendment Act, 1885. Major Hamilton, seconding the amendment, said his principal reason for doing so was his experience as a commanding officer in charge of poor working boys. He told the House what nineteen soldiers had suffered from association with two girls, 15 and 16 years of age, whom both the medical officer and himself were satisfied looked as if they were 18, 19, or 20 years of age. The Home Secretary (Mr. Shortt) strongly supported the retention of the clause. The whole purpose of this measure was, he said, for the protection of the young, and it was one of the objects of the bill to protect girls of 15 who were so developed as to look like 17. In the course of the further discussion Dr. Farquharson, speaking as a physician, said he had seen over and over again the most deplorable mental and physical wrecks, due to early promiscuity. He appealed to the House to let the clause stand as a physical protection to the race. On a division the clause was retained by 105 votes to 49.

On the motion of the Solicitor-General for Ireland, an addition was made to Clause 7 (short title) to bring Ireland within the scope of the measure.

The third reading discussion followed on report. After a few speeches the closure was carried by 106 to 15 votes, and the bill was then read a third time by 101 votes to 6. Dr. Farquharson announced the figures as one of the tellers for the majority.

National Insurance: Suggested Inquiry.

Mr. Haydn Jones asked, on August 4th, whether the working of the panel system under the Health Insurance Act was causing dissatisfaction, and whether the Minister

was prepared to consider the desirability of appointing a committee to inquire into and report upon the working of the system. Sir A. Mond said he had no information that the working of the system was generally causing dissatisfaction, although in a scheme of this magnitude a certain number of complaints would arise. Machinery was provided under the regulations for investigating complaints and imposing penalties where such complaints were substantiated. He would be glad to look into any specific cases which Mr. Jones might desire to bring under his notice. He was considering whether the time had not come for an inquiry into the working of the Act as regards both cash benefits and medical benefits.

Medical Officers of the Ministry of Pensions.

Major Tryon informed Mr. Hayward, on August 4th, that 317 whole-time medical officers were employed at the Ministry, partly or solely on administrative duties. Their annual salaries, inclusive of all emoluments, amounted to £316,255. Of these, however, 75, while holding administrative posts, were engaged for a large part of their time in visiting or examining and arranging for the treatment of pensioners, and some considerable portion of them were, and had to be, officers with specialists' qualifications. Three hundred whole-time doctors were employed solely in the treatment of pensioners. Their annual salaries, inclusive of all emoluments, amounted to £220,108. In addition, the Ministry utilized the part-time service of 653 medical officers and specialists in connexion with treatment at hospitals, limb-fitting centres, and clinics, at a total annual cost of £210,558. There were also 1,717 medical referees, paid on a fee basis, who were employed in examining and certifying patients for treatment.

War Pensions Bill.

On Report on the War Pensions Bill in the Commons on July 28th, Mr. Trevelyan Thomson moved an amendment to Subsection 2 of Clause 1 to make it compulsory that before issuing any order for the establishment of war pensions committees the Minister of Health should consult persons and bodies affected thereby, including local committees. The intention was to reduce the administrative machinery of pensions by cutting down the number of committees from 1,200 to 400, and he was anxious that the Minister should discuss with the committees questions of area on reorganization. Mr. Macpherson said the gist of the arguments advanced by members was that he should consult all local interests, and he had agreed to do so, but he could not accept Mr. Thomson's first amendment. On a division it was rejected by 127 votes to 40.

On Clause 4, under which any person dissatisfied with a final award may at any time within one year from date of notice of the award appeal to a pensions tribunal to set aside or vary the award, Mr. Griffiths moved to alter one year to two. He urged that the shorter period might produce some very hard cases. For instance, a person suffering from tuberculosis might be in the first stage when he had his final award. He might follow his employment during the first twelve months, but later the disease might develop, yet his final award would have been only of 25 per cent. or 50 per cent. disability. Mr. J. Guest, in seconding the amendment, said that the Labour Party welcomed the system of final award, because the men had become dissatisfied with the repeated medical examinations, but which they had to face. There was a danger in the case of complaints liable to recur, such as neurasthenia or tuberculosis, or even in the case of wounds in which trouble might break out again after a long period; there should be a sufficient period after the final award during which a man might be entitled to have his case reheard. Twelve months was a comparatively short time in the history of some of these diseases, and it would give confidence if the period could be increased to two years. Major Tryon, in reply, said the medical boards were necessary because for a long time the men were getting better or worse, and if these boards were not available, men who were getting worse would not get higher pensions, and men who were getting better would retain pensions to which they were no longer entitled. The final award was not made by a medical board until the end of four years, and at that period a large number of pensions must be finally settled. A man suffering from tuberculosis who was obviously getting worse would not be given a final pension. His case would be left open, as would any other case thought to be getting worse, and under a warrant whereby he was given full statutory right he would get full treatment allowance, hospital allowance, and allowance for his wife and children, should he, with a small permanent pension, become incapacitated and be placed in a hospital. The two years proposed by the amendment would be far too long. If it were desired to prolong the period before finality was reached to six years, it would be better to give five years before the final award and have only one for appeal. If the appeal were left open, a man might be engaged in an unhealthy occupation, the Ministry might lose touch with him and have no record of his medical history in those two years. The men themselves might run some risk, because if they were found to be better and they appealed they would lose pensions which they would have retained if they had been content with what they had got. On a division the amendment was rejected by 109 votes to 33.

Regional Medical Officers.—Sir J. Harmood Banner, on August 2nd, asked how many regional medical officers had been appointed by the Ministry of Health; the functions of such officers; and whether their appointments would in any way prevent direct access by the local authorities to the Ministry. Sir A. Mond said that thirty-three regional medical officers had been appointed, and of these one had died, and the vacancy had not been filled. These officers acted as medical referees on questions of incapacity of insured persons for work referred to them by the approved societies or raised direct by insured persons. In addition they acted as consultants to insurance practitioners, and generally assisted in maintaining the efficiency of the insurance medical service. They did not prevent access to the Ministry.

Pre-war Disability Pensions.—Sir J. Davidson asked, on August 3rd, when the new scale of pre-war disability pensions would be promulgated. Sir Robert Horne assumed the reference to be to pre-war life disability pensioners who served during the great war, excluding the former war pensioners and men again invalided who had already been dealt with on the great war scale. If so, the answer was that the scales approved for post-war disability pensioners would be applied to pre-war life disability pensioners under the same conditions and as from the same date as the increases in long service pensions had been applied to long service pensioners, subject, however, so far as the disability element was concerned, to medical survey to determine the present degree of disability. The post-war scale was in an advanced state of consideration and would be promulgated shortly.

Shell Shock Cases.—Major Tryon, on inquiry by Mr. F. Roberts on August 4th, said that in general the Minister of Pensions was satisfied with the present arrangements made by his department for the treatment of shell shock patients; it was in conformity with the highest medical opinion. If Mr. Roberts had in mind any institution of whose proper administration he had doubt, a communication would be welcome.

Service Patients in Mental Institutions.—Colonel Wedgwood, on August 5th, asked the Minister of Pensions how it happened that, in default of any authority possessed by him to intervene in matters coming within the scope of the Lunacy Acts, a medical officer from pensions headquarters joined in the visits paid by the Lunacy Commissioners, and was invited to report on the mental condition of service patients in county asylums; and would he, in view of the admitted irregularity of such procedure, take steps to put an end to unauthorized decisions emanating from pensions officials, where such intervention was directed to the release of ex-service men from unjustified detention. Mr. Macpherson replied that the medical inspector of his department, who, by the courtesy of the Board of Control, visited mental institutions in which ex-service men were under treatment, did not intervene in any way in matters coming within the Lunacy Law, but acted solely in the interests of "service patients" as pensioners. On the particular occasion which he understood that Colonel Wedgwood had in mind it was known to the Board of Control that the Ministry inspector was about to visit the hospital, and they took the opportunity of availing themselves of his opinion on the case. Such opinion was in no sense a decision, nor was there any irregularity in the procedure of obtaining or furnishing it. The arrangements for the visiting of asylums by a Ministry official was in the best interests of ex-service men, and it was, moreover, one which was considered and approved by the recent Departmental Committee of inquiry.

Health and Unemployment Insurance Cost.—On inquiry by Sir R. Clough, Dr. Macnamara stated, on August 4th, that the normal weekly contributions from employers and employed for health insurance and unemployment insurance, where payable, were at present as follows:

	Health.	Unemployment.	Total.
	d.	d.	s. d.
In respect of men—			
Employers	6	8	1 1
Employed	5	7	1 0
In respect of women—			
Employers	5	7	1 0
Employed	4	6	0 10

In certain cases where low contributions were paid, the employer's contribution for health insurance was increased, and that from the employees was correspondingly reduced. Unemployment insurance contributions were payable at half the above rates in respect of boys and girls between the ages of 16 and 18. The State did not make the weekly contribution to health insurance, but provided two-ninths of the cost of benefit and the administration thereof. The State contribution to unemployment insurance was one-fourth of the contributions from employers and employees—that was, 3⅜d. weekly in respect of men and 3d. weekly in respect of women.

Poor Law Children. The number of children in receipt of Poor Law institutional relief on January 1st, 1921, was 60,672. Of these there were in sick wards of workhouses 2,365 children over three years of age, and 2,905 children under three years of age. In other wards of workhouses there were 2,555 children over three years of age, and 3,555 under three years of age. The number of children in receipt of outdoor relief, including children boarded out, on the same date was 174,097. The number of children in the following classes of Poor Law establishments for children on January 1st, 1921, were: schools, 7,429; grouped cottage homes, 11,793; scattered homes, 7,946; other separate homes and institutions for children (including a training ship), 4,224.

The Administration of Asylums. Dr. McDonald asked, on August 3rd, if the attention of the Minister of Health had been called to a publication by Dr. Montagu Lomax, containing grave charges of inhumanity in the administration of our asylums, and as these charges were specific and the alleged inhumanity was inferred rather than witnessed by Dr. Lomax, would he cause inquiries to be made as to their truth, in order to relieve the anxiety of many of the public who had relatives confined in these institutions. Sir A. Mond replied that his attention had been called to the statement in the book. The visiting committee of the asylum at which Dr. Lomax was employed as locumtenent, and to which he evidently referred, had already been asked by the Board of Control for their observations; as soon as these had been received he would consider what further action was necessary.

National Health Insurance: Seamen.—Major Henderson asked the Minister of Health, on August 3rd, whether he was aware that the Controller of Health Insurance promised the deputation which waited upon him on July 6th that he would summon an early conference of all interests concerned to consider the advisability of improving the system of seamen's insurance. Sir A. Mond said the matter was being investigated by an office committee appointed for the purpose. Steps would be taken at the earliest possible date to obtain the views of all concerned.

Army Hospitals and Dépôts.—Asked by Captain Wedgwood Benn the reason for the increase in the working expenses of hospitals and dépôts in the Estimates for the present year, Sir L. Worthington Evans said that, in the case of the dépôts, the increase was due to the expansion of this subhead to include classes of dépôts not hitherto costed.

Milk Supplies to Tuberculous Persons. Mr. T. Griffiths asked, on August 2nd, whether the Hertfordshire County Council, in providing milk for tuberculous persons, proposed to allow for a supply to 47 persons, in addition to the supply provided by the Insurance Committee for 153 insured persons; whether the limitation of the supply to persons with tubercle bacilli in the sputum excluded many, especially children, for whom milk was necessary; and whether, in view of the inadequacy of one pint of milk per day for the purpose, the Minister would consider withdrawing the regulation which limited the expenditure of local authorities, if they were to receive Government aid, to £2 per 1,000 inhabitants? Sir A. Mond understood that the County Council scheme provided for the supply of milk to about 200 tuberculous persons at any one time, and that this was the maximum provision which could be made within the limits of an expenditure of £2 per annum per 1,000 inhabitants of the county. The limitation of the supply to persons with tubercle bacilli in the sputum did not apply in cases of non-pulmonary tuberculosis, the majority of which were children. The Exchequer grant allowed, on the average, an expenditure of double that hitherto incurred by the Insurance Committees. He could hold out no hope of an increase in the grant.

Royal Air Force Medical Service. Commander Bellairs asked, on August 2nd, whether the Air Council was attempting to build up a separate medical service from the army and navy. If so, how many medical officers there were; whether casualties or invalids were sent both to naval and military hospitals, or exclusively to military hospitals; and whether any hospitals had been, or were, being built for the Air Force. Captain Guest replied that a separate medical service was being built up and the number of medical officers was 124. This figure excluded medical officers employed at the Air Ministry. Casualties and invalids were sent, where possible, to the nearest naval, military, or civil hospital. No hospitals had been, or were being, built for the Royal Air Force, but Royal Air Force hospitals had been established in buildings at Halton and Cranwell, which were formerly occupied by other units. In addition a temporary hospital for officers existed at Avenue House, Finchley. The latter was a private house hired for the purpose and had not been altered.

The Certification of Insane Prisoners. In reply to Mr. Lawson, on August 2nd, Mr. Shortt said that when the inmate of a prison became insane he could be so certified under the Criminal Lunatics Act, 1884, by two members of the prison visiting committee (who, of course, were justices) and two legally qualified medical practitioners. If the prisoner was then removed to an asylum he continued to be subject to the Act until the expiration of his sentence. If at the expiration he was still insane, provision had to be made for him under the ordinary lunacy law. This reply referred to persons certified insane while in prison, not to persons found insane by verdict of a jury on evidence.

The Licensing Bill.—In report on the Licensing Bill in the House of Commons, on August 2nd, it was decided by 175 votes to 135 to make the hours of opening licensed premises and clubs, otherwise than in the metropolitan area, on week-days, a uniform total of eight hours a day, instead of a maximum of eight hours, with a discretionary power to local justices to limit the number to seven hours. In the same way also the hours of Sunday opening were made a uniform total of seven, instead of a maximum of seven, with discretionary powers for magistrates to reduce the number.

Women Panel Doctors.—Sir Alfred Mond informed Sir Walter de Frece on August 2nd that 117 women physicians were at present acting as panel doctors in England and Wales, and the number of patients on their lists was 40,686.

Sections at the Annual Meeting.

BRIEF SUMMARY OF PROCEEDINGS.

(Concluded from p. 251.)

SECTION OF OBSTETRICS AND GYNAECOLOGY.

THE proceedings of the Section opened on July 21st with a joint paper by Drs. J. Munro Kerr (Glasgow) and Eardley Holland (London) on the rôle of Caesarean section in midwifery. Dr. Munro Kerr took as his subject the indications for the operation, and showed how these indications had been extended in recent years and were still being extended. In early years Caesarean section had been confined to cases in which delivery of a living child was rendered impossible by pelvic contraction or tumours. Now the operation was being performed for placenta praevia, accidental haemorrhage, eclampsia, and rigidity of the cervix and vagina. The authors had collected statistical tables from the British Isles showing the results of Caesarean section for these conditions.

Dr. Holland's side of the paper dealt with the technique of the operation and with the operative mortality. He emphasized the value of operating through the lower uterine segment. A most interesting part of his paper was a table showing the excellent results when Caesarean section was done before the onset of labour or where no manipulations had been carried out. The paper was very fully discussed, most criticism being directed at the lower uterine segment incision.

This paper was followed by one on the treatment of advanced malignant disease of the cervix, by Dr. Arthur Burrows (Manchester). The paper and the discussion dealt purely with the value of radium. No other line of treatment was touched on. The results obtained by Dr. Burrows demonstrated the value of radium in the treatment of inoperable cases, and its value in tending to make apparently inoperable cases operable.

On July 22nd the session was opened by a paper by Dr. Archibald Donald (Manchester) and Dr. Farquhar Buzzard (London) on the neurasthenic element in midwifery and gynaecology. The subject was dealt with at great length by both authors. The papers did not arouse much criticism, but were followed by some personal experiences from members of a full meeting. A valuable contribution on curettage was made by Dr. H. Beckwith Whitehouse. Dr. Whitehouse emphasized that the endometrium must be looked upon as a ductless gland, possibly antagonistic in action to the ovary. He looked upon menstruation as the pro-oestrum, and thought that the local condition was produced by the uterine hormone controlled and sensitized by the ovarian secretion. With regard to excessive uterine bleeding, this was due to general or local causes, and he considered it as essential that a thorough pathological investigation of the endometrium should be held on each individual case. Herein lay the value of curettage. He emphasized that endometritis—that is, "inflammation of the endometrium"—was a rare condition, and that it was not a cause of uterine haemorrhage. Curettage only did good in treatment where something definite—such as hypertrophied endometrium, polypi, or the products of conception—was removed. The session closed with a paper by Dr. John Campbell (Belfast) on the position of the medical practitioner called in to attend a case of procured abortion. This paper raised an interesting discussion, the view being expressed by the President, Professor Ranken Lyle (Newcastle), that the position of the doctor was "that on being called to a case of abortion he should inform the patient that he could not attend the case unless the matter was reported to the legal authorities." The meetings of the Section were very well attended, particularly on the second day of the proceedings.

England and Wales.

Second Report of the Welsh Consultative Council.

The Second Report of the Welsh Consultative Council of the Ministry of Health (of which Sir Edgar Jones, K.B.E., M.P., is Chairman) has just been presented to Parliament. In its First Report the Council expressed certain preliminary conclusions as to personnel (medical practitioners, nurses, health visitors, etc.) and as to the kind of health institutions that should be available. It has since made a general survey of the existing institutional provision in the Principality, and in the Report now presented formulates proposals with regard to two main subjects: (1) The provision and the distribution in the various areas of Wales of health institutions of all kinds and grades; and (2) the local authorities which should be entrusted with the future administration of the health services recommended.

General Hospitals.

The Council finds that the total number of beds in the various kinds of institutions in Wales at January 1st, 1920, was 15,532. It is impressed by the great need for increased accommodation for the residential treatment of sick persons other than those suffering from mental disease, tuberculosis and infectious diseases; and it estimates that the existing provisions for such cases after allowing for beds in Poor Law infirmaries that could be made available, should be supplemented by an addition of at least 50 to 75 per cent. The existing distribution of hospitals, also, is by no means satisfactory having regard to the requirements of the population.

Scheme of Institutions.

The Council has drawn up a scheme providing a network of institutions for the Principality. This scheme is based on the general principles: (1) That there should be fifty-nine *Local Health Institutes* situate at specified places within convenient reach of members of the population. (In sparsely populated areas small subsidiary hospitals or centres for clinics are suggested in place of local institutes, or, in very sparsely populated areas, single clinics with, say, at least two beds.) (2) That for the present there should be established not more than four *Central Health Institutes* (situate at Bangor, Wrexham, Swansea, and Newport), and that upon these the local institutes in their respective areas should be based. (3) That at Cardiff, in association with the Welsh National Medical School, there should be a *National Health Institute of Wales*, which should serve also as the central health institute for the immediate area.

At each local institute and subsidiary hospital the cases admitted would be followed through by the general practitioner. Wherever possible this would also be done in cases admitted to central institutes. The various local institutes would differ considerably in size and importance, and in the provision of facilities. The minimum provision should, however, include (*a*) beds for general medical and general surgical cases, (*b*) a maternity ward, (*c*) various clinics (for example, child welfare, dental, tuberculosis, venereal diseases, pediatric, psychiatric) and (*d*) a hostel for nurses. These departments need not necessarily be under one roof. Attached to each of the central institutes and to the more important of the local institutes (thirty-two in number) there should be a medical institute, which should afford facilities for each medical practitioner to be brought into close contact with his fellow practitioners in team work, and to keep himself abreast with developments in medical science and practice. In close proximity to the larger local institutes and to each of the central institutes, there should be a separate block to which cases requiring care and supervision might go pending the return of the patient to vigour and health before discharge from the institution. The various clinics should be normally in very close association with the nearest suitable hospital or other institution. A suggested scheme showing the proposed location of the various kinds and grades of health institutions to meet the requirements of Wales as a whole is set forth in an appendix to the report.

Part II of the Report—to which we shall refer in a later issue—is devoted to the problem of the form of local government which should be established for administering the health scheme.

Schools for the Blind, Deaf, Defective, and Epileptic.

The Board of Education has issued a pamphlet[1] which gives a classified list of certified schools, training institutions, and technical schools for blind, deaf, defective, and epileptic children in England and Wales, and includes also a list of the boarding-out committees which have been approved by the Board under the different Acts. There are in England 39 day schools and 25 residential schools for blind children; 28 day schools and 21 residential schools for deaf children; and 175 day schools and 20 residential schools for mentally defective children. Schools for physically defective children are included under a number of separate classifications. There are 59 day schools and 13 residential schools for crippled children; 36 day open-air schools for delicate children, including children suffering from tuberculosis; 4 day schools for children in hospital who are suffering from non-pulmonary tuberculosis or other crippling conditions; 20 residential sanatorium schools for children suffering from pulmonary tuberculosis; 22 residential sanatorium schools for children suffering from non-pulmonary tuberculosis; 23 residential open-air schools of recovery; 2 residential schools for children suffering from ophthalmia; and 6 residential schools for epileptic children. In Wales there are 1 day school and 2 residential schools for blind children; 1 day school and 1 residential school for deaf children; 6 day schools for mentally defective children; 1 day open-air school for delicate children, including those suffering from tuberculosis; and 1 residential sanatorium school for children suffering from tuberculosis. There are 38 recognized institutions in England and 1 in Wales which provide full-time courses of instruction for the blind, deaf, epileptics, and cripples, in preparation for a trade, and there is one institution—the Worcester College for the Blind—which is a recognized institution for the higher education of the blind. There are in addition 4 recognized schools and classes for blind students, 13 schools and classes for deaf students, and 2 schools for physically defective students. In Wales there is one institution—the Cardiff Institution for the Blind—which is similarly recognized.

Cost of Treatment of School Children.

The London County Council has decided that parents unable to pay the fees of a private practitioner, but able and willing to pay to the Council the full cost of the medical or dental treatment of their children, shall be enabled to do so. Certain small but definite charges are also to be made to parents or guardians who cannot pay the full cost of the treatment. Hitherto the rule requiring recovery of expenditure from parents has been almost a dead letter. In 1919–20 the proportion so recovered was only a little more than 4 per cent. of the total cost. The actual cost of treatment, excluding administration, based on the estimates of 1920–21 was—on ear, nose, and throat cases £6,660, on ringworm £2,980, on minor ailments £16,170, and on dental treatment £32,610, the average cost of a case in each of these categories being respectively 8s. 5d., £1 3s. 10d., 7s. 1d., and 5s. 9d.

Central Midwives Board.

The Central Midwives Board for England and Wales met on July 28th. A special meeting was held first, and the ordinary monthly meeting followed on the completion of the former. Sir Francis Champneys presided at both meetings. At the special meeting three midwives were removed from the roll—serious faults, such as neglect in cases of ophthalmia neonatorum and puerperal fever, being among the charges proved. At the ordinary meeting a letter was read from Dr. W. E. Fothergill complaining of the inclusion by the General Nursing Council of certain midwifery subjects in its draft syllabus for education and training, and suggesting that the Board should express an opinion on the matter to the General Nursing Council. A letter from Dr. Fairbairn on the subject was also read. The Board agreed to reply that the question of the

[1] *Board of Education List of Certified Schools.* London: H.M. Stationery Office. 1921. Price 6d. net.

instruction of nurses does not fall within the scope of its jurisdiction. The Central Midwives Board for Ireland having submitted a copy of its new rules for the Board's consideration, it was agreed that, subject to the observations made by its secretary to the Secretary for Ireland, the Board was prepared to agree with them.

Scotland.

The Chair of Midwifery in Edinburgh University.

We understand that, pending the permanent filling of the chair of midwifery in the University of Edinburgh, the court has appointed Dr. Freeland Barbour to act as lecturer on midwifery to men students for the winter term (October to December). The court has also reappointed Dr. Ballantyne lecturer to women students for the next academical year on the same subject. The teaching of clinical obstetrics will be carried on by the staff of the Edinburgh Royal Maternity Hospital, and that of clinical gynaecology by Drs. Haig Ferguson and Fordyce in the Edinburgh Royal Infirmary.

The Health of Edinburgh in 1920.

Dr. Maxwell Williamson's annual report of the Edinburgh Public Health Department for 1920 almost attains to the size of the last of the pre-war years (1913), and it is fully as interesting. It is still a report on Edinburgh with its older boundaries, for their extension to include Leith and other contiguous areas only began to be operative in November, 1920; the next report will deal with Greater Edinburgh, and it will also be founded on the revised statistics as to population made possible by the recent census. Meanwhile Dr. Williamson is in the happy position of being able to report the lowest general death rate for the city ever recorded—namely, 13.2 per 1,000 of the estimated population, a rate which is 3.3 lower than that of 1919, and 2.2 lower than the average of the five preceding years. He again demonstrates that the high death rates are found in those wards of the city where one and two-roomed houses abound. Large improvement schemes are needed, but the Corporation is hampered by the acute housing famine, which causes an initial difficulty in providing accommodation for occupiers whose houses are to be removed or improved.

Infantile Mortality and Maternity and Child Welfare.

The infantile mortality for 1920 was 89 per 1,000 live births, the lowest rate yet recorded. In 1897, when special attention began to be paid to the reduction of these deaths, the rate was 167 per 1,000; in 1906 it had fallen to 112; then the Notification of Births Act of 1907 made it possible for the health authorities to come more promptly into touch with the young infants born in the city, and in 1916 the rate fell to 100 per 1,000, in 1918 to 94 per 1,000, and in 1920 to 89 per 1,000. It is also interesting to look at the infantile mortality in decades; for the ten years 1890–1899 the rate was 143 per 1,000 live births; for the years 1900–1909 it was 122 per 1,000; for the years 1910–1919 it was 110 per 1,000, and for the single year 1920 it was only 89 per 1,000. Dr. T. Yule Finlay, who is in charge of the maternity and child welfare work, arrives at some interesting conclusions from an examination of the infantile mortality returns. He assumes that a large part of the improvement is due to the somewhat extensive child welfare work which has been going on during the past few years, but the fact that the city was wonderfully free from whooping-cough during the year must not be forgotten. The evidence available, however, shows that there has been little reduction in deaths from congenital conditions as compared with the previous year, and that the improvement has been mainly from post-natal conditions. This is quite intelligible, and such a result will probably continue until expectant mothers submit themselves for supervision at an early date in pregnancy, and until more is known about preserving ante-natal lives by care of the mother before delivery. Dr. Finlay's conclusion is of great importance. It is as follows:

"Much more research work along ante-natal lines still requires to be done before we can hope to deal effectively with deaths from congenital disease, and, while not neglecting to carry on the crusade against post-natal diseases, the time appears to have been reached when intensive work along ante-natal lines should be encouraged in order further to reduce the wastage of infant lives."

This is a true saying, and also a correct diagnosis of the present state of child welfare work. The congenital causes of infantile death, such as prematurity of birth (and specially the conditions leading to it), malformations, atrophy, atelectasis, injury at birth, and congenital syphilis, produce their dire effects chiefly in the first weeks of life. Consequently the neonatal death rate ought at once to show if mother welfare work, as represented by ante-natal clinics and the like, is beginning to save infantile lives. It is therefore with some interest that the neonatal death causes are scanned and compared. In 1919 there were 243 deaths in the first four weeks of life out of 5,612 live births, giving a neonatal death rate of 43·3; in 1920 there were 294 neonatal deaths out of 7,774 live births, producing a neonatal death rate of 37.8. In the former year the congenital conditions leading to death numbered 205 out of 243, whilst in the latter year they were 217 out of a total of 294; if the same proportion had been maintained the deaths due to congenital conditions ought to have been more nearly 249 than 217. This looks as if the work of the ante-natal clinics were beginning to have an effect, and the scrutiny of the individual causes would seem to point to a reduction in the fatality of premature birth as the means leading to this effect. This in no measure lessens the urgency of Dr. Finlay's call for concentration on the ante-natal causes; indeed, it reinforces it by pointing out that an improvement has already begun, and that therefore better things may be looked for along this line. A curious slip has, by the way, crept into the figures giving the number of patients attending the ante-natal clinics at the Royal Maternity Hospital: they are given as 2,257 new cases and 2,700 revisits, but the report of the hospital gives them as 802 new cases and 1,209 revisits. The matter of the stillbirths is not referred to; it is important that an attempt be made to give a stillbirths rate in future, for it is in this direction that ante-natal care ought soon to show whether or not it is achieving one of its main purposes. Dr. Finlay's analysis of the deaths among illegitimately born and legitimately born babies elicits some striking facts: during the first week of life illegitimacy does not seem greatly to increase the deaths, but for infants between 1 and 3 months it introduces an element of grave danger and a heightened mortality.

Venereal Diseases.

Dr. Lees gives an account of the working of the Corporation's venereal diseases scheme, which is carried on mainly at the Edinburgh Royal Infirmary; but the pregnant women suffering from these maladies are treated and delivered in an annexe of the Royal Maternity Hospital, and others of the women patients are received at the Bruntsfield Women's Hospital. It will be some time before the full value of this work can be estimated; difficulties of no small size must be overcome before it can be operated to the best purpose, but the results so far obtained are encouraging.

Cancer.

Many other matters are dealt with in this annual report. In some directions there is a hopeful outlook, as is seen in the diminished mortality from infectious diseases and phthisis; but in others there is no progress to be noted, and this remark applies especially to cancer, of which Dr. Williamson says "practically every year shows a definite increase in the number of fatalities." This sad fact is not, of course, peculiar to Edinburgh.

Mental Disease in Scotland.

According to the last annual report of the General Board of Control for Scotland there was an increase in 1920 of 226 registered insane persons in Scotland as compared with the previous year. The total number of insane persons of whom the Board had official cognizance was 17,806 on January 1st, 1921; this did not include insane persons maintained at home without being certified. Excluding transfers, the number of patients admitted to establishments was 3,783; of these 2,889 were admitted for the first time. In addition, 313 persons voluntarily entered establishments for the insane in Scotland for the treatment of mental disorders. During the same period 1,328 patients were discharged recovered, being

55 more than the recoveries in 1919. The death rate for private and rate aided patients in establishments was 10.1 per cent. of the average number resident, as compared with 12.1 per cent. in the previous year. This decline was mainly accounted for by the absence of epidemics, such as influenza. The Medical Commissioners reported favourably on the careful and capable management of the institutions, and on the satisfactory standard of efficiency maintained. The Board recommends an early revision of such terms in the Lunacy Acts as "lunacy," "lunatic," "asylum," and "pauper lunatic." Legislation is also recommended for the establishment and maintenance by local authorities of psychiatric clinics, open to all classes of the community, for the treatment of mental disease in its incipient forms.

Causes of Mental Breakdown.

The ninety-fourth annual report of James Murray's Royal Asylum, Perth, has also appeared recently, and contains some interesting observations on the causes of mental disease by the Physician Superintendent, Dr. D. Maxwell Ross. He remarks on the number of cases in which mental stress and worry are assigned by the relatives as the cause of the illness. In very many of these cases, however, it was found on close examination that the worry exhibited was groundless and unjustified. "It is now generally admitted," he continues, "that alcoholic excess, which some years ago was regarded as a prolific cause of insanity, is much more commonly a symptom. The same is undoubtedly in most cases true of such conditions as 'worry,' 'anxiety,' 'sleeplessness,' 'overwork.' The experiences of the war have shown that the moderately healthy man can withstand excessive and protracted mental and physical strain without permanent harm. Such conditions may undoubtedly, if genuine and prolonged, produce a state of exhaustion which may lead to a breakdown. But it should be realized that in the great majority of cases these conditions are indications that the danger-point has already been passed, and that a state of mental disease is already in being. Patients brought under treatment at this stage have an incomparably greater chance of a perfect recovery than those who delay till definite psychotic symptoms develop."

India.

AUXILIARY FORCE MEDICAL CORPS.

THE regulations for the Indian Auxiliary Force Medical Corps provide that any person eligible for enrolment under the Auxiliary Force Act of 1920 may apply for a commission in the medical corps if he holds certain recognized medical qualifications. The qualifications which are recognized are as follows: (*a*) A qualification registrable in the United Kingdom; (*b*) late medical service of Madras; (*c*) membership of the State medical faculty, Bengal; (*d*) membership of the College of Physicians and Surgeons, Bombay; (*e*) diplomas or degrees of American medical schools which are recognized by the conjoint examining board of the Royal College of Physicians of London and the Royal College of Surgeons of England. Officers in the medical corps will be posted to a unit of the auxiliary force or to a medical unit for service within a prescribed local area, but if not so posted will be placed under the orders of officers commanding station hospitals or will be supernumeraries of local units of the auxiliary force. During training they will be entitled to the ordinary pay and allowances of officers of the auxiliary force, but when called out or embodied they will receive pay and allowances in accordance with the corresponding ranks of the Royal Army Medical Corps serving in India. Promotion will be in accordance with the scale in force for the time being for regular officers R.A.M.C., and all previous commissioned service as a medical officer will count towards promotion. A medical officer holding a commission in the regular army may under certain limitations be attached at his own request to a unit of the auxiliary force, and when so attached will be entitled to the allowances which regimental officers receive when absent from their corps headquarters on duty. Non-commissioned officers and men of the Auxiliary Force Medical Corps will be required to undergo periods of training similar to the infantry, but purely military training will be restricted to a minimum, and they will be trained in first-aid and nursing (in hospital whenever possible), in sanitation, water purification, and the formation of first-aid posts, and similar field operations.

CEREBRO-SPINAL MENINGITIS.

Outbreaks of epidemic cerebro-spinal meningitis have occurred in Hong Kong and also in Goa, and the number of deaths from the disease in Bombay has been increasing; there were eight in January, thirteen in February, and thirty-one in March. Calling attention to these facts, the executive health officer for Bombay, Dr. J. E. Sandilands, points out that the infection is conveyed by the nasal and laryngeal secretions, and that personal precautions similar to those against influenza should be taken.

PROVINCIALIZATION OF HEALTH OFFICERS.

The *Pioneer* announces that in accordance with the recommendation of the local municipal conference the Madras Government has passed orders provincializing health officers and lending them to local bodies. Two classes of appointments have been sanctioned—for assistant surgeons and subassistant surgeons respectively. The first class is to receive a salary of 100 to 300 rupees a month, and the second class 50 to 150 rupees, according to service. The Government also proposes that deputy sanitary commissioners shall be recruited from these ranks

PUBLIC HEALTH OF BENGAL.

The Government of Bengal has constituted a new Sanitary Board, which will advise the Ministry of Local Self-Government in all matters relating to the public health of Bengal, including schemes for water supply, sewerage, and drainage, submitted by local bodies. The Board will recommend to Government the order in which projects of sanitary and antimalarial engineering should be taken up and the grants and loans to be made for such schemes. It will also advise on the promotion of researches and investigations into the prevalence of infectious, communicable, and preventable human diseases. It will report not only on matters referred to it, but make recommendations on any question of public health concerning the people of Bengal.

Correspondence.

THE GREAT MULTITUDE OF STUDENTS.

SIR,—In the interest of the honour and dignity of the medical profession I suggest that it is time to make the public understand that the numbers of students who are now coming forward threatens so to overcrowd the profession that it will be intensely difficult for many to make even a living.

In South Africa two medical university colleges have been instituted, the one at Cape Town and the other in Johannesburg. The total white inhabitants in all the Provinces and Rhodesia only amount to a little over one million, for which there are more than sufficient doctors already available, and the medical students now studying in South Africa, England, and Holland, are more numerous than the doctors already established there.

It requires no prophet to foresee that the future is fraught with grave danger inasmuch as while the few may do very well and a fair number make a reasonable income, a large number will be quite unable to make a living.—I am, etc.,

FIASCO.

THE COLON AND COLITIS.

SIR,—After repeated observations during operations and in the *post-mortem* room, I published an article[1] in which I stated that the colon has normally a considerable degree of mobility, especially the proximal part, and that this being the normal state of affairs, it is not justifiable to assume that a mobile colon in a dyspeptic patient is a case of cause and effect; and consequently colopexy, which

[1] *Lancet*, April 30th, 1921.

seems to be much in vogue just now, is not an operation which is destined to stand the test of time.

Lord Dawson, in an admirable paper published in the BRITISH MEDICAL JOURNAL of July 9th, 1921, though he does not mention the normal anatomical arrangement of the colon, is also of opinion that anatomical varieties have little or nothing to do with colonic dyspepsia and colitis, and therefore colopexy, except in certain cases, is unlikely to survive.

In the issue of July 23rd of the same journal, Mr. Sheen offers three comments upon Lord Dawson's paper which, in his opinion, justify the operation of colopexy and other fixation operations. He says, "anatomical varieties do count, and fixing operations are in use and of value." I am not sure that he appreciates the very wide variations in the mobility of the colon, which, according to my observations, appear to fall within normal limits. Undoubtedly fixation operations are in use, but their value is not very convincing. It is, perhaps, not fair to argue from one operation to another, though of a similar kind, but such operations as gastropexy and nephropexy were very popular at one time. I do not remember seeing gastropexy done once during the last eight years, and it has become generally recognized that a kidney which is sufficiently movable to deserve the distinction of being called mobile, only produces physical symptoms when the ureter becomes kinked across some such obstruction as an abnormal renal artery. Nephropexy may be a justifiable operation under such circumstances, and likewise in certain cases, which I specified in my article referred to above, I believe colopexy is a proper operation to perform.

Mr. Sheen's second comment, which relates to the usefulness of a properly fitting "truss" belt, and his third comment, which introduces the mesenteric drag as responsible for the pain and other dyspeptic symptoms, are really one. He brings forward the well known fact that, under the ordinary local anaesthesia, bowel manipulation causes no pain, but dragging on the mesentery does. It is his opinion that the drag of the prolapsed viscera on their mesenteries is responsible for colonic dyspepsia. I think there is a much more probable explanation for the pain and discomfort in these patients, and that is irregular intestinal motility and flatulence. Post-operative flatulence is common after even gentle handling of the hollow viscera, and occurs even when the patient is resting in bed with the head lower than the feet, where there can be no question of mesenteric drag. The pain and discomfort experienced at this time seems to me to be a better mimicry of dyspepsia than any caused by pulling on the mesentery, for the colon type of patient, though he does have definite pain sometimes, much more frequently has discomfort rather than pain, whereas pulling on a mesentery produces the most excruciating agony. Moreover, I think it requires proof that, with the abdominal wall intact, drag, in the strict sense of the term, can occur.

Keith's suggestion, to which Lord Dawson refers, that the neuro-musculature of the intestine is at fault in these cases, has not been made without definite evidence—evidence which is more convincing than any as yet brought forward in favour of the anatomical variation theory.

It must have happened to many surgeons, as it has to me, to operate on dyspeptic patients with identical symptoms in whom the ascending colon has been in some very loose and in others fixed. But the most striking instance of which I know occurred in two cases operated upon consecutively on the same afternoon by Sir Berkeley Moynihan. The symptoms were so alike that the notes of one might have been copied from the other, and yet in one the ascending colon could be brought right out on to the abdomen, and in the other the fixation was even more pronounced than the usual anatomical description—indeed, no fixation operation could have made a more complete and thorough colopexy.—I am, etc.,

Leeds, July 30th. E. R. FLINT.

THE OPERATIVE TREATMENT OF ANGINA PECTORIS.

SIR,—Jonnesco's account of his operation (*Bull. de l'Acad. de Méd.*, 84, 1920, p. 93), to which Sir Clifford Allbutt refers in your issue of July 23rd, contains some interesting features which call for comment, and, although I have already addressed you on the subject (BRITISH MEDICAL JOURNAL, 1920, ii, p. 840), perhaps you will permit me again to refer to some additional points.

It will be agreed by those who are cognizant of it that rarely has a more notable contribution been made to Science, properly so-called, than that which was the life-work of W. H. Gaskell—namely, the anatomy, and incidentally the physiology, of the "involuntary nervous system." With the caution of one writing with a fullness of knowledge, and after an amount of steady work on particular lines rarely equalled, he commences his summary by modestly stating that the conclusions he had come to were those he entertained at the time he wrote. That they might be modified by fresh facts he would have been the first to admit.

M. Jonnesco, however, "sans entrer dans de longs détails," and basing his remarks chiefly on the views of François Franck, rapidly sketches the whole mechanism, or what he assumes to be the whole mechanism, of angina pectoris, its nature, cause, and relief, and places it neat in a nutshell, thus solving at a stroke what is admittedly to many still an obscure problem in very many instances. He adds that while his success in the case he relates was complete, by unilateral ablation of the cervical sympathetic and first dorsal ganglia, "l'opération étant si simple et innocent," it is preferable to get rid of the sympathetic on both sides while you are at it—"dans le suite"—even if unilateral resection might be enough! Why Dame Nature had such an amount of superfluous time on her hands when placing the baubles "dans le cou" at all, beggars imagination! I stated in my last letter that double sympathotomy was not always so simple and innocent a procedure in other hands than those of M. Jonnesco, and that in those of that expert anatomist and finished surgeon the late Mr. C. B. Lockwood, it had been promptly followed by death, as it is likely to be again and in hands no less skilful. I confess, therefore, that the routine recommendation of double ablation would require serious consideration.

M. Jonnesco mentions an interesting fact in connexion with the avulsion of the first thoracic ganglion in the case in question—namely, that while the patient was under cervical stovainization, he complained of violent pain and electrical tinglings (vibrations électriques) in the fingers of the left hand, when the ganglion was torn away. Is it not conceivable that this may have been due to injury to sensory intercostal fibres, and in no way proof of the transmission of stimuli by way of the sympathetic connexion with the central nervous system? That the latter, however, is possible is also probable. Gaskell maintains that all ganglia in the heart itself are vagal (*The Involuntary Nervous System*, p. 79), but confesses to uncertainty as regards the innervation of the coronary and cerebral arteries. I have, however, found vascular ganglia in both these situations, and have before published the fact. If these were not on motor fibres issuing from the thoracic visceral outflow, they must naturally have been on inhibitory (vagal) fibres, certainly in the case of the coronary arteries. In sections of the larger nerves accompanying the coronary arteries, branches of which innervate the muscular coat of those vessels, ganglia are easily demonstrable and should, according to Gaskell, be vagal. In one instance in my experience, moreover, a coronary ganglion lay between the muscular coat and the intima and close to an intravascular aneurysm. In this case angina pectoris was a constant and ultimately fatal feature.

Great as Gaskell's work was, he would have been the first to confess its incompleteness, and that there are afferent fibres in all innervation, however modified, appears to me to be as probable as that all muscular tissue, wherever found, is innervated. That unilateral section or ablation of the sympathetic may be practised as safely as one pneumogastric may be divided, as it has been accidentally because of the innervation of both sides of the heart from one side through the plexuses, is unquestionable, and persistent angina pectoris with unilateral radiation may justify its performance; but one's conceptions of the involuntary nervous system will have to be revised if double ablation can be carried out with impunity. That conditions at the base of the aorta are active in the production of anginal symptoms in a certain number of cases is undeniable, and I would recall Sir Clifford Allbutt's classic description of the case and the findings in it, at one time under the care of his teacher Dr. Bence Jones; but no single cause of angina pectoris will cover all cases, although some causes are more

often operative than others. The diagnosis of the cause, often a very difficult matter, naturally determines the treatment of the condition in any given case. I am, etc.,

London, W., July 23rd. Alexander Blackhall-Morison.

THE USUAL SITE OF ENDOLARYNGEAL CANCER.

Sir,—Surely Sir StClair Thomson, in his letter in your issue of July 23rd, has somewhat overstated the case when he asserts that direct examination after laryngo-fissure is the only reliable method of determining the precise site of carcinoma of the vocal cord, seeing that the condition is regularly diagnosed by indirect laryngoscopic examination before the question of thyro-fissure arises.

Whilst Sir StClair Thomson's contribution of 50 cases exceeds that of any other individual laryngologist in this country, and would of itself have almost sufficed to settle the question, there has been a growing admission for many years that Virchow's teaching as to the exact site of origin of laryngeal cancer needed readjusting, the evidence being rather of a cumulative kind than due to any sudden discovery. During later years better opportunities have arisen for earlier diagnosis.

As I have pointed out in my monograph on intrinsic cancer of the larynx, careful search amongst the hundreds of cases of cancer of the larynx recorded in the literature—as also of all the cases operated upon by thyro-fissure (including Sir StClair Thomson's cases up to this date, the whole of which had been already published in various medical journals)—furnished a proof that the favourite site of origin of endolaryngeal epithelioma was the anterior and middle third of the vocal cord.

My literary research also led me to surmise, as no doubt others have done, that the starting-point—at any rate in the majority of cases—was the junction of the anterior and middle thirds of the vocal cords, which is what one would expect, since it is the position of greatest exposure to extraneous irritation, and that extension beyond this position indicated a later stage of the disease.

But apart from the literature, my own observations of the fact have not been confined to those cases of thyro-fissure in which I have had the opportunity of co-operating with Sir StClair Thomson, but are based also on a number of other cases in which I have been associated with other of my colleagues.

My monograph, though only published in 1918, occupied three years' research into the literature, and the earlier portion, which dealt with the clinical aspect of endolaryngeal cancer, had been completed (with the exception of a few later references) a considerable time before the date referred to by Sir StClair Thomson. At the meeting of the Section of Laryngology, Royal Society of Medicine, in 1917, Sir StClair Thomson only broadly stated the results of his own observations, and I fail to understand how such a rough general statement can now be submitted as a definite conclusion, or as strictly coinciding with the views I had arrived at and published in 1918. However, he has now fully elaborated his observations, and so effectively as to crown the pile of evidence and close the matter under observation for good.—I am, etc.,

London, W., Aug. 5th. Irwin Moore.

CAPILLARY PRESSURE.

Sir, Dr. Henderson (July 30th, p. 170) asks me to revise my "erroneous conception of what Professor Hill has really stated." Dr. Henderson's restatement of what Dr. Hill stated in his lecture does not in the least alter my conception of it.

Dr. Hill stated that he found the pressure of the brain against the skull to be a certain amount, and that he took this to be a measure of the pressure in the arterioles and capillaries of the brain. He had no right to take the one as a measure of the other. It was a wrong assumption, as it took no account of the tension in the walls of the arterioles and capillaries which aids the outside pressure in balancing the greater pressure inside these vessels.

There is such a tension in the walls of the blood vessels in spite of Dr. McQueen's assertions to the contrary. When a liquid is forced through a tube with non-rigid walls there is necessarily greater pressure at any point inside the tube than at the immediately opposite point outside. This is necessary in order to maintain the patency of the tube. The same thing is stated by Dr. Hill in another way when he says that "an artery, big or small, when compressed by a surrounding fluid pressure is shut up by a compressive force practically equal to that of the pressure which is maintaining the flow through the artery, and which is measured directly by a manometer connected with the lumen of the artery." The reason why a pressure slightly greater than that inside them has to be applied to the outside of arteries to stop the flow in them is that their walls have a slight amount of rigidity. But the rigidity of capillary walls is negligible, so that as long as there is any flow of blood through them we may be sure that the inside pressure is greater than the outside. The difference between the two necessitates tension in the wall.

Dr. Hill also stated that he found the pressure in the torcular Herophili to be equal to the pressure of the cerebro-spinal fluid and to that of the brain against the skull. I do not dispute the correctness of these observations. But Dr. Hill goes on to say: "I concluded that the cerebral capillary pressure is practically the same as the pressure in the cerebral veins; only the least difference is required to maintain the flow." What he here calls a conclusion is an unwarranted assumption. To force through the capillaries a viscous liquid like blood containing semi-solid corpuscles of diameter only a little less than that of the capillaries must require a considerable difference of pressure between arterioles and venules. Anyone can get a rough idea of this by observing the ease with which the contents of the barrel of a hypodermic syringe can be expelled when the needle has been broken off short, compared with the force required to expel the contents at the same rate with a whole needle on. And one should bear in mind that the calibre of a capillary is only about one-twentieth part of that of a fine hypodermic needle.

The pressure in a capillary at the end next the arteriole approximates to that of the arteriole—that at the end next the venule to that of the venule. What the actual difference is between arteriole pressure and venule pressure Dr. Hill's experiments do not show. His assumptions lead to the conclusion that there is practically no difference, for he takes the pressure of the brain against the skull as a measure of the pressure in the arterioles, and finds that the former is equal to the pressure in the torcular Herophili, which is less than the pressure in the venules. These experimental observations *plus* the assumptions are what Dr. McQueen calls "experimental evidence."

Dr. Henderson's observation on the behaviour of the retinal veins when a slight pressure is made with the finger on the outside of the eyeball is interesting evidence of the correctness of the explanation given by me of the slowing of the current in the capillaries in Dr. Hill's experiment with the Roy and Brown apparatus. I stated that the slowing of the current was due to a narrowing of the calibre of the capillaries. In the case of the retinal veins under similar conditions this narrowing can be seen. It is evident that before the contraction the veins must have been distended—that is, their walls were on the stretch, which implies the existence of tension in them. This in turn implies greater pressure in the veins than outside them.

I hope Dr. Henderson may follow my argument. I have but little hope that Dr. McQueen or Dr. Hill will do so, as the former wrote and the latter approved of the following sentence (July 30th, paragraph 4): "These low figures are the sum not merely of the lateral pressure but also of the kinetic energy of flow." Pressure and energy (kinetic or otherwise), being quantities of different dimensions, cannot be added to form a sum. One might as well talk of the sum of the height of a monument and the area of its base. Dr. McQueen's method of dealing with the equation,

$$p_1 - p_2 \quad \frac{T}{R}$$

also betrays an unscientific mind. He began by defining the different letters in the same way as I had done, but did not adhere to the same as he went along. Hence the absurd result at which he arrived.—I am, etc.,

Knock, Belfast, August 1st. John R. Gillespie.

CHRONIC NASOPHARYNGEAL INFECTION IN CHILDREN.

Sir,—I have not been in a position to answer Dr. McBride's letter which appeared in your issue of July 16th before because I have been away on holiday.

The main point which arises from his letter is whether a chronic nasopharyngeal trouble of sufficient degree to cause toxaemia from septic absorption can exist without the presence of adenoids or tonsils which need operation; I maintain that this does happen, especially in older children. My cases were practically all over the age of 6 years.

I wish to make it clear, however, that the cases on which my observations were based included many which needed operation and had definite tonsils and adenoids. The main object of my paper was to point out the results of chronic nasopharyngeal toxaemia, and not to raise the question of whether operation was needed or not. I regret that I made it appear that I regarded obstruction as the one criterion for operation. That is not the case, and I quite agree with Dr. McBride that adenoids and tonsils may, even though they are not giving rise to definite obstruction, cause toxaemia, and need removal.

My contention that nasopharyngeal toxaemia can arise from conditions which do not necessarily require operation is based upon observations of (1) cases which have been examined digitally and by inspection of the tonsils, and have been found to be free from operable trouble and have yet had the symptoms of frequently recurring colds with catarrh, together with the other general signs of toxaemia which I mentioned in my paper; these signs and symptoms have cleared up completely in those children who could be removed from the climatic conditions and from the opportunities for infection obtaining in certain centres, and have recurred when the children have returned to these conditions. (2) Cases which have been operated on by competent surgeons and have improved temporarily, but have suffered from a recurrence, and have not been cured until they have been put under better climatic conditions. In younger children, where there is a greater chance of stagnation, hypertrophy and the formation of adenoids is very common; but I am convinced from observations of my own cases that, especially in older children, a chronic infection of the nasopharynx occurs which remains inflammatory, and does not go on to hypertrophy and the formation of adenoids. I think that many physicians—at any rate those physicians who deal with children, either in hospital out-patient departments or elsewhere in the large industrial centres—will agree with me in this contention.

To turn to Dr. McBride's further questions, it is practically impossible to avoid contamination in taking a swab in the nasopharynx, especially in children, and Dr. Sellers and myself were careful therefore to draw no positive conclusions from the results, but only to set forth what was found. The cases he examined included many needing operation, the investigation not being undertaken with the idea of showing whether operation was needed or not. My cases were not all examined by a rhinologist, though many were examined and treated by operation. However, since many of those which I judged not to need operation have improved with suitable treatment, especially removal from bad climatic and hygienic conditions, I cannot agree that all cases of chronic nasopharyngeal infection in children need operation.

With regard to the connexion between the nasopharyngeal trouble and the symptoms of toxaemia, the fact that the symptoms which I have enumerated as indicating toxaemia improved definitely in conjunction with the improvement of the nasal symptoms and recurred with a recrudescence of the latter, satisfied me of the relation between the two, especially after, as I emphasize in the paper, I had employed a process of careful differential diagnosis to exclude other toxaemias, notably that of early tuberculous infection.—I am, etc.,

Manchester, Aug. 8th. C. Paget Lapage.

DEATHS FROM PLUMBISM.

Sir,—Your correspondent "Statisticus" (July 30th, p. 172) raises an interesting question, the answer to which is found in the annual report of the Chief Inspector of Factories and Workshops for the year 1919, p. 61. A considerable proportion of the reported cases of plumbism comes from the pottery industry. Broadly speaking, there are now no new cases of plumbism among potters, and the cases reported in that industry are mainly old cases where the disease was contracted many years ago. When deaths occur from chronic nephritis and so forth following lead poisoning they are returned as deaths from lead poisoning, and the rate of mortality is, of course, very high. The Home Office has really been much more successful in the pottery industry than is apparent from the statistics.—I am, etc.,

London, N.W., Aug. 5th. Stephen Miall.

MEDICAL IMPRESSIONS OF THE MINERS' STRIKE.

Sir,—There is another aspect of the recent strike that deserves consideration, and that is the effects upon the miners' wives and children. There is no doubt that owing to the nature of the meals—in this district soup was the staple diet, with roughly 3 ounces of bread per capita per diem—a deficiency of vitamins was frequently present in their diet. The soup was as a rule boiled for three hours, a vitamin-destroying process, and, in many instances, unless furnished with a medical certificate, the children, who for the most part were fed at school, received little or no milk.

During the three months' strike I had occasion to attend two cases of scorbutus the direct result of inefficient feeding. The first case was that of a mentally deficient child, aged 6, whose father was a member of a soup-kitchen committee. The child had received practically no milk, but was fed almost entirely on soup, and was given an additional supply of this concoction owing to the father's official position. The child, who on the previous day was attending school, was covered with a discrete, purpuric eruption, the distribution being trunk and limbs. There was in addition ecchymosis of the arms and legs, and profuse haemorrhage from the gums and nasopharynx. Antiscorbutic remedies were ordered, consisting of metagen—which is said to contain all the vitamins, fat-soluble A, water-soluble B, and water-soluble C (antiscorbutic)—and orange juice, together with adrenaline for haemorrhage, but the child died of syncope within twenty-four hours and before metagen could be obtained.

A month later the second case occurred—a girl aged 5—in whom the signs were exactly analogous, with, in addition, slight haemorrhage from the vulva and melaena. One could not place a sixpence between the purpuric spots on the greater part of trunk and limbs, the face and neck, as in the first case, being spared. The child's dietary was as follows: Breakfast (at school), cocoa to which condensed milk was added, bread and margarine; dinner (at home), soup from soup kitchen containing over-cooked vegetables, with now and then a slice of bread added; tea (also at home), bread, tea with condensed milk. An immediate improvement was observed following prompt administration of metagen and orange juice, with milk and liberal supply of fresh vegetables. The haemorrhage ceased and the purpuric eruption almost disappeared in six days, marked improvement being noticed within forty-eight hours.

The age of the children is worth noting, for they are then more vulnerable because of the lack of stored-up vitamins as compared with the adult. I have observed no evidence of deficiency disease amongst the women, but many lost weight—an advantage with the obese—although signs of semi-starvation were evident in one case, phthisis in another. As regards the men, as they themselves acknowledge, they never felt better in their lives.—I am, etc.,

J. Boyd Primmer.

Cowdenbeath, Fife, Scotland, July 30th.

Sir,—A letter upon this subject in your issue of July 16th is effectively answered and disposed of by a communication from a practitioner in a Durham mining district, and appearing in the Journal for July 30th. But, having practised for many years in the mining district of South Staffordshire, I offer my testimony for what it may be worth, and such testimony entirely confirms that of the writer from Durham, and so, of course, represents an opinion differing essentially from that contained in the original letter.

During the great war I was called upon to examine a large number of recruits at a local recruiting centre, and if one fact emerged more clearly than any other, it was that the physique of the miners far excelled that of any other class. This was quite unmistakable, and was frequently commented upon and discussed by the medical men who conducted the examinations. Apart from the miners, men from all sorts of occupation were dealt with —iron-workers, farm hands, chauffeurs, gardeners, shop assistants, brewery hands, etc.—and I venture to say that, given an equal number following each vocation, an experienced man would have little difficulty in picking out the miners, with few errors, owing to the excellence of their physique. Next to them came the iron-workers. Clearly the amount of holiday required by the manual worker must remain a matter of opinion, and the idea of two weeks' holiday for the miner, with full remuneration, after each three months of work sounds highly delightful. What the average miner would do during his long absence from work it is difficult to conjecture. This much, however, I say without hesitation: If the miner, as I saw him at the recruiting centre, is in need of the suggested holiday, the other men who came up for examination, judging from their condition, required at least four weeks' holiday after each three months' work.

What of the medical practitioner himself? His expectation of life is lower than that of members of the other professions. Might not the discrepancy be removed, if the suggested extension of holidays, with accompanying remuneration, were made operative in his case also?

No, Sir, a great deal too much flabby twaddle respecting overwork is propagated and swallowed to-day. Ergophobia is rampant, and it is high time for recognition of the fact that good health and contentment can be best assured by the steady pursuit of one's vocation, whatever it may be. This still leaves leisure for a hobby—and a hobby is very desirable for every one.

Of course, any such extension of holiday as was proposed by the original writer, with its lessened output, would be fatal to our national existence, unless other nations in competition with ourselves adopted the same plan. Into this aspect of the question I do not propose to enter.—I am, etc.,

Wednesbury, Staffs, Aug. 1st. WALTER GAGMAN.

STREPTOCOCCAL VACCINES IN ASTHMA.

SIR,—I was very interested in the original article in your issue of July 16th (p. 71) by Sir Leonard Rogers on streptococcal vaccines in asthma. My experience may be interesting as proving that the treatment is certainly reliable in certain types.

In 1916 in the Murree Hills, India, an elderly lady, an officer's wife, consulted me for this condition with a view to undergo vaccine treatment. I accordingly prepared an autogenous vaccine from her nose, and later from her sputum. The organism was a streptococcus of medium length, but I now forget its chemical and biological characteristics. The patient received about twelve inoculations in all in weekly doses varying from 150 to 500 millions. She showed a rapid improvement while she remained in the hills. I heard from her husband a year later that she was still free from paroxysms and also from chronic bronchitis.—I am, etc.,

J. E. H. GATT, Major R.A.M.C.

Curragh Camp, co. Kildare, July 31st.

BIRTH CONTROL.

SIR,—Nature's method of limiting population is to reproduce freely and let the majority (the unfit) be eliminated by failure, so that only a minority (the fittest) survive. Man strives to defeat Nature, keeping the unfit alive by soft living, sanitation, and medical treatment. The result of man's efforts is not merely an increase of numbers, but the addition of many unfit members to the population and a diminution of the average health. Birth control, in the ordinary sense of the term, does not improve matters; it only diminishes numbers, and by lessening the struggle for existence it gives still greater opportunity for survival of the unfit. From the eugenic point of view the limitation of births (in the ordinary sense) is attended with the danger of degeneration of the human race.

It is true that the human race, increasing at the present rate, will soon exceed the capacity of the world to support it, and man will have to fight his neighbour for the mere means of subsistence; but to avert this by means of contraceptors is to substitute one catastrophe for another.

Soft living, sanitation, and medical treatment, by increasing the number of surviving children, increase the burden of family life, and thus prevent early marriage. This is bad for the future race, as the children of young parents have, by inheritance and by parental care, the best chance of healthy life; moreover, late marriage is one of the causes of prostitution and of venereal disease.

In short, medical science is the chief cause of overpopulation and the diminution of average human fitness; it is also a cause of late marriage with its attendant evils. It would make my letter too long to discuss the possible remedies, eugenics, for instance; but it behoves the medical profession, who have created the difficulty, to find the true remedy. I cannot see it in contraception.—I am, etc.,

Cambridge, August 1st. F. J. ALLEN.

SIR,—The cult of cheapness is one of the worst causes and results of our free trade policy which teaches people to think they need not make sacrifices to secure future benefit. And precisely similarly do the people behave who avoid marriage or limit their families on the ground of expense. They dread present discomfort and forfeit future gain and security. The present difficulties of the middle classes are largely due to their want of families; they have so few sons to "speak with the enemy in the gate." Doctors, often marrying late, are similarly handicapped. Three of us, fellow students and become senior officers in the three services, met once in London with our wives, and not a child between us. A well known fellow student of mine lamented to me in Edinburgh recently the number of our coevals in the profession who were childless. Consequently, said he, we shall be replaced by people less well educated, people who have not had the up-bringing we should have given our sons to fit them for the profession.

The strength of a nation is in its families. If any important section has but few children to take its place, its ideals will not be carried forward, but will be lost. Children, besides, do prevent divorces; perhaps, however, we should go further back about that.

But should people bring up children at great cost and only to be miserable? One of my acquaintance refuses to have a second child because he could not then play golf. Is there, then, no pleasure in children which shall compensate for the troubles and expenses they bring upon you? I notice that the penurious Roman Catholic French-Canadian farmers are spreading out of Quebec and occupying more and more of Ontario. I fancy those hard-living parents would think their struggles to bring up their large (ten to twenty) families worth while when they see how their group is strengthening its position. If a race comes to find no instinctive pleasure in children it will probably be swept away by others more virile. One man will live where another will starve; prudence and selfishness are not identical.

In her book, *The Strength of a People*, Mrs. Bosanquet, who signed the Majority Report of the Poor Law Commission, tells the story of two girls in domestic service who became engaged. One was imprudent, married at once, lived in lodgings, trusted to the church and the parish doctor to see her through her first confinement, had no foresight or management, every succeeding child only added to her worries, and her marriage was a failure. The other was prudent, did not marry till, after six months, she and her fiancé had chosen a house and its furniture. Then she married, and their house was their own careful choice; every table and chair reminded them of the afternoon they had had together when it was chosen; they were amusement enough to themselves, and they saved their money for the expenses of her confinement. He had not to seek amusement outside his home, did his work with a high sanction and got promoted, and each child was only an added pleasure. Idyllic; yes, but sometimes true. One of the happiest men I have known was a Marine sergeant with ten children, and a bed in his house for stray boys he thought he should help.

One of my friends married young and had five children;

this required management. He certainly could not go trips, take courses and extra qualifications, but he did his work all right, and his sons were there to help in the war, and one of them has won a position of Imperial usefulness far above that of his father or me. Is that no compensation to his parents for old-time difficulties they have by now almost forgotten? A bad tree cannot bring forth good fruit.—I am, etc.,

Naval and Military Club, July 29th. W. E. HOME.

SIR,—An advocate of "birth control" (July 30th, p. 168) says that "continence is not and never will be" the principal means to that end. I can well believe that, for continence is the only legitimate means, and "birth control," as generally practised, is both illegitimate and immoral.

From a medical point of view, to control births can only be justified on the following grounds: (1) Because there is danger to the mother from childbirth. (2) Because, on account of the mental or physical condition of one or both parents, there is every reason to believe that the children would not be mentally or physically sound. For either of these two reasons, failing continence, I would be prepared to advise the parents how to control birth, and for no other reason.

In the case of both males and females it has been abundantly demonstrated that the soundness of their health is impaired by undue sexual indulgence, and, on the other hand, that vitality and virility are not only conserved but strengthened by the practice of "continence" as a habit. Honest guardians of the public health will therefore practise and preach the habit. Dr. Halliday Sutherland quotes Mr. Bernard Shaw and "a friend in the Church of Scotland." I go further than either of them, and state that a man who uses his wife for sexual intercourse other than for the purpose of propagation of his species is prostituting his own body and that of his wife to uses for which they were never intended, and is immoral to that extent.

The higher the ideal the fewer people that are able or willing to subscribe to it.—I am, etc.,

Barrowford, July 30th. ALFRED E. SELLER.

SIR,—Dr. Halliday Sutherland says in his letter that Malthus "was so concerned about the birth rate that he forgot that every one of us must die." As any one who has read the *Essay on the Principle of Population* knows, Malthus forgot nothing, and was concerned about the birth rate because of his belief that, in consequence of the relatively slow rate at which the food supply of countries is increased, a high birth rate necessarily causes a high death rate. Dr. Sutherland holds that "a high birth rate is not of necessity associated with a high death rate." The fact remains, however, that no country has ever had an annual birth rate of over 30 per 1,000 without having a low average duration of life. Dr. Sutherland has evaded my statement that the world's food supply has always been increased so slowly that only a small percentage of couples in the world could get sufficient food for more than two or three children. To certain other opponents I should like to say that emigration increases poverty in the mother country, because the majority of emigrants are adults; and also, that emigration is not migration, for colonials do not share our poor rates, taxes, and charities. —I am, etc.,

London, S.W., July 30th. BINNIE DUNLOP.

SIR,—Dr. Mary Scharlieb refers in her letter in your issue of July 16th to

> "some people who advocate the use of artificial preventives of conception go so far as to consider this knowledge an unmixed benefit to unmarried girls and women; indeed, one well known medical advocate of artificial prevention stated a few days ago that a young unmarried woman attending her clinic has already procured abortion twice, but she was thankful to have been able to teach her how to avoid that necessity in future!"

As my husband and I founded, and I control, the *only* birth control clinic in Britain, the above obviously will be widely recognized as referring to me. I must therefore crave your space to correct its misstatements.

Those of my words which Mrs. Scharlieb here travesties and misapplies in such a way as to make me appear to condone immorality, which my work is entirely calculated to do away with, have, fortunately, been published by Putnams in a shilling pamphlet giving the verbatim report of the "speeches and impressions of the Queen's Hall meeting on Constructive birth control." My exact words were (p. 24):

> "The second person who came to the clinic when it was first opened came on behalf of a girl of 20 who was pregnant for the sixth time. And every previous time she had had an abortion procured by her own mother. We, of course, had no help for that girl. We cannot deal with such cases. Yet it shows that in that terrible underworld of misery and anguish which we seldom, self-centred, lazy people so selfishly visualize and understand, there *is* already 'knowledge' of a kind . . . which is utterly detrimental, utterly unwholesome, and tragic in its effects. The true knowledge which we are bringing to consideration is clean and wholesome, and is pure physiological information to replace the miserable half knowledge which already exists."

Comparison of what I did say with what Dr. Scharlieb implies I said shows how she distorts my words, and I must ask her to withdraw her implications.

I should add that the method of control we advise in the clinic *cannot* be used by virgin girls, and therefore cannot have induced a single case of downfall. Moreover, almost without exception, those who apply to the clinic are married women who have already injured their health through too frequent childbirth.

Other points in this letter should be answered, but I will only deal with one more. Mrs. Scharlieb says her experience of over forty years convinces her that birth control "causes damage to a woman's nervous system"; yet she does not indicate which methods were used. When discussing this theme on the Birth Rate Commission I elicited from Mrs. Scharlieb that very many of her patients used (or rather got their husbands to use) the sheath and coitus interruptus. Dr. Scharlieb has only to read my book, *Wise Parenthood*, to learn the cause of the injuries which I clearly demonstrated are originated by these methods. But different processes have different physiological results, and it is really time that medical practitioners took the trouble at least to differentiate between totally distinct methods and to be explicit about which they refer to when they attempt to discuss a theme of such importance to the nation as the control of the quality of its conceptions.—I am, etc.,

Leatherhead, July 21st. MARIE CARMICHAEL STOPES.

We have referred this letter to Mrs. Scharlieb, who writes:

SIR,—I am sorry that my letter to the BRITISH MEDICAL JOURNAL of July 16th has given offence to Mrs. Marie Stopes, and that she feels that I make her to appear as condoning immorality. I am sure that this is far from being her intention.

I quoted the incident to which Dr. Stopes alludes on the authority of a doctor who was in the audience at the Queen's Hall when the lecture was given. I, of course, see that the statement made by Dr. Stopes was misunderstood by the hearer, and withdraw my statement and apologize for having given it currency.—I am, etc.,

Great Stretton, Aug. 8th. MARY S. SCHARLIEB.

CLINICAL AND LABORATORY METHODS.

SIR,—Having followed the correspondence concerning the line of research at St. Andrews with regard to early symptoms and prognosis, I beg to be allowed to state the matter as it appears to the young practitioner, possessing a certain amount of superficial knowledge, but very little based on personal experience. I would compare the minute investigation of symptoms to the attitude of a man approaching an isolated house. He sees a flickering light within it, a little smoke coming from an open window, and a little from the chimney. The problem before him is whether the room is on fire, or whether the fire burns normally in the grate but the smoke does not all go up the chimney. Immediate knowledge of his problem is essential to save the house. Should he contrast the varieties of smoke and flickerings he may, after some time, arrive at the correct answer, but by looking through the window he will come at once to the knowledge he requires. Similarly in disease, by looking at the diseased spot, or by testing for abnormal constituents of the body, a diagnosis is made, and treatment started at once. And on early treatment depends

20, 40, or perhaps 60 per cent. of the prognosis. An hour-glass stomach, constriction of the pylorus or colon, are seen by *x* rays, the *Spirochaeta pallida* is demonstrated in a sore, the bacillus of diphtheria isolated from the throat, the typical blood picture seen in pernicious anaemia in all these diagnosis is settled at once.

Thus, Sir, it appears to me, starting on the practice of medicine, that my time would be more profitably spent endeavouring to get to the root of problems at once than to search after the meaning of symptoms, a process from which I cannot gain any definite knowledge under twenty years. Already I can recognize pyloric obstruction by means of *x* rays, but to diagnose it from symptoms with certainty would take me a lifetime, and I should be unable to pass on to others the results of my personal experience. If my views are worthless, or my reasoning at fault, correction will be welcome to one honestly inquiring after wisdom. I am, etc.,

July 27th. M.B.LOND.

THE ORGANIZATION OF SCHOOL OPHTHALMIC WORK.

SIR,—In your issue of June 18th Dr. Wright Thomson joins issue with Mr. Bishop Harman on the subject of examining children of 7 years of age. I go further than Mr. Thomson, I examine the whole school by retinoscopy and pick out the defective ones for later examination, and obtain thereby more reliable results than are obtained by subjective tests in the hands of lay helpers.

My method is to address the school and explain what I am going to do and what they have got to do. I have a large class-room darkened and the children file in, keeping touch, so that they can all see what is being done, and so be prepared and thereby avoid the shyness that wastes time. A helper places them on the chair by the lamp and another one pulls them off it (which is another saving of time), and any defectives stand away for registration by a third helper for later examination. In a well regulated school orphanage with children from 15 to 4 years of age I have often done up to 200 per hour. Another day I pass them all in the same way for lid examination for trachoma, which is common out here, and it is quite easy to do more than that number per hour. My average of defectives over some years is 9.1 per cent., which compares favourably with other statistics.—I am, etc.,

Johannesburg, July 19th. A. GRELINE BRINTON.

THE FORMOL-GEL REACTION IN SYPHILIS.

SIR, I was very interested in Major Mackenzie's memorandum of his experience of this reaction in twenty-three cases, published in the BRITISH MEDICAL JOURNAL of June 11th. I was hopeful that at last a method had been found which would enable the clinician to diagnose syphilis without invoking the aid of the laboratory worker.

I therefore proceeded to test twenty-five serums, following faithfully the technique recommended by Major Mackenzie. I was disappointed to find that the serums all remained perfectly liquid, even after standing for several days, in spite of the fact that, as tested by the Wassermann reaction, fourteen of them were strongly positive.

One can therefore only come to the conclusion that this reaction is another "will o' the wisp," and of no value in the diagnosis of syphilis.—I am, etc.,

A. MURRAY STUART.
Surgeon in Charge of Venereal Diseases,
August 7th. Walsall General Hospital.

Obituary.

EDGAR FREEMAN MORRIS, M.R.C.S., L.S.A., Hereford.

THE announcement of the death on July 31st of Mr. Edgar Freeman Morris of Hereford was received by his colleagues throughout the county with profound regret. He was born in Hereford in 1857 and educated at the cathedral school. For about a year he was a pupil at the county hospital, and later became a student at University College Hospital. He took the diplomas of M.R.C.S. and L.S.A. in 1880, and after a year or so as an assistant in Eastbourne joined his father in practice in Hereford. There he soon became known as a careful and skilful surgeon, and in 1892 he was elected on the surgical staff of the county hospital; at the time of his resignation in 1917 he was the senior surgeon; he was then elected honorary consulting surgeon. He was very much interested in electrical therapeutics, and early in the present century installed in his consulting-rooms most complete electrical apparatus. A little later he was instrumental in securing a similar installation at the county hospital.

In his early manhood he was associated with the Volunteers and held the rank of captain. During the war he was consulting surgeon to several V.A.D. hospitals and was chairman of the local medical war committee. He was an active member locally of the British Medical Association, and succeeded his father as honorary secretary of the Herefordshire Medical Society, which was founded in 1859. Of late years he took a great interest in Freemasonry, and was a P.M. of the Vaga Lodge, of which he was the first initiate. He was a J.P. for the city of Hereford, and for many years vicar's warden of St. Peter's Church. He was twice married, and leaves a widow, a son, and two daughters to mourn their loss.

WE regret to record the death of Dr. RICHARD GRAMMER ALLEN, of Belper, on July 23rd. He was the son of the late Richard Rowland Allen, who for many years practised in Belper, and was educated at Belper School, Trent College, and Queen's College, Birmingham. He became a Member of the Royal College of Surgeons of England in 1875, and a Licentiate of the Royal College of Physicians of Edinburgh in 1876. Before commencing practice in Belper he was house-physician at the Queen's Hospital, Birmingham, and assistant house-surgeon at the Carlisle Infirmary. He was medical officer of health, Belper Urban District Council; medical officer, Belper Union Workhouse and Nos. 1 and 2 Districts of the Union; medical superintendent, Belper Joint Isolation Hospital. Dr. Allen was a member of the British Medical Association, and was for many years chairman of the Belper Conservative Club. He leaves a widow, a son (Dr. Richard Clayton Allen, who was in practice with his father), and two daughters.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on August 4th the degree of Bachelor of Medicine was conferred on H. L. Rayner Balnoh.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on July 20th.

The following were recognized teachers at the institutions and in the subjects indicated:

St. Bartholomew's Hospital Medical School.—Dr. Geoffrey Evans and Dr. C. M. Hinds Howell (Medicine), Mr. R. M. Vick (Surgery).

Guy's Hospital Medical School.—Dr. Geoffrey Marshall (Medicine), Mr. Ernest G. Slesinger (Surgery).

King's College Hospital Medical School.—Mr. Henry A. Burridge (Forensic Medicine), Mr. John Everidge and Dr. C. Jennings Marshall (Surgery), Dr. Arthur C. D. Firth and Dr. F. W. Tunnicliffe (Medicine), Mr. Cecil H. M. Hughes (Anaesthetics), Dr. Helen Ingleby (Pathology—Morbid Anatomy), Mr. J. W. Thomson Walker (Surgery—Urology), Dr. S. A. Kinnier Wilson (Neurology), Mr. Harold A. T. Fairbank (Surgery—Orthopaedics), Dr. Charles W. M. Hope (Laryngology).

Royal Army Medical College.—Brevet Lieut.-Colonel Henry M. J. Perry (Pathology), Lieut.-Colonel James Crawford Kennedy (Tropical Medicine), Brevet Colonel Percy S. Lelean (Hygiene), Lieut.-Colonel John Weir West (Surgery—Military).

The following were appointed to act as examiners for the second examination for medical degrees Part II in the session 1921–22, the chairmen of the respective boards being indicated by an asterisk:

Anatomy.—*Professor W. Wright and Professor E. Barclay-Smith, together with the external examiners, Professor G. Elliot Smith and Dr. W. L. H. Duckworth.

Physiology.—*Professor F. A. Bainbridge and Professor H. E. Roaf, together with the external examiners, Professor J. S. Macdonald and *Professor M. S. Pembrey.

Pharmacology.—Dr. P. Hamill and Dr. V. J. Woolley, together with the external examiners, *Professor F. Ransom and Professor J. A. Gunn.

The regulations for the second examination for medical degrees, Part II, and M.B., B.S. examination for external students were amended as follows:

Paragraph 4 (iii) on p. 230 of the Red Book, 1920–21, by the addition of the following words after "at a school of the University":

"Provided that, in and after October, 1923, no candidate shall be permitted to enter for the third examination for medical degrees under this regulation unless he has spent at least three years in the

required course of study, part or the whole of which may, however, have been followed prior to passing in anatomy and physiology at the second examination for medical degrees, Part II."

Paragraph 4 (iii) on p. 211 of the Blue Book, September, 1920, by the insertion of the words:

"Provided that, in and after October, 1923, the required course of study for the third examination must be shown to have covered at least three years."

Mr. H. J. Waring has been elected Chairman of the Brown Animal Sanatory Institution Committee.

Applications for the University chair of chemistry, tenable at Middlesex Hospital Medical School (salary £800 per annum), must be received by the Academic Registrar, University of London, by at latest the first post on September 22nd.

ST. THOMAS'S HOSPITAL.

An Entrance Arts Scholarship, 1921, value £25, has been awarded to R. A. Hill; and an Entrance Science Scholarship, 1921, value £150, to J. M. Ashton.

The Services.

ARMY DENTAL CORPS.

THE War Office announces that the rates of half-pay for officers of the Army Dental Corps, which were fixed in January last at half the rates of full pay, have been amended, and will now be the rates provided for other arms of the service in terms of Army Order 524 of 1919.

DEATHS IN THE SERVICES.

Colonel Andrew Francis Dobson, Madras Medical Service (retired), died in London on June 24th. He was born on June 10th, 1848, the son of Dr. Park Dobson of Longford, and educated at Trinity College, Dublin, where he gained a medical exhibition in 1869; he graduated B.A. and M.B. in 1871, also taking the L.R.C.S.I. in the same year. Entering the I.M.S. as assistant surgeon on March 30th, 1872, he attained the rank of colonel on May 4th, 1901, retiring on May 28th, 1906.

Colonel Samuel Henry O'Brien Banks, Bombay Medical Service (retired), died at Brighton on June 15th, aged 79. He was educated at the Carmichael School, Dublin, and took the L.R.C.S.I. in 1865 and L.K.Q.C.P. in 1866; and subsequently the F.R.C.S.I. and M.K.Q.C.P. in 1880. Entering the I.M.S. as assistant surgeon on October 1st, 1866, he attained the rank of brigade surgeon on November 19th, 1889, and that of surgeon-colonel on September 18th, 1895, and retired on November 13th, 1900. He served in the Abyssinian war of 1868, was present at the storming of Magdala, and received the medal. In November, 1888, he was appointed a Presidency surgeon in Bombay, and on promotion in 1895 was posted as P.M.O. of the Nagpur district, Central Provinces.

Colonel Charles Henry Hale, D.S.O., C.M.G., Army Medical Staff (retired), died at Plymouth on July 20th, aged 58. He was born at Eastbourne, and was the younger brother of Lieut.-Colonel G. E. Hale, R.A.M.C. He was educated at St. Mary's Hospital, taking the M.R.C.S. and L.R.C.P.Lond. in 1884. After acting as assistant medical officer at the Salop and Montgomery Counties Asylum, he entered the army as surgeon on February 5th, 1887, becoming lieutenant-colonel on June 7th, 1911, and full colonel on March 1st, 1915. He served in South Africa in the Matabele campaign of 1896, when he was mentioned in dispatches and received the D.S.O.; in the South African war in 1901–2 in operations in Cape Colony and in the Orange River Colony, receiving the Queen's medal with four clasps; and in the recent war from 1914 to 1918, as A.D.M.S. of the 13th Division in Gallipoli, and as a D.D.M.S. in the Egyptian Expeditionary Force; was mentioned in dispatches in the *London Gazette* of January 28th, 1916, and July 13th, 1916, and received the C.M.G. in 1915.

Lieut.-Colonel John Osburne, R.A.M.C. (retired), died recently in County Kildare, aged 64. He became L.R.C.P. and S.Edin. in 1880, and entered the army as surgeon on February 5th, 1881, becoming Lieut.-Colonel after twenty years' service, and retiring on January 11th, 1902. After retirement he was employed at Galway from 1904 to 1916. He served in the Egyptian war of 1882, was at the battle of Tel-el-Kebir, and received the medal with a clasp and Khedive's bronze star; in the Sudan in 1885, at Suakin, and at the action of Tofrek (clasp); and in the South African war in 1900–01, taking part in operations in Cape Colony and in the Transvaal, and gaining the Queen's medal with three clasps.

Major Arthur Charles Oldham, R.A.M.C. (T.F.), died recently of sunstroke in the Persian Gulf. He was educated at Owens College, Manchester, and in the R.C.S.I. School in Dublin he took the Scottish triple qualification in 1895. Before the war he was in practice at Kidderminster. He took a medical commission in the old Volunteer Force on December 21st, 1898, transferred to the Territorial Force on its organization, and became surgeon-major in the 2nd South Midland (Worcester) Brigade of Royal Field Artillery on July 19th, 1912, with which he went on service in August, 1914, serving throughout the war. After the armistice he served for some time in the army of occupation at Cologne, and about eighteen months ago took an appointment at Bagdad.

Medical News.

THE St. Bartholomew's Hospital and College annual old students' dinner will be held in the Great Hall of the hospital on Monday, October 3rd, at 7 for 7.30 p.m. The chair will be taken by Dr. W. S. A. Griffith. The honorary secretary is Sir C. Gordon-Watson, 82, Harley Street, W.1.

DR. JAMES ARTHUR HARGREAVES of Wetherby, Yorks, has been appointed to the Commission of the Peace for the West Riding of Yorkshire.

DR. CHARLES CAMERON, assistant medical officer of health and divisional tuberculosis officer for the South-Western Division of Glasgow, has been appointed medical superintendent of the sanatorium to be instituted at East Fortune by the South-Eastern Counties of Scotland Joint Sanatorium Board.

THE annual dinner for past and present students of Westminster Hospital will be held on Friday, October 7th, at the Great Central Hotel. Sir Charles Ryall will be in the chair. The usual notices will be sent out early in September. The honorary secretary is Dr. Adolphe Abrahams, 24, Park Crescent, Portland Place, W.

WE learn from *Nature* for August 4th that the main object of Professor Einstein's recent visit to America has been attained, and that the establishment of the medical faculty of the University of Jerusalem is now assured. It is proposed also to establish at an early date an arts faculty, a Jewish faculty, and departments of physics, chemistry, law, and commerce. So far as possible, Hebrew will be the medium of instruction, this being the language spoken by the Jews of Palestine, but no religious or racial tests will be enforced. The university, which was founded in 1918, will be modelled on European and American standards.

THE second Congress of the Association of Gynaecologists and Obstetricians of French-speaking countries will be held in Paris from September 29th to October 1st, 1921. Membership of any French-speaking gynaecological or obstetrical society entitles to membership of the congress. The general secretary is Dr. Brindeau, rue de Grenelle 71, Paris.

THE ceremonies in connexion with the dedication of the new building of the Peking Union Medical College, erected by the China Medical Board of the Rockefeller Foundation, will include an international medical conference during the week commencing September 15th, which will be participated in by medical men from all parts of the world. Among those who have accepted invitations and will be present are Dr. Thomas Cochrane, of London, formerly Principal of the Union Medical College at Peking; Sir William Smyly, of Dublin; Professor R. T. Leiper, of the London School of Tropical Medicine; Professor Tuffier, of Paris; Dr. George de Schweinitz, of the University of Pennsylvania, President-elect of the American Medical Association; and Dr. A. B. Macallum, of McGill University, Montreal.

A BILL for the prevention of venereal diseases is to be introduced by the health authorities in the Japanese Diet in the coming session. It is stated in the official report of the medical examinations for conscription that the number affected with venereal disease was approximately 11,600 out of a total conscription list of 534,800 for the year.

DR. RAGHAVENDRA ROW, M.D., D.Sc., has been appointed first physician to the Jamsetjee Jeejeebhoy Hospital and professor of medicine and therapeutics at the Grant Medical College, Bombay. This is the first time, the *Pioneer* states, that a member of the independent medical profession has been appointed to the post. Dr. Row, who received his medical education at the Grant Medical College and University College, London, was at one time demonstrator of physiology at the first named institution; he has made many contributions to pathology.

THE winter session at the Middlesex Hospital will open on Tuesday, October 4th, at 3 p.m. The introductory address will be delivered by Mr. Gordon Taylor, F.R.C.S., after which the prizes gained during the previous year will be distributed by Sir John Bland-Sutton, Consulting Surgeon to the Hospital. The annual dinner will be held the same evening, at 7.30, at the Trocadero. Dr. Comyns Berkeley will preside. Those wishing to be present at the dinner should communicate as soon as possible with the Secretary-Superintendent of the Hospital.

THE second International Congress of Eugenics is to be held in New York City from September 22nd to 28th, 1921.

AT the June matriculation examination of the University of London there were 210 successful candidates in the first division and 1,308 in the second division; 34 candidates obtained the supplementary certificate in Latin.

A DISPATCH from Helsingfors reports that the Health Commissioner informed the Pan-Russian Health Congress in Moscow, on June 21st, that cholera was raging in the southern and middle provinces of Russia.

ON June 18th graduates of the University of Pennsylvania paid a tribute to the late Dr. Joseph Leidy, who at one time was professor of anatomy at the institution, when they unveiled a bronze statue in his memory at the University's medical laboratory building.

THE thirty-first annual meeting of the American Electrotherapeutic Association will be held in Washington from September 7th to 19th. Dr. Byron S. Price is president, and Dr. A. Bern Hirsh, 71, West 94th Street, New York, secretary.

THE American Red Cross has held successful exhibitions in child and infant welfare at Lille, Roubaix, and Tourcoing. These three cities form practically one industrial group, and are still seriously crippled by the damage done during the period of German occupation.

DURING the present financial year three new public sanatoriums for tuberculosis are to be established in Japan; when these have been completed there will be in all ten public tuberculosis sanatoriums established under the regulations for the prevention of tuberculosis.

A FEW months ago the Spanish Government withdrew the privilege of practising in Spain from foreign medical practitioners. Owing mainly to the efforts of Professor Recasens and Professor Maranon the privilege has, according to the *Paris Médical*, been restored to French medical practitioners, but information is lacking as to whether this will apply to practitioners of other nationalities.

THE Second International Congress of Comparative Pathology will take place at Rome on September 20th.

A FRANCO-POLISH medical congress will be held at Warsaw on September 15th to 19th.

THOUGH the Dental Act, 1921, has received the Royal assent, the additional registrations for which it provides cannot be made until the Dental Board the Act directs should be set up has been constituted.

ON November 5th the Faculty of Medicine of Montpellier will celebrate the seventh centenary of its foundation by a banquet and other festivities.

THE *Nederlandsch Tijdschrift* relates that the students and faculties of the Swiss universities are soliciting funds for founding a sanatorium at Leysin for the benefit of tuberculous students and professors of any country.

THE *Riforma Medica* announces that the clinical institutes of Milan are to be merged henceforth in the medical school of the University of Pavia. There are several post-graduate institutes in Milan, including one for occupational diseases.

THE late Mr. John Dyer of Swansea, who left net personalty of £49,954, has bequeathed £4,000 to the Swansea General and Eye Hospital, £1,000 to the North Devon Infirmary, Barnstaple, and £500 each to the Swansea Infirmary for the Blind and the Yeatmen's Hospital, Sherborne.

A NEW cottage hospital established at Chirk, Denbighshire, mainly, as we understand, through the exertions of Dr. John D. Lloyd, was opened by Sir Napier Burnett on August 4th. The hospital, which is of brick, rough cast, has wide and commanding views of the Welsh and Shropshire hills. There are eighteen beds, three of which are for private patients. Lady Trevor, of Brynkinalt, has generously presented an up-to-date operating theatre; Miss Cheetham has endowed a bed to the memory of Mr. Barnes; a cot has been endowed, with the promise of another. In the initial stages £4,000 was raised locally, and this sum was covered by the joint committees of St. John and the British Red Cross, which have since made further liberal gifts. Ifton and Brynkinalt colliery employees contributed £1,073 -£1 per head -and the Collieries Relief Society gave £500, as well as £30 towards a memorial tablet presented to the hospital in memory of the 125 men of these collieries who laid down their lives in the war.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"IATROS," who is in active practice but whose nights and week-ends are his own, asks whether it would be possible for him, under these circumstances, to obtain the diploma in ophthalmic medicine and surgery of the Conjoint Board. He wishes information as to the routine of work, the textbooks, and the type of practical work required at the first part of the examination.

TOBACCO HABIT.

"MEDICUS" writes that if "Victim" applies silver nitrate solution to his throat he will find tobacco abominable and gladly refrain from using it. Repeat as required. Put all tobacco, etc., out of sight.

INCOME TAX.

"W. G. R." sold his practice, but not his book debts, last year; the inspector of taxes claims payment of tax on the amount of book debts paid to "W. G. R." since the sale of the practice. What action should be taken?

*** The inspector's attitude seems to be founded on a misunderstanding of the "cash receipt" method of calculating liability. That method has been accepted by the Board of Inland Revenue on the ground that in the case of a well-established practice, the "cash receipt" income is equivalent to the theoretically more correct "booked" income less an allowance for bad debts. In other words "W. G. R." has already paid tax on the income from his practice, and he is not now assessable for what he is realizing from the book debts. It is not clear on what "income" the inspector proposes to raise an assessment, seeing that our correspondent's professional work has ceased. "W. G. R." might lay the facts before the Secretary, Inland Revenue, Somerset House, in writing, or alternately repudiate liability, and if and when a notice of assessment is received give formal notice of objection and appeal to the local or special commissioners of income tax.

"A. M." is assessed under Schedule E for his remuneration as house-surgeon, and has been refused any deduction for the expense of purchasing professional books or subscribing to professional societies.

*** We think this refusal unjustifiable. A practitioner's medical library is part of his professional equipment, and we consider a reasonable expenditure on its *maintenance* at a normal standard as allowable on the ground that it is incurred wholly, exclusively, and necessarily in the performance of the duties of the office.

"H. F." has received a letter from the local official declining to allow the expense incurred in using a pony and trap for his attendance at the hospital as radiologist to the Infirmary and War Pensions Committees. Our correspondent is crippled, and the use of a conveyance is necessary for him.

*** The inspector's action appears legally correct. The emoluments concerned are chargeable under Schedule E, and it has been held in cases decided in the courts that deductible expenses must be incurred *in* the performance of the

duties, not in travelling, to the place where they are employed. This case supplies another instance where the distinction on this point between Schedule D and Schedule E creates a distinct hardship.

A GRAVEYARD SITE.

"MEMBER of twenty-five years' standing" is anxious to purchase a piece of land in a main road in a county town, but he now understands it was used as a burial ground fifty years ago. He asks if there would be any objection to the erection of a building or dwelling house thereon.

*** It would assist in replying to this question if we had been told for how long a period the ground had been used as a burial ground and what is the nature of the subsoil. Assuming that it has been under cultivation for the past fifty years, there would appear to be no objection, apart from sentiment, to the erection on it of a building or dwelling-house.

LETTERS, NOTES, ETC.

THE DYNAMOMETER AS A TEST OF FATIGUE.

DR. E. A. C. SWAINSON (Stafford) writes: Sir Thomas Oliver's paper on industrial hygiene mentions the dynamometer as a method of testing "fatigue." Twenty-seven years ago, foolishly perhaps, I used to play with heavy-weight dumb-bells. The following facts, as regards myself, were forced on my observation: Muscular strength is low on rising in morning and lower after a cold bath. It rises considerably in the forenoon, reaches its maximum at 5 or 6 p.m., and slightly diminishes in the evening. A long bicycle ride in the afternoon made no perceptible difference. I remember lifting for the first time, to my surprise, a new and particularly solid specimen after coming back tired from a ride of at least forty miles. Note the difference: low power in morning, fresh after a bath; high power in afternoon when tired. Dynamometer readings would probably work out in the same way. Some years afterwards a review published in this JOURNAL of a small work by an American professor gave equivalent results. I do not think, therefore, that one or two grips of the machine give much, if any, indication of fatigue. While on the subject of grip, we used to be taught that a grip *slightly* in favour of the left hand meant defect of the right side, except in left-handed persons. This presumes that the right hand is usually about 5 lb. better than the left. I doubt it. My own left-hand average is as good as the right, and I have frequently found this to be the case in others.

IONIC MEDICATION IN SEPTIC WOUNDS.

DR. CHARLES W. HAYWARD (Hatch End, Middlesex) writes to express the opinion that the value of ionic medication for the cleansing of septic wounds is not as much appreciated as it deserves. He writes: The action of salt solution upon infected wounds, when the electric current is passed through, warrants all the praise given by your correspondent. In 1911 I reported cases treated in this manner with marked success, and one of them may suggest to your correspondent methods which will be useful to him and his patients. I was treating in hospital a case of neglected septic hand, where extension had taken place necessitating amputation, with reamputation at the elbow. Further complications threatened, as there were sinuses about seven to eight inches upwards along the humerus. I daily placed the stump in a deep vessel of salt solution up to the armpit, and in each sinus I placed a long hip probe. The salt solution entered the two sinuses, and the probe conveyed the current the full length of each sinus. Within a few days the discharge from the sinuses rapidly diminished, the whole stump cleared up, and satisfactory healing took place. This process has also been followed in cases of suppurating sinus after appendicitis, as well as other cases, and it has never failed to produce excellent results. I strongly recommend surgeons to follow up this line of treatment.

A TALL TALISMAN.

In this column on March 19th, p. 443, was published under the above title a communication from an I.M.S. officer giving some account of a circular issued in all seriousness by a native firm in Calcutta, advertising a "Talisman" which [illegible] manufacture. We had supposed that the foolishness of the claims made would have been obvious, and therefore our comments were very brief. It appears, however, that we were mistaken, for the firm interested has reprinted the note as a handbill, with this introduction: "The following is the full text of the review of our worldwide 'Talisman' published in the BRITISH MEDICAL JOURNAL, London, of the 19th March, 1921." A medical correspondent in India, who sends this circular, expresses the opinion that the proprietors are trying to gull their fellow countrymen into believing that their so-called wonder worker "has the approval and recommendation of one of the most revered medical journals in the world." "The trick," he writes, "in your few words of comment was too subtle for the average Indian to appreciate in a foreign language." "India," he continues, "seems to abound in patent medicine concerns (often, I regret to say, adopting English or American names) which flood the country with their pernicious advertisement literature."

THE GATÉ PAPACOSTAS REACTION.

CAPTAIN W. C. SPACKMAN, I.M.S. (Dharmsala, Punjab), writes: The Gaté-Papacostas "formol-gel" reaction is not specific for syphilis. It is given by kala-azar, with this most important distinction, that the serum coagulates in a few seconds, whereas in syphilis twelve to forty-eight hours are required. Moreover, the clot is a hard white one, not mildly gelatinous or semitransparent. I suggest to tropical disease workers that the reaction may be strongly given in trypanosomiasis. I have not as yet had time to see if the reaction in kala-azar is modified by injections of antimony tartrate during the cure of the disease.

TREATMENT OF WHOOPING-COUGH.

"ASSISTANT" writes: I have read "Country Doctor's" letter (p. 224) with regard to the treatment of whooping-cough with much interest. May I send an account of the routine treatment at the Bermondsey Medical Mission which has been very successful? In all cases the vomiting and whooping have stopped in fourteen days, and in many cases in a week. The treatment is as follows: (1) The bowels are kept open with syrup of senna, dose according to age. (2) The diet is light and nourishing, and no meal is taken after 5 p.m. This restriction lessens the attacks of coughing during the night. (3) The chest is rubbed back and front nightly with soap liniment, diluted with olive oil for very young children, as they have a tendency to a "liniment rash." (4) We keep the following stock mixture made up:

R Alum ...	...	...	...	5ss
Vin. ipecac.	...	...	...	5iss
Glycerin	...	...	...	5ss
Aquam anethi	...	...	ad	5i.i

(Dose, 5ij four-hourly for a child of 6 years.)

(5) Virol 5ss to 5j is given three times a day after meals. This treatment may sound rather old-fashioned, but it is most efficacious. Our patients are drawn from among the poorest in a very crowded district, and all are doing well. They come for inspection once a week.

A BONUS ON SALES.

OUR attention has been drawn to a typewritten letter, clearly a circular though marked "Private," which has been received by a medical man from the proprietors of a disinfectant. The circular opens thus:

> "To provide for the further development of the —— business, additional capital is being raised on £100 Ten Year 8 per cent Debentures, redeemable at £110, with a bonus on sales of —— for 25 years, secured by a Commission Coupon. Whilst I was placing these Debentures with personal friends, I heard of a medical man who wanted a financial interest in ——. It then occurred to me that other members of the profession who have used —— might possibly wish to secure a similar interest. I wrote to a few of our clients, and was surprised at the number of applications received. As you might possibly be interested, I would gladly send you full particulars on hearing from you."

Only one further sentence need be quoted from the circular: "The Debentures need not be in your name, but may be in the name of any member of your family."

We agree that it is objectionable to make a suggestion of this kind to members of the medical profession, and we think it right that readers should be warned to be on their guard in dealing with any proposal of this sort that may reach them through the post.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, 31, 32, and 33 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 28, 29, and 30.

THE appointment of a Medical Referee under the Workmen's Compensation Act, 1906, for the Walsall County Court in Circuit No. 25, is vacant. Applications to the Private Secretary, Home Office, by August 27th.

THE appointments of certifying factory surgeons at Llanwrtyd Wells (Brecon) and Southwell (Nottingham) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF RADIOLOGY AND ELECTRO-THERAPEUTICS.

Robert Knox, M.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

In opening the meeting of this Section I feel compelled to refer to the tragic circumstance which has led to my appearance in the chair. Dr. Ironside Bruce was the President-elect for this meeting, and I cannot too deeply deplore his untimely death. He was one of our pioneers, and had rendered most important service in the advancement of radiology since the discovery of *x* rays by Professor Roentgen in 1895. It is most probable that he sacrificed himself in the prime of a useful career by his devotion to research, for it is clear that in some way over-exposure to *x* rays had induced changes in the blood which terminated fatally.

The Need for Research.

In any case the tragic circumstances of his last illness have directed attention to the changes induced by penetrating radiations, particularly upon the blood constituents, which, when fully investigated, may lead to very important discoveries as to the method of action of the ray from *x*-ray tube and radium. That these agents exercise a far-reaching action no one will deny. I believe that a systematic investigation of the action of rays upon tissues will lead us a long way on the road to accurate therapy, and I am strongly of opinion that in the blood we have a tissue peculiarly adapted for such systematic research. It is not merely the use of blood counts, total and differential, that should be of service, useful though such counts undoubtedly are. It should be possible to extend our researches in other directions—for example, what do we know about the changes which take place in the blood corpuscle itself, what nuclear changes have been noted? Then there are the changes which action on the tissues may induce in the serum. The work done up to the present has thrown some light upon the action of radiations upon the blood cells. I would strongly urge an extended field of action in blood observations. In this field alone there are boundless opportunities for many research workers.

It is obvious, in view of the now well known dangers of over-exposure to radiations, that all precautions should be taken to protect the patient and the worker from such over-exposure. These important points have already been dealt with by a special committee, which has issued a preliminary report stating the measures of protection which are required in the light of our present knowledge. It is extremely likely that these may have to be reinforced when deep therapy on intensive lines becomes more general. It will become necessary for all departments to be overhauled with a view to securing adequate protection for workers. Inspection of departments by experts should become a routine practice.

Intensive Treatment of Cancer.

The interest of the public in matters pertaining to the treatment of cancer by *x* rays has recently been stimulated by announcements in the lay press of very radical changes in treatment. It is greatly to be deplored that any such announcements, even including a percentage quoted of actual cures, should have been made public before time has been allowed to elapse for the thorough testing of the method of treatment and the percentage of cures.

The facts upon which these claims have been based are as follows: Drs. Wintz and L. Seitz, of Erlangen, have been treating cancer, and particularly cancer of the uterus, by *x* rays, and have published papers giving a remarkable percentage of cures. The results have been obtained by a technique the chief feature of which is the administration of a large single dose directed towards the primary lesion. They state that if the carcinoma is strictly localized, then one sitting will suffice; but they add, "As, however, one can never be sure beforehand in the case of carcinoma that new formations have not already taken place, we must irradiate the area of tissue which lies adjacent to the pelvic wall with the full carcinoma dose. In six weeks after the first irradiation, the condition of the blood having fully recovered, the skin can also receive a fresh dose without danger after that time. The parametrium on the right is then irradiated. After another six or eight weeks the irradiation of the left parametrium is carried out in like manner."

The improvements in the instrumentation consist in the use of a twin-coil installation which is capable of giving a high voltage in the secondary (estimated at from 180,000 to 200,000 volts), and in the employment of an *x* ray tube capable of continuously passing a current of 2.2 milliampères at that voltage. The dosage has been very scientifically measured by means of the Ionto quantimeter, which is a specially adapted ionization chamber.

The theory of the technique is based upon what is termed the "carcinoma dose," and it is stated that each portion of the tumour must receive this dose if success is to be obtained.

Work of a similar nature has been carried out in other centres in Germany, and a variety of apparatus devised to give the required voltage. For this advance in radiological technique the German workers are entitled to full credit, and I freely acknowledge that they have done a great deal to advance the scientific side of the work. But it would be well to withhold judgement in this important matter, particularly with regard to the percentage of cures obtained by the new method, for some considerable time. Time will prove the value of the *x*-ray treatment of carcinoma, and until a large number of cases have been treated in this country we cannot express an opinion on the value to be attached to the claims put forward.

Recently the authorities of the West London Hospital have called attention in the lay press to the fact that they have installed a German *x*-ray outfit for this intensive treatment of cancer, and this has been magnified into a "new cure for cancer." They quote the German statistics and assert that 80 per cent. of cases treated have been cured clinically. We cannot too strongly deprecate this action on the part of the authorities of the West London Hospital. The exploitation of "a cancer cure" in such a totally unscientific and unwarranted manner is worthy of the strongest condemnation. No pronouncement on a subject of such importance should have been made at all, and certainly not to the lay press, until the hospital authorities had been able to state from the results obtained by their own work that they were able to accept or confirm the German statistics. They must have known that such a publication would rouse hopes in the minds of thousands of people which are doomed to cruel disappointment. Moreover, it would appear from a perusal of the work published by Drs. Wintz and Seitz themselves that the authorities of the West London Hospital have overstated the German claim. I quote from the original paper published in 1919:

"In spite of this we even now do not advocate the treatment of uterine carcinomata by *x* rays alone. In order to do so our period of observation has not been sufficiently long. The chief point, however, which prevents us from demanding in general that uterine cancer should be treated by *x* rays alone is the difficulty of the technique.

"In order to obtain results as described by us it is necessary to take out of tube and apparatus everything that it is possible to get; maximum efficiency is required from the apparatus and the tube; the greatest personal attention is wanted, and before everything from the doctor, in order that he adjusts each field of concentration after careful consideration and in accordance with the best topographical and anatomical knowledge."

In the *Lancet* for July 2nd, 1921, the following is one of a number of statements made in a leading article entitled, "The *x* rays in malignant disease":

"It will be seen that the suggestion in the lay press that cases of malignant disease should go to the radiologist immediately the diagnosis is made, and before operation, is based on the observation of competent observers. There is little doubt that the time has come for us to reconsider our position in dealing with the situation."

This we regard as a most ill-advised pronouncement, and we emphatically disagree with the conclusions expressed. The time has not yet come when radiology

can be regarded as the first choice in the treatment of the majority of cases of malignant disease. We believe that surgery still offers the best prospect of cure in nearly all cases of cancer, and that until much more convincing proof of the efficiency of *x* rays or other form of radiation is forthcoming it would be extremely dangerous to encourage patients to submit to *x*-ray treatment for the cure of these very serious conditions before the advantages that surgery possesses have been fully discussed.

We are of the opinion that a closer co-operation between the surgeon and the radiologist would lead to a clearer appreciation of the value of radiations in treatment, and that in all doubtful cases surgery and radiation therapy should be fully considered. Up to the present combined treatment still offers the best prospects of cure in all cases of cancer; we therefore strongly urge that after operation radiations should be used more extensively than they are at present. We regard *x* rays as a most valuable adjunct to surgical treatment, which when carefully applied renders valuable service.

It is to be regretted that such hasty opinions should have been given so much publicity, and it should be realized that such pronouncements must be harmful to the future of radiology and inevitably bring discredit upon what is really a useful agent in the treatment of disease.

From the lay press announcements on the subject of the treatment of cancer it might be presumed that no work had been done in this country and that our radiologists in general were hopelessly behind Continental workers in this important branch of medicine. Radium and *x*-ray treatment of malignant growths have been carefully studied in many centres in this country for years, and radiologists are fully alive to the value of these agents in treatment. The question of higher power apparatus has been engaging the attention of physicists, instrument designers, and radiologists. *X*-ray workers have been using higher and higher voltages in recent years, and have only been limited by the apparatus hitherto obtainable. Demands for tubes capable of standing up to the higher voltages have been made, and such tubes are now being manufactured in this country.

Several hospitals besides the West London have installed or are about to install the most powerful apparatus obtainable. It may be said in passing that this can now be obtained from the home manufacturers, so that it is not necessary to apply for the imported article. The Cancer Hospital, Glasgow, has, I believe, a German outfit. At the Cancer Hospital, London, where I work we have been using high voltages for many years with improvements in results; we are about to install an outfit capable of working at the 200,000 volts, and a special committee is engaged on the design of a high-tension transformer outfit which will greatly exceed that limit if it should be required. At St. Bartholomew's Hospital high voltages have been used for some time back; indeed, Dr. Finzi has been insistently asking for apparatus that would give him still higher voltages.

I may confidently state that we are in a position in this country to grapple with this problem of the radiation treatment of cancer, that it is being steadily and patiently investigated in a number of centres, and that the true value of radiation treatment will be established.

DISCUSSION ON THE CHANGES INDUCED IN BLOOD CONSTITUENTS BY RADIATIONS.

OPENING PAPERS.

I.—Professor SIDNEY RUSS, D.Sc.,
Middlesex Hospital.

Some Contrasts in the Effects of *X*-rays and Radium upon Blood Cells.

A study of the effects of *x* rays upon the circulating leucocytes of the rat has shown that for a certain measured dose of *x* rays the effects upon the lymphocytes are regular and can be repeated, but simultaneous observations upon the polynuclear leucocytes show quite irregular changes, for an increase or a decrease in their numbers may occur as a result of the exposures.

Observations have also been made upon the effects of exposures on man to rather large quantities of gamma radiation. The subjects were all under treatment for malignant disease, and blood counts were made immediately before exposure to the radiation which lasted for four or five hours; counts were then made two and seven days afterwards. Here again a greater regularity was observed in the effects upon the lymphocytes than upon the polynuclear leucocytes.

The observations have been restricted to finding how the number of circulating cells is affected by the radiation. In the experiments upon rats it was found that a very short exposure to *x* rays of medium intensity and of moderate penetrating power always produced a marked fall in the number of circulating lymphocytes—the reduction being about 50 per cent. for an exposure lasting twelve seconds.[1] The animal returns to its normal lymphocyte count in about twenty-four hours.

If the exposure be repeated, almost the same change takes place. The time of exposure may be prolonged to one minute, or even to five minutes, without any appreciable difference in the effect; the animal, however, takes rather longer to recover from these exposures than from the very short ones. The regularity of these effects upon the lymphocytes is seen in Fig. 1, the percentage drop for

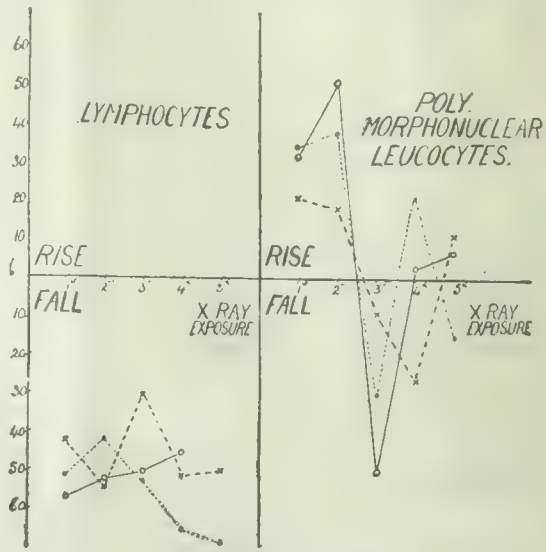


Fig. 1.—× = 12 seconds exposures. o = 1 minute exposures. • = 5 minutes exposures.

exposures repeated at intervals of about a fortnight being represented, showing in all cases a reduction of the numbers of the circulating lymphocytes; the deviations ficant. Simultaneous observations upon the polynuclear from a 50 per cent. change not being often very significant forms show a marked contrast, for the probability of a rise in their numbers appears to be almost as big as of a fall, after the *x*-ray exposures.

As already mentioned, the blood counts upon man were upon patients suffering from malignant disease who were being treated by means of a large quantity of radium (about 5 grams of radium bromide) applied externally to the affected region. In these circumstances the body shared to a large extent in the gamma rays, and it was decided to make complete blood counts with a view to seeing whether the blood changes might serve in any way as a guide to the extent to which the radiation could be applied. In several cases where it was desirable to prolong the irradiation the blood changes were of a sufficiently marked character to suggest the advisability of stopping the treatment for a time. In the 31 cases dealt with here a blood count was taken immediately before the rays were applied and repeated two and seven days later. The blood changes, after an exposure to the radium for four or five hours, were in the majority of cases significant, and here again a greater regularity was observed in the effect upon the lymphocytes than upon the polynuclear leucocytes. The data in Table I show that out of the 31 cases, a reduction in the number of circulating lymphocytes was observed in 20, an increase in 5, and "no

[1] For details of the dose corresponding to this exposure see the *Lancet*, April 26th, 1919, "Experimental Studies with Small Doses of *X* rays," by Russ and others.

TABLE I.—*Effect of Gamma Rays upon Blood Cells.*
(31 cases.)

	Fall.	Rise.	No Change.
Lymphocytes	20	5	6
Polymorphonuclear leucocytes	12	10	9

change" in 6. Anything less than an 8 per cent. variation is classified as "no change," this being considered a safe margin to allow for the possible error in these counts. The figures for the polynuclear cells for the same 31 cases show that an increase, a decrease, or no change in their numbers was of very nearly the same probability.

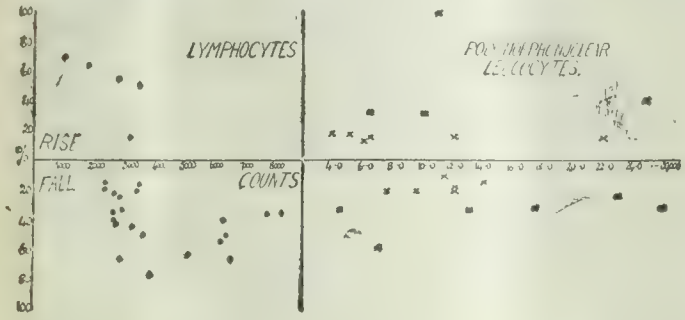


FIG. 2.

No doubt the conditions in these 31 cases were of a very complicated character, for the subjects were not normal, and a septic condition was the rule rather than the exception.

The experimental and the observational data bear upon one another to the extent of showing that both *x* rays and gamma rays may be expected to cause lymphocytes to disappear from the circulation. It may be worth mentioning that the five cases in which an increase in their numbers occurred were characterized by rather lower lymphocyte counts than the average of the series.

Changes in the red blood cells have also occurred after a single gamma ray exposure; they are not of a pronounced character, however, unless the radiation is very prolonged. Full details of the blood counts relating to the 31 cases considered here are given in a recent report to the Medical Research Council upon "The use of the gamma rays from a large quantity of radium in the treatment of malignant disease," by W. S. Lazarus-Barlow, Helen Chambers, and the author.

II.—J. C. MOTTRAM, M.B., M.R.C.S., L.R.C.P.,

Director, Research Department, Radium Institute, London.

THE USE OF BLOOD COUNTS TO INDICATE THE EFFICIENCY OF X-RAY AND RADIUM PROTECTION.

IT is well known that exposure to *x* rays and radium causes changes in the cellular content of the blood, and that *x*-ray and radium workers sometimes present these abnormalities. As a result, it has been suggested that these effects upon the blood will serve as a guide in deciding whether or no the worker is being subject to over-exposure, or, alternatively, whether or no the devices designed for his protection are sufficient.

In order to come to a decision two sets of facts must be reviewed:

1. A general survey of the biological actions of radiation, in order to discover to what extent blood changes may be used as an indicator of over-exposure.
2. A detailed consideration of the blood changes, in order to determine what constitutes a small deviation from the normal.

1. Surveying the biological action of radiation, one of the first generalizations which may be made is that the various tissues differ widely in their susceptibility. Some —for instance, nerve cells—show no change after relatively large exposures, whereas others—for instance, reproductive cells—are altered by small amounts of radiation. The following tissues are especially sensitive: skin, blood vessels, connective tissue, hair follicles, reproductive cells, lymphoid tissues and blood cells. Experimental evidence goes to show that the last three are more susceptible than the others. So much so that these tissues would be especially chosen for examination in searching for the earliest effects of radiation. There is no doubt about the sensitiveness of the reproductive cells—the sterility of *x* ray workers who have good health in other respects is very clear evidence. As regards the blood changes, it may be mentioned that experiments on rats have shown that, by their blood changes, *x* radiation can be detected where a photographic plate gives no record. For this reason, and also because the blood changes have been the subject of much investigation, it may be concluded that they will serve as an excellent indicator for the biological effects of radiation. The present state of our knowledge would lead to the conclusion that in the absence of blood changes the worker had received no more than a harmless amount of exposure to radiation.

It may be mentioned that there is some evidence that the blood changes, more especially in lymphocytes, are independent of the type of radiation. Experiments have shown that soft *x* rays, hard *x* rays, and β rays of radium produce the same lymphocytic blood changes in the rat, provided the ionization dose be kept constant. This is referred to because it might be thought that soft *x* rays and β radiation, which are largely absorbed in the superficial tissues, would cause skin changes under conditions where no blood changes might be expected to occur. More evidence on this consideration is required, but it seems unlikely that the blood of an *x*-ray worker would escape, whilst his skin suffered injury.

2. Turning now to the detail of the blood changes, it will be convenient to deal first with the lymphocytes. If an animal be subjected to a single exposure a sudden fall in the number of circulating lymphocytes occurs, which is gradually recovered from. If a series of daily exposures be given the lymphocytes can be kept below the normal level, and this is the condition which is found in *x*-ray and radium workers who are subjected to small daily doses of radiation. It follows that very precise information is required as to the limits of variation among normal individuals, if small departures from the normal are to be detected. If the limits laid down by a number of observers are reviewed, it is found that whereas there is some agreement as regards the average, there is much disagreement as regards the limits of variation. It is clear that an examination of, say, 300 cases, will probably give wider limits than when, say, 50 cases are investigated. The larger the number of cases the wider will be the limits. It follows that what is required is not the normal limits, but the normal distribution of variation, so that when, for instance, a low count is recorded it will be possible to estimate its value.

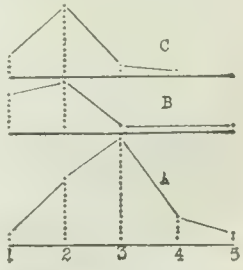


DIAGRAM 1.—The lymphocyte distributions for A, 40 normals; B, 18 *x*-ray workers; C, 20 radium workers. The counts represent the number of lymphocytes per cubic millimetre of blood to the nearest thousand. The figures at the bottom of the chart represent 1,000, 2,000, etc., to 5,000.

For this purpose 40 normal adult counts have been collected, and the distribution curve is given in Diagram No. 1, A. In the same diagram is shown the counts of 20 radium workers and 18 *x*-ray workers. The diagram shows without further comment that these workers present an abnormal lymphocyte distribution. If, however, a single blood count be taken, then all that can be said is that there is a great or a small probability of the worker being affected according as to whether his count is much below, or near the centre of, the normal distribution curve, for the reason that very low counts in normal individuals occasionally occur.

What has been said of the lymphocyte counts applies equally to the polynuclears. The corresponding distribution curves are given in Diagram No. 2.

The diagram shows a diminution in numbers of cells per cubic millimetre in both radium and *x*-ray workers. It can be seen that the radium workers are more affected

than the *x*-ray workers; this difference, however, does not apply (see Diagram No. 1) to the lymphocyte counts, and will be again referred to when red cells are being considered.

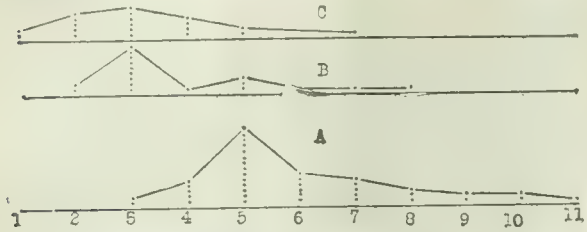


DIAGRAM 2.—The polynuclear distribution for A, 40 normals; B, 18 *x*-ray workers; C, 20 radium workers. The counts represent the number of polynuclears per cubic millimetre of blood to the nearest thousand. The figures at the bottom of the chart represent 1,000, 2,000, etc., to 11,000.

Although from a single count it may not be possible to say definitely whether the worker is or is not receiving a harmful amount of radiation, it is certain that valuable information will be given by making periodic blood examinations, more especially if some of the observations are made when the worker first becomes subject to exposure. Under these conditions a fall, followed by a sustained low level, would indicate that insufficient protection was being provided.

The following figures show such a result in a radium worker:

Days of Work:	0.	31.	108.	123.	335.
Polynuclears ...	7,283	3,077	4,890	3,017	3,712
Lymphocytes ...	4,544	1,612	1,270	1,225	1,960

It may be noted that all these counts fall within normal limits, so that from any single count it could not have been said that the individual was abnormal.

The red cells are not as sensitive to radiation as are the leucocytes, so that they make a less delicate indicator. For this reason an anaemia must be looked upon as a grave departure from the normal, and will indicate a serious over-exposure. The red cell changes are shown in Diagrams 3 and 4.

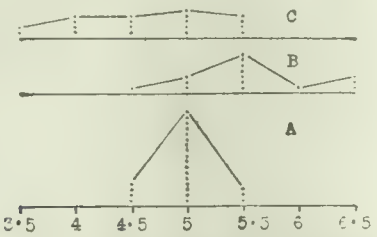


DIAGRAM 3.—The red cell distribution for A, 24 normals; B, 15 *x*-ray workers; C, 19 radium workers. The counts represent numbers of red cells per cubic millimetre of blood to the nearest half million. The figures at the bottom of the chart represent millions. I am indebted to Dr. C. Price Jones for the normal counts.

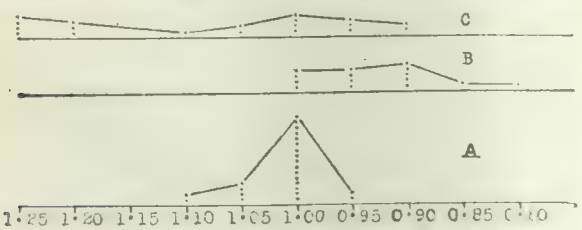


DIAGRAM 4.—The colour index distribution for A, 24 normals; B, 15 *x*-ray workers; C, 19 radium workers.

The red cells are seen to be diminished in numbers in the radium workers. The haemoglobin content of the blood is less affected, so that the colour index is high. This finding, combined with the fact that there is no evidence of red cell regeneration, and with the associated polynuclear leucopenia, points to an interference with the production of red cells and polynuclears in the bone marrow. Observations on the bone marrow of rats exposed to gamma rays confirms this conclusion. It would seem that the penetrating gamma rays of radium react and injure the bone marrow, whereas the less penetrating *x* rays exhibit their effects chiefly upon lymphocytes and lymphoid tissues which are not protected by a covering of bone.

It will have been noted in Diagrams 3 and 4 that *x*-ray workers present a polycythaemia and a low colour index; however, in view of the fact that the *x*-ray data have been collected from various sources, and that the numbers are very small, all that can be said is that this is a matter for further investigation.

Having now briefly surveyed the changes which are to be found in the blood of *x*-ray workers, it may be concluded:

1. That a single blood examination may give a warning of danger if the count be near the low limit for normals.
2. That a considerable fall with a sustained low level in the repeated blood examinations of a single individual indicates that insufficient protection is being provided.
3. That if several workers in the same department present very low counts, this also shows that further protective precautions are required.
4. That in workers using soft *x* radiation special attention should be paid to the lymphocytes, because these cells are more likely to be affected than are the polynuclears or red cells.

It is regretted that rulings more precise than the above cannot be laid down; but this will not be possible until further data in respect of both normal individuals and *x*-ray workers have been collected.

DISCUSSION.

Dr. ARCHIBALD LEITCH (Pathologist, Cancer Hospital, Brompton) said that he had been very much interested in the charts showing the blood counts, but he was somewhat sceptical of these records. It had been urged that among *x*-ray workers there was a danger of very abnormal blood counts, but he thought that on the whole *x*-ray workers were to be congratulated upon their very good health. The results of the observations given in the papers were of a very striking character. The communications of Professor Russ and Dr. Mottram had at first considerably startled him. He could not say that he believed that if an animal were subjected to a small dose of *x* rays the lymphocytes in a short time would decrease to the extent which had been stated, nor would he say that he disbelieved it. His colleague, Dr. Knox, had desired him to carry out experiments to determine whether it was true. He was loath to attempt such experiments, because a blood count to him was rather a serious matter; for anything less than two and a half hours was an insufficient time to spend upon a blood count, and he did not understand how Professor Russ and his colleagues had been able to take blood counts from rats in about five or ten minutes. Dr. Knox had, however, induced him to make some experiments. It was suggested that if rats were subjected to *x* rays the blood count subsequently taken would show a 50 per cent. diminution of lymphocytes. The problem was where these lymph corpuscles disappeared to; he suggested that their disappearance was by what was now known to be the normal way—namely, through the intestinal canal. His own experiments in detail had been conducted on a fairly large scale, with a large counting chamber, and he took special precautions against bias, which was so likely to come in, unconsciously, even when the worker set out to be most careful. The worker had an idea of what the count would be before the experiment began, and this to some extent, quite without any such purpose on his part, would influence his calculations. In his own investigations, therefore, he stipulated with his colleagues that they should not tell him which rat had been subjected to *x* rays and which had not, and in that way he believed he had avoided bias. He then showed on the lantern screen charts giving the results of a number of counts. In the normal rat variations were enormous; in some cases there was an increase and not a diminution of lymphocytes. Was it not possible, the rats which had been subjected to radiation being very nervous, that the variations were neurotic effects due to the noise of the *x*-ray installation, and that there was a reaction by way of the intestinal canal? It seemed to him very likely that some of the results at all events were influenced by the psychical condition of the subject.

Dr. Mottram replied to Dr. Leitch's criticism by saying that the work he had brought forward had been going on, not for a few months but over a space of years. Before he subjected the rats to *x* rays all the controls were arranged exactly as Dr. Leitch had arranged his. It was impossible for him to criticize Dr. Leitch's methods, because he did not know the full details. Another paper not yet published would bear out the results which he himself had sketched before the Section, proving, to his mind, that they were not fictitious.

Dr. Leitch added that the plan which he had followed in counting had been in accordance with the most up-to-date methods in use at the present time.

The President regretted that there was not time to pursue this point further, but he hoped that later there would be full discussion in another place.

Dr. H. E. Gamlen (Newcastle) said that he had himself for a number of years been subject to Roentgen radiations in large doses, and latterly to the more potent radiations employed in deep therapy, and he had no experience of the dire results which had been described. If the rays were as dangerous as they were asked to believe he would have been dead long ago. He had had blood counts taken of several patients, as well as blood counts of himself, and, generally speaking, no changes of any consequence were found. When bad results did occur, it was his opinion that they were caused by the altered condition of the air breathed, due to high-tension currents in it. Noise, fear, and general debility played a great part. Within his experience he could only think of one case in which death might be attributed to excessive radiation. It was a case of recurrent sarcoma of the neck which he treated fourteen years ago and which at first improved under *x*-ray treatment. After a lapse of several months the growth recurred, when it was treated in roasting-jack fashion between two tubes and the patient slowly rotated between them (a method which had been recently revived). On visiting the patient several weeks after her return home, he found her in a very anaemic condition, and she died shortly afterwards.

Dr. J. B. Waters (Monkwearmouth) said that he had not had any considerable experience of the evil effects described. The diminution of lymphocytes might possibly be due to a physiological process. Another fact which struck him was that the blood which was taken for examination was superficial blood. It was blood from the skin, and the lymphocytes, after the radiation of the patient, might have gone into the deeper tissues. Yet another thing which struck him—he agreed that it pointed in the other direction—was that the plotting of Dr. Mottram's *x*-ray curves showed great similarity to the results obtained with radium, and it was hardly to be believed that nervousness entered into the case if the rats could be influenced by radium to the same extent as they were influenced in the *x*-ray room.

DISCUSSION ON RADIATION IN THE TREATMENT OF DISEASES OF THE BLOOD.

OPENING PAPERS.

I.—G. LOVELL GULLAND, C.M.G., M.D., F.R.C.P.E.,

Professor of Medicine and Clinical Medicine, University of Edinburgh.

Conditions in which Radiation may be Beneficial.

Much of what I might have said as to the actual effect of radiation on the blood cells has been already dealt with in the earlier papers, and I propose, therefore, rather to give the general impression which a fairly long clinical experience of the blood diseases has left on my mind. I well remember the enthusiasm with which we hailed the first cases of myelocythaemia which were treated by *x* rays. As it chanced, in Edinburgh, all these cases were very successful. The spleen melted away, the white count fell rapidly, the urine showed the big excretion of uric acid which goes with leucocyte destruction, and the general condition of the patients improved markedly. But as time went on we found that the cases relapsed, and that we met with many refractory cases, and I have never again experienced such uniform success as in the first cases.

We must keep in mind what it is that we try to do in using radiation. It has shown its value in the removal of inflammatory products, using the term in its widest sense to include such conditions as lymphadenoma, in restraining the abnormal cell growth in neoplasms of all kinds, and in causing the destruction and removal not only of neoplastic cells, but of cells which have assumed an exaggerated function, such as the thyroid cells in exophthalmic goitre. But it is a two-edged weapon in this respect, that what one may call this calming effect may be preceded or followed by a stimulating effect. The former result is, perhaps, best seen in some cases of exophthalmic goitre in which one finds that radiation will at first produce a marked increase of symptoms, followed later by improvement. The latter result is illustrated by the neoplastic change which may follow on radiation, and it is even possible that the relapses which occur in myelocythaemia, for instance, may to some extent be caused by this stimulating effect, though, from the ordinary tendency of this disease to relapse, this is a matter probably incapable of proof. I confess, however, that it has seemed to me that the more energetically a case was treated the more certain it was to relapse in a relatively short time.

In which of the blood diseases, then, is radiation likely to be useful? Obviously in those associated with hyperplasia rather than in those with hypoplasia of the blood elements, in the leukaemias rather than the anaemias. No one would attempt to treat a secondary anaemia by radiation of the spleen or long bones. The place of radiation in these conditions, if it is indicated at all, is in the treatment of the causal agents—cancers, uterine myomata, etc.—in so far as these are not susceptible of removal in other ways. Chlorosis, if it is really due to an excess of blood plasma and the attempt of an overworked marrow to keep the plasma full of corpuscles, might conceivably be treated by radiation; but so long as ferrous carbonate is to be obtained even the most enthusiastic radiologist would hardly experiment in this direction.

Pernicious anaemia merits more consideration, for though there is in it a hypoplasia of the elements of the circulating blood, there is great hyperplasia of both the red and white corpuscle-formers in the marrow. But whatever theory of the causation of the disease one adopts, there is no doubt that this hyperplasia is necessary and must not be interfered with. My own view of the disease is that it is most often a toxic interference with the proper adult normoblastic blood formation, with the result that the embryonic megaloblastic type of blood formation is again called into action to replace or more usually to supplement the normal function which is temporarily more or less in abeyance. The hyperplasia of the marrow is due to the fact that the death rate of the red corpuscles is high, and regeneration requires to be as rapid as possible. Obviously therefore it must not be checked, and radiation is contraindicated. Many years ago I tried the effect of *x* rays on a series of cases of pernicious anaemia, with uniformly disappointing clinical results. It is further to be noted that radiation has much less effect on tissues of primitive, embryonic, or undifferentiated type than on those more fully developed. It destroys normoblasts more easily than megaloblasts, neutrophils more easily than lymphocytes, myelocytes more easily than myeloblasts. Therefore radiation in pernicious anaemia would still further interfere with the normoblastic function, and the whole purpose of treatment in the disease is to encourage and restore this. If it becomes possible in the future to increase and utilize the stimulating effect of radiation and to exclude its destructive effect, it may yet come to be of service. Occasionally one sees reports of cases of pernicious anaemia which have recovered under radiation. I am afraid this recovery is not due to radiation but in spite of it. Certain cases of pernicious anaemia, in their first and second attacks particularly, have so strong a tendency to recovery that they will get well under the most inappropriate medication, and it is necessary in this disease, in testing any new remedy, to try it in a series of cases, and especially in the later relapses.

Aplastic anaemia in its relation to radiation has lately been brought into prominence—one hopes into a temporary

and accidental prominence rather than a permanent and essential one. There are comparatively few places in which there can be such constant exposure to radiation as in the Radium Institute, and except in isolated cases the radiologist seems to escape anaemia—at least, none of my radiological friends appear to suffer from it—while the leucopenia which radiation induces is not associated with ill health. I find that many perfectly normal people have a white count persistently subnormal. The dangers of a radiologist's life are quite sufficiently great without the addition of a new one, and we all trust that means of protection from it will be found. There is no doubt whatever that radiation, when carried too far, is capable of exhausting the marrow—a power which it shares with arsenic, mercury, and other drugs if they are pushed unduly. I shall refer later to this point in discussing myelocythaemia. Most of the cases in which aplastic anaemia is produced by radiation appear to pass through a pernicious anaemia stage of high colour index before reaching the aplastic stage, for the reason which I have already given, that normoblasts are more readily affected than megaloblasts. Indeed, I regard this fact as one of the strong arguments in favour of my view of the causation of pernicious anaemia, that it is an inhibition of normoblastic function.

One would like very much to know whether it is possible to produce aplastic anaemia in everyone by excessive radiation, for in the ordinary disease, as one knows it apart from radiation, the primary difficulty is almost certainly a congenital deficiency in the bone marrow, which makes it unable to respond to excessive calls upon it. None of my cases of aplastic anaemia had ever been exposed to radiation: in some there had been haemorrhage or septic infection, or the strain of an operation as the starting point; in others there was no discoverable cause. In isolated cases it may chance that a man with this defective marrow may have the scales turned against him by the constant exposure to radiation, but one hopes it is not to be a common occurrence.

There is one disease of the blood in which radiation deserves a much more systematic trial than it has yet received—polycythaemia vera, or Vaquez's disease. Its main features are a great increase of the circulating red corpuscles, often to double the normal number or more, with high blood pressure, and usually with enlargement of the spleen. The cases are very rare, and since it occurred to me to try radiation in them I have seen only one case. In this a course of *x*-ray treatment was commenced, but had to be stopped for family reasons. The patient died some time later of cerebral haemorrhage, out of observation. The marrow in this condition is unduly active, and it is possible that radiation of the long bones might be useful in checking the increased output of red corpuscles. The conflicting results which have been published may perhaps be due to error in diagnosis to some extent, for there are numerous secondary polycythaemias which one could not hope to influence favourably by radiation.

In discussing the leukaemias one must remember that for practical purposes there are three main varieties—chronic myelocythaemia, the commonest, chronic lymphocythaemia, and the so-called acute lymphocythaemia or acute lymphatic leukaemia, which is usually really an acute myeloblastaemia, and which is probably next in frequency to the first form. These react very differently to radiation. The actual cause of the conditions is not known, but a good working hypothesis is that it is due to a neoplastic hyperplasia of different forms of leucocytes. The mobility of the cells involved, as a rule, prevents the formation of any local tumour, though tumours do occur at times, but the cells flood the blood and pervade the organs, showing a special tendency to settle down in the large venous spaces found in the spleen, and to a less extent in the liver and other organs. This results in the familiar enlargement of the spleen, which occurs to a varying extent in all forms of the disease—the more chronic the case the greater the enlargement of the spleen. Part of the enlargement is due to this mechanical distension, part to the fact that as the spleen has to deal with effete cells in the blood it hypertrophies for this purpose, and part to increase of fibrous tissue. The spleen is in no case the starting point of the disease, and the successful results which used to be obtained from *x*-raying the spleen alone in myelocythaemia before treatment of the long bones was introduced, are probably to be attributed to the fact that the organ is extremely vascular, and that a large part of the blood must pass through it and be exposed to radiation.

Let us now discuss the three varieties. It has long been known that radiation was useless, and probably harmful, in acute lymphatic leukaemia. In this form the starting point is always in the marrow. The myeloblasts, the precursors of the myelocyte forms of the three series of granular leucocytes—neutrophil, eosinophil, and basophil—are only found in the marrow in normal adults, and it is they which proliferate in this disease. I forbear to discuss how many of these cases are myeloblastic and how many lymphocytic; for our present purpose it matters little. The condition is sometimes so acute that there may be very little enlargement of the spleen, and even none of lymphatic glands, while the marrow is packed with myeloblasts which take up all the available space and oust the red corpuscle formers. The result is a very rapid anaemia, often of aplastic type, for it matters very little practically whether a terminal anaemia is caused by an inability of the red cells to proliferate, as in aplastic anaemia, or by the filling up of the space in which they can be formed by other cells. In the more chronic leukaemias there is time for red blood formation to overflow into the circulating blood and into the spleen and liver; in the acute form there is no opportunity for this to happen. The rapidly proliferating undifferentiated myeloblasts are apparently not affected by radiation; in some cases in which I tried its effect there was always a rise of temperature and apparently an increase in the rapidity of the anaemia as a result.

The most favourable form for radiation is chronic myelocythaemia, and in regard to this disease a very large amount of experience has now been accumulated. Some time ago, as I was disappointed with *x*-ray results, I began treating all my cases with radium, and while I cannot say that the benefit produced has been any more permanent, it has been more certain and more rapid, and it has seemed to me that the patients improved more in general condition, and especially in recovering from their anaemia. I must leave it to the radiologists to discuss the reason of this if the opinion is borne out by other physicians. The first obvious effect of radiation is a reduction in the white count, which may drop by two or three hundred thousand in a few days. The cells most affected are the neutrophils, of both the myelocyte and polymorphonuclear forms. Next come the eosinophils and basophils, while the lymphocytes and myeloblasts are less affected. Degenerated cells are always found in myelocythaemic blood, but they become more frequent in radiated cases. The normoblasts, which are often present in large numbers, disappear, and in successful cases the blood may return to practically a normal appearance, though one can generally find some abnormal cells. The spleen diminishes in size. I do not think I have ever seen it go back quite to the normal, but it may just be palpable under the ribs and no more. As the fibrous tissue is increased one would hardly expect it to reach normal in size.

The amount of radiation required varies greatly in different cases, partly because of the different periods in the disease at which treatment is begun, partly because of the general condition of the patient, and probably because of unknown factors also. While *x* rays can be given as required, the amount of radium in Edinburgh is limited, and is so much in demand that my leukaemias have had to take their turn, and I have never been able to persist with the treatment as thoroughly as I should have liked. Sometimes I have had four or five cases in my wards at one time, and one had to do the best one could for each in turn. In every case there must be a complete blood examination at least once a week, for it is quite easy to carry radiation too far and produce a condition closely resembling pernicious anaemia, with a high colour index, numerous megaloblasts, and a low red count. This is obviously due to interference with the normoblastic function of the marrow, and if radiation were persisted in would lead perhaps in the end to an aplastic anaemia, though I have never seen it progress so far. I am accustomed to regard a leucocyte count of 20,000 as the signal for stopping radiation, for the effect goes on for some time after radiation has been stopped, both as regards the white count and the diminution in size of the spleen.

It is remarkable, however, in how many cases the red

count improves after judicious radiation, even when no haematinic has been given. This may be due to a stimulating effect of the radiation, but more probably depends on the extension of the space available for red cell formation, and possibly also on the arrest of phagocytosis in the spleen and marrow. Phagocytes are no respecters of persons, and seem to prefer red corpuscles to white.

Not every case proceeds satisfactorily: in some cases severe toxic febrile, digestive, and cardiac symptoms may occur; some refuse to be influenced at all; others improve in white count and spleen to a certain extent, and will progress no further; while all relapse after a longer or shorter time—generally months, sometimes a year or so. Speaking broadly, the earlier a case comes under treatment the better the result, and when one is dealing with a third or fourth relapse the result is not so good as in the first attack, but there are exceptions to both these rules. In the long run all the cases die of the disease or of an intercurrent affection, but I feel sure that the average length of life is greater than it was before radiation became general or than it is with any other form of treatment, though it is usually wise to treat the cases with arsenic or iron as well, according as the colour index is high or low. I have never had splenectomy performed in any case of leukaemia; as the disease begins in the bone marrow, it is quite irrational to remove the spleen, though apparently it is easy and reasonably safe to do so after the organ has been reduced in size by radiation. Splenectomy does not influence the course of the disease, and it has this disadvantage—that it robs the practitioner of a valuable piece of evidence. Whenever a myelocythaemia begins to go back the spleen enlarges. We cannot keep these cases in hospital all their lives, and unfortunately not every practitioner is a haematologist. Why, therefore, deprive him of a valuable physical sign for no reason? Often one finds, indeed, that patients palpate their own spleens and come back to hospital when they find enlargement.

The reason why the myelocythaemias are so much more amenable to radiation than the myeloblastaemias is that the cells affected are of a much more differentiated type, they approach more nearly to a benign tumour. It is evident from the progress of cases that many of the circulating leucocytes are destroyed, but that the rays also arrest their development. For this latter reason radiation of the long bones in turn is sound, both theoretically and practically.

The chronic lymphocythaemias are rare in comparison with the other two forms, and as regards radiation occupy a middle place. Lymphocytes are comparatively primitive cells, both phylogenetically and ontogenetically, and do not respond so well as the granular cells, but improvement does sometimes take place, though never in my experience to the extent common in myelocythaemia. The procedure is exactly the same as in the latter disease. The majority of these cases start in the marrow, but a certain proportion of them seem to start in the lymphatic glands and only spread to the marrow later. Early radiation of the glands in these cases might be useful.

We probably include under the term splenic anaemia a number of conditions which are due to different causes. We are accustomed to think of Banti's disease and the splenic anaemia of adults as being synonymous and to expect the disease to begin at about 30 years of age. During the last six months I have had in my wards five young people, aged from 5 to 17, all of whom had a markedly enlarged spleen, slight anaemia, and a definite leucopenia, and practically nothing else in the way of symptoms or physical signs. These cases are too old for the splenic anaemia of infants, and of quite different type. They are too young for typical Banti's disease, and it is very difficult to place them satisfactorily. The same difficulty occurs in adults. One has to exclude, as far as possible, tubercle, syphilis, lymphadenoma commencing in the spleen, primary cirrhosis of the liver, and a number of other conditions, before one can with certainty assume that a case is Banti's disease and that it is really suitable for the splenectomy which is good treatment in that condition. The operation is based on the theory that the disease is due to a toxin which is located in the spleen, and is removed along with it. There is a certain amount of evidence that the primary home of the toxin is the alimentary canal, and it is well in these cases to make sure that the bowel is in a satisfactory state.

I am convinced, on the one hand, that cases have been splenectomized which were not splenic anaemia and which would probably have recovered with other treatment, and on the other hand, splenectomy in true splenic anaemia is not, in this country at least, the simple and safe operation which it appears to be in America. I grant that splenectomy, when it is successful, does cure the disease if it is done before the anaemia has advanced too far or the liver has become too much involved, but the mortality in my cases has been higher than I cared for. I have therefore of late generally preferred radiation, and it seems to me that this is one of the most hopeful conditions for that treatment. I have had one or two apparent cures and several long remissions, and probably if one were able to keep patients permanently under observation one would be able to get even better results. Quite recently I have had an interesting experience in this connexion.

Ten years ago I had under my care a man who had suffered from haematemesis, and whom I found to be a case of Banti's disease, with large spleen, marked leucopenia and considerable anaemia. I did not think him fit for splenectomy; he was treated with *x* rays, and made an excellent recovery. The spleen diminished nearly to normal, the blood recovered, though the leucopenia persisted. He remained perfectly well, and did not see a doctor for eight years. During the last two years he had several slight haematemeses, and when he reappeared at hospital was rather anaemic from a fairly severe one. The spleen was large, the liver diminished in size, but with iron and radium the blood again recovered and the spleen diminished in size, though, when he went out of hospital it still extended three fingerbreadths below the ribs.

I have no technical radiological knowledge, but it seems to me that the problem of the future in regard to blood diseases in particular is the question of accurate dosage, especially the determination whether the doses should be massive and far apart or small and long continued, and in what way the evil effects of radiation, which I am inclined to think in some cases complicate the disease, may be avoided. I am told that there is no difference in the essential character of the radiation produced by *x* rays and by radium—that if higher voltage could be used *x* rays would give as good results as radium. I trust radiologists will soon be able to increase the penetrating power of their *x* rays so that the two may be on a level, and that we may be able to subject our cases more freely to treatment by this more accessible means.

II.—JAMES METCALFE, M.D.,

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VALUE OF RADIATION IN LEUKAEMIA.

THE effect of radiations on the blood constituents is a matter of profound interest and importance to all working radiologists. The increased penetration of *x*-ray radiations, the ubiquitousness of their presence in radiological chambers, and the results produced by their presence are matters that must be carefully studied. I think we all agree that our conclusions at present must be somewhat cautious. Although we have known of their effect on local parts for a long time, it is only recently that their general bodily effect have become evident. The latter is largely due to the increased penetration of *x*-ray tubes, and especially of the Coolidge tube.

What is the effect on the body generally? Is it due to an action on all the body tissues—the nerve centres, the muscles, the blood, and the lymph? Or can we say that it is only due to the action on one or other of the body elements? Probably the effect is general in character, but some of us think that it is more especially on elements more or less in a state of flux, such as the blood and the lymph. If the effect be on the mobile elements rather than the stationary ones, the explanation may, I think, be found in the fact that these are essentially carriers and distributors of all the elements required by the other tissues for their proper functioning. It is quite possible that new chemical constituents may be formed in the blood cells which have a deleterious effect on the other tissues of the body.

It is generally assumed that the corpuscles are the parts of the blood usually attacked by strong radiations. That changes occur in the red and white cells is known, but I wish to propound as a theory that perhaps these effects

are after all only secondary, and that the primary attack is on the blood plasma. Amongst *x*-ray workers I have noticed very frequently an attenuation of the tissues: an apparent drying up of the fluid constituents—the lymph and the plasma—before any actual changes in the blood cells could be perceived. Careful observation of the specific gravity of the plasma and alterations in its chemical composition might reveal whether the effect on the blood cells was a starvation—a diminution in the amount of plasma received through the cell wall. If this be so, the question arises whether the result is produced by ionization or is merely a "drying up" of the secretion. I have observed the thickened appearance of the blood, and also the limited amount of the secretion in the joints, evidenced by creaking on movement, in individuals working with *x* rays. There is also limitation of the intestinal secretions producing constipation, and the genital secretions are also diminished. I am not speaking of the spermatozoa—for these are undoubtedly diminished in number, and the individual is often eventually sterile—but of the rest of the sexual secretion. If my theory is correct, I would suggest that *x*-ray workers should always drink a considerable amount of water—three or four tumblerfuls during the course of the day. The amount of plasma would be kept higher and the corpuscles not deprived of their nourishment.

As to the treatment of pathological conditions in which the blood elements are amongst those chiefly attacked, it may be asked whether our methods of radiation are likely to produce permanent relief or cure of many of the diseases associated with them. I agree generally with Professor Gulland's observations. Chlorosis, however, which he thinks theoretically might be suitable for radiation treatment, may, I think, practically be cured. Ferrous carbonate has its drawbacks and limitations, and my remarks on the effects of radiations on the plasma point this out as one of the diseases that may be justifiably treated.

Cases of myelocythaemia show remarkable improvement for a time. The great thing required in these cases is absorption of the radiations by the blood cells. I see no reason why we should assume that it cannot be obtained by the forms of apparatus at present used by radiologists. A great deal has been published during the last few months in the lay press on the marvellous results obtained by powerful apparatus with gas tubes of high vacuum and rays of great penetration, especially in regard to cancer. It is probable that these rays may be more effective in conditions like cancer, where there is a large amount of hyperplastic tissue, and greater penetration is required to produce any effective action on the deeper portions of the growth. I think, however, that it has been very unwise to raise public hopes by exaggerated statements as to what can be done with these radiations until more careful and prolonged observation has been made. Premature publicity of this kind is much to be deprecated.

The blood constituents are readily got at; and the point, to my mind, is whether more rays are absorbed by the mobile elements with extremely high penetration than with those of more moderate power. This has yet to be settled and requires most careful observation.

Professor Gulland has taken us through the chief blood diseases in which radiations have been used. He says that his first cases of myelocythaemia were remarkably successful, although relapses occurred and he has never since experienced such uniform success as in the first cases. This point requires some elucidation. It suggests to me that the technique in his later cases had not, for some reason or other, been as effective as in the earlier ones. After running through the gamut of diseases connected with the blood in which radiation has been used he expresses the opinion that those which can be at all effectively treated by this method are probably Vaquez's disease, some leukaemias, splenic anaemia, and Banti's disease. It is certainly no use in secondary anaemias, and I do not think it is useful in pernicious anaemia. I have treated a good many cases of leukaemia. The following is an example:

A man of 59, with chronic myelocytic leukaemia, had a large hard spleen, bulging forward and reaching down into the pelvis. He had formerly been treated by *x* rays and then by benzol therapy. The red blood cells were 2,532,000, white cells 219,000, of which the polymorphonuclear neutrophils constituted 57.14 per cent. and the myelocytes and myeloblasts 25 per cent. After seven weeks' treatment the blood examination gave red cells 5,350,000, white cells 76,000, and there were 55 per cent. of polymorphonuclear neutrophils and 31 per cent. of myeloblasts and myelocytes. Full pastille doses of rays, with a penetration of 8 to 9 on the Benoist scale, were given through an aluminium filter 3 mm. thick weekly, the rays being measured after passing through the filter. The rays were applied over the spleen, sternum, ends of femurs, and long bones of arms.

I believe this man later had a relapse, but if we can make this return to the almost normal possible, why can we not maintain it? That is one of our problems. I think the dosage must be massive. It must be as powerful as the superficial tissues will stand, but given at rather long intervals. Frequent and small doses only stimulate the abnormal condition.

With regard to splenectomy there is undoubtedly a tendency to use this severe surgical measure too frequently and too indiscriminately. The surgeon argues that the patient has only a very limited time to live and it is worth giving him a chance; but the chances are, to my mind, so bad that it is really a cruel and unnecessary procedure. On the other hand, not all cases of splenic anaemia die even without radiation. Some recover spontaneously.

I have under my care at the present time a bright-looking girl of 12, with numerous multiple sarcomata. The trouble began in the supraclavicular region, but there is now a large swelling involving the sternum. She has had hard radiations for some months through aluminium filters. Her blood count before radiating was 3,000,000 red and 20,000 whites. It is now 5,400,000 reds and 8,400 whites. The growths are not much reduced, but the general appearance is excellent and she feels very well.

In Hodgkin's disease I have had some remarkable results. I will only quote one.

The patient was a big, young married woman, who lost her husband in the war. The disease started early in the war after her husband had left for the front. She developed large masses of glands on each side of the neck, bigger than a man's fist; also some mediastinal glands. Her blood count, which was low, gradually improved under massive doses of *x* rays through aluminium filters, and the glands slowly diminished. She is now almost completely well. A few small remains of glands can be felt on pressure in the neck and supraclavicular regions, but she has no treatment.

My conclusions in regard to the effect of radiations on the blood are: (1) That they produce remarkable improvement in the blood count and general health, and reduce the splenic enlargement and other hyperplastic tissues; and (2) that they are especially useful in some leukaemias, splenic anaemia, and Banti's disease. The earlier improvement is frequently not permanently maintained; but there is great hope that with improved technique this will prove feasible.

In connexion with *x*-ray workers we should take into consideration the facts that *x*-ray workers, if healthy, are much less susceptible to radiations than those of poor physique; and that the bad effects produced by exposure to radiations are much diminished by working in well ventilated rooms; by thorough protection of all apparatus by lead covering; by limited hours of work; by drinking a good deal of fluid (water or light lemonade) during the day; by being out in the fresh air as much as possible when not working; and by the exercise obtained by outdoor games such as golf or tennis.

DISCUSSION.

Dr. W. HOPE FOWLER (Edinburgh) said that experience had shown that in many cases there might be a happy result to start with, but this happy result became increasingly difficult to maintain, and in the end they had the sad experience of seeing the patient gradually get worse. Hitherto thorough cure had not been obtained. If a case did appear to be thoroughly cured it might almost be taken as a certainty that the diagnosis had been wrong. Still, radiation treatment had offered to patients a lengthened prospect of life for one, two, or three years, sometimes for a longer period. Some patients, the more sensible ones, put it to him, "I suppose it is just a question of visiting you for the rest of my life?" and he had replied that they could put it that way if they liked. He had been interested in Professor Gulland's remarks with regard to good results from the use of radium as an alternative to *x* rays, but he believed the attainment of more satisfactory results to be largely a question of the evolution of proper apparatus.

The PRESIDENT said that it was obvious from the two discussions on blood changes that there was material for many more. A clear indication had been afforded for future work on the subject, and he hoped that further discussions would take place.

DISCUSSION ON SURGICAL DIATHERMY.

OPENING PAPERS.

I.—E. P. CUMBERBATCH, B.M.OXON., M.R.C.P.,
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IN opening a discussion on surgical diathermy I do not propose to make any reference to the theory or principles of the method, but I wish rather to describe briefly my own clinical experience of its use, to indicate the types of malady for which it can be used with advantage, and to make some suggestions for its further employment. In the subsequent discussion I hope that we may hear the experience of other members in the use of this method of treatment, which, I believe, is now widely employed, although little has been written on it in medical journals.

Diathermy is used for the destruction of abnormal and unnecessary tissue—namely, malignant new growths, innocent new growths, infective granulomata and scar tissue. Before speaking on the clinical aspect of the subject some remarks on the methods of performing surgical diathermy might be made. Tissue can be destroyed by this method in one of the following ways. In the most commonly used method the end piece of the active electrode is placed in contact with the tissue and the current is increased until the tissue is coagulated by the heat. The stronger the current and the longer the time for which it flows the deeper and wider proceeds the coagulation. But before the coagulation has proceeded to the maximum extent possible the current has to be stopped, because the tissue in contact with the end-piece soon dries, and when this occurs the current passes in the form of sparks. Coagulation then proceeds no further and the tissue is charred on the surface. The less moist the tissue the sooner the sparks appear. This is well shown in the case of bone. If the end-piece is placed in contact with it sparks appear almost at once, and destruction spreads only a very short way beneath the surface. It is in the treatment of malignant growths that the destruction must be continued to a sufficient depth. I believe that the failure to prevent the occurrence of recrudescence is, in some cases, due to the failure to coagulate the tissue sufficiently deeply, the current being stopped when sparks appear. Deeper coagulation can be produced by using an end-piece of larger area. A disc of 1 centimetre can be used, and sometimes one of 1½ centimetres, but no larger, because the current density beneath the end-piece will be insufficient to generate heat sufficient to coagulate the tissue at more than a trifling distance.

Discs, bearing prongs of different lengths, may be used. In the electrodes supplied only one, bearing prongs, is provided. The prongs are 6 mm. in length, but other discs, bearing prongs of greater length up to 15 mm., should be tried in cases in which infiltration has extended deeply. The rate at which the current is increased is of importance in regulating the depth to which the coagulation extends. If the current is increased very slowly to its maximum, three or four minutes being occupied in the process, the tissue will dry with corresponding slowness, and the coagulation will extend more deeply. There is a further method of preventing the appearance of sparks altogether. This consists in the constant moistening of the tissue in the region of the end-piece by salt solution. The solution may be dripped slowly from a suitable syringe, care being taken to prevent it from running over the adjoining healthy tissue (for instance, by means of a swab), otherwise the latter may be scalded. By this method the maximum amount of tissue that can be coagulated by various strengths of current could be ascertained.

There is a second method of performing surgical diathermy, and this consists in using a narrow, blade-like end-piece, and simultaneously coagulating and excising the growth. This method must be reserved for those growths that are freely movable over healthy underlying tissues. It requires considerable practice, as bleeding will occur unless the operator is very cautious; and when this happens one of the chief advantages of surgical diathermy is lost, and there is more risk of dissemination of the growth. If this method is used it would be better to coagulate the growth *en masse* before excising it by the blade electrode.

A third method of destroying tissue is by means of the diathermy apparatus. This consists in using the sparks which the apparatus can produce. This method is, in my experience, unsuitable for malignant growths. Destruction cannot be produced to so great a depth as by the other methods. Even if the growth is superficial, there is more likelihood of recrudescence. For certain forms of non-malignant growth the method is very effective, and I shall refer to it later.

With regard to the clinical results of surgical diathermy those obtained in the treatment of malignant growths will be considered first. The most important question for consideration is the degree of prolongation of life without discomfort. There is abundant evidence that disagreeable symptoms can be abolished by destroying the growth by diathermy, and the facts that the operation is speedy, that there is no shock following it, that the stay in bed is very short, and that complications are rare, are now well known, and render the method very valuable. All the experience gained at St. Bartholomew's Hospital during the first few years of its trial, since 1910, was derived from cases which were deemed unsuitable for surgical excision by the knife. The best of the earlier results was obtained with a case of malignant growth involving the tonsil, fauces, palate, and upper and lower jaws. The patient, who was under the care of Mr. Harmer, lived for two and three-quarter years after the first application of diathermy. The operation had to be repeated on five occasions, at varying intervals, for recrudescence. The patient was comfortable until three months before his death. Now if cases are treated by diathermy earlier, the prolongation of life will be greater, and in view of the simplicity of the operation, I see no reason why diathermy should not be given to very early cases, which are regarded as suitable for the knife. For these cases the method of combined coagulation and excision should be tried, and it is possible that cures will be obtained in some cases. Some cases of prolongation of life for a longer period than that above mentioned have been reported, and I should like to learn the experience of others in this matter.

Most of the work on surgical diathermy with which I am acquainted has been performed on growths of the mouth and throat. I have treated growths of the uterus, rectum, breast, and elsewhere, but the cases were so advanced, the growths having spread into parts that could not be destroyed without danger, that the treatment was of necessity incomplete, and where there was improvement it was of short duration.

Regarding complications, that which is most to be feared is haemorrhage. I do not refer to the bleeding that is likely to occur two or three days after the operation, when the patient is in a condition of cachexia. Diathermy is, in my belief, unsuitable for such cases. In other patients haemorrhage is liable to occur when an artery of appreciable size lies close to the field of the operation, and usually occurs about the middle of the second week. It has occurred from the lingual artery in some cases of operation on the tongue. In one of my cases it occurred from the temporal artery, and in another case, under the care of a colleague, apparently from the ascending pharyngeal artery. Some surgeons prefer to tie the vessel from which bleeding may take place, prior to the operation.

Sepsis is, in my experience, exceedingly rare. I have seen only two cases in ten years. In one case sudden death occurred during convalescence, without ascertained cause. Bronchopneumonia may occur after operation on the mouth or throat, but I do not know whether it is less common than after cutting operations on the same regions.

The form of malignant disease in which excellent results may be obtained is rodent ulcer. The invasion of bone or cartilage does not contraindicate the treatment, and the disease may be stopped even if these are involved. I treated a case of rodent ulcer of the scalp, showing cell nests of carcinoma, seven years ago. Periosteum and bone were destroyed during the operation, and although suppuration took place some months later, while the sequestrum was separating, the whole area, except for a small portion near the centre, is now covered by epithelium. Both for this case and another which is still free from recrudescence

four years after the diathermy, other methods of treatment had been previously applied, but without lasting result.

With regard to non-malignant growths, papillomata of the bladder should receive first consideration, because diathermy appears to be the most suitable method of treatment. Smooth scars are left after coagulation, and, so far, I have heard of no cases of reappearance. A case of fibroma of the nasopharynx, under the care of Mr. Rose, was successfully removed by diathermy without haemorrhage, except at the first trial, when an unsuitable end-piece was used. Disc end-pieces should be used. The dangers of fatal haemorrhage when these growths are removed by the knife are known.

For naevi of the mucous membranes diathermy is very suitable, even if other methods have failed and excision is inadvisable. The results after healing are surprisingly good. For naevi in and under the skin diathermy is less suitable. In the case of cavernous naevi it is difficult to prevent destruction of the skin. This takes place before the blood in the naevus coagulates. Healing is then slow, and there is a risk of sepsis.

I have treated a few cases of haemorrhoids by surgical diathermy. In these cases the haemorrhoids were permanently prolapsed. There had been extreme pain and discomfort, and I commenced the treatment by passing a metal rod into the rectum and making the current strong enough to heat the parts in the region to a degree that could be comfortably borne. The relief of pain and spasm was remarkable. In one case the relief lasted for two years. At the end of this time the patient reported and asked if the haemorrhoids could be permanently removed, and I destroyed them under local anaesthesia. Some exudation occurred during the next few days, and a small ulcer was left near the anal orifice, which healed after three weeks. The patient suffered no pain and very little discomfort. The haemorrhoids which I have destroyed by diathermy were partly fibrous and not very vascular, but I believe that other operators have treated some that were thin-walled and contained much blood. I should like to hear their experience and the method which they adopted.

Enlarged tonsils have been excised by diathermy, using the blade electrode. If successfully performed, this treatment would be unaccompanied by loss of blood.

The kind of infective granuloma for which I have tried coagulation by diathermy is lupus. I have treated three cases. One of these has shown no recurrence after two years, and the others were treated one year ago and there has been no reappearance. In one case the nodule was on the shoulder. There is now a smooth unwrinkled scar, though for some months it was erythematous. Another patient had a group of nodules in the region over the maxilla, and in this case keloid has developed in the scars. This was due probably to the quick healing after the coagulation, and might have been prevented by applying pyrogallic acid ointment so as to delay healing. The treatment of lupus by diathermy deserves further trial.

The fact that the new tissue that fills the place left after destruction by diathermy does not shrink or form adhesions with adjoining parts has suggested the treatment of adherent soft palate by diathermy. Mr. Harmer has treated two cases by this method, but without success. The method, however, deserves further trial, and the soft palate should be kept away from the pharynx until healing has taken place. Diathermy might be tried for Dupuytren's contraction of the palmar fascia, but I know of no case for which it has been applied.

There remains for consideration the treatment of growths by means of the sparks which can be obtained from the diathermy machine. This treatment is the same in principle as that known as "fulguration," the difference being the replacement of the high-frequency apparatus by the diathermy machine. With the latter the sparks are shorter and thicker, and can be accurately aimed upon the exact spot desired. This method is not, strictly speaking, diathermy, since the heat is not generated in the tissues, but is applied in the form of sparks. The destruction is, therefore, due to incandescent air. As the sparks fall on the surface the tissue in the immediate vicinity is destroyed by the heat. The destroyed tissue is dried by the heat, and becoming then a poor conductor is pierced by subsequent sparks, and if the latter are gradually lengthened the tissue can be destroyed for about a centimetre in depth. Fulguration is an excellent treatment for warts, either flat or pedunculated, for papillomata of the skin, for telangiectases, and for pigmented areas of skin. With regard to the latter, the method must be performed with extreme thoroughness, or areas of pigment will reappear. I believe, however, that ordinary diathermy is a more certain method. I have treated a large area of skin, deep brown in colour, occupying the greater part of the submaxillary region, part by sparks, and part by diathermy. The former method was less effective, and minute specks of pigment have reappeared.

What I have written above represents, in brief summary, that part of the field of surgery that has been explored by diathermy at St. Bartholomew's Hospital by my colleagues and myself. I shall be most interested to hear the experience of others, and to learn any new methods of applying the treatment, and any other types of growth in other regions that have not been mentioned.

II.—C. W. SCOTT SABERTON, M.D.,

Harrogate.

I do not propose to review the whole subject of surgical diathermy, but will confine my remarks to a description of the utility of this method from my own personal experience of its application in suitable cases and the technique employed. The treatment of cutaneous blemishes by the method known as "diathermic fulguration"—that is, cauterization by sparks from a diathermy machine—I shall purposely omit, as the method is not strictly speaking diathermy.

Technique.—I will first say a few words as regards the technique employed in treating cases requiring a general anaesthetic. My duties in major operations have been confined to responsibility for the application of the indifferent electrode and control of the apparatus during the operation. The current is controlled by means of a foot switch. I use a large flat pliable indifferent electrode, not usually less than 8 in. or 10 in. square, to which is securely fastened a well insulated cable from the diathermy machine. With a patient in the supine position, the electrode is placed under either the shoulders or the buttocks, and is retained in place by the weight of the body. The indifferent electrode is covered by a thick pad of gamgee tissue well saturated in strong warm saline solution (2 tablespoonfuls of NaCl to a pint of H_2O). It is essential that a strong salt solution be used if burns or scalds are to be avoided. If a weak saline solution is employed, the temperature of the pad rises owing to its high resistance to the passage of the current, and steam may form between the pad and the skin of the unconscious patient. The strength of current—that is, the number of ampères necessary to produce coagulation and destruction of tissue, and the choice of an active electrode, depend upon the character and situation of the part treated. I pay little or no attention to the amount of current actually registered on the ampèremeter, because, even if it were an accurate measurement of the current passing through the tissues, the exact number of ampères used appears to me to have little practical value. In actual practice the amount of current may be anything from half an ampère up to two or more ampères. The current necessary for any particular operation is judged by the effect it produces, and not by the amount the ammeter may happen to register at the moment.

Cases Suitable for Treatment.

It is essential that the part we wish to destroy or remove should be accessible to the active electrode. In some cases a preliminary cutting operation is necessary in order to enable the surgeon to place the active electrode in contact with the diseased tissue. We have employed diathermy chiefly, and found it most useful, in the diseases enumerated below (I to VI).

I.—*Naevi involving the Mucous Membrane of the Mouth and Lips.*

In all operations involving the buccal cavity or nasopharynx it is not advisable to use ether as an anaesthetic, as there is risk of an explosive mixture being formed. The indifferent electrode is placed under the shoulders or buttocks, and active needle or pronged electrodes are employed to transfix the tumour. I have found the pronged electrode—that is, a plate electrode fitted with short needles—most useful when dealing with a thick mass of

naevoid tissue. The active electrode is first placed in contact with the mucous membrane covering the surface of the tumour, and the needles are pushed into the growth at the same instant as the current is switched on. The current strength may be increased, if necessary, after the needles have been pushed into the naevoid mass. No haemorrhage occurs when treating naevi in this manner, and we have recently treated a naevus in the roof of the mouth of a bleeder without any haemorrhage.

When attacking large naevi it will be found that considerable current is required in order to coagulate the rapidly circulating blood. When the naevoid tissue involves nearly the whole thickness of the cheek or lip it is necessary to place a finger on the overlying skin, so that the current may be turned off immediately the skin feels hot; otherwise sloughing of the skin will occur. Destruction of tissue takes place beyond the area of visible and palpable coagulation; for this reason it is wiser to destroy rather too little than too much at one sitting; in some very large naevi a second sitting may be necessary to complete the destruction of the mass. This second treatment must not be given until the sloughs have separated and the full extent and effects of the first treatment can be estimated. The sloughs usually separate in ten to twenty-one days. If the growth involves the skin as well as the mucous membrane I treat the cutaneous surface at a later date by means of electrolysis, and use Lewis Jones's bipolar electrode for the purpose. So far no complications have arisen in any of the cases treated, and the results have been all that could be desired.

II.—*Malignant Disease of the Tongue.*

We operate upon all cases of malignant disease of the tongue and floor of the mouth by the diathermic method, believing that any case operable by ordinary methods is much better treated by diathermy, and also that by it it is possible to remove successfully some growths otherwise inoperable. My experience in this class of case has been obtained with Mr. Herbert Frankling, of Harrogate, and I am indebted to him for the following description of the technique he employs:

"The patient is anaesthetized with chloroform, the head being propped up, the mouth kept widely open by means of a suitable gag, and the tongue controlled by a suture placed deeply through the base.

"Removal to the desired extent proceeds on ordinary lines by cutting wide of the growth with the knife electrode, the part to be divided being put on the stretch. If an area in front of the knife becomes charred and it is found impossible to get on, division of the charred mass with ordinary scissors will put matters right. This difficulty may also be obviated by the use of the Cumberbatch knife. There is no bleeding, all vessels being sealed off as the removal proceeds; the lingual artery can be identified as a rule and receive special attention.

"Involvement of the floor of the mouth or the pillars of the fauces is easily dealt with; we have found it easier to work near the lower jaw by this method than by the Whitehead removal with scissors. The area left after removal can be treated by the button electrode, special attention being paid to any tissue divided near the growth."

The removal of a malignant tongue by the above method is quicker than by the use of scissors or scalpel, and is a less formidable proceeding. Other advantages are: a bloodless field of operation, diminished sepsis and septic absorption, and rapid convalescence. A slight rise of temperature sometimes follows the operation. The routine block dissection of the neck precedes or follows the removal of the growth. We have made a point of giving a course of prophylactic *x*-ray treatment as soon as possible after these operations for malignant disease of the tongue.

CASE 1.

M., aged 41 years, first noticed a "pimple" on the tongue on October 23rd, 1917. He was in hospital in Vancouver for two months. A snipping from the tongue proved to be epithelioma. He had "Percy treatment seven or eight times." The patient, who was not a good subject for operation, was suffering when seen by Mr. Frankling on March 26th, 1919, from acute pain in the left ear, and carcinoma of the left side of the tongue, anterior pillars of fauces and floor of mouth, spreading over the middle line.

On April 4th, 1919, diathermic removal of three-quarters of the tongue, the anterior pillar of the fauces, and the tissues in the floor of the left side of the mouth was performed, and on May 6th, 1919, block dissection of the glandular area, including right and left submental, left submaxillary and carotid areas.

A course of twelve *x*-ray treatments commenced on May 15th, 1919. It consisted of a full Sabouraud B, measured "after" filtration through 2 mm. aluminium. A Coolidge tube was used with 9-inch alternate point to plate spark gap. One treatment was administered each week to alternate sides of the neck.

On May 20th, 1919, the patient had gained over a stone in weight since the operation—that is, in six weeks.

On June 3rd, 1919, the right submaxillary gland was enlarged; *x* ray treatment was given to it, and on June 10th it was considerably smaller.

On June 23rd block dissection of the right submaxillary and carotid regions was performed. Tremendous hyperaemia was present, which Mr. Frankling thought was due to the *x*-ray treatment.

The course of twelve *x*-ray treatments commenced on May 6th was completed on August 3rd. The patient continued to increase in weight, and on September 30th weighed 9st. 13lb. (without clothes); a second course of eight *x*-ray treatments was then commenced.

By the end of November the patient appeared in perfect physical health, and his weight had increased to 10st. 7lb. (without clothes).

A third course of six radiations was given during February and March, 1920, and the patient returned to Canada.

In a letter dated from British Columbia, April 6th, 1921, this patient wrote:

"As it is exactly two years on the 4th of April since Mr. Frankling removed the greater portion of my tongue, I thought that both you and he would be interested to know how I am. There has not been a single sign at any time of either a breakdown or a recurrence. My general health is simply splendid, my appetite good, and I am getting regular and restful sleep. There is no doubt about it I am a splendid result, and words are made quite to express my thanks both to Mr. Frankling and yourself. My speech has improved wonderfully, and but for a lisp my friends seem to think I speak very well, etc."

CASE 2.

M., aged 52, had an epithelioma involving the left half of the tongue and floor of the mouth, the whole forming a foul fungating mass. There were secondary glands in the neck.

On November 28th, 1918, the affected part of the tongue was removed in the manner already described. The floor of the mouth was then thoroughly treated with a button electrode. The operation was rapidly performed, and haemorrhage was almost completely absent. Foul sloughs covered the floor of the mouth, and separated between the tenth and sixteenth days. There was very little pain after the operation. On the morning following the operation the temperature was 98.8°, and in the evening 100.8°; on the second morning it was 98.8°, and remained normal. No complications ensued. The patient's general health rapidly improved, and he was able to speak remarkably well.

On December 20th, 1918, block dissection of glandular areas was performed.

Present condition: When seen on June 1st, 1921, there was no sign of recurrence anywhere. The lingual scar in front was perfectly supple, and posteriorly a little fibrous. The patient felt in perfect health, and had been at work since a week after he left hospital.

CASE 3.

M., aged 71 years, presented an epithelioma of the left side of the tongue extensively involving the floor of the mouth; the right half of the tongue showed leucoplakia.

Operation by diathermy was performed on November 28th, 1918; the left half of the tongue was removed; no haemorrhage occurred during the operation. Thick foul sloughs covered the treated areas and separated between the tenth and twentieth days. A large slough was pulled off by forceps, and some haemorrhage occurred. The haemorrhage was quickly stopped by a hot mouth-wash. No other complication occurred. After separation of the sloughs the remaining part of the tongue and floor of the mouth had a smooth healthy appearance. The temperature was only above normal (99°) on one occasion, the evening following the operation. Sloughs following diathermic treatment should be allowed to separate naturally, and not be pulled off, or haemorrhage may occur, as in this case.

On December 20th, 1918, block dissection of the whole glandular area was performed, and the patient left hospital on December 31st.

He remained well until November, 1919, when he was readmitted with an intrathoracic growth on the left side, from which he died in a few days.

Since October, 1918, we have operated upon 12 cases of malignant disease of the tongue. Up to the time of writing no local recurrence of the disease has occurred in any of the cases.

Three deaths have occurred, one case being that of a woman in which the whole of the tongue, pillars of the fauces, and one tonsil was involved in the disease at the time of the operation. This patient died a few months after the operation from large mediastinal deposits. Another case, a male, developed secondary carcinoma of the oesophagus, and Mr. Frankling performed gastrostomy. Death occurred one year from the date of the diathermic operation.

Diathermic removal of a malignant tongue is followed by cessation of discharge, relief of pain, and rapid improvement in the general health.

III. *Malignant Disease of the Nasopharynx.*

The results obtained in the two following cases speak for themselves:

CASE I. *Epithelioma involving the Pillars of the Fauces, Soft Palate, and Tonsil on the Left Side.*—In this patient, aged 46, Mr. Steward, of Harrogate, considered the growth inoperable by ordinary methods, and on September 8th, 1918, destroyed all the palpable and visible parts by diathermy. The posterior part of the soft palate was removed. The operation was rapidly performed, and there was no haemorrhage. Thick sloughs covered all the coagulated area; they separated between the fourteenth and twenty-first days. During this time the patient had great difficulty in swallowing owing to partial ankylosis of the jaw. No secondary haemorrhage occurred. Three months later the patent developed an ulcer on the lateral wall of the pharynx beyond the area treated in September. The ulcer gave rise to great pain and difficulty in swallowing. Mr. Steward coagulated the base of the ulcer with a button electrode attached to the end of a special pharyngeal electrode. The treatment relieved the pain and difficulty in swallowing, and no discomfort followed the operation. The patient was discharged ten days later, and was perfectly well for three months, when secondary visceral deposits developed, and death occurred nine months after date of first operation. There was no local recurrence of the disease, and Mr. Steward thinks the secondary deposits in the viscera were present at the time of the first operation.

CASE II. *Nasopharyngeal Sarcoma.*—In this patient, a woman aged 27, the disease commenced with profuse haemorrhage; she came under the care of Mr. Steward in 1913, and, after a preliminary laryngotomy, he performed an extensive operation, which failed to cure the disease. For four and a half years frequent haemorrhages, at times very profuse, occurred, and were kept in check by treating the entire surface of the nasopharynx once a fortnight by means of the galvano-cautery. In September, 1918, Mr. Steward decided to try diathermy. The head of the patient was drawn well over the end of the operating table, and a good view of the growth was obtained by depressing the tongue and retracting the soft palate. The chief part of the disease was situated on the posterior pharyngeal wall. A flat disc electrode was applied for two or three seconds over every part of the surface until the whole area was thoroughly coagulated. After this operation the patient was free from haemorrhage for about two months, when Mr. Steward again applied diathermy. On this occasion, owing to a vigorous application of disc and button electrodes, the anterior parts of the bodies of the second and third cervical vertebrae were injured, and the patient was ill with pyrexia, running up to 103° F. at the end of a week. Two weeks after the operation rough bare bone was felt all over the area treated, and the patient complained of stiffness in the neck. Two months after the operation a large sequestrum separated; it consisted of the compact tissues of the anterior wall of the bodies of the second and third cervical vertebrae. For two and a quarter years following the second operation the patient was perfectly well, there was no sign of recurrence, and no haemorrhage occurred. In March, 1921, a small recurrence limited to the left side of the pharynx was again treated by diathermy. When seen on July 9th, 1921, the patient was perfectly well; there was no further haemorrhage or signs of the disease.

IV.—*Malignant Disease of the Cervix Uteri.*

Until recently the majority of the cases of malignant disease of the cervix we have treated by diathermy have been those considered inoperable by any other means, or for some reason a radical operation was contraindicated. The experience gained in these cases has resulted in our employing diathermy as a means of amputation of a malignant cervix preparatory to a radical abdominal operation. Mr. Frankling considers this combined method of operating has had encouraging results, and that it holds a legitimate place in the treatment of the disease.

We employ three methods of treatment, the method adopted depending upon the stage and character of the disease and the condition of the patient.

1. Destruction by button and disc electrodes of as much of the cancerous mass as possible. In many cases this is all one can hope to accomplish.

2. Supravaginal amputation of the cervix by means of the diathermic knife.

3. Amputation by the diathermic knife, preparatory to a radical abdominal operation.

Very little loss of blood attends these operations. This fact, together with the slight shock and diminished sepsis, makes it possible to employ the diathermic method merely as a palliative in cases where any other active treatment is contraindicated. For a time, at least, foul discharge and haemorrhage are checked, and the end of the patient's life is rendered a little more tolerable.

CASE.

A woman aged 59, seen on March 2nd, 1921, gave a twelve months' history of discharge, recently blood-stained, loss of strength and backache. The menopause had occurred five years previously. The vaginal part of the cervix presented soft fungating growth which bled on touch. The uterus was movable. The vagina was the seat of acute septic inflammation, and there was severe excoriation of thighs, vulva and lower abdomen.

On March 8th, 1921, the whole of the cauliflower-like excrescence was removed by diathermy; the cervical canal was thoroughly charred, and the vagina loosely packed with bipp gauze. The discharge rapidly ceased and the excoriation quickly healed.

On March 23rd, 1921, abdominal panhysterectomy was performed, no attempt being made to do Wertheim's operation, the patient being very fat and the heart muscle flabby. Examination of the specimen removed showed that the carcinoma had been well destroyed by diathermy. Only at one part could anything that looked like malignant tissue to the naked eye be discovered.

The patient made an uninterrupted recovery, and left the nursing home at the end of three weeks.

V.—*Papillomata of the Bladder.*

All surgeons who have had experience of the diathermic method of treatment in this disease are, I think, agreed that it is the best means of destroying these growths. There are two methods of employing the treatment: the periurethral and the open suprapubic.

By the first method, in order to complete the destruction of extensive papillomata, more than one sitting is usually necessary. I have had no personal experience of this undoubtedly excellent method of treatment. For large papillomata Mr. Frankling prefers the open suprapubic method, and I am indebted to him for the following description of the technique he employs:

Method of Operating.

"After a preliminary cystoscopy and mapping out of the tumours the patient is anaesthetized and placed in the moderately high Trendelenburg position and the bladder is moderately distended. The bladder, when exposed, is steadied by two laterally-placed sutures, the ends of each being clamped together with Spencer Wells forceps. These sutures serve to control the cut bladder edges in the subsequent stages of the operation. A suprapubic opening sufficiently large to give a good view of the bladder cavity and the villous growth or growths is made. Adequate exposure is facilitated by the use of suitable retractors. It is usually recommended that these should be of wood, but we have found no disadvantage in the careful use of metal ones. Intact mucous membrane is carefully packed away, by means of wet gauze swabs, to avoid the implantation of any tumour cells during subsequent manipulations, which for the same reason must always be carried out in the most gentle manner possible. If a pedicle be present, it is seized with delicate right-angled forceps and put on the stretch, great care being taken that the villi are not in any way injured; it is then burnt off quite close to the bladder wall with the curved diathermic knife—this burning extends out on to the bladder wall, which has been pulled up by the traction on the pedicle. A charred oval area, greater or smaller according to the degree of the traction exercised, is thus left. If there be any doubt as to the non-malignancy of the tumour—some authorities regard these papillomata 'from the first as papillary carcinomata,' and that is certainly the 'safer assumption from a surgical standpoint and is protective of the best interests of the patient'—and remembering that malignant changes are prone to take place, 'especially about the pedicle,' the area left after removal may with advantage be further treated with the button electrode.

"Subsessile and sessile tumours may be treated in a similar fashion, full advantage being taken of the possibility of 'pulling up' the mucous membrane of the bladder wall at and around the tumour base, and due regard being paid to the possible proximity of a ureteral opening.

"The proper application of the forceps for holding the tumour whilst it is being burnt off can be facilitated by picking up the mucous membrane just beyond the growth on either side by small-toothed forceps with delicate jaws and teeth, and thus pulling away the growth with its basal mucosa. If it should be impossible to apply the holding forceps to the base of the tumour well below its main mass, the mucosa must be incised around the base, leaving an adequate margin of healthy tissue. Picking this up in forceps at one point, the area marked out is dissected away, any suspicion of malignancy being met by removal of the deeper muscular coat of the bladder as well as the mucous membrane, the diathermic knife being, of course, used throughout. Too much stress cannot be laid on the necessity for the utmost gentleness in handling the tumour. Any crushing or other injury will result in abnormal epithelial cells being detached and possibly becoming implanted on the mucous membrane.

"A convenient forceps for holding the tumour base is a ring forceps with ring sufficiently large to encircle the main tumour mass without catching the villi in its bite. We have had made for us by Thackray, of Leeds, such a forceps with the ring part boxed in with thin metal, so that when it is clamped across the base of the tumour the villous mass is enclosed in a small chamber. We think that in practice the utility of this is small. Small 'splashes' of villous growth may be destroyed *in situ* by the small ball electrode.

"As a rule there will be no bleeding from the base of tumours removed in this way, but, should there be any oozing, it is readily checked by a touch of the electrode.

"When it is certain that no growth has been overlooked the swabs are removed, and the bladder cavity is flooded with alcohol to kill any loose abnormal cells that may be present, and the bladder, if aseptic, is stitched up with interrupted catgut sutures, either wholly or leaving a space large enough to admit a small safety drain tube. The parietal wound is sutured in the usual way.

"The separation of the slough is, as a rule, unnoticed. Occasionally we have noted about the tenth day a slight haemorrhage, together with the passage of a slough large enough to be obvious. In aseptic cases the bladder is not washed; the tube is removed on the third or fourth day, and there is seldom much leakage afterwards."

The cases we have treated have done uniformly well, and no recurrence of either symptoms or growth has up to the present occurred in any case. We have also used the open suprapubic method as a palliative measure in the treatment of otherwise inoperable cases of malignant disease of the bladder, with encouraging results.

VI.—*Fungating Malignant Growths of Cutaneous and Muco-cutaneous Areas.*

Our experience in this class of case is mainly derived from growths involving the vulva, anal, and perineal regions. Healing, of course, occurs by granulation after separation of the sloughs, but we believe that little time is wasted, as primary healing in such situations is notoriously difficult to obtain. In favour of this method of treatment we feel justified in claiming more complete removal and destruction of the disease, and absence of septic absorption.

Results of Surgical Diathermy.

After a diathermic operation there is abundant exudation of lymph and oedema of the surrounding tissues. In operations involving the mouth, pharynx or larynx, operators should be prepared for tracheotomy; no case of excessive oedema has so far, however, come within my experience. The sloughs resulting from diathermic coagulation usually separate between the tenth and twenty-first days, leaving a healthy granulating surface. Healing is usually complete in about a month. Generally only a slight rise of temperature follows diathermy, there is little or no shock, and the amount of pain is surprisingly little. I have had no experience of any severe secondary haemorrhage, but this possibility must be borne in mind when operations have been performed in the neighbourhood of large blood vessels. It occurs at the time the sloughs separate. A rapid and marked improvement in the general health of the patient is noticed after diathermic operations on malignant growths in the mouth and pharynx, and in no case have adhesions formed, or has bronchopneumonia developed as a complication.

The chief advantages and disadvantages of surgical diathermy over cutting operations may be tabulated as follows:

Advantages.

1. Tumours otherwise inoperable may be attacked.
2. A more or less bloodless field of operation.
3. In the treatment of malignant disease the danger of metastasis is much less than with a cutting operation owing to the sealing of the blood vessels and lymphatics draining the part.
4. Saving of time due to absence of blood in the field of operation.
5. Operations are frequently less formidable than when carried out by scalpel or scissors.
6. Sterilization of the parts due to destruction of infecting organisms.
7. Complete destruction of visible and palpable malignant disease.
8. There is no surgical shock.
9. Convalescence is rapid.
10. Formation of adhesions is rare.
11. The operation can easily be repeated if necessary.

Disadvantages.

1. Healthy and diseased structures are destroyed at the same time.
2. The surgeon is not always able to see important vessels and nerves.
3. As the destructive process extends beyond the area of visible coagulation, the depth to which coagulation occurs is difficult to estimate.
4. Danger of secondary haemorrhage on separation of the sloughs when operating near large blood vessels.

III.—F. HOWARD HUMPHRIS, M.D., F.R.C.P.E.,

Officer in charge of X-ray Department and Department of Electrotherapeutics, 3rd London General Hospital.

DIATHERMY is an intensive form of high frequency; the current passing through the body has no other effect than that of heat. Its value depends entirely upon the power to produce heat of any required intensity, at any depth, and within any part of the patient's body that may be desired.

In surgical diathermy the current is modified in so intense and concentrated a form as to produce the destruction of tissue; in medical or therapeutic diathermy the current is intended to produce only a slight increase in temperature without destructive effect.

With this latter to-day we have nothing to do, and I will mention surgical diathermy only somewhat briefly, since the opener has covered most of the ground. When used thus the current is essentially destructive; it is useful in cases of haemorrhoids and papillomata of the bladder, lupus, rodent ulcer, moles, and other facial blemishes; telangiectasis, blastomycosis; chronic pharyngitis; naevi, corns, and warts; and in certain forms of malignant disease. The subject of extensive destruction of malignant growths by diathermy is rather out of place in a paper of this sort; but it is one of great value, especially in cases of epithelioma of the bucco-pharyngeal cavity. Its advantages over the cutting operation are several. Inasmuch as it is bloodless, cell implantation is out of the question. Operation is through the mouth, thus avoiding extensive dissection, etc. The technique, however, is not easy to acquire, and must be left in the hands of the specialist.

The surgical diathermy to which I will restrict my remarks is the method introduced by Major Turrell some four years ago, which can be carried out with ease and safety. He called it indirect diathermic fulguration. Originally the patient was placed on an auto-condensation couch, holding the usual bar. The operator brought a small metal point down to within sparking distance of the part to be destroyed. The current employed was about 400 to 500 milliampères. The application permits of great accuracy, and the depth of action can be regulated with certainty. The amount of pain is not great and often quite negligible. More recently Turrell simplified the technique. He found that by far the best fulgurating instrument for general use was a Primus pricker, an instrument sold by ironmongers in threepenny packets for cleaning the nipples of Primus petroleum stoves. Instead of using the bar electrode held in the patient's hands, an electrode 20 × 10 cm. was bandaged on the thigh, arm, or abdomen, and the somewhat cumbersome auto-condensation couch was replaced by a simple and efficient substitute made from a three-ply board backed with zinc and vulcanite and drilled so that a terminal can be fixed.

The technique of the little operation is briefly as follows: Having arranged the patient on the couch or board so that a good light falls on the growth, and the bar in the patient's hands, or the electrode bandaged firmly, the current is slowly turned on until 400 milliampères are registered. This should be done by an assistant. The current is then stopped by means of the knife cut-out switch. The operator, resting his hand on an ebonite rod, or cushion, brings the Primus pricker to a suitable distance from the growth, then calls to his assistant to turn on the current. The sparks are then allowed to flow for a time, varying with the size and depth of the growth or the toleration of the patient, usually from twenty to sixty seconds, and the current is sharply turned off again with the knife switch.

In the treatment of corns I will describe the details of preliminary technique which I have found useful, as they have not hitherto been published. The corn is ground down with a steel burr which fits into the flexible shaft of a vibrator. The corn substance comes away as a fine dust at first; when it ceases to come, owing to the deeper layers not being sufficiently dry, the surface may be levelled with an emery or carborundum wheel, and the little operation stopped for that day. A few days later the process is repeated until all the hard skin has disappeared and the central part of the corn is visible as a dark spot. The patient is then instructed to bandage the foot that

night, to soak the bandage in water, cover with oiled silk, and pull on sock or stocking and return with the water dressing still in place on the following morning. On removing the bandage the corn will be visible surrounded with a whitish layer of skin. If this is fulgurated in the centre with the Primus pricker the patient has usually no further trouble.

Diathermy has brought about immense progress in the treatment of papillomata of the bladder, and is particularly successful in the destruction of these benign tumours. The patient is placed on his back on an ordinary flat table, with the usual indifferent electrode about 18 by 24 cm. under the sacral region, and attached to one side of an ordinary diathermy apparatus. It should be thoroughly wet with saline solution, and kept in good apposition to the skin by means of folded towels. The bladder is then washed out with sterile water until it returns perfectly clear. Then the bladder is injected with more water to a point of slight distension. Indication of this is given by the patient expressing a desire to pass water. Then a special cystoscope is introduced into the bladder. This carries with it a conductor insulated along its whole length except at the tip; the conductor is attached to the other side of the diathermy machine. The cystoscope having been introduced and the lamp lighted the whole of the bladder wall can be examined. When the bare end of the conductor or electrode is in contact with the growth it is withdrawn for 1 cm., the operator tells the assistant to turn on the current, which is continued until the meter registers 250 to 300 milliampères. A rain of sparks flows from the tip of the electrode to the papilloma. After from five to six seconds the tumour will be blanched, and the current is then abruptly switched off. The cystoscope is withdrawn, the bladder emptied, and a final lavage with sterile water given. The patient after half an hour's rest may then go away and the result is usually quite satisfactory. A single application, if properly done and with sufficient intensity, often suffices to effect a cure without recurrence.

The details of each method of using surgical diathermy are the result of personal experience and can only be learned from it; but it is a current easy to handle, safe in its application, and satisfactory in the results obtained.

DISCUSSION.

Dr. William Hill (London) said that the use of diathermy could be justified in certain cases, but he was not able to testify to uniformly good results. The dreadful state in which some of these patients came for treatment needed to be taken into consideration and compared with their condition a month afterwards. He had heard it said that there was no reaction, but he had known it to occur. There was sometimes scarring and fibrosis, though this was no great disadvantage compared with the advantages of the method. He protested against the use of the term, almost universal amongst medical men, "inoperable malignant growths." The term was stupid and misleading. Any growth was operable; a surgically ineradicable growth was a different matter. Partial removal of growths was a very common procedure. If a growth could not be completely eradicated it was possible to take away some portion of it. He referred to the extraordinary results obtained with radium in cases of sarcoma. Before treating sarcoma by diathermy radium might be tried. The results with radium were obtained with fair, though not with absolute, consistency, and the rapid diminution of the growth was a remarkable feature. Nevertheless, the more they worked along these lines, the more careful they became in any prophecy as to the ultimate results.

Dr. H. E. Gamlen (Newcastle) said that, up to the present, his experience of diathermy had not been great. He had had success in the treatment of an extensive naevus of the face and mouth, the mucous membrane of the mouth being treated by diathermy while the skin of the face was rapidly improving under radium. Several warts had been cleanly though not painlessly removed, and a case of internal and external haemorrhoids had been dealt with; as he did not at the time possess the necessary protective instruments, an ordinary pair of clip forceps, protected by a piece of indiarubber drainage tube, was used, the base of the pile was seized, and within a couple of minutes pulled away, as a grape was pulled from its stalk. There were no resulting evils and no haemorrhage, and the patient was quite able to return home in a couple of days. Undoubtedly diathermy had its place and would be more used as experience was gained amongst surgeons. He agreed with the suggestion that before treating cases of sarcoma by diathermy it would be advisable, if radium were available, to try it first.

DEMONSTRATION
ON
RADIOGRAPHY IN GALL BLADDER AND KIDNEY DISEASE.

The President of the Section (Dr. Robert Knox) and Mr. Thomson Walker (Senior Urologist and Lecturer in Urology at King's College Hospital) gave a lantern and print exhibition illustrating the value of radiography in gall bladder and kidney disease.

The President emphasized the value of the lateral position in making a differential diagnosis in both gall bladder and kidney work. His lantern slides would prove how valuable such a position could be. The photographic technique was very simple, although in gall bladder and kidney cases, especially in the former where the outlines of the shadow were very fine and delicate, it was important to eliminate even the slightest movement which would blur the result. Naturally, the exposure must be as short as possible, but the duration of the exposure was controlled by the patient's tissues, and in the case of a stout person it might be necessary to give an exposure of considerable length. The quality of the radiation did not matter greatly; a medium tube was commonly supposed to be best for detail, and provided the patient was not very stout this should be used, but, with thick tissues to penetrate, it was always necessary to take into account the fact that there would be considerable absorption of the radiation. He had tried experimentally various forms of gall stones with different lengths of exposure, and had found that he could get good detail with a soft tube and a long exposure, and good detail also with a penetrating radiation and a short exposure. With regard to the position of the patient, his practice was to employ first of all the ordinary kidney position, and, for gall-bladder cases, to turn the patient round on the abdominal surface, raise the shoulders a little, and expose just below the liver at the back. The third position was the lateral one already mentioned, and this he thought extremely valuable. Multiple gall stones would vary in intensity, but if some were missed altogether the probability always was that others would have sufficient density to give a shadow.

Mr. Thomson Walker said that the work of the radiographer and the surgeon went together. Although, he supposed, Dr. Knox would not claim that he could get a shadow from every gall stone, still he could get it very frequently. The technique of the injection of an opaque substance into the pelvis of the kidney had undergone some changes since its first introduction. Collargol was used at first, but it was found that poisoning might occur owing to the drug spreading outside the kidney. Thorium nitrate was next used, but at the Mayo Clinic there had been a death following the use of this substance, for if kept for a certain time it became toxic. Sodium bromide was easy to use, clean, and gave quite a good shadow, not so deep as collargol, but still serviceable; given in a 20 or 30 per cent. solution it did not seem to cause any irritation. Mr. Thomson Walker then showed a series of slides illustrating the results obtained with this method of pyelography. In one instance he was able to show gall stones and kidney stone on the same plate.

At the close of the demonstration the President and Mr. Thomson Walker received a cordial vote of thanks from the Section.

SECTION OF AMBULANCE AND RED CROSS.

Sir James Cantlie, K.B.E., LL.D., F.R.C.S., President.

THE CLAIM OF "FIRST AID" TO BE REGARDED AS A SPECIAL BRANCH OF PRACTICAL SURGERY.

The President said: All teachers of Ambulance know how unsatisfactory it is to have to hold an ambulance class in the goods shed of a railway station. The fact that conditions of that kind have had to be endured in the case of such an important branch of surgery as this makes one marvel that so much has been done. Every teacher of Ambulance knows, however, that it could be done much better, and that, given proper conditions, much greater efficiency is possible than exists at the present time.

I began to teach Ambulance in 1878, and I have been lecturing on the subject ever since. My first class was held beneath the arches at Charing Cross. Our illuminant was a candle stuck in a beer bottle. On the wall we had a piece of white paper upon which, with charcoal, we drew diagrams. But I will not harrow your feelings by recalling the experiences which many went through in these early classes. In 1881 there was a medical and sanitary exhibition at South Kensington, the first of its kind. I proposed that in connexion with it there should be an ambulance display. There had never been such a thing before in England. At first the suggestion was received with amusement, but at last it was agreed to. I sent out five thousand circulars announcing it, and three doctors came to see it—a German, a Russian, and a Spaniard. No British doctor came. We had the usual demonstration, with the help of policemen, who used their truncheons. One of the gentlemen who was looking on asked, in broken English, with a German accent, "Where did you get that stick from?" When he was told, he said, "I have taught the world military ambulance; now I go to teach the world civil ambulance." Surely, I said, that cannot be the great man himself, come to see our little show; but immediately I found myself being introduced to Professor Esmarch, who had done such a great work with his first-aid lectures at Kiel University. Has any British university ever attempted to raise ambulance work above what it is at the present time? Esmarch himself asked the public to come to Kiel University, the foremost university in Germany. We have not reached that stage yet. We have not even got within the sacred precincts of hospitals and medical schools.

But what was the effect of that policeman's truncheon? For one thing, as I have said, it taught Germany civil ambulance. Another of the doctors who came to see the display, the Russian, also went home and taught civil ambulance to Russia, and the third, the Spaniard, introduced first aid into Spain. So that from our small beginnings we can say that civil ambulance spread over the face of the globe. Germany taught the world military ambulance, but England taught the world civil ambulance.

On every hand to-day the question of the recognition of the work done by the men and women who volunteered for ambulance work during the war is being raised and discussed. Under the title "Ambulance" is included humanitarian work in many departments which has borne fruit in our hospitals at home and abroad, on every front where help has been called for, in kitchens and sculleries, in wards and operating theatres, on wagon and train, in work-rooms, in clerical and committee labours, in teaching and instruction, and in the performance of innumerable unseen duties which may never become known to the public. How to group so wide a range of good deeds and all that they mean under one title is difficult, but I think that the word "Ambulance," better than any other, suffices to convey to everyone the aim and object of the work performed.

Forty years' experience of teaching Ambulance has brought it home to us that in the interests of the public during peace, as well as in the interests of the soldier in war, the work of ambulance teaching should be raised out of the haphazard methods of instruction which up to the present have prevailed, and that this branch of humanitarian work, regarded, as it should be, as a special branch of practical medicine and surgery, requires relatively as careful an education and as ample methods of technical instruction as any one of the other specialities. As I have already said, Esmarch, the founder of military ambulance, after seeing in 1881 the meaning of civil ambulance in Britain, returned to Kiel, and with the help of two of our greatest ambulance workers, the Princess Christian and Sir John Furley, called the inhabitants of Kiel to the University, and there, under the auspices of the authorities, raised and consecrated the subject of civil ambulance to the higher platform of university teaching. In Britain we have not done so; we have been content to let it be taught as and where it may.

Yet this is delightful work. There is an immense attraction to me in improvisation. Can you make an ambulance wagon, a stretcher, and splints out of nothing? To create something out of nothing is well worth while. I am told that we must have the latest appliances, aluminium splints, and so on. Suppose a man in the country gets kicked by a horse or injured by a reaper, where are you to get your aluminium splints if the nearest town is thirty miles away? If that is what first aid is to descend to, I say good-bye to it. There is no further interest in it. It would mean that there must be a set of the very latest splints at every farmhouse in the kingdom. Do you know that fine dressings can be made with the aid of a good "fat" newspaper? Do you know how to make a hay or straw rope like that which the yokel can make? If not, you are no good for ambulance work. Do you think this important branch of surgery should be allowed to fall entirely into the hands of people who are not doctors? It is wonderful what can be done; let us make it still more wonderful. A railway porter will sacrifice his day's pay in order to take part in a public demonstration. I know that doctors have nothing to reproach themselves with as regards making sacrifices. But much more can be done.

It was the result of my forty years' experience that induced me in 1914 to open the College of Ambulance in Vere Street, London. The building was generously placed at my disposal by Sir James Boyton for twelve months free of charge, and the initial funds were a present to me from the pupils who, on August 6th, 1914, began to assemble at the Polytechnic in Regent Street for ambulance teaching at emergency classes. The testimonial these 3,000 students presented to me was spent in equipping the college. An appropriately equipped technical school was instituted and has attracted tens of thousands to the teaching afforded by the college. The college is open daily, the teaching being continuous. For three years the weekly attendances amounted to over 900, giving an annual attendance of 45,000.

The suitable and commodious premises were placed at my disposal only until September, 1915, but after that date the responsibility for the maintenance of the college was sustained by myself, my own work being unpaid. A number of friends of the college, however, felt that it was too great a burden for any single individual to shoulder such an undertaking any longer, and at a public meeting held on March 23rd, 1918, presided over by Sir James Reid, it was agreed that the college should become incorporated and be a national institution.

The college having become a great centre of teaching ambulance, the authorities feel that there could not be a more fitting memorial than the permanent establishment of an institution furthering the cause to which voluntary ambulance workers have devoted themselves. Ambulance is not a question of to-day but of all time. The first half-hour after injury, be it on the field of battle, in the streets of our cities, in factories, mines, harvest fields, railways, or in the merchant service, is the period of primary importance, and as this critical moment is in civil life left to the public to deal with, it is imperative that the training should be carried out in the best possible manner. Heretofore there have been no real schools of technical instruction of the kind, and it was to meet the urgent need that the college was established.

The teaching given in the college is essentially technical, and the college is therefore equipped with anatomical specimens, models, diagrams, lantern slides, and microscopes,

and a ward is arranged for instruction: there is a model operating theatre, a drill hall, models of railway and motor ambulance, stretchers, a kitchen equipped for instruction in cooking, a lecture hall and museum, and everything that can promote the teaching of first aid, home nursing, and hygiene on a practical and technical basis.

Wishing to test the feeling of the country in regard to a memorial on the lines proposed, a few members of the governing body sent out a strictly limited number of letters privately. The response was so immediate and unanimous that it was resolved to issue a public appeal. The intention is to secure a site and building for the establishment of a technical college at which our ambulance workers can be educated in a manner worthy of this important department of practical medicine and surgery. We have long been familiar with the great public work done voluntarily by the ambulance workers for the past forty years, and more recently in the war. There has been no opportunity given to the public to express their thankfulness to these men and women for their humane work. We want to see neither monuments in stone nor any other form of inanimate testimony, but an emblem in being, an active and living centre where ambulance teaching shall be furthered, standardized and perfected, to meet the needs of the injured, the sick, and the suffering.

Dr. Robert Anderson (Vice-President of the Section) said that he had been interested to hear Sir James Cantlie's account of the embryonic stage of civil ambulance. He himself well recalled it in the North of England. He gave his first course of lectures on ambulance in Northumberland in 1881, the very year of which Sir James had spoken. When he took up the subject he did not know how to lecture and had no textbook. He began in a colliery schoolroom with fifty or sixty men, moderately intelligent pitmen, but quite ignorant of this subject. He was not lecturing for their entertainment, and it was a rather ambiguous situation—an ignorant teacher addressing an ignorant class! The first book he had was Esmarch's book, translated by Princess Christian (*First Aid to the Injured: Five Ambulance Lectures.* Translated from the German. London, 1882.) With this very creditable production he proceeded to give lectures, and the pitmen crowded to them, because they understood that they would get information which would be of advantage and benefit to them and their fellows. Later on he was asked to give other courses of lectures, and the class was twice doubled. This went on session after session, until neighbouring collieries began to get infected with a desire for knowledge, and he found himself giving four or five courses of lectures, at a distance of three or four miles from his own house, every winter. Eventually he was asked to be examiner in the district, and in this way he travelled over a wide area. He found the President's well-known textbook most useful. It was simple, though the very simplicity of the whole thing made it difficult. Too often they pottered about over the great and serious things to no particular purpose, and overlooked the very simple things. Sir James Cantlie had rightly emphasized the value of extemporization. The late Hugh Boyle, once president of the Northumberland Miners' Association, was one of his own pupils and heard him lecture on fractures. On the following day, in the pit, the man next to Boyle sustained a bad fracture of the leg. Boyle immediately applied first aid, using oakum for padding the splints and tying them with tarry rope. The result was excellent. On another occasion he was lecturing on bleeding from veins; one of the men in the class was the very man who had sustained the fracture just mentioned, and about two o'clock in the morning that man's wife called his attention to the fact that a varicose vein in her leg had burst. The man did not rush off to the surgery. He did exactly what he had been told to do the night before. He stopped the immediate bleeding by pressure below the wound, only sending for the doctor when it was daylight. Sir James Cantlie had very properly emphasized the fact that the first half-hour after the injury was the time when skilled aid could be of most use. Pupils were taught to put the patient in a safe position and await the arrival of the doctor. There was every reason why a College of Ambulance should be established in a large and important mining centre such as Newcastle.

DISCUSSION ON AN X-RAY MOTOR AMBULANCE WAGON SERVICE FOR GREAT BRITAIN.

Sir James Cantlie next introduced a discussion on an *x*-ray motor ambulance service for Great Britain, illustrating his remarks by a map showing centres from which areas could be worked. The paper he read in this connexion was one which he had already presented to the Royal Society of Arts on April 20th, 1921, and which appeared in the *Journal* of that institution for May 13th. His suggestion was, in brief, that *x*-ray wagons, which had been found of such value in various seats of war, should be used in peace. He had himself initiated a test service in London and a radius of fifty miles around London; only a few days previously the wagon was sent to Bexhill to carry out radiography in the case of a patient who was not allowed to leave her room. The idea of an *x*-ray motor ambulance originated in a conversation between Major Robert Mitchell of the Regent Street Polytechnic, Dr. Robert Knox, and himself. Its realization was rendered possible by the acquisition of such an ambulance, which was built by the British Red Cross Society for use in Italy during the war, and was now available for civil work. The members of the Eccentric Club in London, whose hostel work during the war would live as a model of practical philanthropy, made a contribution sufficient to purchase the wagon, which was presented to the College of Ambulance; the British Red Cross Society, at the instigation of Sir Arthur Stanley, presented the *x*-ray equipment. The purpose of the wagon was to bring the *x* ray apparatus to the sick man instead of often at the cost of great pain and discomfort—bringing the sick man to the *x*-ray apparatus. The wagon stood outside the house while the apparatus was carried within, a cable connecting it with the energy supply, which remained in the wagon. He hoped to see these wagons introduced all over England, so that there should be no place where a man could not have the *x*-ray apparatus brought to his bedside. The authorities of the College of Ambulance had been testing the possibilities of conveying the delicate apparatus about the country and its transport up narrow staircases and into small bedrooms.

He added that several doctors from towns outside London had seen him about this scheme, and they were already endeavouring to get *x*-ray motor ambulances to serve districts in Scotland and England for a radius of fifty miles or more around centres where such wagons might be housed. In this way a network of areas could be spread, covering all parts of the country, which could be served with the *x*-ray motor ambulance, to the benefit of the medical profession and the lessening of pain and suffering to patients. Meanwhile the College of Ambulance could send the wagon anywhere within fifty miles of London. The poor were served without charge, but those able to afford it were expected to pay a fee.

Dr. George Locke described the ambulance work done at Hastings, and the skilfully adapted motor ambulance which was the pride of the town and was frequently to be seen in the streets of London. He hoped to be able to do something in connexion with the scheme Sir James Cantlie had outlined. The difficulty was to obtain the means for developing the radiographic plates.

Dr. C. H. Milburn (Ministry of Health, York) asked what was the cost of providing an *x* ray motor wagon, and what would be the cost of maintenance. He asked also with what feeling *x*-ray experts in the area which the *x*-ray wagon would serve would regard it. Were they likely to be favourable to its introduction, or would they feel that it was in any way trespassing upon their province? He imagined that the whole of the financial transactions would not be of the nature of outgo, but that fees would be received from well-to-do people for the use of the wagon. He quite realized that the idea was that this service should be for the benefit of those patients who could not be moved; but might not the service extend so as to cover other than these immobile cases? He asked whether the College of Ambulance, or the Joint Committee of the St. John and the Red Cross organizations would be responsible for administration and finance.

Sir James Cantlie said that he had proposed a society to deal with administration; he would like every county in England to form such a society. He could not at the moment furnish figures as to expenditure, but it would not be so high as some estimates might suggest, and, as Dr. Milburn had said, there would be receipts as well as expenditure.

STRETCHER SLIPS.

A demonstration of stretcher slips, the carrying of loaded stretchers on the shoulders, and the yoke slip, followed.

Sir James Cantlie pointed out that during the war the men, both of the British and the American armies, ceased to use the old-fashioned slings, which caused the bearer to bend his head and back, and were very easily thrown down and lost. The stretchers were then hoisted on to the bearers' shoulders, but that was an impossible position, because the wounded man's face could not be seen. Anything which prevented the worker from seeing all that was necessary in ambulance work must be abandoned. The carrying of the stretcher on the shoulders was very effective—for the kinematograph show; but it would be remembered that the American general, Stonewall Jackson, when being carried in that way, fell off, sustaining injuries from which he died a few days later. On one occasion, to enforce the lesson to his class, he had said that Stonewall Jackson fell from the stretcher and broke his neck, and this statement of his being reported in the newspapers, a lady rang him up next morning and complained that he had not been quite accurate with regard to her grand-uncle! His reply was: "Madam, I am a teacher first, and I tell the truth afterwards!"

Sir James then gave a demonstration of the ease with which the new yoke slip was adjusted, its strength, and the ready manner in which it might be attached to the bearer's coat so that it could never be lost. With the yoke slip, which was modelled on the lines of the farm worker's yoke, two women could carry a man on a stretcher, whereas without the yoke perhaps as many as six women would be required.

The brief discussion which followed was on ambulance in general, and not on this particular contrivance.

Dr. W. Nunan (Professor of Medical Jurisprudence and Toxicology, Grant Medical College, Bombay) gave an account of ambulance work in India, where, he said, those who were enthusiastic on this subject had to persevere against apathy; but something had been done during the past six years; in Bombay the Parsee and Hindu ambulance divisions during the first six months of the war handled practically ever sick and wounded soldier. He had suggested to the Indian Government that a rupee a day was a fair return for the work of these ambulance boys, but the Government would not agree, as the workers were not employed during the whole of their time, but offered a rupee for a full six-hour day. Even this concession, however, was found to be very unsatisfactory in practice, and worked unfairly against men who were called on at any moment to devote an hour or two to the work. Official recognition of ambulance work was absolutely necessary in India; if only it were forthcoming this volunteer work would get on much better. At the same time, from the technical point of view, good progress had been made. A large motor ambulance was now worked by volunteers in the streets of Bombay.

Captain J. T. Scott (Cooden Colliery) mentioned that he took his first-aid certificate in 1888, and had been an ambulance worker more or less ever since. He thought that there was not sufficient recognition given to the men who devoted their time to this fine and noble work; hundreds of accident cases passed through his hands, and he knew what devotion it demanded; ambulance workers did not get the encouragement that ought to be theirs, either from the Government or, in many cases, from the owners of the mine, the shipyard, or the dock, where the work was done. His own case was an exception, because he had had every encouragement from the colliery company at Cooden.

Dr. J. G. D. Cort (Whitburn) thanked Sir James Cantlie, and expressed his intention of doing his best to carry out the instructions received.

THOMSON'S MACHINE FOR ARMLESS MEN.

A demonstration was then given of the machine for armless men, which was invented during the war by Mr. George Thomson of Edinburgh. Mr. Thomson, who was a gasfitter by trade, and acquainted with mechanics, succeeded in producing a machine which enabled an armless man to carry out a whole series of useful manipulations.

The apparatus consisted of a small table at which the armless man was seated. Beneath the table were two rods, on the ends of which were metal pegs whereby the movements were made. The armless man, whose boots were removed, wore socks with a digitation between the big toe and the next, as in a hand-mitten with a separate thumb-piece. By placing in these clefts the pegs on the foot-rods he was able to make the necessary movements. The foot rods were attached to uprights which came over the side of the table opposite to that at which the man was sitting, and to these upright pieces the "arms" of the apparatus were attached, and projected towards the worker. Hinges and joints made the whole structure movable in almost every direction, and at the end of the arms there was a slot in which the various instruments employed for writing, eating, and so forth could be inserted and removed as required. These instruments were hung in a rack on the table.

The armless man whom Sir James Cantlie had brought with him then, with quite considerable facility, managed to consume food, using fork and knife and spoon, even delicately breaking the shell from an egg, also to light a cigarettee, write with a pen, turn over the leaves of a book, drive a nail into a piece of wood, and execute various other movements.

Sir James Cantlie added that the first regulation machine made was now deposited at the College of Ambulance for public inspection.

COLLIERY RESCUE WORK.

In the afternoon the Section met again at the Miners' Rescue Station, Scotswood Road, Newcastle, when an instructive demonstration of rescue work was given by Mr. F. P. Mills, M.I.M.E., F.S.I., chief officer of the Durham and Northumberland Collieries Fire and Rescue Brigade. A large number of visitors were received by Colonel W. C. Blackett, Chairman of the Brigade, who pointed out that the station dealt both with outbreaks of fire and with rescue and ambulance work. The brigade had four such stations, which covered a radius of about ten miles. Men from the collieries came there to learn how first aid might be rendered. Colonel Blackett pointed to the exhibits of various types of breathing appliances in connexion with which, he said, Mr. Mills had done so much valuable work. With regard to some of the more elaborate of these he expressed the view that they were best used as a last resort, for there were simpler methods which should first be tried.

Dr. Robert Anderson (Vice-President of the Section) said that it was vitally necessary that there should be such well-equipped stations ready to send men out to save life. He agreed that many of the appliances which were on view should only be used as a last resort, but there were occasions on which they might be of the greatest value.

Dr. H. L. Rutter (Honorary Secretary of the Section), in thanking Colonel Blackett and Mr. Mills, remarked that Sir James Cantlie greatly regretted that he could not stay for the demonstration.

The visitors were then taken over the station and inspected with interest many modern appliances, including the means of making liquid air, the provision for resuscitating men who had been overcome by foul air, and the use of canaries, which were taken on the engine and carried down the mine for the purpose of indicating foul gases. It was explained that the birds when affected were soon brought round by oxygen. Many questions were asked of Mr. Mills and the other guides, and a hearty vote of thanks was accorded to them at the close.

A CASE OF TRYPANOSOMIASIS TREATED BY INTRATHECAL SERUM.

BY

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AND

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SENIOR MEDICAL OFFICER, UGANDA.

IN view of our recent advocacy of the treatment of sleeping sickness by the injection of serum into the spinal canal, we wish to record the case of Mr. X. in fuller detail.

The first point of importance is the probable date of infection. As to this, Mr. X. lays stress on the fact that, to the best of his belief, he was bitten only once by a tsetse fly. This point is impressed on his memory, as he often remarked in jest that alcohol, if taken into the system systematically, would keep all insects away, and he would call attention to the fact that, owing to his unfailing regularity as regards his evening "peg," he had never been bitten by a tsetse fly. This period of immunity applies to the interval between April 8th and May 7th, 1920, when he was in the fly area. From the later date till about July 12th Mr. X. was not exposed to the risk of infection. He was again exposed between July 14th and 17th and bitten once, but he is convinced there was not more than one bite.

Taking this history as correct—and we have no reason whatever to doubt it—infection was caused by a single bite, and the incubation period was either approximately a fortnight or, alternatively, as long as eleven weeks.

On July 30th Mr. X. had an attack of what he believed to be malaria, which lasted till August 3rd, with a temperature of 102 to 103 F., but unaffected by quinine. Attacks of fever recurred on August 4th 5th, 10th 15th, and 24th 25th.

On August 24th his blood was examined by an Indian subassistant surgeon (there being no medical officer in the district), who sent the slide to headquarters, where the presence of trypanosomes was confirmed by three medical officers, including Dr. Duke, the Government Bacteriologist, who diagnosed *T. gambiense*.

Mr. X. was seen by one of us (C. H. M.) on September 24th, 1920. He was then suffering from malaise, distaste for food, vomiting, pains in the back, and a dull headache. His face was grey and drawn; his weight had decreased from his normal 13 st. odd to 11 st. 8 lb. He had no sleeplessness or sexual excitement, nor was any rash observed. He had one small gland at the base of the neck on the left side, but this was possibly septic in origin (from a carious tooth). The gland was too small to puncture, but the peripheral blood showed two or three trypanosomes in each field.

On September 24th 0.9 gram of neo-kharsivan was injected intravenously; half an hour later 20 c.cm. of blood were drawn off and allowed to stand in a sterile covered jar for twenty-four hours, by which time a solid clot had formed; 12 c.cm. clear blood serum were thus obtained.

On September 25th, after 15 c.cm. of cerebro-spinal fluid had been withdrawn by lumbar puncture, the 12 c.cm. of clear blood serum were injected into the spinal canal. From September 26th to 30th there was severe reaction with pyrexia (101° F.) and intense headache. Subsequently convalescence was rapid.

Mr. X. then proceeded to England, but on the journey was examined at Khartoum by Major W. E. Marshall, R.A.M.C. (November 2nd). No trypanosome was found microscopically in the blood, either fresh or stained; nevertheless animal inoculations yielded positive results, for Major Marshall's cabled report, which awaited the patient on his arrival in England (December 12th), stated that the inoculation of 1 c.cm. citrated blood into a monkey and ½ c.cm. into each of two rats resulted in one rat showing trypanosomes in its blood on November 30th, 1920, and reinoculation from this rat into another was again positive.

In spite of this report it was decided, in consultation with Dr. W. T. Prout, Medical Adviser to the Colonial Office (December, 1920), to give Mr. X. no further treatment of any kind, as clinically he was perfectly well and his weight had increased to 13 st.

The results of subsequent microscopical examinations and subinoculations of the blood and cerebro-spinal fluid carried out in the bacteriological department of Guy's Hospital by one of us (J. W. H. E.) are recorded in the accompanying table. In view of the negative result of inoculation of Mr. X.'s blood into the monkey and the positive result obtained upon the rat by Major Marshall, it seemed fair to infer that the particular strain of trypanosome concerned was more virulent for the latter animal than the former, therefore all our inoculation experiments were performed upon small rodents.

To summarize this report the original infection must have occurred not less than thirteen months ago (at the time of writing), and the single injection of salvarsanized serum was given eleven months ago; there has been no other treatment of any kind whatsoever. Clinically Mr. X. is and has been perfectly well ever since.

The reasons that led us to employ intrathecal medication in the treatment of sleeping sickness were based upon clinical observation upon the disease which suggested the theory[1] that definite antibodies — trypanolysins — are formed during the course of treatment. This assumption might be correlated with the statement of some observers that cases of the disease undergo spontaneous cure, and of others that either the natural resistance of the native is increasing, or that the virulence of the strain of trypanosome is undergoing progressive diminution. (Our own observations do not, however, lend support to either of these views.) Dr. Vasello, of the Uganda Medical Service, further considers that the formation of trypanolysin is a natural phenomenon and is cyclic in periodicity. Data bearing on these points are being collected, but much experimental work is needed before evidence necessary to support these contentions can be presented for criticism.

We would recall that much of Ehrlich's preliminary work on chemotherapy was concerned with the employment of arsenic compounds in experimental trypanosome infections, and the first great principle aimed at throughout his search for an effective agent against protozoal diseases was the complete sterilization of the tissues by a single

Examination of Patient. Date.	Material.	Microscopical Examination.	Result.	Experimental Animals Inoculated.	Method of Inoculation.	Killed.	*Post-mortem* Examination.
21.12.20	Blood	(*a*) Fresh (*b*) Stained	No trypanosomes detected (?) One degenerated trypanosome in eight slides	Guinea-pig	1 c.c. intraperitoneally	17.2.21	No evidence of trypanosome infection.
20.1.21	Cerebro-spinal fluid, centrifugalized	(*a*) Fresh (*b*) Stained	No leucocytes observed No trypanosomes detected	Rat 1 Rat 2	1 c.c. intraperitoneally 1 c.c. intraperitoneally	17.2.21	No evidence of trypanosome infection.
7.4.21	Blood	(*a*) Fresh (*b*) Stained	No trypanosomes detected	Rat 3 Rat 4 Mouse 1 Mouse 2 Mouse 3 Mouse 4 Mouse 5 Mouse 6	2 c.c. intraperitoneally 1 c.c. subcutaneously 0.5 c.c. subcutaneously 0.5 c.c. subcutaneously 0.5 c.c. subcutaneously 0.5 c.c. intraperitoneally 0.5 c.c. intraperitoneally 1 c.c. intraperitoneally	23.4.21	No evidence of trypanosome infection.
2.5.21	Cerebro-spinal fluid, centrifugalized	(*a*) Fresh (*b*) Stained	No leucocytes observed No trypanosomes detected	Rat 5 Rat 6 Rat 7 Mouse 7 Mouse 8	1 c.c. subcutaneously 1 c.c. intraperitoneally 1 c.c. intraperitoneally 0.5 c.c. intraperitoneally 0.5 c.c. intraperitoneally	18.7.21	No evidence of trypanosome infection.
7.7.21	Blood	(*a*) Fresh (*b*) Stained	No trypanosomes detected	Rat 8 Rat 9	2 c.c. intraperitoneally 2 c.c. intraperitoneally	9.7.21	No evidence of trypanosome infection.

massive injection. Practical clinical experience has shown that this result is, however, very rarely achieved; and in connexion with the commonest of protozoal infections—namely, syphilis—multiple doses and alternation of drugs has now become the accepted method of treatment.

Syphilis and trypanosomiasis present many points of similarity, particularly as regards treatment when the infection has involved the central nervous system, so that we are justified in applying the accumulated experience of the past eleven years in the treatment of syphilis to the problem of the treatment of sleeping sickness.

It is now a matter of common knowledge that the arsenic introduced into the circulation by the intravenous injection of salvarsan or neo-salvarsan is at its maximum concentration *during* the injection, and can only be detected, as such, in the blood for a few hours afterwards, and does not appear at all in the cerebro-spinal fluid. Given an otherwise healthy patient, arsenic derived from 914 is rapidly excreted, chiefly by the intestines and kidneys, and usually at the end of forty-eight hours is no longer to be detected by chemical analysis.

It has also been shown clinically that the serum from a salvarsanized patient possesses curative effects when injected into another case of syphilis, even when the blood is collected after a lapse of time that apparently ensures its freedom from arsenic,[2] although Ellis and Swift make it clear that *in vitro* the spirochaeticidal activity of the serum is in direct proportion to the intensity of the Abelin reaction.[3]

The hypothesis to be adduced from the foregoing observations is that a phenomenon analogous to that which takes place in bacterial infection occurs in protozoal diseases also; that is to say, definitely lytic antibodies are formed in the serum in consequence of the stimulus afforded by the dead spironemal protoplasm—a theory originally put forward by Ehrlich himself.[4] The acceptance of this hypothesis, together with the admitted impossibility of forcing arsenic into the spinal canal by way of the blood stream and the danger of introducing it directly into the subdural space, were probably the factors that decided Swift and Ellis[5] to resort to intrathecal injections of so-called "salvarsanized serum" in cases of tabes and other syphilitic infections of the central nervous system. This procedure was followed in a considerable number of cases by a definite measure of success,[6] depending, it is true, to a certain extent on the duration of the nerve lesions, although we personally have had some striking successes in distinctly late cases.

As invasion of the central nervous system is the rule in infection with the trypanosome, and as the date of this invasion in point of time from the original inoculation by the insect host is a variable and unpredictable quantity, we hold that it is essential to apply curative measures to this area, when infected, simultaneously with the attempt to sterilize the more immediately accessible tissues; and to apply identical measures with prophylactic intent, if happily infection of the central nervous system has not yet taken place, in order to prepare an antagonistic medium to await the advent of the trypanosome.

Communication of the details of this method to the Society of Tropical Medicine and Hygiene, although sympathetically received by those present, naturally evoked some criticism, and we fear that disregard of these comments may retard the progress of attempts to place the treatment of the disease on a sounder footing. The criticisms fall under two distinct headings, some being levelled against the particular case of Mr. X., others against the general principle involved. Under the first heading the suggestions made are:

1. That Mr. X. never had the disease. The positive finding of the trypanosomes on several occasions by five different observers, two of whom are expert protozoologists—namely, Dr. H. L. Duke and Major W. E. Marshall, R.A.M.C.—the successful inoculation of a rat with the trypanosome by the latter observer, and the reinoculation of a second rat from the first, renders comment under this heading unnecessary.

2. That the trypanosome which has caused the disease in Mr. X. (and also in the native cases we have recorded) is a strain of low virulence, and the resulting infection is one which requires little or no treatment. If this suggestion is maintained there appears no reason why the trypanosomes of different districts and villages, or even individuals, should not also be differentiated into strains of high virulence and low virulence, until in all cases that recover after treatment the infecting trypanosomes are described as practically non-virulent. In controverting this thesis we would quote one case treated as a control.[7] This was a native who received an intravenous injection of neo-kharsivan on August 3rd, 1920, but did not have intrathecal serum; he made no improvement, and living trypanosomes were found in his cerebro-spinal fluid at the end of October, when clinically he was rapidly going downhill. Further, several natives in whom trypanosomes were found to be present died during the course of the few weeks they were waiting for treatment. Again, in untreated cases numerous deaths are reported, and the number of deaths, compared with the percentage of infected cases found on examination of large numbers of the population, affords no indication that cases of sleeping sickness recover by natural means or that the trypanosome is of low virulence.

3. That the disease was cured simply by the antiparasitic action of the original intravenous dose of neokharsivan, without any trypanolysin formation. This is rendered unlikely by the fact that subinoculation was positive six weeks after the original injection of neokharsivan.

4. That the case is not cured and the disease is dormant. Time alone can confirm or confute this argument, but so far the clinical history is an excellent one; Mr. X., who was very ill, is in the best of health now, and so compares favourably with other cases treated by routine methods of intravenous injections only or various arsenic and antimony compounds.

5. That another case now in London treated by the intrathecal serum method has not improved. We are informed, however, that this patient had been previously treated with repeated doses of atoxyl and antimony tartrate, so that—assuming always that the technique was identical with ours—we are quite justified in suggesting that the previous drug treatment may have resulted in the formation of "fast" strains, or, alternatively, have prevented or affected the formation of trypanolysin, which may well be the curative factor.

Criticism under the second heading is more destructive and uncompromising, as it definitely states that the treatment is unsound and unjustifiable.

Clinical experience demonstrates the value of local treatment in dealing with infections of the central nervous system as conclusively as it proves the impossibility of influencing them by intravenous medication; anatomy and physiology supply the logical explanation, rendered even more obvious by a study of the morbid anatomy of trypanosomiasis cases; and we would again take the opportunity of declaring our conviction that, whilst intrathecal medication is essential in cases where the infection has reached the cerebro-spinal fluid, we are also satisfied that it should form an integral part of the routine treatment of early, and indeed of all, cases. From a recent German publication,[8] it appears that this line of treatment was adopted in the Cameroons in the treatment of sleeping sickness, though its exponent has relied upon the effect of direct medication by arsenic compounds, injecting intrathecally 0.04 gram of neo-salvarsan mixed with salvarsanized blood serum, a procedure which we regard as inadvisable on account of its inherent dangers, a point which Reichenow himself admits.

We venture to think that the result of our serum treatment in the case of Mr. X. detailed above, supported as it is by the eight cases of natives who remain well more than eighteen months after treatment by a single dose of serum (two of these after over two and a half years) establishes a case for immediate investigation of an extended character in those countries where the disease occurs, simultaneously with careful laboratory experiment and control both at home and in Africa. If further support of our attitude is needed it is provided by the fact that among a total of nearly eighty cases that we have treated, some have died of intercurrent disease, two have disappeared, and two advanced cases did not respond to treatment, but no case to our knowledge has relapsed. The cases have been followed up and examined at regular intervals, both clinically and by microscopical methods.

Such an investigation as we have in mind involves a clinical study and experimental research by a team unhampered by any routine or official duties, but devoting all its

energies to the elucidation of this problem. Moreover, as the mentality of the native precludes the possibility of accumulating the necessary material at a permanent base, the team would be essentially a roving body, well equipped in every way and furnished with a really efficient travelling laboratory; whilst its activities, including periodical examination of treated cases and the collection of statistics, would extend over a period of about three years.

The personnel would include probably two clinicians and two or three trained protozoologists, assisted by an adequate staff of assistants, and also one or more veterinary surgeons—since it is obvious that, if the method we have put forward fulfils our anticipations, it opens up the possibility that the treatment of the future will resolve itself into the simultaneous intravenous administration of arsenical compounds and the intrathecal injection of salvarsanized serum derived from the horse, ox, or other large animal already experimentally infected and treated.

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GLYCOSURIA OF MALARIAL ORIGIN.

BY

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Malaria may simulate very many internal diseases, but we are not aware of cases of malarial glycosuria and malarial diabetes having been placed on record; the following two cases may therefore be of some interest.

Case I.

J. F. S., a demobilized soldier aged 32, was admitted to the Tropical Section of Orpington Hospital on April 13th, 1921, as a case of malaria. He had his first attack in August, 1916, when malignant tertian parasites were found; since then he had had numerous relapses. On admission the temperature was 98.8°, and the pulse 120; the patient was pale and tremulous; he stated that he had lost flesh and complained of great weakness. Physical examination of the chest revealed nothing worthy of note. The spleen was not palpable. No malarial parasites were present in the blood. Differential count: Polymorphonuclears 63, large mononuclears 9, lymphocytes 33, eosinophiles 1. In the faeces no cysts were found. The chemical analysis, kindly carried out by Dr. Lynch at the Central Chemical Laboratory, Ministry of Pensions, Chelsea, gave the following results:

Total solids, 22.1 per cent.

Fat	8.6 per cent.
Fatty acid	2.8 ,,
Soaps (as fatty acid)	2.8 ,,
Total	14.2 per cent.

The urine, specific gravity 1031, was slightly acid, the amount passed during twenty-four hours was only very slightly increased. It contained sugar 8.5 grams per litre, but no albumin. Acetone and diacetic acid were absent.

On April 14th the patient was placed on a fairly intensive quinine treatment (10 grains three times daily). The sugar present in the urine decreased rapidly after twelve days' treatment, but there was still a quantity sufficient to reduce Fehling's solution and to give phenyl-glucosazone crystals, though not enough to estimate. The patient was then given, in addition, a course of six injections of quinine hydrochloride intramuscularly of 15 grains each. On May 10th the quinine hydrochloride injections were discontinued, and quinidine was given in their place (30 grains daily).

The urine was examined again on May 13th, 16th, 17th, and 18th, and did not give any reduction of Fehling's solution, nor did it give phenyl-glucosazone crystals.

At no time was the patient put on antidiabetic diet, and there was no restriction of his carbohydrate intake. There can be little doubt, therefore, that the disappearance of the sugar was due to the administration of quinine.

When the patient was admitted to hospital he was feeling very weak, and complained of having lost a great deal of flesh. There was, however, no polyuria, no boulimia, no thirst. On May 20th, 1921, the general appearance of the patient had much improved, and he expressed himself as feeling better than he had done for years.

Case II.

Mr. E. N., aged 44, married, with no family history of diabetes, consulted one of us in March this year. During the war he served in one of the allied armies, and in 1916 he contracted, while in the Balkans, a severe malarial infection; he had several relapses, the last being on December 19th, 1920. In January, 1921, he noticed that he was feeling more hungry and thirsty than usual, was passing much more urine than normal, and was losing flesh. He consulted a medical man, who found a fairly large amount of glucose in the urine (2 per cent.), and placed him on a very strict diet, which induced only a slight decrease in the amount of sugar present in the urine. When the patient consulted one of us in February the urine contained 1.5 per cent. of glucose; it was acid, specific gravity 1032, no albumin, and acetone and diacetic acid were absent. The amount of urine passed during the twenty-four hours averaged 6 pints.

The patient looked rather emaciated and very anaemic; the skin was of a pale, earthy colour, with patches of hyperpigmentation resembling chloasma, so often seen in cases of chronic malaria. His spleen was very slightly palpable and very hard. The examination of the blood did not show any malarial parasites, but there could not be any doubt clinically that he had chronic malaria, and the diagnosis was made of "diabetes in a malarial subject." He was advised to continue the strict diet he had been having for the glycosuria, and in addition to take 10 grains of quinine three times daily for his malaria. He came back three weeks later feeling much better; the enlargement of the spleen had disappeared, and—a most interesting feature—the amount of sugar had decreased enormously, being less than 0.1 per cent. We came to the conclusion that it might be a diabetes syndrome of malarial origin, and suggested to the patient that he should go back to ordinary diet but continue the quinine. He came to see us regularly once a week and the sugar did not increase; only a trace was present. During March the patient went to the South of Europe on business, and during all the time he was away (four weeks) did not take any quinine. He came back to this country in April, and three days after arrival, after playing golf in the rain, had a shivering fit, followed by very high fever, which ended in profuse sweating. The spleen again became palpable and hard, and examination of the blood showed the presence of a few rings of malignant tertian. The urine was examined after the temperature had come down to normal; it contained 1.2 per cent. of sugar. The patient was placed on an intensive quinine treatment by the mouth and intramuscular injections for six weeks without any dieting; not only did the symptoms of the chronic malarial infection disappear, but the urine became completely free from glucose, when examined by the usual methods of analysis (Fehling's, Nylander, phenyl-hydrazine, fermentation test).

Conclusion.

Our observations tend to show that there is a form of glycosuria of malarial origin, and that this condition may at times (Case No. 2) become so severe as to simulate true diabetes, the patient losing flesh, becoming very weak, complaining of thirst and hunger, and passing a large amount of saccharine urine. The glycosuria in our two cases was cured by the administration of quinine in full doses without any dietetic treatment.

SLOUGHING OF THE LOWER UTERINE SEGMENT FOLLOWING PLACENTA PRAEVIA: LAPAROTOMY: RECOVERY.

BY

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A married woman, aged 27, was admitted to Addenbrooke's Hospital on January 22nd, 1921. She had been delivered, on January 1st, of her second living child, but not without complications. Twenty-four hours previous to delivery she had a sudden severe haemorrhage and had called in her doctor, who, although he was unable definitely to diagnose placenta praevia, had strongly suspected it. He immediately ordered her to bed with instructions to remain there. She failed to carry out these orders, but remained up and did her work for the twenty-four hours previous to the birth of the child, suffering from no further haemorrhage. The delivery of the child was uncomplicated and occurred rapidly after two or three pains and before the arrival of her doctor. The placenta however was retained, and was removed digitally and without anaesthesia one hour later. It was found to be very adherent to the uterine wall.

All apparently went well during the first eight days of the puerperium, after which an irregular pyrexia developed. On January 16th (the fifteenth day of the puerperium) the patient had a severe haemorrhage, and this persisted on and off until she was urgently admitted to hospital. She had no vomiting, and complained of little or no pain. Constipation was present, but was corrected by purges and enemata. On the day preceding the haemorrhage she had had diarrhoea, which had been checked with paregoric, and ergot and nux vomica had previously been given her by mouth.

I saw her on January 22nd, at 10 p.m., when the history suggested the retention of some products of conception which had become septic. She was exceedingly anaemic, with a small running pulse of 120 per minute, and respirations 24 per minute. She was wasted, and stated her inability to take much nourishment. Although complaining of little or no pain, she had the "abdominal type" of facies. The abdomen was soft and moved well, but there was slight tenderness over the brim of the pelvis. On vaginal examination it was found that the uterus was not particularly enlarged or tender, but there was an offensive blood-stained discharge.

Operation.

Under anaesthesia I explored the uterus. The os readily admitted the examining finger, which, when passed within the uterine cavity, came upon a firm transverse ridge of tissue, which at first I thought was a fragment of placenta. (It afterwards proved to be the lower edge of the normal posterior uterine wall.) Immediately above and posterior to the internal os I was struck by the softness and lack of resistance of the tissues. With a pair of blunt ring forceps portions of soft and blackened tissue were removed, which were thought to be detritus from the placental site.

In the same situation some tissue was grasped in the forceps which did not come away. Suspecting the possibility of its being a loop of bowel, I drew it down as far and as carefully as possible, and by means of special illumination demonstrated that my suspicion was only too well founded. Fearing that I had perforated the uterus, and in spite of the patient's desperate condition, I decided that the only course was to explore from above and, if possible, to remove the uterus. I divided the parietes by the ordinary mesial incision, but found the peritoneum adherent to underlying structures. The adherent coils of intestine were carefully separated and a condition of firm plastic peritonitis was found gluing all structures to one another including uterus, appendages and bladder. On further separating the coils covering Douglas's pouch, I came down on a large collection of foul-smelling pus. This was sponged out and the coil of small intestine which had been seen *per vaginam* was drawn up. It was found to be firmly adherent at both ends deep down in the pelvis, and over an area measuring 3 in. by ¾ in. on the side opposite to the mesenteric attachment the serous coat was eroded away, leaving the submucous coat exposed. Owing to adhesions it was found impossible to resect this. The hole in the back of the lower uterine segment was explored and cleaned as much as possible, and the appendix, which was very oedematous and lying in the abscess cavity, was removed. Owing to the generalized adhesions in the pelvis (general peritonitis was absent) and the grave state of the patient nothing further was attempted. A large tube was passed down to the bottom of Douglas's pouch and the wound closed. A piece of thin-walled colotomy tubing was inserted *per vaginam*, through the os uteri. This was removed twelve hours later, having apparently not assisted drainage to any great extent.

After-History.

During the next twenty-four hours the patient held her own and complained of little pain. The temperature fell to normal and the pulse remained about 136 per minute. She was kept on brandy by the mouth and camphor subcutaneously, and managed to take slop food in the absence of vomiting.

Forty-eight hours after operation the temperature rose to 101°, and this nocturnal rise persisted till the fifth day, when the temperature rose to 103°. Douches of Dakin's solution were given night and morning, and the abdominal wound continued to drain freely, at first emitting foul material indistinguishable from faecal content.

On the third day, by means of calomel gr. ¼ given four-hourly, the bowels acted well and continued to do so regularly during her recovery. By the end of the second week the temperature had fallen almost to normal, the patient was taking her food well, and the abdominal wound was cleaning and tending to close. Vaginal discharge had almost ceased. At the end of the fifth week she was sent home, the abdominal wound having closed and the patient's condition being most satisfactory. Her doctor has now been to see her, two and a half months after operation, and reports that she is fairly well and has had no need to call him in.

The case would appear to be one of infection of the placental site, aided possibly by its low position in the uterus, followed by a gradual sloughing of the uterine wall at the placental site, and secondary haemorrhage therefrom. A coil of small intestine lying in Douglas's pouch became adherent and eroded, and the infection spreading produced pelvic peritonitis and pelvic abscess. Although the bacteriology of the case was not worked out, the strong presumption is that it was an infection by *B. coli communis*, and it is surprising that the patient withstood and survived a condition so desperate.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ENCEPHALITIS LETHARGICA WITH SEVERE HICCOUGH AT THE ONSET.

A single man, aged 27, had, in the course of his business, to visit ships at the London Docks. On the morning of December 11th, 1920, he felt quite well; at mid-day, on his way home from the docks, hiccough began, and was so persistent that at the end of two hours he consulted a doctor. Dr. Frazer, who saw him at this time, writes that he had "severe hiccoughs and general malaise." He then began to vomit about every quarter of an hour. Hiccough and vomiting persisted till 4 the next morning (a period of sixteen hours) when he went to sleep. Both symptoms disappeared and have not recurred.

For the next twelve days he remained in bed; he had headache and felt feverish, but did not feel sleepy. He travelled to his home at Cardiff on December 23rd; seeing everything double. On that evening he was seen by Dr. Fiddian (to whose kindness I am indebted for the notes of his condition). He then had a temperature of 102° F., was very tremulous, and delirious at times. A few days later he imagined he was being kept confined in a cabin on board ship, and became so violent that he had to be placed under restraint. Three days later he was quiet and became very sleepy. I saw him on January 17th, 1921. He was then stuporous and complained of diplopia. His face showed the typical Parkinson's mask. There was no squint or nystagmus, the pupils were equal and reacted to light, and the fundi were normal. The limbs were rigid and coarse regular tremor of the left arm was present. The reflexes were normal, except that both abdominal reflexes were absent, and that left-sided extensor toe response was obtained by the methods of Oppenheim and Gordon, but not by stroking the sole of the foot, the latter producing flexion.

He gradually got better. At the beginning of April (three months after the onset) he noticed twitchings of the left shoulder which later spread to the right. These have persisted. The muscles involved are the trapezius, sterno-mastoid, latissimus dorsi and pectorals. The contractions are coarse, of regular rhythm (often synchronous with the pulse beats) about 70 to the minute. They are most liable to come on in the evening and keep him awake. They disappear during sleep, but are always present when he awakes in the morning. The left side is more affected than the right.

For some months he has had to use a magnifying glass for reading, but now (six months after onset) he can read Jaeger 2 and Jaeger 4, though only for a short time; the pupils respond only slightly to a bright light. Nystagmus is present. The reflexes have become normal, and the rigidity of face and limbs has disappeared. While quite clear mentally, there remains a certain intellectual stiffness.

Concurrent epidemics of hiccough and encephalitis lethargica have been reported during the last two years, in all parts of the world, and more especially in France. Sicard and Dufour[1] have published cases, connecting "epidemic hiccough" with encephalitis of the myoclonic type. The course of an attack of epidemic hiccough is usually as follows: After a prodromal period lasting three or four days, during which lassitude, headache, general pains and slight fever are present, severe hiccough appears. It may occur in "rhythmic crises," lasting fifteen to ninety minutes, with similar intervals of rest, or may be continuous. It usually lasts for two to four days, but may persist for ten. It may be complicated by bouts of vomiting. Spasms occur at the rate of six or eight to the minute. The onset and termination are usually sudden. It is reported as being common in males and rare in children.

Hiccough occurring as a prominent symptom has been described in connexion with outbreaks of influenza in this country; isolated cases of "spasmodic" hiccough have also been published,[2] but I do not know of any recorded case of severe hiccough of the epidemic type directly followed by undoubted encephalitis lethargica, as in the case here recorded. French authors have regarded these epidemics of hiccough as a mild form of the graver disease.

It may be objected that the small number of cases in which epidemics of hiccough and encephalitis lethargica have been clinically connected is no greater than can be

accounted for by coincidence. It is curious that hiccough has been chiefly observed in the myoclonic form of the disease—that is, where the clonic spasm of the diaphragm would be, *a priori*, most likely to occur. Economo and others[3] have described outbreaks of epidemic hiccough followed in about a month's time by the appearance of myoclonic encephalitis in the same district. If it were found that these cases of epidemic hiccough later developed any of the sequelae known to follow encephalitis, such as diplopia, inactive pupils, paralysis of accommodation, mental hebetude, insomnia, etc., and especially myoclonus, such a sequence would greatly strengthen the view here advanced.

On the whole the evidence seems to justify the conclusion that epidemic hiccough is a manifestation of encephalitis lethargica; they should therefore be notified, and should be treated like any other form of lethargic encephalitis, especially as regards rest and isolation.

No remedy has been found of any use in controlling the actual attack. As benzoyl benzoate has been found by Nacht[4] to be valuable in certain forms of persistent hiccough it would seem worth while to give it a trial.

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Reviews.

ASYLUM ADMINISTRATION.

FOR a period of about two years during the war Dr. MONTAGU LOMAX held the position of temporary assistant medical officer in two large county asylums, and in his volume, *The Experiences of an Asylum Doctor*,[1] he has recorded the impressions he gained of lunacy administration and of the treatment of the insane in this country. The picture of asylum life herein given is extremely depressing, and the book creates a most painful impression upon the mind of the reader. An asylum is depicted as a gloomy and often dilapidated barrack-like building, where the atmosphere is such that brightness, hope, enthusiasm, and devotion—qualities which should be conspicuous in any institution for the sick and which are essential for its well-being—are unable to flourish or survive. It is clear that this must be so if the author is accurately describing the conditions which exist when he writes (p. 54):

> "The thoughtful observer . . . no longer wonders at the attitude of chronic pessimism which characterizes asylum doctors, attendants, and patients alike; the profound melancholy and dreary hopelessness which impregnates like a miasma the general asylum atmosphere, and which presses so heavily upon all those who live within its walls."

It is evident that there must be something seriously wrong with a hospital in which the attitude of the staff and patients can be described in terms such as these; and as Dr. Lomax takes his readers through the various departments of the asylum and describes the methods of treatment—or the absence of treatment—a feeling of profound dissatisfaction with the system in vogue will inevitably be aroused. We can only briefly indicate some of the conditions upon which the author bases what is a very serious indictment of asylum administration.

The asylum buildings are described as comfortless, badly constructed, unhygienic, and totally unsuitable for their purpose; the wards are barely furnished, and in some instances are devoid of bookcases or any means of amusement; there are no proper facilities for hospital treatment; no operating theatre; only a few dirty and neglected surgical instruments; and a dearth of dressings and other necessary appliances. The patients, it is said, are badly fed, clad in a convict-like garb, dirty and unkempt; no overcoats are provided in wet or cold weather; no attempt is made to occupy, interest, or amuse; and exercise is confined to a prison-like yard. There is, the author asserts, no pretence to classify, and all kinds of cases are indiscriminately herded together without consideration of their feelings or individual needs; there is no systematic treatment and no attempt at cure; the asylum is only to restrain and detain, and restoration to mental health only occurs by accident. Active treatment is almost confined to the excessive use of sedatives, and refractory or excitable patients are punished by drastic purgation or seclusion in dark rooms. The staff are bored, indifferent, and uninterested—not actually cruel, but tactless and more or less callous.

This is Dr. Lomax's description of asylum life, and since the book is written for the information of the general public, it may well be asked if it is a tested description of the average mental hospital in this country. With a few exceptions Dr. Lomax evidently regards it as such, and he conveys the impression throughout his book that the account he gives is generally applicable. It would indeed be sad if the conditions such as the author depicts were usual in the English asylums. Such a view we cannot accept; to do so would involve, so we believe, a grave injustice to a large body of skilled and devoted asylum workers. There are a large number of asylums in which the conditions as described above do not exist; where the nursing is of a high standard, tuberculous cases are isolated, operations are performed by consulting surgeons, the medical staff are in constant consultation together, occupation is systematically encouraged as a form of therapy, the patients are warmly clad (with overcoats), amusements are organized, the staff are keen, hopeful, and enthusiastic, and the aims are to cure recoverable cases and to make the life of the patients as a whole as happy as possible. Many statements which Dr. Lomax makes will be read with great surprise by those associated with asylums. As, for instance, that letters received by patients are read by anyone but themselves, and that the medical staff are not accustomed to interview their patients in private. In many asylums it is customary to study the patients and to hear their troubles quite alone, with no one but the doctor to hear what they have to say. For this reason a woman doctor is almost essential in a large asylum; development along this line might well become more general.

We have felt constrained to combat the view that conditions such as Dr. Lomax describes are in any sense general in asylums, and we feel that it is essential that the public should realize that there is another and brighter side to asylum life with which the author is apparently unacquainted. There is, however, no room for complacency, and we agree with Dr. Lomax that the asylum system is sadly in need of reform. The huge, cheerless, and cumbersome barrack asylums, such as the author depicts, are perhaps symbolic of the system of lunacy administration which has gradually evolved. The machinery is rusty and antiquated—unsuited to modern needs and aspirations. Dr. Lomax devotes much attention to the question of reform, and suggests directions in which they might be undertaken. The majority have been advocated by the Medico-Psychological Association, and a considerable number have been in operation in various asylums for a number of years. On many minor points relating to the comfort of the patients Dr. Lomax has useful suggestions to offer, and with his ideal of a village asylum we are in entire agreement.

The author has written a clear and particularly frank account of his experiences, and his book will certainly arouse public interest, and probably become the subject of further inquiry. It should not be possible for the conditions described in this book to develop in any institution for the sick, and it may be, as Dr. Lomax says, that the fault is not so much with those who administer the asylums as it is with the system they are called upon to administer. Whether the account presented by the author is overdrawn, or whether he has sufficiently taken into account the conditions created by the war, we cannot presume to decide, but it is perhaps true to say that the more public attention is drawn to asylums, even if an antagonistic attitude is shown, the better it will ultimately be for those institutions.

The want of public interest is perhaps the greatest difficulty with which the mental hospitals have to contend. They are out of contact with the community; they tend to be "last resorts"; and they do not fulfil as completely as they might those social functions for which, in many instances, they are admirably designed. They need to be in vital touch with social organizations, visited more,

[1] *The Experiences of an Asylum Doctor*. With Suggestions for Asylum and Lunacy Law Reform. By M. Lomax, M.R.C.S. London: G. Allen and Unwin, Ltd. 1921. (Demy 8vo, pp. 255. 12s. 6d. net.)

humanized by contact with life outside, and above all freely open to members of the medical profession to visit their cases and discuss them with the asylum doctors. The public need to be enlightened, not only in respect to abuses which may exist, but equally so in respect to the aims, needs, aspirations, difficulties, and work accomplished in hospitals for the mentally sick. If this book serves to interest the public and induces them to press for much-needed lunacy legislation, and to adopt a more liberal policy in respect to the treatment of the insane, it will have served a useful purpose. We are sure that this is the result Dr. Lomax is anxious for his book to achieve. There is, however, a danger that it may be utilized to make an indiscriminating attack on asylum management, and thus blind the public to a great deal of unobtrusive work which is being, and has been, done on behalf of the insane in this country.

KEITH'S EMBRYOLOGY.

STRIKING as were the advances made in all branches of biological inquiry during the nineteenth century, in few were the advances more marked than in embryology. The way had been shown in the two previous centuries, but little progress made along it, and it was mainly the researches of Von Baer and His in the nineteenth century which led to the systematic exploration of the new country. In 1827 Von Baer demonstrated for the first time the extremely small mammalian ovum, and in 1870 His described a microtome which corresponded in principle to that in use at the present day. In the half-century which has passed since His showed us what could be done with a complete series of sections of a young embryo, a vast field of knowledge has been added to the subject of anatomy.

Doubtless, to begin with, the tendency was to regard embryology too much as a pure science, and to treat it as a special subject. The facts alone appeared cold, barren, and meaningless. No one has realized this more clearly than Sir ARTHUR KEITH, whose well known work on *Human Embryology and Morphology*,[2] has now reached a fourth edition. In the original conception of the book the author sought to bring the facts of embryology into line with those of comparative anatomy and physiology, and to interpret them in the light of our knowledge of the evolution of the human body. Nor was the bearing of the facts on medicine and surgery forgotten. The book was an instantaneous success. It appealed not only to students, but also to teachers and medical practitioners, and in each succeeding edition it has continued its successful career.

The issue of the present edition has given the author the opportunity not only of incorporating much new work in the field of embryology, but also of rearranging and to a large extent rewriting some of the chapters. Over eighty new illustrations have been added. This has entailed some increase in the size of the book, but in making it thoroughly representative of the latest British and American research Sir Arthur Keith has greatly increased its usefulness, and at the same time it is still well within the compass of the average reader.

Every medical student should read this textbook in his second year, and if he can do so in a museum with some embryological models in front of him, so much the better.

"PSYCHE."

THE current number of the new series of the review *Psyche*[3] is catholic in its appeal. There is an interesting series of topics of wide diversity. The policy of the review is "to provide a conspectus of all the most reliable views of modern psychology," although not necessarily discarding the more conjectural, and to judge by this number, the policy bids fair to be carried to success.

In a closely reasoned study of the criterion of criminal responsibility in insanity Dr. Prideaux is optimistic enough to look forward to a future when "moral responsibility" and "legal responsibility" will be coincident—a future when "responsibility tests" will be our main reliance in ascertaining criminal liability. From this happy consummation we are admittedly far removed. Meanwhile there remains the necessity of bringing about some reconciliation between the opposing schools, some compromise calculated to remove the instances, now happily infrequent, of injustice ensuing under the application of the criterion set up in the McNaghten case. The suggestion that this could be best effected by raising the question of insanity as a defence only in a trial subsequent to one recording a conviction—and then before a judge and medical assessors—is open to doubt. Reconciliation may be sought in two other ways—by the establishment of a permanent professional body of psychiatrists instructed and called by the court as witnesses, and by the reversal of the presumption of knowledge on the part of one already accepted as insane, so that, as Oppenheimer suggests, those proved to be of unsound mind should be assumed, until the contrary be proved, not to know the nature and quality of their act and that what they were doing was wrong. In the peculiarly difficult path he has chosen to tread Dr. Prideaux only once stumbles. "Theoretically then," he says, "both medicine and law are in a state of ignorance as to the criterion to be applied as a test for insanity, but whereas the law demands that there must be some hard-and-fast rule, medicine replies that theoretically no sharp line can be drawn between the sane and the insane." The law, however, does not concern itself with the criterion of insanity. It is concerned with the question of responsibility and with that question alone. The criterion of insanity—such as it is—is the province of medical men, and will remain so until a state of insanity necessarily entails a state of irresponsibility.

Amongst other contributions there is a unique account by Major Priestley of the effect of Antarctic rigours on the minds of his fellow explorers. Richards and Ogden, in a brief article, clarify the obscurities of modern psychological terminology. Mr. Dingwall refutes the psycho-analytic interpretation of psychical phenomena, and reserves some venom for the hostile scientist "untrained in psychical investigation."

NOTES ON BOOKS.

IN *V.R. 76: A French Military Hospital*,[4] Mr. HAROLD J. RECKITT gives an account of a hospital founded by himself and Lady Johnstone, wife of the British Minister at the Hague, and established at the village of Ris-Orangis on the road from Paris to Fontainebleau. The book is a chatty account of the administration by a lay Englishman of a hospital recognized by the French military authorities and supported and staffed to some extent by Americans. Consequently it is not to be expected that the record should contain much that is of medical or surgical interest, beyond a summary of the cases treated. The difficulties experienced in establishing and developing a small hospital amongst the French were not unlike those sometimes encountered in our own country. After months of discussion permission was given for the establishment of the hospital; but when the personnel had been got together it was discovered that the hospital buildings would not be ready for three months! Even when the hospital was ultimately absorbed by the American Red Cross, the rules with regard to finance made administration extremely difficult. Sundry criticisms due to the different conditions of different countries had to be met. Thus the French wounded, accustomed to see Frenchmen of 48 years of age in the fighting line, began at one time to describe English orderlies of 40 as *embusqués*. At other times difficulties in discipline arose; and this was not surprising in a French military hospital with a non-medical administration, to which was attached an American surgeon of distinguished position who, not being a French officer, could not be recognized by the French Government as solely responsible for the institution. It says much for the tactfulness of Mr. Reckitt that for three and a half years he was able to steer his hospital through the dangers of such a position. In Dr. Joseph A. Blake of New York Mr. Reckitt obtained an admirable *médecin chef*, who did much to establish the reputation of the hospital. The latter half of the book consists of notes and reminiscences by various members of the staff, and the whole has been arranged and edited by Miss Margaret Storrs Turner.

[2] *Human Embryology and Morphology*. By Sir Arthur Keith, M.D., F.R.S., etc. Fourth edition, revised and enlarged. London: Edward Arnold. 1921. (Med. 8vo, pp. 498; 490 figures. 30s. net.)

[3] London: Kegan Paul, Trench, Trubner and Co. Issued quarterly. Price 5s. net.

[4] *V.R. 76: A French Military Hospital*. A History of the Foundation Johnstone-Reckitt. By Harold J. Reckitt. Arranged and edited by Margaret Storrs Turner. London: W. Heinemann. 1921. (Demy 8vo, pp. 303; illustrated. 21s.)

British Medical Journal.

SATURDAY, AUGUST 20TH, 1921.

THE DANGERS OF RADIATION.

THE two matters which have recently most occupied the minds of radiologists were both discussed in the Section of Radiology and Electro-therapeutics at the annual meeting of the British Medical Association at Newcastle: the one is the method of *x*-ray therapy brought prominently to notice by the claims made by the Erlangen school; the other the hitherto not fully recognized dangers to radium and *x*-ray workers. Possibly the former has in some measure been responsible for the full realization of the latter.

For a few years past a certain school of radiographers has been calling for more powerful apparatus, for the production of the highly penetrating type of *x* rays in larger quantities, and for the use of massive doses in the treatment of various diseases; the culminating point of all this is for the present the German technique. A machine capable of yielding 200,000 volts and a tube which will pass for hours a current backing up a 16-in. spark gap at 2 to 2.5 milliampères are asked for. Drs. Seitz and Wintz claim that they have worked out with such an apparatus the definite dose of *x* rays which should be administered at a single sitting in cases of malignant disease, and which so administered will "kill" the malignant cell. This contention, if true—and at the present time this "if" is all-important—would mark a very long step forward in scientific treatment from the hitherto more or less happy-go-lucky dosage which has been administered in an empirical manner. Whether these German workers will or will not eventually be proved to have established their points as to the definite dose and the single sitting, they at any rate have pursued their investigations upon thoroughly sound and scientific principles.

At the recent meeting at Newcastle Dr. Knox, the President of the Section, in discussing the intensive treatment of cancer, spoke of the need for the careful study of the effect on the blood, not only as regards variation in the proportion of the different corpuscles, but also as to any effects on the corpuscles themselves and on the serum; the decision of questions as to the protection of workers is, as he pointed out, intimately associated with what is already known about these blood changes.

During the past few years Sidney Russ, Mottram, Lazarus-Barlow, and others have made careful investigations of the blood of workers with both radium and *x* rays; they have as a rule dealt chiefly with the differential counts; and in the discussion reported elsewhere in this issue Russ related his recent experience with regard to the circulating leucocytes of rats; he found that while the effects on the lymphocytes are regular and can be repeated, similar observations on the polynuclear leucocytes show irregular changes, varying in different experiments. The important conclusion was that experimental and observational data both tend to prove that both *x* rays and gamma rays may be expected to cause lymphocytes to disappear from the circulation. Further, his and Mottram's experiments show that red cells, though not so sensitive, are also affected by the same radiations. Russ and others have also stated that in the course of their researches upon the circulating blood of rats small doses of *x* rays, so small that they produced no visible photographic action on photographic plates, were nevertheless capable of producing definite blood changes in rats. This observation will require confirmation, but if it prove to be correct it may have an important bearing on protection.

In the opening paper of the discussion on radiations in the treatment of diseases of the blood Gulland, as will be seen, entered fully into the different forms of anaemias in which *x* rays or radium are either indicated or contraindicated; he considers that the condition which gives the most favourable results from radiation is chronic myelocythaemia; in its treatment he favours radium rather than *x* rays. He suggests that the reason why the myelocythaemias are so much more amenable to radiations than the myeloblastaemias is that the cells affected are of a more highly differentiated type, approximating more nearly to a benign tumour.

In relation to the modern trend in favour of intensive *x*-ray treatment it is to be noted that it was asserted during the discussion that the dosage must be massive, as powerful indeed as the superficial tissues will stand, that it must be given at long intervals, and that frequent and small doses only stimulate the abnormal condition. These statements are open to question. In the past it has frequently been noticed that the spleen diminishes rapidly in size, and that the blood count quickly improves and even becomes normal under small and frequently repeated fractional doses, with very small currents passing through the tube. This method avoids all the unpleasant effects so often produced upon patients by massive doses, and is not lightly to be set aside. The statement that these small doses stimulate the lesion has not been proved; we know, indeed, of no evidence in its favour.

All these researches on the blood, the known action of *x* rays and radium on certain blood diseases, the tragic death of Ironside Bruce, the ill effects on many workers in radium and *x*-ray departments, have accentuated the dangers and have forced the question of protection into prominence. If in future the *x*-ray treatment of malignant disease is to be carried out with *x* rays of the highest penetrating powers, methods of work and methods of protection will have, of necessity, to be carefully overhauled with the view of making them more efficient. Those protective measures which were considered necessary and effectual under the older methods of *x*-ray work have completely broken down under the newer conditions, and both in private clinics and in hospitals many modifications will have to be made. In the past two main lines of protection for *x*-ray workers have been in vogue; the tube was enclosed in materials as opaque as possible to *x* rays, and material opaque to *x* rays was worn by the operators in the shape of gloves, aprons, and so on. These means have probably, when properly carried out, been fairly efficient as regards the direct effects of *x* rays upon the blood; but measures of this kind will not suffice with modern apparatus. Fortunately the protection for workers whilst carrying out *x*-ray treatment can be made absolutely efficient by the most simple means. The fundamental point is that no one should be in the same room with a patient whilst the massive doses of highly penetrating rays are being administered. If the patient is placed in a cubicle or room the walls of which have been

rendered opaque to x rays by lead or some other suitable material, then the apparatus, or at any rate the part by which it is controlled, can be outside this cubicle with the operator, and the treatment can be watched through a small lead glass window placed on a part of the wall on which the smallest possible quantity of radiations will impinge. Such an arrangement will mean that the operator is not exposed to the rays at all, and then no further protection is necessary. An additional precaution would be that the opening of the door to gain access to the treatment room should cut off the current.

When protection has to be made efficient for the purpose of making screen examinations and the usual routine work of x-ray diagnosis the matter is not so simple, especially as regards the former; but it is fortunate that only comparatively small currents are required for screen work, and so even here protection does not present insuperable difficulties. For the actual exposure of plates it is of interest to recall the fact that even in the very early days of x-ray work the late Professor Albers-Schoenburg of Hamburg had a small x-ray proof cubicle in the middle of his operating room, all the control apparatus was placed inside this; all the plate taking was done with the operator inside, and he was able to view the patient and tube through lead-glass windows.

As the effects of the high penetrating x rays and the gamma rays of radium are identical, it follows that protection for radium workers is equally important, and generally speaking the principles upon which it is to be carried out will be the same, modifications being made to suit the special requirements of radium.

There are many other practical details which still require consideration in order that workers may be thoroughly protected; among these are the suitability of rooms as regards size, ventilation, and the access of fresh air, the hours of work, sufficient holidays, and so on; but granted all the dangers and all the difficulties, there appears to be no reason why x-ray work at any rate, should not with care be made perfectly safe for both operators and patients.

A RETROSPECT OF NATIONAL INSURANCE.

For some time past there has been a widely expressed demand for a reliable description of the medical service under the National Insurance Acts. The need for this has been specially felt in America, which before long will have to make up its mind as to whether it will establish some form of national insurance or State medical service. Criticisms of the British system have appeared both in England and America, some of them displaying a lamentable ignorance of the facts and some so tainted with political prejudices as to be worse than worthless. The task of compiling such a description as is wanted is far more difficult than might appear at first, but no one could be in a better position to undertake it than the Medical Secretary of the British Medical Association. In addition to his personal acquaintance with general practice, Dr. Alfred Cox has been, from the time when the idea of national insurance was first taken up, intimately associated with all the discussions within the medical profession and the conferences with the Government. It has been his chief business to study every suggestion made, to focus the opinions of the profession, and to gather from every quarter trustworthy information as to the practical working of the medical service. Any statement, then, of fact or opinion coming from him may be taken as authoritative, and the series of articles he has contributed recently to the *Journal of the American Medical Association* may be confidently recommended as a thoroughly reliable summary of the facts up to date.*

The subject matter of the articles may be divided into two parts: First, a description of the insurance medical service, with its principal regulations now in operation; and secondly, a historical retrospect of the development of the system, the whole being freely interspersed with comments and criticisms. It is unnecessary here to deal with the descriptive part, which may be accepted as accurate and trustworthy, and the only comment that suggests itself for American purposes is that, while the account given of the local administration of the service is fairly full, more space might profitably have been allotted to the central administration.

In his historical retrospect Dr. Cox must have felt that he was treading on very thorny ground. The lay press generally and the friendly societies considered that in the negotiations with the Government the British Medical Association gained a remarkable victory. On the other hand, a section of the medical profession maintained that the Association was signally defeated, and, as appears to have become the fashion in the trade unions, the leaders and delegates were unreasonably abused because everything that extremists demanded was not obtained. In this connexion Dr. Cox aptly quotes the *Westminster Gazette*, which said: "We all admire a man who does not know when he is beaten; the trouble about the British Medical Association is that it does not know when it has won." It is clear throughout the articles that Dr. Cox strongly resents the attacks on the British Medical Association by members of the profession, and he shows a pugnaciousness which is, perhaps, in some danger of becoming infectious and of rousing the war spirit when there ought to be peace. In his short section headed "Lessons to be drawn from the fight" several matters are again brought to light which might well have been consigned to oblivion. We feel confident that Dr. Cox will take this criticism in the friendly spirit which dictates it. His loyalty to the Association and his self-sacrificing devotion to the best interests of the profession are too well known to be in question, but in raking up the ashes of the past, which may still be smouldering beneath, there is some risk of again fanning them into a flame, which is, of course, far from his intention.

In the chapter describing the outlines of the system as at present constituted reference is made as occasion offers to its defects and faults; without setting up as a general apologist, Dr. Cox shows himself ready to accept reasonable excuses for defects. For example, the fact that the service is almost confined to general practitioner treatment is excused on financial grounds. Mr. Lloyd George, from the very outset, was never tired of saying that the medical service was not a State service and not a charity, and that, save for the fact that the State was willing to offer a strictly limited subsidy, the system must be regarded as a "business proposition"; as such the contributions must be commensurate with the benefits, so that if an extended service be demanded the contributions of employers and employees must be proportionately raised, and against this there would be great objections. How far this should be accepted as satisfactory

* *Seven Years of National Health Insurance in England. A Retrospect.* By Alfred Cox, M.B.; B.S.Durh., Medical Secretary of the British Medical Association. (*The Journal of the American Medical Association.*)

and how far the State should divest itself of responsibility is of course a question still open to debate.

The disciplinary powers of the Medical Services Subcommittees are dealt with in a reasonable manner. "It is," Dr. Cox writes, "a fact not foreseen by many of us in the earlier days when we viewed the setting up of these committees with great suspicion that the medical members of the subcommittees are notoriously much harder on medical delinquents than the lay members are. . . . The number of doctors actually struck off the list is very small, and there has been no case in which the penalty has not been felt by all who knew the circumstances to be deserved." The duties of the Panel Committees in regard to excessive prescribing are fully explained; Dr. Cox does not believe that "the procedure has deprived or will deprive a single insured person of any drugs really necessary for his treatment; but the system evidently does not favour 'elegant pharmacy' or luxury in prescribing." This, no doubt, is as it ought to be, though it has offered an opportunity to some opponents of the system to allege that the drugs supplied are only the cheap and nasty ones.

Dealing with "The Effects of the System," Dr. Cox concludes that it has increased the work of the doctor, and particularly his clerical work, but that it has undoubtedly increased the income of the profession as a whole. In this connexion he is very severe on certain sections of the lay press for fostering the idea, which some doctors also have been willing to spread, "that the system is a very cheap and inferior service, given by unwilling and badly paid doctors to persons who get it as a kind of charity. This kind of thing has rebounded with great severity on the medical profession. It gives a handle still to our Yellow Press and to persons like your Mr. ——, who came over here with the intention of finding out what a bad service it is, and had no difficulty in finding plenty of people to fill him up with the kind of thing he was looking for. Let it be clearly understood that there is no charity about this service." Our readers will probably at once identify the Mr. —— referred to; and we have no doubt that the American medical profession and American statesmen will quickly decide which are the more to be depended on, the semipolitical conclusions of Mr. ——, founded on statements by avowed opponents of the system, or the well informed conclusions of Dr. Cox, founded on practical acquaintance with the whole of the system.

The effect on the professional moral of the doctors is dealt with in a very cautious way, for it is admitted to be too early to arrive at any conclusion. One thing Dr. Cox says is clear: that "the profession which people had vaguely thought lived mainly on its reputation as a 'noble profession' and on the gratitude of the people who could not pay has been discovered to be as amenable to ordinary economic laws as anyone else." Does not this mean, in other words, that the moral has been not so much altered as revealed? "The doctors have had to talk more in public about money, which has had a bad effect on their status in the public eye." Dr. Cox thinks this is only a temporary effect, and that the influence of the system on the moral of the profession will on the whole be good.

As one of the chief disadvantages of the system is mentioned the fact that it "has rendered the profession much more liable to be used as a pawn in the political game." Grumbles have been seized on to discredit not only the system but the Government, and many doctors with an honest grievance have not seen through the political game. Dr. Cox has quite rightly tried to open the eyes of the profession to the discreditable use that may be made of perfectly honest complaints, but surely in this there is nothing special or peculiar to the National Insurance system. Every social movement has been used and will be used by the Opposition press as a stick with which to beat any Government that happens to be in power. The public sooner or later come to understand the position, and Dr. Cox's remarks on this are only apposite to the Insurance Act in so far as they are a warning to medical men. Without saying that the majority of the doctors are entirely satisfied with the system, Dr. Cox states confidently that "not one doctor in 1,000 who is doing National Health Insurance work would willingly go back to the old system."

After dealing, perhaps rather too briefly, with objections and desirable modifications of the medical system on the lines already suggested by the British Medical Association, Dr. Cox concludes that one of the chief lessons the Insurance Acts have taught the profession is that a strong and vigilant fighting organization is as essential to the medical profession as to every other calling or trade. There can be little doubt that some of his statements and opinions will have exposed him to sharp criticism from certain quarters, but it may safely be said that his views are supported by the majority of the profession, and this, with the fact that they are backed by a knowledge and experience second to none, should go far towards commending them to the American profession.

ZYMOTIC DIARRHOEA AND EARTH TEMPERATURE.

The observation of Ballard that the rise in mortality from summer diarrhoea does not commence until the temperature of the earth, as recorded by the 4 ft. earth thermometer, has reached 56° F. or thereabout, is strikingly illustrated in the course of that disease during the present summer. That high atmospheric temperatures were associated with the prevalence of zymotic diarrhoea was a matter of common knowledge, but Ballard showed that no matter what the atmospheric temperature or that of the superficial layers of the earth might be, they had no influence on the course of epidemic diarrhoea until the temperature of 56° F. was recorded by the 4 ft. earth thermometer. Warm and dry weather undoubtedly favour the epidemicity of diarrhoea, but only after this critical temperature has been attained. Warm and dry weather, prolonged and persistent, in winter, spring and summer we have had, but the weekly record of deaths issued by the Registrar-General showed no increase from diarrhoeal diseases. For the week ending July 9th the mean temperature of the 4 ft. earth thermometer at Greenwich was given as 55.9°. The deaths under 2 years of age for that week from diarrhoea were for the ninety-six great towns 64 and for London 13, the corresponding mean weekly deaths for the thirteen preceding weeks 56 and 12 respectively. For the following week the mean temperature of the 4 ft. earth thermometer was 57.3 and the infantile diarrhoea deaths jumped in the ninety-six great towns to 118 and in London to 30. A week later the figures were: 4 ft. earth thermometer 58.5° F.; diarrhoea deaths under 2—ninety-six great towns 198, London 29. For the week ending July 30th the figures were: 4 ft. earth thermometer 59.6°; corresponding deaths from diarrhoea—ninety-six great towns 300, London 52. The figures are not high but they are telling. Perhaps there is no instance in the behaviour of disease of a definitely measured telluric condition correlated with a vital phenomenon so striking as is this rise in the deaths from infantile diarrhoea when the temperature of the earth 4 ft. below the surface reaches the critical level. The chain of events connecting these correlated phenomena is unknown. Infants exclusively breast-fed are but little if at all subject to zymotic diarrhoea. There is much

evidence to show that contaminated milk artificially fed to young children is a high correlate in the development of the disease. The prevalence of flies is another, but epidemicity is established only when the earth temperature conforms to a narrow rule. The signal is one for redoubled vigilance by those responsible for the public measures taken to safeguard infant life and health. To the practitioner, the family guide and guardian in these matters, it has a significance the less likely to be overlooked because he appreciates more fully the precise and particular bearing of this specific physical event. It behoves everyone to remember that while the 4 ft. earth temperature remains above 56°, zymotic diarrhoea threatens the infant population living under those other conditions that subject it to the incidence of the disease.

OUTBREAKS OF FOOD POISONING.

THE investigation of outbreaks of food poisoning or of individual cases of illness alleged to be due to the contamination of food has admittedly in the past frequenty been of a very casual and unsatisfactory character. Too often it has been confined to an inquiry by a coroner and a jury who may have had before them quite insufficient medical evidence to justify the conclusions arrived at. It follows, therefore, that many opportunities must have been lost of amending conditions associated with our food supplies which are detrimental to the public health. The Ministry of Health has long been alive to the danger resulting from the lack of organized investigation of those conditions, and the resources of the central health department have always been at the service of medical officers of health who have been called upon to make inquiries in connexion with these outbreaks, but it is only in recent years that precise instructions have been issued as to the steps that should be taken on the occurrence of a case of illness suspected of being due to food poisoning. In January last, as was noted in our columns at the time, a memorandum was issued by the Ministry requesting all medical officers of health to let the Ministry know immediately of any such case, giving information as to the chief causes of food poisoning, and indicating the best method of investigating the circumstances connected with a case. A further memorandum has now been issued by the Ministry stating that arrangements have been made in conjunction with the Medical Research Council for the fuller investigation of these cases. Dr. A. W. J. MacFadden, senior medical officer of the Foods section of the Ministry, will have charge of these inquiries, but the laboratory work and the investigations connected with it will be carried out in the Pathological Department of the University of Bristol by Dr. W. G. Savage, county medical officer of Somerset, whose recent report to the Canned Food Committee of the Department of Scientific and Industrial Research, Food Investigation Board, based on experimental investigations spread over several years, throws much light upon the causes of food poisoning. The Ministry urges upon medical officers of health to make the fullest use of the arrangements made with the University of Bristol, and those who do so will be greatly assisted by a memorandum drawn up by Dr. Savage, in which he describes the methods to be adopted in collecting and transmitting material for examination. It may be anticipated that the action of the Ministry of Health in providing, at no cost to local authorities, these facilities for the speedy investigations of circumstances which have hitherto given medical officers of health a great deal of anxiety, will enable the latter to deal with outbreaks of food poisoning much more successfully than has hitherto been the case.

THE BRITISH ASSOCIATION AT EDINBURGH.

THE eighty-ninth annual meeting of the British Association will begin at Edinburgh on Wednesday, September 7th; the president, Sir Edward Thorpe, C.B., F.R.S., will deliver an address on "Some aspects and problems of post-war science, pure and applied." The sections, of which there are thirteen, begin their work on the following morning. In the section of Physiology the president, Sir Walter Fletcher, K.B.E., F.R.S., M.D., will give an address on the boundaries of physiology; it will be followed by a discussion. This section will hold a joint meeting with the section of Chemistry for a discussion on biochemistry. The section of Psychology, over which Professor C. Lloyd Morgan will preside, is to have a discussion, introduced by him, on consciousness and the unconscious, and will hold a joint discussion on vocational training and tests with the sections of Economics and Education. The discussion in the section of Botany, introduced by the president, Dr. D. H. Scott, F.R.S., will be on the present position of the theory of descent in relation to the early history of plants, and the section will join with those of Agriculture and Zoology in a discussion of the relation of genetics to agriculture. In the section of Zoology, Professor Goodrich, the President, will discuss some problems in evolution, and there will be a full-dress discussion on the age of the earth, in which this section and those of Physics, Geology, and Botany will combine. A series of citizens' lectures will be given: the first, by Sir Oliver Lodge, on wireless telephony; the second, by Dr. E. J. Russell, arranged by the section of Agriculture, on science and crop production; the third, by Professor A. Dendy, F.R.S., on the stream of life; and the fourth, by Professor H. J. Fleure, of University College, Aberystwith, on "Countries as personalities." Two evening discourses will be given: the first, on the evening of Friday, September 9th, by Professor C. E. Inglis, on cantilever bridge construction; the second, on the evening of Tuesday, September 13th, by Professor W. A. Herdman, F.R.S., on "Edinburgh and oceanography." A conference of delegates of corresponding societies will be held, under the presidency of Sir Richard A. Gregory, who will give an address, on Thursday, September 8th, on "The message of science"; this will be followed by a discussion on science and citizenship. There will be another discussion, on regional surveys, at a meeting of the conference to be held on Tuesday, September 13th. As has been said, there will be this year thirteen sections, but this is felt to be too large a number, leading to a diffusion of interest and energy and involving unnecessary expense. The subject has been under the consideration of the council and organizing committees during the past year, and will be discussed at a special session of the general committee on Thursday, September 8th, when proposals for reducing the number of sections in future will be brought forward.

THE LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

As happened in the case of most other societies, the activities of the Leeds and West Riding Medico-Chirurgical Society were lessened during the years of the war. Dr. T. Wardrop Griffith, who was the president during the year 1913–14, was followed in that position by Dr. Bates of Ilkley, who, at the request of the society, retained the position throughout the war. Some business meetings were held and one or two for scientific purposes. The sessions for 1919–20 and 1920–21 have been conducted in the same manner as before the war; in the former year Mr. Priestley Leech of Halifax was president, and in the latter Mr. Frank Mayo of Leeds. It has been the unwritten rule of the society to select its president from the city and from the district around in alternate years. In the first of these two sessions the opening address was delivered by Sir Clifford Allbutt, whose visits to Leeds are always so welcome and whose presence always ensures a full attendance of members; he gave interesting details of a scheme which he had seen in operation in America under which those in general practice in a given neighbourhood combined to form a sort of working team in relation to their private work; it appeared to have been

attended with a large measure of success. During the session ten meetings were held. The session 1920–21 was characterized by an almost complete return to the old activities of the society, though the numbers attending the meetings were not so great as for a few years before the war, the average attendance being fifty-seven as compared with seventy or eighty during these fat years. Eleven meetings were held—eight ordinary, two clinical, and one pathological. A great feature of the session was the paper read by the veteran, Mr. T. Pridgin Teale, on that subject which in past years interested him so greatly—namely, the removal of stone from the bladder by crushing. He described his instant conversion to the methods of Bigelow, and showed to the society a series of notes of his cases which left many of his hearers in chastened mood and led to the formation of many good resolutions. It is interesting to note that the Leeds and West Riding Medico-Chirurgical Society was founded on the old Leeds Medical Club, a small group of men, intimately known to one another, who were in the habit of meeting at each other's houses for the discussion of medical and surgical topics. The new society was launched in the year 1872 under the presidency of the late Dr. Chadwick, and with the late Dr. West Symes and the late Mr. A. F. McGill as joint secretaries. There are now 296 ordinary members. During the presidency of Mr. William Hall (1892–3), who was one of the original members, it was decided that a limited number of honorary life members should be elected from among the number of those who had retired from practice and who had done the society good service. There are many who will remember the occasion when the society welcomed the first three of these members in the persons of Dr. Allbutt (as he then was), Sir James Crichton-Browne, and Mr. C. G. Wheelhouse. Since then others have been added to this list of honour—namely, Dr. Churton, Dr. Eddison, who for so many years was treasurer of the society; Dr. Joseph Dobson, Mr. Charles Richardson, Mr. Pridgin Teale, Colonel Littlewood, who, it will be remembered, retired from practice, but returned to Leeds to do such valuable war service, and whose second departure followed soon after the signing of peace; Mr. Edward Ward, whose death during the past session has left a blank in the profession; Mr. R. Lawford Knaggs, whose work as secretary will long be remembered, and whose departure from Leeds deprived the society of the prospect of being able to ask him to accept the presidency; and, finally, Mr. William Hall himself, who was the originator of this method of honouring those who had brought renown on the society.

PREMONITORY SMALL-POX.

In the course of the present year there have been reported about one hundred cases of small-pox scattered over a wide area throughout England. Bristol, Birkenhead, Southampton and Middlesbrough among the ports, Nottingham, Long Eaton, Huddersfield, and a number of inland towns and villages, chiefly in Derbyshire and Yorkshire, have been the centres of greatest incidence. There has been no sustained outbreak—a case here, half a dozen there, and then, so far as these centres are concerned, cessation, but never a long interval before others are reported in quite a different locality; this is the record, and it is disquieting. In Derbyshire the disease smoulders, and in Nottingham and surrounding districts cases continue to occur; four were notified on August 16th. From January up to the end of May only one case of the disease was notified in Nottingham, and that was in the last week in February. In the first week of June one case occurred in Nottingham, and seven in the borough of Long Eaton, a town with a population of 20,000 persons seven or eight miles from Nottingham. A fortnight later another case was reported from Long Eaton, and during the first ten days of July two more cases occurred in Nottingham. In the five subsequent weeks fifty-three cases were notified in Nottingham: there have been no cases in Long Eaton since the middle of July. During July isolated cases occurred in Matlock, in New Mills, Codnor Park rural district, and Bakewell rural district. On August 16th a case was reported from Stapleford rural district. Of the fifty-six Nottingham cases six were men over 20 years of age, three of them were unvaccinated, and three were vaccinated in infancy. There were three cases under 1 year of age, eighteen between 1 and 10 years, fourteen between 10 and 20 years, and twenty-one were over 20 years of age. In Huddersfield there have been two cases, the first contracted in the town and not accounted for by previous known cases, the second a visitor from Wakefield, where small-pox has not been reported since last January. It is easy to control small-pox when all the cases and all the sources of infection are known, but it looks as though the cases were not all known and that there were sources of infection not yet detected. Persons who have been in contact with unrecognized cases cannot be kept under observation and cannot be offered vaccination. Diffusion by contacts is not the only means of spread. The suggestion that the Nottingham outbreak has its origin in a parcel of lace from the Continent which came to the town of Long Eaton cannot be negatived on general principles. Nottingham and Huddersfield are centres of the textile industries, and the first known case at Huddersfield was that of a woman woollen mender. Whatever may be the case with other infectious diseases, there is much support for the view that small-pox is spread by means of fomites. To a greater and greater degree this country is relying on sanitary measures other than vaccination for its protection. How little to be trusted some of these measures are is to be seen in the course of the present outbreaks. They rely for their effectiveness upon early and complete knowledge of the cases occurring; and in the nature of things this is not possible. When danger of small-pox threatens there is only one reliable protection, and that is an immunized population. During the past twenty years primary vaccination of infants has been increasingly neglected in this country, and in that time there has accumulated a large proportion of the population, especially the younger portion of it, wholly unprotected against small-pox. Under such conditions every outbreak of small-pox necessarily creates anxiety, or rather accentuates an anxiety always felt in the knowledge of the continued growth of a danger which the medical profession, despite its warnings, has been powerless to avert.

THE VOLUNTARY HOSPITALS COMMISSION.

The Voluntary Hospitals Commission appointed in accordance with the recommendations of Lord Cave's Committee has held several meetings and has appointed committees to deal with some of the matters referred to it. Its first duty is to distribute the Government grant of £500,000 so as to enable those voluntary hospitals which are financially embarrassed to carry on. One of the most important functions of the Commission, however, will be to help the hospitals to evolve a system which will enable them, with the resources at their disposal, to maintain a sound financial position. The Commission has taken steps to appoint voluntary committees throughout the country. In London, as the Cave Committee recommended, King Edward's Fund has been asked to undertake the duty; in the provinces the county basis has been in the main followed. The larger borough counties, such as Liverpool, Manchester, Sheffield, Birmingham, and Bristol, have been asked to form separate voluntary hospital committees, but the small county boroughs will, as a rule, be expected to join forces with the county. The method suggested for the formation of the county committees is that two representatives should be chosen by the county council and one by the town council of each county borough; two representatives would be drawn from the hospitals throughout the county, including those in the county borough, one of the repre-

sentatives being a member of the board of a large hospital, and the other of that of a smaller or cottage hospital; and two medical representatives would be chosen from the whole county, one a hospital consultant and the other a general practitioner. This will give six members for the county and one each for each county borough. In addition the Commission will be represented by not more than five members appointed directly by it. The Commission, we gather, did not intend that the medical members should be chosen in the manner indicated in a communiqué recently issued by the Ministry of Health—namely, by the local medical committees appointed under the Insurance Act. In a Current Note published in the SUPPLEMENT some of the objections which will be felt to this course are briefly indicated. The first duty of the local committees will be to collect for the Commission information as to the financial position of the hospitals; and the second, to inquire into the adequacy of the hospital accommodation provided. In this connexion the assistance which may be obtained from Poor Law infirmaries will be taken into consideration, and the local committees will be expected to report fully on this aspect of the matter. The local committees will also, it is hoped, help to co-ordinate appeals and to organize contributions by approved societies and by workmen, either directly or through local societies Another way in which it is thought that the committees may be useful is in arranging systems of transfer from one hospital to another. At many voluntary hospitals there are long waiting lists, but the beds are blocked by chronic cases which could be equally well treated, if not better, in a convalescent institution or in one specially adapted for after-care. It is not intended that the local committees shall attempt to control the hospitals in any way; it is hoped that they will act as assistants and advisers, not as masters.

THE NATIONAL PROVIDENT HOSPITAL SCHEME.

IT was announced early last month that the London Hospital, St. Thomas's Hospital, and the Royal Free Hospital, had resolved to make a trial of the voluntary insurance or provident scheme for hospital benefits and additional medical services known as the Sussex scheme, which was commended by Lord Cave's Committee. An organizing committee has been provided with a sum sufficient to cover initial expenses, and has established an office, with a secretary, at 3, Fenchurch Avenue. The members of the committee are Sir Arthur Stanley, Sir Alan G. Anderson, Sir Napier Burnett, Lord Dawson, Mr. McAdam Eccles, and Dr. Gordon Dill, who is acting as honorary secretary. The scheme is founded upon the Sussex scheme designed by Dr. Gordon Dill and described by him in our columns on January 22nd, p. 129. The committee has made arrangements with certain other hospitals and with the Queen's Nursing Association for carrying out the scheme, and has also entered into arrangements for an ambulance service. It is proposed that the enrolment of members shall begin on September 1st, and the benefits will, it is hoped, become available on October 1st. A conference was held at St. Thomas's Hospital on August 11th between the organizing committee and representatives of some of the approved friendly societies. The scheme was generally commended to the meeting by Sir Arthur Stanley, Sir Alfred Warren, M.P., Dr. Gordon Dill, and Mr. Lesser, and its working in Sussex was explained by Mr. A. L. Wright. At the conclusion of the discussion the following resolution, proposed by Mr. Henry Lesser, President of the National Federation of Employees' Approved Societies, and seconded by Mr. Dickinson, of the Port of London Authority, was carried unanimously: "That this conference is of opinion that the services made available by the national provident scheme are likely to prove of great value to members of friendly and approved societies, and recommend the several committees of management and their officers to bring to the notice of their members the opportunity which is given them by the organizing committee of joining the scheme."

POOR LAW MEDICAL INSTITUTIONS.

THE second annual report of the Ministry of Health, which relates to the year ended March 31st, 1921, is considerably shorter than the first. The Minister states that the change has been made for the double purpose of reducing the cost of production and of enlarging the circle of those who may be prepared to buy and read a yearly account "of some of the operations of government which affect most closely their daily lives." The price of this report (Cmd. 1446) is 2s. net; it is published by the Stationery Office, and can be obtained through any bookseller. The subjects dealt with include housing and town planning, local finance, the administration of the Poor Law, and the administration of national health insurance. The work of the Welsh Board of Health is dealt with in a separate section. The annual report of the chief medical officer, dealing with the year 1920, was issued a few weeks ago, and to it we propose to recur in an early issue. The part of the Minister's report dealing with Poor Law administration contains sections on medical institutions. Practically all the Poor Law infirmaries lent to the Army Council and the Ministry of Pensions have been restored and most of them reopened; in many instances additions made during military occupation providing better accommodation and equipment have been taken over. For instance, the Alder Hey Infirmary of the West Derby board of guardians now includes a special department for orthopaedic work. A survey made during the year of the fifty-four separately administered infirmaries made it clear that the majority would be capable of development on the lines of general hospitals. Many of the larger establishments in urban areas when restored by the military authorities were found to provide accommodation in excess of Poor Law requirements, and many boards turned their attention to the problem of making fuller use of this surplus accommodation for the relief of the voluntary hospitals. So far as this tendency has relieved the strain upon the general hospitals by diverting to Poor Law institutions cases which were, in fact, eligible for treatment under the laws for the relief of the poor, it has received the Ministry's entire approval, and as no sanction from the central authority was required for this development it has in many cases not been brought to official notice. The attention of the Ministry, however, has been drawn by protests received from medical organizations to the tendency shown by certain boards of guardians to cater for patients who are in a position to provide for themselves the treatment required. The Ministry in consequence has called the attention of such guardians to the limits of their statutory powers, and has pointed out that even if the Minister could, in justice to the medical and nursing professions, and without prejudice to the development of public health administration, acquiesce in the treatment of non-Poor Law patients, he could not, in the absence of statutory authority, legalize by sanction the action taken, or contemplated, by these guardians. Consultation between the guardians and representative bodies of the local medical profession and with the managers of voluntary hospitals was suggested, with a view to the division of functions between the local institutions and the provision of facilities for medical education in the Poor Law establishments by the association of infirmaries with neighbouring general hospitals. Reference is made to the arrangement under which the guardians of St. Marylebone were given authority to appoint a considerable number of consultants. As this experiment was considered to have been successful, the system has since been adopted in nine other metropolitan infirmaries and seven institutions under the control of the Metropolitan Asylums Board. The same system is being developed, it

is stated, by numerous infirmaries in the provinces, especially as regards the treatment of children. There is still a scarcity of applicants for the post of probationer nurse, in spite of the fact that the minimum age for admission was reduced during the war to 19 years, and that this plan is being continued. In spite of the shortage the proportion of nurses to the number of patients has increased in the larger institutions; in the twenty-three institutions and separate infirmaries in Lancashire the proportion is one nurse to every six patients.

THE IMPERIAL CANCER RESEARCH FUND.

THE nineteenth annual report of the Imperial Cancer Research Fund, approved by the General Committee last month, shows the present position of the finances and gives a summary of the investigations. The general scope of the work, as indicated in the report, embraces the culture of normal and cancerous tissues *in vitro*, the effects of deprivation of accessory food substances on tumour growth and studies in cell-respiration. In addition, brief reference is made to experiments on the production of tar cancer in mice, a line of work which the director, Dr. J. A. Murray, says is destined to play an important part in the elucidation of the processes which lead to the development of cancer. The report cannot fail to arouse interest in the forthcoming seventh scientific report, which will deal with this and other subjects in detail. We note that the general belief in the unlimited resources of the Fund is not borne out by the treasurer's report; the income for the past year was exceeded by the expenditure. This is emphatically a state of things which should be remedied as soon as possible, and we commend it to the notice of all who are able to help. In doing so they will be furthering, not only the work of this, our premier organization for the scientific study of cancer, but the cause of the investigation of the disease in other institutes of this country and throughout the world.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY.

THE first International Congress of Military Medicine and Pharmacy took place at Brussels from July 15th to 20th, and was attended by delegates from the United Kingdom, France, United States, Italy, Japan, Spain, Sweden, Switzerland, Denmark, Holland, Norway, Brazil, China, Poland, Mexico, Argentina, Chile, and other countries, and by representatives of Red Cross Societies. The British representatives were Colonel E. M. Pilcher, Major A. D. Stirling, D.S.O., Surgeon Rear-Admiral J. Chambers, and Surgeon Commander E. T. Meagher. Dr. Wibin, Inspector-General of the Belgian Health Service, opened the Congress with an address, and a number of important discussions afterwards took place. In considering the general organization of the Army Medical Service and the relation of the military services to the Red Cross, the Congress approved the suggestion that the medical profession of a nation should prepare itself in times of peace for the part which it would have to play in war, and that in time of war it was necessary that medical advisers qualified by their scientific standing should be equally responsible to the high command with representatives of the medical service. The use of poison gas in war was discussed, and the Congress considered that there should be special mobile organizations in the army medical services for the treatment of such cases. It was agreed that pulmonary tuberculosis followed gas poisoning in exceptional cases only; the permanent disabilities which actually did follow included tachycardia, such chronic respiratory troubles as emphysema and asthma, neurasthenia and neuroses, and ophthalmic troubles. After a discussion of the lessons of the war as to the treatment of fractures of the limbs the Congress expressed the opinion that simple extension apparatus which had come into use during the war should be generally employed in future, and that it was necessary in peace to organize in the great industrial and urban centres special services analogous to those established in war for the treatment of fractures. The campaign against tuberculosis in the army was discussed, and it was agreed that, to be efficacious, it should be based primarily on a rigorous application of hygienic measures in regard to the housing, feeding, and physical education of the soldier, and that there should be a permanent liaison between the civil and the military administrations with regard to tuberculosis. With regard to the problem of venereal disease in the army, educative measures were advised as well as the promotion of various kinds of recreation and sport, in addition to prophylactic methods and the employment of the most modern methods of treatment for the affected soldier. The purification of water during a campaign was also discussed, and it was agreed that while the method of chlorination which had been employed in the war of 1914–18 had been thoroughly efficacious, it was desirable that further research should be made into the physical methods of sterilization, such as those based upon the employment of ultra-violet rays or of ozone. On the termination of the Congress it was resolved to appoint a permanent international committee, with Dr. Wibin as president and Dr. Voncken (Brussels) as secretary; Major A. D. Stirling was appointed the British representative on this Committee.

THE HALF-YEARLY INDEXES.

THE usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been prepared and printed. They will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C.2.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

Medical Evidence in Courts of Justice.

LORD DAWSON'S notice of motion: "To call attention to recent rulings as to the privileges of medical men with regard to evidence in courts of justice, and to move that the matter be referred to a select committee of the two Houses of Parliament," stands on the Order paper of the House of Lords, without date fixed. It was postponed recently at the request of the Government.

War Pensions Bill.

Viscount Peel (Chancellor of the Duchy of Lancaster) moved the second reading of the War Pensions Bill in the House of Lords on August 9th. In summing up provisions which had already been explained in the House of Commons, he said that the general proposal of the bill, as regards local committees, was to make them advisory instead of executive. The Pensions Ministry would therefore have all the valuable assistance of local advice and knowledge, but would be able to control its own officials; and by the reduction in the number of the committees, from about 1,250 to about 450, some millions of money would be saved in the cost of administration. Touching the portion of the bill providing for final assessments of pensions, Lord Peel said he understood that at present 20,000 men were re-examined every week, thus a vast paraphernalia of doctors and others were involved, one doctor in every five in the country being engaged in the work. It would be possible to sweep away most of this imposing façade, the intention being that after a period of four years from the final discharge, or first examination, the pension would be made permanent. The Earl of Dartmouth recognized that the powers to be given to the Ministry over committees should be full, but he hoped that they would not be too full. He spoke with a considerable feeling as to the value of the local committees. Lord Harris raised some criticism as to the contemplated change in the personnel of the appeal tribunals, but Lord Peel explained, in his reply, that the reason why a second doctor was to be substituted for a lawyer was that while originally the questions dealt with were of a semi-medical and semi-legal nature, they had now become purely medical—the point being to settle the permanent disability of the men. The bill was read a second time.

The bill was taken in Committee in the House of Lords on August 11th. The Marquess of Salisbury, on behalf of Lord

Harris, moved an amendment to omit certain words in Subsection 3 of Clause 3, in order to retain the arrangement under which a lawyer, a doctor, and an ex-service man constitute an appeal tribunal. Under the bill the proposal is that there shall be two doctors and one ex-service man. Lord Salisbury urged that it was unwise to get rid of the lawyer, as questions of earning capacity and other considerations, besides those of the physical condition of a man, might arise, and they were not doctors' questions at all, but general. Viscount Peel, in reply, explained how the proposal arose to eliminate a lawyer and substitute a second doctor. The Select Committee of the House of Commons that sat during 1919-20, on the question of pensions awards, held that there should be a majority of medical men on the committee, as well as an ex-service representative. If the medical men were to have a majority in accordance with that recommendation, it would be necessary, in the event of a lawyer being retained on the committee, to increase the number of medical men to three. With the number of these appeal tribunals, that would seriously increase the cost of administration. The remark of the Marquess of Salisbury, that a lawyer was a better judge than a doctor of earning capacity, appeared to be based on observations of past practice and not on the system to be inaugurated under this bill. The old practice was not based on the principle that compensation for war disablement must be uniform for all disablements of the same kind and degree. The present principle was based on the degree of disablement, and was uniform for all disablements of the same kind and irrespective of earning capacity. The Minister held that they had reached purely medical questions on which only medical men could have a view. The Lords' amendments were accepted by the Commons on August 16th.

National Insurance Panels.—Mr. Alfred T. Davies asked, on August 10th, whether the attention of the Minister of Health had been called to the allegations of the high chief ranger of the Order of Druids regarding the workings of the National Insurance Act, to the effect that the Ministry doctors issued certificates habitually without seeing the insured persons; that there was a medical tendency to refer patients for hospital treatment as out-patients, as doctors then received the capitation fee, whether the patient was well or ill; that in some cases doctors showed reluctance to call on patients outside surgery hours; that the number of panel patients was in numerous cases beyond the physical capacity of doctors adequately to deal with; whether any inquiry would be made into these allegations; and whether, if they were found accurate, improvements in the services would be introduced without delay. Dr. McDonald asked also, whether the Minister's attention had been called to the fact that many panel medical men issued certificates of illness without even seeing the patient; that private patients very often received priority of attendance when medical practitioners had a combined practice; that many panel patients requesting attendance at home on account of serious illness, were asked to call at the surgery; and that many panels were too large to secure necessary and efficient service. Sir A. Mond said he had seen press reports of the allegations, and if specific cases in support were given to him he was quite prepared to go into them. A certain number of complaints must arise in working so large a scheme, and machinery was supplied under the regulations for investigating complaints and imposing penalties if necessary. He was considering whether the time had not come for a general inquiry into the working of the National Insurance Act. Mr. Purchase inquired the maximum of patients a doctor might have on his panel, and to what extent he might increase the number by having assistant doctors. Sir A. Mond replied that the limit of the number of insured persons whom an insurance practitioner might have on his list was determined by a scheme made for each area by the Insurance Committee and the Panel Committee, jointly, and the extent to which the limit might be increased, when the doctor engaged one or more permanent assistants, was determined by the Insurance Committee, who was required to have regard to the particular circumstances of the doctor's practice. No doctor working single-handed might have more than 3,000 persons on his list. The maximum had been fixed in a large number of areas at 2,000 to 2,500, and the average number per doctor was approximately 1,000. In reply to further questions, on August 15th, Sir Alfred Mond made similar replies. Sir B. Chadwick then asked the Minister whether he proposed to make representations to the British Medical Association. Sir Alfred Mond replied to the effect that he did not think anything could be gained by that. In cases where it was proved at an inquiry that the continuance of a practitioner on the medical list would be prejudicial to the medical service of the insured the practitioner was removed, and adequate machinery existed and was freely used for dealing with offences of a less serious character for which removal from the list would be too severe a penalty. Twenty-nine practitioners had been removed from the list since the Act came into operation.

Insurance Practitioners: Travelling Grants.—Mr. Lambert asked, on August 9th, the terms of the regulations by which grants are made for medical men under the Insurance Acts for mileage and travelling. Sir A. Mond replied that a Central Mileage Fund was constituted, into which the sums available for mileage were paid (Article 19); that a committee known as the Distribution Committee, consisting of insurance practitioners and other persons, reported to him as to the basis on which the sums in the Central Mileage Fund should be distributed amongst Insurance Committee areas (Article 20); and that the sums allocated to each area after consideration of that report were distributed amongst the practitioners in accordance with the scheme prepared jointly by the Local Panel Committee and the Insurance Committee, which was subject to his approval (Article 21).

Deposit Contributors for Health Insurance.—In reply to Sir M. Moore, who asked, on August 11th, the amount of the available surplus of deposit contributors for the five years ended December 31st, 1918, Sir A. Mond said the deposit contributors were entitled to the ordinary benefits under the National Insurance Acts only so far as the sum standing to their individual credit would admit, and no question of a valuation therefore arose. No medical funds in respect of deposit contributors remained unallocated; the total amount payable to medical benefits was distributed annually.

Safeguarding Industries Bill.—On report on this measure on August 10th, Captain W. Benn moved a new clause for exemption of goods used for educational or scientific purposes. He and Major Barnes (who seconded) recalled the expressions of opinion that had been given by a number of scientific workers, as to the seriousness of the extra charge to be put upon them in their operations in the event of the passage of this bill. Sir Philip Magnus, insisting that he remained a Free Trader, urged that it was essential to maintain the infant industries established during the war, otherwise the country would again be entirely at the mercy of the foreigner for necessary apparatus. He suggested that the cases of schools and laboratories might be met by the Government giving them the 33⅓ per cent. that might be paid for imported articles, on condition that they purchased them in this country. Captain Coote also favoured, as an alternative, the payment of a direct subsidy to scientific and educational institutions. Sir P. Lloyd Graeme, for the Government, reiterated their view that it was essential to maintain the struggling industries, and he pointed out that the provision was only for five years. Dr. Murray spoke cynically of the temporary character of the provision. On a division the new clause was rejected by 231 votes to 80. On report on the Schedule, on August 11th, Mr. A. Williams moved to leave out the words "optical glass and optical elements, whether finished or not, microscopes and opera glasses, theodolites, sextants, spectroscopes, and other optical instruments." Optical elements, he said, included such things as ordinary spectacle glasses. Sir Philip Magnus, without repeating his previous arguments in favour of the Government proposal, dealt with the suggestion that the manufacture of this glass in the country might be preserved by means of a subvention. He pointed out that a subvention would have to be paid by our Government, whereas, in the case of a tariff, the money was paid by the other Government. He insisted that, in Great Britain, optical glass and instruments could be produced in every respect as good as those manufactured in foreign countries, but not at anything like the same price. He did not attach any importance to the argument that the instruments could not be obtained by our universities; the additional cost to any research laboratory of paying a little more for the expensive instruments required was a fraction compared with the absolute necessity of being able to produce these instruments in Great Britain in the event of war. It was a tax that would be readily paid for the sake of security. It would not fall on the schools, or colleges, or research laboratories; it would be paid by the Treasury, who would give these institutions sufficient grants to enable them to make the purchase. Dr. Murray supported the amendment, and quoted from a statement issued by the British Optical Manufacturers Association to show that the circumstances of the war were promptly met. On a division the amendment was rejected by 170 votes to 61.

The Spread of Cholera from Russia.—Lord Askwith, in the House of Lords on August 11th, sought information as to famine conditions in Russia, and raised the question of the danger of the spread of cholera and typhus to other countries. The Earl of Crawford, in reply, said that reports of cholera outbreaks in certain parts of Russia were received as early as last year, and it was believed that a severe epidemic had broken out in the famine area. According to the figures quoted in the soviet press up to July, 27,000 cases had been reported. Any measures taken to assist the famine-stricken areas would have to include measures for the prevention of the spread of cholera and other infectious diseases, and the whole matter of relief was being considered by the Allied Supreme Council in Paris. Lord Onslow (the Under Secretary to the Ministry of Health) informed him that measures to deal with the possible importation of cholera were undertaken in this country in accordance with the International Sanitary Convention, 1912, under regulations of the Ministry of Health, and were administered by port sanitary authorities and medical officers. The Minister of Health had already called the attention of port medical officers of health to the possibility of the occurrence of ship-borne cholera at the present time. Information as to the prevalence and spread of cholera obtained by the Ministry was systematically communicated by cable through the Dominions, which all possessed well-organized port sanitary services.

Regional Medical Officers.—Sir J. D. Rees asked, on August 10th, whether the Minister of Health was aware that the opinion was held by county councils that the appointment of regional medical officers at £1,000 a year was waste of money, their duties being simply to receive reports of tuberculous cases to pass on to the council's officers; whether his attention had been called to this matter by the County Councils Association, and whether he would reconsider these appointments with a view to their early abolition. Sir A. Mond replied in the negative. He said

that only a very small part indeed of the time of a regional officer of the Ministry was required for the duty mentioned, of securing due preparation and transmission to tuberculosis officers of the reports which insurance practitioners were required to furnish. As to their main duties, Sir A. Mond referred the inquirer to previous answers. Sir J. D. Rees asked whether the Minister was aware that the chairman of the Nottinghamshire County Council declared the other day that these officers had no duties whatever to perform, and that their salaries were therefore wasted. Sir A. Mond rejoined that he did not think that the chairman of the Nottinghamshire County Council knew what the duties were.

Criminal Law Amendment Bill.—The Commons amendments to the Criminal Law Amendment Bill were considered in the House of Lords on August 15th, when the Bishop of Norwich was in charge of the measure on behalf of the promoters. The Earl of Malmesbury moved the rejection of the new clause (after Clause 3) to make acts of gross indecency by female persons a misdemeanour punishable under the Criminal Law Amendment Act, 1885. The Earl of Desart and the Lord Chancellor strongly urged the excision of the clause on the grounds that the subject had not been considered by the Joint Committee of the two Houses, upon whose findings the present bill was based; that the law and police authorities had not been consulted, and that the provision would give rise to blackmail. Lord Birkenhead said there was no evidence of any widespread practice of such vice. The Bishop of Norwich agreed with the conclusion reached, and the clause was rejected without a division. The Lords also disagreed with the Commons addition to Clause 5, which, in repealing the regulation that the trials of incest cases should be *in camera*, proposed to give any judge power to direct that any particular case should be heard *in camera*. The Lord Chancellor stated that the judges did not desire such discretion, and that it would be against practice.

Treasury Grants and University Colleges.—Mr. Gilbert asked, on August 11th, what amounts had been annually granted by the Treasury to universities and university colleges since the Advisory Committee was set up; whether such grants were for capital or maintenance, and particulars of the reference. Mr. Young replied that the amounts granted by the Treasury since the University Grants Committee was set up were as follows:

	£
1919-20:	
Recurrent grants	789,500
Non-recurrent grants	295,500
1920-21:	
Recurrent grants	976,127
Non-recurrent grants	277,000
1921-22 to July, 1921:	
Recurrent grants	489,063
Non-recurrent grants	242,000
	£3,069,190

The recurrent grants had been for maintenance only and not for capital; the non-recurrent had been principally for capital, but to some extent for maintenance. The reference to the Committee was as follows: "To inquire into the financial needs of university education in the United Kingdom, and to advise the Government as to the application of any grants that may be made by Parliament towards meeting them." The members of the Committee were as follows: Sir William McCormick, LL.D., Chairman; Mr. William Bateson, F.R.S., Sir Dugald Clerk, K.B.E., F.R.S., Sir James Johnston Dobbie, F.R.S., Miss S. M. Fry, Sir Frederick George Kenyon, K.C.B., Sir Wilmot Parker Herringham, K.C.M.G., C.B., M.D., Sir Stanley Mordaunt Leathes, K.C.B., Sir Joseph John Thomson, O.M., F.R.S. None of the members receive any remuneration except the chairman, who received in this capacity a salary of £1,300 per annum, with an allowance for expenses (including subsistence) of £500.

Voluntary Hospitals Grants.—Mr. Gilbert asked, on August 10th, what were the amounts paid in the years 1914 to 1919 respectively as grants in aid of the London voluntary hospitals in consideration of their treating sick and wounded soldiers and sailors. Lieut.-Colonel Stanley answered that the amount paid during the period mentioned was £880,000. He could not give the sum in respect of each year. Mr. Gilbert inquired whether it was proposed to publish the evidence given before Lord Cave's Committee on Hospitals. Sir A. Mond said that, in view of the cost of printing, this would not be done.

Pensions Committee Appointments.—Asked by Dr. McDonald, on August 11th, if the Ministry of Pensions would issue instructions that while Pensions Committees were being organized no conscientious objector should receive an appointment until the claims of ex-service men had been satisfied, Mr. Macpherson said that preference had always been given to ex-service men.

Pensions Appeal Tribunal.—In answer to Sir H. Brittain, Colonel Gibbs said, on August 11th, that the average period which elapsed between the date on which an appeal was received by the Pensions Appeal Tribunal and the date on which it was heard was eight weeks. Approximately 20 per cent. of the cases had to be adjourned owing to the non-attendance of the appellant or for other reasons.

Vaccine Treatment of Lunacy.—Mr. Gould asked, on August 11th, whether the attention of the Minister of Health had been drawn to the articles in the press in reference to the cure of lunacy by vaccine injections; whether he was aware of the allegations that many potentially healthy minded persons were needlessly confined in an asylum because of the lack of proper curative treatment; and whether he would initiate an investigation into the Lunacy Laws and asylum administration with the object of making such treatment available to the mentally afflicted confined in asylums. Sir A. Mond said he had seen the article. There was no obstacle to the use of vaccine in any case in which that form of treatment was considered suitable by the medical authorities of an asylum. He had under consideration the question of possible reforms in lunacy adminstration and treatment.

Dangerous Drugs Act Regulations.—Mr. Shortt stated, on inquiry by Mr. Gilbert on August 11th, that the Regulations under the Dangerous Drugs Act would come into force on September 1st. He could not say definitely what other Powers had passed legislation to carry out the Convention of 1912, but the Powers which were signatory to the treaties of peace undertook to enact the necessary legislation without delay and at latest within twelve months from the treaties coming into force. Full information as to the position in each country was being collected by the League of Nations, which was entrusted with the general supervision over the execution of the Opium Convention.

Poison Antidotes.—Brigadier-General Surtees introduced, on August 9th, a bill to provide that the receptacle of each poison sold by retail shall bear a printed description of an antidote for that poison. It is a measure of three clauses of twenty lines; the first lays down the provision, and the second the penalty, on failure of compliance—namely, a fine not exceeding £5 for each offence. The third states that the bill shall not apply to Ireland. Dr. Nathan Raw and Mr. Percy back the measure.

Deaths of Animals from Unknown Causes.—Captain Coote asked, on August 9th, whether the Minister of Agriculture was aware of the nuisance occasioned by the clumsy procedure necessary in the notification of the death of animals from unknown causes; and whether he could see that in future the police would transmit these notifications direct to the local veterinary officer instead of indirectly through the Ministry. Major Barnston replied that the Minister was unaware that the procedure was clumsy or inconvenient. In dealing with suspected outbreaks of diseases scheduled under the Diseases of Animals Act it was necessary to take every precaution to prevent them from becoming epidemic. This end could only be successfully obtained by a central authority, which was in a position to co-ordinate any necessary control measures; and the Minister was therefore not prepared to modify the order by which the Ministry required to be notified immediately of all suspected outbreaks of diseases.

Committee of Inquiry on Artificial Limbs.—Mr. Macpherson informed Major Cohen and Captain Elliot, on August 11th, that he understood that the report of the Committee on Artificial Limbs would shortly be submitted; it would be published as soon afterwards as possible.

Holloway Prison: Lady Superintendent.—Viscountess Astor asked, on August 11th, whether the lady superintendents recently appointed in Holloway Prison possessed medical or nursing qualifications. Mr. Shortt replied that one of these ladies was a nurse who had had much experience in charge of outside hospitals. She had the supervision of all the hospital work of the prison and of the hospital staff, subject to the control of the medical officers and the governor, who was a medical man. The other had had great experience as a prison officer and had the supervision of the disciplinary side of the prison with its staff, subject to the control of the governor.

Registration of Nurses.—Lieut.-Colonel Sir J. Hope, on August 10th, asked whether a nurse who had been trained in Scotland, and was practising in Scotland, could be admitted to the English register and thereby remove herself entirely from the jurisdiction of the Council of the country in which she was practising; and whether he would consider amendment of both the English and Scottish rules, so that all nurses should originally register in the country in which they were practising, but should be able to be placed on the register of the other country without difficulty or payment, if they afterwards desire to practise in it. Sir A. Mond said he was advised it was not competent to the General Nursing Council to refuse to admit to the register a nurse who was otherwise qualified on the ground that she was not practising in the country. Registration was purely voluntary, and no nurse could be brought within the jurisdiction of any of the three Nursing Councils, except by her own choice. A nurse practising in Scotland would derive no advantage from admission to the English register, since she would not thereby be entitled to describe herself in Scotland as a registered nurse. Sir J. Hope inquired whether the Minister realized that the whole object of the Act would be defeated if these Councils had no jurisdiction over the nurses in their own country. Sir A. Mond rejoined that they had, but Sir J. Hope remained unsatisfied on the point.

The Licensing Bill.—The Lords' amendments to the Licensing Bill were accepted by the Commons on August 16th.

Training in Sanatoriums.—Sir Henry Harris asked, on August 9th, whether the Minister of Pensions would state the conditions on which payment of bonus was made to men undergoing treatment in sanatoriums, and the amount paid to such men by way of bonus. Major Tryon replied that the payment of training bonuses to the class referred to was subject to the same conditions as obtained in regard to training given at a Ministry convalescent centre. The information sought in the second part of the question was not available.

England and Wales.

The Welsh Consultative Council's Report.

We announced in this column last week (p. 255) that the second report of the Welsh Consultative Council of the Ministry of Health had been presented to Parliament, and gave a summary of the scheme drawn up by the Council for providing a network of institutions for the Principality. The following is a summary of the remaining sections of the report.*

Infectious Diseases Hospitals.

The number of small-pox hospitals in Wales is 21; many have never been used and the remainder very seldom. The Council recommend that the present system, which is neither economical nor desirable, should be reviewed from a broad national standpoint. There are 55 hospitals for fever cases (scarlet fever, diphtheria, and enteric fever), containing 1,292 beds, but several of the hospitals are unsatisfactory and inconveniently situated; large parts of several counties have no satisfactory means of isolating the infectious sick. It is recommended that fever hospital accommodation, conveniently situated, should be provided, giving at least one bed for every 1,000 of the population in the thickly populated areas and at least one bed for every 4,000 in sparsely populated areas. Provision should be made for emergency expansion to meet sudden outbreaks on a large scale. Special institutional provision is not recommended for measles and influenza, but the Council is of opinion that accommodation should be available at every fever hospital for complicated or exceptional cases.

It is advised that a complete survey should be made of the needs of the whole coast line of Wales from the point of view of port sanitation, and that the administration should be charged to one national authority.

Tuberculosis Hospitals and other Institutions.

The Council refers to the work of the Welsh National Memorial Association for the Prevention, Treatment, and Abolition of Tuberculosis, and appends to the report a statement as to the organization and administration of the Association which works a comprehensive national scheme. In addition to convalescent homes, of which there are eleven in Wales, the Council advocates the provision of rest (or holiday) homes for the benefit of workers who, though not actually suffering or recovering from definite illness, may be run down in health and need a period of rest and refreshment. Open-air schools, health centres, and colonies for children should also be provided. At present such provision is limited to one open-air school, at Aberdare, for mental and physical defectives. Mental deficiency institutions are needed and should be organized as colonies.

The Council contemplates that there should be an adequate supply of two types of specialists and consultants—namely, full-time specialists in certain diseases (such as tuberculosis physicians) and part-time specialists whose services would be available in the various institutions.

Local Health Administration.

In Part II of the report comments are made on the complexity, the ineffectiveness, and in many cases the unsuitability of the present system of local government in matters pertaining to the health of the community. There are in Wales nearly 1,000 separate public authorities concerned with some branch or other of health work. Except for Glamorgan and Monmouth the county units are, in respect of population and assessable value, exceedingly small as compared with the county units in England. The Council considers it essential (1) to introduce the principle of one national supervising local authority in Wales endowed with adequate statutory powers; (2) to reduce the number of separate health authorities and to map out a co-ordinated network of Statutory Health Committees, responsible to the national authority; and (3) to ensure that the national authority and the local committees, acting in co-operation and in their respective spheres, shall have power to correlate between the preventive and curative aspects of a public health service.

The Council, after setting out each of six alternative schemes considered, recommends the scheme described below as the only one which could be put into practical operation pending the devolution of parliamentary responsibility. As the scheme involves the imposition of financial obligations upon existing local authorities, the constitution of the national body has been fixed so as to place representatives appointed by local authorities in a substantial majority.

Scheme for a National Council of Health.

1. *National Council.*—A Council, to be called "The Welsh National Council of Health," to be established by statute as the sole Local Health Authority for Wales and Monmouthshire, and to be subject to the control and supervision of the Minister of Health. The duties of the Council to include the following:

(i) To provide for the progressive development and comprehensive organization of health services and institutions in Wales and Monmouthshire;

(ii) To control and be responsible for the efficient administration

(*a*) of health services and institutions transferred to it; and

(*b*) of health services and institutions supplied or provided by the Council;

(iii) To inspect and, subject to conditions, to approve and make grants in aid of health services and institutions in Wales and Monmouthshire supplied or provided by voluntary organizations;

(iv) To co-ordinate health services and institutions in Wales and Monmouthshire, whether transferred to, or supplied or provided by, voluntary organizations.

The powers and duties relating to health of existing Local Authorities and Boards of Guardians in Wales and Monmouthshire, and the powers and duties of Insurance Committees (except those relating to the cash benefits of deposit contributors, which should be transferred to the Minister of Health), to be transferred to the Council. The Council to receive and, subject to the approval of the Minister, to apply moneys provided by Parliament or raised by County and County Borough Councils or received from any other source, in respect of the health services and institutions of Wales.

2. *Local Health Committees.* The Council to be required, in the discharge of certain of its duties, to establish and constitute Local Health Committees, and, subject to certain conditions, to utilize for this purpose existing Local Public Health Authorities.

3. *Regional Health Committees.* The Council to be empowered to appoint Regional Health Committees, to which it may delegate certain of its duties.

4. *Constitution of National Council.* The Council to be appointed as follows:

(*a*) Members appointed by the *elected* members of County and County Borough Councils, and of Urban and Rural District Councils with populations exceeding 40,000	41
(*b*) Members, including women, appointed by the Minister	24
	65

The number of members appointed under (*a*) to be made up as follows:

1 member to be appointed by each of the Councils named.
1 *additional* member if the population of the Council's area is between 75,000 and 150,000.
2 *additional* members if the population of the Council's area is between 150,000 and 300,000.
3 *additional* members if the population of the Council's area is between 300,000 and 450,000.
4 *additional* members if the population of the Council's area exceeds 450,000.

5. *Central Committees.*—The Council to be empowered to appoint such Central Committees from among their own members as they think fit, and to delegate to such Committees any of their powers except the raising or borrowing of money. The Council to be required to appoint (*a*) a Finance Committee, and (*b*) an Executive Committee.

6. *Advisory Committees.* The Council to appoint such Health Advisory Committees as it thinks fit, every Advisory Committee to include women as well as men, and to consist of persons having special knowledge or experience.

The report is signed by 28 out of the 30 members of the Council. Certain members have, however, made a reservation to the report to the effect that the proposed National Council should be mainly directly elected by the people instead of by the Councils, and one member (Mr. D. Lleufer Thomas) suggests a method of arranging the voting at the elections.

* Cd. 1448. To be obtained from H.M. Stationery Office, 1, St. Andrew's Crescent, Cardiff, or from Imperial House, Kingsway, London, W.C.2. Price 9d. net.

THE FINANCE OF LONDON HOSPITALS.

King Edward's Hospital Fund for London has issued a circular to London hospitals making suggestions with regard to collections from employees. The Fund has held a series of conferences with representatives of the various central agencies. The discussions have had as a starting point the opinion expressed by Lord Cave's Committee, that a larger development of collections from wage-earners is possible in the London area. A conference of hospital representatives, held at the Mansion House on July 6th, recommended that an attempt should be made to ensure co-operation between the hospitals and the central agencies in making local collections from employees. The outcome of the conferences so far may be summarized as follows: It is suggested that the metropolis (within nine miles of Charing Cross) should be divided into hospital areas arranged round key hospitals for the purpose of collections from employees, and that in each area committees should be formed in connexion with the key hospital or hospitals consisting of the local representatives of the Hospital Saturday Fund, the League of Mercy, and other organizations, to co-operate in securing the maximum collections from the employees in the area. It is proposed that there should be a general arrangement under which hospitals actively co-operating with the Hospital Saturday Fund and the League of Mercy should be assured of a due proportion of the proceeds of the local collections from employees. It is stated that the question whether changes in the existing practice as regards weekly contributions should be made, and if so the nature of the changes which are desirable, is still under consideration, and it is pointed out that if a given weekly sum was in 1914 an adequate contribution on the part of an employee towards the provision of free treatment when needed, the same weekly sum cannot now be adequate when the cost of hospital treatment is so much greater and patients generally are expected to contribute. The questions under discussion are whether the remedies should be sought in increased weekly contributions or in weekly contributions combined with patients' payments. Further, local conferences are considered desirable, and the King's Fund Policy Committee offers to help in arranging them. A separate part of the circular deals with the co-ordination of appeals to the public; no plan is put forward, but any hospital which may be contemplating a special appeal is asked to communicate with the King's Fund before launching it.

Ireland.

IRISH POOR LAW REFORM.

SEVERAL counties in Ireland have adopted far-reaching reforms of the Poor Law system. In all cases the county is adopted as the unit of administration, and boards of guardians are without exception abolished. So far the scheme for the county Clare seems to be the most practicable and workable of those put forward. In many respects it follows closely on the lines of the report of the Irish Public Health Council, as will be seen from the following summary of the scheme:

For public health administration it is recommended that the county be a unit, and that all public health services be co-ordinated and administered by a single body, to be known as the County Board of Health, with authority over the medical staff, nursing staff, health inspectors, and have control of home assistance.

The Board of Health would consist of thirty members—county councillors, chairmen of rural and urban councils, members nominated by the county council, representatives of the county insurance committee and of the county medical association.

All the public health powers vested in the guardians would be transferred to this Board, which would have power to delegate its functions to subcommittees, to which non-members might be appointed—representatives of the local rural and urban bodies and locally elected bodies.

It is recommended that there be a fixed maximum county at-large public health rate of 1s. in the £, and a supplemental rate in the more highly rated districts in proportion to their relative rates and the amounts by which their demands exceed their quota on the flat rate.

The report recommends that there should be five public health institutions, namely, a mental hospital; a county central home (Union Workhouse) for aged and chronic hospital cases, the harmless insane, and a detached portion for tuberculous cases; a county nursery section of Kilrush Workhouse; district hospitals (four); and an inter-county sanatorium. The committees of management of these institutions would include persons, including ladies, who are not members of the Board of Health. Stringent regulations are proposed regarding admission to the various institutions.

The Board of Health would have full power over the medical staff, its appointment, and the areas of operation, and provision is made, "if possible," for automatic promotion. Similar provisions are made for the nursing staff. Only nurses with medical and surgical training would be admitted to the county nursing staff.

Home assistance would include old age pensions, pensions for the partly blind, out-of-work donations, insurance benefit, maternity benefit, war pensions, outdoor relief, and boarding-out allowance.

Officers who lost their positions under the scheme would get the superannuation to which they were legally entitled under the ordinary civil law, excluding recent enactments; existing officers to get the option of taking any available positions.

"By ruthless economy," says the report, "by annexing old age pensions, by enforcing payment in the mental hospital and in the district hospitals, by keeping track of all pensions, Government donations, and insurance grants, it is possible to reduce the cost of Public Health Service by 1922 to £90,000 per annum—that is, to bring it within the county at large *plus* the grants.

The scheme involves the abolition of the present Poor Law system, and the workhouse and boards of guardians would cease.

IRISH TRADES CONGRESS AND A MEDICAL SERVICE.

The following resolution was unanimously passed at the recent meeting of the Trades Congress:

> That the National Executive be instructed to draw up for the benefit of Labour members of local authorities a comprehensive scheme of Public Health Service reforms towards the attainment of which all Labour members of local authorities could use their influence.

Correspondence.

THE POST-GRADUATE COMMITTEE'S RECOMMENDATIONS.

SIR,—So many people seem to be interested in the subject of post-graduate study that it is curious that the publication of the recommendations of the Athlone Committee in your issue of June 25th has produced so little comment. Many post-graduate courses already exist, some appear to flourish; the publication of the Athlone Report, with its proposals for an extensive, complete, and comparatively costly system of post-graduate teaching, raises the question, wherein have existing courses failed, and why? As I deplore the possibility of State intervention in a matter with which the medical profession ought, in my opinion, to be able to deal, I venture to submit my views under the headings (*a*) the student; (*b*) the teaching centres; (*c*) the central office; (*d*) finance.

The Athlone Committee has classified seven different kinds of possible student. This seems to me to complicate matters unnecessarily, although it is quite wise at the outset to clear one's mind with regard to different types. For example, in studying the possible sources of supply of students from amongst general practitioners, some such division as the following might be useful: (1) General practitioners of capacity who keep themselves abreast of the times by reading, observation, clinical assistancies at hospitals, and visits to their own hospitals gratuitously when they so desire; (2) general practitioners, overworked, but of sufficient capacity for the purposes for which they are required, who are not going to "waste" their holidays on post-graduate study; (3) general practitioners of no capacity and not overworked, but with no desire to spend money on mental improvement, even when mental improvement is possible; nothing will stir this class out of its "pathetic contentment"; (4) general practitioners with some brains, a little money, and no work. This is perhaps the class from which many post-graduate students are drawn. No doubt there are other classes of practitioners; for the moment these may give sufficient food for thought. However many classes we may divide our material into, I venture to suggest that for practical purposes there are only two that count: First, those who want a special course, either of an advanced nature or in a special subject; secondly, those who want to polish

up minds which have become rusty, or else have been narrowed by routine. The first class may be illustrated by the men who used to go to Vienna from many parts of the world for special courses; the second, by the naval or military medical officers before Millbank and the West London Hospital offered them post-graduate facilities.

It seems to me that it is an exaggerated estimate of the men available for post-graduate study which has induced the Athlone Committee to lay so much stress on the immediate need for a post-graduate hospital. No doubt such an institution is the ideal to aim at; but until further information is available as to the number of students who will present themselves for courses of study, the length of course they are willing to take, and the seasonal variations in the demand, it might be well to see what can be done with existing facilities. Moreover, it will not be easy to fit in satisfactorily the work that should be undertaken by the two main types of student, for one of which the leading experts of world-wide reputation are required as teachers, while the other is probably better dealt with by younger men of good teaching capacity but perhaps unknown to fame. The Fellowship of Medicine has tried to supply the want in certain directions in which it has not been met by existing post-graduate schools or courses. It has accomplished most valuable work by establishing a central office, comparable on a small scale to the central office suggested by the Athlone Committee. Such an office should be able to distribute would-be post-graduate students of either type in appropriate directions. Unfortunately the Fellowship of Medicine has not yet succeeded in making its scheme all-embracing; it appears to have asked too much of some of the undergraduate schools, whose teachers found too great the strain of teaching post-graduates as well as undergraduates; and the expenditure on the office has eaten up too large a proportion of the students' fees, with the result that in many cases a totally inadequate portion has been left for division amongst the teachers. Therefore we are faced with the great difficulty in establishing a post-graduate system—the lack of funds. To assist in arriving at an estimate of immediate requirements I suggest that it should be a settled policy that the whole of the fees paid by the students should go to the teachers, until such time (if ever) as the number of students presenting themselves enables the cost of administration, as well as of instruction, to be covered by their fees. If it is wiser at the present time to postpone the establishment of a post-graduate hospital, then the immediate financial requirements are those for the maintenance of an efficient central office. For this purpose I am of opinion that in the initial stage £1,000 a year should suffice, and would finance the establishment of a thoroughly sound post-graduate scheme. If the fees of students are ruled out for administrative purposes, whence can this £1,000 a year be obtained? (1) Directly through some State department, such as the Ministry of Health. (2) From the Treasury through the University Grants Committee. (3) From a generous donor or donors. (4) From contributions by various bodies concerned in the honour and interests of the medical profession—for example, the Royal Colleges, the British Medical Association, and other bodies. It will be a pity if (1) should be the source; (2) is also a State source, though perhaps less objectionable. At present the University Grants Committee refuses to recognize anything which is not a definite school of a university. But if that Committee regards post-graduate study as really desirable, might it not consider the possibility of backing its opinion by affording some support to a really satisfactory scheme for a central office? (3) would be an ideal method, but the generous donor is almost extinct; (4) should be a far more likely source of funds considering that all such bodies seem agreed as to the value of, and need for, post-graduate instruction. Is it impossible for these bodies to make an attempt to keep out State interference until it has been proved to be necessary? And if they find it impossible to shoulder the whole cost of administration, might not the University Grants Committee feel inclined to relax its strict interpretation of its functions by contributing some portion of the expenses of an office for a year or two? In any case, ought not such a proposition to appeal to existing post-graduate establishments, whose existence is likely to be jeopardized if ever the proposals of the Athlone Committee materialize?—I am, etc.,

C. Buttar.

London, W., Aug. 13th.

CLINICAL AND LABORATORY METHODS.

Sir,—"M.B.Lond." (p. 262) misapprehends the purpose of the St. Andrews Clinical Institute. We employ every available means in the examination of patients, including *x* rays. We have on our staff an expert chemist and an expert bacteriologist. In advanced diseases we sometimes get valuable assistance from these sources, but in the early stages of disease we rarely find them of help. The early signs of disease are in the main subjective, due, as a rule, to functional disturbances of the organs. These functional disturbances are too subtle for laboratory methods to detect, but the sensitive structures of the body react to them, and produce sensations which the individual recognizes as signs of ill health. These sensations are as distinct and as instructive as any of the phenomena revealed by laboratory methods, but medicine has not advanced far enough to recognize this, and consequently the mechanism and the significance of these sensations and the methods required to discover them are not understood.

When we examine a patient and fail to discover the nature of his complaint we do not say the disease is undiagnosable; we say the symptoms are plain and distinct, but we are, as yet, too ignorant to understand them.—I am, etc.,

J. Mackenzie.

The Clinical Institute, St. Andrews, Aug. 14th.

CAPILLARY PRESSURE.

Sir,—As Dr. Gillespie persists in ascribing to Professor Leonard Hill views, statements, and assumptions which the latter has never made, I am not surprised that Dr. Gillespie finds that his conception of Professor Hill's work is, to use his own expression, absurd. It is, but only as conceived by Dr. Gillespie, certainly not as stated by Professor Hill.

Now as regards the retinal venous pressure phenomenon, Dr. Gillespie considers that this "implies greater pressure in the veins than outside them," and hopes that I may follow his argument. I certainly do to a *reductio ad absurdum*. If the pressure within the veins of the eye is greater than that outside their walls, how does Dr. Gillespie expect the aqueous to drain into the venous sinus of Schlemm's canal? No amount of equations or formulae will assist water to flow uphill.—I am, etc.,

Nottingham, Aug. 15th. Thomson Henderson.

BIRTH CONTROL.

Sir,—Dr. Halliday Sutherland, referring to the questionnaire mentioned in my letter in your issue for July 23rd, inquires how many replies I received, and suggests that I was fortunate if I received twenty. He will find full particulars in a paper published in *The Journal of State Medicine* for November, 1918, but I may say here that the number was seventy-four. Of these, fifty-two were of opinion that the contraceptives mentioned in the questionnaire were not injurious to health under ordinary circumstances, as against ten who thought that they were injurious. The remaining twelve either were not prepared to express a definite opinion on this point, or for other reasons could not be classified yes or no.

Dr. Sutherland states that sterility is less common in countries such as Ireland or Spain where birth control is not practised. One would like to know his authority for this statement, and also whether he distinguishes between true sterility, which is, of course, the point under discussion, and voluntary sterility, which is quite another matter.

I cannot understand why Dr. Sutherland should take exception to my suggestion that in order to avoid possible self-reproach later in life all young couples (under ordinary circumstances) should be advised to make sure of some children before practising birth control.

Finally, Dr. Sutherland asks: Does birth control make for happiness? That is a definite issue. Granted that under certain circumstances which frequently arise limitation of the family is indicated—and the vast majority of thinking people now agree that it is so—I maintain unhesitatingly that the use of properly selected contraceptive methods do certainly conduce very materially to happiness. They enable marital relations to be maintained between married couples. The only alternative, the

cessation of marital relations, camouflaged by the opponents of birth control under the term "self-control," mutilates and nullifies marriage, and places upon most normal young couples an intolerable and altogether unnatural strain.—I am, etc.,

Leicester, Aug. 8th. C. Killick Millard.

Sir,—Dr. Scharlieb opposes birth control on medical as well as other grounds. The question, however, involves a much wider, much deeper controversy than that—it raises once again, as is raised in the venereal disease problem, the fundamental difference between the moralist and the materialist. It is not to be wondered at if the moralists in our profession are outnumbered by the materialists, for the whole structure of medical knowledge is built upon a materialistic foundation of anatomy and physiology. Hence it is doubtful if the medical profession will ever speak with one voice on any question involving a moral issue.

Birth control is but one of a series of social problems of which the individual members are intimately related one to another, and it is by no means easy to take it up without touching at times on these other questions. What is it the neo-Malthusian aims at? To reduce the size of the family to a manageable level—a level, that is to say, commensurate with the conditions under which the parents are living and working: conditions of wages, of health, and of housing. The object is praiseworthy; the means recommended are, if widely adopted, likely to prove a mixed blessing, whether the possibilities be examined from the standpoint of domestic happiness or national expediency.

"What shall the people do?" says Dr. J. C. Jones in your issue of August 6th. "Shall they use 'preventives' or shall the men rest continent? The easiest way out of the dilemma is the artificial restriction of the family," and many will agree with him. But the easiest way out of a difficulty may well prove to be the surest road to ultimate disaster. Morally, the doctrine is indefensible—it follows the line of least resistance and sacrifices the spirit to the flesh. Materially, it is fraught with grave danger to the home and to our national existence. It is proposed to disseminate a knowledge of contraceptive methods throughout the overcrowded homes of the ill-fed, ill-clad poor. Now it is in these homes that the moral sense has already but little chance of development, where the child of 8 or 10 already knows far more than is good for the health of either body or mind, and though we may succeed in reducing the size of the family, yet the means we employ will militate against the raising of the moral tone of the household, and the children will not be any less precocious than before. Further, what results may we look for from the national point of view? A reduction in the birth rate? But how far is the birth rate to be reduced, and at whose command will the process—a downward process—come to an end?

The late Sir William Osler, speaking of syphilis, says: "Personal purity is the prophylaxis which we as physicians are especially bound to advocate. Continence may be a hard condition . . . but it can be borne, and it is our duty to urge this lesson upon young and old who seek our advice on matters sexual." Here, too, are we bound to take up a similar attitude. Morally it cannot be assailed, and it does not imperil our family and national existence as does the previous doctrine.

I have said that it is doubtful if the medical profession will ever speak with one voice on matters involving a moral issue, and herein lies our weakness. For we are all servants in one of the greatest "ministries" in the world—the real ministry of health. We see more, we know more of the strength and weakness of human nature than any other body of men, and we are constantly meeting questions of individual or social morality. This is where we suffer through having no settled doctrine—a great teaching ministry, we are "by schisms rent asunder," and each one of us preaches a doctrine according to his own personal beliefs. For as long as this state of affairs shall continue, for so long will mankind look to us in vain for that wise moral guidance which we have unique opportunities for imparting, and which is one of the crying needs of the present-day world.—I am, etc.,

August 9th. S. M. J.

EDUCATIONAL GRANTS FOR CHILDREN.

Sir,—The War Emergency Fund was founded in 1916 to assist medical men after their service abroad on their return to practice.

The committee has already expended £18,000 in grants; it still has ample funds in hand and is prepared to make liberal grants towards the cost of education and, if necessary, to pay the school fees of the sons or daughters of any medical man who, as the direct consequence of having held a commission in the army during the late war, finds himself unable to give as good an education to his children as he would otherwise have been able to do.

The committee is also prepared to consider applications for grants in such cases, in order to aid in education at the universities and the medical schools and in training for the professions.—I am, etc.,

G. Newton Pitt,
Hon. Secretary.

11, Chandos Street, London, W.1.
August 14th.

THE NEW DENTISTS ACT.

Sir,—Although the Dentists Act, 1921, has now received the Royal assent and has become law, it will not be possible for the new Dental Board to be constituted for some months and, until this is done, no registrations can be effected.

From inquiries I have received I think it is advisable to warn registered medical and dental practitioners that the position of unregistered persons practising dentistry is at present unchanged. Many of them no doubt will in due course be registered, but, until they are, the *Warning Notice* of the General Medical Council in regard to association with unregistered persons holds good.—I am, etc.,

Norman C. King,
Registrar.

General Medical Council,
44, Hallam Street, London, W.1.
August 10th.

Obituary.

COLONEL WILLIAM HENRY BULL, K.H.S., V.D., A.M.S.(T.F.Res.).

Colonel William Henry Bull died at Stony Stratford on August 14th. He was educated at St. George's Hospital, and took the diplomas of M.R.C.S. in 1874 and of L.R.C.P.Lond. in 1875; he took the F.R.C.S.Edin. in 1882. After filling the posts of house-surgeon and assistant surgical registrar at St. George's, he went into practice at Stony Stratford. He held the Volunteer Decoration, and on June 3rd, 1913, was appointed Honorary Surgeon to the King. He was a Knight of Grace of the Order of St. John of Jerusalem, and an honorary associate, lecturer, and examiner, St. John Ambulance Association. He was a member of the British Medical Association, and had been president of the South Midland Branch. He became a member of the Naval and Military Committee of the British Medical Association in October, 1913, and served thereon for several years. He was also a member of the Ministry of Pensions Sub-committee of the Medico-Political Committee for 1920–21. For many years he had been a member of the Bucks Territorial Force Association, and after the war was appointed County Director of the Bucks branch of the British Red Cross Society. His son, Lieutenant G. J. O. Bull, 2nd Field Company, East Lancashire R.E.(T.F.), was killed in the Dardanelles on July 8th, 1915.

Colonel P. Broome Giles, C.B., writes: With great regret I hear of the death of my very old friend, Colonel W. H. Bull of Stony Stratford. We were intimately associated in Volunteer medical reforms, and worked together down to his death without a single disagreement. Soon after beginning practice he took a commission as surgeon in the Bucks Volunteers, and worked hard to make the Volunteer Medical Service a reality. He passed through the various steps, and in 1890, when Volunteer brigades were formed, he raised the Bearer Company of his brigade, and its early completeness and efficiency was entirely due to his personality and energy. He attended a course of instruction and obtained his pass at the Volunteer Ambulance School of Instruction, and directly I was selected as commandant actively joined the school as an instructor. When in 1898 he became the S.M.O. of his brigade, he

became a vice-president and continued to hold that position until on the advent of the Territorial Force the school dissolved as the necessity for it ceased. During Colonel Bull's association with the Volunteer Ambulance School of Instruction some 768 medical officers and 12,000 N.C.O. and men obtained pass certificates. Between 1901 and 1908 Colonel Bull was honorary secretary of the S.M.O. Association which originated with the sole object of bringing volunteer medical officers together with the ultimate idea of welding the volunteer medical officers of yeomanry, engineers, artillery, and infantry into a corps similar to and co-ordinate with the R.A.M.C. Eventually we agreed on many points, and a deputation of myself, Bull, Raglan Thomas, and Andrew Clark, presented our case before Lord Raglan, the then Under Secretary of War to Mr. Brodrick (now Lord Midleton); eventually all our demands, except two, were granted. In 1912 Colonel Bull became A.D.M.S. to the South Midland Division and at the outbreak of the war worked hard. Later he was sent to Birmingham on recruiting work, and did splendidly till demobilized in 1919. In the county of Bucks, where his ingrained common sense and feeling for justice soon gave him a firm position, he was made a D.L. and J.P. As a Freemason he attained a very high position, and was in great demand at all important ceremonials. After the war he was appointed county director to the Bucks branch of the British Red Cross Society, an office in which his reputation as an organizer of military medical units and his knowledge of training St. John Ambulance served him well.

H. E. CUFF, O.B.E., M.D., F.R.C.S.,

Principal Medical Officer, Metropolitan Asylums Board.

We regret to announce the tragic death of Dr. Herbert Edmund Cuff, O.B.E., Principal Medical Officer to the Metropolitan Asylums Board, who was drowned while on holiday on August 16th. When bathing in a rough sea at Burnham Overy, Norfolk, Dr. Cuff's two young daughters, both of whom are said to have been good swimmers, got into difficulties, and Dr. Cuff, who was watching them from the beach, went to their rescue. All three were, however, carried away by a strong tidal current and drowned. Dr. Cuff, who was 57 years of age, was educated at Guy's Hospital, graduating M.B., B.S.Lond. in 1888, and M.D. in 1891; he took the diploma of F.R.C.S.Eng. in 1890. After having acted as house-physician at Guy's and as resident medical officer of the Leeds General Infirmary, he entered the service of the Metropolitan Asylums Board in 1893. He was appointed medical superintendent of the North-East Fever Hospital in 1897 and held the appointment for eight years, when he was attached to the staff at the head office, subsequently attaining the position of principal medical officer to the Board. During the war he was resident head of the Belgian Refugee Camp at Alexandra Palace; for this work he was awarded the O.B.E. He was the author of *Lectures on Medicine to Nurses*, part author of a work on practical nursing, and contributed to medical literature on the subject of infectious diseases. He is survived by his widow, with whom much sympathy has been expressed; she is the daughter of Dr. Philip Nunn, medical officer of health of Bournemouth.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Mr. F. J. W. Roughton, of Trinity College, has been elected to the Michael Foster Research Studentship in Physiology, value £200. The Raymond Horton Smith prize in medicine has been awarded to Dr. R. L. M. Wallis of Downing College.

UNIVERSITY OF ABERDEEN.

The late Miss Kate F. Grant, of Cullen, bequeathed the residue of her estate, amounting to over £2,000, to the University of Aberdeen for the purpose of founding bursaries in the Faculty of Medicine, to be called the Grant medical bursaries. The University Court, after consultation with the Senatus, will decide the amount and award of the bursaries, but preference will be given to candidates born in, or having a substantial personal connexion with, the parishes of Cullen or Huntly.

Medical News.

At a meeting of the Privy Council held at Buckingham Palace on August 10th the King approved an Order in Council providing for the official termination of the late war at midnight on August 31st, 1921. The Order is of general application, except in regard to the Ottoman Empire.

The Duke of Connaught opened, on August 13th, the nursing home which he has presented to Bagshot in memory of the late Duchess of Connaught and the Crown Princess of Sweden. The hospital, he said, was not a charity, but was intended to be of medical and surgical assistance to those who might unfortunately require it. The hospital, we understand, is open to any practitioner in the parish for the reception of his patients under his own care.

Sir St'Clair Thomson has had conferred on him the distinction of Chevalier de la Légion d'Honneur for services rendered in France with the Croix Rouge Française during the war.

A special post-graduate course will be held at the Prince of Wales's General Hospital, Tottenham, N.15, from September 26th to October 8th. It will include practical demonstrations on clinical and laboratory methods each morning, demonstrations on groups of selected cases, general hospital work, and a clinical lecture each afternoon. Lectures will be given, among others, by Mr. C. J. Bond, C.M.G., of Leicester, on "Latent infections"; Mr. James Berry, on "The diagnosis of thyroid swellings"; Colonel W. H. Harrison, on "The routine treatment of syphilis and tests of cure in gonorrhoea and syphilis"; Colonel Byam, O.B.E., on "The invalid from the tropics"; Dr. Arthur Giles, on "Sterility"; Mr. H. D. Gillies, on "Plastic surgery"; and Sir W. H. Willcox, on "Diabetes." Practical demonstrations will also be given in associated special hospitals. Luncheon will be obtainable in the neighbourhood and tea will be provided each day in the hospital. A syllabus will be issued in due course and further information may be obtained from the Dean.

The first travelling scholarship prize awarded by the People's League of Health has been won by Mrs. M. C. D. Walters, who during the war worked in the maternity hostels for Belgian women. Mrs. Walters will visit Brussels and other parts of Belgium, and make a report to the League. The prize is given in connexion with the Sims Woodhead health lectures, which will be resumed in October.

The Voluntary Hospitals Commission continue to receive numerous applications from individual hospitals, and to avoid misunderstanding they are anxious to make it known that grants will only be made on the recommendation in London of King Edward's Fund, or in the provinces of the local Voluntary Hospitals Committees. Steps are now being taken in co-operation with the county and county borough councils to establish these local committees, and any inquiry as to whether a committee has already been appointed for a particular area should be addressed to the Clerk to the County Council. Hospitals are asked to defer their applications until the local hospital committee has been appointed, and in no case should any hospital apply direct to the Commission.

The National Health Society has arranged for two training courses—the one for health visitors and infant welfare workers, and the other for the examination of the Sanitary Inspectors' Examination Board. The course for health visitors, which is recognized by the Board of Education, extends over two years, and includes theoretical work, practical training by full-time attendance at an infant welfare centre, and special training at a Poor Law infirmary, maternity hospital, infants' nursing home or similar institution. A course of practical instruction will be arranged at an ophthalmic hospital for the observation of cases of ophthalmia neonatorum. The full fee is £50. There is also a shorter course for both theoretical and practical training, arranged in regard to the previous knowledge and experience of students; the fee for this is £25. The fee for the course for the examination of the Sanitary Inspectors' Examination Board is £16 16s. Full particulars can be obtained on application to the Secretary of the society, 53, Berners Street, Oxford Street, London, W.1.

Dr. W. H. Pimblett has been elected chairman of the Preston Insurance Committee, and Dr. R. H. Wagner chairman of the Plymouth Insurance Committee. Dr. Pimblett is physician to the Royal Infirmary, Preston, and a medical officer to two of the union districts. Dr. Wagner is honorary secretary of the Local Medical Committee.

IT is expected that the Registrar-General's preliminary report of the Census giving the figures for counties, boroughs, urban and rural districts, and parliamentary areas will be published next week.

THE Great Northern Hospital has received from King Edward's Hospital Fund a grant of £1,550 for the new nurses' home and other extensions from the final distribution of surplus Red Cross Funds.

A CONFERENCE convened by the International Red Cross Committee and the League of Red Cross Societies met in Geneva on August 16th for the purpose of considering what steps should be taken to relieve the conditions in Russia due to the famine. One result of the famine will almost inevitably be the spread of disease, especially of cholera and typhus fever, and a consideration of this aspect of the question by the conference is of supreme importance. In this connexion it is of interest to learn that at a meeting of the Supreme Council, held in Paris on August 14th, Lord Curzon emphasized the necessity for taking steps to protect Europe against these diseases, and urged the nations to provide funds for the purpose. This country has hitherto found adequate protection in the activities of the port sanitary authorities, which are kept well informed by the Ministry of Health of the progress of epidemics in all parts of the world. They are thus made aware at any moment from what part of the globe a particular disease is to be expected, and can take appropriate preventive measures.

DR. ALEXANDER MCNAUGHTON, J.P., for forty years medical officer of Ardnamurchan, has, on the occasion of his retirement, been presented by the parish council with a silver rose bowl and wallet of Treasury notes in recognition of his services. Mrs. McNaughton was the recipient of a gold wristlet watch.

PROFESSOR WIDAL has been appointed Grand Officer of the Legion of Honour.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN ORDER to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London:* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

TREATMENT OF ASTHMA.

DR. W. J. MIDELTON (Bournemouth) writes, in connexion with Dr. Collins's letter on asthma in the BRITISH MEDICAL JOURNAL, August 6th, 1921: A short time ago a young laundress consulted me, accompanied by her mother. Both asserted that she had not drawn a comfortable breath, night or day, for fourteen years. I applied the galvano-cautery to the back of her neck, six small "dots." That night she slept well, and, by continuing the treatment, I have cured her asthma.

BRONZE POWDERS.

INDUSTRY.—The bronze powders used in printing and lithographic establishments contain copper and zinc with occasionally a minute trace of arsenic. Bronzing is now largely done by machinery, and is therefore not nearly so dusty a process as it was. The dust, being extremely light, floats in the atmosphere of the workroom and becomes entangled in the hair and folds of the clothing of the girls employed. It is apt, if it remains upon the skin, to cause considerable itching. When inhaled it causes respiratory catarrh, and when swallowed dyspepsia followed by anaemia.

LETTERS, NOTES, ETC.

RELATION OF ANKYLOSTOMIASIS TO MALARIA.

DR. D. BRIDGES calls attention to two mistakes in the report of his paper on this subject read at a meeting of the Malaya Branch, and published in the JOURNAL of July 30th (p. 149). The errors occur in the treatment with oil of chenopodium. This should be preceded by sodium bicarbonate and sodium sulphate, ½ drachm of each—not 1 drachm as in the case of the beta-naphthol treatment; also, the 2 c.cm. of oil of chenopodium should be given with 1½ oz. of castor oil—not 1 oz. This Dr. Bridges considers important, as the chenopodium must be well mixed in a large quantity of oil, for chenopodium, if not well diluted, often sets up chronic enteritis, and might cause extreme collapse or even death.

VACCINATION TREATED LOCALLY WITH CASTOR OIL.

DR. E. H. MYLES (Chichester) writes: Lately all cases of vaccination or revaccination showing excessive local reaction are treated as follows with the most satisfactory results. Take some cotton-wool and dab over the whole inflamed area with castor oil. Cover it with a square of boric lint, pinned in position. Put the arm in a sling, excuse the patient all duties, and direct him to attend daily for the same treatment. The lint should be large enough to enfold the arm loosely. The opposite (diagonally) corners are fastened inside the arm with a safety-pin. The upper corner is similarly fastened to the inside of the shirt or vest, but near the shoulder; the lower corner lies loose. This is not a lightning cure, but from the very first application all untoward symptoms are checked, the inflammation begins to subside, and continues to do so.

A FLY TRAP.

WE have lately seen a specimen of an ingenious fly trap, which we understand has been favourably reported on by a number of medical officers of health both in this country and in the United States. It is simpler in construction than the Japanese fly trap described by Captain Gilchrist in our issue of January 5th, 1918 (p. 40), about which we had many inquiries. It appeared, however, that the Japanese revolving wooden drum fly-trap was not manufactured in this country and could not be procured except in the Far East.

The "Curry" fly and wasp trap consists essentially of a gable-shaped metal framework, the upper part being covered with wire gauze. The galvanized iron base has a dark chamber with a slit at the top to admit light. An attractive bait, such as fish heads or sweetened vinegar, is placed in a pan set under the trap. When it leaves the bait the fly is attracted by the line of light, and entering the trap is caught. The apparatus is easily set up and appears strong and durable; it folds up flat for packing.

The trap is simple, and we are informed that it is very effective. The sample we saw contained thousands of dead flies, said to have been caught on the previous hot day in a private garden near a municipal rubbish heap. The size at the base is fourteen inches square, and the height to the top of the gable is about the same. The American Government, it is stated, bought 100,000 of the traps in 1918. It is sold in this country by Mr. W. Burton (160, Brondesbury Park, London, N.W. 2) at the price of 12s. 6d. post free in Great Britain.

A CORRECTION.

IN referring to the annual report of the James Murray's Royal Asylum, Perth, last week (p. 257), Dr. D. Maxwell Ross was erroneously referred to as the physician-superintendent, instead of Dr. W. D. Chambers; Dr. Ross resigned the post last year and unhappily died shortly afterwards.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 32, 33, 34, and 35 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30 and 31.

THE appointments of certifying factory surgeons at Dunkeld (Perth) and Somercotes (Lincoln) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF UROLOGY.

J. W. Thomson Walker, O.B.E., F.R.C.S., President.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF CYSTITIS.

OPENING PAPERS.

I.—J. F. Dobson, M.S., F.R.C.S.,

Honorary Surgeon, Leeds General Infirmary.

Among chronic disabling disorders, the various conditions which are commonly labelled "cystitis" cause a great deal of misery and suffering. All medical men are familiar with these cases, all surgeons interested in urinary surgery see large numbers of them. We are all familiar with the patient, man or woman, who has undergone treatment for years, who has tried every known and official as well as the unknown and unofficial drugs which from time to time are lauded as specifics; who has had vaccines, usually more than one, sometimes autogenous, sometimes the blunderbuss production of the drug purveyor; who has had bladder washings, catheterizations, soundings, dilatations, etc., without benefit. Surgical operations of the most varied kind have been done; ventrofixation, oöphorectomy, and appendicectomy are chiefly in favour.

What is the reason for the popularity of all of these different methods of treatment? It is this: that many of the infective conditions of the urinary tract designated as cystitis are prone to spontaneous recovery, some are amenable entirely to drug treatment without any accurate diagnosis being made, and so it can easily be understood that many drugs and many methods are from time to time credited with results to which they are not entitled.

Inaccurate and imperfect diagnosis is at the root of the present unsatisfactory position in regard to these cases. They are very numerous, rarely do acute complications bring home to the patient or the practitioner the seriousness of the condition and the need for the most complete investigation. The reason for these difficulties is perhaps to be found in the teaching and upbringing of the medical student in regard to urinary diseases.

In the first place we have to get rid of the idea that we shall at all commonly meet with cases of the following type: the patient who has had repeated attacks of frequency, urgency, and perhaps incontinence, with turbid urine containing pus, etc., and who, after a short course of treatment with drugs, with perhaps vaccines and bladder lavage, recovers completely. We must regard any chronic case presenting symptoms of "cystitis" as a case requiring the closest and most accurate investigation by all the methods at our disposal.

The subject is difficult to approach, as so many and varied conditions may be considered under the label of cystitis. In comparatively few of the cases so labelled is the disease process limited to the bladder or has its origin in the bladder. It is better to drop entirely the term cystitis and to speak of infective conditions of the urinary tract. In this way we should no longer be content to confine our investigations and treatment to the bladder alone.

In investigating these cases it must first be determined as an actual fact that there is an infection of the urinary tract. There are many examples of patients suffering from frequency of micturition and other symptoms which are attributed to cystitis when the urine contains no trace of pus or organisms. Whatever the cause of the symptoms such cases must not be confused with true urinary infections; treatment on different lines is required. One of the first essentials, therefore, is to determine whether organisms are present in the urine.

These cases of what may be called false cystitis are to be attributed in some instances to chemical alterations in the urine; one sees patients who complain of frequency of micturition, but on examination of the urine no abnormality is found except high colour, high specific gravity, and strongly acid reaction, and on microscopic examination epithelial cells and perhaps oxalic acid crystals. They can usually be relieved entirely by taking water in quantities, with alkalies. In other cases we may find that, while there is no infection of the urinary tract, there is, for instance, a calculus in the kidney or ureter, or perhaps a tumour pressing on the bladder. An irreducible hernia may give rise to bladder irritability, particularly if a portion of the bladder is involved in the sac. Numerous other examples might be given.

Diagnosis.

Examination of the urine is the first essential; a preliminary examination of the urine as passed will be the first step. Then a catheter specimen must be obtained. A large proportion of catheter specimens show, on bacteriological examination, evidence of contamination. This is difficult to avoid altogether, but it can generally be done, though rarely by a nurse. It is better for the practitioner to do this himself. If possible the catheter should be handled only with sterile forceps; preliminary washing out of the urethra with sterile water is advantageous, and, in addition to disinfection of the meatus and the surrounding parts, it is advisable, in the female particularly, to pack all around the orifice with sterile gauze before the catheter is inserted. After the catheter is passed the urine is collected into a sterile vessel, and it is better to retain the last portion withdrawn than the first. It is extremely important that the bacteriological examination should be done as soon as possible. A more accurate finding is likely than if there is any delay. In obtaining this specimen we at the same time ascertain whether the patient has a stricture. In addition to the bacteriological investigation, such points as the presence of fragments of tumour, cells, blood, pus, etc., reaction and specific gravity, are, of course, obtained.

Rectal Examination.—Having obtained the result of the bacteriological examination of the urine we are in a position to proceed further with the investigation. The next stage is a rectal examination in the male and a rectal and vaginal examination in the female. In the male the prostate must be examined, and any adenomatous or malignant enlargement will be detected. The presence of a subacute or chronic prostatitis or prostatic abscess will be determined by massage of the prostate and microscopic examination of the fluid expressed. Any enlargement or tenderness of the seminal vesicles will be noted. Growth, fissure, fistula, haemorrhoids, etc., will be excluded. In the female rectal examination will exclude the ordinary rectal diseases. Vaginal and combined examination will detect uterine enlargements and displacements, adnexal enlargements, etc. In addition to the more obvious disorders the presence of a slight degree of cystocele must be particularly noted. The urinary meatus must be examined and the presence or absence of pus in the urethra noted.

Abdominal Examination.—We shall search for distension of the bladder, tenderness on suprapubic pressure, abdominal tumours, tenderness over the appendix, appendix abscess, faecal accumulation, etc. The kidneys will require special examination for prolapse, tenderness, enlargement, etc.

We may now be in a position to make an approximately correct diagnosis. We may, for instance, be able to say: "This patient is suffering from cancer of the rectum invading the bladder"; or perhaps, "This patient is suffering from a uterine fibroid causing bladder retention and cystitis"; or we may find, for instance, that a patient has a cystocele with uterine prolapse, faecal accumulation in the colon, and a prolapsed and tender right kidney; or we may find nothing. The indications for surgical treatment may be sufficiently obvious—for example, for hysterectomy; but it must here be noted that the treatment of a urinary infection associated with a uterine fibroid does not consist merely in removing the fibroid; the urinary infection itself may persist after the operation and require further investigation and treatment. Similarly, it is of little avail to correct a uterine prolapse with cystocele, and to ignore the presence of faecal accumulation, or a prolapsed and infected kidney.

X-Ray Examination.

Having found nothing, or having found some abnormality which does not sufficiently explain the urinary infection, or feeling, as one should feel, that before deciding on the treatment of the accessory factor or factors we should first make as complete an investigation as possible, what should be the next step? An *x*-ray examination of the whole urinary tract to exclude calculus. On one occasion I removed a vesical calculus from an unfortunate patient who had undergone no fewer than five courses of vaccine treatment.

Cystoscopy.

Our next step should be a cystoscopic examination, preceded or not, in the male, by a urethroscopic examination if considered necessary. This is an important, perhaps the most important, part of the investigation. The first step is to ascertain the presence of residual urine. We may find at once on introducing the cystoscope the explanation of the patient's symptoms—calculus, tumour, enlarged prostate, foreign bodies, ulceration of the bladder, tuberculosis, etc. Changes in the ureter orifices will be noted. But we may find nothing in the bladder; ureteral catheterization, collection of urine from both kidneys, its complete examination, including culture, will then be carried out. In certain cases a pyelogram will be necessary to determine the presence of renal pelvic retention. The evidence of definite renal disease being obtained, further investigation into the functional capacity of the kidneys, the amount of blood, urea-nitrogen, etc., will then be necessary.

The examination should not be considered complete until the general condition of the patient has been most completely considered; the presence of pyorrhoea, chronic follicular tonsillitis, middle-ear disease, and other sources of chronic infection must be considered.

But it may be objected: this is a very elaborate, expensive, and trying investigation to carry out on a patient who may be completely cured by a few weeks in bed, by suitable diet, the ingestion of large quantities of water and alkalies, with perhaps urinary antiseptics and sedatives. This is a very reasonable objection, but it may be urged that if the patient is not cured by treatment on these lines it is wiser to carry out the investigation than to ring the changes on other urinary antiseptics or to fly to vaccines.

We have now reached the stage where a complete and accurate diagnosis should be possible and correct treatment can be carried out.

TREATMENT.

There will be many cases in which the urinary infection is so obviously secondary to a definite lesion of the urinary tract or some neighbouring organ that the active treatment of the infective process is secondary in importance to that of the principal disease. We need not here concern ourselves with these cases, merely observing that the importance of supplementary treatment directed to the infection must not be lost sight of.

The Treatment of Acute Infection of the Urinary Tract.

In the majority of these very acute cases, whether due to infection from without or not, any very active surgical treatment is rarely required. As a rule instrumental interference is unwise, and cystoscopic examination should generally be deferred. This particularly applies to those cases of acute infection arising in the kidney and not associated with gross organic disease. Further, in the majority of cases in which acute infection has arisen from without, either in the form of an ascending infection or as a result of instrumentation, the most acute stage of the disease should be allowed to pass before active surgical treatment is begun. We still rely mostly on abundant drinks, alkalies, sedatives, and the various urinary antiseptics.

But there do arise occasionally cases of acute infection most pronounced in the bladder, associated or not with other diseased conditions, in which drainage of the bladder is imperatively necessary.

Sometimes the intensity of the infective process may lead to actual necrosis of the bladder mucosa and perforation and pericystitis may be met with. The urgent need in such cases is for drainage and antiseptic instillations into the bladder. The route usually favoured for drainage in such cases is the perineal unless there are indications to the contrary, it being supposed that better drainage is obtained in this way. It is, by the way, quite futile to attempt to drain such a case as we are considering by the in-dwelling catheter. Perineal drainage is, I am convinced, a mistake and should be abandoned. The perineal wound cannot be kept clean; it encourages a secondary infection of the bladder and is inconvenient for antiseptic treatment of the bladder; further, it is quite doubtful whether it drains the bladder any better than a suprapubic wound. I prefer to treat such a case with a medium-sized suprapubic drain and with bladder instillations of eusol through Carrel tubes. When the acute stage of the disease is passed and the infection has been in part controlled then the investigation of the case may proceed. The suprapubic drain has one disadvantage—it is very difficult sometimes to conduct a satisfactory cystoscopy with catheterization of the ureters until the drainage aperture is almost closed.

The Value of the Urinary Antiseptic.

The control of infection of the urinary tract by the administration of drugs by the mouth has afforded scope for much experimental investigation; it is a peculiarly fascinating subject for study on account of the ability of the kidney to select definite chemical substances from the blood stream and excrete these substances in the urine. We can control infective processes in wounds by the regular instillation of antiseptic solutions over the whole surface of the wound; we should be able to control infective processes in the urinary tract by causing antiseptic substances to appear in the urine and thus come into contact with all parts of the urinary tract. But the conditions are not quite the same: in the first place a wound heals if during the process of healing infective processes are kept under control, and when the wound is healed further infections are not common. We also possess antiseptic substances which we know are capable of controlling most of the wound infections. The urinary tract remains open to reinfection by whatever route, and we do not as yet possess any drug which on oral administration will cause to appear in the urine an antiseptic substance capable with any certainty of controlling any infective process going on in the urinary tract. Also a wound will not heal if there is inefficient drainage, or foreign bodies or dead tissues are present; an infective process in the urinary tract cannot similarly be controlled in the presence of retention, stone, tumour, tubercle, or other accessory cause. As Davis says: "The most enthusiastic advocate of drug therapy could not expect therapeutic results until all the underlying causes of persistent infection have been excluded by accurate diagnosis and eliminated by surgical measures when indicated." No conceivable drug could be expected to cure the cystitis resulting from carcinoma or stone or prostatic retention.

We have therefore to search for the antiseptic substance which when excreted in the urine will prevent infection—for example, when catheterization is necessary—or will control an infection, the accessory causes being first removed. We possess at present a number of drugs which are of some use. Urotropine is the one in most common use. Against its occasional successes are to be placed innumerable failures. It develops formalin in acid urine and undoubtedly has some antiseptic effect; but it has definite limitations; it is inactive unless the urine is acid, and it not infrequently causes haematuria. Salol, boric acid, ammonium benzoate, are also urinary antiseptics in frequent use. According to Keyes urotropine is the only antiseptic of value, and it is chiefly of use as a prophylactic.

Davis says: "The compound ideally accepted for the purpose of internal urinary antisepsis should be chemically stable and relatively non-toxic and non-irritating; it should be antiseptic on high dilution in urine of any reaction, and should be eliminated unchanged in high percentage by the kidney." Clinically there is no such drug known. Davis has carried out a long, elaborate, and most valuable series of experiments on various aniline dyes as urinary antiseptics; his investigations on proflavine and acriflavine are most promising. However, the ideal urinary antiseptic has still to be found.

Bladder Lavage by Catheter.

The first thing to say about bladder lavage is that it is not much use washing out the bladder with weak antiseptics if you at the same time reinfect it. It is clear also that the introduction of antiseptics into the bladder will not have much effect on a renal infection of haematogenous origin, nor will it have much effect on cystitis due to calculus or tuberculosis of the bladder; that is to say, it is no use instituting bladder lavage in any case until one has ascertained all there is to ascertain about the infective process. Bladder lavage is of little avail as a prophylactic—witness the disastrous effects of washing out the bladder in cases of spinal injury. It is chiefly of value as a preliminary to the surgical treatment of enlarged prostate, stricture, tumour, calculus, etc.; here the action is probably largely mechanical—to clear up residual infections which are recovering spontaneously or under medical treatment, and in the after-treatment of cases of urinary infection treated by various operative procedures, such as prostatectomy, removal of bladder tumours, etc. As an auxiliary to renal lavage it is of great value in the treatment of pyelitis and cystitis.

A large number of solutions are in common use; boracic acid and potassium permanganate I believe to be quite useless; mercurial solutions are painful. Silver nitrate I believe to be the best; a weak solution, 1 in 20,000, should first be employed, which may be gradually increased in strength. I employ eusol as an accessory to suprapubic drainage for cystitis, and believe it to be of very great value in controlling the infection in cases of enlarged prostate; I have rarely used it with the catheter, it is too painful.

Vaccine Therapy.

A recently published textbook on surgery (Gask and Wilson) states without equivocation that vaccines are entirely useless in the treatment of cystitis. I am in complete agreement with this statement. During the wave of enthusiasm for vaccine treatment it was quite common to see patients under treatment by vaccines who were suffering from very obvious disorders requiring surgical treatment. The best advice that can be given in this connexion is: if you must have a vaccine, have it prepared by a bacteriologist who is sceptical as to the value of vaccine therapy.

Pyelitis and Cystitis.

In the great majority of cases where no definite primary or accessory organic disease is found to explain the presence of a urinary infection, ureteral catheterization will reveal the presence of bacteria and pus, in greater or less quantity, in the specimens obtained from one or both kidneys. Renal infections of this kind are by some observers regarded as being almost always of haematogenous origin. This is no doubt very frequently the case, but it does not appear to be the invariable rule. Acute infections of this kind generally recover completely on the simplest treatment, fluid and alkalies, but the chronic and relapsing cases are most rebellious to treatment of every kind. Fortunately there is a very definite tendency to spontaneous recovery in time, particularly when the general health of the patient receives adequate attention, and when all possible causes of chronic toxaemia are dealt with.

Renal Lavage.

Of recent years lavage of the pelvis of the kidney for chronic pyelitis and cystitis has been practised with some frequency. The antiseptic in common use is collargol, which is used in 5 to 20 per cent. solution. It is introduced into the pelvis through the ureter catheter under a low pressure and should not cause pain. It has been demonstrated clearly that the collargol permeates the whole kidney, even appearing in the peri-renal fat. With care no harm can be done and in many cases the results are most satisfactory; even after one injection the urine may be cleared of organisms and the symptoms entirely relieved; a second or third injection may be necessary. It is most important that any contributory source of infection, such as a chronic prostatitis, must be attended to, as Kidd has pointed out. We require much more information as to the value of this method of treatment and of the permanence of the results. Unfortunately it appears that recurrence is not uncommon. The discovery of the ideal internal urinary antiseptic would appear to be a more profitable line of research.

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II.—ALFRED PARKIN, M.D.Durh., M.R.C.P.Lond., F.R.C.S.Eng.,

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THERE is no branch of his work in which the general physician is more dependent on the help of the specialist than in connexion with genito-urinary cases. For accurate diagnosis the aid of the expert in the use of the cystoscope and ureteral catheter, and of the bacteriologist, is essential. Patients present themselves with pyuria and haematuria, and with symptoms of varying character and severity, associated with the urinary organs. From an examination of the urine by ordinary clinical methods, and from consideration of the symptoms, an opinion may be formed as to the site of the disease and of its nature; but without the help of the exact instrumental methods of examination as employed by the genito-urinary surgeon, and of an accurate bacteriological examination of the urine, a reliable diagnosis cannot be made with certainty. Besides these cases in which the symptoms complained of are directly associated with the urinary organs, other cases come under the notice of the physician on account of more remote symptoms of uraemic origin arising from pyelonephritis secondary to cystitis and pyelitis.

It is not even easy to determine whether an infection is situated in the bladder or the kidney from the symptoms or urine examination without the use of the cystoscope. One has been accustomed to assume that frequency of micturition, with pain at the end of micturition, in a case of pyuria, were diagnostic of disease in the bladder, but it has been shown that these symptoms may exist with pyelitis alone. Primary cystitis is apparently an uncommon disease except as a result of infection of the bladder by the passage of instruments. It is therefore difficult in a discussion on cystitis to avoid reference to diseases of the kidney and prostate, to which cystitis is often secondary.

As a matter of every-day practice one meets with cases in which nephritis is diagnosed because there is albumin in the urine, but in which a more careful examination of the urine shows that the albumin tests are really given by pus present in the urine, and that the case is surgical rather than medical. It is not a difficult matter in such cases to examine a drop of the urine under the microscope, and so recognize pus on the one hand or renal casts on the other, but the neglect of this simple method is, in my experience, not an uncommon source of error. In the female a catheter specimen is, of course, necessary for examination for pus or blood, and even for albumin in a doubtful case. For bacteriological examination, in both sexes, a catheter specimen is desirable; but in the male a reliable specimen may be obtained by having the urine passed in two portions into separate vessels with rejection of the first portion. Conclusions are often drawn from specimens of urine obtained without proper precautions, and are very misleading, especially concerning the *Bacillus coli*.

There are certain cases of chronic nephritis which are apt to be confused with surgical conditions of the bladder and kidney owing to the occurrence of periodic attacks of haematuria. The absence of oedema and of albuminuria between the attacks of bleeding in these cases, which are of the "granular kidney" type, adds to the possibility of error. I have seen such cases cystoscoped and even submitted to operation. Careful examination of the cardio-vascular system, and of the urine for casts, is generally sufficient to clear up the diagnosis. On the other hand, I suspect that there are cases of albuminuria, apart from haematuria or pyuria, treated by physicians as cases of nephritis, in which the albuminuria originates from some surgical condition of the kidney or bladder. In doubtful cases we ought, perhaps, to avail ourselves more freely of the special instrumental methods of examination.

Some acute cases of *Bacillus coli* pyelitis with much blood in the urine resemble acute nephritis closely; but the association of a high temperature and the presence of pus in the urine on microscopic examination serve to make the distinction even without bacteriological examination. The striking response to treatment by potassium citrate in

such cases also helps to differentiate them from cases of nephritis.

Other cases of *Bacillus coli* infection begin with symptoms which are markedly referred to the bladder—frequency and pain, with pyuria, and a little blood at the end of micturition. These cases one has been accustomed to regard as being essentially bladder cases, but it may be that the infection is primarily in the kidney. For precise information on this point we are dependent on examination by the genito-urinary specialist. The *Bacillus coli* infections of young children, often with great constitutional disturbance, are frequently missed for want of an examination of the urine for pus. The difficulty of obtaining the urine is often allowed to stand in the way, but can easily be overcome if the importance of having a specimen is realized.

As regards the treatment of *Bacillus coli* infections, this is generally most satisfactory in the acute stages, for the acute symptoms and temperature readily subside when the urine is rendered alkaline. But in some cases the pyuria persists, and it is in these cases that the treatment becomes difficult. In the course of the discussion one hopes to hear considered the indications for vaccine treatment, and for direct surgical treatment such as lavage of the pelvis of the kidney.

The exact mode of infection of the urinary tract by the *Bacillus coli* is still the subject of controversy. Some hold that the infection is an ascending one by way of the urethra to the bladder, and the more frequent occurrence of the disease in female infants is mentioned in support of this view. Others favour the direct transmission of the infection to the urinary tract from the neighbouring colon. In spite of the attractive simplicity of these theories it seems to me that bacterial infection of the kidney through the blood stream is the more scientific explanation.

Cystitis is of frequent occurrence as a complication in cases of spinal paralysis following acute myelitis, tuberculous spine, locomotor ataxia, and other diseases of the spinal cord. It appears to be a direct result of catheterization for retention of urine, and ordinary precautions as to asepsis fail to prevent its development. Routine methods of washing out the bladder with boric lotion are not very effective in curing the cystitis, and we seem in need of further guidance in dealing with such cases. The discovery of the tubercle bacillus in the urine of certain cases of cystitis carries the diagnosis a step forward, but cystoscopic examination and catheterization of the ureters are necessary for the accurate localization of the disease.

In the diagnosis of cystitis the part played by the ordinary medical clinical methods is therefore limited. The physician can recognize the presence of haematuria and pyuria, and by attention to the history of pain and other symptoms he can separate the surgical cases from the purely medical cases of nephritis. By careful examination of the urine as to its reaction, the amount of blood or pus, and their state of admixture with the urine, he may form a fairly reliable opinion as to the seat and nature of the disease. The discovery of a palpable mass in the kidney, prostate, or epididymis, may further guide him as to diagnosis. But after all these methods have been exhausted, he will be wise to avail himself of the assistance of the bacteriologist, of the radiologist, and of the surgeon skilled in the use of the cystoscope.

DISCUSSION.

Mr. J. Swift Joly (Senior Assistant Surgeon, St. Peter's Hospital, and Surgeon, London Lock Hospital) pointed out that formerly urologists were content to speak of tuberculous infections of the genito-urinary tract under the heading of the organ which gave rise to the most obvious symptoms, and the terms "tuberculous disease of the kidney," "tuberculous cystitis," etc., were in common use. Recently these infections were considered as a whole, irrespective of the extent of the infection or the number of organs involved, and the terms "urinary tuberculosis" and "genital tuberculosis" were almost universally substituted for the older nomenclature. He thought that non-tuberculous infections of the urinary tract should be treated in a similar manner, and the use of the terms "cystitis" and "pyelitis" should be restricted, as (especially in the case of the bladder) it was very seldom that one organ alone was involved. He distinguished two types of urinary infection, the ascending and the descending. The former was frequently met with in cases of urinary obstruction, stricture, enlargement of the prostate, etc., and in cases of spinal disease; but apart from these conditions it was comparatively rare. The descending or haematogenous infection, on the other hand, was very common. This, of course, presupposed some other source of infection in the economy, which should be dealt with first, as it was obvious that it would be impossible to cure the urinary infection if the prime source from which the micro-organisms were derived was left untouched. In ascending infections the most common site of infection was the prostate, but in obstruction the infection might reach the kidneys, and this renal infection might persist long after the obstruction had been dealt with. This condition had frequently been observed in cases of enlargement of the prostate. If the symptoms of cystitis persisted for a considerable time after removal of the gland, the infection was almost always renal. Therefore it appeared that the treatment of chronic cystitis, apart from cases where the bladder was infected by a dirty instrument, resolved itself into the treatment of a renal infection. There were four methods of dealing with these renal infections—urinary antiseptics, lavage of the renal pelvis, vaccines, and forced fluids.

Urinary antiseptics gave results which, as a rule, were disappointing, except in the more acute cases. Hexamine was most useful when used as a prophylactic against infection, but once the infection had become established it did not seem to be sufficiently powerful to kill the organisms.

Lavage of the renal pelvis, when first introduced, would, it was thought, provide a therapeutic agent that would rob renal infection of all its terrors, but, in the speaker's hands at all events, it had proved very disappointing. It was possible to diminish the intensity of the infection by this means, but, although the patient's condition might improve and the pus in his urine become almost infinitesimal, a "bacteriological" cure was never effected, and the old condition of infection returned soon after the treatment had been stopped.

Vaccine treatment also gave disappointing results. This might be due to the fact that many of the so-called *Bacillus coli* infections were really due to some other organism—a streptococcus or staphylococcus—and that the *B. coli* was really only a secondary infection. However, it might grow so luxuriantly that it killed off the primary organism when cultures were made from the urine. Until more attention had been given to this point, it was useless to hope for good results from this line of treatment.

Forced fluids had, he thought, proved one of the most efficacious methods of dealing with a renal infection. The patient should be encouraged to drink as much as possible, and a diuresis of at least 100 oz. of urine a day should be maintained until the urine was clear. The amount of fluid might then be diminished gradually. This treatment, of course, had obvious limitations, as, for example, in cases of parenchymatous nephritis, or of unrelieved urinary obstruction.

Mr. Andrew Fullerton, C.B., C.M.G. (Lecturer on Surgery, Queen's University, Belfast), said that in the out-patient department of a general hospital the number of cases of cystitis was so great that expert examination by a urologist of all cases was impossible. It was, however, fortunate that the large majority of these cases were cured by bladder lavage. Those that did not respond to this form of treatment could be subjected to expert examination by cystoscopy, ureteral catheterization, etc. An important point to determine was whether the cystitis was a primary condition or whether the kidney was infected. The latter condition was found to be more frequent than was formerly suspected. The analogy with tubercle of the bladder was obvious. Surgeons did not now speak of tuberculous "cystitis" because tubercle of the bladder was almost invariably secondary to a renal lesion. He had been greatly disappointed with the results of vaccines and urinary antiseptics. In acute cases instrumentation was not advisable. In more chronic cases excellent results were obtained by washing out the bladder with potassium permanganate, mercury oxycyanide, or silver nitrate. The last was, in his opinion, the best agent, especially when the more acute symptoms had passed off.

Mr. H. N. Fletcher (Assistant Surgeon, Sussex County Hospital, Brighton) said that in a discussion on cystitis considered from the point of view of the general practitioner it was of prime importance to define exactly what the general practitioner should do when confronted with a case of urinary infection. He was very doubtful whether the first step should be, as the previous speaker had suggested, to adopt bladder lavage. One of the first steps taken should be to obtain a catheter specimen. This would decide at the same time whether a stricture were present or not. In his opinion, vaccines (and especially *B. coli* vaccines) were generally administered in too strong doses.

Mr. Kenneth Walker (Surgeon, Miller General Hospital, London) heartily agreed that the term cystitis was misleading, and that the analogy with tuberculous infections of the urinary tract was very close. Surgeons had come to realize how frequently the renal pelvis was affected in these cases, but he doubted whether due recognition had been accorded to the prostate as a source of trouble. Many cases of recurrent infection of the urinary tract were due to a persistent focus in the prostate. For this reason one of the most vital points in the examination of the patient was an investigation of the prostate. Not only must it be palpated from the rectum, but it must be massaged, and a careful examination of the prostatic fluid made for the presence of organisms and pus cells. The route along which infection of the urinary tract took place was a matter of great interest. Much discussion had centred around the question whether the infection was descending, ascending, or direct from the bowel. In his opinion all three methods of infection were possible, although a descending infection from the blood stream was probably the commonest. He had come across an extremely interesting example of direct infection from the bowel while working with animals. In order to anaesthetize a rabbit he had employed a rectal injection of urethane. The rabbit developed severe colitis and proctitis owing to the urethane having been given in too concentrated solution, and was consequently killed twenty-four hours after the anaesthetic. Sections of the bladder revealed the presence of enormous numbers of coliform bacilli in its walls. Infection had apparently taken place directly from the bowel and along the lymphatic channels. There was one point in connexion with pelvic lavage that deserved special emphasis. Mr. Dobson had mentioned the fact that collargol was frequently found in the perinephric fat after it had been used for renal lavage, and had rather implied that this was a normal event, and one that need not excite anxiety. He (Mr. Kenneth Walker) wished to say most emphatically that such a phenomenon was an abnormal and dangerous event. The investigations carried out by Eisendrath and others at the time that collargol first came into use for pyelography had conclusively shown that when injected above a certain pressure collargol burst through the renal pelvis and travelled along the intertubular planes. It might even invade the capillary walls and be carried away in the blood stream to form small collargol infarcts in the liver, lungs, or spleen. For this reason collargol must be injected with great care and the gravity method employed rather than the syringe. Renal lavage was a valuable method of treatment, but unless carried out with great gentleness it might result in more harm than good.

Mr. F. K. Smith (Surgeon, Royal Infirmary, Aberdeen) divided cases of cystitis into two classes—acute and chronic; the great majority of cases began acutely. If the general practitioner were consulted, it was found that many cases of acute cystitis got quite well and did not recur, under ordinary general treatment—such as rest in bed, purgatives, alkalis, diuretics, colon lavage, and even morphine or nepenthe. Those cases that did not recover completely in a reasonable time—say two to three weeks—ought then to be completely investigated, not only by special urological methods, but also by a complete general examination. Teeth, tonsils, gall bladder, pelvic organs, appendix, colon, and rectum, should all be passed under review. Urinary infections were often secondary; in fact they might be said to be always secondary, whether the infection were haematogenous by the lymphatics or by contiguity. Very often treatment of the primary focus, even when outside the urinary tract, was sufficient to bring about a cure. In chronic cases antiseptics and vaccines had a slight amount of value.

Mr. Sydney MacDonald (Surgeon, Genito-Urinary Department, West London Hospital) said that the point of view of the specialist was so different from that of the general practitioner that it was difficult for him to approach cystitis from the latter's standpoint. There was so much tendency for general practitioners to look upon what the specialist regarded as a symptom, as a disease—for example, the terms cystitis, haematuria, albuminuria, covered a multitude of sins, and there was a tendency to accept albuminuria as a diagnosis. By proceeding no further in investigation pyuria might be missed, as happened in the case of a boy who had recently come under his care with advanced urinary tuberculosis. The outlook of the various speakers had shown a great advance in the attitude towards urinary infections. Formerly discussions had centred round the question whether infections were ascending or descending infections; now the idea of haemic infection from some intestinal focus was generally accepted. He considered that Mr. Dobson's statements with regard to vaccines were too sweeping. The types of case in which vaccines were of assistance were (1) cases starting acutely and afterwards "hanging fire"; (2) cases of persistent bacilluria or chronic *coli* infections suffering from frequent exacerbations. Mr. Joly had gone into the subject of primary and secondary infections, but further intestinal investigations were needed. Possibly the *Bacillus coli* was only at fault accidentally. It might be that some other organism was producing the intestinal fault and thus allowing migration of the *B. coli*. It was along such lines as these that future work should be directed. Possibly we should soon be treating infections with *B. coli* with, say, streptococcal vaccines. The failure of urinary antiseptics emphasized by several speakers was due to the fact that ordinary doses were too small and that none was given at night. A large nightcap dose should be given in addition to the daily dosage. Lavage of the renal pelvis had in his hands shown disappointing results. Statistics on this score were misleading: if *all* cases were subjected to this method of treatment the percentage of cures would be high; if only the cases that "hang fire" had the kidney pelvis washed the percentage of cures would be small—in fact, it was doubtful whether a "bacteriological" cure was ever attained.

Mr. Angus Martin (North Shields) laid stress on the importance of carrying out a systematic examination of all organs and of eliminating such a focus of infection as a chronic appendix or a loaded colon. He cited a case of acute cystitis in which a very tender appendix was discovered. Appendicectomy was performed, and within a week the acute cystitis cleared up. Many a case of cystitis treated by vaccines had not improved until lavage had been carried out. No instrumention of urethra or bladder should be carried out without a preliminary washing out of either the urethra or bladder, or both.

The President of the Section (Mr. Thomson Walker), in closing the discussion, said that he would only deal with a few of the important points that had been raised. Complete examination of the patient was the basis on which all successful treatment must be founded. In the background of a large proportion of cases of urinary infection there was a primary focus of infection that remained untouched by treatment of the urinary tract. Investigation would show such conditions as chronic colitis, intestinal stasis, piles, or appendicitis, which might be sources of reinfection, and must be dealt with before the urinary infection could be cured. The interaction of different bacteria that had been mentioned was, he believed, a matter of great importance. An infection of the urinary tract by *B. coli* might flare up when the patient had an attack of streptococcal tonsillitis. The differentiation between medical and surgical affections of the urinary tract as a preliminary to treatment was one amongst the important points that had been raised. Cases of pyuria and haematuria were still being treated by physicians under the diagnosis of albuminuria, and with the idea that these symptoms were diseases. On the other hand, haemoglobinuria had sometimes led the careless surgeon to perform nephrotomy. It might be taken as a rule that all

cases of persistent and recurrent cystitis were secondary, and search must be made for prostatitis, diverticulum of the bladder, bladder growths, or for pyelitis, by rectal examination, cystoscopy, and catheterization of the ureters. The point raised by Mr. Kenneth Walker as to direct infection of the urinary tract through the lymphatics of the wall was important. He had long believed that such direct infection might take place from the duodenum or colon to the renal pelvis, from an appendix to the ureter, and from the rectum to the bladder or prostate. Urinary antiseptics carefully used gave good results in some cases, but not in all. Frequently the failure was due to some such cause as obstruction or calculus keeping up infection in spite of any bactericidal remedy. In chronic cases a short intensive course of urotropine, repeated at intervals, would do more good than prolonged administration of small quantities. He believed that urinary antiseptics should be widely used as a prophylactic agent before all operations on the pelvic organs, and before all bowel operations. They should be avoided altogether in acute inflammations of the urinary tract, and reserved for the subacute and chronic infections. Renal lavage in pyelitis had now been practised by urologists for many years; he had used the method widely, and had obtained some good results and met with some failures. The results must be checked by the bacteriologist. Cases in which the symptoms had temporarily disappeared were not cures, although they were sometimes claimed as such. No case was cured which did not show a sterile urine for some weeks after the treatment had finished. A distinction must be made between renal lavage and the instillation of antiseptics, such as collargol, by force into the kidney substance. The latter method had been proved to cause necrosis of the tubules, and in some cases even death of the patient. A method that he had sometimes used had not been mentioned—namely, nephrotomy in conjunction with continuous irrigation of the renal pelvis. The kidney was exposed and stitched in position, and two small rubber tubes passed through a single or sometimes a double nephrotomy wound into the pelvis. Continuous irrigation was kept up with short intervals for from six to ten days. Then the tubes were removed, and the "kidney" wound allowed to heal. There was some danger of a urinary fistula that might heal only with difficulty, and it was possible for a staphylococcus infection to track alongside the tubes and replace the *Bacillus coli* infection of the pelvis.

BLADDER GROWTHS AND THEIR TREATMENT.

BY

SYDNEY MacDONALD, M.B., F.R.C.S.,

Surgeon in Charge of Genito-Urinary Department, West London Hospital.

From the clinical point of view growths of the bladder can be divided into: 1. Benign (papillomata). 2. Malignant (carcinomata). 3. Those of doubtful nature. As a general rule differentiation with the cystoscope between benign and malignant growths is not difficult: the innocent papilloma being a more or less pedunculated growth with long villous processes; the carcinoma, on the other hand, begins as a bald sessile growth, or as an ulcer having the characteristics of malignant ulcers elsewhere. The growths I have labelled "those of doubtful nature" are villous in type, but the villi are short stunted and more fleshy and the base broad. I would also include in this category papillomata in patients over fifty years of age.

Papillomata.

The treatment of choice is "diathermy" applied through the cystoscope. Excision of papillomata by suprapubic operation is followed by recurrence in a very large percentage of cases, sometimes with alarming rapidity and in a widespread manner. The commonest site of the first recurrence is in the scar of the original growth and in the suprapubic scar in the bladder, small papilloma buds or papilloma cells possibly being implanted in these wounds at the time of operation. Diathermy at once eliminates this factor and diminishes the percentage of recurrences: also if the patient is kept under cystoscopic observation for several years afterwards any recurrences can be dealt with at once when they are quite small and before they have produced any symptoms. This early destruction of recurrences also diminishes the danger of "contact growths." Unfortunately diathermy has serious limitations; growths low down, in relation with the internal meatus, are mechanically impossible to reach, and when the growths are multiple, apart from the fact that almost certainly some will be inaccessible with the cystoscope, often it is impossible to keep pace with them, growth taking place faster than destruction. Multiple papillomata are, in my opinion, best left alone as long as they remain benign and are not producing serious symptoms. The main symptoms which call for operation are repeated haemorrhages, retention of urine, secondary malignancy, and secondary infection. *X*-ray treatment has its uses; it may, for a time, give considerable relief from haemorrhage and frequency of micturition, though it appears to have no influence on the actual growth. After operation for multiple papillomata a prophylactic application is advisable.

In my opinion, when operation becomes necessary, the best means of dealing with multiple growths is to open the bladder widely, to excise pedunculated growths by transfixion, after dissecting up a cuff of mucous membrane, and, while the bladder is open, to destroy the sessile growths by a powerful diathermy apparatus. If any portion has become malignant and is deemed operable, a portion of the whole thickness of the bladder wall must be widely excised, if necessary with transplantation of the ureter. The operation is carried out in the Trendelenburg position. A single papilloma in a patient over 45 to 50 years of age should be subjected to operation rather than diathermy, as it is not possible to tell with the cystoscope whether any given papilloma is benign or malignant. This fact has been impressed upon me by two cases which I briefly relate.

Case I.

A woman, aged 75, had a single papilloma growing in the usual relation with the left ureter. There was nothing to suggest malignancy from its appearance, nor could anything abnormal be detected on vaginal examination. After the second treatment with diathermy the papilloma was thought to be completely destroyed, but the patient failed to report for cystoscopy until two and a half months later; there had been further haematuria, and the cystoscope now showed, at the site of the original papilloma, an ulcerated nodular growth, and vaginal examination revealed extensive infiltration, rendering excision impossible.

Case II.

A man, aged 60, presented a single papillomatous type of growth in relation with the left ureteric orifice. Being in doubt as to the nature of the growth, I opened the bladder suprapubically. The growth and mucous membrane were found to slide over the muscular coats—that is to say, there was no muscular infiltration; a mucous membrane cuff was dissected up and the growth transfixed and removed. Microscopical examination showed the growth to be benign. Being on military service I did not see this patient again for three years, when he reappeared with haematuria; cystoscopy now revealed a similar growth at the site of the original one. Acting on the result of the previous microscopical examination, I elected to deal with this recurrence by diathermy through the cystoscope. On examining two weeks after the second application I found no papillomatous tissue remaining, but its place had been taken by a typical malignant ulcer. I accordingly opened the bladder and excised the ulcer, with a wide margin, through the whole thickness of bladder wall, including the ureteric opening, and transplanted the ureter. Microscopical examination confirmed the diagnosis of carcinoma, and up to date (nine months) there has been no recurrence.

Whether in these two cases the papillomata were malignant from the beginning, or whether diathermy had any influence in making them become so, is a moot point, but certainly to my mind it raises the question whether diathermy is advisable in patients over a certain age.

Carcinomata.

In early cases the prognosis is good, but unfortunately about 50 per cent. of cases are inoperable when they reach the surgeon. I would like once more to impress upon the general practitioner the utmost importance of at once referring all cases of haematuria to a urologist for cystoscopy. Similarly all cases of cystitis which do not readily yield to treatment should be subjected to cystoscopy; for it must be remembered that a large number of cases of carcinoma of the bladder supervene upon chronic cystitis, which must be looked upon therefore as a precancerous condition. I have already stated that most cases are readily recognized with the cystoscope; all bald growths and all ulcerated growths are malignant; other points favouring malignancy are puckering of the mucous

membrane round the growth, showing infiltration and contraction, the presence of outlying nodules in close relation to the original growth, and also the presence of infiltration of the bladder wall, or involvement of glands felt from the rectum. In villous growths the more sessile the growth and the shorter the villi the more likely is the growth to be malignant. In giving a prognosis after cystoscopy it must be remembered that it is the intravesical portion of the growth only that is visible, spread takes place by way of the lymphatics in the muscular coats, and it may be found on exploring the bladder that the growth has infiltrated the muscular layers to an unexpected extent. It is impossible therefore to give an absolute prognosis until the bladder has been explored, but the cystoscope may veto exploration. The aim of operation will be to resect the whole thickness of bladder wall containing the growth with as wide a margin of healthy tissue as possible. When the growth involves the upper zone of the bladder, which is covered with peritoneum, the peritoneum should be opened first to make sure there is no adherent gut or omentum, the peritoneum covering the portion of bladder to be resected is outlined with the knife, and the peritoneal cavity closed before the bladder is opened. Where the growth springs from the base of the bladder the bladder wall is split from the suprapubic opening down to the growth, and the latter surrounded, including a margin—when possible an inch—of healthy bladder wall. If this cannot be accomplished without encroaching upon the ureteric orifice, the latter must be included and the ureter transplanted; the operation is facilitated if the ureter can be catheterized before the bladder is opened. These operations are done with the patient in the Trendelenburg position, and the best exposure is obtained by use of Mr. Thomson Walker's self-retaining retractor. I regret that time has not permitted me to collect my hospital statistics for this paper, but I have private notes of 11 cases operated upon for carcinoma. The patients varied in age from 40 to 74. In 6 cases the position of the growth necessitated transplantation of the ureter; 1 patient died from pulmonary embolus three weeks after operation; 2 have since succumbed to their disease (within twelve months of operation), one with secondary deposits in the spine, the other with extensive local recurrence. In 2 further cases local recurrence was discovered with the cystoscope six months after operation; these recurrences were subjected to secondary operation, so far successfully. The remaining 6 are in good health and have had no local recurrence one to five years after operation.

Growths of Doubtful Nature.

I have sufficiently indicated already the types of growth that come under this category. I have notes of 13 cases up to date in which the diagnosis after cystoscopy remained in doubt. All were submitted to partial cystectomy by suprapubic operation; in 7 cases this necessitated transplantation of the ureter. Subsequent microscopy reported 8 malignant, 5 benign; the age incidence varied from 30 to 74—both the latter were malignant—but 9 of the cases were between 50 and 60 years of age. Of the 5 benign, in 1 the microscopic diagnosis was at variance with the subsequent history, for this patient within a few months developed extensive and rapid malignant disease of the bladder, which fungated through the suprapubic wound. Of the other 4 "benign," 1 (operation 1917) has had several small recurrent papillomata dealt with by diathermy; in 2 a year has not yet elapsed since operation, and from the last I have not had news since the microscopical examination.

OPEN PROSTATECTOMY.

BY

J. W. THOMSON WALKER, M.B., F.R.C.S.,

Senior Urologist and Lecturer on Urology, King's College Hospital; Surgeon to St. Peter's Hospital.

THE operation of suprapubic prostatectomy as generally practised to-day is a blind operation. The prostate is enucleated by the sense of touch—through a small suprapubic incision, bleeding is controlled by irrigation or by packing with gauze, and the rough irregular edges and surfaces left by the enucleation are allowed to slough and granulate. In spite of these disadvantages the operation has been successful, and has entirely superseded the perineal method.

Certain complications and sequelae occur, however, in connexion with suprapubic prostatectomy that raise the question whether some improvement cannot be made which will bring the operation more into line with other modern surgical procedures.

These complications and sequelae are (1) haemorrhage, (2) post-operative infection, (3) post-operative obstruction.

Haemorrhage is a complication so variable in degree and in the effect on the patient that it is difficult to discuss. It has a considerable influence, partly direct and partly indirect, on the mortality of the operation. The number of deaths after prostatectomy that are directly due to haemorrhage is small. I have only seen one case, and in searching the records at St. Peter's Hospital I could only find two deaths stated as due to haemorrhage. But there is a large number of deaths ascribed to shock, collapse, asthenia, where the cause is undoubtedly haemorrhage, and I have come to the opinion that post-operative shock in prostatectomy is usually the direct result of haemorrhage. In addition to these cases there are deaths attributed to renal failure, bronchitis, bowel complication, and other sequelae, where haemorrhage, although it was not directly the cause, was at least a contributing and sometimes a deciding factor in the fatal result.

Infection is seldom absent during the stage of healing of the suprapubic wound after prostatectomy. By daily irrigation of the bladder and sometimes by the use of constant irrigation, the infection can usually be reduced to a minor degree, but in some cases there is persistent sepsis, and during the healing of the wound or after closure of the bladder one or more masses of slough impregnated with phosphates are washed out or passed by the urethra. Such complications as epididymitis, pyelitis, venous thrombosis, pulmonary embolism, occurring during convalescence, are the result of post-operative sepsis.

A secondary calculus occasionally forms in the bladder or in the prostatic cavity. The cause of persistent infection in most cases is the sloughing of strips and tags of mucous membrane and of partly detached portions of capsule.

I have published[1] a series of sixteen cases of obstruction after prostatectomy occurring in cases operated on by different surgeons and have seen a number of others since the article was written. The obstruction in these cases lay, with only two exceptions, at the internal meatus where the bladder opens into the cavity left after removal of the prostate. At this point folds and strips of mucous membrane frequently remain after enucleation of the prostate and there is constantly a semilunar fold at the posterior lip of the orifice. This semilunar fold is usually formed by the trigone muscle and the mucous membrane covering it, but it may contain a thick layer of prostatic gland tissue. Partly detached capsule and nodules of prostatic tissue also contribute to the narrowing in some cases of post-operative obstruction. Occasionally the mucous membrane unites over the internal meatus so that no opening remains. Obstruction at the apex of the prostatic cavity where it joins the membranous urethra may be observed, but is much less frequent. It occurred in only two out of the sixteen cases of post-prostatectomy obstruction recorded.

In order to avoid these complications and sequelae I have practised for a number of years an open operation which I shall now describe.

Description of Operation.

The bladder is distended with fluid and opened and the prostate enucleated with the gloved forefinger of the right hand. It is only in rare cases of very tough small prostates or prostates of great size that I find it necessary to introduce the left forefinger into the rectum. In routine work it is not necessary to do so. This part of the operation, the actual enucleation, is most easily carried out with the patient in the horizontal position and by the finger. Some years ago I tried to enucleate in the Trendelenburg position with the fingers and also by dissection with the bladder fully open, but I found that in the majority of cases it was simpler and quicker to enucleate in the horizontal position.

Having enucleated the prostate and removed it from the bladder a catgut stitch is placed in each lip of the bladder wound and the patient placed in the Trendelenburg

position. My bladder retractor is then introduced. This retractor (Fig. 1) is an important factor in the operation, for by its use the cavity from which the prostate was removed is fully displayed. It consists of detachable blades on a square expanding frame. The blades are shown in the figure. The recess holds the abdominal wall and the edge of the bladder wound, and the lower part of the blade pushes the lateral wall of the bladder aside. A median posterior blade is shaped to the curve of the sacrum and

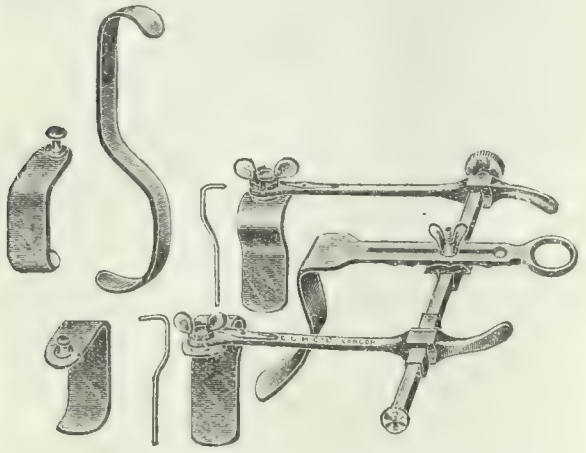


Fig. 1.

pushes back the posterior wall of the bladder. When the posterior blade is pulled backwards the lateral blades, which work on a swivel, are pushed forwards, and the anterior edge inclines somewhat inwards. A separate blade, moulded to curve round behind the pubis symphysis and raise the anterior wall of the bladder, is held by an assistant at the anterior angle of the wound. The bladder is now cleared of clot and a temporary gauze plug is introduced into the prostatic cavity.

The condition of the opening into the prostatic cavity first receives attention. Strips and folds of mucous membrane are picked up with long forceps and clipped away. The posterior fold presents many variations. It may consist of a broad crescentic ledge of mucous membrane and muscle overhanging the posterior segment of the vesico-prostatic opening. In this case long pressure forceps are placed on it at an angle, the points of the forceps meeting posteriorly, so as to include a wedged-shaped portion between the blades. This wedge is now cut away, leaving the forceps in position, and a stitch of fine catgut introduced by means of a long-handled curved needle on each side external to the forceps. This is tied and the forceps removed. The posterior fold may have the form of a conical projection, consisting of mucous membrane, muscle, and gland tissue. When pushed downwards this will almost close the vesico-prostatic opening. Another form of posterior fold is a thick glandular mass, which narrows the opening and which can be everted into the bladder. These glandular folds are cut away with long fine curved scissors, introducing a stitch of catgut to control any bleeding point.

This trimming and removal of folds and strips at the vesico-prostatic orifice leaves a large oval opening, which fully exposes the interior of the prostatic cavity. It effectually prevents the formation of a stricture at the outlet. After the operation, as I showed many years ago,[2] the prostatic cavity forms part of the bladder and there is no sphincter at the vesico-prostatic opening. The acting sphincter is now the compressor urethrae muscle situated at the outlet of the prostatic cavity.

Within the prostatic cavity loose strips and folds are often found. In clearing the cavity with a gauze swab a large fold of semi-detached capsule may be revealed. This is grasped with forceps and peeled off with the point of the curved scissors. A flattened nodule of prostatic tissue may likewise be discovered and removed.

Occasionally a long strip of urethra may have been pulled out in removing the prostate; this is held up with forceps and cut across low down near the triangular ligament. It is useless, and indeed quite unnecessary, to try to preserve such a strip. In the great majority of cases of prostatectomy the urethra is torn across transversely at the internal meatus, and very obliquely at the membranous urethra. This oblique rupture, as I have many times pointed out, leaves a narrow strip of urethral mucous membrane attached to the posterior wall of the prostatic cavity, and extending from the membranous urethra as high as the level of the verumontanum. On examining the enucleated prostate, removed in a single piece, the absence of this part of the posterior wall of the prostatic urethra will be seen.

The urethra tears across in this oblique fashion not because the surgeon plans to tear it thus, but because the urethra is held posteriorly by the ejaculatory ducts and the tissue surrounding them, and the area of the prostate between the ejaculatory ducts and the membranous urethra does not take any part in the changes which produce the so-called enlargement of the gland, if indeed there is any gland tissue in this area.

I have recently heard it recommended that the mucous membrane at the internal meatus should be stitched to the urethral mucous membrane, and that the prostatic urethra may be preserved by careful manipulation during prostatectomy. Examination of the enucleated prostate shows the thin, easily torn mucous membrane of the urethra attached to the inner surface of the lobes, and this seems to the ordinary observer to preclude any such possibility. But even if it were possible designedly to preserve the urethra and reattach it to the vesical mucous membrane the anatomical condition so produced would be a hollow tube of damaged mucous membrane without adequate blood supply stretching across a cavity containing urine. This tube would actually prevent the egress of the urine that found its way into the cavity. No better result could be expected from attempts to stitch the mucous membrane of the bladder outlet to that of the membranous urethra. Nor are such refinements necessary even if they were practicable. The fibrous wall of the prostatic cavity has long been known to form an adequate lining for the prostatic cavity. What is necessary is to make certain that no loose folds, tags, long shreds, and semi-detached gland nodules are left hanging from the wall of the cavity to promote sepsis and encourage the formation of secondary stone by sloughing.

The control of haemorrhage in this open operation is usually complete and accurate. The bleeding points frequently lie at the thick lip of the vesico-prostatic opening. Here on either side in the muscle or just under the torn mucous membrane may be found a spouting vessel. A pair of long pressure forceps is placed on the vessel and a fine catgut stitch passed round it with a curved needle on a handle. Bleeding may come from underneath this cornice and the point is difficult to see. By seizing the lip with pressure forceps and holding it back or everting it, the vessel may be exposed. Bleeding from the wall of the cavity is difficult to see. It frequently comes from the veins in the anterior wall of the cavity. Control by pressure forceps is difficult or impossible. Moynihan's curved pressure forceps are the best for this purpose. Temporary packing usually controls this bleeding. Should there be difficulty in controlling haemorrhage, it is an easy matter to pull the catheter point well into the bladder and pack the prostatic cavity firmly round the catheter with iodoform gauze. Having controlled the bleeding, assured a wide opening between the bladder and prostatic cavity, and removed all tissue that might slough, the retractor is removed and a large tube placed in the bladder. The catgut slings in the edges of the bladder wound are crossed over this and held up by an assistant. The bladder blades of the retractor are now replaced by the abdominal blades, and the retractor is placed in the pubic angle of the wound with the frame kneewards and displays the anterior wall of the bladder. A continuous catgut suture is placed in the cystotomy wound, and a small tube in the prevesical space. The retractors are removed, and repair of the abdominal wound carried out. The routine method that I use is to place two catgut mattress sutures through the recti about 1 to 1½ in. from the margin of the wound. This necessitates undercutting the skin, which is done at the preliminary incision. A continuous catgut suture unites the edges of the rectus sheath.

This operation is an attempt to bring the control of haemorrhage and the prevention of sepsis in prostatectomy into line with that practised in other modern surgical

operations. It also recognizes the fact, which I have proved elsewhere, that post-prostatectomy obstruction at the outlet of the bladder may occur in the hands of the most experienced operators, and it effectually prevents this sequel.

Reply to Objections.

Two objections have been raised to the operation. The incision is longer than that required for blind prostatectomy, and the duration of the operation is longer, so that more shock is produced. The increased length of incision is said to be the cause of post-operative hernia. The incision extends from the pubes to one two inches short of the umbilicus. It is the usual incision for the removal of growths of the bladder. I have not heard any objection to the use of such an incision in removing bladder growths.

The healing of the abdominal wound after any bladder operation depends upon the ability of the surgeon to close wounds of the abdominal wall. If he is unable to deal with this part of the operation he would be well to leave this and other bladder operations requiring full exposure alone.

The objection to a longer wound assumes that a short wound of the button-hole type safeguards the patient against hernia. This is not so. I have had to operate on a large hernia following prostatectomy by another surgeon where the wound was of this type, and such cases are not very rare. As a matter of experience the more extensive abdominal wound heals by first intention down to the tube, and gives rise to no anxiety at all.

The objection of increased time taken by the operation resolves itself into the question of shock. In the first place the length of the operation depends largely on whether or not the surgeon is accustomed to work rapidly and systematically. With ordinary surgical skill the length of time is little extended when we consider the prolonged irrigation that is frequently found necessary to control bleeding after the blind operation. Fifteen to twenty minutes is the usual time taken from start of the operation to the last stitch. I have watched a good many operators at home and abroad, and the duration of the blind operation usually exceeds this.

Shock after prostatectomy is due not to prolonged operation but to rough handling and to haemorrhage. Delicacy of touch is individual to the surgeon. The open operation is an attempt to control haemorrhage, and in this way to reduce the amount of shock during and after the operation.

References.

[1] *Lancet*, 1921, i, 1093. [2] *Journ. Anat. and Physiol.*, vol. xl., April, 1906, 189.

DISCUSSION.

Mr. Fullerton (Belfast) argued that many of the cases of prostatectomy said to die from shock died really from haemorrhage. It was very difficult to distinguish between shock and haemorrhage. He had adopted Mr. Thomson Walker's operation in cases in which he believed that the patient could stand a slightly prolonged operation, and with the most satisfactory results.

Mr. Kenneth Walker (London) congratulated Mr. Thomson Walker on having brought prostatectomy into line with other operations, and on having rendered it a surgical procedure completed under visual control. He (the speaker) had carried it out after having seen Mr. Thomson Walker's technique at King's College, and with excellent results. There was, however, one type of case in which he had had some doubt as to the correct procedure—that was the case in which, for one reason or another, the two-stage operation was advisable. Did Mr. Thomson Walker recommend the full exposure of the prostatic bed in such cases?

Mr. Thomson Walker, in his reply, said that the length of time occupied by the operation could only be correctly compared with that of the blind operation if the whole time that elapsed from the induction of anaesthesia until the moment that the patient left the table was considered, for much time was often spent after the blind operation by irrigation in an attempt to stop bleeding. In two-stage operations where the bladder had been recently drained by a suprapubic wound for sepsis or renal failure, he did not attempt to do an open operation, but was content to practise the blind operation. Nor did he practise the open operation on very feeble individuals. If, however, there had been prolonged suprapubic drainage, say, for a period of from a month to six months, he dissected out the scar and did an open operation. He drained the bladder with a large tube after prostatectomy, as he held that even with an open operation the two great indications for free drainage—namely, haemorrhage and sepsis—were never completely abolished.

SECTION OF PREVENTIVE MEDICINE AND INDUSTRIAL DISEASES.

Sir Thomas Oliver, LL.D., M.D., F.R.C.P., President.

INTRODUCTORY REMARKS.

The President in a few words welcomed the members, and referred to the overcrowding that occurred in Newcastle during the war owing to the great influx of munition workers. He then called on Dr. I. G. Modlin, O.B.E. (Chairman of Health Committee, Sunderland), to take the chair. Dr. Modlin said that it was of the greatest importance that medical men should take more interest in public health and in municipal government. Some might be co-opted on to the various bodies, but nothing could take the place of popularly elected bodies when control of public funds was in question. He raised the question whether the results of the various schemes for dealing with tuberculosis, maternity and child welfare, and venereal diseases were commensurate with the cost, and asked whether the best results would not be obtained rather by greater attention to housing? Having regard to the high taxation and heavy rates, this was not a time for new and expensive Government measures.

DISCUSSION ON THE EFFECT OF HEALTH LEGISLATION ON THE HEALTH OF THE PEOPLE.

OPENING PAPER BY Captain W. E. Elliot, M.B., Ch.B., M.P.

The effect of public opinion is focussed by legislation, and it is instructive to compare the vital statistics of this and other countries. The enormous value of prevention as against cure is becoming more and more realized; but prevention is only brought about by the compulsion of some statutory enactment. Regulations are ineffective in the prevention of great epidemics, such as the black death and influenza—that is, where great epidemics cross oceans—but these epidemics draw public attention to the subject, giving rise to Royal Commissions and to legislation.

In 1388 the first Sanitary Act was passed, dealing with the removal of nuisances in England. In 1427 an Act was passed in Scotland forbidding lepers to come into towns to purchase food except at certain hours on three days a week, or to dwell elsewhere than in certain hospitals. Probably the cost was borne by local authorities. In 1446 a kind of quarantine was established in boroughs against plague, and the regulations appear to have been enforced. In 1511 a Medical Registration Act was passed. In 1518 a rough attempt was made to secure notification and isolation. In 1543 the first Plague Order was made. In 1563, under Elizabeth, the Aldermen of the City of London issued instructions with regard to infected houses. Before the end of the century searchers and health registration were in force. In 1720 Richard Mayne recommended notification at a fee, visitation, isolation, and cleansing of houses. His advice was unheeded.

During the nineteenth century there was an enormous increase in population after the industrial revival and the unlocking of the coal seams. The population, which in Elizabeth's reign was three and a half millions, is now thirty-seven millions. This rapid increase compelled the passing of sanitary legislation, and we are much indebted to the inspiration of Lord Shaftesbury during the hungry forties. The expectation of life has greatly increased

during the past fifty years. This is shown in the following table, which gives the expectation of life in the several decades:

1871–1880	41.0 years
1881–1890	43.7 ,,
1891–1900	44.1 ,,
1901–1910	43.9 ,,
1911–1920	51.5 ,,

This increased expectation is due to the extinction of the great fevers and to reduced infant mortality, and has been secured very largely through legislation.

In 1854 the death rate was 37.2 per 1,000. In 1920 it was 12.4 per 1,000. Medical skill has not increased so much as the influence of preventive legislation, but increased medical skill has brought about a great saving of life. In Great Britain to-day, as compared with 1871, there are thirteen millions more population and 50,000 fewer deaths a year. The increased expectation of life to-day is due to years saved during the younger and more useful period of life, for a man of 70 has the same expectation of life—namely, thirteen years, now as in 1871.

During the middle of last century there were in the working-class districts of Edinburgh neither sewers nor drains. Refuse and garbage were thrown into the streets. There were no privies. The evil conditions were accentuated by the Irish potato famine and the consequent emigration into England. Fares were then cheap and starving boat-loads were huddled into the slums of our great cities. This period of emigration from Ireland was marked by a definite rise in the fever death rates in England.

Public health legislation led to public water supplies, to more washing and to killing of lice, followed by the disappearance of typhus fever. As water supplies became purer, typhoid fever gradually lessened. In 1853 Lord Palmerston wrote to a correspondent: "It is the duty of man to plan and execute measures to free the poorest districts from sources of contagion." In 1869 a Royal Sanitary Commission was appointed. In 1872 the Local Government Board was established. In 1875 the great Public Health Act was passed into law. In 1878 an Act was passed to provide water supplies.

Average Number of Deaths from Typhoid Fever.

Between 1871 and 1880	7,800
,, 1891 and 1900	5,300
,, 1901 and 1910	3,000
,, 1911 and 1920	1,200
During 1920	537

This marked drop is due more to legislation than anything else. Similarly in 1920 there was no death from typhus and only one in 1919. That the marked drop is due not so much to increase in medical skill as to the effects of legislation is shown by the marked drop of 78 per cent. in typhus in Poland recently, following a grant of £50,000 from this country and consequent organization and compulsion.

In 1870 scarlet fever killed 30,000 a year; now the deaths are about 1,000 a year. The fall in measles has been much less marked, the number of deaths in 1871 and 1920 being 9,000 a year, the mortality then and now being 1 in 10.

As regards the outlook for the future, take pulmonary tuberculosis. In this disease the deaths, in round figures, were:

In 1911	39,000	In 1916	41,000
1912	38,000	1917	43,000
1913	37,000	1918	46,000
1914	38,000	1919	36,000
1915	41,000	1920	33,000

In Scotland the war rise did not occur to the same extent. The causes of the war rise are still obscure. There has been a similar fall in deaths from non-pulmonary tuberculosis, from 13,000 deaths in 1911 to 9,000 deaths in 1920. It is noteworthy that notifications are falling too, though less importance can be attached to this.

	All Forms.	Pulmonary.
Notifications in 1913	150,000	91,000
Notifications in 1920	86,000	63,000

It may be argued that there has been a general fall in the incidence of tuberculosis, but this has not been the case on the Continent. Thus the death rate in Vienna, which of Continental cities has suffered most from starvation, is higher than the rate in Warsaw, Cracow, etc.

In maternity and child welfare work the grant of money by Parliament for special measures was followed by a pronounced drop in infantile mortality—a strange coincidence.

As regards the general health, certain interesting points arise in connexion with the present widespread unemployment, which in May reached the enormous figure of 22 per cent. Yet the vital statistics have apparently not suffered, and it is not improbable that the granting of the unemployment dole may have had some influence.

As regards the cost of recent health legislation, the following simple figures may be of interest:

	Burnley.	Manchester.
Tuberculosis	1d. ...	1⅔d.
Venereal diseases ...	less than half a farthing	¼d.
Maternity and child welfare ...	1⅔d. ...	2⅔d.
	2¼d. in £.	4¾d. in £.

This works out at about 2 per cent. of the total rates.

The improvement of the health of the people depends upon public opinion, medical skill, and compulsory measures. There is a great field in factory hygiene, and it will be well to trust less to laboratory experiments than to mass experiments in factories. Factory legislation was agitated for by laymen, and especially by Lord Shaftesbury, who carried the Twelve Hours Act which came into force in 1844. In 1847 a bill was passed limiting the hours of women and young persons. These measures would never have been carried by private enterprise. No less an authority than the State is capable of dealing with such problems.

The reaction due to the war period can be understood, but it would be fatal to ignore the good results that have come about through public health legislation in the past.

DISCUSSION.

Dr. EUSTACE HILL (County M.O.H. Durham) said that it was not possible to legislate in advance of public opinion, and this point was overlooked in recent legislation. The Public Health Act, 1875, was out of date. Legislation on health matters was now piecemeal, and there was urgent need for the reconsideration and codification of the whole of the Public Health Acts. Dr. Fraser of Edinburgh had shown the terrible effect of milk from tuberculous cows in causing non-pulmonary tuberculosis. He gave 40 per cent. of such cases as due to tubercle-infected milk. The Milk and Dairies Act should be put into operation as soon as possible. The history of public health legislation might be divided into two periods. The first began in 1875; it was concerned with sanitation, water supplies, sewers, infectious diseases, hospitals, etc. A fall in the death rate commenced and continued to the present time. The second period began in 1905 with measures for the protection of infants. The Notification of Births Act, passed in 1907, had had a most important effect through the influence of health visitors. This Act, which was at first voluntary, was made compulsory in 1915. Government grants stimulated health measures. Falling death rates stimulated grant giving. This second period was concerned with the care of the individual as exemplified by measures touching tuberculosis, the schools, and venereal diseases. In Durham county there was a slight increase in tuberculosis during the war, due probably to war strain, women's employment, and deficient or unsuitable foodstuffs.

Dr. A. E. COPE (Westminster) said: Public health administration is in advance of public opinion, being guided by professional opinion. It is necessary to educate public opinion, otherwise Acts tend to become less effective. For example, the Vaccination Acts are becoming less and less effective owing to popular apathy based on ignorance. There is need for systematic education alongside of legislation if the best results are to be secured.

Dr. MILLER (County M.O.H. Radnor) spoke of the regrettable tendency of Government departments nowadays to add to the labours of medical officers by the introduction of numerous forms involving much correspondence. Many of them appeared to be superfluous. The procedure in connexion with grants of milk under maternity and child welfare schemes was a case in point. Legislation should be so conducted as to lead to a minimum of interference with local authorities.

Dr. COLES (Medical Officer, Gas Light and Coke Co., London) considered that greater attention should be given to the prevention of accidents, and especially of slight accidents, which often resulted in serious consequences owing to neglect of precautions. Unfortunately workmen not seldom neglected to observe the regulations made by the Home Office, and apparently no means of compelling them to do so existed. In his experience amongst workers in trinitrotoluol and in molten metal this neglect had been forcibly brought home to him.

Dr. WALKER (Southend) said that the middle classes were bearing an almost unendurable weight of taxation, and one result was the limitation of the family. This was especially to be deplored, because the children of the middle classes were just the kind that the country needed most. Where practicable voluntary effort in health as in other matters was preferable to State interference. The Government should have a definite policy with regard to vaccination, which should be done as early as possible.

Dr. JOHNSON SMYTH (Bournemouth) said that when a surgeon in the Foot Guards he had noticed that a high tuberculosis mortality was associated with defective ventilation. Gouty people he had observed seldom suffer from tuberculosis. The increased incidence during the war might be due to deficiency in nitrogenous diet, also to overwork, and the acceptance by medical boards of men with old pleuritic adhesions.

Dr. MACKAIL (Lecturer in Public Health, St. Mungo's College, Glasgow) thought credit for the improvement in health and reduced death rates of recent years was due to municipalities rather than to legislation. Some municipalities were progressive and enlightened, and led the way by pioneer measures, which subsequently were copied and embodied in legislation. The fall in infantile mortality was associated with a decline in the birth rate.

Dr. DEARDEN (M.O.H. Port of Manchester) said that legislation had been slow because of the necessity of focussing public opinion. The first real Factory Act was passed in 1833, the next in 1844. The agitation in connexion with the Ten Hours Act drew attention to the bad sanitary conditions, and was the moving power in developing industrial hygiene. The influence of specialist health officers (medical officers of health) and their exertions had led to rapid improvement in the sanitation and health of towns. Factory legislation was never guided so much by a body of experts and was therefore slower. The medical staff of the Home Office consisted of four persons only.

The PRESIDENT (Sir Thomas Oliver) observed that the early introduction of water supplies was due to compulsory legislation, but asked whether this was done for health reasons or whether it was not rather due to the danger from fire. Lord Shaftesbury played a great part in securing legislation to improve labour conditions. The reduction in infant mortality might be due to the deprivation of unsuitable articles of diet. Thirty years ago, when there was a big strike and food was scarce, infant mortality went down.

After a few words from Dr. A. FORBES (Sheffield), Captain ELLIOT said, in reply to the discussion, that the Ministry of Health had been too recently established to make it reasonable to expect to obtain measurable results. The central provision of all funds for health measures would be disastrous and much must be left to local enterprise and effort. The improvements in factory hygiene were a definite illustration of what legislation by itself had accomplished.

DISCUSSION ON
THE IMPORTANCE OF INDUSTRIAL MEDICINE TO THE COMMUNITY.

OPENING PAPERS.

I.—EDGAR LEIGH COLLIS, M.A., M D.Oxon.,
Talbot Professor of Preventive Medicine, University of Wales.

FIRST thought, then research resulting in knowledge, and finally action, represent the stages of scientific progress. Where for any reason, as in the art of medicine, action based on empiricism has come first into existence, new knowledge based on research frequently finds some vested interest opposing action on new lines, or at least some *vis inertiae* resulting from innate conservatism. New knowledge in medicine has recently been acquired through research, and practice is gradually changing accordingly. But in no branch is thought, research, and knowledge less hampered by action than in that of industrial medicine, because there is little or no action, and in no branch, possibly for that very reason, has the trend of thought been advancing more rapidly.

Medical service during the past twenty years has been changing its outlook. Previously treatment of the sick was the first consideration, and the public only came in contact with the profession in case of illness. Questions affecting the maintenance of health were impersonal and left to the public services concerned with water supply, drainage, disposal of refuse, and the sale of wholesome food. More recently, however, the personal note has been sounded in relation to maternity and infant welfare, school medical service, tuberculosis, and venereal clinics. Notification of births has provided the information upon which infant welfare work is being constructed. Schools, by gathering together children for educational purposes, provide the opportunity for medical inspection of each child. Notification of tuberculosis again is of value for establishing, through the work of health visitors, personal touch with contacts—the preventive side of the tuberculosis campaign. Here adult life is just touched; but, generally speaking, means have yet to be found for bringing preventive medicine into direct personal contact with the adult. For this purpose industry, which gathers adults together, provides the means. The points for consideration are, whether the community would benefit if industry shouldered this responsibility and whether industry itself would benefit by such action. The benefit to the community is closely interlocked with the benefit to industry, since the community is composed of constituent groups, among which the industrial group (using the word industrial in its widest sense) forms the greatest part. And if the industrial part of the adult population were sound in health there would not be need for much else.

The first point to ascertain is whether the health of the industrial part of the community is sound. Appeal on the matter may be made to different types of data. First come the recent disclosures of the army recruiting examinations. Here only 36 per cent. of the male adults of age to bear arms were classed as Grade 1; but the numbers attaining this standard were found to vary widely according to occupation; the miner and the agriculturist provided a far higher proportion than other groups of industrial workers.

Next, appeal may be made to mortality statistics. Here we find the agricultural labourer with a comparative mortality figure of 470; a standard set by the lowly paid and poorly housed agriculturist who works long hours is surely not too high to aim at. Yet the comparative mortality for printers is 773, for tailors 799, for cotton operatives 811, for shoemakers 820, for iron and steel manufacturers 837, for Lancashire coal-miners 941, for edged tool-makers 1,010, for costermongers 1,507, and for general labourers 2,301.

Third, age distribution gives us some information. Out of 1,000 occupied agriculturists 225 are aged 55 and over, out of 1,000 cotton operatives 69, out of 1,000 printers 66, out of 1,000 coal-miners 75, out of 1,000 metal workers 98, and in the building trades 121.

Neither set of data indicates a satisfactory state of affairs, and each set brings out marked differences in different occupations. There is, then, a wide field of work

before industrial medicine to establish the why and wherefore of these differences. There is an inclination to associate the subject of industrial medicine only with occupational diseases, such as poisoning from lead, mercury, or phosphorus, anthrax, miner's nystagmus, writer's cramp, or caisson disease. These peculiarities of industrial disease are important, both in themselves and in drawing public attention to the influence of occupation upon health. Moreover, through them the guide-post of industrial hygiene has been established—the guide-post which directs attention to prevention rather than to cure. The scope of work has enlarged much beyond the boundaries of occupational disease, but the guide-post is the same.

Industrial medicine to-day is recognized to be directly aimed at preventing disease and maintaining health. In industry more easily than elsewhere in the community can the balance be cast between the debit of sickness and inefficiency and the credit of health and productivity; this matter will be referred to again later. Here there exists a direct economic interest in maintaining health, an interest which up to the present has hardly been perceived by industry. Nor does the matter end here, for opinion is hardening that a definite duty lies with those who employ labour. The State is now undertaking work upon which large sums of money are being spent in order to bring up from birth to adolescence healthy individuals. Those who thereafter employ these persons have to thank the State that this supply of labour is at their disposal and must in their turn maintain it in health. This opinion finds its expression in Workmen's Compensation Acts and schemes of unemployment benefit. The tendency in the past has been to shift the burden of responsibility on to some insurance agency; but the latest compensation scheme under the Workmen's Compensation (Silicosis) Act, 1918, places upon industry—the refractories industry in this case—the responsibility of shouldering its own insurance. Action on these lines will probably prove a direct incentive to industry to lighten the liability by actively pursuing preventive measures.

The personal note in the application of modern preventive medicine has already been alluded to. This note is not to be perceived to-day in factory life. Yet the community as a whole needs it. The State up to adolescent life is striving to instil the principles of health, and its efforts are yearly increasing in effectiveness. Then the youth passes into some occupation where his master, as judged by social standing and worldly wealth, stands far above the school teacher, and is presumably more worthy of respect.

But the youth finds now no attention paid to health and its maintenance. Is it a matter for surprise that he disregards the precepts of his former teachers as something only concerned with boyhood, something not needed in manhood, something it is manly to despise. There are here immense possibilities in industry. Fresh air, sunlight, cleanliness, and wholesome food are necessary to efficiency in the work of adults just as they are for children. Moreover, a standard set in these matters by the all-admired capitalist who rules industry would spread from the factory to the home.

To-day the reverse holds good; the coal-miner carries home the colour-bar of his occupation, and no Sherlock Holmes is needed to recognize the cement-maker, the stoker, the cotton operative, the dock labourer, the tanner, or the man from the rolling mills on his way to carry the grime of his work to his artisan dwelling. Example, indeed, is stronger than precept. Not until tidiness, cleanliness, and fresh air, which are the breeding ground of good manners and good thought, are to be found in British industries, can we expect to find them in British homes. Here again a duty is owed by industry to the community, and a debt, the payment of which is long overdue. The community, being largely composed of industrial workers, must benefit by any action which benefits industry, and consideration of the importance of industrial medicine economically to industry must indicate at the same time its economic importance to the community. A few short sums in arithmetic will give help.

Labour Turnover.

The drift of workers from one place of employment to another is now recognized to be a heavy economic burden upon employers and employed. Employers suffer because workers newly engaged experience more accidents and suffer more sickness than the more permanent staff; they are also less productive units. Various estimates have been made of the cost of changing a worker, some place it as high as £5. Let us err on the safe side and put it at £2 10s. The worker himself, on changing employment, may be out of work for a while, then, when he does get work, at first he earns less and is more liable to sickness and accidents. He also loses not less than the employers, say £2 10s. on the average. That is to say, every change costs industry not less than £5.

Various calculations in America and in this country place labour turnover at a figure which in some cases attains to 400 per cent. Let us be content and place it at 100 per cent., which means that to maintain a personnel of 1,000 workers at full strength every year 1,000 workers require to be engaged to replace those who left. In our factories and workshops alone are some eight million workers, then there are over a million miners with a similar turnover. These, together with those employed on the land, on the railways and in transport service, as well as shop assistants, clerks, and the mercantile marine, make up not less than twenty million persons. A labour turnover on this total of 100 per cent. at £5 per head comes to 100 million pounds a year. This high labour turnover is unnecessary, as has been shown both in the United States and here; it falls to 30 per cent. where medical supervision of entrants and hygienic conditions of employment exist. This would mean a saving of seventy million pounds a year.

Lost Time.

Careful inquiry has established that the underlying cause at the back of lost time is either certificated sickness or that condition of lowered health which precedes sickness. Various estimates of lost time have been made. In some cases it amounts to 20 per cent. of total possible hours; but when health conditions are favourable it may fall below 4 per cent. An average of 10 per cent. probably is not excessive for half the employed population; while 4 per cent. may be taken for the other half. Total possible working hours each year may be placed at a round figure of 2,000. The loss of 10 per cent. means 200 hours, which at a wage of 1s. per hour comes to £10. The loss of 4 per cent. means 80 hours, which comes to £4. Ten million persons at £10 means £100,000,000. Ten millions at £4 means £40,000,000. The difference, £60,000,000, represents what may be easily attained by medical supervision in industry. On these two items alone there is a possible saving of £130,000,000 a year.

Industrial Convalescence.

There is still another valuable contribution, connected with recovery from sickness, which industry can make to the community and at the same time benefit itself. Sickness among industrial workers, whether due to accident or ill health, is liable to be unduly prolonged for two reasons. In the first place weekly wage earners tend to be unduly anxious about themselves and their symptoms, and unduly anxious lest if their invalidity is prolonged their place may be filled up. This anxiety tends at once to delay recovery and also to induce them to attempt to resume full-time employment before they are ready, when a second breakdown ensues. In the second place these persons are in receipt of either compensation pay or sickness allowance which are forfeited directly they start upon work of any kind. Convalescence can be expedited both mentally and physically by graduated activity of an interesting nature, and the best form of interest is remuneration for work done, which is to-day precisely the form of activity prohibited for the industrial convalescent. The result is that to-day enormous sums of money, which there are no means for estimating accurately, are expended in retarding convalescence.

Instances of this kind of case can readily be recalled: the poisoned hand or injured limb, cured so far as the surgeon is concerned, for which short-time light employment is needed to restore functional usefulness; the consumptive discharged from sanatorium, but quite unfit to resume full factory hours; the nervous heart case for whom graduated exercise up slopes only gives opportunity for concentrating attention on the vagaries of cardiac behaviour to the detriment of convalescence; the dyspeptic who needs oxygenation resulting from exercise to rectify his gastric peristalsis; the great class of neurasthenias

often called debility and suspected to be laziness, which after initial rest urgently need a period of short-time work; the list could easily be lengthened indefinitely. Each and all require—what to-day they cannot get—a period of short-time remunerative activity.

There still remain for consideration those permanently maimed in industry who are to-day cast on to the scrap-heap as unemployable, to be a permanent charge on industry or on the rates. Holman has estimated that annually 250,000 workers are permanently thrown out of employment through accident or preventable disease in the United States. There are no accurate statistics for this country, but a census taken in Wales in 1918 revealed that one in every 810 civilians had lost one or more limbs, and that in the industrial district of South Wales the proportion was one in every 695. Application of the former figure to the population of the United Kingdom gives a total of limbless civilians at any time of over 58,000. Few persons are ever maimed so that they do not retain some productive capacity. The Ministry of Pensions in this country—and similar evidence is forthcoming from France, America, and other countries—have shown what can be done through industrial re-education for maimed soldiers. Eighty per cent. of war cripples can be trained to carry on a trade without special equipment. The need for continuance of this work for those maimed while earning their livelihood—for assuredly peace has its victims no less than war—is clear. The duty, and also the benefit resulting, lie with industry, in whose service the disability is sustained, just as the State has undertaken the duty for those injured in her service.

Debit and Credit.

The proposition is put forward that industrial medicine properly applied can effect a saving each year on labour turnover of from sixty to seventy millions, on lost time of fifty to sixty millions, and through industrial convalescence of many millions more. Put the total at £140,000,000 on a conservative estimate. There are to-day something over 40,000 doctors in the kingdom; the cost, if industry employed half the profession and gave each doctor £2,000 a year for whole-time work, would amount to £40,000,000 a year, leaving a handsome balance of £100,000,000 a year. Such wholesale engagement of the profession is not proposed, and indeed is not needed. The figures are only instanced to demonstrate that industry by developing industrial medicine has the promise of great profit while it fulfils a great social service.

The trend of thought to-day is against nationalization of industries, but industries must realize that while maintaining their independence they take over at the same time certain responsibilities as regards those employed which under nationalization would be undertaken by the State. Recognition of these responsibilities and taking them up would entrench the position of industrial independence. Failure in this matter, quite apart from economic waste, must sooner or later cause those employed to demand reconstruction of modern industrial organization. Such reconstruction might seriously dislocate the community, with sufferings as a consequence, such as Russia is now experiencing with no commensurate advantage. To-day our profession stands too much aloof from such thoughts, and does not do enough to impress upon industry that there is a science of medical sociology, the principles of which, if applied to labour unrest, would give results more certain, more sure, and more enduring than all the remedies evolved from the inner consciousness of political economists, who may know somewhat of politics but know nothing of the economies of the human machine, and who give lip service only to the truth that a healthy body is necessary for a healthy mind. In very truth the community to-day greatly needs an industrial medical service; it needs it in the interests of health; it needs it in the interests of economy; it needs it in the interests of industrial efficiency; it needs it in the interests of social contentment.

II.—Sir Kenneth Goadby, K.B.E., D.P.H.Camb.,
Medical Referee for Industrial Poisoning, London.

Professor Collis is very happy in the opening sentences of his paper in which he epitomizes in a few words the difficulties which beset those who are engaged in bringing thought, research, knowledge, and action into the realm of industrial medicine. Speaking personally, as an inquirer into the causes of the disabilities suffered in many industrial processes, more especially those industrial occupations in which lead is used or manufactured, I am constantly hampered by the perfectly frank and often good-willed obstruction of both employer and employee to innovations directed towards the improvement of health conditions. On the other hand, extreme measures may be proposed to combat an evil recognized by its effects, though its actual cause may be little understood, and the somewhat tempting but unscientific and uneconomic point of view is easily adopted, contained in the old Hebraic dictum "I cannot away with it." An especial instance of this no doubt perfectly genuine but misguided frame of mind is to be found in the controversy at present raging regarding the suggested prohibition of the use of white lead as a pigment in the arts and manufactures. That lead poisoning exists amongst the users of lead is well known; still more it is well known that its incidence has diminished, shown in the diminution in death rate and cases of poisoning following the reduction of lead dust in dangerous lead processes; and yet in an extraordinary document bearing internal evidence of the acute propagandist, the so called questionnaire emanating from the International Labour Bureau at Geneva, dust as a cause of poisoning in the painting trade is dismissed with an almost contemptuous negative. One has only to refer to the excellent results obtained through the Special Home Office Rules in the white lead manufacture, in potteries, and in other trades, in which the opener of this discussion had no small share on the administrative side, to see the fallacy of disregarding dust as the most important vehicle by which lead poisoning is produced industrially. In these industries the use of the deleterious material is still continued with comparative safety in processes in which it has been possible to reduce the amount of dust within innocuous limits. The quantity of soluble lead in pottery glaze has been reduced, but lead silicate is still the glaze although modified, in that the fritting or combining of the lead with the silica is carried out before the glaze is applied to the ware instead of the lead silicate being from a soluble salt of lead during the process of firing the ware. It is therefore not fair to argue from the diminution of the quantity of soluble lead present in a glaze to the quantity of soluble lead present in a paint. This by the way.

Professor Collis has emphasized the necessity of the industrial individual acquiring a competent knowledge of the danger of any deleterious process in which he is engaged, and I would add that, as in microbic disease individual susceptibility varies within wide limits, so also the resistance towards varieties of industrial poisoning shows wide variations of tolerance and intolerance.

At a meeting of the Royal Society of Medicine in which T.N.T. poisoning was discussed, Professor Collis showed a curve demonstrating the presence of susceptibility and immunity towards this poison; and in a recent paper before the Royal Society of Arts I was able to show that the largest incidence of lead absorption amongst workers in white lead factories occurs within the first six months of their exposure, and that by careful supervision, alteration of employment, and suitable treatment such susceptible persons finally obtain a tolerance which enables them to work for long periods without disability. This is an important factor, and is well brought out by Professor Collis's suggestion of a period of industrial convalescence for persons who have suffered from any type of industrial disease; at present the factory surgeon is often handicapped by the absence of facilities to carry out such a procedure.

Lead poisoning bulks largely as an industrial disease, but its statistics are sometimes looked on with suspicion, particularly as regards those trades in which lead poisoning is not a certifiable disease and in which no special rules or medical inspection exist. The statistics of lead poisoning may thus be divided into two categories:

1. Those in which the case is seen by a certifying surgeon—a surgeon with a special knowledge of the symptoms, and, above all, a surgeon practising in the particular district in which the diseases are likely to occur; I regard the suggestion that the certifying surgeon should be superseded by a whole-time official as not in the highest interests of the working-class population. A surgeon practising in a district is acquainted with the general run of disease in that district more than a whole-

time officer not engaged in private practice, and who has not the same opportunity to estimate the value of certain symptoms common to both lead poisoning and other diseases. The notification and certification by the certifying surgeons is, on the whole, extremely satisfactory. As medical referee for industrial poisoning in the County of London a number of cases are referred to me in which the certificate of the certifying surgeon is appealed against, and rarely have I found myself in disagreement with the certifying surgeon. This class of statistics may, therefore, be regarded as satisfactory.

2. The second series of statistics into which lead poisoning is divided are those arising in industrial processes which are not certifiable by the certifying surgeon in the district. Such cases are frequently seen by medical men who are unfamiliar with the symptoms of lead poisoning, and who rely for diagnosis (not surprisingly) upon the history and occupation of the sufferer who seeks their advice. Further, the opportunities for obtaining knowledge on the differential diagnosis of many types of industrial disease is denied to a large number of men who annually qualify, and who have unfortunately little opportunity at hospital of studying the symptoms of occupational diseases. This lack of knowledge may at times lead to extravagant and absurd statements, such as that made to the Departmental Committee on Lead Poisoning amongst Painters, when a noted physicist, who was told by his doctor that he had suffered from lead colic, concluded that the spectroscopic lines seen in drying paint vapour must be volatile lead, and committed himself to that opinion!

The health of painters, the diseases from which they suffer, the processes of their industry that cause disease, comprise a much debated problem of industrial medicine at the present time, and I may perhaps be permitted to draw attention to some of the points on this question which are now engaging public attention. Complete agreement exists that dry rubbing down of old or new paint may produce lead poisoning and constitutes the painter's main risk. To obviate this risk one school of opinion suggests the total prohibition of lead as a paint. Another class of opinion argues that for one risk that can be easily obviated it is uneconomic to prohibit the use of materials whose manufacture affords occupation to a large class of industrial workers and for which there is no adequate substitute. The whole question, therefore, becomes one of industrial medicine.

Painting is an operation so widely performed that many medical men are acquainted with the curious symptoms following the inhalation of the vapours given off from drying paint. The most delicate tests applied to these vapours fail to show the presence of any lead; yet symptoms closely resembling lead poisoning are produced in susceptible persons, and there is little doubt that a large number of such cases are returned as painter's colic—hence lead poisoning—and there is every likelihood that this class of case will increase, as since the war there has been a wholesale tendency to replace turpentine with various other forms of volatile driers, some of which are exceedingly poisonous; the attention of medical practitioners as a whole should therefore be directed towards such forms of poisoning. Clinical observation and careful inquiry as to the facts would yield much useful information.

I have recently had the opportunity of studying the figures of illness suffered by painters belonging to the sickness benefit branch of the Hearts of Oak Society, and I have taken out the numbers of cases of various types of disease under four headings—respiratory, alimentary, muscular, and nervous, obtained from the short list of the Registrar-General. The respiratory diseases comprise influenza, phthisis, bronchitis, pneumonia, and other diseases of the respiratory organs. The alimentary diseases are colic, diarrhoea, dyspepsia, enteritis, gastro-enteritis, gastric catarrh, gastritis, haemorrhoids, gastric fever, and gastralgia. Under the heading of muscular I have placed rheumatism and rheumatic fever, myalgia, lumbago, gout, and ague, as being likely in the painting trade to be associated together under the general term of "rheumatism." In the nervous division are included neuritis, neurasthenia, neurosis, and vertigo.

Table I gives the percentage which these various groups bear to the total number of cases in each age group, and it will be seen that the chief diseases from which the painter suffers are those of the respiratory tract. The recent

TABLE I.—*Painters, from Hearts of Oak Figures, 1920.*

Age Group.	Group of Disease.								All Causes. Total Numbers.	Exposed to Risk.
	Respiratory.		Alimentary.		Muscular.		Nervous.			
	No.	%	No.	%	No.	%	No.	%		
16–20 ...	4	25.0	2	12 5	1	6.2	1	6.2	16	89
21–25 ...	5	21.7	1	4.3	3	11.5	1	4.3	23	187
26–30 ...	8	25.0	5	15.5	4	12.5	1	3 1	32	325
31–35 ...	7	25.9	2	7.4	6	22 0	0	0	27	323
36 40 ...	14	38.8	1	2.8	5	13.9	0	0	36	312
41–45 ...	6	25.0	3	12.5	3	12.5	0	0	24	266
46 50 ...	8	26.6	4	13.3	6	20.0	2	6.6	30	218
51–55 ...	6	33.3	3	6.0	5	27.8	1	5.5	18	131
56–60 ...	6	35.3	0	0	2	11.7	2	11.7	17	95
61–65 ...	4	50.0	0	0	0	0	0	0	8	41
66–70 ...	4	57.1	0	0	0	0	0	0	7	26
									238	2013

admirable paper by Professor Armstrong and Mr. Klein has shown that the droplets of paint splashing are larger than any size likely to be inhaled and that the amount of actual splashing which reaches the face is minimal and not likely to subject the painter to an intake of more than 0.7 mg. of lead per working day of eight hours if he is engaged the whole day in stippling; the high incidence of respiratory disease is possibly associated with the inhalation of vapours of the drying paint. More particularly is this likely to be the case as in the splashing produced in painting a vertical surface practically no splashes come beyond 15 in. from the foot of the wall. Most paint is now sold ready made and very little so-called "breaking down" of the dry white lead is done.

It is interesting, further, to note that in this group of painters in the Hearts of Oak the actual claims for sickness over the various age groups is less amongst painters than that of the total number of persons claiming benefit. The absence of high incidence of disease of a type which might be attributable to lead—namely, those in the alimentary and nervous sections—together with the high incidence in the respiratory, is a little difficult to reconcile with the supposedly high incidence of lead poisoning amongst painters as a whole, as it would seem that if lead poisoning were a serious feature in the painting trade it should show in a block of figures of this type.

Mr. Croft-West has kindly given me a comparison of the causes of death in occupation 64 (painters, etc.), from the Seventy-fifth Annual Report of the Registrar-General. The relative importance is expressed as a percentage of the comparative mortality figure. The shortened table shows that respiratory diseases come first, circulatory diseases second, and urinary diseases third, and that in 1911 the three groups comprise 60 per cent. of the actual percentage.

Cause of Death Expressed as Percentage of Comparative Mortality Figure.

	1901.		1911.
Diseases of respiratory system ...	35.69	.....	28.66
Diseases of urinary system... ...	8.96	.....	11.62
Diseases of circulatory system ...	13.74	.....	22.32

There is therefore an issue between these two points of view, and the community is entitled to ask exponents of industrial medicine as to the proper solution of such a dilemma. Recent work has to some extent suggested the direction in which this may be sought. Comparison of the disease occurring in persons who work in lead alone (white lead workers), uncomplicated by the dust of angular particles (potters), shows that while respiratory diseases are common in potters who inhale flint dust and lead together, it is not so common amongst white lead workers who only inhale lead dust. The material of which the painter makes use is soft and not angular, and it is well known that persons exposed to baryta and other types of dust without angular particles do not show a high incidence of

respiratory disease. The painter, on the other hand, is exposed to a risk to which neither of the other two classes of industrial workers is exposed—namely, the inhalation of fumes of volatile products (turpentine and turpentine substitutes) which are known to produce respiratory effects in susceptible animals.

In a recent examination of white lead workers and painters the average blood pressure of the painters in the same age-groups was found to be higher than that of lead workers. This is a suggestive point—the constant inhalation of vapours of volatile fluids, among which are compounds of the benzine and paraffin series, is conducive to renal affection and high arterial tension. The higher arterial tension of painters is the more striking, as painter's work is much less severe; less muscular effort is required in using a paint brush than in carrying half-hundredweights of lead or huge baskets filled with wet tan.

One further statistical fact, culled from the figures of the Registrar-General's report for 1911, appears to corroborate the growing opinion that it is in the volatile portions of the paint rather than in its solid constituents that one must look for the cause of the disease. The birth rate tables per 1,000 males aged under 55 years gives a birth rate for the painters of 155, which is actually higher than for clergymen, barristers, solicitors, and law clerks, and farmers and graziers (148), whilst the figure for all males is 162. Such figures do not suggest serious lead absorption.

This short epitome of some of the facts of the painting trade controversy supports by a specific instance the difficulties underlying the problems of occupational disease outlined by the opener of the discussion, and emphasizes the necessity of strictly scientific methods in dealing with problems of industrial medicine.

DISCUSSION.

Captain W. E. Elliot, M.P., thought it desirable that labour should treat medical men engaged in factory hygiene as private practitioners are treated and not as if they were employers' agents. It was important to secure a correct spirit and a right attitude of mind. While it was doubtful how far laziness was pathological, it might well be psychological in origin. The problems of industrial hygiene were wide. The figures given by Professor Collis should be taken into account in the consideration of legislative proposals. For example, the high proportion of agricultural labourers over 55 years of age as compared with miners was an important point in considering the question of an agricultural wages board. Reforms unfortunately meant more spending by an already overburdened community. The large labour turnover referred to by Professor Collis might be due to psychological causes, such as the element of monotony. The spirit of man revolted against the idea of supreme efficiency. As regards convalescents, the Ministry of Pensions was the biggest medical organization, dealing with 1,200,000 disabled men in receipt of pensions. Of these, a residue of 10 per cent. would remain permanently subnormal. Here was an opportunity to investigate short-time employment, and to apply the results to industry. Failure to deal with the problems of industry might lead to disastrous consequences. Industry must put its house in order. A small sentimental cause might result in a big explosion.

Dr. Dearden (M.O.H. Port of Manchester) said that a proper industrial medical service ought to be established, as was being done in Belgium, where since the war a brave attempt was being made to reconstruct industry. There an independent factory medical service with its own chief had been set up, including eleven medical inspectors of factories, a laboratory, and an expert research chemist. There were also inspectors of young people while at work. An independent or semi-independent department was needed in this country with a large staff of medical inspectors. At present there were only four medical men and one woman. The inspectors should live in the industrial areas and keep in close touch with industry. Great advantage was to be gained by utilizing the services of general practitioners in this work. During his own long period of service as a factory surgeon in Manchester he had been able to do original work in connexion with aniline poisoning, "phossy jaw," and other subjects, and he was now working on the subject of defective eyesight. Excellent work had been done by other general practitioners holding factory appointments; Dr. Prosser White of Wigan, for example, had written a standard textbook on industrial diseases affecting the skin. Change of employment was due partly to physical deficiency and not infrequently to defective eyesight.

Dr. Harold Kerr (M.O.H. Newcastle-on-Tyne) said that inadequate attention was given in existing conditions to the supervision of the preparation of food in public restaurants, hotel kitchens, etc. These places were often not inspected, because with respect to them the position was ill-defined as regards the responsibility for inspection. The responsibility should be definitely settled and the relation of local authorities and their officers made clear and definite. A careful supervision of these places was of great importance.

Dr. Mackail (Lecturer in Public Health, Glasgow) pointed out the great anomalies as regards the powers of factory surgeons which at present existed; there was no power to walk through a factory and to reject an employee who was obviously ill. This was left to the employer. Where a monthly inspection was obligatory, as amongst workers in lead, mercury, etc., the management was discouraged from making intermediate inspections. The general practitioner should have the right of entry into factories. At present there was no right of entry into a lead factory until a person was certified as suffering from lead poisoning. There was no power or duty to follow up cases. With regard to the large labour turnover referred to by Professor Collis, it was possible that the same people were changing repeatedly. Each industry should carry its own wastage. No person should be allowed to start work without being instructed in the precautions that should be taken. In conclusion, he pointed to the need for correlation between the Workmen's Compensation Act and the Insurance Act.

Dr. Duncan (Factory Surgeon, Stafford) considered that the general practitioner could play a most important part and be a great power for good in factory hygiene. He believed that the reason for change of work was largely psychological. The general practitioner ought to familiarize himself with the industries of his district, and know the nature of the processes of each industry. He should lose no opportunity of obtaining by courtesy entrance into as many works as possible. By this means he would be able to treat his patients more intelligently and sympathetically. Provision should be made whereby convalescents could undertake light work whenever this was desirable.

Dr. Miller (County M.O.H. Radnor) said that there was need for closer co-operation between the factory surgeon and the school medical officer, in order to secure continuity and to utilize the information obtained during school life. This might be effected through the Juvenile Employment Committee. The existing machinery should be improved with a view to greater simplification. Part-time consultants might, he thought, be employed with advantage.

The President (Sir Thomas Oliver) said that employers would be wise in their own interests if they allowed and encouraged medical practitioners to visit their works and to inspect the various processes carried on. Medical men would benefit considerably as a result of these visits and the information obtained therefrom. It was unwise to pay too much attention to patients' statements; cases were not infrequently certified as lead poisoning in which the symptoms were really other diseases; this was due to unfamiliarity on the part of the practitioner with the conditions in which lead poisoning was likely to occur. Those employed in brass works and other industries showed a remarkable capacity of acquiring tolerance to poisons. Thus young persons engaged in brass departments inhaled small quantities of carbon monoxide, and suffered from shortness of breath, but after a time, as tolerance became established, the symptoms became less marked.

Dr. Inglis (Hebburn-on-Tyne) said that an experience of forty years as a factory surgeon had shown him that, where tact and, on occasion, "bluff" were exercised, there

was no difficulty in gaining admittance to factories. With regard to workers in lead, he had followed the practice of removing those who were apparently "run down" or in poor health to another part of the works. In this way loss of work and of wages had been successfully avoided.

Professor Collis said that the psychology of industrial unrest appeared to bear a definite relation to industrial mortality. Thus it was remarkable that in the recent strikes the strike ballots in the seven great coalfields were directly related to the mortality from accidents. The greatest numbers in favour of a strike were found in the areas having the greatest mortality, and the parallelism was almost exact. Laziness might well be psychological, but due to pathological causes.

Dr. F. E. Wynne (M.O.H. Sheffield) moved, and Dr. Kerr (M.O.H. Newcastle-on-Tyne) seconded, the following resolution, which was carried unanimously:

That it be a recommendation to the Council of the Association to endeavour to obtain increased powers for local authorities with respect to houses let in lodgings.

LUMINAL CONTRASTED WITH BROMIDE IN EPILEPSY.

BY

F. GOLLA, M.D., F.R.C.P.,

PHYSICIAN TO ST. GEORGE'S HOSPITAL AND THE MAIDA VALE HOSPITAL FOR EPILEPSY AND NERVOUS DISEASES.

The therapeutic value of luminal in the treatment of epilepsy has been recognized by a large number of American and German writers. The following observations record an effort to establish the relative efficacy of the luminal and the bromide treatment of epilepsy.

In any attempt to establish the value of a form of treatment which cannot pretend to rank as a specific cure certain difficulties are encountered necessitating the exercise of great caution. Every neurologist of experience is aware of the astonishing manner in which epilepsy undergoes spontaneous remissions and exacerbations. This difficulty necessitates the observation of a very large number of cases for a lengthy period before the new treatment is commenced, and the continuance of the experimental treatment for a considerable time. All cases due to traumatic or infective lesions must be rejected in order to avoid complication of the results by possible variations in the extent or intensity of the lesion.

The total number of cases that have been observed for a period of not less than eighteen months is 125. The patients were treated at the Hospital for Paralysis and Epilepsy, at St. George's Hospital, and at the Maudsley Hospital. All of them had been treated by bromides for periods extending from fourteen years to a minimum of six months. Since cases occur in which the mere suspension of bromide treatment may be followed by a period of improvement, in every case bromide treatment was suspended for a short period and the effects noted. In only one case was there a period of remission following suspension of the bromide treatment, and this remission lasted for sixteen days. Two other cases were unaffected by cessation of the bromides, and all the others showed signs of an increased severity of the malady. This sufficiently disposes of the possibility that any amelioration with luminal treatment might be referable to the mere suspension of bromides. Without much larger statistics than I have been able to gather, it is difficult to make any pronouncement on this alleged improvement of epilepsy on the cessation of active treatment, but its rarity is not incompatible with the view that such cases are merely those in which a spontaneous period of remission happens to have coincided with the disuse of bromides.

As to the intensity of the bromide treatment, with which the luminal treatment is compared, I will confine myself to the general statement that in every case such doses of bromide had been exhibited as appeared to reduce the fits to a minimum without causing any marked general disturbance.

When the results obtained by luminal treatment were collated, it at once became evident that the efficacy of the luminal varied greatly in cases afflicted with different degrees of severity. In our complete ignorance of the pathology of epilepsy it is impossible to hazard any opinion as to whether or not the same pathological process is at the root of epileptic crises occurring daily and those occurring at infrequent intervals, either in bouts or singly, but the effect of luminal on such different types of cases is so different that I have thought it expedient to group my cases empirically into classes which are determined by the frequency of the attacks. By this means a far more accurate picture of the efficacy of the drug is obtained than by the consideration of the unclassified results. It is necessary to add that no selective action on the different types of epileptic discharge could be verified.

I have then divided my cases into the following groups: Those suffering from diurnal fits; those suffering from fits more frequently than four times in a month of thirty days; those with fits occurring between once and four times in a month; those with fits occurring less than once a month; those with fits occurring in bouts of several at a time at intervals of not less than twenty-one days; and lastly, a small group of cases of traumatic epilepsy in which the lesion was of several years' standing. All the cases were carefully examined to exclude syphilitic origin, and if any cases with either a luetic, vascular, or traumatic pathogenesis have been unwittingly recorded the number must be practically negligible.

Class A.—*Diurnal Fits.*

The results of treatment of cases in this class may be summarized as follows:

No.	Age.	Period during which Fits occurred Daily whilst under Bromides.	Average Number of Fits during Past Three Months after not Less than a Year's Luminal Treatment.
1	36	Thirteen years	One in forty-five days.
2	42	Fourteen years	One in thirty-seven days.
3	19	Four years	One in seven days.
4	27	Eight years	One in ten days.
5	18	Two years	One in thirty-six days.
6	20	Six months	One in twenty-one days.
7	7	Three years	One in seven days.
8	10	Eighteen months	Daily; condition unchanged.
9	4	Ten months	Condition became worse under luminal.*

*After three months' trial put on bromide again; fits gradually diminished, now one in twenty-eight days.

These cases show such a startling superiority of luminal over bromide treatment that they merit some further comment. The first two cases are perhaps the most striking.

Case 1.

A woman who had suffered from hereditary epilepsy since her sixteenth year. I first saw her when a registrar at St. George's over fourteen years ago, and since then she has been under continual observation as an out-patient. Under full doses of bromide the fits occurred regularly once a day. On three occasions I endeavoured to stop the bromide treatment, but on each occasion the fits increased in frequency and severity to an alarming extent. During the past few years the patient has become increasingly depressed and stupid, and the face has been covered with acne. She was given luminal sodium in two-grain doses in the morning and four grains at night. From the second day after beginning luminal treatment the fits ceased, and for the ensuing ten weeks she was free from fits. She became much brighter and her general condition, both mental and physical, showed striking improvement. After ten weeks she had a series of fits on three successive days, and then remained free for three weeks. Her fits after eighteen months' treatment now average one in forty-five days, and can be said to be slight in nature.

Case 2.

A man who had been under my observation since 1907. Like the preceding case, he had daily fits whilst under bromide, and became very much worse when the drug was intermitted. His fits were, however, slighter than those of the first case, and he showed little trace of the effects of bromides. Treated with two grains of luminal thrice daily the fits ceased at once, and he did not again have an attack till two months later, when he had two fits in succession. His present average is one in thirty-seven days.

Both of these cases are liable to frequent attacks of *petit mal*, but they assure me that these attacks are not more frequent than they were under the bromide treatment. Both patients say that they feel infinitely better and brighter than when taking bromides. Cases 3, 4, 5 and 6 were, after some months' treatment with luminal, placed on bromide treatment for a fortnight. In all four cases the number of fits increased within two days, and I had to yield to their solicitations to discontinue the experiment. Cases 8 and 9 are two children, both mentally defective. Case 8 showed no improvement when treated with luminal, whilst Case 9 became decidedly worse. Some weeks after the luminal treatment was abandoned, and this child again put on bromides, she began to improve, and during the past three months has not had more than one fit a month.

CLASS B.—*Cases with more than Four Fits a Month.*

The results of treatment of cases in this class are recorded in the following table. Of the 51 cases, 4 were no better with luminal than with bromides, as evidenced by the number of fits, and 5 cases had an increased number of fits.

Table showing Average Incidence of Fits during Preceding Nine Months under Bromide Treatment, and during the last Three Months of a Year of Luminal Treatment.

No. of Cases.	Bromide Treatment.	Luminal Treatment.
3	15 to 17 fits a month—average 15	Average 3
2	10 to 15 " " " 12.5	" 7.5
16	7 to 10 " " " 9	" 6
30	4 to 7 " " " 5.5	" 4.5

CLASS C.—*Fits Occurring One to Four Times a Month.*

There were 29 cases in this class, with an average incidence of three fits a month during nine months under bromide treatment, and of 1.2 during the last three months of a year of luminal treatment. Eight of these cases showed practically no improvement, and one was distinctly worse when treated with luminal.

CLASS D.—*Fits Occurring less often than One per Month.*

There were 15 cases in this class. The average incidence of fits during nine months under bromide treatment was 0.8 a month, and during the last three months of a year of luminal treatment 0.9. Seven cases showed no improvement, and two had fits with slightly greater frequency.

CLASS E.—*Fits Occurring in Bouts of Several in Succession not oftener than Once a Month.*

Under this heading there were 13 cases. The number of fits in succession during nine months under bromide treatment averaged 4, and during three months under luminal treatment 5. Six cases showed no improvement as to frequency of fits; 3 were somewhat worse. The absolute numbers of fits occurring during a bout is seldom very reliable. The best interpretation of these results would probably be to consider that luminal showed no advantage over bromide treatment. Eight cases of traumatic epilepsy in which the lesion had occurred not less than five years previously were treated with luminal. Of these cases, 7 showed definite improvement under luminal, whilst one patient who suffered from fits occurring in bouts was unaffected.

A study of the results here recorded shows that 36 cases out of a total of 125 were either not improved or deteriorated under luminal treatment, whilst the remainder did better under luminal than under bromide. The cases most beneficially affected by luminal were those with fits occurring at frequent intervals, and the cases least affected were those whose fits occurred in bouts at considerable intervals of time.

The interpretation of these results is a matter of some difficulty; to make the experiment complete it would be necessary to know the frequency with which the fits would have occurred when the patients were observed for lengthy periods in an untreated condition, and this for obvious reasons was impossible. I hesitate to believe that luminal exercises a selective action on those forms of epilepsy in which the fits occur with the greatest frequency; it appears to be more probable that a class of epileptics exists who are more refractory to bromide treatment than others, such a class would obviously show the greatest number of fits when treated by bromides, at the same time these patients are not less susceptible to luminal than their fellows, and consequently it is with these cases that the drug shows its most marked effect.

The doses of luminal employed have rarely exceeded 6 grains a day of the sodium salt. Using such small doses I have hitherto been unsuccessful in determining to what degree, if any, it undergoes change in the body. The only method so far available of recovering it from the urine is to shake it out with ether, and when the total weight recoverable in a twenty-four hours' specimen of urine does not exceed 6 grains it is futile to pronounce on the possible destruction of small fractions in the body. The sodium salt was administered on all occasions on account of its solubility, but there is little doubt that in the acid stomach it is converted into the insoluble acid.

It is the rapidity with which the insoluble acid is passed on to the duodenum and its relative dilution with the gastric contents that may, by varying the rapidity of absorption, be responsible for the occasional appearance of slight toxic symptoms such as giddiness and drowsiness. The earliest period after ingestion at which I have been able to demonstrate its presence in the urine is three hours.

The drug is, as a rule, well tolerated, and most patients found that they were far brighter and more cheerful after a change to luminal from bromide treatment. In twelve cases, however, the patients complained of giddiness and drowsiness. Five of these patients showed definite affection of the gait, reeling slightly as if under the influence of alcohol. By diminishing the dose of luminal I was able to secure eventual toleration in all but four patients, who complained so persistently of giddiness that the luminal treatment was suspended. Urticarial rashes appeared in two cases at the onset of treatment, but disappeared when it had been continued for a few days.

There has in no case been any signs of the formation of a drug habit, and suspension of the treatment has never given rise to any disturbance. There is a tendency in all cases for the number of fits to increase slightly after the first two months of treatment. I have refrained from increasing the strength of the dose given, as I wished to determine whether this tolerance was a progressively increasing factor, but I found little evidence of this. In a series of 20 cases the average number of fits per month after a month's treatment was 21; after two months, 30; after four months, 36; and after ten months, 32.

It is to be regretted that no English firm has been willing to undertake the manufacture of this important drug, which is at present only obtainable from Germany. The more toxic compound known as dial, which I have endeavoured to substitute for it, is only manufactured in the form of the insoluble acid salt, and the giving of boxes of pellets of a poisonous hypnotic to epileptic out-patients is a measure of doubtful expediency.

RECURRING DISLOCATION OF THE SHOULDER-JOINT.

BY

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CAPETOWN.

DISLOCATION of the head of the humerus from the glenoid cavity of the scapula occurs from congenital, pathological, and traumatic influences; with the two former categories we are not here concerned.

The initial dislocation from traumatism is usually very painful, not so much from the actual displacement as from the reflex muscular contractions, which occur in spasms of great severity, driving the head of the humerus against sensitive structures in the proximity. Once the reposition has been effected, prolonged abstention from

* Luminal is phenyl-ethyl-barbituric acid, a modification of veronal, an ethyl group being replaced by a phenyl radical. It is almost insoluble in water. The sodium salt is readily soluble.

violent movement is advisable. The integrity of the ruptured, or stretched, capsule and ligaments can hardly be re-established under three months, unless by soft, plastic repair tissue devoid of tensile strength.

If, from want of proper rest and adjustment of the injured capsule and ligaments while undergoing repair, or if, by reason of the severity of the primary traumatism, dislocation soon again recurs, those ligamentous structures which are concerned in retaining the bones in position are liable to become permanently elongated, leading to the condition of recurring dislocation.

This chronic disability is not usually painful but it is inconvenient, and when well established it takes place with annoying frequency, often on the most trivial occasion—for example, serving at tennis, throwing a cricket ball, brushing the hair over the occiput, washing the back, stepping unexpectedly off the kerbstone, stumbling in the dark.

The head of the humerus, we are taught by the anatomists, maintains its position by reason principally of the support of the circumjacent muscles. In rest and in gentle and limited movement this may be true, for the tonus of these muscles acts as a constantly approximating factor. In movements of wide range, however, or when the relaxed musculature, taken unawares, is put to sudden strain, the capsule acts as a check ligament, or as a conjoined series of check ligaments, and is indeed the essential feature in maintaining the opposition of the articular surfaces. If the capsule, with its special developments, the coraco-humeral and gleno-humeral ligaments, is too loose, or stretched, or torn, the more lateral attachments and elasticity of the muscles operating the joint, and the insufficient adjustment of the osseous contour permit an unusual degree of mobility of the humeral head in its articular seating.

This *a priori* statement, which is contrary to that generally accepted, that the integrity of the capsule is the prime factor in maintaining the bony elements of this joint in proper juxtaposition, receives support from the fact that in neuropathic affections of the shoulder-joint, as in syringomyelia, or in cervical tabes, the acute distension with mucous fluid leads to rapid relaxation of the capsule and dislocation, frequently apart from and prior to any absorption of bone; although admittedly there is often some degree of hypertonus of the local musculature from infringement of the centripetal sensory paths.

On the other hand, in the Erb-Duchenne type of palsy, or in gunshot wound of the neck involving the upper cords of the brachial plexus, dislocation does not occur, though the arm may fall one to two centimetres. This relative importance of the ligamentous and muscular structures seems to be equally true of most of the other joints.

The musculature of the shoulder, in addition to its tractive action, forms also a firm housing for the joint, except below. Here the capsule is unsupported, and hangs pendent between the teres minor and scapular head of the triceps behind and the subscapularis in front. In abduction it is taut, over what is now a linear aperture between the same muscles. The majority of dislocations take place primarily in abduction, and through this space, the head of the humerus being levered, or pulled, over the lower quadrant of the glenoid articular rim.

The textbooks consulted recommend that recurring dislocation of the shoulder should be treated by stitching up the torn capsule, tightening the loose area, or resecting the redundant part, in addition, of course, to the repair of any obvious bony deformity which may be present. As a rule this is not easy, and it is not always successful. Another type of operation has been devised to meet the exigency (Openshaw). In this the tendon of the subscapularis is severed, the capsule is opened, the head dislocated, and about half the articular surface sawn off in a nearly vertical plane. The opposing surface of the glenoid cavity is obliterated. This leads to fibrous union of the central portions of the articular surfaces, which, with active and passive movements, later develop into a short, strong ligament holding the bones in association. The conception of this operation is scientific, but it disables the joint for a long time. Furthermore, unless the patient applies himself with assiduity and fortitude to the vigorous after-treatment indicated, a firm fibrous or bony ankylosis remains, with very deficient mobility, though certainly dislocation will not occur again.

In my last five cases the following operation has been performed with entirely satisfactory results. It is devised on the principle of strengthening the suspension of the limb at the site and by means analogous to those of a normal joint.

Operation.

An anterior incision is made in the delto-pectoral sulcus, from the clavicle as far down, if necessary, as the insertion of the deltoid. This muscle is now well reflected, exposing the anterior and lateral aspects of the capsule and permitting digital access to the posterior. With the arm in abduction to relax the deltoid a drill of large size is driven antero-posteriorly through the humerus, medial to the tendon of the biceps and through or close to the insertion of the subscapularis tendon; this about the level of the middle of the articular surface of the head. The drill passes backwards horizontally and emerges through the great tuberosity behind. It perforates easily, as the bone, excepting the superficies, is of a loose cancellous texture. The diameter of this tunnel should be about 1 cm.

By inserting the finger between the deltoid and posterior part of the bone the drill can be felt emerging. Any vessels severed are tied and the wound temporarily covered. The capsule of the joint is not opened. A long incision is now made on the lateral aspect of the thigh, exposing the fascia lata for its full length. A strip of this fascia is excised, about 30 cm. (or 12 in.) long and about 4 cm. (or 1½ in.) broad. The fascia lata incision is sewn together and the thigh wound closed. The excised strip is now rolled or folded up into a compact cord and sewn with a running stitch of linen thread or silk into a firm ligamentum teres.

The shoulder operation area is again exposed. A silver wire with a loop, or a pliant probe, is used to draw a strong linen thread through the tunnel, and this in turn being fixed to the extremity of the artificial ligament pulls it antero-posteriorly through the bone. The arm must be abducted and rotated to give the maximum space between the deltoid of the humerus, otherwise manipulation is difficult and the posterior exit of the tunnel not of easy access.

A small incision is now made on the upper aspect of the clavicle lateral to the coracoid process, exposing the bone, from which the soft parts are freed. With a curved pair of pressure forceps passed in front of the clavicle and burrowed through the deltoid the posterior extremity of the artificial ligament is pulled up and slung over the clavicle. By again directing the forceps from the anterior incision through the tissues (avoiding the coraco-acromial ligament, which can be felt) and causing the forceps to emerge posterior to the clavicle, the artificial ligament is drawn once more into the original operation area. Both ends are seized in forceps, drawn taut (with the arm at an angle of 45 degrees from the side), overlapped, and sewn securely together with silk or linen thread.

Thus a firm figure of 8 ligament is made to suspend the humerus through, approximately, its axis of rotation in the movement of abduction, to a fixed osseous buttress above. This ligament interferes in no wise with rotation or excursions of normal limitations. While permitting rolling of the articular surface it prevents descent of the head, which is the first tendency towards ordinary dislocation whether due to paretic musculature or stretched ligaments.

Any looseness of the capsule (and this cannot often be demonstrated) is repaired by taking in a reef, usually in front and below. This can be done by raising a ridge in the line of the fibres, transfixing its base with a continuous mattress suture of linen thread, further strengthened by a running continuous suture along the summit of the ridge.

The operation is considerably abbreviated by employing two or three strands of strong silk as the suspensory material. This was done in one case with equally good result. There is, however, a possibility that the thick alien material may give trouble in the course of time. The arm is well supported in a sling and rested for six weeks. Gentle movement only is advisable for three months.

Note.—This paper was read on October 29th, 1920, at a British Medical Association meeting in Cape Town. The cases and operations referred to were performed and recorded on the clinical history cards and operation books of the S.A. Military Hospital, Richmond, Surrey, in 1917 18 19, and in the Wynberg Military Hospital, Cape Province, in 1920. By the mail from Europe of about November 8th, 1920, an article in the *Zentralblatt für Chirurgie* delineates a somewhat similar operation recently successfully tried on one case, an epileptic.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PRURITUS ANI.

The subject of pruritus ani was recently discussed before the subsection of Proctology of the Royal Society of Medicine, and various methods of treatment were then suggested. Dr. Finzi alone, among the speakers, is reported to have said that "high frequency applied with a vacuum electrode often gave considerable relief, and this was a treatment that could be continued indefinitely, if applied with care."

After many years of experience in the use of high frequency currents in various conditions, I have no hesitancy in agreeing with Dr. Finzi's statement. Personally, I obtain the best results from a solid metal electrode introduced within the rectum. The treatment does not need to be "continued indefinitely"; on the contrary, a beneficial and permanent result is, as a rule, speedily obtained. I would suggest, therefore, that before drastic measures are adopted, a trial should be given to the application of high-frequency currents. By this method not only may the pruritus be relieved, but haemorrhoids or fissure, if present, may be cured at the same time.

A further advantage of the high-frequency treatment is that it can be conducted without interfering with the patient's ordinary affairs, and its application can cause neither pain nor discomfort.

Glasgow. W. F. Somerville, M.D.

RUPTURED ECTOPIC GESTATION AND UNINTERRUPTED UTERINE PREGNANCY.

On November 10th, 1919, I was asked to see a married woman, aged 29, a multipara, in consultation with Dr. W. Branch. She had that day been seized with acute abdominal pain, and had a very rapid pulse and faintness. She had missed two menstrual periods. After removal to hospital her general condition improved, and the acute symptoms passed off, but there remained a well-defined swelling in the left iliac region which was tender to the touch, and she had an occasional slight rise of temperature.

On December 4th I operated, and found the peritoneal cavity full of fresh blood which came from a tear in the left Fallopian tube; there had evidently just occurred a second rupture of the tube, perhaps on removing her from the ward to the operating theatre. The left Fallopian tube was ligated and excised, and the left ovary was removed, as it was cystic. The excised tube contained a foetus of about six weeks to two months. The uterus at the time seemed large, as it usually does in these cases.

The patient made an excellent recovery from the operation; unmistakable signs of pregnancy soon manifested themselves, and she was delivered of a healthy boy on June 10th, 1920. This variety of twin pregnancy is, I believe, of comparative rarity.

Antigua, B.W.I. Cecil M. Rolston, F.R.C.S.E.

Reviews.

THE HISTORY AND METHOD OF SCIENCE.

The second volume of *Studies in the History and Method of Science*,[1] edited by Dr. Charles Singer—an important and imposing work—is a tribute to the enthusiasm and efficiency of the able editor. Most appropriately, it is dedicated to the memory of Sir William Osler, who saw the first instalment of these *Studies* through the press, and had the success of this project so much at heart. The fifteen articles in the present volume cover a wide field; the possibility that in the first volume undue prominence was given to mediaeval studies has been borne in mind, and more space has been devoted to the evolution of the mathematical and exact sciences. In the preface the recent evidence of the world's interest in the history and philosophy of science is briefly sketched, and a plea is advanced for a central institute and library in this country to promote systematic investigation into the historical documents of science.

In a scholarly and beautifully illustrated article of a hundred pages Dr. Singer points out that science, which is said to be the conscious collection of data and the conscious formulation of theories, cannot be traced with certainty earlier than the speculations of the Ionian philosophers of the sixth century B.C., the Hippocratic writings being the first available in a substantial form. Comparison of the course of Greek and modern science shows that from the downfall of Greek science in about the third century A.D. there was a somnolent interval until 1543, when Copernicus's *De Revolutionibus Orbium Celestium* and the *De Fabrica Corporis Humani* of Vesalius appeared, and that, though anatomists had been active for some centuries, as shown by dissection of animals at Salerno in the eleventh century, effective advance in zoology hardly began before the second half of the sixteenth century. Greek science originated among a group of philosophers, and there was little to check direct observation or the experimental method of active extension of knowledge; modern science at its beginnings was much hampered by the priesthood and tradition, but the extension of knowledge began before the revival of the Greek language. The Greek intellect often accepted data without the laborious verification modern science regards as essential. The contrast between the ancient and the modern methods of setting out biological conclusions is illustrated by a striking account of the investigation of the interesting generative processes of the Cephalopods. In spite of errors work on modern lines has shown a steady advance towards a true conception of the phenomena, because each observer recorded his actual results in a form available to criticism, whereas Aristotle noted his final conclusions only, without any indications of the observations on which they were based. At the same time justice is done to Aristotle's genius in the classification of animals and in foreshadowing the doctrine of evolution by his theories of the development of the individual. The Greeks studied living things in order to understand themselves, but paid more attention to animals than to plants, which Theophrastus, the father of botany, in the sense that his writings are the earliest extant, frankly admitted were studied mainly for their medicinal uses. The father of plant illustration was Crateuas in the first century B.C., and some fragments of his drawings are reproduced from the famous Julia Anicia MS. Professor Arthur Platt, after a struggle with the difficulties and contradictions of the obscure text, contributes a new interpretation of Aristotle's description of the heart. In an article based on much research—the Asclepiadae and the Priests of Asclepius—Dr. E. T. Withington, after a careful analysis of the data, brings forward some additional reasons for the rejection of the view that Hippocratic medicine originated in the health temples. Mr. J. M. Child's technical essay on Archimedes's "Principle of the Balance and some criticisms upon it" has been written in response to Ernst Mach's criticism of the work of Archimedes.

Professor H. Hopstock writes authoritatively on "Leonardo da Vinci as an Anatomist." He shows that Leonardo at first relied on the existing works of Galen, Avicenna, Mondino and Benedetti, and attempted to adopt their teaching, but finding them inaccurate began cautiously and tentatively to depend on his own observations; eventually he emancipated himself entirely from tradition and became the greatest naturalist of the fifteenth century. He corroborated his physiological investigations by physical and mathematical tests, studied embryology in animals and in man, dissected more human subjects and gave far more accurate descriptions than any of his predecessors, and came near to, but did not succeed in, anticipating Harvey in the correct conception of the circulation. Mr. J. J. Fahie's essay on the scientific work of Galileo is a review of the national edition of Galileo's works in twenty large octavo volumes edited by Professor Favaro, who has devoted forty-four years to this study. Although Galileo was not much interested in medical studies, and was soon attracted away from them by the lure of mathematics and physics, one of his first discoveries, the synchronism of the oscillations of the pendulum, was made by timing the excursions by his pulse; this was the earliest instance of accurate measurement of any bodily function, as well as the basis of the modern clocks; it was long used by physicians under the

[1] *Studies in the History and Method of Science.* Edited by Charles Singer. Vol. ii. Oxford: At the Clarendon Press. 1921. (Pp. xxii + 559; 55 plates; 80 illustrations in the text. 48s. net.)

name of pulsilogia. Galileo's readiness to criticize dogmas, especially the dictates of Aristotle, early gained him the nickname of "the Wrangler"; his activities were prodigious: he invented the telescope, the microscope, and the air thermometer; his law of falling bodies at once led to much physical discovery; it was his astronomical researches and his support of the Copernican theory that brought him under the ban of the Inquisition. In an article on the steps leading to the invention of the first optical apparatus Dr. C. Singer, while tracing the germ of the origin back to Pliny, gives reasons for regarding Galileo as the effective discoverer of both the telescope and the microscope.

In his contribution on "Mediaeval Cosmology and Astronomy" Dr. J. L. E. Dreyer points out that the chief reason why few students are attracted to these subjects is that many of the interesting manuscripts of the Middle Ages have not been printed, and that for this reason Duhem's great work recently published in Paris is especially welcome. Roger Bacon was thoroughly acquainted with the Greek and Arabian astronomical writings, and seriously devoted himself to this line of work when he went to Paris in 1235. The next article is appropriately on "Roger Bacon and the State of Science in the Thirteenth Century," by Mr. Robert Steele; that century, which was surging with unrest and criticism of established authority, was characterized by the introduction into Western Europe of Aristotle's works, the spread of knowledge being effected through three distinct channels —through the universities, especially those of Paris and Oxford; through the schools of religious houses; and through individuals and small groups of scholars. Medicine received a fresh stimulus from the Sicilian Emperor's insistence on the value of dissection, and from the translation of Avicenna's work, which dominated medical teaching till the seventeenth century. The relations of Bacon to Albertus Magnus are described, and Mr. Steele remarks that Roger Bacon stands out prominently as the first English leader of scientific thought; his writings, which have been much neglected, should, he urges, be collected and published.

Mr. F. C. Conybeare's translation of four Armenian tracts on the structure of the human body will assist the occidental reader to form an impression of the character of mediaeval Armenian scientific ideas. A sketch of the history of palaeobotany has been contributed by the late Mr. E. A. Newell Arber. In his article on the history of anatomical injections Mr. F. J. Cole shows that the rapid acceptation of this method and the exaggerated view of its ability to solve all the problems of anatomy and physiology was soon followed by neglect, so that it ceased to be a means of research and became a matter of almost purely historical interest. Dr. Schiller's disquisition on "Hypothesis" is followed by a paper on "Science and Metaphysics" read some years ago to a philosophical society in Oxford by the late Mr. J. W. Jenkinson. Mr. F. S. Marvin, writing on "Science and the Unity of Mankind," discusses first the abstract question, How far is the nature of science essentially social? and then the historical or *a posteriori* inquiry, How far has the growth of science been accompanied by a closer knitting up of the world as one community? He decides that the unity of the future will be largely dependent on international scientific associations, and that in any teaching of history favoured by the League of Nations the history of science should have a prominent position.

Although it is impossible to give any consecutive review of the valuable studies contained in this volume, enough has perhaps been said to stimulate the reader to consult its carefully thought out and scholarly essays.

DISEASES OF INFANCY.

DR. G. VARIOT,[2] in his *Traité pratique des maladies des enfants du premier age*, carries on a celebrated French tradition. His book is in the direct line of Parrot's *L'Athrepsie* (1879), and of Billard's classic, *Traité des maladies des nouveau-nés, et des enfants à la mamelle* (1818). He, however, extends the age period dealt with to two years, because a large number of children over a year, by the standards of height and weight, really belong to the period of infancy.

In these eleven hundred large pages the author gives the fruit of his long clinical experience of infants. The first and perhaps the best part of the book deals with infant hygiene, breast and artificial feeding, and the disorders of digestion in their various types and degrees produced by errors in feeding. On these matters Dr. Variot writes with acknowledged authority, and he succeeds in imparting interest to a subject that is often made dull as well as obscure. It is a great advantage to have collected here and vigorously expounded the views and doctrines that have come to be associated with his name, such as the importance of measuring infants (pediometry), and of guiding the feeding by the figures of height as well as weight; the greater danger of underfeeding than of overfeeding; the faulty use of undiluted or too highly diluted milk; the great value of superheated and highly sweetened milk; the superiority of cane sugar to milk sugar; the use of x rays in young infants; the distinction between atrophy and hypotrophy. He will not perhaps carry conviction on all these points, but he always writes from his own clinical experience, and with clearness and confidence, and it is these qualities that give the precious quality of interest to his narrative.

The remaining and larger part of the book deals with all the clinical conditions met with in infants and young children up to 2 years of age. The account of congenital diseases and defects is especially complete, and includes conditions rarely described in the ordinary textbooks.

Dr. Variot has been distinguished as an organizer as well as a clinician. Early in his career he took an important part in effecting hospital reforms in Paris, as a result of his study of the London hospital system. He then struck out an entirely new path in his foundation of the milk dispensary, the famous Goutte de Lait of Belleville, a model which has now been copied all over France and widely outside. A further step was the formation of his Institute of Puericulture, where courses of instruction in infant hygiene and preventive medicine are given both to medical students and to the mothers attending his infant clinics. A short account of this administrative machinery is given in the book. But they do not require the assistance of a book; they have their own solid corporate existence, and they may well endure longer than the book. Together, dispensary, institute and book, form a triple crown of achievement, and they fairly entitle Dr. Variot to be called the pioneer of the child-welfare movement in Europe.

X-RAY DIAGNOSIS IN DISEASES AND INJURIES OF BONES.

Diseases and Injuries of the Bones and Joints, and their differential diagnosis by means of the Roentgen rays, is one of a series of monographs on special x-ray subjects which is in process of production by various specialists in the United States. The present volume, by F. H. BAETJER, M.D., Associate Professor of Roentgenology at the Johns Hopkins University, and C. A. WATERS, M.D., Instructor of Roentgenology at the same University,[3] is the considered result of their joint observations made in the clinic of the Johns Hopkins Hospital, and is the more valuable by reason of the fact that it is entirely based upon personal work and experience. Technique is not dealt with at all, and the preface declares that the object of the book is to show that roentgenology is not a picture process but a medical procedure based upon careful analysis and logical deduction from the shadows observed upon a plate and the translation of these shadows into pathological terms.

The scope of the book and the ground covered may be estimated from the headings of the various chapters. A short introduction is followed by a full account of the normal bone appearances both in adult life and in the epiphyseal stages of bone development; here the importance of an accurate knowledge of the normal x-ray appearances is emphasized. Following this comes the main portion, divided into chapters upon fractures of the upper extremity, fractures of the lower extremity, congenital

[2] *Traité pratique des maladies des enfants du premier age.* Par le Dr. G. Variot, Médecin de l'Hospice des Enfants Assistés, et de l'Hôpital Notre-Dame-de-Lorette-aux-Secours, avec la collaboration de MM. le Dr. Pinchon et le Dr. Lambert-Gransagne. Paris: Librairie Octave Doin. 1921. (Imp. 8vo, pp. 1165; 88 figures. Fr. 75.)

[3] *Diseases and Injuries of the Bones and Joints.* By F. H. Baetjer, M.D., and C. A. Waters, M.D. London: H. K. Lewis and Co., Ltd. 1921. (Roy. 8vo, pp. 367; 355 figures. £5 10s. net.)

dislocations, acquired dislocations, bone infection, joint lesions in children, joint lesions in adults, bone tumours, the spine, abnormalities, and dystrophies. Again and again great stress is laid by the authors on the importance of a complete knowledge of normal bone formation and growth, and the variations which may be expected at different times of life. The importance of this knowledge is not only apparent in reading the chapters upon fractures and dislocations, but becomes even more obvious when bone tumours are discussed. The importance of the nutrient canal in bone tumours is pointed out, as in metastatic malignancy it is by the blood and lymph vessels entering the bone through this canal that the infection is carried and the site of the metastasis decided. Further, it is recommended that in analysing bone tumours four points should be taken as forming the basis for classification—1, the origin of the tumour; 2, the presence or absence of bone production; 3, the condition of the cortex; 4, the invasion. This chapter on bone tumours is decidedly good, and one of the most important and original; it is also sufficiently illustrated.

Perhaps the weakest part of the book is that which deals with abnormalities and dystrophies; it suffers from over-compression, and in any future edition should be revised and expanded. A more serious criticism is that whilst the illustrations are numerous and distinctive, in the large majority of cases they are not of the highest technical excellence, and the reproduction leaves very much to be desired.

As a textbook on the subject, and as a reference book, the volume fills a distinct gap in *x*-ray literature, and should prove of much use not only to experts in radiology but to the medical profession generally.

NOTES ON BOOKS.

THE current issue of the *Biochemical Journal* contains several papers on nutrition and vitamins; among them are a preliminary note on the synthesis of vitamin B by yeasts by Professor A. Harden and Dr. S. S. Zilva; a paper by Zilva, Golding, Drummond, and Coward on the relation of the fat-soluble factor to rickets and growth in pigs; another by G. M. Findlay, from the Royal College of Physicians Laboratory, Edinburgh, on the effects of an unbalanced diet in the production of guinea-pig scurvy; and a fourth on the influence of free fatty acids in the intestinal contents on the excretion of calcium and phosphorus, by S. V. Telfer, from the Institute of Physiology of the University of Glasgow.

A new number of *Brain* appeared on August 19th; it contains an article by Mr. Percy Sargent on lesions of the brachial plexus associated with rudimentary ribs; two papers, one by J. L. Birley and L. S. Dudgeon, and the other by W. E. Gye, on disseminated sclerosis (Dr. Gye's conclusion, it may be noted, is that disseminated sclerosis is probably an infectious disease, and that the virus may sometimes be found in the cerebro-spinal fluid); a report by Professor Marinesco on a case of myoclonic encephalomyelitis of malarial origin; and a paper by Professor J. T. Wilson, from the Anatomical Department of the University of Cambridge, on the double innervation of striated muscle.

The last two mails from India have brought us three copies of the *Indian Journal of Medical Research*—those for January, April, and July respectively. The January number contains reports of an experiment in the eradication of plague infection carried out at Poona by Major J. C. G. Kunhardt and Assistant Surgeon G. D. Chitre, and on malaria in Mesopotamia by Major S. R. Christophers, C.I.E., and Captain H. E. Shortt, I.M.S. The issue for April contains a series of papers, admirably illustrated, by Major W. S. Patton, director of the Pasteur Institute of Southern India, and Subassistant Surgeon Sundara Rao, of the same institution, on certain flagellates, and Lieut.-Colonel Gill, chief malaria medical officer, Punjab, contributes a long paper on the meteorology of malaria. Other papers in the same issue are by Major H. W. Acton and Major P. M. Rennie and a number of other workers on various forms of malaria. In the issue for July Major J. A. Sinton gives a description of larvae observed in certain cases of myiasis in India and Persia, Captain R. H. Malone relates methods of producing influenza vaccine and pneumococcus vaccine on a large scale, and Dr. M. B. Soparkar has two papers on cercaria.

It is often difficult to estimate the educational possibilities of mental defectives and to determine the form of instruction and training from which they may reasonably be expected to derive benefit. A recognition of these difficulties has led Dr. MARTIN W. BARR, Chief Physician, Pennsylvania Training School for Feeble-minded Children, and Professor E. F. MALONEY, Professor of English, Girard College, to write conjointly a volume entitled *Types of Mental Defectives*.[4] It is not a textbook; the practical aim the authors put before themselves was to provide those beginning work among the feeble-minded with data enabling them to map out a course of training suitable for the various grades of defectives. Much needless effort may easily be expended in the training of a child in directions in which it is incapable of making progress, and any special aptitudes it may have thus remain undeveloped. One chapter is devoted to each type of defective. A preliminary account of the general characteristics and possibilities of development is given, followed by descriptions—diagnosis, family history, and notes of progress or retrogression—of a number of illustrative cases. In order to make each type readily recognizable a photograph of each case is reproduced. The volume will be found especially useful to teachers in special schools, nurses in institutions for defectives, and secretaries and workers in social services connected with the feeble-minded.

The Art of Life, as Revealed by Poets, Mystics, and Philosophers, consists of four lectures given by Mr. A. F. CROSS,[5] who is professedly not a trained theologian, to the patients and staff of the industrial sanatorium at Bramcote Hill, Warwickshire. It is dedicated to Dr. P. W. Edwards, the medical superintendent, who in a short foreword insists on the importance of understanding the psychological needs of the tuberculous patient. The four addresses on "The Origin of Poetry," "The Mystic Way," "The Teaching of Philosophy," and "Life's Mystery and Glory," are serious in tone but are brightened by literary and historical allusions. The author's words may be quoted: "The only object I have in view is to lead you down pleasant by-paths of knowledge until you come at last to a beautiful Temple wherein the indestructible Spirit of Man dwells harmoniously in contemplation and worship of its Highest Good."

[4] *Types of Mental Defectives*. By Martin W. Barr, M.D., and E. F. Maloney, A.B. London: H. K. Lewis and Co., Ltd. 1921. (Roy. 8vo, pp. ix + 179; 31 plates containing 185 illustrations. 16s. net.)

[5] *The Art of Life, as Revealed by Poets, Mystics, and Philosophers*. By Albert Francis Cross. London: C. W. Daniel, Ltd. 1921. (Crown 8vo, pp. 64. 2s. net.)

APPLIANCES AND PREPARATIONS.

DR. WALTER J. RONAN (London, W.) has designed a urological basin which he finds useful in the treatment of urethritis and cystitis when irrigation is required. It fits firmly between the thighs without causing undue pressure on the posterior urethra, which sometimes occurs when other appliances of the same nature are used. Flanges cover the inner surface of the thighs, and no splashing or leaking over the sides can occur. It will hold more than three pints of fluid, and therefore does not require to be emptied during treatment. It is made of enamel iron, and therefore can be sterilized by boiling. It is sold by Mr. J. H. Montague, 69, New Bond Street, W.1.

Shadowless Light for Surgical and Laboratory Work.

A new lamp for surgical and laboratory work has been designed by Barbier, Benard, and Turenne, in France, and introduced in this country by Major J. P. Ashley Waller, who has it on view at his office at Audrey House, Ely Place, London, E.C. The advantages claimed for it are that the shadows cast on the table by the head and hands of the operator, are almost completely eliminated, and that the heat generally present with lights of high candle-power is greatly diminished. The lamp, which is suspended from the ceiling by adjustable gear, consists in the first place of an ordinary 50 c.p. half-watt filament, which is fitted in the centre of a reversed saucer of sheet steel, some 30 or 40 in. in diameter. Immediately around the lamp is a cylindrical prismatic lens, so designed that all the rays from the filament, except those issuing vertically downwards, are collected and reduced to a series of radial horizontal rays. Around the rim of the saucer or shield are a number of small silvered reflectors placed at such an angle that these horizontal rays descend from them to form a focal patch of intense light about 18 in. in diameter on a surface 36 in. below the lamp. A toughened glass screen intercepts the greater part of the heat, and also protects the mechanism from dust. The result of these arrangements is that a person standing at the operating table or the laboratory bench can take up any position without finding himself embarrassed by his own shadow, and also can do his work without being unpleasantly affected by heat. Another ingenious device with this "scialytic" lamp, as it is called, is a focussing tube fitted beside the lamp so as to secure accurate adjustment.

THE CENSUS OF ENGLAND AND WALES.

THE Preliminary Report by the Registrar-General of England and Wales on the 1921 Census[1] was published on August 24th. It is divided into three parts; an introduction by the Registrar-General containing a description of the history of the enumeration is followed by statistical notes on the census prepared from the summaries provided by local officers, and this by the actual figures, arranged in ten tables, which effectively display various important points in the census.

The census schedule which was adopted differed substantially in certain respects from that of 1911. In view of the increasing importance for many administrative and public purposes of statistics regarding the extent of the burden of dependency upon different sections of the community, an inquiry was added as to the number and ages of children under 16 (including an inquiry as to orphans). An inquiry as to place of work, which was felt to be of great value for transport, housing, and general industrial purposes, was also added. On the other hand, it was decided to omit the inquiry as to "infirmities" included in previous censuses, in view of the fact that reliable information upon these subjects could not be expected in returns made on behalf of the afflicted individuals. Further, it was concluded after careful examination that the "fertility" inquiry of 1911 (as to duration of existing marriages and the number of children born of such marriages) could be omitted in 1921, notwithstanding its importance, with less disadvantage than either of the new inquiries proposed, particularly in view of the long range covered by the 1911 inquiry, and of the fact that the wealth of material which it provided had not been completely exhausted.

The preliminary report shows that the total population of Great Britain is now 42,767,530, an increase on the figures for 1911 of 1,936,134; of this increase, 1,633,240 is in England, 181,510 in Wales, and 121,384 in Scotland. For the whole of Great Britain the increase was at the rate of 4.7 per cent., which is the lowest rate of increase yet recorded, the increase in the previous intercensal period being 10.4 per cent., which was lower than the rate of any previous decade. The population of England and Wales combined was 37,885,242 persons, of whom 18,082,220 were males and 19,803,022 females, the excess of females over males being therefore over 1,720,000, which added to the excess of over 100,000 in Scotland, gives a total excess of females of nearly two millions.

The Administrative County and City of London shows a decline in population of 38,436, the total being 4,483,249, as against 4,521,685 in 1911. Fifteen of the metropolitan boroughs show increases, while thirteen of them, and the City, have declined; the greatest increase, both in actual numbers and in rate, was in Woolwich, which increased by 19,027, or 16 per cent., while the most serious decline in numbers was in Stepney—30,066, or a decrease of 11 per cent. The greatest rate of decrease is, however, shown by the City, where a fall of 5,951 in the population has reduced it by 30 per cent. Islington, with 330,028, has the largest population among the metropolitan boroughs, though Wandsworth, with 328,656, is rapidly overtaking it; Holborn has now a population of only 42,796, and the City of 13,706. The population of Greater London is 7,476,168, an increase of only 3.1 per cent., as compared with 10 per cent. in the preceding intercensal period. The population of the great towns according to size is:

Birmingham ...	919,438	Newcastle-on-Tyne	274,955
Liverpool	803,118	Nottingham ...	262,658
Manchester ...	730,551	Portsmouth ...	274,343
Sheffield	490,724	Stoke-on-Trent ...	240,440
Leeds	458,320	Leicester	234,190
Bristol	377,061	Salford	234,150
West Ham... ...	300,905	Plymouth	209,857
Hull...	287,013	Cardiff	200,262
Bradford	285,979	Croydon	190,877

Of the towns with over 50,000 inhabitants the greatest proportional increases are shown in Blackpool 64 per cent., Southend-on-Sea 50 per cent., Hendon 44.3 per cent., Coventry 20.6 per cent. The greatest decreases are shown in Blackburn 4.8 per cent. and Bury 4.4 per cent.

[1] Cmd. 1485. To be purchased through any bookseller, or directly from H.M. Stationery Office. (Price 1s. net.)

The date of the census, however, which was postponed from April 24th to June 19th, must have had a considerable effect upon certain of these figures, for it is difficult not to associate decreases in Blackburn, Bury, and several other large Lancashire towns, with the enormous increases shown for Blackpool and other holiday resorts. Attention has already been called to this point by the medical officer of health for Blackburn in his report, and the unusually fine weather in June doubtless caused a large proportion of the population to take holidays earlier than usual. On the other hand, it would hardly be fair to most seaside resorts to make a census of their populations in midwinter, and their mean population may not have been, in spite of the facts mentioned, affected very greatly.

The general rate of increase in England and Wales for the county boroughs was 6 per cent., for the municipal boroughs and urban districts 5 per cent., and for the rural districts 4 per cent.; the percentage of rural population to urban has declined from 21.9 to 20.7 per cent. The Registrar-General does not, however, appear to consider that rural districts are becoming more depopulated, but rather that the populations of urban districts are increasing, without the actual numbers of the rural population being affected.

The report shows that the population of the Isle of Man had increased to 60,238 or by 15.8 per cent., while that of Jersey had fallen to 49,494, a decrease of 4.6 per cent., and that of Guernsey to 40,120, a decrease of 10.8 per cent.

In the Indian Empire the population has risen by nearly four millions to 319,075,132; in the Australian Commonwealth it had risen by nearly a million to 5,426,008; the European population of the Union of South Africa had increased by nearly 150,000 to 1,521,635; while New Zealand, not including the Maori population, showed an increase of over 200,000 to 1,218,270.

These figures are comparable with such recent census figures of foreign countries as are available. Switzerland has shown an increase of 3.4 per cent. in ten years, against 13.2 per cent. in the previous decade; the decrease in the growth of the population of this country is the more remarkable since it was not affected by the war. France —including the three new Rhine provinces—has a population of 39,194,550, which may be compared with the population (including the population of Alsace-Lorraine) in 1910, of 41,476,272, showing a decline of 5.5 per cent. In Sweden, the population at the end of 1920 was 5,904,292, an increase in ten years of 8.7 per cent.; this was a greater increase than in the previous intercensal period, when it was 7.5 per cent. The population of the United States is now 105,710,620, an increase of 14.9 per cent. as compared with an increase in the previous decade of 21 per cent. Japan (Japan proper, not the Japanese Empire) has a population of 56,000,000 in round figures, an increase of 13 per cent. since 1908.

The figures comprised in the present report are provisional, relating solely to the number and sex of the population, and it is too early to draw any deductions of real importance from them or to do justice to the numerous points of interest which emerge. The great events of the last decade cannot fail to impress a character of uncommon significance upon the results of this census, whether they be regarded merely as records of the passage of the war or as a source of enlightenment upon the many problems which the war has bequeathed to this country.

RED CROSS WORK IN PEACE.

THE Joint Council of the Order of St. John and British Red Cross Society came into existence on September 4th, 1919, for the purpose of organizing Red Cross work in peace. It will be remembered that on the outbreak of war the two societies at once agreed to form a Joint Committee, and from that time the differences which had arisen between the two organizations were composed, to the immense advantage of the nation. One of the chief lessons of the war was the need for a single national authority to co-ordinate voluntary agencies and encourage and train voluntary workers.

Although, as we have said, the Joint Peace Council was set up in the autumn of 1919, its active work did not begin till the early days of the following year. Thus the

first report of the Council deals with the work accomplished from January, 1920, until the end of March, 1921. The work of the Joint Council falls into two sections: (1) The continuance of the various departments of the Joint War Committee dealing with sailors and soldiers and discharged men of His Majesty's Forces, and (2) the new departments set up to carry out the peace work of the Order of St. John and the British Red Cross Society. The money for the first of these sections is found by the Joint War Finance Committee, but for the programme of the second section reliance has to be placed on money collected in various ways since the armistice for this special work.

The report is a volume of about 100 pages. It contains a list of members of the Joint Council and of the nine committees and subcommittees by whom the work is carried out; a foreword, signed by the chairman, Sir Arthur Stanley; a series of departmental reports; the report of the Finance Committee, with a statement of accounts; and three appendices, the second of which advises a scheme of procedure for County Joint Committees.

In dealing with the many questions that arise in connexion with hospitals, clinics, the supply of medical stores, and other related matters, the Council has had the services of Sir Napier Burnett, M.D., who was appointed Chief Executive Officer. In this position he is responsible both for the administration of the Council's affairs and the initiation of new branches of work. His activities under the second head have included the drafting of a comprehensive system of preventive work for submission to the Ministry of Health, and it is recorded that in the main his proposals have been approved by that Ministry. The field of prevention is large, and many workers who gave valuable voluntary aid to the Government services during the war might be employed in it with advantage to themselves and the community. Having regard to the increase of public interest in such of its departments as those dealing with child welfare and tuberculosis, the Council is hopeful of getting in future enough support to enable it to continue and expand the programme already laid before its workers.

The report on auxiliary hospitals for officers states that during the period under review 16,194 officers were assisted through this department. The most important part of the work has been the provision for tuberculous officers at home and abroad. The Emergency Help Committee turns its attention mainly to the organization of emergency relief for sick and disabled ex-service men. The Joint War Finance Committee set aside £100,000 for the assistance of such men who were in distress in consequence of the war, and the Joint Council undertook the responsibility of administering this grant. The Committee is satisfied that the large majority of cases in which grants have been made were cases of genuine distress within the scope of their regulations. County directors are generally agreed that this relief work is some of the best Red Cross work that has ever been undertaken in this country, and has mitigated to a considerable extent sickness, suffering, and distress among ex-service men arising out of the war.

Special reference has been made in these columns to the work of the Home Service Ambulance Committee, formed to establish a motor ambulance service in England, Ireland, and Wales, which will afford means for rapidly and easily conveying the sick and disabled—especially those in rural areas—to the point where curative treatment could be applied most efficiently. In the report a chart is given showing the position of ambulance stations at the end of last year, by which time the number of ambulances at work was 273. As might be expected with such an entirely new service, it was only by degrees that the fullest advantage began to be taken of the ambulances. Last year the total number of cases carried was 38,260, and the mileage covered by the ambulances was just over 460,000. In the first quarter of this year the number of cases carried was 11,393. During the second quarter ten new ambulance stations were established in various parts of England. The scheme has now been at work two years. In the first year 20,000 cases were carried; in the second, with only twenty-seven more ambulances in service, approximately twice as many cases were carried. It is interesting to note that the Danish Red Cross Society instituted a similar ambulance service in Denmark a year ago. The service has been much appreciated and will be extended.

The report refers to the two surveys of voluntary civil hospitals in England and Wales (excluding London) carried out by Sir Napier Burnett as Director of Hospital Services, the results of which have been given in full in our columns.

The collection formed under the direction of the Museums Subcommittee by Lieutenant-Colonel F. S. Brereton, R.A.M.C., will remain on view in the Imperial War Department of the Crystal Palace, Sydenham, until a more permanent place has been decided upon. It comprises 121 pictures, three pieces of sculpture, four large models and 30 trophies, and models of a hospital ship and a motor launch. During the fifteen months covered by the report the Provisional Limbs Dépôts made 2,873 limbs for above and below knee amputations. The Ministry of Pensions has changed the system of issue of artificial limbs, and at its request the provisional limbs department of the Council has established dépôts at certain fitting hospitals; another dépôt has been established near the National Diamond Factories, Brighton, which is supplying not only the factories but the whole of the Sussex regional area of the Ministry of Pensions and the Lady Dudley's hospitals at Brighton. It should be explained that the Ministry of Pensions desires all pensioners to possess a fibre provisional limb to act as a slipper or reserve in case of temporary breakdown of the ordinary limb. It is to meet this need that the Council has established the dépôts mentioned. The policy of buying in bulk for the supply of medium sized and smaller hospitals and institutions has been continued and a considerable saving effected. The financial statement shows a balance of income over expenditure of £51,115; the greater part of the income was derived from grants made by the Joint War Committee, but collections during the year amounted to about £48,000, of which £32,871 were derived from "Our Day" collections—namely, £27,516 at home and £5,355 abroad.

RAGAZ AND THE ENGADINE SPAS.

Among the Swiss spas few are better known than that of Ragaz. It is situated in the highlands of the Canton of St. Gall, astride the river Tamina on its way to join the Rhine, with a graceful range of high mountains, the Falknis, in the background. In happier times many English travellers stayed there on their journey to or from the Engadine. The soil is porous and the climate subalpine, the height above sea level is 1,710 feet. From the village of Ragaz a carriage road follows the course of the mountain torrent through the beautiful Tamina Gorge to Pfäfers, where the thermal springs arise.

The Baths of Ragaz-Pfäfers.

The old baths of Pfäfers are placed in a homely whitewashed building, once a monastery, near the head of the Tamina Gorge, a few minutes' walk from the narrow and lofty ravine, the Gorge of Pfäfers, in which the thermal waters issue from the rock. The hot springs are said to have been discovered in 1038 A.D., and the water has been used for balneotherapy since the fourteenth century. In the steep sides of the defile, which is one of the most remarkable sights in Switzerland, roughly carved holes are still pointed out where the timbers of mediaeval bathing houses were fastened. An account of Bad Pfäfers written fifty years ago says:

"The baths are situated on a narrow ledge of rock a few feet above the impetuous torrent, and the buildings which form them, consisting of two piles connected by a chapel, are so deeply sunk between the rocks, that the sun, in the longest summer day, is visible above them only from 10 to 4 o'clock."

The waters belong to the simple thermal group. The temperature at the source is about 99° F., but heat is of course lost in the two miles' passage along pipes to the baths at Ragaz. The ordinary output from the spring is from 6,000 to 10,000 litres a minute. Until 1840 visitors who wished to use the waters had to climb up to Bad Pfäfers by mountain paths.

* Previous articles on Aix-les-Bains and the Swiss health resorts have appeared in the Journal of July 23rd, p. 118, and August 6th, p. 208.

The modern bathing establishment of Ragaz itself is excellently equipped, and the baths and kursaal with their pretty gardens and orchards are placed in a setting of great natural beauty. The four bathing houses contain between them ninety private baths; there is also a very complete installation for hydrotherapy, an enclosed swimming-bath, and a well appointed Zander institute. The whole thermal establishment, together with the adjoining Quellenhof and Hot Ragaz hotels both very comfortable—is under the direction of M. Simon, to whom the place owes much of its renown as a summer health resort. The Ragaz-Pfäfers season lasts from early May until mid-October, but a "spring season" begins about the Ides of March.

Pontresina and St. Moritz.

From Ragaz the medical party, whose itinerary has been traced in previous articles, travelled through Coire and the Albula Pass to the Upper Engadine. Two nights were spent at Pontresina, the most favoured summer resort in this part of Switzerland. The village stands at a height of 5,916 ft. above sea level, and is well supplied with fine hotels. There are glorious views of the snowy Bernina peaks and of the Roseg and other glaciers, and the place forms a starting point for many alpine excursions. Invalids are not encouraged at Pontresina, but its invigorating sunny climate and charming walks through fields of alpine wild flowers are attractions for those in need of rest. During this halt an opportunity was found to visit the equally well-known winter resort and baths of St. Moritz. The short journey through the valley which separates the two places was broken by a funicular railway ascent to the summit of Muottas-Muraigl. Any slight breathlessness from rising rapidly to a height of 8,265 ft. was compensated for by the imposing panorama of white alps and blue mountain lakes from the terrace of the inn.



TAMINA GORGE AND BATHS OF PFAFERS.
(From the engraving by Merian, 1650.)

During the last fifty years the broad and lofty alpine valley known as the Upper Engadine, has been much frequented at all seasons of the year as an aero-therapy station, and St. Moritz (6,039 ft.), which was known for its mineral waters in the Middle Ages, is now, perhaps, the most popular of all high mountain centres for winter sport. The wind is stronger and the air colder than at Davos, and St. Moritz no longer lays itself out for the treatment of tuberculosis. Winter sport dates back to 1880, when the first small colony of Englishmen began to make this exhilarating place their home for part of the year.

The cold chalybeate springs of St. Moritz-Bad are three in number. The present pump room and bathing establishment was built on modern lines in 1910; it contains forty-four baths and a full outfit for hydrotherapy and kindred forms of treatment. The climate of St. Moritz Dorf, a mile away uphill, is rather more bracing than that in the immediate vicinity of the Kurhaus. All three springs are rich in free carbon dioxide; the water is thus agreeable to drink as well as stimulating to bathe in. The spa season in the Upper and Lower Engadine lasts from June to September.

St. Moritz is famous for its fine hotels; perhaps the most beautifully situated of all is the modestly named Suvretta House on the outskirts of the village. A visit was paid also to the Chantarella establishment, which stands on a sheltered site overlooking the valley and the principal lake. This has been laid out as a home for convalescents and the dietetic treatment of metabolic disorders. The methods adopted there are comparable with those of kindred institutions in this country, but the laboratory side does not seem to be so fully developed.

Tarasp.

The last of the watering places visited during the tour was Tarasp in the Lower Engadine. Tarasp and the neighbouring health resorts of Schuls and Vulpera together form one spa on the banks of the river Inn as it flows to join the Danube. The use of the waters dates from the sixteenth century. In former times Tarasp was difficult of access, and it was not until the year before the war that it became linked up by the electric Engadine railway with the main Swiss routes. Tarasp itself is at the bottom of the valley; Schuls, with the railway station, is on higher ground on the left bank; and Vulpera lies higher still on the steep and rugged right bank, the whole district being dominated by the Rhaetian Alps. The altitude of the spa varies from 3,890 ft. above sea level to 4,180 ft., and the climate in general is mildly alpine, for there is shelter from north and east winds.

The waters of Tarasp-Schuls-Vulpera are cold. The most important of the sulphated alkaline springs is the Luciusquelle, whose water is rich in sodium sulphate, bicarbonate and chloride, and is highly charged with carbon dioxide. The Emerita Spring resembles it closely in composition and action. The Bonifacius Spring yields an alkaline chalybeate water. The waters of all three springs are served at the Pump Room on the river bank. The other springs are also very gaseous, and a feature of the place is therefore the natural carbonic acid baths, heated by steam pipes so as to retain as much as possible of the gas. Visitors at the comfortable Kurhaus can have their effervescent baths on the spot, and a well-planned hydrotherapeutic establishment is next door. For those who find the bottom of the valley too sheltered, there are several modern hotels among the firs and pines at Vulpera on the edge of the Swiss National Park.

The mountain scenery of this part of Switzerland is very fine, and there are charming walks and drives; but Tarasp makes no claim to be a fashionable health resort, and this is clearly an advantage for those who need rest rather than excitement when taking a course of waters in a mountain climate. Motor cars are still forbidden on the roads in the Canton Grisons, and this also may have its advantages from the same point of view, though the prohibition seems odd in the year 1921.

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SATURDAY, AUGUST 27TH, 1921.

DANGEROUS DRUGS AND THE OPIUM CONVENTION.

It may be well to survey the progress which has been made during the last twelve months towards putting into force the International Opium Convention signed at the Hague in 1912. As we pointed out in the Journal of May 22nd, 1920, Great Britain, which had ratified the Convention prior to the war, has by the passage into law of the Dangerous Drugs Act, 1920, endeavoured to give legislative effect to the Convention, and thus facilitate the proper control of the traffic in dangerous drugs of addiction. The regulations made under the Act will come into force on September 1st. As originally drafted by the Home Office they were open to much legitimate criticism; but after emendations by a Departmental Committee, in accordance with the recommendations of the British Medical Association, these are now in a form better calculated to achieve the end desired without impeding legitimate use of the drugs in question. An article explaining the manner in which the Regulations will work is published in the Supplement this week.

From an answer recently given in the House of Commons it would appear that the Government is at present unable to state definitely what other Powers which are party to the Opium Convention have passed legislation similar to our Dangerous Drugs Act, in order to secure the all-important international co-operation in controlling illegitimate traffic in noxious drugs.

All the Powers which were signatories to the Treaties of Peace, however, have undertaken to enact the necessary legislation within twelve months from those treaties coming into force. The earliest of these treaties, that of Versailles, came into force on January 10th, 1920; the latest, that of Sèvres, has not yet come into force, and in its present form may, perhaps, never do so.

In any case the next step will be to bring other Powers which are party to the Opium Convention into line with the action already taken by Great Britain, and to secure the adhesion of those Powers, old and new, which have not yet signed or ratified the Convention. An Advisory Committee, which was appointed by the Council of the League of Nations, presented a report to that body in June, and this report, with the action of the Council thereon, will be laid before the assembly of the League which is to meet in September. The Netherlands Government, which formerly had in hand the task of carrying out the Convention, will continue to use its good offices in endeavouring to secure the co-operation of those Powers which are not members of the League, some twenty in number, while the Secretariate of the League is henceforth responsible for the necessary steps to put the Convention in force by the Powers, some fifty in number, which are within the League of Nations. A circular has been issued to the Powers concerned inviting them to state what action they have thus far taken towards putting into force the provisions contained in the Opium Convention.

At the meeting of the Council of the League in June the action of the Advisory Committee was approved, and, as we learn from the official "Monthly Summary," a further important step was taken on the initiative of Dr. Wellington Koo, the Chinese Minister to Great Britain, in advance of the Committee's recommendations. It was urged that the desired objects of restricting the traffic in dangerous drugs to legitimate purposes could never be attained so long as their production was very greatly in excess of medical or scientific requirements. Investigations are therefore to be set on foot with a view to ascertaining approximately what are the amounts of opium, morphine, cocaine, and the other drugs enumerated in the Convention, which are in fact required for legitimate medical purposes.

It is good to know that the League of Nations is addressing itself with vigour to this "humanitarian question," as it appropriately calls it. It is difficult to conceive any problem for which its machinery would appear to be better adapted, and there are certainly few questions in which whole-hearted international co-operation is so essential to achieve success. Smuggling, it is to be feared, is widely prevalent, and as long as any country produces and distributes tons of these perilous drugs irrespective of their legitimate destination avenues of illicit traffic will be readily available, and police courts and inquests will periodically disclose what is but a fraction of the evils wrought by the abuse of these narcotics.

The mischief is world-wide, and the co-operation of East and West, and indeed of every producing and consuming country, is essential for its effective suppression.

THE FALLING BIRTH RATE.

A large majority of those who have written upon the decrease of the birth rate have attributed this, perhaps the most remarkable feature of modern vital statistics, to conscious restriction of pregnancy. In support of this opinion it has been shown, (*a*) that in most countries the decline first became evident in the last quarter of the nineteenth century, at an epoch when the discussion and advocacy of "contraceptives" ceased to be taboo; (*b*) that the decline has mainly affected those populations, and, within any one population, those classes characterized by economic foresight or—when the argument is propounded by an opponent of "birth control"—selfish individualism; (*c*) that direct statistical sampling has shown that the use of various "contraceptives" is widespread amongst the middle classes.

To this a minority have retorted that (*a*) the birth rate in France began to decline long before the days of discussions on birth control, and that in most countries the rate of fertility has varied from time to time; (*b*) that in social strata above the pressure of economic hardship—for example, the peerage—fertility has declined greatly, and that there has been in all classes a very distinct increase of absolutely sterile marriages; (*c*) that the statistical samples so far published do not in fact bring out a lower rate of fertility in the families where contraceptives were admittedly used than in those in which their use was specifically denied, even when sterile marriages were excluded from the comparison.

We may take as illustrating certain aspects of the matter a small book with the rather ambitious title, *The Law of Births and Deaths*.[1] The author, Mr. C. E. Pell, endorses the objections of the minority, and is perhaps a little over-scornful in his treatment of the majority. Thus he observes that

[1] *The Law of Births and Deaths.* Being a study of the variation in the degree of animal fertility under the influence of the environment. By Charles Edward Pell. London: Fisher Unwin. 1921. (Pp. 192. 12s. 6d.)

the usual argument "ignores the fact that the use of contraceptives involves the most elaborate and troublesome precautions at a time when the parties concerned are least in the mood for such precautions," and asserts that to be effective the trade in utensils, chemical or mechanical, must be "comparable in magnitude with that in some of the commoner necessaries of life, such as mustard or salt." Both these assertions are a little naïf. Amongst the very commonest means of avoiding conception are the practice of *coitus interruptus* and the use of sheaths or pessaries; the first mentioned does not support any trade great or small, none of the three can be said to involve elaborate and troublesome preparations.

Mr. Pell's own hypothesis is that fertility is negatively correlated with "nervous energy." He states his case thus: "'A' is a society woman of means, and with little need for active exertion. She will produce a moderate amount of nervous energy, but will also expend moderately. Being highly fed, she will have a nervous system always highly charged. 'B' is, say, a successful professional woman. She owes her success to a great natural fund of nervous energy. She expends on a large scale, but also produces on a large scale. She has a great capacity for work, which means that her system replaces the energy almost as fast as it is expended. She also will have a nervous system almost always highly charged. Thus one will have a highly charged system because she expends little, the other because she produces much. They may be equally fertile or infertile. 'C' is, say, a sweated worker of the East End of London. She is overworked for very long hours and underfed. The result is that she is chronically tired and deficient in nervous energy. Her nervous charge will be always low. If she is married, we may expect a large family." What Mr. Pell understands by the term "nervous energy" is not clear. Sometimes, as in the passage just quoted, he seems to have in view some vague physico-physiological property of the central nervous system; at others he identifies the "energy" with the psychological characteristics of different types of civilized and uncivilized mankind. His conception is not made clearer by an examination of the evidence which, he thinks, supports his theory. This, in the case of man, amounts to little more than a recital of familiar facts respecting the association of a high birth rate with a high death rate and the association of a high birth rate with low economic status, and, in the case of other animals, to a summary of Darwin's observations, together with a criticism of Darwin's and Spencer's interpretations of various facts.

Mr. Pell's book, although interesting, does not, we think, reveal much capacity for scientific inquiry. For instance, he appears to hold that his theory involves a very high correlation between birth rate and death rate, and that Dr. Stevenson's results in the case of Ireland are unfavourable to it. He first remarks that it is "hardly possible to express an opinion as to what may be the cause of this peculiar result," then roundly asserts that Dr. Stevenson's interpretation is "fairly certain" to be wrong, and finally doubts whether the result itself is any more than the product of "very refined mathematical calculations based upon very imperfect data." All the data for the discussion of this particular problem are as accessible to Mr. Pell as to Dr. Stevenson; a careful re-examination of them with the aid of the not very recondite statistical methods needed would have been a far more valuable contribution to knowledge than the *ad captandum* arguments used. It is singular that, to judge by his contemptuous reference to Malthus's idea that mere abstention from sexual intercourse could have a sensible effect on fertility, Mr. Pell does not see that another weapon to assail the crude popular form of the "contraceptive" theory is waiting to be employed. In the statistics of the Birth Rate Commission analysed by Brown, Greenwood, and Wood the most popular method of limiting fertility was alleged to be "continence." Of 289 married women who asserted that they restricted their families, 105 gave as the method merely "continence," 86 gave no particulars, and the next most frequent specification (*coitus interruptus*) occurred in only twenty-six replies. Brown, Greenwood, and Wood suggested that, since many persons would not regard mere abstinence from coitus as restriction or birth control in the popular sense, the comparison between restricted and unrestricted families broke down. We say in the popular sense, for in controversial literature—for example, in our correspondence columns—birth control invariably connotes some habit deemed to be more "unnatural" than continence. It is not hard to believe that the sexual appetite is lessened by the diversion of emotional discharges into other channels and that, quite apart from the existence and use of contraceptives, marital intercourse may be less frequent under the social conditions which are observed to be correlated with lessened fertility. The body of facts testifying to the importance of such *Bahnung* in the etiology of psycho-neuroses is absolutely large, but we have no knowledge of the circumstances of those who do not come within the sphere of the specialist physician—that is, no knowledge of random experience. It is this fact which deprives most, we think almost all, discussions of birth control and the falling birth rate of real importance. The statistical end-products of sexual relations, the numberings and classifications of births, have been minutely analysed by the most famous statisticians; to enumerate those who have written on the problem is in effect to record the names of the most prominent statisticians in the world—Pearson, Yule, Stevenson, and Brownlee in this country, March in France, Sundbärg in Sweden, Knibbs in Australia, and many others. The grist in this mill has been ground out very fine indeed, and there is very little probability that any new important truths can be obtained in this way.

Further light upon the problem will only be shed when the statistics of an earlier phase of the sexual relation are made available. This is, we fear, almost tantamount to saying that no further progress is possible. Some of the very simplest elements are altogether inaccessible. What, for instance, is the average probability that an act of unrestricted coitus with an unimpregnated female of given age will be fertile? Is there a great reduction in the chance of impregnation when intercourse is restricted to a particular part of the menstrual cycle? Is there a significant difference between the frequencies of marital intercourse in different social strata? Has the average frequency diminished? These are very important elements of the problem; in theory it would be much easier to collect data bearing upon them than to assemble other anthropometric and economic information which has enabled quite complex sociological problems to be solved. But, at our present stage of cultural evolution, there is no chance whatever of applying the statistician's method of random sampling to this subject. One might almost say that the fact that a number of persons were willing to furnish the data would *eo ipso* deprive their material of the character of being a random sample. This is the

reason why current discussion is so unilluminating. It is also disingenuous; Mr. Pell is, we think, quite justified in saying that the advocates of the contraceptive theory have largely ignored both the peerage data and the evidence (adduced by Dr. Brownlee and Dr. Chalmers) that fertility had sensibly varied long before the end of the nineteenth century. But Mr. Pell himself ignores the fact that there are successful contraceptives which are not sold in chemists' shops, and that the use of one of them led Jehovah to take very drastic steps in the days of the patriarchs (Genesis xxxviii, 9, 10).

If any advance beyond the present position is to be made in our generation it will be made by a general practitioner of medicine who takes notes. The documented experience of such a man approximates far more closely to a faithful record of the sexual lives of a random sample of the population than anything we can hope to get by other means. It is true that the problem is of first-rate importance. It is also true that current medical contributions to its solution are of little scientific value, and that some writers waste a good deal of their own and other people's time in vague moral denunciations or defences of birth control. A very small number of exactly recorded facts are worth a very large quantity of moral eloquence.

THE FATE OF THE MAUDSLEY HOSPITAL.

WE are glad to observe that public attention is being directed to the unsatisfactory position of the Maudsley Hospital. The facts are known to our readers, but the London County Council appears to consider itself superior to scientific opinion. It may, however, be impressed if the general public is sufficiently aroused to understand the position, for to understand must be to condemn. As we have said, there are signs that the public is beginning to appreciate the importance of the facts which induced the late Dr. Henry Maudsley in 1907 to give a sum of £30,000 to the London County Council to build a hospital for the study and treatment of acute mental diseases. In making this offer Dr. Maudsley informed the London County Council that as a physician who had been engaged in the study and treatment of mental diseases for more than fifty years he had been deeply impressed with the necessity for a hospital whose main objects should be the early treatment of cases of acute mental disorder in order to obviate, as far as possible, the necessity of sending them to the county asylums; with the need for the promotion of exact scientific research into the causes and pathology of insanity, in the hope that much may yet be done for its prevention and successful treatment; and, finally, with the importance of providing an educational institution which should offer to medical students the opportunity of clinical instruction in a class of diseases of which under existing conditions it is not easy for them to obtain a competent knowledge. The London County Council accepted the gift, but was very dilatory in carrying out the obligations it thereby undertook. A site was eventually selected at Denmark Hill. In 1913 the County Council reported to the Commission on University Education that great advantages were hoped from the facilities the Maudsley Hospital would afford for the early treatment of cases of mental disease and for the systematic instruction of students, and that a department for pathology would be established to which would be removed the staff and equipment of the Claybury laboratory under the direction of Sir Frederick Mott. The buildings were completed shortly after the war broke out, and were used with great advantage as the neurological section of the 4th London General Hospital. A large number of cases of war psychoneuroses were studied and treated, and important additions to knowledge made. Since then systematic courses for the diploma in psychological medicine have been instituted at the hospital, and to the laboratories over which Sir Frederick Mott presides his great reputation as a neurologist has attracted students of all nations eager to share in the pioneer work he has conducted and directed. Sir Frederick Mott is approaching the age period for retirement, and there are, we are told, indications that not only will no attempt be made to retain his services as a teacher, but that the post of pathologist will be suppressed and the laboratories devoted not to research but to the routine examination of specimens. It is barely credible that the Maudsley Hospital should remain closed and the London asylums destitute of skilled scientific assistance. Well may a physician write in despair of the disappearance of this young but important school of psychological medicine, the cessation of pathological research, and the scrapping of the valuable apparatus collected by Sir Frederick Mott. Such a policy — or want of policy — can only mean the arrest of most promising attempts to understand and to treat scientifically the causes of insanity. The motive is believed to be a desire to save the relatively trifling expense of maintaining laboratories—said to be less than the cost of the annual maintenance of fifteen patients. In 1913 the London County Council told the University Education Commission that the Maudsley Hospital, when established, would be "in close touch with the London University and medical schools." Shall we plead in vain if we ask the University to take action without delay to ensure for it the continued possession and extension of a psychiatric institute worthy to rival the great establishments in other countries? The war and the special purposes to which it was put during it have retarded the development of the hospital both as a teaching and research institute. Its growth along the best lines can be ensured by suitable expenditure on the laboratories and by retaining, if possible, the services of Sir Frederick Mott.

RADIOLOGY IN CANCER.

"IN view of the publicity that has been given to radiotherapy in the treatment of cancer by the publication of laudatory articles in the medical and lay press, and the extraordinary claims that have been put forward by the authorities of the West London Hospital," the British Association for the Advancement of Radiology and Physiotherapy, which includes the majority of radiologists in the country, has deemed it advisable to issue to the lay press a considered statement on the use of these agents. The claim put forward by the Erlangen school is that it is possible by a special method to administer a dose of *x* rays which will cure cancer in one application. The statement points out that the treatment, which has not yet been thoroughly tested, possesses great potential dangers, and may not prove as efficacious as the claims now made would suggest. In the nature of the case, however, no certainty can be arrived at for some years. The unwarranted laudation of this change in technique will, it is thought, probably lead to a reaction, and bring discredit upon *x*-ray treatment in general. The subject has so recently been discussed by Dr. Knox in his address to the Section of Radiology at the annual meeting of the British Medical Association, and in a leading article published last week (pp. 267 and 290 that we need not reproduce the statement in full. It will suffice to say that the experts by whom it is issued state that the time has not yet come when radiotherapy may be regarded as the first choice in the treatment of the majority of cases of cancer; they believe that, of any single method, surgery still offers the best prospect of cure in nearly all cases of cancer, and that until much more convincing proof of the efficacy of *x* rays or other form of radiation is forthcoming the possibility of successful surgical intervention ought to be, in each particular case, fully discussed. They go on,

however, to express the opinion that a closer co-operation between the surgeon and the radiologist would lead to a clearer appreciation of the value of radiation in treatment, and that in all cases both surgery and radiation therapy should be fully considered, with a view to making the fullest use of both. Combined treatment, it is thought, offers the greatest hope of success. Radiologists in this country, the statement continues, have, during the past few years, so far perfected their technique that the risk of any injury to the patient is now small, provided that the treatment is under the direction of a medical man of wide experience in this class of work. If the prospects held out by the more drastic procedure prove to be better than those offered by existing methods full advantage will be taken of it in this country; the real contributions to progress of the Erlangen school are held to be that it has employed in suitable quantities x rays of a higher penetration than that hitherto used, and has carefully systematized already known methods of measuring dosage. It is unnecessary to import the apparatus from Germany; several firms in this country are now making the requisite equipment, so that difficulty of obtaining plant will not be a bar to research. The statement concludes by pointing out that x rays have already relieved suffering and prolonged active life in thousands of cases, and have even effected a few apparent cures, while their value in helping to prevent return after operation is now generally recognized. It would therefore be neither more nor less than a calamity if public disappointment resulting from unfulfilled promises were to bring discredit on radiation therapy, which is in reality a powerful agent in the warfare against disease.

RECONSTRUCTION AND INDUSTRIAL MEDICINE IN BELGIUM.

AFTER the armistice the condition of Belgium was such that it must have seemed impossible to the unbiassed observer that the country could ever become rehabilitated. Extensive districts in Flanders and the Ardennes were devastated and deserted; a third of the factories and the railways had been systematically wrecked; the bare necessaries of life were still rationed, and some of the most ordinary articles of diet, such as cheese and fish, had almost been forgotten, so long was it since they had been seen upon a table; the cost of living was estimated at 639 per cent. above pre-war prices. Yet such was the confidence of this indomitable nation that, months before the end of the war could certainly be foreseen, measures for reconstruction had already been outlined, and early in 1918 the Prime Minister resigned the portfolio of war to become the head of a new department of national reconstruction. The important place which medicine should fill in this work was recognized, and after the war was over one of the first steps was to establish an independent industrial medical service; it included eleven medical inspectors of factories, a laboratory, and an expert research chemist, all under the direction of its own chief, Dr. D. Glibert, who had served as chief factory medical inspector ever since industrial medical inspection had been instituted in Belgium twenty-five years ago. In Britain, as Dr. Dearden pointed out in the discussion on industrial medicine at the recent Annual Meeting of the British Medical Association at Newcastle-on-Tyne, there are only four medical men and one woman holding similar posts, and an independent or semi-independent department of factory medical inspection, with an adequate staff of medical inspectors, is as urgent a necessity to-day in this country as it was in Belgium. An article by M. René Sand, reprinted from a publication with the curious title, *Nelson Loose-Leaf Living Medicine*, describes in some detail the far-reaching programme of industrial medical reconstruction which Dr. Glibert has put forward. Before the war Belgium was the most densely populated country in Europe, and, from having been merely an agricultural country, had become, by the beginning of the twentieth century, a manufacturing nation, remaining, however, what it had always been, a country of low wages and long working hours. The cost of living, however, was low, on account of the low taxes, the low wages, the fact that dealers were content with small profits, and on account of certain other conditions peculiar to the country. Most of the workers did not live in the cities; the cheap weekly railway ticket system, instituted by the State, and the Belgian tramway system, which was one of the most extensive and cheapest in the world, enabled the majority of the workers to live in country cottages, surrounded by gardens, where they were able to raise vegetables, poultry, rabbits, and pigs. The development of mutual benefit societies, loan banks, popular housing associations, and co operative organizations was also very considerable. Such, then, had been the former condition of the industrial population of Belgium, and the first duty of the new industrial medical service was to get into touch with every agency, official or unofficial, which possessed any influence upon the health and education of the working classes. The chief industrial medical inspectors became members of the national councils for health, for child welfare, and for education. They enlisted the co-operation of the Belgian Medical Association and of the regional medical associations. They created interdepartmental joint commissions which co-ordinated the efforts of the factory medical inspectors with the work of other departments. A library on industrial medicine was created, a constant exchange of publications and views was secured with the industrial medical services of other countries, and a periodical, the *Bulletin du Service Médical du Travail*, was started. The proposals of Dr. Glibert covered the protection of the health of the workers in four different main directions: the health of apprentices was protected by medical examination and by restriction of employment; minimum standards for safety in industry were prescribed; a bill was introduced to provide compensation for occupational diseases; a decree imposed upon employers the duty of securing medical care for employees injured or ill at work, and the establishment of clinics for providing such medical aid was encouraged in industrial centres. The medical service of the mutual benefit societies, which comprised about one-fifth of the population, was reorganized, and a general compulsory insurance bill was introduced, the principle of which has been unanimously accepted. This programme is a brave attempt, in face of many difficulties, to bring modern medical methods to aid in the reconstruction of industry.

RIB PRESSURE AND THE BRACHIAL PLEXUS.

IN the course of a paper based on twenty-three observed cases and a thorough review of the literature, Drs. Edwin Bramwell and H. B. Dykes[1] raise a number of interesting questions as to brachial plexus lesions due to rib pressure They divide the cases into two groups: (1) those with symptoms referable to the first dorsal root or lower cord of the brachial plexus, and evidently due to rib pressure, in which a cervical rib or a rudimentary first dorsal rib can be demonstrated; and (2) those with the same symptoms but without any evidence of anomaly of the ribs, the symptoms being due to pressure exerted by a normal first dorsal rib. It is only during this century that rib pressure has been generally recognized as a cause of symptoms. Sir William Thorburn in 1904 was the first in this, and, perhaps, with the exception of Borchardt, in any, country to apply x rays in the diagnosis of a cervical rib. Since then it has been established, as was tentatively suggested in 1903 by Dr. E. Bramwell, that symptoms similar to those associated with a cervical rib occur in the absence of this abnormality, the proof that pressure

[1] E. Bramwell and H. B. Dykes, *Edinb. Med. Journ.*, 1921, N.S. xxvii, 65-88.

symptoms may be caused by an apparently normal first dorsal rib being provided by the disappearance of symptoms after removal of the rib. The answer to the question, "why is it that a particularly well developed cervical rib is often, perhaps usually, unaccompanied by pressure symptoms, while in other cases pressure symptoms are present in the absence of any obvious rib anomaly?" may be found in Professor Wood Jones's conclusion that the development of the ribs is determined by the nerve roots, and that there is a constant antagonism between the developing nerve and the developing rib element; on this hypothesis the question whether the presence of a cervical rib on the one hand, or of a rudimentary first dorsal rib on the other hand, shall produce symptoms is decided by differences in the formation of the brachial plexus; thus, when the brachial plexus includes caudal nerve roots which do not normally join the plexus, the interference with the development of the dorsal first rib will be at its maximum. Since pressure symptoms are found in only a small proportion (5 to 10 per cent.) of persons with cervical ribs, other factors are concerned, and of these additional conditions sex is very influential; out of fifty-six cases (Thorburn, Hinds Howell, and Bramwell and Dykes), forty-nine were in females; and Professor Wingate Todd has made the attractive suggestion that the pronounced dropping of the shoulder girdle in early life, which he has noticed in females, explains the sex incidence. Occupation, debility, trauma, and infection are less obvious factors, but posture, especially confinement to bed, more frequently exerts an influence in bringing on pain. In the final section, on the indications for operation and the results, the authors point out that, when not constant or well marked, the symptoms may sometimes be materially benefited by attention to the general health, a sling to support the elbow, exercises or electricity to develop the trapezius and so counteract dropping of the shoulder girdle, or a blister above the clavicle. But with constant or severe symptoms surgical treatment is necessary and gives brilliant results, though, as would naturally be anticipated, it is much more successful in relieving pain than in restoring atrophied muscles.

SMALL-POX IN TEXTILE TOWNS.

Cases of small-pox continue to occur in Nottingham, five cases having been notified between August 16th and 23rd. In all, sixty-one cases have now been notified in that town since the beginning of June. Those whose occupations expose them to contact with rags, clothes and the like, have frequently been noted to be among the earliest cases in an outbreak, and are believed not uncommonly to have been the originally infected cases in a locality. Laundry workers and the personnel of disinfecting stations have been observed to be among the earlier secondary cases, and the means of their infection is scarcely open to doubt. The sorting of rags imported from distant countries as a cause of the diffusion of small-pox was investigated by the late Dr. Franklin Parsons in the "eighties," and much incriminating evidence recorded. He noted that workers among woollen rags were less exposed to danger than workers among cotton rags. Dr. Corbin, M.O.H. of Stockport, has put on record [1] a number of outbreaks in which raw cotton appears to have been the primary infecting material among cotton operatives. Both Egypt and America have in this way, in the opinion of Dr. Corbin, been centres from which small-pox has reached this country by means of exported raw cotton infected presumably by workers suffering from undetected small-pox. It will in any case be well to recognize that the channels by which small-pox may reach this country are not limited to the immigration of persons actually suffering from or incubating the disease. The extensive textile industries of central and northern England impose a particular, not to say serious, risk of infection upon the operatives engaged in them, and whether the outbreaks at Nottingham and Huddersfield prove to have originated in the manner suggested or not, the liability to invasion by the disease in this way must always be borne in mind. The Glasgow outbreak appears to have yielded to the energetic measures applied under the able direction of Dr. Chalmers, but many European and other countries with which the closest intercommunication exists are at present definite centres of potential diffusion. Eastern and Southern Europe, and even Germany, are infected, and so are North and South Africa, North and South America, India, and Japan. This wide diffusion of the disease is a serious feature, both prolonging and intensifying the risks in commercial countries such as England. It is to be remembered that the proportion of the population susceptible to small-pox has been steadily increasing during the last twenty years. The number of births registered in England and Wales in the year 1901 was 929,882, and in that year 664,366 infants were vaccinated—that is, the percentage of vaccinations to births was 71.4, and in the same year 39,925 infants were legally exempted from vaccination. In 1919, the last year for which the corresponding figures are available, there were 691,370 births and 281,029 infants vaccinated. The percentage of vaccinations to births was 40.6, and 277,558 infants were legally exempted.

[1] *Small-pox among Cotton Operatives.* By H. E. Corbin, Section of Epidemiology and State Medicine, *Trans. Roy. Soc. Med.*, 1915.

THE EDUCATIONAL NUMBER.

The next issue of the British Medical Journal, that dated September 3rd, 1921, will be the annual Educational Number. This will describe the requirements of the General Medical Council and of the various examining bodies, and give detailed information as to the courses provided for medical students and practitioners by the teaching institutions of the United Kingdom, together with notes on the Public Medical Services, post-graduation study, and the special branches of professional work.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

The Parliamentary Session.

For all legislative purposes other than Irish or unforeseen emergency the adjournment of Parliament on August 19th to October 18th counts as prorogation. It is appropriate, therefore, to glance at the record of the Session from a medical point of view. The outstanding features are the change in the Office of Minister of Health, Lord Cave's report on hospital finance, the reorganization of pensions administration by means of the Act introduced by Mr. Macpherson, and the Dentists Act.

There is no need to say anything here about personal equations, except that, whatever may be the controversy over the housing policy, Dr. Addison has the satisfaction of seeing that Sir Alfred Mond recognizes the value of the foundations laid for health work by his predecessor. While he will have due respect to the stringent call for frugality which is going through Whitehall like an east wind, he does not intend to weaken or diminish the effort to build up for the nation the supreme asset of health with its economic advantage of greater working value.

The report of Lord Cave's Committee is recent enough to be familiar. The emphatic finding in favour of the maintenance of the voluntary hospital system confirmed general expectation and is all the more convincing because it is based on the latest information and figures. What the public had not fully recognized before was that a large part of the outstanding debt of these institutions was incurred for war services, and it is all the more regrettable that the Treasury does not see its way to give more than half a million instead of the million which the Committee showed to be required to clear the debt. Subject to that difference, all the recommendations have been accepted, and Sir Alfred Mond has promised to assist in seeing them put into operation with the object of placing the hospitals on a less precarious footing. So it may be hoped that fresh heart will be given to this most beneficent of enterprises.

The War Pensions Act has also been fully explained, and though the criticism is possible that it increases bureaucratic control, the advisory committees are to be made more representative and ensure the check of local public opinion. It is considered that the work has reached the stage when to ensure efficiency and economy it must be increasingly systematized by central direction. It should be noted that Mr. Macpherson was able to dispose utterly of the vague and calumnious assertion that medical appeal boards were being requested for financial reasons to modify their awards. There is not, of course, the smallest idea of an attempt to minimize the national obligation. The boards are free and independent.

The Dentists Act, it may be remarked in passing, was a remarkable demonstration of success in private bill legislation, made possible by the assistance of the Government. Of other measures of the session the departmental bill to enable county and borough councils to undertake, as from April 30th last, responsibility for the treatment of tuberculosis was a corollary of what had been done last year. The Census Act opened up new sources of information calculated to help in providing knowledge of housing exigencies and of industrial conditions as shown by the figures of comparative employment in various occupations. The Public Health Officers Act affords to medical officers and sanitary inspectors of local authorities security already enjoyed by the medical officers of other bodies; and the Coroners' Remuneration Act, though only permissive and not compulsory, as originally framed, will enable local bodies to revise salaries as circumstances demand. As regards the Criminal Law Amendment Bill, Dr. Farquharson is entitled to sympathy on the rejection of the measure on the last lap, when its passage seemed to be assured. But with such large majorities in both Houses in favour of the proposals as they were originally presented the matter cannot be left as it is. It will come up again next session with added strength, whether in this or a new Parliament.

In two matters, which are none the less important as affecting health because their influence is indirect rather than direct, compromises which appear to represent the national feeling of the time were successfully made by the Government. Housing schemes have been foreshortened, but it is claimed that work to be undertaken will occupy all labour available for the purpose for the next eighteen months, and before then the position can again be considered. The Licensing Act cuts between prohibition at the one end and those who would have had the country return to something like the pre-war latitude in drinking.

No attempt can be made here to appreciate individually the contributions of the medical group to the work of the session. Sir Watson Cheyne, Sir Henry Craik, Sir Philip Magnus, Drs. Farquharson, Fremantle, Elliot, Murray, and Raw, have taken an active share, the last named serving as chairman of the committee during the time Sir Watson Cheyne was absent on account of illness. The medical men in the House have more than justified their position, both in the general and particular application of their minds to parliamentary problems.

Loss of the Criminal Law Amendment Bill.

The Criminal Law Amendment Bill came before the House of Commons on August 17th for consideration of the Lords' refusal to accept certain amendments inserted in the Commons. These were: (1) A new clause to make acts of gross indecency between women a misdemeanour punishable under the Criminal Law Amendment Act; and (2) a provision that the hearing of the trial of incest cases *in camera* should be subject to the discretion of a judge in any case.

It will be remembered that, following on the findings of a Joint Committee of the two Houses, the bill was introduced in the House of Lords by the Bishop of London and made smooth passage there. Late in the session the Government gave facilities for its progress in the Commons, where it was in charge of Dr. Farquharson; but Mr. Chamberlain, in making this concession, said as to this and some other bills that the Government would not think it right to ask the House to take them during late hours of sitting "except with something like general assent." Thus it was that the Lords' refusal to accept the Commons amendments came before the Commons after 11 at night on August 17th.

Major Hamilton, in moving that the bill be further considered that day three months—or, in other words, that it be rejected—insisted that what Mr. Chamberlain had said amounted to a pledge. He also submitted that the Lords were right in holding that the new clause setting up a new offence should not have been introduced without the fullest consideration. He held that the bill ought to have been brought forward as a Government bill, and dealt with deliberately. He regarded this as hustled legislation.

Sir E. Wild, seconding the motion, said that when the new clause was passed in the Commons 205 members were present, and the fact that the Lords had rejected a proposal which had received such large support in the Commons was proof that the measure was highly contentious and should not, having regard to the Government pledge, be proceeded with at that hour of the night and that period of the session.

Dr. Farquharson said he was much impressed by the statements of the last two speakers as to the contentious character of the measure. When he obtained from the Government a promise that the bill might be proceeded with, he did so on representations made by him and others as to the prospects of more or less agreement. There was almost unanimity on the part of all the women's societies in the country for the bill as it originally appeared in the House, and a most imposing meeting was held in the House at which united support was given to it. But what happened on the third reading and was happening at that moment showed that the bill had not the general assent of the House. Therefore he was not disposed to disagree with Major Hamilton's motion. He accepted on report stage the new clause in order to facilitate the passage of the bill, but to his mind that clause was valueless.

Mr. Chamberlain explained that he did not intervene on the last occasion because he thought that those who opposed the provisions in the measure would accept the decision of the House as final. Since then the clause which had been accepted by the promoters of the bill as a compromise had been rejected in another place. The basis of compromise having been destroyed he was satisfied that there was not that basis for general agreement that would enable him to ask the House to proceed with the bill after October 11th. He expressed his gratitude, and he thought members in all quarters would allow him to say their respect, for the motives which led Dr. Farquharson to take the course he had. He was touched by the way in which the honourable member honoured the pledges given in his name, and asked the House to observe them.

In the course of further discussion Mr. Chamberlain said, in reply to Sir Donald Maclean, that he could not see his way to take the Government whips off and leave the decision on the matter to the House. Sir Donald had urged that the only difference was on the insertion of the new clause; Mr. Inskip, while recognizing that the leader of the House was in a difficult position, took the same view, and said that an enormous part of the electorate would be profoundly disappointed if the bill were wrecked in these circumstances. Sir Ernest Wild later repudiated a suggestion by Lieut.-Colonel Moore Brabazon that the new clause had been introduced for the purpose of wrecking the bill, and the Speaker rebuked that member for imputing a motive, and he thereupon apologized. Sir Ryland Atkins opposed Major Hamilton's motion, holding himself free to do so as the original clauses of the bill had been carried by such large majorities. Viscountess Astor appealed to the House to pass the bill, whose object was not to deal with immorality but to protect young people. Mr. Macquisten declared emphatically that he had proposed the new clause in good faith. In his opinion the measure was only a half-measure, and legislation on the subject needed to be more fully considered. Earl Winterton, though satisfied as to the good faith of the opponents of the bill, regretted their action.

On a division the motion to consider the Lords' action that day three months was carried by 89 votes to 59. Thus the bill was lost.

The Medical Services of the Army. On the third reading of the Consolidated Fund Bill, Dr. Fremantle said that if there was one subject which called for attention in connexion with any inquiry which the War Secretary might make as to the results of the war it was the health of the army in general. That needed the closest scrutiny, because the war had shown that this was a matter not merely for the medical service, but for the whole service. It could be dealt with only with the co-operation of the whole service, all branches of which were equally responsible for the preservation of the health of the forces. That this should be referred to a committee of inquiry was necessary because the ordinary channels seemed to be closed. When he spoke on the subject before, he was misunderstood; the late Minister for War had, indeed, replied to him with a cheap sneer that he seemed to prefer the army to be sanitary and defeated rather than insanitary and victorious. That showed a total want of appreciation of his point. The object of the medical service was to increase efficiency. At the present moment, however, the organization had gone back to what existed before the war, and this would result in a lack of co-ordination which would continue until the time of necessity came again and a big scandal occurred. One proposal which was originally vetoed, though Lord Esher afterwards recanted his opinion, was that some one person on the Army Council should be responsible for the health of the service, and presumably that would be the Director-General of Medical Services. Secondly, an inquiry into the results of the war in this respect should embrace the question of inter-imperial co-ordination—namely, co-ordination between the medical services of the different dominions. Thirdly, the inquiry should deal with the possibilities of co-operation with the civil services both in peace time and on active service. He believed that this was being inquired into at the present moment by the War Office, but there was not sufficient actual co-operation with the civilian personnel even for peace-time purposes. Another suggestion which needed to be considered was the very large economy

possible by attaining proper co-ordination between the medical services now run under twelve different departments of the Crown. The medical units of the Territorial Army required to be trained, especially nursing orderlies; they did not exist as such in peace time, but had to be trained with a view to being utilized in war. If the Territorial Army was to be of any use in war, the medical services should be kept efficient and the medical units should not be reduced out of proportion to the reduction necessary in the combatant units.

Cost of the Medical Services.—Dr. Fremantle on August 16th asked if the Advisory Business Men's Committee would consider "the waste incurred in the maintenance under twelve Government departments of separate public medical and nursing services with separate institutions and personnel, separate means of recruitment, separate purchase of stores and equipment, often overlapping, often in peace time redundant, to meet needs which to a large extent are the same, and on active service were often discharged by mutual assistance"; and whether in any such consideration they would be assisted by persons having direct experience of such services. Sir Robert Horne replied that, pending examination of the departmental replies to the Treasury circular of May 13th, it would be premature for him to express an opinion with regard to the alleged duplication of machinery, but the matter would be carefully investigated.

Medical History of the War.—In answer to Mr. Raffan, on August 17th, Sir R. Saunders said that the medical history of the war was being prepared in a series of volumes dealing with the general history of the medical services during the war, the diseases of the war, the surgery of the war, and the sanitary work of the war. The first volume of general history was practically ready for publication, and the first volumes of surgery and diseases of war respectively were practically ready for printing. The medical statistics of the war were being prepared by the Medical War Records Section, which was now under the direction of the Minister for Pensions.

National Health Insurance.—Mr. T. Griffiths asked, on August 18th, whether the Minister of Health had come to a decision as to the appointment of a committee or commission to inquire into the working of the Acts relating to National Health Insurance, as suggested in his statement to the House on July 5th and August 3rd; and whether, if an inquiry was made, the Minister would see that approved societies, which had the greatest experience of the administration of the Insurance Acts, should be represented thereon. Sir A. Mond said he was not in a position to add anything to the answers he had already given as to an inquiry; but before any action was taken the point raised by the honourable member would be considered.

Bacteriological Examinations in Manchester Area.—Mr. Kenyon asked for particulars as to the arrangements sanctioned by the Ministry of Health as to bacteriological examinations in the Manchester area, particularly concerning the bacteriology of venereal diseases. Were they, he inquired, tending towards the creation of a monopoly in bacteriology in that city; had the Minister received from at least one competent bacteriologist a request to make arrangements with the local authorities in that area to conduct the same examinations at lower rates than those paid to the main examining body in that city; and was the Minister prepared to authorize bacteriologists in charge of approved laboratories in that area, already conducting the work for hospital clinics, to enter into arrangements with local authorities for the examination of material collected by doctors not attached to those hospitals, in view of the economy to be effected thereby. Sir A. Mond said that he had received a request from the bacteriologists referred to, but he had not had any application from any local authority to enter into an agreement on the lines suggested. If any such application should be made on the expiry of the existing agreements it would receive full consideration.

War Cases in Naval Hospitals.—Mr. Amery stated, on August 15th, in answer to Mr. A. Williams, that the number of serving naval men suffering from disabilities due to the war and still under treatment in hospital is 18. In addition there were in naval hospitals 5 men discharged from the navy who were in receipt of pensions from the Ministry. There were 113 naval men under treatment in the Royal Naval Hospital, Great Yarmouth, suffering from disabilities due to the war. Naval men still being treated under the Ministry of Pensions, in hospitals other than naval, are not included in the above figures.

The Restriction of Opium Cultivation.—Sir J. D. Rees asked, on August 18th, whether the League of Nations was now charged with the duty of deciding how much opium was to be grown in the world and how much was required for medicinal purposes, with the object of preventing the cultivation of the poppy to any greater extent than would suffice to satisfy this need; and, if this was the intention, how did the League propose to enforce its decrees in foreign countries such as China and Persia? Mr. Shortt replied that Article 23 of the Treaty of Peace entrusted the League with the general supervision over the execution of the International Opium Convention of 1912, and any conventions on the same subject which might hereafter be concluded. One provision of the existing convention required the signatories to enact effective laws or regulations for the control of the production and distribution of opium, but it did not rest with the League to decide how much opium was to be grown.

The Export of Opium.—Colonel Sir C. Yate asked, on August 15th, what steps the Government of India proposed to take regarding the export of opium from India, owing to the failure of the Chinese Government to carry out her undertaking to put down the cultivation of opium in China. Mr. Montagu said that as the Chinese Government prohibited the import of opium into China in 1919, the Government of India was bound under the Hague Convention to prevent its export to China.

Small-pox in India.—Mr. Montagu on August 17th informed Mr. Hayday that compulsory vaccination was introduced in Calcutta on May 26th, 1880, in the city of Madras May 15th, 1884, and in the city of Bombay on September 1st, 1877. The statistics of death from small-pox so far as available were:

	Calcutta.	Madras.	Bombay.		Calcutta.	Madras.	Bombay.
1911	41	480	443	1916	58	476	1021
1912	77	105	979	1917	28	195	269
1913	120	34	212	1918	545	272	1024
1914	1038	66	252	1919	—	—	780
1915	2560	92	359				

Indian sanitary authorities admitted that compulsory vaccination had never been very rigorously carried out. It would be understood that the zenana system created difficulties unknown in the West. Mr. Bromfield asked whether the attention of the Government had been drawn to the number of cases of and deaths from small-pox which occurred among Europeans and Indian troops in India during the year 1918 as follows: European troops, 117 cases with 18 deaths; European officers, women, and children, 33 cases with 5 deaths; Indian troops, 329 cases with 46 deaths; making a total of 479 cases with 69 deaths; and what explanation the army had to offer for the failure of vaccination and revaccination to protect these cases. Mr. Montagu said he had been unable to verify the figures as regards European officers, women, and children, but had no doubt they were correct. The other statistics agreed with those in his possession. He had no information to show how many of the cases had been vaccinated, but would call for a report.

Food Protection.—Sir A. Mond stated, in answer to Mr. T. Thomson on August 17th, that a circular had lately been addressed to local authorities, suggesting, amongst other things, that medical officers, health visitors, and nurses should, during the hot weather, draw the attention of mothers of young children to the methods of preserving and storing milk and other food and protecting it from flies. He realized the difficulties of protecting food effectively in overcrowded dwellings, but he hoped that the advice given might help to secure this in many cases.

Registration of Nurses in Scotland.—In reply to Major Henderson, on August 17th, Mr. Pratt said objection had been taken by several of the larger boroughs in Scotland to the Draft Regulations framed by the General Nursing Council for Scotland. The Secretary for Scotland, however, considered that it was most desirable that the registration of existing nurses in Scotland should not be delayed, and, as the rules had been carefully adjusted with a view to securing reciprocity of registration with other parts of the kingdom, and as they in no way prejudiced the rules that might be made for future nurses, he was not prepared to withdraw them.

Air Pilots' Licences.—Captain Elliot asked, on August 17th, whether, in view of the coroner's verdict at the inquest held upon the late H. G. Hawker, which attributed the accident to the physical disability of the deceased, and also in view of the long history of tuberculous caries of the spine, disclosed by the *post-mortem* examination, the Air Secretary could state if these physical defects were ascertained at the medical examination at the Air Ministry, which took place on December 31st, 1920; and, if not, could the Minister say what further precautions were being taken to prevent the issue of Class "B" pilots' licences to persons suffering from physical defects likely to be prejudicial to the safety of air navigation. Captain Guest replied that it was known at the Air Ministry that Hawker had had tuberculosis, but at the examination in December, 1920, in the opinion of the medical officer his state of health warranted the renewal of the licence. This licence expired at the end of June, 1921, and at the time of his death Mr. Hawker was flying without a licence. In all cases, both for the orginal grant of a "B" licence and for its renewal, a most careful medical examination was carried out, and it was improbable that a person suffering from physical defects likely to interfere with his qualifications as a pilot would successfully pass this examination. Captain Guest added that it would have been impossible for Mr. Hawker to take up a passenger.

Letchmore House, Richmond.—In answer to Captain Tudor Rees, Major Tryon stated, on August 16th, that Letchmore House, Richmond, was recently taken over by the Ministry of Pensions from the War Office for the treatment of the more severe cases of neurasthenia. Patients with more pronounced mental symptoms were accommodated in a separate wing of the building under observation by orderlies, and did not mix with other patients. No persons certified as insane were inmates of this hospital.

Hospital Subscriptions: Income Tax.—In reply to Captain Bowyer, on August 18th, the Chancellor of the Exchequer declined to promise to introduce legislation providing that next year's subscriptions to hospitals should not be liable to income tax.

Ex-Service Men in Hospitals. Major Tryon, in reply to Mr. Aneurin Williams on August 16th, gave the number of ex-service men at present receiving in-patient treatment from the Ministry of Pensions for disabilities due to or aggravated by service in the great war as approximating 34,000. These figures included 2,600 men undergoing concurrent treatment and training.

Eligibility of Ex-Service Men for Medical Treatment. Major Tryon stated, on August 16th, that no distinction is drawn, under existing regulations of the Ministry of Pensions as regards eligibility for treatment and allowances, between the man who on account of a small disability has been awarded a lump sum and the man who is awarded a final weekly allowance. It has been the practice of the Ministry to allow reconsideration of the man's claim even in these cases of minor disability.

Exchequer Grants to the Universities.—In reply to Mr. Johnstone, who asked, on August 18th, the total amounts of Exchequer grants to universities in England and Wales for the years 1890, 1900, and 1910 respectively, Sir R. Horne said in the financial year 1890–1891 the Exchequer grant was £28,500; in 1900–1901, £42,000; in 1910-11, £154,250; in 1919–20, £742,000, of which £510,500 was described as recurrent, and £231,500 as non-recurrent.

Discharge of Lunatics.—In reply to questions on August 15th and 17th, the Minister of Health undertook to ask the Board of Control to consider whether further steps could be taken to make known the right of friends of private patients or the authority liable for the maintenance of pauper lunatics, to the provisions with regard to discharge contained in Sections 72–14 of the Lunacy Act.

Compulsory Vaccination. Dr. McDonald asked, on August 17th, if the Minister of Health would, at the earliest possible date, introduce legislation making it compulsory for all individuals who had been in contact with small-pox cases, and who had not been vaccinated in five years, to submit themselves to vaccination. Sir A. Mond said he could not undertake such legislation.

Beds for Tuberculosis. On inquiry by Captain Elliot, on August 17th, Sir A. Mond said that the number of beds in institutions approved by his department for the treatment of tuberculosis increased from 8,888 (or 0.258 bed per 1,000 of the population) in August, 1914, to 16,396 (or 0.470 bed per 1,000 of the population) in August, 1920.

Pensions Hospital, Chepstow. On inquiry by Major Prescott, on August 18th, Mr. Macpherson said that the number of patients at present in the Chepstow hospital was 167; the staff comprised five medical officers, including the medical superintendent. The hospital was for neurasthenic patients. He was considering the reduction of the medical staff in this hospital and in others.

ROYAL MEDICAL BENEVOLENT FUND.

At the last two meetings of the Committee thirty-seven cases were considered and £510 was voted. The following is a summary of some of the cases relieved:

Daughter, aged 61, of L.R.C.P. and S.Edin. who died in 1895. Applicant lost all her belongings through a fraudulent solicitor. She used to earn a little as a journalist, but cannot get work now. She now appeals to the Fund for help. Rent and rates £35 per annum. Voted £15 in twelve instalments.

L.R.C.P. and S.Edin., aged 70, who is now unable to work owing to paralysis agitans. He is dependent on his wife, who earns £3 5s. per week as a clerk. They are living with applicant's father-in-law, who has a pension and is also helpless; they pay £2 per week for their board and lodgings. Voted £26 in twelve instalments.

Widow, aged 68, of M.R.C.S. who died in 1882. Owing to chest and heart trouble applicant has not been able to earn anything for the last five years. For two years she has been living on proceeds of the sale of her furniture; this has now gone, and applicant asks the Fund for help. She has been living with a married daughter, but cannot do so any longer; her son allows her £12 per annum. Voted £18 in twelve instalments.

Widow, aged 41, of M.B.Ireland who died in 1920. Applicant left with four children, aged 5 to 16. The second boy, aged 14, provided for by uncle. The eldest son, aged 16, is consumptive, and has just returned home from a sanatorium. Applicant has sold her furniture and is now living in rooms. Since September, 1920, she has received £114 from investments. Voted £18 in three instalments.

Daughter, aged 75, of M.R.C.S.Eng. who died in 1847. Applicant is partially blind and consequently unable to work. Her sole income is derived as follows: £2 from investments, £20 from the Royal Unired Kingdom Benefident Association. Rent and rates amount to £28 per annum. Voted £18 in twelve instalments.

Widow, aged 59, of M.R.C.S. who died in 1913. Owing to enforced sale of house to pay off heavy mortgage applicant has no means, and has lived the last few months by selling her jewellery. She pays 15s. per week for board and lodging. This case has been referred to the Fund by the Portsmouth C.O.S. Voted £5.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Belsover Street, W.1.

England and Wales.

PUBLIC HEALTH IN ENGLAND IN 1920.

THE early issue of the report of the Ministry of Health for 1920–21 compared with the tardy publication of the annual reports of the Local Government Board is evidence of the desire of the Ministry to create and stimulate interest in the work carried on by the central health department of the country, for a two-year old report has lost its attractiveness, however admirable may be the achievements which it records. The Ministry of Health has now taken over from other Government departments certain functions which properly belong to the Ministry—for example, the powers as to water undertakings have been transferred from the Board of Trade, and from the Home Office has been taken over the administration of the Anatomy Acts, of various powers and duties relating to mental disease, and the enforcement of certain provisions of the Factory and Workshop Act, 1901, especially the prohibition of the employment of women after childbirth. Conversely, the Board of Trade is now responsible for work in relation to gas undertakings of local authorities, the Home Office deals with registration and elections, and the Board of Education is the authority for certain purposes under the Museums and Gymnasiums Act, 1891, and the Public Libraries Act, 1901, with all of which the Local Government Board was concerned.

An important step has been taken by the Ministry with a view to lessening the great cost entailed by proposals for the extension of municipal boundaries. On this question Dr. Addison called to his assistance the Consultative Council on local health administration and the recommendations of that body should go a long way towards reducing the heavy charges which are entailed in connexion with many local inquiries, at which there is often an array of counsel and expert witnesses as large as that to be seen in a parliamentary committee room when a private bill is under consideration.

The statistics given in the report are held to justify expenditure on the prevention of tuberculosis. In 1915 there were notified 68,309 cases of pulmonary tuberculosis; in 1920 the number was 57,844. In the same two years the deaths were 41,676 and 33,469 respectively. There are 418 institutions in which tuberculosis is treated, and they provide 17,352 beds. The prevailing financial conditions made it impossible to proceed with the proposed scheme for the establishment of village settlements and industrial colonies for tuberculous persons. The organized treatment of venereal disease has been in force for about four years. There are now nearly 200 treatment centres, and one—at St. Thomas's Hospital, London—is open every weekday from 8 a.m. to 10 p.m. The number of patients dealt with for the first time at these centres in 1920 was 105,000, and nearly 20,000 were found not to be suffering from venereal disease.

The low infant death rate of 80 per 1,000 births in 1920 is referred to with pardonable pride, and the report says "it can hardly be doubted that, after allowing for other circumstances which may conduce to low infant death rate, the special work done under maternity and child welfare schemes for the health of child-bearing women and children must be responsible for a part of the reduction." It is considered, however, that the extension of this work in recent years has been so rapid that there is some advantage in a halt at the present time for the purpose of considering the existing position and for a careful planning of future extension to meet the needs of the locality. There are over 3,000 health visitors in the country working from 1,780 centres; of these centres 712 are administered through voluntary agencies. There is still a serious shortage of trained midwives in rural districts where it is difficult for these women to make a living by independent practice and they have to be subsidized by nursing associations and act also as district nurses.

There appears to be an increasing number of whole-time medical officers of health in the country. There are 250 who act for county boroughs and county districts, and 62 of them act for more than one district. In the opinion of the Ministry this is the best method of filling the appointment of a medical officer of health in a district which is too small to need the whole time of an officer. In view of

the existing financial position in the country no proposals are made by the Ministry involving additional expenditure, but local authorities are advised to devote increased attention to the task of surveying the whole field of health services and health organization in order to ensure that, when the economic situation permits fresh progress to be made, whatever action has to be taken will be based upon a mature and deliberate plan.

Health of London in 1920.

The report of the medical officer on the health of London in 1920 follows close on the heels of his report for 1919, which was noticed in our issue of August 6th. We propose to deal with the new report at length shortly, and will now notice only the remarkable figures with regard to the birth rate and the death rate. The birth rate rose from 18.2 to 26.4, and the death rate, which was 13.6 in 1919, fell to 12.6 in 1920, the lowest rate for London ever registered; moreover, the infant mortality rate dropped to 76, the lowest ever recorded in London—lower even than the rate of 80 for England and Wales as a whole, and comparing favourably with 85, the rate in the other great aggregation of population, that of New York. It is to be noted, however, that the increase in the prevalence of certain notifiable infectious diseases observed in 1919 continued during 1920, the high incidence of scarlet fever and diphtheria being particularly noticeable.

Treatment of Tuberculosis in London.

The London County Council, at its last meeting before rising for the summer recess, passed a resolution urging the Ministry of Pensions to expedite its decisions as to the responsibility for the treatment of tuberculous ex-service cases, not only in new cases but also in cases at present receiving residential treatment, in which the Ministry has not yet decided that the tuberculous condition of the patient is attributable to or aggravated by war service. It was explained that in some 200 cases of tuberculous ex-service men at present under treatment for which the London County Council was responsible no decision had yet been made by the Ministry. It was agreed by the Council that if the Ministry decided, in any of the cases now undergoing treatment and training, that the tuberculous condition was not due to war service, the courses of treatment and training should be completed by the Council. The Council also decided not to include, as expenditure on the tuberculosis dispensary service, expenditure by the metropolitan borough councils on the provision of extra nourishment. A further decision taken on the same occasion was that in cases in which the income of an insured person accepted for residential treatment for tuberculosis was the main support of the family no assessment should be made for contribution towards the cost of such treatment.

Correspondence.

THE TEACHING OF BIOLOGY.

Sir,—The subject of the teaching of biology in schools is likely to come up for discussion in some form or other at the forthcoming meeting of the British Association in Edinburgh. Intimately bound up with this question is that of biology in relation to the medical curriculum. Should the subject be taught before or after the student has entered the medical school? What type of syllabus is most suitable for these students? Opinions are divided as to the answers to be given to these questions.

It seems to me that the time has arrived to redefine our conception of what should be included in the term "biology." In its widest sense nearly all the subjects included in the medical curriculum come within its scope. In the usual narrower application of the term it has come to mean an elementary knowledge of the facts of botany and zoology in their morphological aspects. A slight acquaintance with the general principles of structure and function is expected of the student. My experience as an examiner leads me to the conclusion that the latter is frequently ignored, attention being given only to the structural details of a few specified types. Such an elementary knowledge might well form part of a general education, and not for intending medical students alone, and as such could be taught in schools.

There is, however, a wider and more ill-defined aspect of the subject which might—and in my opinion should—be taught in the medical schools and presupposes the knowledge of elementary biology as above defined, and which might be termed "applied biology." As an indication of my meaning, mention may be made of such subjects as *tropisms*, *regeneration*, *immunity*, *parasitism*, and *heredity* (more particularly in relation to disease). It should be quite possible to evolve a really useful course, which need not of necessity be given at the commencement of the medical curriculum.

The question needs more space for detailed discussion than the medium of correspondence in your journal would allow, but I think it is a matter to which attention may well be given.—I am, etc.,

London, W., Aug. 22nd. H. W. Marett Tims.

HOSPITAL POLICY.

Sir,—I have read with surprise the debate on the Leicester motion at the Representative Meeting,[1] and am led to wonder how many representatives had discussed it with hospital committees or other laymen interested in hospital work. At the London meeting Mr. Eccles, who, to my astonishment in view of the recent appeal of St. Bartholomew's Hospital, supported this resolution, allowed that objection would be raised if the staff appropriated this money, and assured us that at St. Bartholomew's this was not done; yet others, who spoke on the same side, clearly expressed intention to do this very thing which he condemned. Now Dr. Brackenbury, in advocating the proposal, candidly allows that it will be bad for our profession, that we should be content with less, and that it will cast odium upon us. Assuredly it will, and that in no small measure, following so shortly on the lamentable failure to establish our 13s. 6d. claim before arbiters approved by ourselves. Was ever misguided resolution damned with more faint praise? The Leicester motion was wisely rejected by the staffs of Scottish hospitals; it was justly condemned as a positive menace to the voluntary system by the Cave Commission; yet it is to be forced upon us. What are we to do if our committees, rightly as I maintain, refuse this mercenary proposition? Are we to resign? Is it likely? Surely it is futile for the Association to impose what cannot be enforced. Are we not weary of "bluff" by now? To suggest what we do with our money is impertinence. Either it is our property, honestly earned, and no one has right to dictate or inquire what each individual does with his own, or it is not honestly earned. This resolution claims to be logical. If, indeed, we must exact toll upon every pittance towards mere maintenance paid voluntarily by patient or his relatives in cash, then logically we should demand share also in eggs, butter, potatoes, and the like paid similarly for maintenance in kind. As for the notion that societies will "manipulate" contributions, I think it unlikely that they will risk their funds, increase their work, and complicate their accounts by tricks calculated to conceal those contributions which it is to their interest to advertise at large. Yet, were such practices adopted, surely they could be frustrated when they actually occur. Shall we wreck the voluntary system, degrade the staffs of hospitals, and raise a storm of opposition among the laity, by gratuitous foreboding of such a bogey as this?

Having been present at the London meeting, I assert positively that undue influence was brought to bear in favour of this Leicester motion by the very strong lead given from the chair, that it was hurriedly and inadequately discussed, and, further, that the meeting was dominated by speakers, some of whom spoke repeatedly, from a few large industrial centres. The staffs of the county hospitals, whose views I believe to be accurately expressed by the Brighton amendment at the Representative Meeting, have never obtained sufficient hearing. I trust that others of these, more influential than myself, will now express opinion upon this humiliating and injurious resolution of Leicester, which we are told to commend to our committees.—I am, etc.,

Chichester, Aug. 20th. G. C. Garratt.

[1] British Medical Journal, Supplement, July 30th.

PREVENTION OF PUERPERAL INFECTION.

SIR,—May I be allowed to add one more letter on the above subject and to state that I agree with the writer in the BRITISH MEDICAL JOURNAL of August 6th (p. 220), on the impracticability of Dr. Bell's ideas in general practice? My experience of midwifery dates from early in 1867—my apprentice days—and I am still attending operative cases of midwifery although 74 years of age; during the period of fifty-four years I have attended 10,500 cases, as many as 7 in twenty-four hours; puerperal cases have been a rarity. I do not think, as far as my case-book shows, that I have had ten cases in this period, and most of these were in patients that had been in the hands of midwives for some hours, and my services were called in after the birth had taken place; of these cases three died, the remainder recovered.

My routine has always been strict cleanliness of hands, washing and disinfecting and scrubbing of nails, instruments boiled before and after using, vaginal examination reduced to a minimum; expression of placenta after birth. Ergot is given only in the third stage to ensure contraction. During the last ten years since midwives have been trained the use of chloroform is more in demand than in my earlier years, and is always given prior to delivery and instruments used before the patient has become exhausted. *Post-partum* haemorrhage has been a rarity. Although I have had all sorts of operative cases, from Caesarean section, embryotomy, craniotomies, eclampsia, etc., my maternal death rate has been exceptionally low. I have attended many cases suffering from scarlatina in a fever hospital and never lost one mother; also one in a small-pox hospital, where the mother was a patient with confluent small-pox, and both mother and child lived.

To sum up: My experience is to show that strict cleanliness will suffice even without rubber gloves and all the added paraphernalia of modern resources. Needless to say, the bulk of my cases have been amongst the working classes, but, on the other hand, I have attended many titled people.—I am, etc.,

August 9th. A GENERAL PRACTITIONER.

BIRTH CONTROL.

SIR,—It was with interest, after my return from a holiday, that I read the discussion on the subject of birth control. One fact which I think must be admitted by all is that the practice has become established to a very large extent in the educated classes, and will continue and extend. It is for the medical profession to decide whether it is better to give sound advice on the question or to allow people to continue to obtain advice from deleterious advertisements. If the advocates of unlimited propagation consider it an advantage they are right in advocating it, but they are not justified in trying to enforce it by claims that birth control methods are injurious to the woman's health. In my experience birth control has no ill effects, and does not promote either nervous disorders or sterility. Many of my patients restrict their families to the dimensions of their incomes, and when the latter has become capable of the greater burden have voluntarily increased the former. They are, in my opinion, the better and happier for doing so. It is far better for parents to have two or three children and to be able to bring them up well fed and well educated than to have an unlimited number which means constant deprivation. That appears to me to be the chief difference between the working classes and the middle classes at present. Dr. Turner makes a very true statement in saying that knowledge should be imparted to the poor and feeble. The upper classes know it already and benefit by the knowledge.

Dr. Sutherland objects to statements culled at random being used to support the argument for control, and then cites Ireland as more free from sterility than other countries where birth control is more in practice. He has no justification for this statement. I have just looked up all the cases admitted to this hospital this year from the rural districts, and out of 87 women admitted 33 were sterile. I have not got any statistics, but I very greatly doubt his statement that the infant mortality in the rural districts is so satisfactory or the large families of half-starved children so happy. The land of the small farmer is not capable of supporting many of the large families, with the result that many of the children are reared weaklings. The mothers are constantly occupied in the care of an infant, with the result that the elder children are nothing but drudges for the younger, and are largely deprived of the education which they should receive and all the parental care they should be entitled to.

One of the most potent causes of sterility is acquired venereal disease, and in my opinion this is largely promoted by the economic deferment of marriage. If young men felt that they could get married early and not incur the unlimited liability of a family, I believe there would be a marked reduction in the average age of marriage. My experience is that young married people do not try to avoid the first or second infants; they are, as a rule, only too pleased with them; but when the income is then taxed to its limit, without the sacrifice of the ordinary pleasures of life, the prospect of another child becomes a perpetual nightmare. It is the knowledge of many cases of too large families amongst their friends and the resultant distress that debars many young men and girls from getting married and running the same risk. Dr. Muspratt advocates the State support of superfluous families, the unmarried to be taxed for the purpose. Why should the unmarried not be encouraged to marry and have children of their own? I know numbers of cases of men and women who have never married because of the burden thrown on them by their less thrifty—or, rather, less considerate—brothers and sisters having uneconomic families. In many of these cases the unmarried ones are far the more fit for propagating the nation morally and physically. Is Dr. Muspratt such an admirer of the products, both morally and physically, of foundling schools that he would wish to have a nation of such? Personally, I would rather have one child brought up in decent home surroundings than ten foster school children. The love and human element of the home is absolutely essential to the nation, and in the present times of competition there is no more potent destroyer of this element in the home than the worry and anxiety of making ends meet owing to too large a family.

The moral effects of teaching birth control has been largely brought into the discussion. Some of the writers state that the practice amounts to prostituting the wife. Do they deny any desire on the part of a healthy, clean-minded woman for her mate? The statement that the teaching will induce undue indulgence is unjustified; if a man is such a moral degenerate as to be so affected it would be better for the nation to restrict his propagation or induce him to do so, for the fear of too large a family will not do so. Why not give the power to the wife? She probably cannot resist him otherwise. The same applies towards the sexually immoral women. Healthy home upbringing by parents able to devote themselves to the duty, unhampered by the worries and discomforts of a family too large for the income, will do more to prevent girls going astray than anything else. It is the loss of home control and influence that has increased the moral laxity of late years, and if a girl wants to find out about preventive methods there are plenty of people ready to give her all information. It is not to the medical profession or decent married people she will go for the information. Much of the present moral laxity arises from postponement of marriage owing to fear of the consequence, and this fear is justified by the experience of others who have married and then had families out of proportion to what they can ever expect to be their economic value. If young men and girls could look forward to getting married at an early age there would be a greater tendency for them to fix their affections early and to remain faithful to these affections prior to marriage, thus diminishing the incidence of venereal disease and the resultant disasters in late marriages. Many of the girls who at present go wrong in what may be called an amateurish way, do so from having their affections trifled with without any prospect of security of tenure. The young men play about without hope or prospect of marrying.—I am, etc.

GIBBON FITZGIBBON, M.D.

Rotunda Hospital, Dublin, Aug. 13th.

SIR,—I have no wish to evade Dr. Binnie Dunlop's statement that the world's food supply has always been increased so slowly that only a small percentage of couples in the world could get sufficient food for more than two or three children. My contention is that this doctrine of Malthus could only possibly apply to a closed country producing all its own necessities of life, and that it

cannot be applied to Great Britain or to any country open to commercial intercourse with the world. On the contrary, in Great Britain there has been not only an increase of population, but also an increased consumption of various foods per head of the population. This capacity for growth depends on the production of goods or of services required by other nations, and not on the actual food produced in Great Britain. Moreover, there is no evidence to prove that the available supply of food in the world either has not been or will not be increased to meet any demand that was made or is likely to arise. Within the British Empire alone between 1901 and 1911 there was an increase of 75 per cent. in the production of wheat. Lastly, as was shown over a generation ago by Prince Kiopotkin, if Britain was as well cultivated as is Flanders we could produce all, or nearly all, our own food.

Furthermore, there is no evidence whatsoever to prove that a high birth rate is of necessity associated with a high death rate. In China, where there is said to be a birth rate of over 50 per 1,000, and where over 70 per cent. of infants are helped to die, the high death rate is due to degraded social conditions. Among the French Canadians, where the average family numbers about nine, the high birth rate is associated not with a high death rate, but with the increase of a thrifty, hard-working race. In Ontario the birth rate went up from 21.1 in 1910 to 24.7 in 1911, and the death rate fell from 14 to 12.6. Again, in 1911 the standardized birth rate for Connaught was 45.3 as against 24.7 for Great Britain. At present I have not access to the respective death rates, but am safe in asserting that the infant mortality rate in Connaught is very much lower than in Great Britain. Among the poorest class in Great Britain a high fertility rate is associated with a high infant mortality rate, but it is surely obvious that a high infant mortality rate is not due to the numbers born, but to the numbers who do not survive owing to degraded social conditions. Now the neo-Malthusians hold that unrestricted reproduction inevitably leads to poverty and therefore to an increased mortality rate. This doctrine contains an obvious fallacy. It is not unrestricted reproduction but unrestricted survival that might possibly lead to pressure on subsistence. Consequently their argument comes to this—that unrestricted survival leads to an increased non-survival rate, which is contrary to reason. Moreover, a general correspondence between birth rates and death rates has never been established by statistical methods. In Great Britain, between 1838 and 1912, the birth rate and the death rate show a correlation of 0.84, but if that period be split into two the correlation from 1838 to 1876, when the birth rate was fluctuating, is *minus* 0.12, and in the period after 1876 the correlation is *plus* 0.92. That means that the whole of the positive correlation is due, as was shown by Dr. Major Greenwood,[1] to the falling of the death rate.—I am, etc.,

HALLIDAY SUTHERLAND.

Gorthleck, Inverness-shire, Aug. 13th.

SIR,—The persons advocating birth control in your columns have pointed out its various conveniences. Among these it is extolled as a substitute for prostitution, and I presume the writer might have added for venereal disease. Scientific achievement multiplies conveniences and contrivances as time goes on, and the tendency of the day is to set a standard of convenience as a standard for action; yet it is quite obvious that power for evil increases with knowledge, so that our profession cannot avoid examining the moral and psychic aspect of new experiments. By substituting contraception for the dangers and inconveniences of the streets, etc., the would-be offender introduces the prostitute into his own home. This may seem a hard saying, yet a woman's purity is surely something more than a label attached by legal sanction! It is obvious that, when marriage takes place early, contraception must be carried on continuously for years if it is to attain the end advocated; and herein lies the danger of that mutual loss of respect which has broken up so many homes and filled the divorce courts. We like to grant her the highest place who is an example of purity and whose womb bears the fruit of life naturally; while it is revolting to consider the whole of womanhood coming under the influence of such a practice.

In reviewing the arguments for contraception we find that they are strictly confined to the economic question, and centre round the advisability of early marriage for the male. The later marriages of the present day facilitate the intellectual and physical development of women, as they also limit the family to some extent; and they tend to produce a more intelligent type of offspring in those instances where the father is also healthy. Therefore the reasonably late marriage is favourable both to mother and child, while the disadvantages fall upon males who are unable to keep continent previous to marriage. This is the whole crux of the argument. No one can pretend that a numerous progeny is over exhausting to a normal woman, though it may arrest her development in some directions; and every medical practitioner has experience of the hearty strong mother of sixteen children. I may repeat that the argument centres round the economic question, and the likelihood of the husband contracting venereal disease. This is a stupendous problem; but I venture to suggest that the psychic instability resulting from widespread degradation of marriage will be potent in ruining the national character. Can we expect an enduring edifice which has corruption at its base? Syphilis was not known in the days of the Roman Empire, in which times the degradation of minds and morals proved sufficient to overthrow the state without the aid of venereal disease. Vice deserves its name no less when it is carried out under the legal sanction of matrimony; and I would remind the reader of Mrs. Scharlieb's statement that "mankind is already oversexed." The practice of contraception strikes at womanhood, the fortress of our national character and strength, by whom the home will be polluted at its source.

Our arguments are not merely theoretical. We have the example of France before us, who, by the "law of August 1st, 1920," endeavoured to migitate the widespread evils that contraception had brought upon her people. All are aware of these evils, which have been obvious for many years. I do not speak only of the lack of fighting men, but of the national instability, lasting through a generation, and from which the valiant country is striving to free herself. Britain now proposes to follow a scheme that France found rotten and which her legislature seeks to abolish. It is futile to call a process "birth control" which results in limitation to a dangerous extent. Parents who understand contraception will restrict births to suit their own convenience, not that of the State, while the home becomes a centre of selfishness and something much worse, in which are sown seeds of disintegration and decay, whose harvest springs up in the sordid precincts of the divorce court, and where the blight of venereal disease is by no means wanting.—I am, etc.,

Dundee, Aug. 14th. FLORENCE E. INGLIS, M.B., Ch.B.

SIR,—If the deliberate limitation of the number of pregnancies in wedlock be bad morally or physically, or both, then any method, even continence, that produces this limitation must be condemned. If it be not bad but harmless and beneficial to individual or race, then there is urgent need for the widest advertisement of the best method for its production if this be known, and if not known for research and discussion to discover it. The best method must obviously be efficient to the end of preventing conception and causing no bodily, no mental harm to the individual, nor moral hurt to the community.

Two facts stand out clear and unassailable. Denial of coitus, from whatsoever cause, in marriage is often the cause of mental and physical distress and ill health; if this be not so, then much medical evidence given in open court is untrue, however sincere were the expert witnesses. Pain and exhaustion of mind added to bodily hurt are the frequent result of pregnancy oft repeated.

The profession of medicine, in discussing this question, can hardly forget that it, itself, has a birth rate, if not actually the lowest, certainly lower than that of almost all other sections of the community. We are not, probably, unusually sterile by nature, nor are our wives. We are not, certainly, unusually unhappy in marriage. We have not become unusually lustful, morally flabby; nor in ourselves, our families, and our social circles "psychically disintegrated." We may, of course, be unusually continent.—I am, etc.,

H. M. HANSCHELL, M.R.C.S., L.R.C.P.

London, E., Aug. 8th.

[1] *The Declining Birth Rate*, Lond., p. 150.

SIR,—Certain of your correspondents appear to regard any effort made by the human mind to control the rate of reproduction as a species of unnatural interference with the ordered course of Nature.

The basic fact, however, cannot be ignored that the human intellect is one of the highest, possibly the highest, of the directing forces evolved by and employed by Nature in her ceaseless struggle to promote mankind to ever higher stages of perfection and to diminish pain and suffering.

The factors which determine populousness are complex in the extreme, and as yet but dimly understood; certain well-defined laws can, however, be clearly established. Population can at no time exceed and survive the limit which the maximal possible sustenance produced either directly or indirectly by that population is capable of supporting. Immediately such margin is passed elimination of surplus necessarily takes place. An uncontrolled birth rate means that such surplus must be eliminated after birth by the cruel instruments of starvation, of disease, and, indeed of destruction at the hands of man himself. Nature, however, in her wonderful beneficence, has (within the past century) evolved through her highest product, the human mind, machinery whereby the production of surplus progeny may be checked or prevented, thus offering to mankind the means of emancipation from untold potential misery.

Through countless ages living things have been evolved towards greater perfection by the dual method of diminishing their fertility and increasing the periods between conception and birth and adolescence with consequent increased parental care. Fewer and fitter has been Nature's merciful maxim, thus ever lessening the necessity to eliminate the superfluous at the cost of infinite suffering. These facts, I suggest, should be given very full consideration by those who are inclined to advocate an uncontrolled birth rate; and, too, I would direct their attention to the present débâcle in the country having the highest birth rate in Europe. I doubt if the prolific peasants of that country can be classed among those who "are very much happier than the people of Great Britain."—I am, etc.,

London, Aug. 8th. C. CONYERS MORRELL.

*** We cannot continue this correspondence, but are prepared to print a correction of any matter of fact.

Obituary.

JAMES H. NICOLL, M.B., C.M.Glas., F.R.F.P.S.Glas., Legion of Honour, France.

PROBABLY no death in the medical profession in recent years has affected the profession and the general public in Glasgow and the West of Scotland with a sense of such acute personal loss as that of Mr. James H. Nicoll. It had been known that while in France in the summer of 1918 he had been infected with bacillary dysentery, and that since then, possibly because with pressure of work he did not undergo a rigid course of treatment, he had never quite regained his former vigorous health. But the news of his sudden death at his residence, Woodside Place, on August 15th, came as a real shock.

Nicoll, who was the son of the Rev. James Nicoll, M.A., a man of distinction as a clergyman and preacher in Glasgow, was born there fifty seven years ago, and was educated at the Academy and Glasgow University, where he graduated in 1886. After holding the usual house appointments in the Western Infirmary he spent the next four years in surgical study in London and in various Continental schools, his *Wanderjahr* taking him as far afield as Moscow. He had quite clear-cut ideas as to his future line of work; on returning to Glasgow he joined the surgical staff of the Western Infirmary and became known as a rising surgeon. Promotion came to him rapidly, and in comparatively short time he became visiting surgeon to the Infirmary, surgeon to the Royal Hospital for Sick Children, as well as honorary consulting surgeon to other public institutions. He had but a short time to wait for private practice. Within a very few years he had built up a substantial position and reputation amongst practitioners as a surgeon of the highest diagnostic and technical skill, combined with real kindliness of heart and graciousness of manner and the debonair style of an accomplished man of the world. These qualities brought him many friends in commercial and artistic Glasgow who mourn his loss with a sincerity not less than those of his professional colleagues. In 1917 he resigned the surgeonship to the Western Infirmary—a severe blow to the teaching strength and personnel of the institution. Contrary to the usual experience, his private work increased rather than diminished, and his pleasure in it grew greater with the greater leisure.

In the surgical world beyond his own school Nicoll was probably best known for his work on congenital hypertrophic stenosis of the pylorus, which he was one of the first to describe and operate upon; on cranial depression in infants, which he wrote of in the *Glasgow Medical Journal* in 1901, describing an operation notable alike for its ease and efficiency; on haemorrhoids; on hare-lip and cleft palate; on prostatectomy and on pancreatitis, subjects on which he published several papers in the BRITISH MEDICAL JOURNAL. In the beginning of his surgical career his leanings were towards genito-urinary surgery—he invented an excellent modification of the Lister bougie and did much work in cystoscopy—but that speciality proved to be too limited. The immense expansion of the surgery of the abdomen in the last fifteen years presented him with an opportunity he was quick to appreciate, and he was at his death recognized in Scotland as an abdominal surgeon of first rank. He contributed many papers and demonstrations to the Royal Medico-Chirurgical Society of Glasgow, the latest being last winter, an able introduction to a debate on gastric and duodenal ulcer from the surgeon's point of view.

As a teacher of surgery Nicoll was one of the most popular in Glasgow. His classes in the Anderson College of Medicine (an extra-mural school in close proximity to the Western Infirmary) and his clinical classes in the Infirmary itself were always full of keen diligent men. His style was lucid, his diction graceful, his method pointed. He spent money lavishly on diagrams, specimens, lantern slides—on any means whereby he could make the subject of surgery plain.

Nicoll was a man of great public spirit. Ordinary politics he avoided, but in public work for the profession he delighted. As secretary of the Glasgow and West of Scotland Branch of the British Medical Association he rendered admirable service for several years and paved the way for the greater work of the Branch since the reorganization of the Association, and was vice-president of the Section of Surgery at the Annual Meeting at Leicester in 1905. He took an active part in management of various nursing institutions, and for two years, after resigning from the staff, he was a manager of the Western Infirmary. His latest public office—assessor on the Court of the University of Glasgow nominated by President Poincaré, Lord Rector of the University—was one which gave him the most elevated pleasure of all, as he held the post as representative of the students of the University. The award of the Cross of the Legion of Honour, conferred by M. Poincaré, was regarded by him as a recognition of his constituents rather than of himself.

Mr. Nicoll was unmarried, and so perhaps gave himself the more assiduously to his work. He could not bring himself to indulge in long holidays, nor did he play games or take part in sports. As a lover of nature he knew bird life well; as an admirer of art, his collection of etchings, especially those of his friend D. Y. Cameron, his bronzes and his paintings—the Hornels made a glorious display of colour—were a constant source of refreshment and delight; as a genial, hospitably disposed, generous-minded man he was popular in all circles. But we may well believe that those who will most regret his passing from amongst us will be the many men and women and little children to whom he was first the accomplished surgeon but soon discovered to be the forbearing, tactful, and kindly friend.

DR. JAMES PATON BOYD (Glasgow) sends the following tribute to Mr. James H. Nicoll: I have known him intimately for thirty years. He was very human; ambitious, but in the best sense. He loved his work and the success it brought him, but he held the monetary rewards he reaped of no account. I never heard him mention the word "investment" during all these years. There are scores of medical men in the West of Scotland who could testify to his untiring labours on their behalf and their families. He was always very courteous to women, and little children loved him even if he had

unwillingly to cause them pain. He was deep down a sentimentalist, like my old friend Professor Samson Gemmell, though like him he would have cut off his hand rather than have shown it. He hated cant and dogma, but believed in the true essentials. He always dreaded a long illness, so he has died as he wished, and his memory will remain enshrined in the hearts of many patients and friends.

WILLIAM A. CASKIE, M.A., M.D., J.P.,
Glasgow.

By the death of William A. Caskie, M.A., M.D., J.P., which took place on June 2nd, the profession in Glasgow has lost one who was well known and greatly respected. After studying at Glasgow University, he graduated M.A. in 1871, M.B. and C.M. in 1876, and proceeded M.D. in 1883. Dr. Caskie, when he returned to settle in Glasgow, was already a man of ripe experience, which he had acquired during many years of practice in the coast town of Largs; and when he took part in the discussions at medical meetings he at once commanded the respectful attention of his hearers. He made no pretensions to brilliancy, but he was of that good type, the observant and reflective general practitioner, and his contributions to debate were characterized by the restraint in statement that shows the well-balanced mind. It was mainly, however, as secretary to the North-Western Division of the Glasgow and West of Scotland Branch of the British Medical Association that he made for himself a place in the grateful remembrance of the local profession. A colleague writes: "Dr. Caskie held office through the long, laborious days when the National Insurance Bill was under discussion and those no less arduous times of recruiting for the medical service of the army. Never did he complain of the heavy burden laid on him, and never did he give cause for complaint through work undone. When men's tempers were apt to be frayed in the conflict of opinion his patience and equanimity never failed. In recognition of the debt which the local profession owed him he was made the recipient of a material testimonial, but the debt remains undischarged, although not unacknowledged in the memory of those who know the real extent of it."

THE LATE DR. HERBERT CUFF. An old colleague writes that probably the most striking piece of work accomplished by Dr. Herbert Cuff was the organization of the Alexandra Palace at a day's notice in September, 1914, as a huge camp for Belgian refugees; it had over 3,000 beds, and from October, 1914, to February, 1915, over 35,000 refugees of all ages and conditions passed through, including 1,900 refugees in one night from the wreck of the *Amiral Ganteaume* off Calais. Dr. Cuff's handling of this difficult work won great admiration, and for his services he was created an officer of the Order of the British Empire and an officer of the Order of the Crown of Belgium. At the funeral at Little Bookham on August 18th a large gathering of representatives of the Ministry of Health, the Metropolitan Asylums Board, Guy's Hospital, and other authorities and institutions assembled to pay a last tribute to one whose lovable personality will leave an abiding memory with all those with whom he came into contact.

The Services.

ARMY MEDICAL SERVICE.

A COMMUNICATION received from the War Office states that the sword for colonels Army Medical Service, and officers of the Royal Army Medical Corps, will in future be of the pattern authorized for infantry. Officers in possession of the existing pattern sword may retain it in wear. The gorget patches worn by the Army Medical Service are now of dull cherry cloth.

HONOURS.

AMONG the recipients of rewards announced on August 10th for distinguished services in the field in Mesopotamia is Temporary Captain Ivor Ridge-Jones, R.A.M.C., attached 122nd Inf. I.A., who receives the Military Cross.

For conspicuous bravery and devotion to duty at Julan on October 26th, 1920. During a five-hours' fight he displayed great coolness and daring in bringing back the wounded from the front line under heavy rifle and machine-gun fire. Throughout he set an excellent example, and it was due to his pluck and resource that all the wounded were retrieved.

The Shah of Persia has conferred the Order of the Lion and Sun of the second class upon Major (acting Lieut.-Colonel) A. Irvine Fortescue, D.S.O., R.A.M.C., for services rendered in dealing with a severe epidemic of typhus which occurred in a camp for Bolshevist prisoners of war at Shahr-i. No, near Teheran.

The following are among the decorations conferred by the Allied Powers for distinguished services rendered during the war 1914-1919:

President of the United States: *Distinguished Service Medal*: Surgeon Lieutenant-Commander F. C. Alton, O.B.E., and Surgeon Lieutenant A. G. Lee.

King of the Belgians: *Ordre de Leopold—Chevalier*: Temporary Honorary Major Edward H. Hicks, R.A.M.C.

President of the French Republic.—*Croix de Guerre*: Colonel S. F. Clark, A.M.S., R. of O.

President of the Portuguese Republic.—*Red Cross Medal, 3rd Class Cruz Vermelha de Merito*: Major J. Utting, R.A.M.C. (T.F.).

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

THE following appointments have been made in the Faculty of Medical Sciences at University College, London:

Senior Demonstrators in Anatomy: Mr. R. A. Dart and Mr. J. Shellshear.

Senior Lecturer in Histology: Dr. C. Da Fano.

Senior Assistant in Zoology: Dr. Elizabeth Fraser.

Assistant in Physiology: Mr. E. B. Verney.

Medical News.

SIR A. W. MAYO ROBSON, K.B.E., C.B., has had conferred on him the distinction of Chevalier de la Légion d'Honneur for services rendered in France with the Croix Rouge Français during the war.

A POST-GRADUATE course will be given at the Radcliffe Infirmary, Oxford, from October 3rd to October 8th. The subjects for consideration will be introduced by various members of the staff, who will also give demonstrations daily. A limited number of those attending the course will be accommodated in rooms in Queen's College. Full particulars can be obtained from Mr. Hugh Whitelocke, M.B., B.Ch., 6, Banbury Road, Oxford.

AT the quarterly committee meeting of the Auxiliary Royal Army Medical Corps Funds, held on July 22nd, eleven grants were made to cases in the Benevolent Branch for the orphans of officers amounting to £474 15s. 4d., and five grants in the Relief Branch for widows and children of the rank and file amounting to £109. These funds are for the relief of widows and orphans of commissioned officers, non-commissioned officers, and men of the rank and file of the Royal Army Medical Corps, Special Reserve, Territorial Force, and New Armies, and also for the relief of the children of those who have been so severely damaged in the late war that they need help for the education of children. Requests for relief should be addressed to the honorary secretary at the offices of the Funds at 11, Chandos Street, Cavendish Square, W.1.

THE Wellcome Historical Medical Museum will be closed for cleaning and decorating from September 1st to September 30th inclusive.

A THREE months' course of lectures and demonstrations in hospital administration for the diploma in public health will be given by the medical superintendent (Dr. E. W. Goodall) at the North-Western Hospital, Lawn Road, Hampstead, on Tuesdays and Thursday, at 5 p.m., commencing on October 4th. The fee for the course is £3 3s. Further information can be obtained from the Clerk to the Metropolitan Asylums Board, E.C.4.

THE courses of lectures and demonstrations for sanitary officers, meat and food inspectors, and women health visitors and child welfare workers, at the Royal Sanitary Institute, will be opened on September 19th, when Professor H. R. Kenwood, C.M.G., M.B., will give an introductory lecture. Full particulars can be obtained from the Secretary, 90, Buckingham Palace Road, S.W.1.

THE Franco-Polish Medical Congress will be held next month. A two-day session at Posen is to be followed by a five-day session at Warsaw.

AN article giving particulars with regard to the Dangerous Drugs Regulations, which come into force on September 1st, is printed in the SUPPLEMENT for this week. The *Chemist and Druggist* has published a card (1s.) for the use of pharmacists; in addition to particulars of such parts of the regulations as are of most importance to them, it gives a table showing the percentage of the various drugs to which the Act applies in various official and unofficial preparations.

THE Departmental Committee appointed by the Minister of Health to investigate the causes and prevention of blindness, of which the Right Hon. G. H. Roberts is chairman, has issued an interim report on the injuries to the sight of performers alleged to be due to the powerful lights used for the production of films in kinematograph studios. The committee traces the trouble to the use of open arc lights without diffusing screens, but finds that the deleterious effects have not been permanent. Unscreened arcs are not only unnecessary, but give less satisfactory photographic results, and the Incorporated Association of Kinematograph Manufacturers has given an undertaking that its members will not permit the use of open arc lights without filters in their studios. The committee points out that the industry is in a state of development, and that research is needed as to the best types of lamp.

A MEDICAL congress on balneotherapy, presided over by Dr. Roger Bolay, is to be held on October 8th and 9th at Yverdon-les-Bains, that pleasant little Swiss spa which is situated at the lower end of the Lake of Neuchâtel.

ON the occasion of his retirement from the superintendentship of Bellefield Sanatorium, Dr. James W. Allan has been presented by the staff of the Public Health Department of the Glasgow Corporation with a silver rose bowl in recognition of his work in the department.

MESSRS. W. HEFFER AND SONS, LTD., Cambridge, have in the press a volume entitled *The Autonomic Nervous System*, Part I, by Dr. J. N. Langley, F.R.S., Professor of Physiology in the University of Cambridge. It is the first part of a study of the sympathetic and allied nervous systems grouped together as the autonomic system. It gives an historical account of the various terms which have been used in describing the system, the place of origin and of peripheral distribution of its parts, and the common character of its nerve fibres. It treats of the action of drugs in relation to the sympathetic and parasympathetic subdivisions of the autonomic system, taking adrenaline and pilocarpine as types of the drugs which have a preferential action on these subdivisions, and discusses the various theories to which the preferential action has given rise. The tissues innervated are then dealt with; this section includes a discussion of the innervation by autonomic nerves of pigment cells, capillaries and striated muscle.

IT is reported that Professor Tcherbak, director of the physio-therapeutic institute at Sebastopol, has been shot by the Bolshevists for having had the wounded soldiers of the voluntary army nursed in the institute.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediscra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"W. J. C." asks: (1) Is the inspector of taxes right in refusing to allow for "depreciation" of motor car? and (2) a Maxwell four-seater costing £250, sold for £200, and two-seater Calcott costing £650, purchased in replacement, what is the appropriate allowance?

(1) Yes; this probably accidental and undoubtedly unfair discrimination between a "trade" and a "profession" was represented to the Royal Commission, and its abolition was recommended in their report. (2) Apparently the Maxwell was purchased second-hand, in which case "W. J. C." has undoubtedly improved his professional equipment, and the improvement represents capital and not current expenditure. The amount deductible must be limited to £[illegible] £200, £ being the cost, as at the date the Calcott was purchased of a second-hand four-seater Maxwell in a condition similar to that in which the old Maxwell was purchased.

"M. M. K." inquires whether he can deduct for tax purposes (1) £350 expended in connexion with a proposed purchase of a practice, the proposal having fallen through; and (2) sums paid, not under legal obligation, annually towards the support of a relative who advanced money for his education.

*** No. "M. M. K." is in practice, and can deduct from his professional receipts only expenses incurred in carrying on the practice. (2) If our correspondent is in fact paying interest, he is rightly assessed at 6s. in the £ on the amount thereof, because on that assumption he is entitled to deduct tax at that rate from the interest, leaving the relative to reclaim the whole or such portion as is returnable. But the facts as stated rather suggest that there is no real payment of interest, in which case the tax cannot be deducted, and the rate of 6s. may or may not be right, according to the amount of our correspondent's income.

"A. V. D." has sold his practice with a twelvemonths' introduction, but does not wish the fact to be known. The "partner" has been asked by the local inspector of taxes whether he has bought the practice and, if so, how much he has paid for it. Can this information be required?

*** We think that the local official is reasonably entitled to know in what capacity the declaration of profits is made, but should demur to the request for a statement of the purchase price. On the legal aspect, the inspector is not entitled to the information, but he has the right of objecting to the amount returned for assessment, and on an appeal against an assessment made the commissioners for the district may call for such information as they think fit. Whether they would demand to know the purchase price may be doubted.

LETTERS, NOTES, ETC.

ASTHMA AND ALLIED DISORDERS.

"M.D. 1920" writes with reference to the report of the address by Sir H. Rolleston and discussion by others on asthma and allied disorders.

It would be interesting to learn how long Sir H. Rolleston spent in gathering his facts; it would be more interesting to learn on how many patients a day he would be able to carry out his hundred and one skin reactions with proteins; it would be most interesting to discover how he proposes to juggle with the proteins which, in treatment, he suggests his patients should avoid. It is another triumph for Sir James Mackenzie's recent efforts to put symptomatology on a firm basis that the old recorders of symptoms said in simple words simply what to-day is shrouded in technical terms and a mass of figures. The doctors of the last century did no skin reactions, and yet were successful in treating—say urticaria—by advising the avoidance of strawberries or some article of food that disagreed. They likewise considered such points as occupation and environment in the treatment of asthma. When one considers the admitted psychical causes of these conditions one wonders why there is all this "pudder of the elements" over "sensitization" (a most unhappy term). This letter is meant in no way to detract from the eminence of the speakers, which I admire and respect; it is only the feeble cry of one young in medicine whose infant knowledge is daily being strangled by this rank growth of research.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, 31, 32, and 33 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 28, 29, and 30.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

LONDON: SATURDAY, SEPTEMBER 3RD, 1921.

EDUCATIONAL NUMBER, SESSION 1921-1922.

THE PROFESSION OF MEDICINE.

DURING the past thirty years the annual Educational Number of the BRITISH MEDICAL JOURNAL has been prefaced by some general remarks on the profession of medicine, addressed more particularly to intending students and their parents. Following the usual custom, we print this introductory article in the hope that it may serve, in part, as a clue to the mass of detailed information given in the pages that follow. A few notes are also included on the influence of the war and recent legislation upon professional study and practice. Medicine, like every other profession, has certain advantages and certain disadvantages, which vary from time to time with changing social conditions. These should be carefully weighed by all who think of entering its service, so that they may be able to judge not only of their fitness for the calling, but also of the prospects it holds out.

Our present issue is thus primarily designed as a guide to those needing information about the course that must be followed in order to become a legally qualified practitioner of medicine. Certain sections are, however, addressed to another class of readers—those who, having obtained a qualification to practise, are doubtful as to what particular part in medicine they should choose as a career. What we have to say to these two classes will follow the lines laid down in previous years. For the guidance of the former we print in subsequent pages full particulars of the course of education required of the student, the places at which this training can be obtained, and the universities and other bodies which test the knowledge thus gained, and stamp successful students with their several hall-marks. The medical courses of all the universities and corporations in the United Kingdom run on parallel lines, and the obligatory curriculum is the same for all students. But it is essential to understand from the outset that within these broad lines there are many differences between the requirements of the various teaching and examining bodies. The choice must therefore be made at the very beginning. It is of the utmost importance that the student and his advisers should have a clear idea of the object to be aimed at, and the relative value and difficulty of the various qualifications open to him. To prevent a false step at the outset the advice of someone who knows the ground thoroughly should be sought. To those who have no such counsellor the following remarks may perhaps prove useful.

The conditions with which those who desire to enter the medical profession must comply are regulated by a statutory body, the General Medical Council, and a statement of its requirements will be found on page 346. The examination of candidates as to their fitness to practise medicine is left to the universities and to certain corporations in England, Scotland, and Ireland. But the Council takes steps to ensure that the tests imposed do not fall below a certain standard, and that the persons examined have undergone prescribed courses of instruction at a recognized medical school. Successful candidates at such examinations eventually receive from the body holding them either degrees, in the case of the universities, or diplomas or licences, in the case of the corporations, entitling them to claim insertion of their names in the *Medical Register* kept by the General Medical Council. In former days the holders of diplomas and licences made up the great majority of all medical men, especially in England and Wales. But universities have greatly multiplied, and so many practitioners are now graduates that, in almost all cases, the wisest plan for a student at the threshold of his career is to aim at a university degree, though it may be desirable to take also a diploma or licence. Should he start out with the intention of obtaining diplomas, and find later that a degree is all-important to him, his position will be unfortunate.

Beyond the qualifications on the strength of which the General Medical Council admits to the *Medical Register* most of the examining bodies bestow on candidates who have passed further tests such higher titles as Doctor of Medicine and Fellow. It may be said that as a rule they are well worth obtaining, though the difficulty of doing so, and the added professional status they confer, vary. If a candidate looks forward to a career as a consulting physician he must obtain a degree in medicine from a recognized university, and for hospital posts a doctorate is desirable; he should also become a Member of the Royal College of Physicians of London, Edinburgh, or Dublin, according to the part of the United Kingdom in which he means to practise. If he wishes to devote himself to surgery he must in like manner obtain the Fellowship of one of the Royal Colleges of Surgeons. There are also diplomas in a growing number of special branches of work, such as public health, tropical medicine, and psychological medicine, which are superfluous for most practitioners, but either useful or indispensable for those who wish to specialize in these subjects.

With regard to the question of cost, the outlay involved in completing a medical curriculum varies so much that no single precise statement can well be made. The limits are wide apart. Besides differences in the charges made by medical schools for instruction there are differences in the fees for examination, as well as in those payable for the certificates of qualification given to successful students. Again, not all students, however industrious, pass examinations with equal facility. Since in any case professional education must continue for five years at least (a period exceeded by the vast majority), and since the cost of living in different parts of the country varies

much, while personal expenditure varies still more, it can only be said in a general way that no one should think of entering the profession who is unprepared to spend on his medical education at least £1,500. On the other hand, the number of scholarships now offered is larger than in the past; in the Scottish universities bursaries are numerous, and the Carnegie Trust gives assistance to deserving Scottish students. It will be seen, however, that, as compared with other professions, the period of training in medicine is long, and for most students costly. There is also to be remembered the time of waiting after qualification, when expenditure goes on but income tarries.

To the medical graduate, diplomate, or licentiate, once his name is on the *Register*, many paths are open. He can aim at becoming a general practitioner; or at entering one of the Government services at home or abroad; or at specializing in public health or asylum work, in scientific research, or in one or other of the many modern subdivisions of medicine and surgery. Most of these different paths in medicine are considered in detail in the sections that follow, but a few remarks may here be made as to the first and last of them.

There are three main gateways into general practice. The newcomer may take a house and wait for patients to seek his services; he may acquire through purchase the goodwill of a practice rendered vacant by retirement or death; or—perhaps best of all—he may enter into partnership with some already established practitioner. Success in private practice demands, however, a great deal of knowledge other than that obtained at the medical schools, and consequently a man is more likely to be accepted as a partner, or to succeed on his own account, if he has first gained some experience in private practice as an assistant or deputy. As for those whose aim is to become consultants or specialists, their path, though full of interest, is seldom smooth. For them success will depend in the long run not only upon their mental gifts and capacity for hard work, but on their possession of those qualities which help to win for a man the confidence both of his colleagues and of the general public. Moreover, since it is certain that, however well equipped they may be, they will not at first make as specialists enough to pay their outgoings, this branch is only open to those with the means to maintain themselves for an uncertain period, or who by teaching or in other ways can make enough to defray their expenses. We need scarcely insist here that the man who enters our profession with the sole idea of making money has mistaken his calling. The competent practitioner can always earn a competence while his health lasts, but the main reward of the medical life is the knowledge of good work well done. Whatever the branch of practice chosen, it must be remembered that the large majority of doctors make but a moderate income, while the financial returns of even the most successful compare but ill with those won by men of equal ability in other walks of life. It is the pride of our profession that the true doctor, in working year by year to diminish the incidence of disease, by so much helps to dry up his own sources of income.

It was inevitable that more than four years of war should throw a heavy strain upon the medical profession and upon medical education, and although things have become more normal in the past eighteen months or so, some effects of the upheaval will be felt for several years to come. Many doctors who served long with the Forces found the period immediately after demobilization a time of uncertainty and financial stress, but there is reason to hope that all who are fit for work will soon have found civilian employment. Temporary medical service under the Ministry of Pensions has enabled some to tide over the difficult months. Another important effect of the war was to increase very greatly the numbers of medical students, both men and women, but especially women. This matter has been fully discussed from time to time in these pages, but a short summary of the position as it appears to-day may not be out of place here.

In the first thirteen years of the present century the annual entry of first-year medical students in Great Britain and Ireland averaged 1,400. During the war these entries increased by more than 500 a year. Thus, although many left to serve with the Forces, the whole number actually studying in the medical schools showed a steady upward movement. In May, 1916, the total was 6,103; in May, 1918, it was 7,630; by January, 1919, it had risen to the unprecedented figure of 9,490. But this was not the top of the flood. In the course of 1919, when demobilization was in active progress, 3,420 new students were registered, being 1,015 greater than the "record" entry of 1891—the year before the enforcement of a compulsory five years' curriculum. The students' registrations in 1920 fell to 2,531, which may be regarded as a more manageable number, though it is larger than in any year before 1919. The enormous increase in the student body after the armistice was, of course, mainly due to the return to the medical schools of an accumulation of junior students who had been on naval or military service. As a result many of the medical schools have been overcrowded, and many of the teachers overtaxed; some schools were even compelled to close their doors for a while against the flood of applicants for admission. The figures we have given indicate plainly enough that within the next three years or so any shortage of doctors that may now exist in consequence of the war will be far more than made good, and fears have been entertained lest there should not be enough work to go round when the present generation of students becomes qualified. It is too early to give a positive opinion on this point, because the number of new openings for medical practice under public authorities cannot as yet be foretold. But some optimism is needed to believe that the demands of the near future for medical personnel can quite keep pace with the forthcoming supply of new practitioners. However that may be, there is little doubt that the medical schools welcomed last year's ebb in the deluge of freshmen. The President of the General Medical Council has, indeed, stated his opinion that it would be in the interest of sound professional education were the numbers still further reduced. "They impose," he said, "a severer strain, educational and financial, on the schools and hospitals than the necessary recruitment of the profession demands, and in present circumstances the teaching institutions are less able to meet the strain. To raise the educational standard for admission and to increase the fees for professional tuition would thus seem, from all points of view, to be prudent and justifiable."

What has been said about the student body as a whole applies with even more force to women students. Since one of the effects of the war was to add very greatly to the already increasing number of women going in for the study of medicine, it follows that the proportion of medical women is now growing rapidly. In some of the medical schools there are said to be as many women as men. At the same time there are indications that the services of medical women are less in demand than during the war. Hence, in view of the big entry of

women students in recent years, all those who are now approaching qualification may not at once find openings for professional work. The return to civil life of large numbers of male students and practitioners has not only displaced a portion of the women who helped to carry on the work of the profession during their absence abroad, but has intensified the competition for those junior public health posts in which so many women doctors seek employment. For the present it would therefore seem prudent to advise parents to think twice before encouraging their daughters to embark on the study of medicine.

We may now consider briefly the general prospects of the profession in the transition period following the war of 1914–1918. It is a matter of common knowledge that medical science and practice won fresh laurels in the war, and that the medical services—reinforced more than tenfold from the civilian profession—came out of it with an enhanced reputation. Military medicine and surgery made great strides, and not a few of the lessons of practice and research in the war zones remain as permanent additions to knowledge. The treatment of wounds steadily improved; orthopaedic relief for the crippled and maimed is more successful; preventive medicine scored great triumphs. In civil life a feature of the closing stages of the war was the movement of public opinion towards a demand for extension and co-ordination of the health services of the country. This was a cause for which the British Medical Association had long been working, and whilst the Central Medical War Committee was continuing its labours on behalf of the community and the profession, another committee undertook the task of presenting to the Government and the public the case for the establishment of a Ministry of Health. The purpose of this reform was to make administration more efficient, through combination of departments and co-ordination of powers. The sympathy of a great public servant, the late Sir Robert Morant, was enlisted, and after preliminary administrative changes had been made, the Ministry of Health was set up by Act of Parliament on July 1st, 1919, with a medical man, Dr. Addison, as the first Minister. On that date all the powers and duties of the Local Government Board and of the Insurance Commissioners for England and Wales passed to the Ministry of Health. The creation of the new Ministry carried with it an undertaking for reform of the Poor Law. At the same time a Scottish Board of Health and an Irish Public Health Council were constituted. These new central departments of health have had much to contend with during their infancy. From the day of its inception an immense task was set before the Ministry of Health; it was called upon to meet the demands of the medical profession and the public for better health conditions; at the same time it was ordered to find and apply an instant solution to the housing problem. To make things more difficult, the new Ministry had scarcely entered upon its second year before it became a target for the slings and arrows of outrageous politicians. Dr. Addison resigned his post to Sir Alfred Mond in April last, and has since left the Government—on the housing question. During his troubled time of office he set up a Medical Consultative Council, which presented to him an interim report on the future provision of medical services; a Voluntary Hospitals Committee, and a Committee on Post-graduate Education in London, both of which have issued their reports. All three documents have intimate bearings upon the practice of medicine and are still under discussion. Thus the possibilities of the future, though large, are as yet lacking in precision. More medical care has already been provided for expectant mothers, for infants, for children, and for the victims of tuberculosis and venereal diseases. All this has meant an increase in the official medical services, but the position of these new services is not well defined. The salaries offered may be enough at first to satisfy young graduates, but prospects of promotion are uncertain. If at present these special services look like blind alleys, the evils of this extreme particularism may compel reform at no very distant time.

The future of private practice it is difficult to foresee clearly. The fundamental importance of the work done by the general practitioner is better understood, and the Medical Consultative Council agrees with the British Medical Association that an efficient medical service for the community must be based on that. A year ago there was thought to be some likelihood that the Government would bring in a Medical Services Bill, and many rumours were in circulation. With a new Minister of Health, and in the existing pressure of parliamentary business, the prospect of a comprehensive measure seems more remote. In all public offices the watchword at the moment is economy at all costs, and even were it otherwise we may doubt if Sir Alfred Mond would wish to set up a whole-time salaried State medical service against the opposition of a large majority of the profession and the public. Nevertheless, the position of the private doctor has changed and is changing. It was profoundly affected by the Insurance scheme, which converted the bulk of the general practitioners of Great Britain into part-time civil servants, and brought them under the discipline of Insurance Commissioners. Pecuniarily, National Insurance has benefited many doctors; but its full effect on the profession cannot even yet be gauged, for, in spite of modification by successive amendments and regulations, it is still far from having reached a stable form.

In conclusion, it should be said that in these days of social change the doctor needs a strong sense of *esprit de corps*. The effect of many modern measures is so far-reaching that no medical man, whatever his position or particular occupation, can safely stand aside from his fellows. Medicine is a calling which the general public, as also public authorities, regard as being of a semi-philanthropic character: the compliment would be more welcome if it were less often a cloak for meanness. Furthermore, the aims and requirements of medicine are still very imperfectly understood by lay persons. Hence the interests of the medical profession, both on its financial and scientific sides, are for ever being attacked from one quarter or another, sometimes openly, sometimes insidiously. It is essential, therefore, that medical men and women should band themselves together for the common protection of themselves and their profession. The first step after qualification should be to join the British Medical Association.* The aims of the Association are to promote the progress of medical science and to maintain the honour and interests of the medical profession. Its record of ninety years' work shows that it has well fulfilled these objects, and the strength and vitality of the organization are greater to-day than ever.

* The subscription to the British Medical Association is 3 guineas a year for members resident in the United Kingdom. A member who joins within two years of the date of his registration as a medical practitioner pays 1½ guineas a year up to the end of the fourth year after registration; members joining after July 1st pay half the subscription for that year. All duly qualified British medical practitioners are eligible for election as members. Full particulars can be obtained on application to the Medical Secretary, 429, Strand, London, W.C.2. A brief account of the objects and constitution of the Association will be found at p. 384.

THE GENERAL MEDICAL COUNCIL.

THE General Medical Council was set up by the first Medical Act of 1858, and consists of thirty-eight members, six of whom are elected by the medical profession, five nominated by the Privy Council, and the remainder are representatives of the universities and such medical corporations of the United Kingdom as have a statutory right to issue diplomas. Under the Dentists Act, 1921, three additional members are to be appointed by the Privy Council for dental business; they must be registered dentists and members of the Dental Board. Its headquarters are at 44, Hallam Street, Portland Place, W.1, and it has branch offices at 20, Queen Street, Edinburgh, and 35, Dawson Street, Dublin. Its duties are to control the medical and dental professions in the interests of the general public, and to that end to maintain a register of legally qualified practitioners. It is admission to this *Register*, and not the possession of a degree or diploma, that constitutes a person a legally qualified practitioner. The Council is bound to admit to the *Register* those who hold the qualifications granted by the bodies represented among its members, but it exercises supervision through the Privy Council over the terms on which those bodies grant such diplomas or degrees, and it can erase from the *Medical Register* or the *Dentists' Register* the name of any medical man or dentist who has been convicted before a court of law of an ordinary crime or of a serious offence against public order, or who is proved before the Council itself to have been guilty of certain actions which the Council regards as professionally "infamous." Its disciplinary powers are limited to legally qualified practitioners, and it has no control whatever over irregular practitioners of any kind.

An account of the recommendations that the Council has drawn up in respect of the education of medical students here follows.

PRELIMINARY EDUCATION.

The regulations with regard to the subjects of the preliminary examinations recognized by the Council have recently been modified. In November, 1916, the Council decided that, in the matriculation examinations for the faculties of arts and science, and equivalent examinations, Latin should no longer be regarded as a compulsory subject. For practical purposes this means that all examinations accepted for matriculation in the faculties of arts and science in any university of the United Kingdom, without regard to the subjects included, are approved by the Council as qualifying a successful candidate for admission to the *Students' Register*. This carries with it the recognition of degrees in arts and science of any university of the United Kingdom or of the British Dominions. This decision, however, applies only to the senior or higher grade student; so far as the junior or lower grade of candidates are concerned, it was decided, as a matter of expediency, that Latin should remain compulsory for these candidates, since they do not, as a rule, produce as evidence of general knowledge certificates of examination accepted by a university or national education authority.

The lists of educational bodies whose examinations are now accepted under the regulations made by the Council for the maintenance of the register of medical students, together with other particulars, are published with the Students' Regulations, which may be obtained from the various offices of the Council, price 1s., post free 1s. 2d.

REGISTRATION OF MEDICAL STUDENTS.

In addition to showing that he has passed one of these examinations, any person applying for registration as a medical student must (1) produce satisfactory evidence that he has attained the age of 16 years; (2) show that he has commenced medical study at a university or school of medicine or at a teaching institution recognized by one of the licensing bodies and approved by the Council. The commencement of professional study will not be reckoned as dating earlier than fifteen days before the date of registration, but in certain cases it is possible to have the registration antedated.

On or after January 1st, 1923, candidates will have to produce evidence (*a*) that they have attained the age of 17 years; (*b*) that they have passed an examination in general education which is accepted for matriculation in a university in the United Kingdom, or the Responsions or the Previous; (*c*) and in addition thereto that they have passed an examination in chemistry and physics conducted or recognized by one of the licensing bodies.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from one of the offices of the General Medical Council itself or from one of the various licensing bodies and medical schools, and when forwarded it should be accompanied by the certificates as to age and general education.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

PROFESSIONAL EDUCATION.

The rule is that it is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts.

There are, however, certain important exceptions to this rule: thus (1) to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. (2) Graduates in arts or science of any university recognized by the General Medical Council, who have spent a year in the study of physics, chemistry, and biology, and have passed an examination in these subjects for the degrees in question, may be held to have completed the first of the requisite five years. (3) The Council will accept as six months of that year six months passed, subsequent to obtaining a certificate in general education, as a student of chemistry, physics, or biology at any teaching institution recognized by a licensing body and approved by itself. In any case, the period of five years must be one of bona fide study, and during its course education in the following subjects must be pursued and examinations passed:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity. (ii) Chemistry, including the principles of the science, and the details which bear on the study of medicine. (iii) Elementary Biology. (iv) Anatomy. (v) Physiology. (vi) Materia Medica and Pharmacy. (vii) Pathology. (viii) Pharmacology and Therapeutics. (ix) Medicine, including Medical Anatomy and Clinical Medicine. (x) Surgery, including Surgical Anatomy and Clinical Surgery. (xi) Midwifery, including Diseases peculiar to Women and to Newborn Children. (xii) Theory and Practice of Vaccination. (xiii) Forensic Medicine. (xiv) Hygiene. (xv) Mental Disease. (xvi) Anaesthetics.

The practical study of Subject (xi) shall not commence until the student has held the offices of Clinical Clerk and Surgical Dresser, and the work done in connexion with it must follow prescribed lines. The Council also expects that study of the Subjects (vii) to (xvi) shall extend over not less than twenty-four months subsequent to success at the examination in Subjects (iv) and (v). It also now recommends licensing bodies to require of candidates at their final examinations evidence of instruction in the administration of anaesthetics, in ophthalmology, and in infectious diseases, and of sedulous attention in hospital wards, out-patient departments, and *post-mortem* rooms, as clerks and the like.

Wherever the first of the five years is spent, the next three must be passed at a school of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858. The final or fifth year the Council recommends should be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

SPECIAL CONSIDERATIONS.

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but

before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order:

(1) Pass an examination in arts;
(2) Enter himself at a medical school or other scientific institution approved by the Council;
(3) Get himself registered as a medical student;
(4) Study for a minimum of five years certain prescribed subjects;
(5) Meanwhile pass sundry intermediate examinations; and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a legal authority to practise.

The Arts Certificate.—It is not, however, a matter of indifference what certificate of proficiency in general education or arts the student obtains. The General Medical Council, it is true, will accept any of the large number of tests to which reference has been made, and this, too, is the case with practically all the college corporations in England, Scotland, and Ireland. But some of the universities require that their own ordinary matriculation should be passed, others have special matriculation examinations for those wishing to join their medical faculty, and a third and larger number will accept any arts degree and certain matriculation examinations, as well as several other of the tests entered in the Council's list. The first thing, therefore, the future medical student should, if possible, decide is at what degrees or diplomas he intends to aim, and then find out what arts certificates will be required. If he cannot decide the question in advance, the best course probably would be to obtain a school leaving certificate of the English or Scottish Education Departments, or, failing this, to matriculate at London University.

The Minimum Period.—It must be remembered that the period of five years is a minimum; more is often required even by the man of good abilities and reasonable industry. Besides these qualities, a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss enough of them to make it impossible for him to be "signed up." Then, again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by the need for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards refuse to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the diplomas of the Royal Colleges. Those who wish to take a higher qualification —for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, must in some cases those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

The Normal Course.

In conclusion, a sketch may be given of the general fashion in which a student passes his five years or more, but discussion of this need not be prolonged, because once a student has entered at a school, and chosen the degrees or diplomas at which he wishes to aim, the dean of the school will guide his steps in every particular.

Whatever the goal, the path thereto is in all cases identical in broad outline. Practically it is divided into three stages, the conclusion of each being marked by an appropriate examination. In the first stage the student acquires some knowledge of the preliminary sciences—chemistry, physics, and biology; in the second he studies anatomy and physiology; and the third he devotes to the real work of his future life—medicine and surgery and their branches. During each of these the student must attend the prescribed number of lectures and classes to ensure getting "signed up" in the subjects of the stage, and also do much practical work. The examinations at the end of the stages are known by different titles by different examining bodies, but "preliminary science," "intermediate," and "final" are in common use. Some bodies demand that all the subjects of one stage should be passed at one time; others allow the candidate to present himself in each of the subjects separately, thus multiplying the number of examinations, but limiting their scope. There are also differences in the requirements of licensing bodies as to the length of each stage, but practically all demand that the second shall be longer than the first, and the third not shorter than the second. By the length of the allotted stage the candidate may gauge the comparative importance the licensing body attaches to the subjects within the stage and the difficulty of the tests it will impose; in any case he may feel certain that the time allotted is none too much.

It will be the aim of the student to get through his first two stages as quickly as his abilities and the regulations allow; as a rule, he should have completed the first stage by the end of his first year, and may hope to complete the second stage not later than the end of his third year. He will then have two crowded years in which to prepare for his final examination, the subjects of which include medicine, surgery, and midwifery proper, and many other allied subjects, such as pathology and bacteriology, forensic medicine, gynaecology, and therapeutics. In the first of the final two years he may be able to complete his formal lectures, and thus have the fifth year free for practical work and private study; during those two years, too, he will take part in the work of his hospital by holding clerkships and dresserships in the wards and out-patient department. Then, at length, after perhaps a few weeks of special coaching, he will be ready to present himself for his final examination, which the regulations of most bodies allow him to divide into two or more parts. The final examination passed in its entirety, he will be able to claim registration as a qualified medical practitioner. There is still room for him to continue a student's career if he will, for, apart from the higher qualifications to which reference has been made, it may seem to him worth while to devote time to acquiring greater knowledge of some particular branch of medicine, such as ophthalmology or laryngology, or to study for a diploma of special proficiency in public health (page 376), or in tropical medicine (page 374).

The English Universities.

There are eleven universities in England and Wales, and some account of each of them follows. With one exception they all have fully developed medical faculties. The exception is the University of Wales, whose constituent colleges are those of Aberystwyth, Bangor, Cardiff, and Swansea. It is in a position, however, to grant degrees, and has laid down a six years' curriculum for candidates for the M.B. degree, and it already provides, at the School of Medicine at Cardiff—of which an account will be found at page 365—thorough training in the work of the first three or four years.

UNIVERSITY OF OXFORD.

THE professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in Public Health and a diploma in Ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in Arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period; for some of the subjects chosen for the final stage of the arts course may be the same as those in which examinations would in any case have to be passed for the medical degrees. Women are now admitted to the B.A. and B.M. degrees, and follow the course set forth below.

A candidate may obtain the B.A. degree in either of the following ways:

(*a*) By passing Responsions (or one of the examinations which are accepted as equivalent), Moderations, a Scripture examination, or, in the event of a candidate objecting, an examination on some substituted book; and the Final Pass School in three subjects, two of which may be the same as two of the preliminary examinations in natural science.[1]

(*b*) By passing Responsions, the Scripture examination, some of the preliminary examinations in the Natural Science School,[1] or the Honour School of Mathematics in the first public examination; and one of the final honour examinations.

Responsions and chemo-physics preliminary may be passed before a candidate is a member of the university;[2] Moderations and Scripture can be passed in or after the second term; the final pass school may be taken any time after Moderations; a final honour school may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively; the preliminary examinations of the Natural Science School may be taken as soon as Responsions have been passed.

PROFESSIONAL DEGREES.

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the First B.M. is examined in human anatomy, in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the Examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine, and hygiene, materia medica, and pharmacology (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation, and not until a period of at least twenty-two months have elapsed from the date of his passing the first examination, and he must take all the three subjects at one and the same time.

Before admission to the Second B.M. examination the student must produce certificates of instruction from a medical school recognized by the University of having acted as clinical clerk and dresser, each for six months, and as *post-mortem* clerk for three months, of attendance on labours, of instruction in infectious and mental diseases and ophthalmology, and of proficiency in vaccination and the administration of anaesthetics. He must also produce certificates of attendance in laboratory courses in pathology, bacteriology, and pharmacology, either in Oxford or in a recognized medical school.

[1] The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary, and can be commenced directly after passing Responsions.

[2] Membership is constituted by matriculation and by becoming either a member of a College or a Hall or a non-collegiate student.

D.M. AND M.CH. DEGREES.

A Bachelor of Medicine who wishes to proceed to the D.M. must have entered his thirtieth term and must present a dissertation for approval by the appointed examiners. If a candidate for the M.Ch. he must have entered his twenty-first term and must pass an examination which is held in June.

Examinations for the Diploma in Public Health are held in Trinity and Michaelmas terms; that for the Diploma in Ophthalmology is held annually, commencing on the third Monday in July. For the Diploma of Ophthalmology attendance on a course of instruction in Oxford lasting two months is obligatory. Candidates must have their names on the *Medical Register* of the United Kingdom, unless, being Bachelors or Doctors of Medicine of universities outside the United Kingdom, they have obtained special permission from the Board of the Faculty of Medicine.

TEACHING.

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First B.M., and in part those of the Final Examination.

SCHOLARSHIPS.

Several colleges grant scholarships of £80 a year, tenable for four years, in natural science, chemistry, physics, and biology. Exhibitions of varying value are also awarded in these subjects. Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges, from the principals of whom details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Rolleston Memorial Prize, for research in natural science (including pathology), and the three Theodore Williams Scholarships in Anatomy, Physiology, and Pathology, of the value of £50 each, tenable for two years. A Burney Yeo King's College Hospital Scholarship of £80 is awarded annually.

FEES.

An annual fee of £4 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are: the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £180, or for women not less than £140.

For further information application should be made to the Dean of the Faculty of Medicine, University of Oxford.

UNIVERSITY OF CAMBRIDGE.

THE professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Ch.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in Tropical Medicine, in Public Health, in Hygiene, in Psychological Medicine, and in Medical Radiology and Electrology to medical practitioners, not necessarily graduates of the university. Information regarding these diplomas will be found in later sections under the headings Tropical Medicine, Psychological Medicine, and Public Health. A candidate for the M.B., B.Ch. degrees need not possess a degree in arts; it is sufficient if he has passed the previous examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B.A. degree, preferably by obtaining honours in the Natural Sciences Tripos at the end of their third year.

PROFESSIONAL EXAMINATIONS.

To obtain the M.B. degree the candidate must pass three examinations, of which the latter two take place twice a year, in the Michaelmas and Easter terms; those who are finally successful receive the B.Ch. degree without further examination.

First M.B., or Preliminary Examination in Science.—This comprises (1) chemistry, (2) physics, (3) elementary biology. The parts may be taken together or separately.

In either case the candidate before admission to examination must have satisfied the requirements in respect of the previous examination, paid the matriculation fee, and entered on his first or some later term of residence. During the continuance of the war students could be admitted to this examination though they had not commenced residence. The examination is held three times a year—in October, December, and June.

Second M.B.—This examination, which cannot be passed until the first examination has been completed, comprises Part I, human anatomy and physiology; Part II, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No one may enter Part II unless he has passed Part I. The candidate must be signed up in both subjects and have dissected for six months. The examination for Part I is held in December and June; that for Part II in October and April.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with surgery and midwifery, must have completed five years of medical study and be signed up in these subjects and have completed two years of hospital practice. Before admission to the second part the candidate must have completed five years of medical study and be duly signed up in all subjects and have completed three years of hospital practice. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council. The examination is in the principles and practice of physic, pathology, and pharmacology.

Act for the M.B.—Before receiving his M.B. degree, a candidate who has been successful at the final M.B. examinations has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence, the candidate sending to the Regius Professor of Physic a thesis, which is laid before the Board.

The Higher Degrees.

The M.D. degree may be taken by a bachelor of medicine of three years' standing after keeping a further Act and writing a short extemporary essay, in which he may deal at his choice with either medicine, physiology, pathology, or State medicine. The M.Ch. degree may be granted to a candidate who has qualified for the B.Ch. at least three years previously; he is then examined in pathology, surgery, surgical anatomy, and surgical operations, or submits books or writings of his own which constitute original and meritorious contributions to the science and art of surgery.

Fees.

In addition to college fees, tutorial fees, and the expenses of living, the following examination fees are payable: First M.B., £4 4s.; Second M.B., £4 4s.; Third M.B., £10 10s. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registrary, Cambridge.

UNIVERSITY OF LONDON.

UNDER the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in two branches, and Doctor of Medicine in six different branches. The university has its own matriculation examination, and this is of so peculiar a kind that candidates should secure and carefully study the booklets relating to it.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some other way; and, unless they are already registered medical practitioners of a certain age and standing, all students must pass not less than five and a half years in professional study subsequent to matriculation.

Professional Examinations.

M.B., B.S.—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself.

The Second Examination, Part I, cannot be passed within six months of the passing of the First Examination. It covers organic and applied chemistry, the candidate's knowledge being tested as in the earlier examination. It is a pass examination, but a mark of distinction may be won. Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination. The subjects are anatomy, physiology, and pharmacology, the tests being written, oral, and practical. Candidates who fail in one subject may sit for re-examination in that subject alone if the examiners think fit.

No candidate is admitted to the Third M.B., B.S. Examination within three academic years from the date of his completing the Second Examination. The subjects are medicine (including therapeutics and mental diseases), pathology, forensic medicine and hygiene, surgery, and midwifery and diseases of women. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and midwifery and diseases of women. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates are divided into an honours list and a pass list, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination.

The Higher Degrees.

M.D.—An examination for the M.D. is held twice yearly—in December and July. Every candidate must have passed the examination for the M.B., B.S. unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) Medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine, and, if he wishes, may pass also in another branch at a subsequent examination.

The period that must elapse between acquiring the M.B. and sitting for the M.D. in any branch varies between one and two years, according to the nature of the candidate's previous work, and in all cases evidence must be afforded of special study of the subject chosen; both written and practical examinations must be passed, though exemptions can be obtained from the former in exceptional circumstances. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example, medicine in the case of branch (4), pathology in branch (1)—an essay on one of two suggested topics connected with the special subject, and a clinical or other practical test. In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

M.S.—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are only two branches in which it may be obtained—General Surgery and Dental Surgery.

Fees.

The examination fees have been raised from pounds to guineas for all examinations held after September 1st, 1918. For Matriculation: 2 guineas for each entry. First Examination: 5 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination, Part I: 2 guineas for the first and each subsequent entry. Second Examination, Part II: 8 guineas for each entry to the whole examination. For re-examination in one subject the fee is 4 guineas. M.B., B.S. Examination: 10 guineas for each entry to the whole examination, and 5 guineas for examination or re-examination in either group. M.D. and M.S. Examinations: 20 guineas, and 10 guineas on re-examination.

Inquiries should be addressed to the Registrar, the University of London, South Kensington, S.W.7.

UNIVERSITY OF BIRMINGHAM.

THIS university confers the ordinary medical and surgical degrees—M.B., Ch.B., M.D., and Ch.M., and also diplomas and degrees in State medicine and dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M.B., Ch.B. candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M.B. those who have passed elsewhere an examination considered to be its equivalent. A degree of Ph.D. is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognised university.

Students entering the Medical Faculty for the M.B., Ch.B. degrees must have passed either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham; (*b*) some other examination recognized as equivalent to the matriculation. Candidates for medical degrees are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination, although these subjects are no longer compulsory. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester.

PROFESSIONAL EXAMINATIONS.

The candidate for the M.B., Ch.B. degrees has five examinations to pass. In the second and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M.B. deals with chemistry, physics, and elementary biology; it may be passed before the student commences residence at the university, provided the regulations as to matriculation have been met. The Second M.B. deals with anatomy and physiology, and the student must pass in both simultaneously. The Third M.B. deals with general pathology and bacteriology, materia medica, and practical pharmacy. The Fourth M.B. takes place at the end of the fourth year, the subjects being forensic medicine, toxicology, public health, therapeutics, and special pathology.

Final M.B.—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a *post-mortem* clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, and ophthalmology. In respect to the latter he must show that he has learnt refraction work. He also has to present to the examiners reports by himself on six gynaecological cases, and certificates drawn up by himself regarding four actual cases of lunacy and notes on two others.

M.D.—An ordinary candidate for this degree must be a M.B., Ch.B., of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B., Ch.B.

FEES.

The fee for matriculation is £2, and £2 10s. for each of the first four professional examinations; M.B., Ch.B. degree fee, £10; M.D. and Ch.M. examination, £12 10s. each. For further particulars application should be made to the Dean of the Medical Faculty, University of Birmingham.

UNIVERSITY OF BRISTOL.

THE university grants the following degrees: In medicine and surgery, M.B. and Ch.B., M.D., Ch.M. (the M.D. may be taken in State medicine); in dental surgery, B.D.S., M.D.S. Diplomas in public health (D.P.H.) and dental surgery (L.D.S.) are also granted. Candidates for degrees must qualify for matriculation in the university by passing either one of the school certificate examinations held twice a year in July and in September by the university itself, or the *Higher School Certificate*, or any one out of a list of similar examinations which will be found in the university regulations for matriculation. Candidates over the age of 23 may, under certain circumstances, be permitted to matriculate without examination. The winter session opens on October 1st, 1921.

Candidates who possess a *Higher School Certificate* approved by the Board of Education in physics, chemistry, and biology may count the first year of the curriculum and the first examination—the curriculum being thus reduced to four and a half years in the university.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are three examinations for these degrees. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The first M.B. comprises chemistry, physics, botany, and zoology. The second M.B. comprises organic chemistry, elementary anatomy (Part I), advanced anatomy, physiology (Part II). The two groups may be taken separately or together. The Final Examination includes materia medica and pharmacy, pharmacology, and therapeutics, general pathology, morbid anatomy and bacteriology (Part I), special pathology, forensic medicine, toxicology and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative), medicine (systematic, clinical, and practical), including mental diseases (Part II). The two groups may be taken separately or together. At the option of the candidate, forensic medicine and toxicology may be taken either with Group I or Group II. First or second class honours may be obtained by a candidate whose work is deemed of sufficient merit, but cannot be awarded to one who has recorded against him a failure at any examination after the first M.B.

M.D.—A candidate must be a M.B. and Ch.B. of at least two years' standing. He has a choice between presenting an original dissertation, undergoing a general examination in medicine (including medical anatomy, medical pathology and bacteriology, systematic and clinical medicine), or passing an examination in State medicine.

Ch.M.—A candidate must have attended, since becoming M.B., Ch.B., and for not less than two years, a public institution affording opportunities for the study of practical surgery, and produce certificates to that effect; the candidate shall be required to pass a general examination in surgery (including surgical anatomy, surgical pathology and bacteriology, operative and clinical surgery), and to present a dissertation in some department of surgery. He must be of two years' standing as a M.B., Ch.B.

Applications for other information should be addressed to the Dean of the Medical Faculty.

DENTAL DEPARTMENT.

The university grants the degrees of Bachelor and Master in Dental Surgery (B.D.S., M.D.S.) and a Diploma in Dental Surgery entitling to the letters L.D.S. The courses of the university are available equally for these qualifications and for those of other licensing bodies. Both courses are open to men and women alike.

Fees.—For the entire curriculum, including the mechanical laboratory, lectures, laboratory work, and hospital practice, if paid in one sum: For the B.D.S., 208 guineas; for the L.D.S., 181 guineas. Fee for the mechanical laboratory if taken alone, 60 guineas paid in one sum. Further details may be found in the Prospectus.

UNIVERSITY OF DURHAM.

To its own graduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), and Doctor of Medicine (M.D.), and Master of Surgery and Doctor of Surgery (M.S. and D.Ch.); it also grants special degrees and diplomas in State Medicine, Psychiatry, and Dental Surgery. To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts, or even to commence that period by matriculation. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of

Durham College of Medicine, Newcastle-on-Tyne, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while the student works elsewhere, but not less than a year must elapse between the date when the student satisfies the requirements of the university as regards matriculation and his presenting himself for the Final M.B., B.S. Examination.

The university has its own matriculation examination, but accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations for the M.B., B.S. degrees. Each is held twice a year—in March and June. The first deals with elementary anatomy and biology, chemistry, and physics; the second with anatomy and physiology; the third with pathology, elementary bacteriology, medical jurisprudence, public health, materia medica, and pharmacy. At the final M.B., B.S., the candidate is examined in medicine and clinical and psychological medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical gynaecology; therapeutics; diseases of the throat, nose, and ear; diseases of the skin; and diseases of the eye.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine for 1921–2. If the candidate is not a M.B. of the university, he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests.[1]

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming M.B., B.S. Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

FEES.

The following fees are payable: Matriculation or its equivalent, £2; First, Second, and Third M.B., B.S. Examinations, each £5; Final M.B., B.S., £10; M.D. and M.S., £5 for each examination and £6 6s. for the degrees of M.B. and B.S. The fee for the degree of M.D. is £10.

Further information may be obtained from Professor Howden, Registrar, University of Durham College of Medicine, Newcastle-on-Tyne.

UNIVERSITY OF LEEDS.

THE degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M.B. and Ch.B.), and Bachelor of Dental Surgery (B.Ch.D.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and Master of Dental Surgery (M.Ch.D.). It also gives diplomas in public health, psychology, and in dental surgery.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in (1) English composition and literature; (2) English history; (3) mathematics; (4) three of the following, one of which must be a language: (*a*) Latin, (*b*) Greek, (*c*) French, (*d*) German, (*e*) some other modern language approved by the Board, (*f*) either mechanics or physics, (*g*) chemistry, (*h*) geography, (*i*) natural history or botany, (*j*) general experimental science. Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., Ch.B. number three. The first deals with (1) physics and chemistry, (2) biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candidate present himself until after matriculation and a period of approved work in the respective subjects.

Second M.B.—This examination may be taken in two parts: (*a*) anatomy and physiology, including practical work; (*b*) materia medica and pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M.B.—This may be divided into three parts. The first (pathology and bacteriology) may be taken at the end of the tenth term; the second (forensic medicine and public health) and the third (medicine, surgery, obstetrics, and pharmacology and therapeutics) cannot be taken before the end of the fifth year; before admission to the examination in its subjects the candidate, besides ordinary certificates, must produce proof that he has done both intern and extern maternity work, and received clinical instruction in gynaecology, in diseases of the eye, skin, or larynx, and in the administration of anaesthetics. This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynaecology. First and second class honours may be obtained in this division.

M.D.—A candidate for this degree must be a M.B., Ch.B. of the university of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, he may be required to write a short extempore essay on some topic connected with medicine, and may be examined orally on the dissertation or other work submitted.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on ophthalmology and one on bacteriology; he is then examined on the subject of surgery in all its branches.

FEES.

The matriculation fee is £2, and on readmission £1 10s. For each of the other examinations £7; and £3 on readmission. On conferment of the degree of Ch.M. £7 is payable, the same remark applying to the M.D. degree.

UNIVERSITY OF LIVERPOOL.

THIS university, besides granting degrees in medicine (M.B. and M.D.) and in surgery (Ch.B. and Ch.M.), gives degrees in dental surgery (B.D.S. and M.D.S.), a degree in hygiene (M.H.), and degrees in veterinary science (B.V.Sc., M.V.Sc., and D.V.Sc.). Diplomas are awarded in dental surgery (L.D.S.), tropical medicine (D.T.M.), public health (D.P.H.), veterinary hygiene (D.V.H.), and medical radiology and electrology (D.M.R.E.).

MATRICULATION.

The Matriculation Examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts under certain conditions the test of several other bodies as its equivalent. The Faculty of Medicine has power to exempt from examination in corresponding subjects in the first M.B. examination any student who has obtained a certificate at a Higher School Certificate examination in the group including chemistry and physics, and who has reached a standard deemed satisfactory in the subject of exemption. Of the five years' curriculum, not less than two must be passed in the university itself, one such year being subsequent to the date of passing the first M.B. Examination.

PROFESSIONAL EXAMINATIONS.

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) chemistry, inorganic, organic, and physical; (2) biology, including zoology and botany; (3) physics. Section 2 may be taken alone or in conjunction with Sections 1 and 3.

Second M.B. — This test covers (*a*) (1) anatomy, (2) physiology, including physiological chemistry and histology; and (*b*) (3) materia medica and pharmacy, (4) pharmacology. Candidates may present themselves in (*a*) and (*b*) separately.

Final M.B.—The subjects of the Final Examination are: (1) General pathology, morbid anatomy, and bacteriology;

[1] See page 372.

(2) forensic medicine, toxicology, and public health; (3) obstetrics and diseases of women; (4) surgery, systematic, clinical, operative, and practical, including ophthalmology; (5) medicine, systematic and clinical, including mental diseases and diseases of children, and therapeutics. The examination is divided into three parts: Part I, subject 1; Part II, subject 2; Part 3, subjects 3, 4, and 5. Candidates may present themselves for examination in the three parts at the same time, or in any two parts together, or in each part separately. Part III may not be taken until five years of study have been completed.

M.D. and Ch.M.—Candidates for these degrees must have received the M.B. and Ch.B. at least a year previously. Students holding equivalent degrees of other approved universities may become candidates for the M.D. degree after two years' study in the university or clinical school of the university. The M.D. candidate submits for approval a dissertation covering original work, and Liverpool Graduates in Medicine who have been in practice for five years may be admitted to the degree by examinations. The M.Ch. candidate undergoes an examination. Other information concerning the diplomas of this university and its medical school will be found on page 365.

FELLOWSHIPS, SCHOLARSHIPS, AND EXHIBITIONS.

The university awards Fellowships annually to students of distinguished merit, as follows:

(1) John Rankin Fellowships in Anatomy; two, each of the value of £120, tenable for two years. (2) Ethel Boyce Fellowship in Gynaecology, value £100 and tenable for one year, open to fully qualified medical students of either sex. (3) John W. Garrett International Fellowship in Bacteriology, value £100 and tenable for one year. (4) Robert Gee Fellowship in Human Anatomy, value £100 and tenable for one year. (5) Holt Fellowships in Physiology and Pathology, two in number, value £100 each and tenable for one year. (6) Johnston Colonial Fellowship in Biochemistry, value £100 and tenable for one year. (7) Thelwall Thomas Fellowship in Surgical Pathology, value £150 and tenable for one year. (8) University Fellowship, £100.

There are, in addition, scholarships and exhibitions open to medical students.

VICTORIA UNIVERSITY OF MANCHESTER.

THIS university grants the four ordinary degrees in medicine and surgery, M.B. and Ch.B. and M.D. and Ch.M.; a diploma and a degree (B.Sc.) in public health; a certificate in factory and in school hygiene; a diploma in psychological medicine; and a degree and diploma in dental surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof; see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the five years' curriculum, one such year being subsequent to the passing of the first M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history; (4) English history; (5) two subjects at choice, one of which must be a language approved by the Joint Board, the other being elementary mechanics or physics, chemistry, geography, natural history, or botany. It is held in July and September.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. At all examinations the subjects, or groups of subjects, prescribed can be taken separately or together, as the candidate pleases. The first M.B. is divided into Part 1, inorganic chemistry and physics; Part 2, biology (including animal and vegetable morphology, physiology, and laboratory work); Part 3, elementary organic chemistry and biochemistry. The parts may be taken separately or together. At the Second M.B. the candidate is examined in anatomy and physiology; at the Third in pathology and pharmacology (including materia medica and practical pharmacy). The Final Examination includes medicine, systematic and clinical (separate papers being given on mental diseases), and diseases of children, surgery (systematic, clinical, and practical, with a separate paper on ophthalmology), obstetrics and gynaecology, preventive medicine, forensic medicine and toxicology.

M.D.—A candidate for this degree must be a bachelor of medicine of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject selected by himself.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than six months, a post in a public institution affording opportunity for the study of practical surgery, and produce certificates of having attended certain courses of study. The examination comprises the general field of surgery, including ophthalmology and bacteriology.

FEES.

The following fees are payable: Matriculation, £2; on readmission, £1 10s. Each M.B. examination, £8 8s.; on readmission, after failure, £3 3s. M.D., including the conferring of the degree, £15 15s. Ch.M., £6 6s. for the examination and £9 9s. for conferment of degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF SHEFFIELD.

THE degrees of this university (M.B., Ch.B., and M.D. and Ch.M.) and the diploma in public health are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose

PROFESSIONAL EXAMINATIONS.

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 21 years by the day of graduation; that he has pursued the courses of study required by the university regulations during not less than five years subsequent to the date of his matriculation or exemption from matriculation, three of such years at least having been passed in the university, one at least being subsequent to the passing of the first examination. The following examinations must be passed in due order:

First Examination.—The subjects are chemistry, physics, and biology. The Intermediate examination in science—chemistry, physics, and zoology—will, on payment of the required additional fee, be accepted instead of this examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, in (i) chemistry, inorganic and organic; (ii) physics; (iii) biology.

Second Examination.—The subjects are anatomy and physiology. The candidate must have completed the second year of professional study, must have passed the First Examination, and must have attended (1) lectures on anatomy, and dissections during three terms; (2) lectures on practical, experimental, and chemical physiology and histology during three terms.

Third Examination.—The subjects are pathology and pharmacology, anatomy and physiology. Candidates must have completed the fourth winter of medical study and the requisite courses in these subjects, including *post-mortem* clerkship for three months.

Final Examination.—The subjects are medicine (including forensic medicine, public health, mental diseases, and diseases of children), surgery, and obstetrics (including gynaecology. Candidates must have completed the fifth year of study and must satisfy the examiners in all subjects at the same examination.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B., at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch.M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES.

THE Charter and statutes of the University of Wales provide for a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M.B.), Bachelor in Surgery (B.Ch.), Master in Surgery (M.Ch.), and Doctor in Medicine (M.D.).

A candidate for the M.B., B.Ch. cannot be admitted to examination until the completion of not less than six academic years subsequent to matriculation in the university, and of these years at least three must have been passed as a student in one of the constituent colleges of the university. These are the University College of Wales, Aberystwyth; University College of Wales, Bangor; University College of South Wales and Monmouthshire, Cardiff; and University College, Swansea. He must also hold an Arts or Science degree of the University of Wales, or of some other university approved for this purpose. Some of the courses of study pursued for a B.Sc. or B.A. degree may be counted as part of the courses required for the degrees in the Medical Faculty.

The courses for the M.B., B.Ch. are divided into two sections, of which the first include the preliminary subjects—physics, chemistry, botany, zoology; and the ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year; study of physiology and anatomy must extend over at least two academic years, and cannot be commenced until all the preliminary courses have been completed; hence the first section of the course must occupy not less than three years. The second section includes courses in pathology, bacteriology, pharmacology, medicine, surgery, and obstetrics, and cannot be commenced, except in the case of pharmacology, until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in the earlier subjects are held at the end of each academic year, and in the subjects of the second section each July.

The University Registry is at Cathays Park, Cardiff.

English Medical Corporations.

THERE are three medical corporations in England—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the "Conjoint Board." Details concerning this body, its component colleges, and the third licensing body here follow.

THE CONJOINT BOARD.

THIS body deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who satisfy it for the Licence and for the diploma of Membership respectively. The successful candidate is then entitled to register as L.R.C.P.Lond., M.R.C.S.Eng. It performs the same task in connexion with diplomas in State medicine, tropical diseases, ophthalmic medicine and surgery, and psychological medicine, jointly issued by the two Colleges in question. It obliges all candidates to pass one of a large number of examinations which it considers satisfactory, tests of general education, and thereafter to pass five years in professional study at a recognized medical school, allowing, however, six months to be spent at any institution which may be recognized by the Board as giving efficient education in chemistry and physics. A list of such institutions, as also of the tests accepted in regard to general education, can be obtained from the Secretary of the Board at the Examination Hall, Queen Square, Bloomsbury, W.C.1.

PROFESSIONAL EXAMINATIONS.

There are three examinations for the Conjoint diploma, or L.R.C.P., M.R.C.S., which are commonly known as First Conjoint, Second Conjoint, and Final.

First Conjoint.—This examination is in three parts: (1) Chemistry, (2) physics, (3) elementary biology. A candidate must present himself for examination in Parts 1 and 2 together until he has reached the required standard to pass in both, or in one of these parts, but he will not be allowed to pass in one part unless he obtains at the same time half the number of marks required to pass in the other part. A candidate may take Part 3 separately, or he may present himself for the whole examination at one time.

Before admission to any part the candidate must show that he has undergone certain courses of theoretical and practical instruction, but these courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. A candidate referred in any part or parts will not be admitted to re-examination for three months. He must produce evidence of further instruction in the subjects in which he was referred. Those who are already graduates in medicine, or who have passed an examination in the same subjects before a university board for a degree in medicine may obtain exemption from re-examination in those subjects at this examination.

Second Conjoint.—This examination is in two parts—namely, Part 1, anatomy and physiology; Part 2, materia medica and pharmacology. A candidate must have attended at a recognized medical school lectures on anatomy, physiology, and a course of practical physiology and histology, and have dissected for twelve months during the ordinary sessions. He must also attend three months' lectures or demonstrations in pharmacology, and receive instruction in practical pharmacy. Part 2 may be passed at the same time as Part 1 or before or after that part, provided the conditions of admission to the whole examination have been fulfilled. The study of anatomy and physiology before passing in two of the three subjects of the first examination is not recognized. If rejected, a candidate before being admitted to re-examination must continue his studies at a recognized medical school for not less than three months.

Final Conjoint.—This examination consists of three parts: Part 1, medicine, including medical anatomy, pathology, therapeutics, forensic medicine, and public health; Part 2, surgery, including pathology, surgical anatomy, and the use of surgical appliances; Part 3, midwifery and gynaecology. The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of having conducted twenty labours. A candidate will be admissible to Parts 1, 2, and 3 of the Third or Final Examination at the expiration of two years (twenty-four months) from the date of passing the Second Examination, and on production of the required certificates of study, provided that the examination is not completed before the expiration of five years (five winter and five summer sessions) from the date of passing the Preliminary Examination. A rejected candidate must produce evidence of further instruction during at least three months.

NOTE.—A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations without any interval. Members of an English, Scottish, or Irish university are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their university the subjects included in the First and Second Examinations of the Board.

A member of an Indian, Colonial, or foreign university recognized for the purpose, who shall have passed examinations at his university for the degree of Doctor or Bachelor of Medicine or Surgery in the subjects of the First and Second Examinations of the Conjoint Board, will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

FEES.

First Examination, £10 10s. Re-examination in chemistry, £3 3s; re-examination in physics, £2 2s.; re-examination in biology, £2 2s. Second Examination, £10 10s. Re-examination in Part I, £6 6s.; re-examination in Part II, £3 3s. Third Examination, £21. Re-examination in Part I, medicine, £6 6s.; Part II, surgery, £6 6s.; Part III, midwifery and diseases of women, £4 4s. Members of English, Scottish, or Irish universities, £5 5s. for first admission to the examination, and £36 15s. for the diplomas.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THIS College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership is only granted to those who have passed the final examinations for the Licence, or those who are registered practitioners and graduates of a recognized university; in any case they must be persons over 25 years of age, who do not practise in partnership, dispense medicines, or engage in trade. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce. Those under 40 are also examined in Latin, and either Greek, French, or German. The examination fee is £6 6s.; the Membership fee is £42, or the difference between that sum and what the candidate has already paid as a Licentiate. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THIS College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the first in anatomy and physiology, which may be passed after the third winter session; the second, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose, who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees.

Fees.—At first examination, £8 8s.; for re-examination, £5 5s. At second examination, £12 12s. Diploma fee for non-members, £10 10s.

The College also issues a diploma (L.D.S.) in dentistry.

SOCIETY OF APOTHECARIES OF LONDON.

THIS body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L.M.S.S.A. (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations:

Primary Examination.—This is divided into two parts, of which Part I includes elementary biology, chemistry, chemical physics, practical chemistry, pharmacy. Part II includes anatomy, physiology, and histology, and cannot be passed before the completion of twelve months' practical anatomy with demonstrations. Candidates will be excused any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination.—This is divided into two sections, the first of which is subdivided into three parts. Part I includes the principles and practice of surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances. Part II includes: (*a*) The principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), pathology, and morbid histology; (*b*) forensic medicine, hygiene, theory and practice of vaccination and mental diseases. Part III includes midwifery, gynaecology, and diseases of newborn children, obstetric instruments and appliances. Section 2 consists of clinical surgery and clinical medicine and medical anatomy.

The fee for the primary examination is £5 5s.; for the final, £15 15s. Further information may be obtained from the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C.4.

The Scottish Universities.

THERE are in Scotland four universities, each possessing a faculty of medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of Edinburgh, Glasgow, Aberdeen, and St. Andrews. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not obtainable one apart from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also diplomas in psychiatry and public health. As for public health, registrable degrees in this subject are granted by the universities of Edinburgh and Glasgow, while diplomas in public health may be obtained from the universities of St. Andrews and Aberdeen.

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science (for degrees in pure science).

PROFESSIONAL EDUCATION.

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and in addition necessitate definite study for stated periods of diseases of children, of the larynx, ear and nose, of the skin, of ophthalmology, and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class. Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the middle of April to the end of June.

PROFESSIONAL EXAMINATIONS.

The distinctive feature of the Scottish curriculum is that, though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may pass in zoology and chemistry. At the end of the first summer session he can finish with botany and physics, and with anatomy and physiology at the end of the second. Pathology and materia medica he will pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects at the end of the fifth year of study. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, forensic medicine and public health, and clinical gynaecology. The first three examinations are held three times a year; the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed an arts or science degree examination in its subjects at any recognized university. When a candidate presents himself for an examination in several of its parts, but is not successful

in all of them, he is credited at the next examination with those subjects in which he has already been approved.

THE HIGHER DEGREES.

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Services, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES.

It is estimated that the class, examination, and other fees for the M.B., Ch.B. come altogether to about £247, the separate examination fees included in this calculation being as follows:

	£	s.	d.
First Professional	9	9	0
Second Professional	7	7	0
Third Professional	6	6	0
Final	11	11	0

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.D. and Ch.M. pay £21, and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d., which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Scottish Corporations.

THERE are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND.

THIS body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P. Edin., L.R.C.S.Edin., and L.R.F.P.S.Glasg. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council.

PROFESSIONAL CURRICULUM.

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held thrice in Edinburgh and once in Glasgow during the next period; it is open to candidates to present themselves for examination at either place. The first examination deals with physics, chemistry, and elementary biology; the second with anatomy and physiology, including histology; the third with pathology and materia medica, including pharmacy; and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine; (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes; (3) midwifery and diseases of women and of newborn children; and, if it has not been passed previously, (4) medical jurisprudence and hygiene. Candidates may also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the final examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects; but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own; but all candidates for the conjoint licence must sit for the final examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

FEES.

It is estimated that the total cost of lectures and fees for the conjoint licence is about £152. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final, £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final, £5. If the re-entry is only in one or two subjects the fees are smaller.

Information concerning this Board should be sought either from Mr. D. L. Eadie, 49, Lauriston Place, Edinburgh, or from Mr. Walter Hurst, Faculty Hall, 242, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THIS College has three grades—Licentiateship, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday, except in September and October. Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a

university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, and in one further subject at choice. This may be either (*a*) one of the departments of medicine specially professed; (*b*) psychology; (*c*) general pathology and morbid anatomy, (*d*) medical jurisprudence; (*e*) public health; (*f*) midwifery; (*g*) gynaecology; (*h*) diseases of children; or (*i*) tropical medicine. Licentiates of the College pay £21, others £36 15s. The examination is held quarterly, and application for admission to it must be made a month previous to its date. For the Fellowship the candidate must have been a member of the College for at least three years, and, if accepted, pays fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THIS College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are now eligible also.

Licence.

As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s., of which £10 10s. is returned to unsuccessful candidates. On due cause being shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Fellowship.

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: Surgical pathology and operative surgery, ophthalmology, laryngology, otology and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh, or, in default, by testimonials obtained specially for the purpose.

Licentiates of the College pay £35, and others £45. For further information application should be made to the Clerk of the College, Mr. D. L. Eadie, 49, Lauriston Place, Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THIS body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s., and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. Special regulations are in force for medical practitioners who served in the late war. The Faculty can also elect four Fellows annually without previously submitting them to examination, providing they "have highly distinguished themselves in medical science or practice." They must be of not less than ten years' standing and 40 years of age. Further information can be obtained from Mr. Walter Hurst, Faculty Hall, St. Vincent Street, Glasgow.

The Irish Universities.

THERE are three universities in Ireland, each with a medical faculty. These are the University of Dublin (usually known as Trinity College, Dublin), the Queen's University of Belfast, and the National University of Ireland. The two former teach students, examine them, and grant degrees; while the third is an academic body only, inasmuch as its practical work is divided among three constituent colleges, situated, one at Cork, another at Galway, and the third in Dublin. Information as to the arrangements for the education of medical students will be found in the section relating to Irish Medical Schools.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE.

THIS university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and a post-graduate diploma in public health. It also grants a post-graduate diploma in gynaecology and obstetrics for which one year's study is required. The degrees are granted to those who, having passed the Professional Examination, have also graduated in arts.

PROFESSIONAL EXAMINATIONS.

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing. At least three of the five years' medical curriculum must be pursued at the School of Physic of the university. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to any of these examinations students must have completed the courses of study in the subjects involved.

Preliminary Scientific.—This covers (*a*) chemistry, (*b*) physics, (*c*) botany and zoology; the three divisions may by taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) anatomy, physiology, organic chemistry, and histology; (*b*) applied anatomy and applied physiology. The two parts may be taken separately or together.

Final Examination.—Part I: Hygiene and medical jurisprudence, pathology and bacteriology, materia medica, and therapeutics. *Part II:* (*a*) Midwifery and gynaecology; (*b*) medicine and mental diseases; (*c*) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the final examination cannot be completed before the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and may also examine him viva voce on other medical subjects of a more general nature.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years.

M.A.O.—The candidate must be a B.A.O. of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Dental Degrees.—The University of Dublin gives two degrees in dental science, namely, B.Dent.Sc. and M.Dent.Sc. The course for the former has a minimum duration of four years; for the latter five years.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

QUEEN'S UNIVERSITY, BELFAST.

THE degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery

(M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in public health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B.D.S. and M.D.S.) are also conferred by the university.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., B.Ch., B.A.O., are four in number. The first deals with: (1) Inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology, and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) Pathology, (2) materia medica, pharmacology and therapeutics, (3) medical jurisprudence, and (4) hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done after the First Examination has been passed.

The Final Examination includes: (1) Medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) systematic, (2) clinical, practical, and oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

THE HIGHER DEGREES.

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list: (1) Human anatomy, including embryology, (2) physiology, (3) pathology, (4) pharmacology and therapeutics, (5) sanitary science and public health, (6) forensic medicine and toxicology, (7) mental diseases. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND.

THE National University of Ireland carries on most of its educational work through three constituent colleges—one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined thereat by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the Board of Studies of the University. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as diplomas in Public Health, in Mental Diseases, and in Tropical Medicine.

PROFESSIONAL EXAMINATIONS.

There are four examinations. The first, which should be passed at the end of the first year, includes Part A (chemistry and physics) and Part B (botany and zoology), which parts candidates may take separately or together. At the end of the second year they should pass in anatomy and physiology; and at the end of the third year in pathology, materia medica and therapeutics, hygiene and public health, forensic medicine and toxicology. The final examination is divided into two parts, each of which may be taken separately—namely, (*a*) medicine, including mental diseases and pathology, (*b*) surgery, including ophthalmology and otology, and midwifery and gynaecology.

The higher degrees are obtainable either by examination or on presentation of an approved work, but in each case not less than three years must have elapsed since the candidate acquired the corresponding degree of Bachelor (except in the case of a graduate in arts or science, in which case only two years must elapse). Further information as to the constituent colleges will be found in the section relating to Irish Medical Schools.

The Irish Corporations.

THERE are three licensing bodies other than the Medical Faculties of the Universities, and, just as in London, there is a Royal College of Physicians, a Royal College of Surgeons, and an Apothecaries' Hall. In Ireland, as in London, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland gives its licence separately.

THE CONJOINT BOARD IN IRELAND.

THIS body requires of candidates the passage either of its own preliminary examination in the subjects of general education, or proof that the candidate has passed one of the tests accepted by the General Medical Council.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations, the first of which cannot be passed earlier than the end of the first winter session, nor the fourth before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first and second examinations deal respectively with (*a*) chemistry and physics, and (*b*) biology; and (*a*) anatomy, and (*b*) physiology and histology. All parts of these examinations, as also of the following one, which deals with (*a*) pathology, (*b*) materia medica, pharmacy, and therapeutics, (*c*) public health and forensic medicine, may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least four years have passed in medical studies other than those for the first examination, and five years at least since the beginning of the curriculum. The divisions are (*a*) medicine, including fevers, mental diseases, and diseases of children; (*b*) surgery, including ophthalmic and operative surgery; (*c*) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the divisions (*a*), (*b*), or (*c*), provided he has completed his curriculum as far as concerns the division in which he presents himself.

Fees.—Preliminary Examination, £2 2s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s.; Third, £9 9s.; Final, £6 6s.; re-examination fee is £2 2s. for each division.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, 123, St. Stephen's Green, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THOSE whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College, and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and Licentiates in medicine of Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members of the College, irrespective of sex.

Fees.—For the Licence in Medicine, 15 guineas; for the Licence in Midwifery, 5 guineas. Special examinations cost in each case 5 guineas extra. For the Membership, 20 guineas to a Licentiate of the College, 35 guineas to others; a second examination costs 10 guineas extra. The Fellowship, £25 in addition to stamp duty, £25.

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THIS body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions. Its Licence is usually granted conjointly with that of the College of Physicians, but it is given separately to holders of a registrable qualification in medicine, provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed. This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body.

The Fellowship.

Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology; and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written, partly practical, and partly viva voce; while the final examination includes the performance of operations. All subjects of either examination must be passed at one time, and to neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register;* if, however, the candidate's name is on the Colonial or Foreign *Medical Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Licence pay 5 guineas for examination in anatomy, if they possess it as part of the fee payable on admission to the Licence, this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination [illegible] part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the [illegible].

APOTHECARIES' HALL OF IRELAND.

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Two periods of dissection, each not less than six months, must be included, and twenty-seven months of hospital attendance, or its equivalent. Three professional examinations have to be passed; they are held three times a year. The Primary Examination deals with biology, physics, and chemistry, practical and theoretical; the Intermediate Examination is in practical anatomy and physiology, and histology and materia medica. A candidate who has passed tests in any of the subjects of these examinations before another licensing body is exempt from further examination in such subjects. The Intermediate Examination, Part II, consists of pathology, medical jurisprudence, and hygiene. The Final Examination deals with medicine, surgery, midwifery, and pharmacy. The Hall's own examination in all these subjects must be passed. Women candidates are eligible.

Fees.—Primary Examination, £5 5s.; Intermediate Examination, £10 10s.; Final Examination, £15 15s.; Final alone, when the others have been passed elsewhere, £21.

Application for other information should be made to the Registrar, 40, Mary Street, Dublin.

MEDICAL SCHOOLS AND COLLEGES.

LONDON.

INFORMATION as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford and Cambridge. Apart from these facts, the only point to which attention can usefully be directed here is that on personal inquiry and investigation reason may be found for regarding the teaching accommodation and general arrangements for students at some schools as superior to those at others.

CHARING CROSS HOSPITAL.

THIS school, with its hospital, is situated in the centre of London, and is easily accessible. Primary and intermediate students attend lectures and practical work at King's College. The final studies are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for the qualifying examinations. Departments are also available for the other final subjects of bacteriology, clinical pathology, materia medica, toxicology, public health, operative surgery, and for research work. An Institute of Pathology, with a whole-time staff of scientific workers and fully equipped laboratories, has been established in the school. Students receive their training in preventive medicine, pathology, and bacteriology here, and are encouraged to undertake research.

Women students are accepted by the school and hospital upon the same terms and conditions as men, and after qualification are eligible for resident hospital appointments. A separate common room and a female attendant are provided, but beyond this no further distinction is made.

Fees.—An entrance fee of 10 guineas and 8 guineas is payable [illegible] respectively, and an [illegible] 55 guineas covers [illegible] expenditure, with the exception of 7 guineas for vaccination, dispensing, and fever hospital attendance, which must be taken outside the hospital. Membership of the Students' Club is included in these fees.

Further information may be obtained on application to the Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

GUY'S HOSPITAL.

THE hospital contains 643 beds in constant occupation. Thirty-three beds are set apart for diseases of the eye and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures.

There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, the orthopaedic department, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are as well some special beds for the treatment of syphilis.

The medical college fronts the east gate of the hospital, providing accommodation for 60 resident students. This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in twenty minutes. The Gordon Museum of Pathology, the Wills Library, the newly built Departments of Chemistry, Physics, Pathology, and Pharmacology, and the school buildings in general, afford unrivalled opportunities for a liberal education and for research. Special classes are held for the First and Second Examinations for medical degrees of the University of London and for the first F.R.C.S.Eng. Special teaching is provided to meet the requirements of the universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are given to students without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, twenty assistant house-surgeons, eight house-surgeons, two ophthalmic house-surgeons, and nine resident obstetric assistants are appointed annually. The house physicians and house-surgeons, obstetric residents, and ophthalmic house-surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, electricity, anaesthetics, dentistry, orthopaedics, vaccine, tuberculosis, and genito-urinary and venereal diseases. More than 150 additional appointments have been added to the list of those annually open to students of the hospital, the majority of them being in the special departments; and numerous clinical assistantships in the various special departments are open to post-graduates.

Scholarships, Prizes, etc.—The [illegible] scholarships are awarded annually in the month of [illegible]. A Junior Scholarships in Arts, Classics, Mathematics, Modern Languages, and Science, of the value of £[illegible] and £50, open to candidates under 21 years of age. A Senior or Universities Scholarships of the value of £[illegible] and £45, open to candidates under 25 years of age who have completed their studies in Anatomy and Physiology. In addition there are two War Memorial Scholarships, Junior [illegible] £40 for five years, and Senior, value £80. Subjects, any two of the following: Anatomy, Physiology, and Pharmacology, General Pathology, Organic Chemistry. Junior prizes for general proficiency, £20, £15, £10; Hilton prize for Dissection, £5; Michael Harris prize for Anatomy, £10; Sambrooke Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in Medicine, Treasurer's gold medal in Surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology, the Beaney Scholarship in Materia Medica, of the value of £150 and £40 respectively, and the Anderson Demonstratorship in Clinical Chemistry, value £150 per annum, are awarded without examination to enable research to be carried out in these subjects. The Arthur Durham Travelling Scholarship of £60 is awarded biennially. The Pengelly Scholarship in Pathology, value £300 per annum, and the Hilda and Ronald Peters Demonstratorship, value £[illegible] per annum are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E.1.

KING'S COLLEGE HOSPITAL.

THE [illegible] school of this hospital, which is situated at Denmark Hill, deals with the advanced or final subjects of the medical curriculum. The [illegible] was opened in 1913, and is the most modern and best equipped in [illegible]. In the [illegible] a special feature has always been the individual attention given to each student. There are special departments for diseases of women and children, nervous diseases, ophthalmology, otology, laryngology and rhinology, dermatology, radiology, and physico-therapy. The laboratory and pathological department are specially noteworthy.

Appointments.—Fifteen resident medical and surgical officers are appointed half-yearly, as well as dressers and clerks in the wards, out-patient departments, *post-mortem* room, and special departments. Each of the special departments has several clinical assistants. There are three registrars and four tutors, all of whom receive salaries. The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room.

Scholarships, etc.—At entrance: Arts Scholarship, £50; Science Scholarship, £50. At commencement of Final Studies: Anatomy and Physiology Scholarship, £50; Pathology and Pharmacology Scholarship, £50; two Barney Year Scholarships, each £81 (for Oxford and Cambridge students); Senior Scholarship, £40; Todd Prize, Tanner Prize, Class Prizes and Medals.

Fees.—The composition fee is 93 guineas if paid in one sum. Entrance fee 10 guineas, includes membership of the Clubs and Societies Union.

The calendar of the school can be obtained on application to the Dean, H. Willoughby Lyle, M.D., F.R.C.S., or to the Secretary, S. C. Ranner, M.A., King's College Hospital, Denmark Hill, S.E.5.

THE LONDON HOSPITAL.

THIS hospital, with its medical college and dental school, is situated in the Mile End Road, E.1. The hospital contains 950 beds, and during 1920, 21,639 patients passed through the wards and 120,886 out-patients received treatment. Of the latter number, 41,973 received treatment in the departments for diseases of the ear, nose, throat, eye, skin, and teeth, and in the obstetric, orthopaedic, venereal, radiological, electro- and physico-therapeutical and inoculation departments. The number of major operations which were performed amounted to 7,804.

The hospital presents, therefore, a large field for clinical instruction, and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

The clinical units in medicine and surgery co-ordinate the teaching of their subjects in the hospital. The directors and their assistants give practical instruction in elementary clinical medicine and surgery to all students before they are allowed to enter the wards and out-patient department. Senior students are encouraged to work with the units. Special courses of lectures and demonstrations are arranged in medicine and surgery and their ancillary subjects. Opportunities for research will be provided under the supervision of the staffs of the units.

All the departments are modern and adapted for the teaching of all subjects in the curricula. Special courses of instruction are held in preparation for the examinations of the University of London, for the Fellowship of the Royal College of Surgeons, and for the Membership of the Royal College of Physicians. A residential hostel on hospital ground is provided for the convenience of students who wish to live near the wards and casualty departments. The athletic ground, of over thirteen acres, is at Highams Park, and is open to all members of the Clubs Union.

Appointments.—The salaried appointments open to students are those of assistants to the clinical units, medical registrars, surgical registrars, obstetric registrar; medical, surgical, and obstetric tutors; clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopaedic, and electrical departments, and in the Pathological Institute. There are 2 resident accouchers, 6 resident house-physicians, and 9 resident house-surgeons, 7 receiving-room officers, 2 emergency officers, also unpaid clinical assistants in the various special departments. In addition, there are numerous assistantships, clerkships, and dresserships in the departments of medicine, surgery, gynaecology, and obstetrics.

Scholarships, etc.—The following is a list of scholarships and prizes:—At Entrance: Price Scholarship in Science, £100; in Anatomy and Physiology, £52 10s., open to students of [illegible] Universities, [illegible] Schools, [illegible] Scholarship, [illegible] Prize Scholarship, [illegible]

After Entrance Laxton Prize in Anatomy and Physiology, £31 10s.; Lethe by Prizes in Organic Chemistry and Chemical Pathology, £25; Prizes in Clinical Medicine, Surgery, and Obstetrics and Gynaecology, £20 each; Duckworth Nelson Prize, in Practical Medicine and Surgery, £10; Hutchinson Prize in Clinical Surgery, £40; Sutton Prize in Pathology, £20; Sir Andrew Clark Prize in Clinical Medicine and Pathology, £26; Anderson Prizes in Elementary Clinical Medicine, £20; Dressers' Prizes, £40; Practical Anatomy Prizes, £10; Arnold Thompson Prize, in Medical and Surgical Diseases of Children, £15; Lucas Pink Prize in Dental Surgery, £5 5s. The London Hospital Medical College and the Eliza Ann Alston Medical Research Funds amount to over £26,000.

Fees.—Entrance fee, 20 or 15 guineas, according to examinations passed; annual fee, 40 guineas.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E.1.

The Middlesex Hospital.

The school and hospital are in Mortimer Street, W., close to Oxford Circus, Goodge Street, and Great Portland Street stations. There is a residential college (overlooking the hospital garden) for a limited number of students, prosperous athletic clubs, and a gymnasium within the hospital precincts. The hospital contains over 450 beds, including a wing containing 92 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for cases of venereal disease and for diseases of children and of the skin and eye.

The medical school, which includes the Bland-Sutton Institute of Pathology and the cancer research laboratories, is completely equipped for teaching the entire medical curriculum, including the preliminary science course. The Bland-Sutton Institute, under the charge of the Professor of Pathology, contains large pathological and public health laboratories, and smaller rooms for original investigation as well as a pathological and anatomical museum. Bacteriological, chemical and microscopic examinations of material from the wards, operating theatres and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work. Every facility is given for original research. The cancer research laboratories offer unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects. Several valuable scholarships are awarded in this connexion. Students also receive special instruction in the electro-therapeutic and electro-cardiographic departments.

Appointments.—Twenty-two resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free of expense. Two casualty medical and two casualty surgical officers, and two resident officers to the special departments, are appointed annually. Eight house-surgeons are appointed every year at intervals of two months, after examination; six house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months. In the out-patient departments the appointments are: clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for diseases of the skin and nervous diseases; dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, and to the dental surgeon. Extern midwifery clerks and *post-mortem* clerks are also appointed. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Students must have held an out-patient clerkship and dresserships before holding in-patient clerkships or dresserships. Non-resident qualified clinical assistants are appointed in the Medical, Surgical, Skin, Neurological, Ophthalmic, Throat and Ear, Odontological, Children's, and Electro-therapeutic Out-patient departments.

Scholarships.—There are three Entrance Scholarships, value £100, £50, and £25 respectively. An annual Entrance Scholarship, of the value of £50, is open to students of the universities of the United Kingdom who have completed the curriculum for, or passed the examinations in, anatomy and physiology. Students joining the school in the previous April are eligible. The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships, there are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Brodrip Scholarships, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s.; Freeman Scholarship, value £30; John Murray Gold Medal and Scholarship, value £25; Hetley Clinical Prize, value £25; Leopold Hudson Prize, value 11 guineas; and the Second Year's Exhibition, value 10 guineas.

Fees.—(*a*) Preliminary Science students: For one year or less, £15. (*b*) Students who have completed the Preliminary Science course: Entrance fee, £15; four annual fees of £40. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £20. Three-quarters, one-half, or one-quarter of the last annual fee may, at the discretion of the School Council, be returned if the student obtains a registrable qualification within three, six, or nine months of the annual payment becoming due. (*c*) Oxford and Cambridge and other students who have completed the Intermediate course: Entrance fee, £10; two annual fees of £40; further annual fees as above.

Further information may be obtained from the Dean.

St. Bartholomew's Hospital.

This institution fills one side of Smithfield and Giltspur Street, sharing with the Post Office buildings a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 750 beds. Extensive new buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study. The medical school buildings, including the library and the chemical, physical, biological, and physiological laboratories, and anatomical department, have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to a new extensive *post-mortem* room, large and well-equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. Within the precincts of the hospital also there is a residential college for a large number of students. The Students' Union owns, moreover, grounds of some 10 acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B., M.D. of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same universities, including the M.Ch.Oxon., M.Ch.Cantab., M.S.Lond., and F.R.C.S.Eng. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Clinical Units.—Special Clinical Units have been established in Medicine and Surgery, each under the charge of a professor and director who devotes the whole of his time to the purpose of hospital practice, teaching, and research. In each unit there are an assistant director and four assistants, for whom special laboratory accommodation is provided. The appointments of clerks and dressers are open to all students in these departments, and arrangements are made for all students to study in these units during a part of their clinical course.

Appointments.—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students; clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Children's, Laryngological, Aural, Dermatological, Venereal, Electrical, and Dental), and in the *post-mortem* room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in the special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "Junior" house-physicians and house-surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" house-physicians and

house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house surgeon, a house surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two resident assistant anaesthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Four entrance Scholarships are annually awarded after an examination held in September. The subjects of examination and conditions of eligibility for these scholarships are: (1) One scholarship, value £75, in not fewer than two and not more than three of the following subjects, Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One scholarship, value £100, in not fewer than three of the following subjects, Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) The entrance scholarship in Arts, of the value of £100, will be given in Latin and mathematics, with one other language—Greek, French, or German. (4) The Jeffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—of the value of £50. The value of the scholarships and prizes is over £900 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical School, St. Bartholomew's Hospital, E.C.1.

St. George's Hospital.

This school is at Hyde Park Corner, and is carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited apartments, and a list of medical men and others willing to receive St. George's men as boarders, may be seen on application to the Dean.

Appointments.—Four house-physicians, four house-surgeons, and two casualty officers are appointed every six months. The house officers receive salaries at the rate of £50 per annum, in addition to board and residence. The casualty officers are non-resident, and receive salaries at the rate of £200 per annum. After the student has held a house appointment, the following are among others open to him: Medical registrarship at £200 per annum; surgical registrarship at £200 per annum; assistant curatorship of the museum £100 per annum; obstetric assistantship, resident, at £50 per annum; the post of resident anaesthetist at £100 per annum; the posts (2) of junior anaesthetist, each at £30 per annum.

Scholarships.—Two university entrance scholarships in anatomy and physiology (90 guineas and £75) are awarded at the commencement of each winter session. The William Brown Exhibition of the value of £135 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £49 (tenable for three years) is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees.—First year, £36 15s. Second and third years, £36 15s. each. For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £42. No entrance fee is payable by St. George's students who have studied at King's and University Colleges.

Further information may be obtained from the Dean of the Medical School.

St. Mary's Hospital.

This hospital and medical school are situated close to Paddington Station (G.W.R.) having on one side a poor district of 500,000 persons, and on the other side the residential district of Kensington and Bayswater. The hospital contains 305 beds, and, by a scheme of affiliation, for teaching purposes, of the Paddington Infirmary, Paddington Green Children's Hospital, and Maida Vale Hospital for Nervous Diseases, the teaching facilities extend over 1,000 beds. The athletic ground (10 acres) is situated at Wembley, and can be reached in thirty minutes by a constant service of trains.

Clinical Facilities.—Clinical Units in Medicine and Surgery were established in 1920, and have now been formally recognized by the University Grants Committee, St. Mary's being one of the six medical schools in London which enjoy this privilege. Lying-in beds have been recently added, and provide special facilities for the teaching of Practical Midwifery.

Institute of Pathology and Research.—Students specially interested in pathology and bacteriology have singular advantages at St. Mary's. The Institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F.R.S. Three Research Scholarships of £200 each are awarded annually to students working in the departments of the Institute; and preparation is being made to open 13 research beds. Clerkships in Pathology and Bacteriology, lasting for a period of three months, are open to students of the fifth year, and enable them to carry out the pathological and bacteriological investigations of the wards, and learn the necessary technique under supervision. Sixty-four of these posts are available annually.

Complete Curriculum.—The medical school provides complete courses of instruction, and students can join at once on passing a Preliminary Examination in Arts. Terms begin in October, January, and April.

Entrance Scholarships.—Five Scholarships (value £100, £52 10s., £52 10s., £50, £25) are awarded annually by competitive examination in September.

Fees.—Composition fee for entire curriculum (5½ years), £200 in one sum, or £210 by five annual instalments. Composition fee for clinical curriculum (2½ years), 90 guineas in one sum, or 95 guineas by two annual instalments. As an alternative, students may pay an annual fee of 40 guineas, with an entrance fee of 10 guineas.

St. Thomas's Hospital.

This school and hospital are situated in Lambeth, on the south bank of the Thames facing the Houses of Parliament, and forms one of the well known architectural features of London.

The school buildings, which are separated from the hospital by a quadrangle, comprise lecture theatres, laboratories, and class rooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m., on Saturdays to 1 p.m. The Students' Club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. Good meals are obtainable at a moderate tariff. The Terrace affords facilities for exercise and recreation. The sports ground, of more than nine acres in extent, is at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports.

The hospital proper contains 630 beds. In addition to the ordinary provisions of a great hospital there are connected with the out-patient department physicians' and surgeons' rooms provided with ample sitting accommodation, so that students are enabled to follow closely the practice and teaching of the out-patient staff. There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students. There is a clinical theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient room; it is arranged also for lantern demonstrations. The maternity ward, containing 20 beds, gives students full facilities for maternity training, under supervision, within the precincts of the hospital. This obviates any necessity for supplementary instruction elsewhere, and fully prepares the student for the extern maternity

practice of the hospital district. The revised regulations of the examining bodies can thus be fully complied with.

Appointments.—All hospital appointments are open to students without charge. A resident assistant physician and a resident assistant surgeon are appointed annually at a salary of £200 each, with board and lodging. Two hospital registrars, at an annual salary of £250 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. An obstetric tutor and registrar is appointed each year at an annual salary of £50. Ten resident casualty officers and anaesthetists (including two senior) are appointed every six months. Five house-physicians, six house-surgeons, one resident anaesthetist, two obstetric house-physicians, two ophthalmic house-surgeons, and eight clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Two research assistants (bacteriological and chemical) are paid £200 per annum each. Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Scholarships.—There are five entrance scholarships: Two in Arts, giving one year's free tuition; one of £150 and one of £60 in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology; one of £100 in any two of the following subjects: Anatomy, Physiology, or Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the universities of the United Kingdom, and have not entered as students in any London medical school. Valuable scholarships, prizes, and medals are open for competition throughout the whole career of a student, including the Louis Jenner Research Scholarship of the annual value of £60 for Pathological research.

Fees.—The annual fees are: For first year (preliminary subjects) £25, and for each subsequent year £50. These fees cover all tutorial classes, but do not include instruction in infectious fevers, pharmacy, and vaccination. Qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the medical secretary.

Special courses of instruction are given for various examinations, and a register of lodgings is kept at the school. Further information may be obtained from the Secretary of the Medical School, St. Thomas's Hospital, Albert Embankment, S.E.1.

UNIVERSITY COLLEGE HOSPITAL.

THE school, which forms part of the Corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine and clinical medicine, surgery and clinical surgery, midwifery and gynaecology, pathology including morbid anatomy, clinical pathology and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, and for instruction in anaesthetics, electro-therapeutics, and skiagraphy. The Hospital and School have acquired the National Dental Hospital and College as their Dental Departments, thus providing every facility for the study of dental subjects. The Royal Ear Hospital, Dean Street, Soho, has also been amalgamated as the Ear, Nose, and Throat Department.

The school thus provides the final course of study for the degrees of the universities of London, Oxford, Cambridge, and Durham, and for the diplomas of the Royal Colleges of Physicians and Surgeons in Medicine and Dental Surgery, and the Licence of the Society of Apothecaries. Special bacteriological classes are also held in preparation for the various diplomas of public health. Each department is also equipped for more advanced work, and provides facilities for research.

Whole-time directors of Medical and Surgical Units have recently been appointed, and are responsible for the systematic teaching of the principles of medicine and surgery. The teaching of practical medicine and surgery and of their special branches continues to be conducted by the honorary staff of the hospital.

The School has recently been the recipient of a large donation from the Rockefeller Foundation, which will enable it largely to increase its facilities for clinical and pathological study, and also to establish an Obstetrical Unit on similar lines to those of Medicine and Surgery.

Scholarships.—The following scholarships and prizes are open to competition: Two Entrance Exhibitions of 112 guineas each, awarded after a competitive examination in anatomy and physiology; Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £250; the Graham Scholarship in pathology of a sum not exceeding £400 per annum; Leslie Pearce Gould Research Scholarship in surgery for one year, value about £200; the Atkinson Morley Scholarship of £45 a year for three years, awarded after examination in the theory and practice of surgery; the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies; the Magrath Clinical Scholarship, value about £100; the Filliter Exhibition in pathology of £30; the Percival Alleyn Prize for the advancement of surgery by research, value about £60; the Graham Gold Medal for research work; four Fellows Medals in clinical medicine; Liston Medals in clinical surgery; the Bruce Medal in pathology and surgery; two Tuke Medals in pathology, and the Erichsen Prize for practical surgery.

Fees.—The fee for the full course of final studies at the school is 112 guineas if paid in one sum, or 115 guineas if paid in two instalments.

Appointments.—All the appointments at the hospital are reserved for students of the school, the dresserships and clerkships being open, of course, to those who have still to qualify. The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, surgical registrars, obstetric registrar, casualty medical officers, casualty surgical officers, assistant in ear, nose and throat departments, assistant in ophthalmic department, registrar in anaesthetic departments and deputy anaesthetists.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

WESTMINSTER HOSPITAL.

THIS school, with its hospital, situate in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College. The rest of the work is done in the school buildings near the hospital. The number of in-patients averages 3,000 and out-patients upwards of 30,000 annually, and the hospital and school affords most ample facilities for instruction in all branches of medicine and surgery.

Appointments.—A medical, surgical and obstetric registrar are appointed annually, each with a salary of £50. Two house-physicians, three house-surgeons, one assistant house-physician, one assistant house-surgeon, and a resident obstetric assistant are appointed after examination, and are provided with rooms and commons, except the assistant house-physician and the assistant house-surgeon, who are provided with commons only. The assistant house-physician after three months' service becomes house-physician for a further period of six months, and the assistant house-surgeon after two months' service, becomes house-surgeon for a further period of six months. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of out-patient dresser for four months, and afterwards hold the office of in-patient dresser for four months. He is also required to serve two terms of four months each as medical clinical clerk to in-patient physician and one term as gynaecological clinical clerk. Two pathological clerks are appointed every four months to assist in the *post-mortem* room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships.

Scholarships.—The following scholarships are offered for competition during the year 1921–22: In the summer session two natural science scholarships, £60 and £30, and one in Arts, £60. In the winter session two scholarships in anatomy and physiology, £50 each. In the spring two scholarships in anatomy and physiology, £50 each.

Fees.—The annual composition fee is 35 guineas. An entrance fee of 10 guineas is payable by all students, namely, primary and intermediate students, £10 10s.; students entering [illegible] subjects, £8 8s. The fees include subscriptions for membership of the Clubs Union.

Further information can be obtained on application to the Dean at the Westminster Hospital, Westminster, S.W.1.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

THE school is situated at 8, Hunter Street, Brunswick Square, W.C.1, close to the Royal Free Hospital. An agreement has also been made under which a certain number of students of the school can receive clinical instruction at St. Mary's Hospital, Paddington. It is, like all the other London schools which have so far been mentioned, one of the constituent schools of the Medical Faculty of London University. The school buildings have recently been enlarged. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London. Research laboratories are attached to all departments. A large, well-equipped library, common room, Union room, and refectory are provided for the use of students. Resident accommodation for 50 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 237 beds, all of which are available for clinical instruction. A new block contains the Obstetrical and Gynaecological Unit, which, with the Marlborough Maternity Department, controls 68 beds. There are separate departments for diseases of the eye, ear, and skin, massage, electrical and *x*-ray work, dentistry, and casualty. The instruction given covers the full curriculum for the M.B., B.S. degrees of the University of London. Students attending at St. Mary's Hospital (305 beds) are admitted to the full clinical course and educational facilities of that hospital. Students attend the practice of one of the fever hospitals of the Metropolitan Asylums Board and receive special instruction in lunacy at Bethlem Hospital; they are also admitted to the practice of a number of special hospitals.

Arrangements are made for students to hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, the National Hospital for Nervous Diseases, and the Brompton Chest Hospital. The work of the school includes preparation for the Primary Fellowship examination, and also for the medical school and general hospital course for dental students.

Appointments.—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne Entrance Scholarship value £30, the St Dunstan's Medical Exhibition value £60 a year for three years, which may be extended to five years, and the Mabel Shaiman Crawford Scholarship value £40 a year for four years, are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years, the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years, the Dr. Margaret Todd Scholarship of the value of £37 10s. a year for four years, and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The Bostock Scholarship, value £60 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, of the value of £25 a year for four years, is awarded every fourth year. The Ellen Walker Bursary of £25 for two years is awarded each year to a student beginning her fourth year of study. The John Byron Bursary of £20 a year for two years, the Helen Prideaux Prize of £40, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10s. a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. The Dr. Edith Pechey-Phipson Post-Graduate Scholarship of £100 is awarded annually. Various missionary societies also offer scholarships on certain conditions, and assist ladies who wish to go to India and other countries as medical missionaries.

Fees.—Courses for the University of London degrees and the diplomas of the Conjoint Board in England, and other qualifications: First medical examination, £35, course for second and third, £205; course after the second medical examination, £115. These sums include library and laboratory fees.

The Students' Union exists to promote corporate action of the students on matters of common interest, and to promote and maintain athletic and other clubs. All students are required to become members of the Union.

Further information can be obtained from the Warden and Secretary.

KING'S COLLEGE.

SINCE the incorporation of King's College in the University of London the instruction given to medical students is carried out there in the classes of the Faculty of Science (Medical Division), and deals only with the subjects of the preliminary and intermediate parts of the curriculum. King's College Hospital (see p. 359) is now a separate institution, and the studies for the final examinations only are carried out there. A special class for the Matriculation Examination is also held.

There is a large athletic ground at Mitcham, managed by the Students' Union Society.

Scholarships.—The entrance scholarships are: 1. Two Warneford Scholarships, each £25 for four years; subjects—mathematics, classics, divinity. 2. One Sambrook Exhibition of £25 for two years, open; subjects of examination—mathematics, elementary physics, inorganic chemistry, botany, and biology. The holders of the preceding awards must proceed to King's College Hospital. 3. Rabbeth Scholarship, value £20, in July, for the best student of the first year. 4. Second year's scholarship, value £20, for the best student of the second year.

Information as to fees can be obtained from the Dean of the Medical Faculty at the College, Strand, W.C.2.

Women Students.—King's College is now open to women students for the Preliminary and Intermediate portions of the medical curriculum. Applications for admission should be made to the Dean.

Information as to scholarships and subjects of examination can be obtained from the Secretary of the College.

UNIVERSITY COLLEGE.

THIS institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences—namely, anatomy, physiology, and pharmacology. The Department of Hygiene and Public Health prepares for the diplomas in public health of the Royal Colleges and of the various universities. Research work is undertaken in all the above-named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. The general arrangements for the benefit of students include membership of the Union Society with its gymnasium and athletic ground. There is also a collegiate residence for about sixty-five men students at Ealing, and for about seventy women students at Byng Place, Gordon Square.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 135 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School), and two entrance exhibitions in the same subjects, each of the value of 55 guineas.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination, amount to 115 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England also amount to 115 guineas. These fees may be divided into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College.

CHARING CROSS SCHOOL OF ANATOMY.

THIS school is prepared to admit to its supplementary work all who may wish to join, but in regard to its curriculum work it does not receive more than half a dozen students a year. The operations of surgery are performed on the dead body. The school, which is open all the year round, possesses a good collection of anatomical models, physiological and chemical apparatus, and students preparing for the higher examinations (F.R.C.S.Eng., etc.) receive special instruction in the more difficult subjects. Other information may be obtained from Mr. Knight, 46, Mecklenburgh Square, W.C.1.

THE PROVINCES.

There are in England and Wales, not counting London, ten medical schools, each with one exception, supplying instruction in the full medical curriculum. Accounts of them are here follow. In several cases there is appended information concerning hospitals other than those directly connected with the school in question; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post graduate study.

OXFORD AND CAMBRIDGE.

Both at Oxford and Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently equipped, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done. The local hospitals are comparatively small. The university authorities therefore encourage the students, as soon as they have completed the earlier examinations, to join some London school, and thus spend the time of their preparation for the final examination in a city where the opportunities for gaining clinical knowledge are greater and more varied.

BIRMINGHAM.

THE school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 500 beds for medical, surgical, and special cases, and with an array of special departments of all kinds, including one for lying-in women. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the winter and summer sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of corporations.

Appointments.—The large number of appointments open to past or other students includes the following:—At the General Hospital: Surgical registrar, £200 a year; one resident medical officer, salary £155 a year; one resident surgical officer, salary £180 a year; one resident pathologist, salary £100 a year; two visiting anaesthetists, salary £50 a year; four house-surgeons, office tenable for nine months, £100 a year; one house-surgeon to the gynaecological and one to the special departments, each tenable for six months, £100 a year; three house-physicians, post tenable for six months, £100 a year. At the Queen's Hospital: three house-physicians and three house-surgeons (posts vacant in January and April); one obstetric and ophthalmic house-surgeon (posts vacant in April and October). These appointments are tenable for six months. Salaries at the rate of £90 per annum, with board, lodging, and washing. One resident dresser, tenable for three months; candidates must previously have attended their third-year lectures, etc., and need not be qualified; honorarium, £13 13s. on completion of duties. At the Maternity Hospital: one house-surgeon, salary £50 a year. At the City Workhouse and Workhouse Infirmary: five resident medical officers. At the Birmingham General and Branch Dispensaries: twelve resident surgeons. At the Birmingham Lunatic Asylums: five assistant medical officers. At the City Fever Hospitals: three assistant medical officers. At the Children's Hospital: one resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: four resident surgeons. At the Orthopaedic and Spinal Hospital: two clinical assistants (non-resident). At the Ear and Throat Hospital: one house-surgeon, £70 a year; four clinical assistants (non-resident). Four non-resident Poor Law appointments are in the gift of the Board of Guardians.

Scholarships.—There are numerous money and other awards for students of the school open to competition. The following: The Walter Myers Travelling Studentship of £50, offered in [illegible]; the Sands Cox Scholarship of £42 an entrance scholarship in the Faculty of Medicine, awarded on either matriculation or First M.B. marks; four Queen's Scholarships of £10 10s. each, awarded annually at the second, third, fourth, and final university examinations respectively; one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men; The Ingleby Scholarships (two) of £10 for proficiency in midwifery and diseases of women; the Arthur Foxwell Memorial Gold Medal (Clinical Medicine) at Final M.B. examination. There is also an entrance scholarship of £37 10s. for students proceeding to a degree in dental surgery. University Clinical Board Prizes are awarded annually as follows: Senior Medical prize, Gold Medal; Senior Surgical Prize, Gold Medal; Midwifery Prize, Gold Medal; Junior Medical Prize, Silver Medal; Junior Surgical Prize, Silver Medal.

Fees.—The composition fee for university classes is £106 5s. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State Medicine, and some other special work. The total cost for the five years' curriculum, including hospital and examination fees, is estimated at £197 0s. 6d.

Other information should be sought from the Dean of the Medical Faculty.

BRISTOL.

THE school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas. The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them about 600 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to arrangements for dental work and large outdoor maternity departments. At each of these institutions there are well-arranged pathological departments, comprising large pathological museums, *post-mortem* rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and cytology, in which special instruction is given in these subjects. Departments are provided and well equipped for *x*-ray work both in diagnosis and treatment, the various forms of electrical treatment, including high-frequency currents, electric baths, Finsen light treatment, and massage.

The students of the school have also the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 108 beds, and that of the Bristol Eye Hospital, with 40 beds. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of medical and surgical work. Each student has the opportunity of personally studying a large number of cases and acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments.—(1) Undergraduate: Clinical clerkships, dresserships, also ophthalmic, obstetric, and pathological clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate—At the Bristol Royal Infirmary: Four house-surgeons, £120 each per annum; two house-physicians, £120; resident obstetric and ophthalmic house-surgeon, £120; throat, nose and ear house-surgeon, £120; dental house-surgeon, £120. All these appointments are made for twelve months. From the resident officers a senior resident officer is appointed at a salary of £200. At the Bristol General Hospital: Senior resident medical officer, £300 per annum; casualty house-surgeon, £175 per annum; two house-physicians, £175 per annum; house-surgeon, £175 per annum; obstetric house-surgeon, £175 per annum; dental house-surgeon, £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years.

Scholarships.—The following are among the scholarships and other awards open to students of the school: Two Martin Memorial Pathological Scholarships of £10 each: the Tibbits Memorial Prize, value 9 guineas, for proficiency in practical surgery; the Committee's Gold and Silver Medals for fifth-year students for general proficiency; the Augustin Prichard Prize, value 7 guineas, for proficiency in anatomy; the Henry Clark Prize, value 11 guineas, for proficiency in gynaecology; the Crosby Leonard Prize, value 7 guineas, for proficiency in surgery; the Suple Surgical Prize, a gold medal and 7 guineas; the Suple Medical Prize, a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15, for proficiency in surgery; the Sanders Scholarship, value £22 10s., for general proficiency; the Barrett-

Roué Scholarship for proficiency in diseases of the eye, ear, nose and throat, value £14.

Fees.—The fee for all the courses required for the medical curriculum, including hospital practice, is 176 guineas if paid in one sum. It amounts to 195 guineas if paid by annual instalments.

The Welsh National School of Medicine.

A complete medical curriculum will be provided from the beginning of next session, which opens on October 4th, 1921. The courses are adapted to meet the needs of students preparing for the degrees in medicine and surgery of the University of Wales, but provide suitable preparation also for the degrees of other universities and for the diplomas of licensing bodies. Clinical instruction is given at the King Edward VII Hospital, Cardiff. All classes are open to both men and women students.

Medical men wishing to prepare for a Diploma in Public Health can attend complete courses of instruction in public health and hygiene.

Prospectuses of the Welsh National School of Medicine and the School of Preventive Medicine and Department of Public Health can be obtained on application to the Dean of the Faculty of Medicine or to Mr. D. J. A. Brown, Secretary, at University College, Cardiff.

University of Durham College of Medicine.

This, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and their clinical work in the new Royal Victoria Infirmary, an institution with over 600 beds and special accommodation for the benefit of students. In a new wing of the school itself there are the departments of bacteriology and physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union.

Appointments.—Assistant demonstrators of anatomy and prosectors for the professor of anatomy, assistant physiologists, pathological assistants, assistants to the dental surgeon, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected annually. Clinical clerks and dressers are appointed every three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in arts, open annually at the beginning of the winter season to intending students. The Pears Scholarship, value £150, for proficiency in arts (when vacant). The Dickinson Memorial Scholarship, interest of £60, with a gold medal for medicine, surgery, midwifery, and pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £400 annually, for elementary anatomy, biology, chemistry, and physics, for students at the end of their first year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of medicine, at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £500 annually, for pathology, at the end of summer session. Gibson Prize, interest of £250 stock, for midwifery. Outterson Wood Prize, interest of £250, for psychological medicine. The Goyder Memorial Scholarship, proceeds of £325; subjects: clinical medicine and clinical surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay in some subject in comparative pathology. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship in Surgery, of the value of £200, awarded every other year. First award in 1896. Philipson Scholarships (2), the interest on £1,800, to the candidates who obtain the highest marks in the Final M.B., B.S. examinations held in March and June respectively.

Fees.—The composition fee for lectures at the college is £122. Composition fee for hospital practice, £46, *plus* £2 2s. yearly for three years, payable to the Committee of the Royal Victoria Infirmary. Other information should be sought from the Registrar of the College of Medicine at Newcastle.

Leeds.

The School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar class-rooms. In addition, there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by common rooms and a refectory in which they can take meals. The General Infirmary has 620 beds, and includes gynaecological and ophthalmic wards and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge, attached to the Infirmary, have 88 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary (where the practical instruction in dental subjects is also given), the City Fever Hospitals (800 beds), the Hospital for Women and Children, and the Leeds Maternity Hospital.

Appointments.—One senior anaesthetist, £50; seven anaesthetists, £25 each; a medical and a surgical tutor, at £125 each per annum; one resident medical and one resident surgical officer, each at £150 per annum; one casualty officer, at £125 per annum; one resident ophthalmic officer, at £100 per annum; one resident aural officer, at £100 per annum; one resident obstetric officer, at £50 (attached to the gynaecological ward); one ophthalmic house-surgeon, at £50 per annum; four house-physicians, each holding office for six months, and four house-surgeons, holding office for twelve months. Surgical dressers are appointed every six months; physicians' clerks, ophthalmic and aural dressers, gynaecological ward clerks, gynaecological out-patient clerks, maternity clerks, assistant physicians' clerk, dermatological clerks and assistant surgeons' dressers, dressers in the casualty-room, *post-mortem* clerks, and laboratory assistants every three months, and dressers in the venereal clinic every month. A resident medical officer (honorarium at rate of £60 per annum) is also appointed every six months for the Ida Semi-convalescent Hospital. Appointments are also open to students at the Leeds Public Dispensary (one senior and four junior resident medical officers, with salaries commencing at £80), at the Hospital for Women (two house-surgeons, at £50 per annum, and two anaesthetists, £20), and at the West Riding Asylums.

Scholarships.—The university awards annually a scholarship in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee. The university also awards a scholarship on the results of the first examination, of the value of £65, in the form of a free admission to the clinical teaching of the infirmary.

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £300 10s., *plus* of course, the expenses of living during the five years covered by the curriculum. The fee for a complete course for the First M.B. is £41; the composition fee for the course for the second and third examinations, and for the clinical work at the infirmary, is £174. The composition and clinical fee for those who have passed the second examination is £130.

Further information can be obtained from the Dean and Clinical Subdean, School of Medicine, Leeds.

Liverpool.

The Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well-equipped class-rooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratory and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals, of which an account is given below, have amalgamated to form the clinical school of the university.

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,500. They include the following: Two Holt Fellowships, one in Pathology, the other in Physiology; a Robert Gee Fellowship in Anatomy; two John Rankin Fellowships in Anatomy; a John W. Garrett International Fellowship in Bacteriology; a Johnston Colonial Fellowship in Biochemistry; an Ethel Boyce Fellowship in Gynaecology; and a

Thelwall Thomas Fellowship in Surgical Pathology; one University Fellowship (value of Fellowships: one at £120, two at £120, seven at £100); a University Scholarship of £25, awarded on the results of the Second M.B. Examinations; a Scholarship in Mechanical Dentistry of £20; two Lyon Jones Scholarships, of the annual value of £21 each for two years, one for the junior and the other for senior students; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize; the Torr Gold Medal in Anatomy; John Rankin Exhibition in Practical Anatomy, £25; the George Holt Medal in Physiology; the Kanthack Medal in Pathology; Mitchell Banks Medal in Anatomy; the Robert Gee Prize of £5 5s. in Children's Diseases; Mary Birrell Davies Memorial Scholarship, £60 per annum for four years; two Robert Gee Entrance Scholarships, each of the value of £25 per annum for two years; Dental Operating Prizes (2); Orthodontal Prizes (2); the Thomas H. Bickerton Prize in Anatomy; Dr. N. E. Robert Prize in Zymotic Diseases; Ash's Prize in Dental Surgery, value £2 2s.; Gilmour Medal; and other Entrance Scholarships.

Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

The Clinical School.

As many as nine hospitals have combined to form the clinical school of the university, these being: The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, the Stanley Hospital, the Royal Liverpool Children's Hospital, the Hospital for Women, the Eye and Ear Infirmary, St. Paul's Eye Hospital, and St. George's Hospital for Diseases of the Skin. Between them they provide about 1,140 beds.

Manchester.

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 670 beds, and has associated with it a large convalescent home (136 beds), and the Royal Lunatic Asylum at Cheadle (430 beds). Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

[illegible]. The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: A surgical registrar, at £150 per annum; a pathological registrar, at £350 per annum; two medical registrars at £150 per annum; a surgical tutor, at £30 per annum; a director of the clinical laboratory, at £400 per annum, and one assistant director at £300; three assistant medical officers and three assistant surgical officers, each at £35 per annum; one assistant surgical officer, aural department, at £35 per annum; five anaesthetists, two at £75 and three at £100 per annum; one radiological registrar, at £250 per annum; one resident medical officer, one year, £250 per annum; ditto at Cheadle, one year, £300 per annum; one resident surgical officer, one year, £250 per annum; two resident medical officers for Central Branch, £200 and £100 per annum; one accident room house-surgeon, six months, £200 per annum; one assistant medical officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum; ten senior and ten junior house-surgeons and ten house-physicians, appointed [illegible] term of six months, at a salary of £50 for the first six months and £100 for the second six months. Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months. Clinical clerks and surgical [illegible] appointed to the various departments of the hospital every three months.

[illegible] are annually [illegible] School: [illegible] annum, tenable for two years. Derby Entrance Scholarship in Mathematics, tenable for one year, value £25, one [illegible] wright Scholarship is awarded. Cartwright Scholarship, £35 per annum, tenable for three years. Three Hulme Scholarships, tenable for three years, of £35, one being awarded annually for proficiency in subjects of general education.

competition of women students only. This is awarded triennially. Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, awarded triennially, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School. Subjects: Mathematics, Chemistry, and Mechanics. Dreschfeld Memorial Scholarship, value £20, tenable for two years and awarded triennially on the result of the Entrance Examination. A Theodores Modern Languages Exhibition, £20, awarded annually. Two Dauntesey Medical Scholarships, value £45 and £35, tenable for one year, for candidates who have not commenced the second year of study leading to a medical qualification. Subjects: Zoology, Botany, and Chemistry. Two Entrance Scholarships in Medicine, value 160 guineas, awarded annually for proficiency in Arts or Science respectively. One Research Fellowship in Public Health of £100, awarded annually. Tom Jones Exhibition in Anatomy, £25, offered annually. A Robert Platt Physiological Scholarship of £90 tenable for one year. A Leech Fellowship of £100 for original research after graduation. A Graduate Scholarship in Medicine, value £25, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination. A Dumville Surgical Prize, value £15, awarded annually at graduation. The Tom Jones Memorial Surgical Scholarship, value £60, tenable for one year, awarded usually annually. The Turner Medical Prize, value £20, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The John Henry Agnew Scholarship of £30, awarded annually for proficiency in the Diseases of Children. The Ashby Memorial Scholarship, tenable for one year (£100), for research in the Diseases of Children; offered triennially. Sidney Redshaw Exhibition in Physiology: One offered annually. The details and regulations of the Dickinson Scholarships—(1) for Anatomy, (2) for Pathology, (3) Research Scholarship in Surgery, and (4) Travelling Scholarship in Medicine—may be obtained from the Secretary to the Trustees. The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum, tenable for not more than four years, to women students who have passed the First M.B. Examination. The conditions under which these are awarded can be obtained from the Registrar. The Knight Prize of £50 for original research in the psychological factors in the causation of mental disorder—open to holders of the Diploma in Psychological Medicine or medical practitioners who have been registered in the University as candidates for that [illegible].

Fees.—The composition fee for the university course in medicine is 104 guineas, payable in four instalments of 26 guineas, but this sum does not include the fee to cover the work required for the first M.B. Examination. This is 36 guineas, payable in one sum.

A prospectus and further information about the school and scholarships may be obtained from the Registrar.

Clinical Work.—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well known Hospitals [illegible] Pendlebury, and St. Mary's Hospital for Diseases of Women and Children all make arrangements for the instruction of students.

Sheffield.

In this city the Medical School is one of the departments of the University, being conducted and controlled by its Medical Faculty, and occupying practically the entire north wing of the quadrangle of the university buildings overlooking Weston Park. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangement and scientific equipment, on the most modern and complete lines.

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work, and a large pathological museum which is open daily. In addition, there is a museum devoted to materia medica specimens, and a large library and reading room. There are a number of recreation, athletic and other societies, all under the management of an annually elected students' representative council, and large and comfortable common rooms both for men and women students. In the university buildings there is a refectory open to all students of the school, and a university journal is published each term. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction, and provide over 500 beds for medical, surgical, and special cases, including diseases of the eye.

In addition, the Royal Infirmary has special departments [illegible] assigned to them; whilst at the Royal Hospital there are special out-patient departments for diseases of the throat,

ear, skin, orthopaedics, and mental diseases. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fever are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Asylum.

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) Casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships, (6) clerk to the skin department, etc. Except in the case of casualty dressers, these appointments are made for three months, commencing on the first day of October, January, April, and July. The casualty dresserships last two months, beginning on the first of any month. All students are required to hold them, and to have attended the tutorial classes for casualty dressers, before being eligible for any other of the above appointments.

Scholarships.—Entrance Medical Scholarship, value about £180, open to both sexes. Four Edgar Allen Scholarships of £125 a year for three years may be held by students taking the degree course in Medicine. Two Town Trustees' Scholarships, each of the value of £50, tenable for three years, for boys or girls under the age of 19 years who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four Town Trustees' Scholarships, value £50, for boys or girls under 19 years of age, educated in any school in Sheffield, secondary or otherwise. Town Trustees' Fellowship, value £75, tenable for one year. Mechanics' Institute Fellowship, value £50 (with remission of fees), tenable for one year, and renewable for a second year. The Frederick Clifford Scholarship, value about £50, tenable for two years. Kaye Scholarship, for proficiency in anatomy and physiology, value £22 10s. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—Students in the Faculty taking their complete course in the university pay an inclusive composition fee of £36 for each of the five years. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

SCOTLAND.

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified or offer valuable opportunities for post-graduation work.

ABERDEEN.

THE school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics, chemistry, anatomy, physiology, materia medica, pathology, forensic medicine, surgery, medicine, and midwifery. Courses of instruction in public health and in tropical medicine are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 270 patients), the Royal Lunatic Asylum (900 patients), the Sick Children's Hospital (85 patients), the City Fever Hospital (250 patients), the General Dispensary, Maternity, and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (3,000 patients annually). Courses of practical instruction are given in diseases of children at the Sick Children's Hospital; in fevers at the City Fever Hospital; in insanity at the Royal Asylum; in diseases of ear, nose and throat at the Infirmary and Dispensary; in diseases of the eye at the Infirmary and Eye Institution; in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are: Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Surgery and Bachelor of Medicine (M.B., Ch.B.). A Diploma in Public Health is conferred after examination on graduates in medicine in any university of the United Kingdom.

Bursaries, Scholarships, and Fellowships, to the number of fifty and of the annual value of £1,180, may be held by students of medicine in this university. They range from £8 to £100 per annum, and are tenable in most cases for two or three years. The winter session begins on October 13th, 1921; the summer session on April 24th, 1922.

Fees.—An inclusive fee of 126 guineas is payable for instruction within the university, and the fee for the degrees of M.B., Ch.B. is 33 guineas. The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £247. This sum represents the increased scale of fees which are payable by students entering the university for the first time in Session 1921–22.

EDINBURGH.

THERE are three Schools of Medicine: the School of the University, the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Edinburgh School of Medicine for Women.

THE UNIVERSITY SCHOOL.—This school, in addition to other resources of the university, has the following means of affording practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Room, Bone Room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery; and the practice of certain other hospitals.

Fees.—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s. each. Physics, botany, zoology, forensic medicine, and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, operative surgery, clinical surgery (per term), experimental pharmacology, and invertebrate zoology, £3 3s. Practical anatomy (winter), £6 16s. 6d. Clinical medicine, £3 13s. 6d. first term, subsequent terms £3 3s. Practical chemistry, £4 14s. 6d. Regional anatomy, chemical physiology, surgical pathology, and applied anatomy, £1 11s. 6d. Tuberculosis, diseases of children, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin, and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynaecology, £2 2s. Infectious diseases, £1 1s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself. No other university is in a better, even if in as good, a position to smooth the financial path of earnest students.

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES.—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi;* for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the lecturers in the school. This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street; (2) New School, Bristo Street; (3) Nicolson Square; (4) Marshall Street; and other places. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the

curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £180. The Calendar, giving full information regarding classes and fees, can be obtained (price 6d.) on application to the Dean of the School, 11, Bristo Place, Edinburgh.

WOMEN STUDENTS IN EDINBURGH.—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women. Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges. In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed; but in the subjects of midwifery and gynaecology the women are lectured to separately from the men. From the appearance of women's names in the lists of winners of prizes, scholarships, and bursaries, it is evident that women are held to be eligible for these distinctions. The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extramural classes taught by the lecturers of the School of Medicine of the Royal Colleges.

GLASGOW.

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health, Pharmacology, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany; the Botanic Garden and the Hunterian Museum (Zoology and Pathology) are also open to students. New buildings and equipments have been provided for botany, for practical anatomy, for operative surgery, as well as for pathology; the very large additions made a number of years ago to the Chemical Laboratory rendered it one of the most extensive in Scotland. The class-rooms and laboratories for the departments of Physics, Physiology, Pharmacology, and Materia Medica, and Medical Jurisprudence and Public Health, are also of recent erection, and are elaborately equipped. Four additional chairs of Medicine, Surgery, Obstetrics, and Pathology have been recently established, the Professors being specially attached to the Royal Infirmary; and a number of University Lectureships in Clinical Medicine, Clinical Surgery, Venereal Diseases, Laryngology, Dermatology, Otology, Psychological Medicine, and Tuberculosis have been founded there. Four other chairs have been founded at the University, in Bacteriology, Organic Chemistry, Physiological Chemistry, and Applied Physics. There are also lectureships on the Surgical and Medical Diseases of Children, and on Electrical Diagnosis and Therapeutics. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage post-graduation and research work. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached; the Royal Infirmary (630 beds); and the Victoria Infirmary (260 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (200 beds), the Royal Maternity and Women's Hospital (108 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds) and Ruchill (540 beds), and other institutions afford facilities for the practical study of special branches. Information regarding post-graduate study will be found at page 373.

Bursaries.—Bursaries attached to the Medical Faculty amount in annual value to about £1,450, three bursaries in many faculty, entitling to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in Arts.

The following bursaries are open to undergraduates of both sexes: The Gibson Bursary, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. The Arbroath Bursary, annual value £40, tenable for three years, is awarded by the Senate, on the recommendation of the Faculty of Medicine, to the student who is of the highest merit among the candidates, as shown by their class records and their performances in the First and Second Professional Examinations. One Logan Bursary, annual value £16, tenable for four years; appointment by the Senate. The Mackintosh Mental Science Bursary in medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of insanity who stands first in an examination in that subject, the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The Gardiner Bursary, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in physiology at the Second Professional Examination, and whose aggregate of marks in that subject and in chemistry and physics of the First Professional Examination is the highest. Of the eight James A. Paterson Bursaries two are awarded each year; they are of the value of £25 and £20 respectively, and are tenable for four years; examination in mathematics and natural philosophy in June for students entering the first or second year of medical study. The following are tenable in any faculty: Two Pratt Bursaries (each £20 and tenable for four years); and two Taylor Bursaries (each £10 and tenable for four years). Andrew and Bethia Stewart Bursaries (£50 each, tenable for three years); candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine Glasgow Highland Society's Bursaries, for students of Highland descent, of the annual value of £25, and tenable for five years; two vacant each year.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the *University Calendar*. The Dobbie Smith Gold Medal is awarded for the best essay on a prescribed subject within the science of botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in medicine of the year. The University Commissioners issued an ordinance to make regulations for the admission of women to certain bursaries, scholarships, and fellowships. Scholarships and Fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study. There are also four McCunn Medical Research Scholarships (two of £200 and two of £400) for graduates in medicine of the Scottish universities. Faulds Fellowship for Research in Medical Science of approximately £200 for three years.

Fees.—The matriculation fee for each year is £2 2s. In most cases the fee for each university class is £6 6s., but in some cases it is £4 4s. For hospital attendance students pay an entrance fee of £7 at the Western Infirmary, with an additional fee of £5 5s. for each winter and £2 12s. 6d. for each summer clinical course; at the Royal Infirmary the fees are somewhat similar. The university fee for the four professional examinations is £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance, and professional examinations amount to about £210.

For further information apply to the Registrar, Glasgow University.

QUEEN MARGARET COLLEGE.—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class-rooms, reading-room, library, etc. They are taught in some classes apart from male students, in others together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 520 beds are available for their use, and in its dispensary; and similarly in the Western Infirmary and in the Victoria Infirmary; also in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel, Hawkhead Asylum; the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill; and the Glasgow Royal Maternity and Women's Hospital.

Scholarship.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1922. This scholarship is restricted to women medical students.

Full information can be obtained from the Mistress, Queen Margaret College.

Board for Students.—A house of residence for women students, Queen Margaret Hall, is situated near the college,

in Bute Gardens. The cost of board and residence is from 27s. to 32s. 6d. per week, according to accommodation. Application to be made to the Lady Superintendent. Another hostel near the college is South Park House, Ann Street, belonging to the Student Christian Movement, and open to women students of all colleges in Glasgow. Cost of board is from 28s. to 30s. weekly. Applications to be made to the Warden.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest in Glasgow. The infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the infirmary grounds.

The infirmary has (including the ophthalmic department) over 700 beds, the average number occupied in 1920 being over 600. There are special beds and wards for diseases of women, of the throat, nose and ear, venereal diseases, burns, and septic cases. In the out-patient department the attendances in 1920 numbered 142,730. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most approved apparatus for diagnosis and treatment.

Appointments.—Five house-physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees. The average class fee is £3 3s. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £20. The classes are open to male and female students.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in all subjects of the curriculum both for medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary; pathology in the Western or Royal Infirmary; vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the school Calendar). The courses (lectures and laboratory) in public health are recognized by the Scottish Licensing Board, the Universities of Oxford, Cambridge, and London, and the London and Irish Colleges.

Fees.—The fees for the lectures and practical work required by ordinary students range between 2 and 5 guineas a session. In the Public Health Department the fee for a six months' course is £14 14s. The Carnegie Trust pays the fees of students at Anderson's College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W., who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, with over 90 beds, offers facilities for clinical instruction in the diseases peculiar to women. Particulars may be obtained from the honorary secretary, 149, St. Vincent Street, Glasgow.

ST. ANDREWS AND DUNDEE.

THE medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit other students as well. In the former city the United College provides education in all subjects of the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s. to £5 12s. 6d. for systematic classes, and from £4 14s. 6d. to £4 4s. for practical classes. The hospital ticket is £1 8s. for three months, £4 4s. a year, or perpetual £13 6s. 8d. in one sum. The inclusive or composition fee for the curriculum is £182. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St. Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

Clinical Work.

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given thereat being recognized for purposes of graduation by all the Scottish Universities, the University of London, the University of Cambridge, the National University of Ireland, and by the Royal Colleges of England and Scotland.

IRELAND.

THERE is a choice of six schools for those pursuing their medical studies in Ireland. For clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

DUBLIN.

The School of Physic.

This school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians in Ireland; the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students whether they belong to the university or not.

The Schools of Surgery.

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the College's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the College by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in Surgery, the Stoney Memorial Gold Medal in Anatomy, the H. Macnaughton Jones Gold Medal for Midwifery and Gynaecology; class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College.

This is one of the constituent colleges of the National University of Ireland, and at present conducts its work at buildings on St. Stephen's Green, at those formerly occupied by the Cecilia Street School of Medicine, and at the University Buildings in Earlsfort Terrace. All the buildings of its permanent home are not yet ready. The section of the new college buildings at Earlsfort Terrace for the departments of physics and chemistry, and new laboratories for pathology, are now in use. It possesses a good library, and the arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. The teaching staff is numerous, and through it the college is connected with many of the hospitals of the city. Students, however, are allowed to pursue their studies at any of the hospitals recognized for the purpose by the university.

Clinical Work.

There are numerous well-arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the United Kingdom. Among them are the Mater Misericordiae Hospital, with 345 beds; Dr. Steevens's Hospital at Kingsbridge, with 200; Meath Hospital and County Dublin Infirmary, with 160; Mercer's Hospital, close to Trinity College, with 120; the Royal City of Dublin Hospital, with 124; the Adelaide Hospital with 140; the Royal Victoria Eye and Ear Hospital, with 100 beds; Sir Patrick Dun's which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 230 beds. As for that known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the United Kingdom. It receives nearly 3,000 patients every year, and, apart from ordinary out-patient work of a gynaecological order, annually attends some 2,000 women at their own homes during their confinement. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality.

BELFAST.

THE Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a Students' Union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital; the Benn Ulster Eye, Ear and Throat Hospital; the Union Infirmary and Fever Hospital; the Fever Hospital, Purdysburn; the District Lunatic Asylum, the Samaritan Hospital, Forster Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Twelve, of the value of £40 each are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year; (2) sixteen Professional Scholarships, value from £15 to £40 each; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases; (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially; (5) Isabella Tod Memorial Scholarship, tenable for three years, awarded triennially to a woman student; (6) Magrath Clinical Scholarship, awarded annually, value about £112; (7) numerous sessional prizes. There is also a post-graduate research fund, open to all graduates of not more than three years' standing. Gold medals are awarded at the M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £130. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

The Calendar containing full information can be obtained on application to the Secretary, Queen's University, Belfast, price 2s.

UNIVERSITY COLLEGE, CORK.

THIS institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the new university, but students proceeding for the examinations of the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (60 beds), the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well-equipped Dental Hospital in connexion with the school.

Scholarships.—Over £4,000 are available annually for scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £120.

Further information can be found in the college regulations, or obtained on application to the Registrar.

UNIVERSITY COLLEGE, GALWAY.

THIS institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Arts, Science, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University but for those of London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway County Hospital, the Galway Union Hospital, the Galway Fever Hospital, and the Galway Dispensaries. The Galway County Hospital is a general hospital, and at the other two hospitals and at the dispensaries students have ample opportunities of studying zymotic and chronic diseases. The Union Hospital has a special ward for diseases of children. Each year the governing body offers about £1,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND.

THERE are a great many hospitals in the United Kingdom which, though not connected with any medical school, open their doors either to those who have yet to become qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland, have already been mentioned in speaking of the medical schools in these localities, but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford; the Royal Sussex County Hospital, Brighton; the Royal United Hospital, Bath; the Kent and Canterbury Hospital; Derbyshire Royal Infirmary; the Royal Albert Hospital

and Eye Infirmary, Devonport; the Royal Devon and Exeter Hospital; the West of England Eye Infirmary, Exeter; the Gloucestershire Royal Infirmary and Eye Institution; the Royal Infirmary, Leicester; the County Hospital, Lincoln; the General Hospital, Northampton; the Norfolk and Norwich Hospital; the General Hospital, Nottingham; the Royal Portsmouth Hospital; the Royal Berks Hospital, Reading; the Royal South Hants and Southampton Hospital; the Staffordshire General Infirmary, Stafford; the North Staffordshire Infirmary at Hartshill; the Royal Hants County Hospital, Winchester; the Wolverhampton and Staffordshire General Hospital; the County Hospital, York; and the Coventry and Warwickshire Hospital.

London Clinical Hospitals.

As for hospitals in the metropolis, so many of these play the part of clinical schools that it is worth while to classify them.

General Hospitals.—These include the Dreadnought Hospital at Greenwich, and its annexe at the Albert Dock, which form the headquarters of the London School of Clinical Medicine, and the London School of Tropical Medicine with its hospital at Endsleigh Gardens; the West London Hospital and the Prince of Wales's General Hospital, Tottenham, both of these being described in the article on post-graduate work; the Great Northern Central Hospital, Holloway Road, an institution containing 185 beds; and the Temperance Hospital in Hampstead Road.

Children's Hospitals.—There are at least seven of these, the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 240 beds. There are also the East London Hospital for Children, Shadwell, with 124 cots; the Queen's Hospital for Children, Bethnal Green, with 134; the Victoria Hospital for Children, Chelsea, with 104; the Belgrave Hospital for Children, which has a considerable out-patient department, but in-patient accommodation for only 40 children; the Paddington Green Children's Hospital, an institution of about the same size; and the Evelina Hospital for Sick Children, Southwark Bridge Road, with 76 beds.

Hospitals for Women.—Queen Charlotte's Lying-in Hospital, Marylebone Road, with 70 beds and a residential college for students and practitioners, specializes in the teaching of midwifery. The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments, the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square, whose teaching is confined to post-graduates in limited numbers; the Chelsea Hospital for Women, Arthur Street, Chelsea; and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road. At this hospital two complete courses of instruction are given during the year—October to February and March to July—comprising the following subjects: anatomy, physiology, and optics; ophthalmic medicine and surgery—(1) external diseases, (2) motor anomalies and squint, (3) ophthalmoscopic conditions (weekly classes), (4) pathology; practical refraction classes; methods of examination (practical); operative surgery; practical pathology; practical bacteriology; *x* ray and radiotherapy; clinical lectures; discussion classes. A fee of 24 guineas entitles the holder to one full five months' course (with the exception of practical pathology and practical bacteriology), together with a permanent ticket for the practice of the hospital. Fee for the practice of the hospital (permanent), £5 5s.; for three or six months, £3 3s.; for two months, £2 2s.; for one month, £1 1s. Gentlemen are eligible, under certain conditions, for the posts of chief clinical assistant, clinical assistant, and junior assistant. Clinical work takes place every morning at 9 o'clock, and operations at 10 every morning. An additional special course in the preliminary subjects (namely, anatomy, physiology, and optics) for the D.O.M.S., and other ophthalmology examinations, will be held immediately preceding the date of the examination. The fees for this course will be 12 guineas, or £5 5s. for any subject separately. Further particulars may be obtained from the Dean of the Medical School. Other eye hospitals are the Royal Westminster Ophthalmic Hospital near Charing Cross, the Royal Eye Hospital, Southwark, and the Central London Ophthalmic Hospital, Judd Street, W.C.1, each with about 40 beds.

Fever Hospitals.—The Metropolitan Asylums Board has under its control a good many institutions for the treatment of the more serious zymotic disorders; it makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses. Detailed information should be sought from the Clerk to the Board, Victoria Embankment.

Chest Hospitals.—The largest of these is the Brompton Hospital for Consumption, which has 333 beds and a large sanatorium at Frimley with 150 beds. There is also the City of London Hospital for Diseases of the Chest, Victoria Park, with 175 beds, and the Royal Hospital for Diseases of the Chest, City Road, which has recently decided to became amalgamated with the Great Northern Hospital, Holloway Road.

Nose, Throat and Ear Hospitals.—The institutions which confine their work to disorders of the throat, nose and ear all make special arrangements for the benefit of senior and post-graduate students. They are the Metropolitan Ear, Nose and Throat Hospital, Fitzroy Square; the Royal Ear Hospital, Dean Street; the Central London Throat, Nose and Ear Hospital, Gray's Inn Road; and the Hospital for Diseases of the Throat, Golden Square—the latter, which possesses 75 beds, being the largest of the four institutions.

Miscellaneous Special Hospitals.—Among these are the Bethlem Royal Hospital, Southwark, which confines its work to the treatment of mental diseases; St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden; St. Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum, including cancer and fistula; the National Hospital for Diseases of the Heart in Westmorland Street, W.1; St. John's Hospital for Diseases of the Skin, in Leicester Square; the Hospital for Diseases of the Skin, Stamford Street, Blackfriars; and the National Hospital for the Paralysed and Epileptic, Queen Square, W.C.1, an institution possessing 200 beds and a world-wide reputation.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries.

MEDICAL EDUCATION OF WOMEN.

WOMEN are admitted to all the medical examinations of the following qualifying bodies: All the universities of Great Britain, with the exception of Cambridge; the Royal College of Physicians of London, and the Royal College of Surgeons of England; the Society of Apothecaries of London; the Conjoint Boards of Scotland and of Ireland. The degree of bachelor of medicine at the University of Oxford is now open to women.

The regulations of each body differ considerably, so that it is necessary for a student to decide, before beginning her course, which degree or diploma she will aim at obtaining. The ordinary regulations of the General Medical Council (see page 346) must be observed, and women can pursue their education either at certain schools only open to women, or at ordinary medical schools where they do their work more or less in common with men students.

The schools which admit women only are the London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London, and Queen Margaret College, Glasgow (see page 368). Women are also admitted to the schools of medicine in connexion with King's College, University College, Charing Cross Hospital, London Hospital, and St. Mary's Hospital, London; the Universities of Dublin, St. Andrews, Durham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bristol, and Aberdeen; St. Mungo's College, Glasgow; the Schools of Surgery of the Royal College of Surgeons in Ireland and of the National University of Ireland in Dublin, Cork, and Galway. The arrangements for women medical students in Edinburgh are indicated on page 368. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff. As regards the London School of Medicine for Women, particulars will be found at p. 363 in the article on London Medical Schools.

Year by year the openings for women who adopt a medical career have increased, and the field open to their energies is now wide. Women hold many appointments as resident medical officers in general hospitals and in hospitals for women and children all over the country, and in a large number of sanatoriums, infirmaries, fever hospitals and asylums. Many medical women are also engaged in public health, tuberculosis, and school inspection work. Further, it is now possible for medical women to hold staff appointments at a number of London and provincial hospitals, to become prison medical officers, and to take charge of infant welfare centres and venereal disease clinics. Nevertheless, in view of the very great expansion during the past six years in the number of women medical students, the attention of those who contemplate entering the profession of medicine may well be directed to the warning note sounded in the introductory article with which this Educational Number opens.

DEGREES FOR PRACTITIONERS.

AT one time it was almost the universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in England possess diplomas to practise but not degrees in medicine. This is a fact which they sometimes find reason to regret, and to such practitioners the following paragraphs may be of interest. It should be noted, however, that the M.D. degree of the University of Brussels, if obtained subsequently to June, 1886, is not registrable, and that the University authorities have decided to discontinue granting it to foreign medical practitioners.

UNIVERSITY OF LONDON.

Registered medical practitioners who have passed the First Examination for medical degrees and the Second Examination for medical degrees, Part I, may proceed to the Second Examination for medical degrees, Part II, and M.B., B.S. Examinations without observing the intervals prescribed by the regulations, on producing certificates that they have gone through the required course of study at a school of the university; subject to the proviso that no degree of the university can in any circumstances be granted by examination to anyone in less than three years after passing the Matriculation Examination or after admission by the university of the candidate's right to exemption therefrom.

UNIVERSITY OF DURHAM.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed an examination in arts previously to the professional examination in virtue of which his name was placed on the *Register*, he is examined in classics and mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books). Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Professional Examination.—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene, and therapeutics; (ii) principles and practice of surgery; (iii) midwifery and diseases of women and children; (iv) pathology, medical and surgical; (v) anatomy, medical and surgical; (vi) medical jurisprudence and toxicology. The examination is conducted by means of printed papers, clinically, and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

The examinations are held twice a year, towards the end of March and of June. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Registrar of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

Fees.—The inclusive fee is 50 guineas; if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

UNIVERSITY OF BRUSSELS.

This university has hitherto granted its M.D. to such foreign candidates as were already duly qualified in medicine and surgery in their own countries, provided they passed the three examinations imposed. The examinations were conducted solely viva voce and in English. The secretary of the University of Brussels has, however, announced this year that in future no more M.D.Brussels examinations will be held, nor will the diploma of the degree be granted by the university to foreign medical practitioners as formerly. Dr. Arthur Haydon, 41, Buckland Crescent, N.W.3, secretary of the Brussels Medical Graduates' Association, is preparing a petition to the University of Brussels upon this subject.

POST-GRADUATION STUDY.

THE belief, very generally held, that the facilities for post-graduate medical instruction in London and throughout Great Britain are insufficient led to the appointment by the Minister of Health at the beginning of this year of a special committee to investigate the matter; to its recommendations reference is made below. It is to be noted, however, that in London and in certain other centres many facilities for post-graduate study already exist. The real difficulty in London has been that these facilities have not been co-ordinated, and that only lately has it been possible for a graduate wishing to join classes in London to learn where he could obtain instruction in the subject in which he was particularly interested. The difficulty has been the greater because formerly very little attempt was made to discriminate between the two main classes of post-graduate students—those who desire advanced or special courses, either for the purpose of "finishing" their medical education, or acquiring knowledge of the technique of special subjects, and those who, having been in practice for some years, desire to revise or increase such general medical knowledge as is useful in their professional work. For the latter class the courses now given at the West London Hospital Post-Graduate College and the North-East London Post-Graduate College are eminently suitable; some of the large undergraduate teaching hospitals provide short post-graduate courses for their former students during the summer vacation, and at the Charing Cross Hospital arrangements have been made with the London Panel Committee whereby weekly post-graduate instruction is given to panel doctors.

Towards the end of 1918 the Fellowship of Medicine was founded in London. Its object was to draw together the members of the medical profession of all the inter-allied countries for the exchange of medical knowledge and the advancement of medical science. An emergency post-graduate course was arranged in the early part of 1919 for the benefit of medical men who had served as temporary officers of the Navy, the R.A.M.C., the Royal Air Force, and of the Dominions, the United States, and the allied countries. The teaching schools in the metropolis co-operated in the course, and daily lectures and demonstrations on general and special subjects were given.

In the meanwhile, and for many months previously, the establishment of a permanent post-graduate association in London had been under consideration. The object was to plan a national scheme for post-graduation training with London as its centre. The details of the scheme, as approved by representatives of post-graduate schools and special hospitals, were published in the JOURNAL at the time. On October 24th, 1919, the Fellowship of Medicine and the Post-Graduate Medical Association were amalgamated. The officers of the combined body are: President, Sir George Makins; chairman of the Executive Committee, Sir Humphry Rolleston; and the honorary secretaries, Mr. Herbert J. Paterson and Dr. Henry MacCormac.

During 1919 a great deal was done in developing ideas as to the future requirements of post-graduate work in this country. It was recognized that the ideal aimed at should include a post-graduate medical school with a teaching hospital adequately provided in all departments: and an appeal was made to the Government to help in equipping one of the large general hospitals in London for graduate teaching exclusively. It was suggested that the teaching staff should be second to none, if not superior to any other throughout the world, in the hope of attracting to the hospital graduates from abroad and from the Dominions as well as graduates from the home universities and medical schools who desired to pursue their studies further. These propositions culminated in the appointment by Dr. Addison of the committee under the chairmanship of the Earl of Athlone. The committee heard

evidence and made a series of recommendations, which it summarized as follows:

1. A school attached to a hospital centrally situated in London should be devoted solely to post-graduate medical education.
2. The school should be a school of the University of London, and receive substantial financial assistance from the Treasury through the University Grants Committee.
3. In addition to the courses provided at the central school for the full-time instruction of general practitioners, and at existing post-graduate colleges and schools, further facilities for post-graduate study should be made available at non-teaching hospitals and in Poor Law infirmaries.
4. It is desirable that increased use should be made of cottage hospitals, in which all general practitioners of the neighbourhood should have the right, if they so desire, to treat their patients.
5. A much larger number of resident appointments and clinical assistantships should be created in hospitals and Poor Law infirmaries.
6. A central office should be established to co-ordinate and develop the work of post-graduate education in London. In the administrative building should be provided not only offices, but the accommodation necessary for social purposes.
7. An Institute of State Medicine should be established by the Univerity of London, in which instruction should be given in public health, forensic medicine, industrial medicine, and in medical ethics and economics.

Although the recommendations of this committee seem hardly likely to assume practical form in the present economic condition of the country, it would appear that further progress might be made along the lines of the Fellowship of Medicine and Post-Graduate Medical Association. The great difficulty from which that conjoint body suffers is in the matter of finance for administrative purposes. But the existence of an office at which those who desire post-graduate instruction can obtain information as to the facilities available, is of the utmost value. A weekly bulletin is published giving a programme based on information supplied by the secretaries of hospitals and medical schools, and by the members of their staffs.

Post-graduate courses are held also at Oxford, Manchester, Birmingham and Bristol. In Scotland post-graduate classes in Edinburgh are conducted by the teachers of the University and Royal Colleges, and in Glasgow a post-graduate medical association has been formed under the management of the post-graduate teachers and of representatives of the institutions granting facilities for instruction.

The remarks above refer almost entirely to comparatively short courses in the nature of revision classes. This country has not so far followed the example of America in establishing long courses extending into years, with a view to making men specialists in the various branches. It is questionable whether any attempt in this direction will be made in this country, where such training is usually obtained by holding junior appointments such as that of clinical assistant. Those who are interested in the matter, and wish to know what can be said for special lengthy organized courses, may consult the instructive account, given in our columns on June 19th, 1920, at p. 833, by Sir Humphry Rolleston and Mr. H. J. Waring, of graduate medical education in the United States.

Fellowship of Medicine and Post-Graduate Medical Association.

The Fellowship has arranged with the medical schools in London and other hospitals for a post-graduate course admitting to their general practice, including clinical instruction in the wards and out-patient departments, clinical lectures and demonstrations, *post-mortem* demonstrations, laboratory work, etc. Tickets can be obtained from the Secretary at the rate of one month, 6 guineas; two months, 10 guineas; three months, 13 guineas; six months, 18 guineas; and one year, 20 guineas. They admit the holder to certain of the London hospitals to which medical schools are attached, and to a large number of other London hospitals and institutions. The Fellowship issues a weekly bulletin containing a programme of the work in these hospitals, specifying the names of teachers or lecturers, together with the time and place at which their instruction is given. This list is arranged under the heading of the various sections of the course —for example, diseases of the chest, ophthalmology, radiology, venereal diseases, etc. Announcement is also given of special courses of clinical lectures, some of which are occasionally held out of London.

The offices of the Fellowship are at 1, Wimpole Street, W.1 (telephone Mayfair 2236). The secretary, Miss M. A. Willis, is in attendance daily from 10 a.m. to 5 p.m., excepting Saturday. The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association has been fixed at a minimum of 10s. 6d., or two dollars and a half.

Edinburgh Post-Graduate Courses.

Short advanced courses for graduates in connexion with the University and the Royal Colleges will, it is anticipated, be held during the summer and autumn terms and the summer vacation. The individual courses will be held only provided that a certain minimum number of graduates enter for them; and, in certain courses, a maximum limit will also be imposed.

The Post-Graduate Courses for the present year consisted of two on Clinical Therapeutics held in the Summer Term (May to July) and of two others, one on General Medicine and the other on General Surgery, meeting from August 15th to September 9th. With regard to the Summer Term Courses on Clinical Therapeutics, one was taken by Professor Meakins and the other by Drs. Chalmers Watson, G. D. Mathewson, and Nimmo Smith; the fee was £10 10s. The General Medical Course in August and September includes Lecture-Demonstrations, and, where possible, practical instruction on Medical Anatomy, Medical Side-room Work, Examination of the Blood, X-Ray and Electrical Therapy, Morbid Anatomy, and *Post Mortems*; Clinical Instruction in Medicine. Diseases of Children, Diseases of the Skin, and Infectious Diseases; and special instruction in the Methods of Examination of the Nervous, Circulatory, Respiratory, Alimentary, and Renal Systems. The General Surgical Course includes Lecture-Demonstrations on Surgical Anatomy, Surgical Pathology, and Surgical X-Ray Diagnosis; Clinical Instruction in Surgery in the Royal Infirmary and Royal Hospital for Sick Children; Clinical Instruction in Venereal Diseases; Surgical Out-patients; Surgical and Gynaecological Operations; and special instruction in Abdominal and Renal Surgery and the Surgery of the Mamma. There are also three special lectures a week on such subjects as Encephalitis Lethargica, Dementia Praecox, Early Diagnosis of Cancer of the Uterus, etc. The composite fee for each course is £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

Particulars in regard to future courses—dates of commencement, fees, etc.—may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Graduate Medical Teaching in Glasgow.

Organized post-graduate medical teaching is now available in Glasgow under the auspices of the Glasgow Post-Graduate Medical Association. This association is composed of practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction, and its business is managed by a board elected periodically by them. The chairman of the board is Principal Sir Donald MacAlister, K.C.B., M.D., and the vice-chairman Sir Hector C. Cameron, C.B.E., M.D. Weekly demonstrations for practitioners are given throughout the winter and spring, and comprehensive courses of instruction during the summer and autumn. Arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year. As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed. Those desiring further information should apply to Dr. A. M. Kennedy, Secretary, Post-Graduate Medical Association, University, Glasgow.

West London Post-Graduate College.

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. In the five years before the war the yearly entry averaged over 220. The work of the college is eminently suitable for men who wish to revive their general clinical knowledge after war work.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months. There is no charge to members of the college. Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and, when material is available, in operative surgery. The size of the classes is limited. A special clinic for the treatment of venereal diseases (male and female) is held every evening (Saturdays included) at 5.30. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session. The pathological laboratory is in charge of a pathologist who attends every day. In bacteriology and microscopy special instruction is given on three mornings a week.

Demonstrations are ordinarily given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars. Lectures of a practical kind are given daily.

Fees. Hospital practice, including all ordinary demonstrations and lectures, £1 11s. 6d. for one week, £4 14s. 6d. for one month, £6 6s. for six weeks, £9 9s. for three months, £15 15s. for six months, £25 12s. 6d. for one year, and £45 for a life ticket. Every year in August there is a special vacation class lasting four weeks, for which the fee is £4 14s. 6d. Instruction in the administration of anaesthetics is given at the rate of £3 3s. per month.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees). A prospectus can be obtained on application to the Dean.

North East London Post-Graduate College.

The headquarters of this post-graduate school are situated at the Prince of Wales's General Hospital, in the midst of a densely populated North London district. It contains 125 beds, and is within a few minutes' walk of South Tottenham Station on the Midland Railway, Seven Sisters Station on the Great Eastern Railway, and Tottenham Hale on the Great Eastern main line. It is readily accessible by electric tram from Finsbury Park and Hackney, and from Dalston, Edmonton, and other parts of North London.

The college is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees; the course of practical teaching of bacteriology is approved by the University of Cambridge for its D.P.H. diploma, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital as a whole affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff in the lecture room. Operations are performed every afternoon of the week except Saturday. Special classes are arranged in modern methods of the investigation and treatment of disease.

Fees. Two guineas for a three months' course of study in any one department, which may be begun at any time; a fee of 5 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas), and a perpetual ticket for the practice of the hospital may be obtained for 10 guineas.

Additional information can be obtained from the Dean of the Post-Graduate College, at the hospital, or at 19A, Cavendish Square, London, W.1.

TROPICAL MEDICINE.

THERE are schools of Tropical Medicine in London and Liverpool, and several universities and other examining bodies have instituted diplomas or degrees in the subject. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

Diplomas and Degrees.

LONDON UNIVERSITY.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. The regulations relating to the curriculum and examination correspond to those applying to the other branches.

LONDON CONJOINT BOARD.—This body grants a diploma in tropical medicine to candidates after an examination usually held in the months of April, July, and December. Ordinary candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine, in an institution recognized for this purpose, during not less than three months; (2) the clinical practice of a hospital recognized for the study of tropical diseases during not less than three months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries. The fee for admission to the examination is £2 9s. The Board also grants diplomas in psychological medicine and in ophthalmic medicine and surgery. Candidates must hold a medical qualification registrable in the United Kingdom or be graduates in medicine of an Indian, Colonial, or foreign university. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, Bloomsbury, London, W.C.1.

UNIVERSITY OF LIVERPOOL.—A diploma in tropical medicine is given by this university to students who have been through the courses provided by the Liverpool School of Tropical Medicine and have passed the examination held twice yearly by the university examiners. The subjects of examination are (*a*) tropical pathology, parasitology, and entomology; (*b*) tropical and applied bacteriology; (*c*) tropical hygiene and sanitation; (*d*) tropical medicine, including etiology, symptoms, diagnosis, and treatment of tropical diseases. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF CAMBRIDGE.—This university grants a diploma in tropical medicine and hygiene to any person whose name has been on the *Medical Register* for not less than a year provided that he passes the examination of the university in this subject. Previous to admission to the examination he must produce approved evidence that he has studied pathology (including parasitology and bacteriology in relation to tropical diseases), clinical medicine and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates. Examinations are held in January and August each year, and last four days. The fee for the examination and diploma is 9 guineas on admission or readmission. Application for further information should be made to Dr. G. S. Graham-Smith, Pathological Laboratory, Cambridge.

SCHOOLS.

London School of Tropical Medicine.

This school is under the auspices of the Seamen's Hospital Society. The laboratories, museum, library, etc., are within the building of the Hospital for Tropical Diseases, Endsleigh Gardens, N.W., and excellent opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the services or going abroad. In the wards of the Hospital for Tropical Diseases are to be found cases of tropical disease such as may be met with in actual practice in the tropics. There are three courses in the year lasting three months, beginning September 19th, January 15th, and May 1st respectively. The course is so arranged as to equip men for the Cambridge D.T.M. and H. and the D.T.M. of the Conjoint Board. Tropical Medicine has been admitted as a sixth alternative subject for the M.D. of the University of London, and the school curriculum is adapted to afford facilities for candidates desirous of taking out the M.D. in this subject. Further information may be obtained from the Dean, London School of Tropical Medicine, India Office, Whitehall, London, and the Secretary, London School of Tropical Medicine, Seamen's Hospital, Greenwich, S.E.10.

Liverpool School of Tropical Medicine.

This school is affiliated with the University of Liverpool and the Royal Infirmary of Liverpool. Two full courses of instruction are given every year, commencing about January 6th and September 15th, lasting for the term of about thirteen weeks, and followed by the examination for the diploma of tropical medicine given by the University of Liverpool. Two courses in veterinary parasitology are also given, commencing about the same dates as the diploma courses. In addition to the full courses, an advanced course of practical instruction in tropical pathology and medical entomology, lasting a month, is given every year in June; it is of such a kind as to be very useful to medical men returning from the tropics on short leave. A special course of instruction in entomology, etc., is also given three times a year to officers of the East and West African Colonial Services. Students of the school who do not care to undertake the examination held by the university at the end of each term for the diploma in tropical medicine are given a certificate for attendance if the latter has been satisfactory.

Fees.—The fee for the full course of instruction is 20 guineas, with an extra charge of 1 guinea for the use of a microscope, if required. The fee for the Diploma Examination is 5 guineas, for the Advanced Course 6 guineas, and for the course in veterinary parasitology 15 guineas.

The new laboratories of the school adjoin the University and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 ft. in maximum length by 84 ft. in width. In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has: (1) Lecture theatre, with accommodation for about seventy students; (2) library; (3) a spacious museum, with preparation room adjoining. The first floor has twelve rooms, in which are housed the Departments of Tropical Medicine and Entomology. The second floor has the main class laboratory, 69 ft. by 58 ft., excellently lighted, and three other rooms, devoted to the Department of Parasitology. The third floor has a large research laboratory and two research rooms. On the roof is an insectarium, a mosquito-proofed house, and other accommodation.

Since it was instituted the school has dispatched to the tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in twenty-one special memoirs, besides textbooks and numerous articles in the scientific press, also in the *Annals of Tropical Medicine and Parasitology* of the school. In connexion with the school are (1) the Manáos Research Laboratory in Brazil, and (2) the Sir Alfred Lewis Jones Tropical Laboratory now in course of construction at Sierra Leone. Further information may be obtained from the Secretary, H. 24/25, Exchange Buildings, Liverpool.

PSYCHOLOGICAL MEDICINE.

THE study of mental diseases has long been a necessary, though somewhat neglected, part of the ordinary medical curriculum, and psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up. In addition, diplomas in psychiatry or psychological medicine can be obtained from the Universities of Cambridge, London, Edinburgh, Durham, Leeds, Manchester, and the National University of Ireland, and from the Royal College of Physicians of London. The Medico-Psychological Association of Great Britain and Ireland also grants certificates of proficiency after examination and encourages the study of psychiatry by the offer of prizes for original and research work.

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals, or similar institutions. In practically all cases they are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £300 per annum and senior assistant medical officers about £500, in both cases with board, lodging, laundry, etc., in addition; if married the value of board, etc., is commuted for cash. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital and draw various allowances.

Since the passing of the Asylum Officers' Superannuation Act in 1909, all officers and others of the established staff of a mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fiftieth for every year served, paying as contribution 3 per cent. of the value of their appointments annually. This very favourable prospect may not appeal to juniors joining the services, but will eventually prove to be a valuable asset.

Mental hospital work has undoubtedly not been in favour with newly qualified medical men in years past. The principal reasons alleged for this are as follows: (1) It is a local and, except indirectly, not an imperial service; this tends to slow and uncertain promotion. (2) The existence of the rule or custom hitherto prevailing, that assistant medical officers may not marry and are merely perpetual house-surgeons, living as bachelors in rooms. (3) The complaint that much of the assistant medical officers' work is clerical, administrative and routine, which if not destructive to the medically trained individual is at least not conducive to scientific medical initiative. The same objection applies also with varying force to medical service in the army or other public services.

In March, 1920, the Board of Control did useful service by issuing to visiting committees of asylums a circular upon the three following matters: (*a*) The dearth of suitable applicants when vacancies occur for the post of assistant medical officer, and the probable causes thereof; (*b*) the need of provision for the more effective treatment upon modern lines of recoverable cases of mental disorder; (*c*) the necessity for raising the standard as to the training of existing and future assistant medical officers in asylum practice, and of affording facilities for such training.

Under (*a*) the Board of Control, after pointing out some of the disadvantages of the present state of affairs, made the following suggestions:

(i) That an improvement be made in the salaries of the assistant medical officers, at least to such an extent that in the cases of all those who have been in the service above a certain number of years and are regarded as permanent officials, the salary should be reasonably sufficient for a married medical man, and that in the case of the deputy superintendent it should more closely approximate than at present to that of the superintendent.

(ii) That, in the case of a permanent official, application for permission to marry be not required; that, according to circumstances, proper accommodation for a married man be provided, and that, subject to rules approved by the Secretary of State for the protection of the patients, and with due regard to the proper administration of the institution, permission to live out may be granted.

(iii) That to the title of assistant medical officer the words "and deputy superintendent" should be added to that of the one selected to be in charge during the absence of the medical superintendent.

(iv) That the use of the title senior assistant medical officer should not be restricted as at present to the post of first assistant; but should be extended and be indicative of a certain standing and expert knowledge. By the adoption of this suggestion there would in many asylums be two senior assistant medical officers, and perhaps even three or four in the largest asylums.

(v) That except where there has been previous asylum experience, appointments to posts of assistant medical officers should in the first instance be temporary in character.

Under (*b*) the Board suggested that the treatment of recent recoverable cases should be carried out by members of the medical staff conversant with modern methods, and that the number of the medical staff should be sufficient to ensure that none of them is required to undertake the treatment of more than fifty recent cases at any one time.

Under (*c*) suggestions were made with a view to encouraging assistant medical officers to obtain a diploma or degree in mental diseases, including provision for study leave on full salary. The attitude of the Board of Control is clearly shown in the following sentence: "If the welfare, treatment, and recovery of patients is not to be jeopardized and the study of mental diseases is not to lag behind the study of other branches of medicine, the Board feel the necessity of initiating measures to maintain progress and to secure the best possible treatment of the patients." Readers who wish to go further into this subject may be referred to an interesting paper by Dr. C. Hubert Bond in the *Journal of Mental Science* for January, 1920, in which he insisted on the need for mental clinics and schools of psychiatry, and reviewed the progress made towards realizing the measures, powerfully advocated in 1908 by Lieut.-Colonel D. G. Thomson, for supplying adequate instruction in the institutes and practice of psychiatry.

Both the British Medical Association and the Medico-Psychological Association are working separately and together to improve present conditions of service, and have, for example, already removed the "celibacy" objection to the service.

Finally, it may be said that while routine, administrative, and clerical work bulk largely in mental hospital duties, as they do in other public medical services, there is ample material, time, and scope for purely medical work—difficult as the subject may be—in psychiatry as one of the branches of medicine open to young graduates.

PUBLIC HEALTH SERVICES.

THE Public Health Service, to use the term in a strict sense, consists of medical officers of health appointed by local public health authorities and holding office under varying conditions of tenure. In addition there are county medical officers appointed by the county councils. The latter are not, strictly speaking, public health authorities; the duties of their medical officers are somewhat similar to those of other medical officers of health, but include few executive functions. In many of the county boroughs and counties assistant medical officers of health or assistant county medical officers are appointed, and such appointments may afford stepping stones for promotion to higher offices. The service is, however, not unified throughout the country, and there is no regular system of promotion; appointments are to be obtained only by application to some particular local authority which has advertised a vacancy.

Three other services also ungraded have been brought into existence by recent legislation; their members are charged with duties which bring them into more or less direct relation with public health authorities or county councils and their officers. They are school medical officers, tuberculosis officers, and venereal disease medical officers. Appointments as school medical officer are made by local education authorities, while appointments as tuberculosis officer and venereal disease officer are made by the county councils and the county borough councils.

The medical department of the Ministry of Health for England has been organized under the control of a chief medical officer, who has the status of an assistant secretary; it contains six sections, with a senior medical officer at the head of each. These sections are concerned with general health and epidemiology, maternity and child welfare, tuberculosis and venereal disease, the supervision of food supplies, and sanitary administration in relation to infectious disease. There is a separate section concerned with insurance practitioners. Lastly, there are medical officers employed in the Poor Law department, and several whose services are available for special purposes but who are not "established" officers. Medical officers and medical inspectors are also employed by the Ministry in Wales, in Scotland, and in Ireland. Appointments to these posts are not open to public competition; they are made by the Minister of Health in England and Wales and by the corresponding head of the department in Scotland and Ireland. They are civil service appointments, and come under the superannuation scheme of the service.

MEDICAL OFFICERS OF HEALTH.

The first appointments of medical officers of health were made for limited periods, the holder of the office having to risk re-election at the expiration of his term of office. This pernicious practice, so far as it applies to whole-time officers, will, owing to the persistent endeavours of the British Medical Association, in co-operation with some other bodies, cease to exist after April 1st, 1922, as regards medical officers of health appointed prior to May 1st, 1921; it is not in operation as regards those appointed after the latter date. The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health shall not be appointed for a limited period, and shall not be removed from his office except with the consent of the Minister of Health. This Act comes into operation on April 1st, 1922, but an order of the Minister of Health dated April 12th, 1921, makes a similar provision with respect to those officers appointed after May 1st, 1921.

A medical officer of health who does not devote his whole time to the duties of his office, and a portion of whose salary is obtained from Exchequer grants, may be appointed without limit of time, in which case he cannot be removed from office without the consent of the Minister of Health. If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal or the electing authority gives him three months' notice to resign his office, but the notice must take effect at the same period of the year as that at which the original term of appointment expired. Where the electing body pays the whole of the salary of a medical officer of health he may be dismissed from office without reference to the Minister of Health.

An increasing number of local authorities have established schemes for the superannuation of their officials, but there is no general scheme throughout the country. During the past twenty years the British Medical Association has on several occasions succeeded in getting introduced into Parliament a bill providing for the superannuation of medical officers of health, but the measure has always been opposed by the Government of the day, latterly on the ground that all municipal officers should be superannuated and that sectional legislation was undesirable. In this connexion it may be stated in passing that medical officers of health are the only State-paid (whole-time) medical officers who do not come under a superannuation scheme.

A medical officer of health of a county or of a district or combination of districts with a population of more than 50,000 persons must hold a diploma in public health. This diploma is now generally required from all applicants for whole-time appointments of medical officers of health and assistant medical officers of health, and very frequently in the case of school medical officers, tuberculosis officers, and venereal disease officers. A medical man who desires to enter the public health service as a career must as a first step obtain such a diploma.

THE SCHOOL MEDICAL SERVICE.

School medical officers are appointed by local education authorities under schemes of medical inspection of school children which must be approved by the Board of Education. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard the education of such children, and to inform their parents of its existence. But practically their duties vary considerably in different areas. This is because most approved schemes of inspection include systems of work which aim at facilitating the

task of parents in obtaining for their children the necessary treatment, at checking the results of the latter, and at keeping each defective child under skilled observation both at home and at school until it has passed altogether out of the education authority's hands. The general object of all schemes alike is to make the inspection imposed by law of benefit not merely to the individual child but to the community at large, by preventing conditions which lead to the existence of a large proportion of inefficient citizens among the adult population. In short, the work is so far related to that of a medical officer of health that in most areas the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole or part time assistants. Whole-time assistants are commonly paid salaries commencing at a minimum of £500 a year, the chief attraction of the posts being that they may lead on to appointment as medical officer of health of some large area where the combined salary of medical officer of health and school medical officer will represent a fair income. In view of this consideration, if for no other reason, it is desirable for a prospective whole-time school medical officer to obtain a diploma in public health. In some counties and county boroughs it is now the practice for the officer to undertake certain minor ameliorative work, notably prescription of glasses when necessary, the removal of adenoids, and treatment in connexion with certain diseases of the skin. The added interest thus given to the work appears to make for increased efficiency and also enhances the value of the post.

Tuberculosis Officers.

The prescribed duties of tuberculosis officers are to act as advisers to Insurance Committees in connexion with the operation of the sanatorium clauses of the National Insurance Act and to take charge of the work of the tuberculosis dispensary, which is the main unit of the Departmental Committee's scheme. A tuberculosis officer is a whole-time officer, who should have special training in tuberculosis work, and be of suitable age and attainments to command general confidence. At present the number of appointments is small, and the salary generally attached to them is in the neighbourhood of £500 a year with an occasional bonus addition. In many cases they are now appointed on the staff of the medical officer of health, so that the work of prevention and cure of tuberculosis may be made part of the general health work of the Municipal Council.

Venereal Disease Medical Officers.

Schemes for the diagnosis and treatment of venereal diseases are administered by county councils and county borough councils. A few of these authorities have appointed whole-time medical officers at a salary of £600 to £700 per annum. In some cases the officer is on the staff of the medical officer of health and in others he is an independent official. Specialized practical experience in the treatment of venereal disease is essential, and it is an advantage if such experience has been obtained in the navy or army. His duties usually include not only the diagnosis and treatment of cases of venereal disease at one or more central clinics, but also the instruction and supervision of the treatment by general practitioners attached to local clinics.

Sanitary Science.

Examinations in Sanitary Science are conducted by the State Medical Syndicate of the University of Cambridge. Two examinations are held each year—one in April and one in October. Any person possessing a registered qualification in medicine, surgery, and midwifery may be a candidate, provided he has satisfied certain demands laid down in the regulations. The examination consists of two parts, the first having reference to the general principles of sanitary science, the second to State medicine and the applications of pathology and sanitary science. Information respecting these examinations should be sought from Mr. J. E. Purvis, M.A., The Chemical Laboratory, Pembroke Street, Cambridge.

Diplomas in Public Health.

Most of the universities and licensing corporations now grant diplomas in public health to candidates who pass the examinations imposed by them. Since all such tests must conform to the requirements of the General Medical Council, there is considerable similarity in their nature, though they differ not a little in their reputed difficulty. All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice, for the regulations of the General Medical Council demand that the granting of a diploma in Sanitary Science, State Medicine, or Public Health shall be proof of the "possession of a distinctly high proficiency, scientific and practical, in all the branches of study which concern the public health." The tests, in short, are supposed to constitute an honour and not a mere pass examination. As regards the special tuition required, it is now easy to obtain this in practically every centre of medical education, and at almost every medical school of any importance. It is desirable to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of M.O.H.—has a considerable amount of the manipulative dexterity only to be acquired by ample work in a laboratory, he would not be likely to satisfy the examiners.

The regulations of the General Medical Council require that every candidate (subsequent to obtaining a registrable qualification in medicine and surgery) shall have passed through a stated curriculum in the subjects of sanitary science. This must last not less than nine calendar months, and include four months' study in a laboratory in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught, six months' practical study of the duties involved by public health administration, and attendance at least twice weekly for three months on the practice of a hospital for infectious diseases at which instruction is given in methods of administration. These rules do not apply to practitioners registered or entitled to be registered before January 1st, 1890, while that regarding six months' practical study of public health administration is waived in the case of a candidate who has himself been in charge of a sanitary district with a population of not less than 15,000 for a period of not less than three years. The study in question must be passed under the personal supervision of a medical officer possessing certain definite facilities for affording it, these being carefully described in the regulations. The period may be reduced to three months in the case of a candidate who has undergone a corresponding period of study in the public health department of a recognized medical school, or who has been resident medical officer at a hospital for infectious diseases with accommodation for 100 patients for not less than three months. The laboratory study must include at least 240 hours' work, not more than half being devoted to practical chemistry. The examinations imposed by the diploma-granting bodies must extend over not less than four days, one at least being devoted to practical work in the laboratory, and one to practical examination in, and reporting on, subjects within the duties of a medical officer of health, including those of a school medical officer.

The steps which examining bodies take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical. Every candidate, therefore, should, when he has settled what diploma or degree in State medicine he wishes to obtain, seek the schedule relating to it from the authority concerned. A certain number of the universities grant degrees in the subject as well as diplomas.

THE PUBLIC SERVICES.

NAVY, ARMY, AIR FORCE, AND INDIAN MEDICAL SERVICES.

THE Medical Departments of the Royal Navy, of the Army, and the Indian Government normally employed between them before the war some 3,000 medical men, and vacancies in the ranks of these services were filled by offering commissions for competition once or more each year. In the abnormal circumstances arising out of the war and the period immediately following it the usual regulations for recruiting the permanent medical staff of these services were, for the most part, in abeyance. Now that a return

has been made to peace establishments we publish somewhat fuller information than we have given in recent years for the guidance of those who think of applying for regular commissions in the Royal Air Force Medical Service, the Naval Medical Service, the Royal Army Medical Corps, and the Indian Medical Service. Further details should be sought from the respective medical departments.

ROYAL NAVAL MEDICAL SERVICE.

In 1919 new rates of pay were laid down for naval officers, including officers of the medical branch and officers of the newly created branch of dental surgeons. The new scales involved a substantial addition to the pay of all commissioned ranks in the several branches of the Royal Navy, though in certain special cases, notably that of senior Surgeon Commanders, far less than justice was done. The revised regulations for the entry of candidates for commissions in the Medical Department of the Royal Navy may be obtained on application to the Medical Director-General, the Admiralty, London, W.

The rules regarding the promotion of medical officers have been altered in various respects. Successful candidates at the entrance examinations (of which notice will be given in due course) will be appointed acting surgeon lieutenants and will be required to undergo such courses of instruction as the Admiralty may decide. At the end of these courses they will be examined, and if approved will be given commissions as surgeon lieutenants, the commission dating from the day of passing the entrance examination. Surgeon lieutenants will be eligible for promotion to surgeon lieutenant commander at the expiration of six years from the date of entry, provided they are recommended by the Medical Director-General, and have served at sea for three years. In exceptional cases special promotion may be made in recognition of distinguished service or conspicuous professional merit. Surgeon lieutenant commanders will be eligible for promotion to surgeon commander after six years' service in that rank under conditions laid down in the new regulations, provided they have passed the qualifying examination for this rank. Provision is made for accelerated promotion for those who obtain high marks at the qualifying examination. In exceptional cases special promotion to this rank also may be made. Promotions to surgeon captain and surgeon rear admiral will be made strictly by selection, and will be confined to officers who have proved themselves to be fitted both professionally and as administrators for these ranks.

The new rates of pay include provision for specialist allowances to junior medical officers who have specialized in the following professional subjects: anaesthetics, ophthalmology, ear and throat diseases, genito-urinary and venereal diseases, physical training, pathology, and bacteriology.

Rates of Pay.

The rates of full pay per diem are as follows:

	£	s.	d.
Surgeon Lieutenant:			
On entry	1	4	0
After 3 years	1	9	0
After 6 years becomes Surgeon Lieutenant Commander.			
Surgeon Lieutenant Commander:			
On promotion	1	15	0
After 3 years	1	17	0
After 6 years becomes Surgeon Commander.			
Surgeon Commander:			
On promotion	2	5	0
After 3 years	2	9	0
After 6 years	2	13	0
After 9 years	2	17	0
Surgeon Captain			
On promotion	3	5	0
After 3 years	3	10	0
After 6 years	3	15	0
After 9 years	4	0	0
Surgeon Rear Admiral	5	5	0

Retired Pay.

Promotion to Surgeon Captain and Surgeon Rear Admiral is by selection from among officers fitted professionally and administratively for these ranks. Surgeon Rear Admirals under the new regulations retire at the age of 60, with retired pay of from £790 to £1,010 per annum according to length of service. Surgeon Captains retire at 55, with maximum retired pay £900. Surgeon Commanders retire at 50, with maximum retired pay £600. Surgeon Lieutenant Commanders retire at 45, with maximum retired pay £450 per annum. The ages given are the ages of compulsory retirement.

Temporary Commissions.

The King in Council has recently approved a proposal of the Admiralty that they should be authorized to enter Surgeon Lieutenants for short periods of service in the Fleet, the number of junior medical officers being at present insufficient. The period of engagement will be three years, with the option of continuing for twelve months more if required. After the first six months a temporary Surgeon Lieutenant will, at the discretion of the Admiralty, be eligible for transfer to the permanent list of medical officers of the navy. The full pay will be 26s. 6d. a day, but no unemployed or half-pay is offered. Gratuities on discharge are provided for, and in case of wounds, injury, or death on duty there may be pensions or gratuities or compassionate allowances for officers or their dependants.

ARMY MEDICAL SERVICE.

Entrance by competitive examination into the Royal Army Medical Corps has not yet been reintroduced, the strength of the Regular Establishment being maintained by the appointment of officers serving on temporary commissions who are selected to fill vacancies as they occur. This source of supply of officers will shortly be coming to an end, when Entrance Examinations on the same lines as those laid down in the Regulations for 1912 will again be held.

The prospects of the newly qualified medical man taking up the army as a career have been much improved by changes that have come into force since the war. The rates of pay and pension are given in the subjoined tables, and it will be found that they compare favourably with those that obtained in 1914.

Pay and Allowances.

	At Home.		In India.
	Married. £ per annum.	Unmarried. £ per annum.	Rupees a Month.
Lieutenant	617	550	650
Captain	762	668	800
,, after 6 years' service	781	684	900
,, after 10 years' service	836	741	950
Major	909	847	1100
Major after 15 years' service	1000	939	1250
,, after 18 years' service	—	—	1400
Lieut.-Colonel	1183	1130	1550
,, ,, after 20 years' service ...	1228	1176	1650
,, ,, after 25 years' service ...	1274	1221	1850
Colonel	1502	1433	—
Major-General	2212	2139	—

At Home.—An officer under the rank of lieutenant-colonel holding an appointment as specialist receives 2s. 6d. or 5s. a day (according to subject or groups of subjects). An officer in charge of a hospital receives charge pay, the daily amounts being 50 beds, 2s. 6d.; 150, 5s.; 300, 7s. 6d.; 500, 10s. An officer in charge of a medical or surgical division of a general hospital with not less than 300 beds receives half these rates. Professors at the Royal Army Medical College receive £200, and assistant professors £80 a year, in addition to pay and allowances of their rank.

In India.—The specialist pay is 50 rupees a month; charge pay is from 60 rupees to 240 rupees a month, according to the size of hospital.

Retirement.

A lieutenant-general or major-general must retire on attaining the age of 60 years, a colonel at 57, and other officers at 55. A major superseded for promotion retires on the completion of twenty-five years' service, or, if he fails to qualify for promotion, on the completion of twenty years' service. A captain who fails to pass the examination for promotion to major on a second trial must retire at once with any gratuity for which he may be eligible, or, if not, on completing five years' service. A lieutenant who does not qualify for promotion within three and a half years is required to resign. A candidate who has been specially employed in consequence of a national emergency will be allowed to reckon such service towards retired pay

and gratuity. The maximum rates of retired pay are as follows:

Captain and subaltern	£300
Major	£450
Lieutenant-Colonel	£600
Colonel	£800
Major-General	£1,000
Lieutenant-General	£1,200

Voluntary retirement on retired pay is not allowed until after twenty years' service. Earlier retirement on gratuity is allowed as follows:

Major or captain:	Gratuity.
After 8½ years' commissioned service ...	£1,000
,, 3 years' service in the rank of major...	£1,800
,, 6 years' service in the rank of major...	£2,500

Seconded Service.

An officer may be permitted to accept employment in the Foreign or Colonial Offices; when so seconded he is not eligible for pay or allowances from army funds, but his service continues to reckon towards promotion, increase of pay, gratuity, and, under certain conditions, towards pension. Among the capacities in which R.A.M.C. officers may be employed are:

(1) The medical service of the Egyptian army.
(2) The sanitary service of the Egyptian Government.
(3) The medical services of the various foreign and colonial Governments.

Service on the West Coast of Africa.

Officers for service in West Africa are usually taken from a list of volunteers for such service. An officer at present receives, while actually serving in West Africa (which service may include ordinary leave not exceeding sixty-one days in a year, and any time spent at Madeira or the Canary Islands on sick leave), additional pay at the following daily rates: lieutenant-colonel 12s., major 9s., captain 7s. 6d., lieutenant 6s.

King's Honorary Physicians and Honorary Surgeons.

Six of the most meritorious officers of the Army Medical Service on the active list may be appointed honorary physicians to His Majesty the King, and six honorary surgeons may be similarly appointed. On appointment as an honorary physician or honorary surgeon an officer under the rank of colonel in the Army Medical Service may be promoted to the brevet rank of colonel. The appointment of honorary physician or honorary surgeon is relinquished on retirement. A lieutenant-colonel so appointed receives pay at the rate laid down for a colonel of the Army Medical service.

The professional work of the corps has received a great impetus through the newly established Directorates of Hygiene and Pathology. Specially selected and trained officers have now been appointed as assistant and deputy assistant directors of hygiene to all commands and garrisons at home and abroad. Schools of hygiene have been established where all branches of the service receive practical instruction in modern sanitary science as applied to life in barracks and camps. Junior officers appointed on probation will undergo a course of instruction in hygiene on entering the service, and will also attend an intensive course of tropical hygiene at the army school of hygiene before proceeding on their first tour of service abroad, where lectures and demonstrations are given on the methods of sanitation, including entomology, applicable to the various climates and countries.

The Directorate of Pathology offers many attractions to those officers who are desirous of taking up the scientific side of medicine. Officers who show aptitude in this direction are encouraged to continue their scientific studies during the whole course of their service. As junior officers the posts of clinical pathologists to hospitals at home and abroad are available, while, after their first tour of foreign service, they are given the opportunity of qualifying as specialists in bacteriology and pathology at the Royal Army Medical College; having so qualified they become eligible for the appointments of assistant or deputy assistant director of pathology, posts which carry with them specialist pay or temporary promotion.

Appointments to the staff of the directorate of hygiene and pathology at the War Office are open to officers who have served in these scientific branches—the senior posts carrying the rank of colonel, colonel-commandant or major-general as the case may be. All such staff appointments, either at the War Office or in commands at home, have a fixed tenure of three or four years should the exigencies of the service permit.

Arrangements are now being made to appoint consultants in both medicine and surgery, and the ranks of colonel and major-general will now be open to such officers. This is an important concession, and will encourage officers of outstanding ability in these subjects to continue to devote their attention to medicine and surgery in which previously there were no openings for officers above the seniority of lieutenant-colonel. The consultant in surgery has already been appointed, while that in medicine has yet to be selected.

The question of specialists has also undergone review and a great improvement in the method of training and selection has been effected. Captains undergo six months' course at the Royal Army Medical College for promotion to major in the subjects of hygiene and pathology, together with general medicine and surgery. Of those officers who pass the Combined Examination in these subjects the first 50 per cent. are now eligible to take out a further six months' specialist training, provided that they can prove to have had past experience in a particular subject and to have shown special aptitude for that subject. Results so far achieved by this system have, we are informed, been most encouraging. The training is undertaken by selected teachers of the various London general hospitals, as well as the army professors at the college.

It is recognized that, apart from purely professional work, it is most important that officers should receive administrative training, and the inclusion of officers of the Royal Army Medical Corps in the classes that undergo courses at the recently instituted School of Army Administration at Chisledon will be of great advantage to the Medical Service. Many appointments of an administrative character are open to officers who show zeal and capacity for this side of the army medical officer's duties.

ROYAL AIR FORCE MEDICAL SERVICE.

THE Royal Air Force Medical Service offers a career for medical men which should prove both attractive and interesting. The rates of pay and allowances are good, and a new field of scientific interest is opened up by the manifold problems which the circumstances of aviation produce. The physical and mental fitness for and reaction to the varied conditions under which the flying personnel perform their functions provide much scope for research.

As promotion to the higher ranks of the service is to be entirely by selection, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in scientific research, as well as for those who develop a talent for administration.

Commissions.

The establishment will consist partly of permanent and partly of short service officers.

Short service officers will be admitted by direct entry for a period of two years, which may be extended to four years at the discretion of the Air Council on recommendation of the Director of Medical Services. Those who are not selected for permanent commissions will pass into the Royal Air Force Medical Reserve at the expiration of their period of service on the active list, and will then receive the gratuity to which their service entitles them.

Short service officers who are approved for permanent commissions, but for whom there are not vacancies in the Royal Air Force Medical Service, may under certain conditions transfer to the Royal Army Medical Corps, counting their time served in the Royal Air Force towards increments of pay and retired pay in the Royal Army Medical Corps.

Officers who have been selected for permanent commissions will be granted leave for a period not exceeding nine months for post-graduate study in general medicine and surgery, tropical and preventive medicine, and other special subjects. Such leave will be granted during the first six years of permanent service, and during such leave officers will remain on full pay and allowances.

New entrants into the Royal Air Force Medical Service will be commissioned as Flying Officers (Medical), and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service. Officers selected for

permanent commissions will be promoted to the rank of Squadron Leader after ten years' total service. Accelerated promotion may be carried out, in a limited number of cases, of officers who show exceptional ability after the completion of eight years' service. Promotion to the rank of Wing Commander will be by selection at any period after sixteen years' total service, and to that of Group Captain by selection at any period after twenty-two years' service.

There will be no competitive examination on entry; candidates must be under twenty-eight years of age; be nominated by the Dean of a recognized medical school or teaching hospital, and will be interviewed personally by the Director of Medical Services, Royal Air Force, before acceptance. Each candidate must produce:

1. Birth certificate.
2. Medical registration certificate.
3. A declaration containing the following information:
   (*a*) Age and place of birth.
   (*b*) That he is of pure European descent and the son of a subject of the British Empire.
   (*c*) That he labours under no constitutional or mental disease or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate in peace or war.
   (All candidates will be required to pass a medical examination as to their physical fitness before acceptance, to ensure that they fulfil the standard laid down in this declaration.)
   (*d*) That he is ready to engage for general service at home or abroad as required.
   (*e*) The qualifications he is possessed of and what medical or other appointments he has held (if any).
   (*f*) That he is willing to fly whenever called upon to do so, and to qualify in such aviation tests as may be required.

If the applicant is in possession of a certificate of training in an Officers' Training Corps this should be submitted.

An applicant who at the time of application holds or is about to hold a resident appointment in a recognized civil hospital may be seconded for the period, not exceeding one year, during which he holds such appointment. Whilst seconded he will not receive pay from Air Council funds, but his seniority will count from the day on which he is seconded to the civil hospital.

Uniform and Equipment.

Medical officers will be required to provide themselves with the uniform of their rank, and with the distinguishing badges of the Royal Air Force Medical Service. They will be required to provide themselves with service dress and mess dress. The provision of full dress is entirely optional.

An outfit allowance of £50 will be granted to officers if they have had no previous commissioned service. If they have had previous commissioned service in the Royal Navy, the Army, or the Royal Marines, but not in the Royal Air Force, they will receive an outfit allowance of £25.

Rates of Pay.

The rates of pay in the Royal Air Force Medical Service are set out in the following tables:

Rank and Years of Service.	Rate per Diem. s. d.
Flying Officer:	
On joining	24 0
Flight Lieutenant:	
On promotion	26 0
After 2 years in the substantive rank	28 0
,, 4 years ,, ,,	30 0
Squadron Leader:	
On promotion	34 0
After 2 years in the substantive rank	36 0
,, 4 years ,, ,,	38 0
,, 6 years ,, ,,	42 0
Wing Commander:	
On promotion	46 0
After 2 years in the substantive rank	50 0
,, 4 years ,, ,,	52 0
,, 6 years ,, ,,	54 0
Group Captain:	
On promotion	60 0
After 2 years in the substantive rank	64 0
,, 4 years ,, ,,	68 0

Rates of Pay in India.

	Rs. per mensem.
Flying Officer	650
Flight Lieutenant	750
After 2 years as such	850
,, 4 years ,,	900
Squadron Leader	1,050
After 2 years as such	1,100
,, 4 years ,,	1,150
,, 6 years ,,	1,250
Principal Medical Officer	1,950

The scale of *Retired Pay* for Group Captains and lower ranks is given in the following table:

Age.	Service Counting for Retired Pay.	Rate of Retired Pay.	Addition for each Extra Year of Service.*	Reduction for each Deficient Year of Service.*
		£	£	£
55	24	790	22	15
54	24	765	22	15
53	23	742	22	15
52	23	720	22	15
51	22	697	22	15
50	22	675	15	15
49	21	637	15	15
48	21	600	15	15
47	20	562	15	15
46	20	525	15	15
45	19	487	15	15
44	19	450	15	15
43	18	412	15	15
42	18	375	15	15
41	17	337	15	15
40	17	300	15	15

* Limited to five years.

Group Captains retire at 55; maximum retired pay £800
Wing Commanders retire at 51; ,, ,, £600
Squadron Leaders retire at 48; ,, ,, £500

There will be a minimum qualifying period for retired pay of twenty years.

Gratuities.

Short service officers will receive gratuities at the rate of £100 for each of the first two completed years of service and at the rate of £150 for the third and fourth completed year. (If granted permanent commissions these gratuities will not be payable, but the period of service under the short service commission will count for retired pay.)

Medical officers holding permanent commissions may, at the discretion of the Air Council, be allowed to withdraw from the service after ten years' service with a gratuity of £1,250, or after sixteen years with a gratuity of £2,000 in lieu of retired pay.

Allowances.

The usual allowances will be payable to medical officers under the same conditions as to officers of other branches of the Royal Air Force.

INDIAN MEDICAL SERVICE.

For some years before the war the pay and conditions of service in the I.M.S. were unfavourable. The pay, furlough pay, and pensions were inadequate; leave was difficult to obtain; the status of administrative medical officers was unsatisfactory. The new terms offered by the Secretary of State for India were announced last year, and the Representative Body of the British Medical Association, finding that they satisfied the Association's demands, resolved unanimously to accept them.

The Indian Medical Service now again offers to a young doctor equipped with the proper qualifications opportunities of a great career. There is no reason why, with confidence restored, the great traditions of the I.M.S. should not be maintained or why it should not regain its former prestige, and attract to its ranks the best students of the medical schools who seek a career in the East.

Pay and Pensions.

A lieutenant on first arrival in India is paid Rs. 650 per mensem, as against Rs. 420 in former days. A captain, on completion of three years' service, is paid Rs. 800 per mensem, as compared with Rs. 550 in former days. A table of the scale of pay is given below. It will be seen that there is an incremental rate rising every three years to a maximum of Rs. 2,100, as against a maximum of Rs. 1,400 formerly. Senior officers of proved capacity are certain to be in receipt of command allowances of Rs. 240 or Rs. 180 in addition, while a certain number of captains and junior majors have the opportunity of drawing the lesser allowances of Rs. 120 or Rs. 90. A young medical man, therefore, on joining the I.M.S., should be able, from the day he first arrives in India, to live comfortably and reasonably on his pay. Pensions also have been improved.

War Service.

The Secretary of State for India has decided that any officer appointed after January 1st, 1917, by nomination to the Indian Medical Service during the present suspension of appointments by competitive examinations shall be allowed to count as service for promotion any service rendered by him during the war as a medical or combatant officer or in a position usually filled by an officer.

Leave and Study Leave.

The Secretary of State undertakes to increase the reserve to 25 per cent. for furlough and to maintain the 2½ per cent. reserve for study leave in addition as soon as the strength of the service permits. That is to say, as soon as recruits are forthcoming, the furlough and study leave reserves come into being automatically. The above percentages are considered ample to guarantee regular and frequent periods of furlough and to ensure the study leave permitted under the regulations.

The rules governing study leave provide for a maximum of twelve months during an officer's service. It is granted to the extent of one month for each year's active service. Any approved course of study in any subject or subjects in any country can be taken. The time counts as duty and is in addition to furlough. The pay is furlough pay with an extra 12s. per day as lodging allowance. Accelerated promotion of six months to the rank of Major is granted under the rules for study leave.

Passages and Furlough.

The cost of passages for an officer and his family to and from England has always been a heavy tax on the resources of individuals, and more especially for those who because of ill health have been compelled to return to England to recuperate at short intervals. The Secretary of State has now decided that officers of the Indian Medical Service in military employ who are granted sick leave to the United Kingdom shall be entitled to free return passages for themselves and their families.

In the past the difficulty of obtaining regular and necessary leave home has been a source of constant and legitimate grievance in the I.M.S. The service has been understaffed. The demands made on the I.M.S. owing to the war and its consequences have exaggerated the former difficulties. The position can only be remedied by increasing the normal cadre and by increasing the furlough reserve. The Secretary of State has given his undertaking to do this whenever it is made practicable by the requisite number of recruits joining the service.

Military and Civil Employ.

An officer of the Indian Medical Service spends his first four to eight years entirely in military service. His duties are with Indian troops and he is posted to an Indian military station hospital. He can if he so wishes remain in military duty all his service; on the other hand, if he is desirous of civil employ he has a very varied field open to him. The majority of those who join the civil side become civil surgeons in charge of districts and the headquarter district hospital. The work is often heavy and always interesting. Private practice is negligible in the smaller districts, and only becomes attractive as officers in virtue of capacity and seniority are posted to the larger towns.

There are professorial appointments at the medical colleges, research appointments in the bacteriological department, hygiene and public health appointments in the sanitary department, and forensic medicine and toxicology appointments in the chemical examiners' department; such appointments carry with them extra departmental allowances. I.M.S. officers in civil employ form the war reserve for the Indian army; they are promoted in the military grades on a time scale comparable with that of officers who remain in military service.

The Indian Reform Act.

There remains the question whether and to what extent the interests of the officers in the I.M.S. will be affected under the new Indian Reform Act which has now come into operation. The essential feature of the Act is the greater participation of Indians in the government of the country. Consequently the Indian Medical Service will absorb in its cadre an increasing proportion of Indian medical men. In the pre-war days of competitive examination the proportion of successful Indian candidates was from 7 to 12 per cent.; in the two years preceding the war it varied from 12 to 25 per cent. At present admission is by nomination only. Recently in nominating selected candidates with approved and high qualifications, and with war service, for permanent commissions the practice has been to admit one Indian candidate to two European candidates.

Scale of Pay: Indian Medical Service.

Rank.	Year of Service.	Basic Pay and Overseas Allowances.
Lieutenant...	1	Rs. 650 per mensem.
,, ...	2	,, 650 ,,
,, ...	3	,, 650 ,,
Captain ...	4	,, 800 ,,
,, ...	5	,, 800 ,,
,, ...	6	,, 800 ,,
,, ...	7	,, 950 ,,
,, ...	8	,, 950 ,,
,, ...	9	,, 950 ,,
,, ...	10	,, 1,050 ,,
,, ...	11	,, 1,050 ,,
,, ...	12	,, 1,050 ,,
Major ...	13	,, 1,200 ,,
,, ...	14	,, 1,200 ,,
,, ...	15	,, 1,200 ,,
,, ...	16	,, 1,350 ,,
,, ...	17	,, 1,350 ,,
,, ...	18	,, 1,350 ,,
,, ...	19	,, 1,500 ,,
,, ...	20	,, 1,500 ,,
Lieut.-Colonel ...	21	,, 1,750 ,,
,, ...	22	,, 1,750 ,,
,, ...	23	,, 1,750 ,,
,, ...	24	,, 1,850 ,,
,, ...	25	,, 1,850 ,,
,,	over 25 ...	,, 1,950 ,,
,,	on selected list ...	,, 2,100 ,,

Charge allowances and second in command allowances for station hospitals in addition to above rates:

(a) Charge Allowances.

First class hospitals ...	Rs. 240 per mensem.
Second class ,, ...	,, 180 ,,
Third class ,, ...	,, 120 ,,
Fourth class ,, ...	Nil.

(b) Second in Command Allowances.

First class hospitals ...	Rs. 120
Second class ,, ...	,, 90

All existing general allowances paid to holders of professional and bacteriological appointments and certain other special classes of appointments on the civil side to be maintained.

Pension Rates.

After 17 years' service	£400	After 23 years' service	£620
,, 18 ,,	430	,, 24 ,,	660
,, 19 ,,	460	,, 25 ,,	700
,, 20 ,,	500	,, 26 ,,	750
,, 21 ,,	540	,, 27 ,,	800
,, 22 ,,	580		

Additional Pensions for Administrative Officers.

Colonel after 2 years' active service ...	£125
,, ,, 4 years' ,, ,, ...	250
Major-General after 1½ years' active service ...	300
,, ,, 3 years' ,, ...	350

For full details and particulars intending candidates should apply to The Secretary, Military Department, India Office, Whitehall, London, S.W.1.

PRISON MEDICAL SERVICE.

CANDIDATES for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.1.

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

The pay of the whole-time prison medical staff is: Medical officer Class II, £300, rising by annual increments of £15 to £500; medical officer Class I, £550, rising by annual increments of £20 to £700. Unfurnished quarters are provided, or an allowance in lieu is made. The Civil Service bonus is paid on the salary. There are 15 medical officers Class II, 10 medical officers Class I, and 33 part-time medical officers.

The number of vacancies is never large, and promotion is slow. Although there has recently been some improvement in the scale of pay, the remuneration both of whole-time and part-time prison medical officers is unsatisfactory.

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES.

MEDICAL Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are always admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical matters as an independent State. The result has been that reciprocity of practice has been established between this country and all the Provinces of Canada except British Columbia, where certain obstacles still remain to be overcome. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register.

Italy, Japan, Egypt, and (within certain limitations) the Principality of Monaco are the only foreign States which accord a right to practise in virtue of British degrees and diplomas, though the authorities of Holland and Greece sometimes exempt British practitioners from portions of the examinations imposed on ordinary candidates for registration. In all other Continental countries a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. The same observation applies to all foreign States in the South American Continent. Each of the United States of North America has its own laws and regulations governing medical practice; some of them admit any holder of a degree or diploma to their Register, but the majority require a candidate for registration to submit to an examination.

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practise abroad can be obtained from the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, price 2s. 9d. post free. Practitioners who think of going abroad to practise will find there much useful information, including the name of the official in each country to whom requests for further particulars should be addressed. The new edition was published at the beginning of this year.

MEDICAL APPOINTMENTS UNDER THE COLONIAL OFFICE.

MEDICAL appointments in certain Colonies, Dependencies, and Protectorates are made by the Secretary of State for the Colonies, and the various colonial medical services, of which the largest is the West African Medical Staff, together include a considerable number of practitioners. But there is at present no unified Colonial Medical Service as a distinct branch of the public medical services of the Empire, with a status and organization such as that of the Indian Medical Service. Candidates, therefore, have to apply for medical appointments in a special colony or group of colonies.

The Colonial Office is at present organized in geographical departments, each dealing with the affairs of one or more colonies or groups, and the Departmental Committee which reported a year ago recommended that until the time is ripe for the formation of a unified service the Colonial Medical Service should be organized departmentally, and that candidates should apply for admission to the service in one or more of these departments. The Committee recommended that in future one Malayan Medical Service should be recognized on first appointment, and that there should be one roster for promotion, officers being transferred and posted to and from the various administrations in this group; also that the medical staffs of the East African administrations should be assimilated, with conditions of service, pay, pension, and gratuity parallel to those in the West African Medical Staff. The latter recommendation would facilitate the ultimate combination of the two African services into one medical staff for British Tropical Africa. Another important recommendation of the Committee was that a Colonial Medical Service List should be kept, giving full information as to the conditions of service under the Colonial Government, and the names, qualifications, and service of the officers in each unit of the service, and of locally appointed officers. The need for increased pay was fully recognized by the Committee. A summary of the report appeared in the BRITISH MEDICAL JOURNAL of September 18th, 1920, p. 448. A number of other reforms were urged upon the Secretary of State for the Colonies, including the need for increased pay, the encouragement of research work, and the holding of competitive or qualifying examinations for admission to the Service.

The Dominions Committee of the British Medical Association has had the whole matter under close consideration for many months past, and evidence was given before the Departmental Committee by representatives of the Association. Much correspondence has passed also between the Association and the Colonial Office; this has been reproduced in the SUPPLEMENT. The latest correspondence appeared in the SUPPLEMENT of August 20th, 1921. From this it will be seen that the Association has been unflagging in its efforts to secure improvements in the status, pay, and prospects of the medical appointments under the Colonial Office, but that the position is still unsatisfactory.

Before the war there was a certain amount of discontent with the conditions of service in many of the appointments under the Colonial Office. During the war matters came to a head, mainly on account of the increased cost of living. Although in certain cases temporary relief was given, there still remains a great deal of dissatisfaction, more especially in the East African Protectorate. While the pay for joining officers is now quite good, the future prospects are poor. Again the African services are much understaffed, and medical facilities, such as hospital accommodation and equipment, are in many respects inadequate. As has been indicated above, the proposed remedy for this unsatisfactory state of affairs is the formation of a unified medical service on the lines of the Indian Medical Service. This proposal naturally found favour with the Dominions Committee of the British Medical Association, and was regarded by the Departmental Committee as an ideal to be worked for, but one whose full attainment was not possible at present.

The Dominions Committee is still endeavouring to obtain from the Colonial Office better conditions for all the Colonial Medical Services. Until this has been accomplished prospective candidates should consider whether they would not be well advised to look elsewhere for a career. Information in regard to the conditions and rates of pay in the various appointments at the present time is supplied in pamphlets to be obtained on application, by letter, to the Assistant Private Secretary (Appointments), Colonial Office, Downing-street, S.W.1.

Certain medical appointments are made by the Egyptian Department of Public Health. They fall into two main categories:—(1) temporary inspectors on two years' contract at £E600 a year, rising to £E720 a year, with certain allowances; (2) divisional inspectors, beginning at £E480 a year, and rising to £E600 a year, with pension. Candidates should be under 30, and unmarried.

Information with regard to medical appointments under the self-governing Dominions may be obtained from the High Commissioners or Agents-General in London for Canada, Australia, New Zealand, the Union of South Africa, and Newfoundland.

Apart from Government appointments, a large number of men find employment as medical officers of mining companies and other commercial undertakings in various parts of the tropics. Much caution should be exercised in accepting these posts.

MEDICAL MISSIONARIES.

To medical men suitably endowed the mission field offers opportunities for interesting work. Just before the war over 450 medical practitioners holding British degrees or diplomas were employed in different parts of the world by missionary societies, and the latter seem to stand in constant need of men and women to fill vacancies as they occur, and also to enable them to take

advantage of fresh openings. Since the conclusion of the war there has been a large number of such vacancies, as most of the mission hospitals are working with depleted staffs. Further, the development of native medical schools as training institutions in connexion with some of the larger mission hospitals affords excellent scope for most useful work to medical men who are qualified to teach. It is not usually expected or desired that a medical missionary should take a position such as would otherwise be occupied by an ordained clergyman or minister. But it is essential that he should be prepared to take his share of definite missionary work in any hospital in which he may be placed. As for scientific and other qualifications for the work, a medical missionary, in addition to being physically capable of sustaining what may prove to be a trying life, should be a thoroughly well trained physician and surgeon. It is very desirable that he should have held a resident appointment at a general hospital and have a good knowledge more particularly of practical surgery, tropical medicine, and the treatment of eye diseases. Societies from whom useful information can be obtained are the London Medical Missionary Association, 49, Highbury New Park, N.5; the Edinburgh Medical Missionary Association, 56, George Square, Edinburgh; the Church Missionary Society (Medical Mission Department), Salisbury Square, London, E.C.4; the Society for Promoting Christian Knowledge, Northumberland Avenue, W.C.2; and the Medical Missions Department of the Society for the Propagation of the Gospel in Foreign Parts, 15, Tufton Street, Westminster, S.W.1.

Dental Surgery.

THE profession of dentistry in this country is regulated by enactments very closely similar to those relating to the practice of medicine—that is to say, there is no direct prohibition of the act of practice, and the Dentists Act gives the same degree of protection to legally qualified and registered dentists as is accorded to registered medical practitioners, namely, the reservation of the use of certain titles. The Dentists Act, 1878, provided (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20; and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—and these did not operate to the same extent in the case of dentistry; hence, unqualified practice has been far more prevalent in dentistry than in medicine, and this increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

This unsatisfactory position has now been remedied by the passing into law of the Dentists Act, 1921; its provisions are based largely on the recommendations of a Departmental Committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." After July 28th, 1922, or at the latest within two years of that date, no person may practise or hold himself out whether directly or by implication as practising or as being prepared to practise dentistry unless he is on the *Dentists' Register* provided for by the Dentists Act, 1878. The practice of dentistry is defined as including "the performance of any such operation and the giving of any such treatment, advice, or attendance as is usually performed or given by dentists" and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth." The maximum penalty incurred by an unregistered dentist is £100. There are, however, certain important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists' Register* and a registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anaesthetic; further, any person may carry out minor dental work in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

There are certain persons other than those qualified by examination entitled to be registered under the new Act. They must be of good personal character and 23 years of age before July 28th, 1921 (the commencement of the Act), and they must have been engaged for any five of the seven years preceding that date as their principal means of livelihood in the practice of dentistry in the British Islands, or have been admitted to membership of the Incorporated Dental Society not less than one year before the commencement of the Act. The passing of an examination within two years of the commencement of the Act will be considered as equivalent to practising for five years, and a registered pharmaceutical chemist or chemist and druggist who immediately before the commencement of the Act had a substantial practice as a dentist, including all dental operations, will also be treated as though he had practised for five years. A dental mechanic who for the five years has been carrying on his work as such may be registered provided within ten years of the commencement of the Act he passes a prescribed examination.

Dentistry may be carried on by a corporate body provided the majority of the directors and all the operating staff are registered dentists, and that no other business than dentistry or only some business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence.

A Dental Board is to be established for the purpose of administering the new Act, and it will hold office for three years. The Privy Council will appoint the chairman and two members, and the latter are to be unregistered dentists. The General Medical Council will appoint three members who must be members of the Branch Council for England, Scotland and Ireland respectively. Three persons who are neither medical practitioners nor dentists will represent England, Scotland and Ireland, and four registered and qualified dentists will be appointed, two by the Minister of Health, one by the Scottish Board of Health and one by the Lord Lieutenant of Ireland. At the end of three years four members of the Board will be elected by qualified dentists practising in the three countries and two by registered dentists who are not qualified.

On the establishment of the Dental Board certain powers and duties of the General Medical Council will be transferred to it, including the duty of erasing from the *Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* will be made by the Board, which will report to the General Medical Council, the order directing the erasure being made as at present by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The first registrar will be appointed by the General Medical Council, and he will hold office for three years: subsequent appointments will be made by the Board. The administrative expenses of the Board are to be defrayed from the fees received on registration, but any surplus may be allocated to purposes connected with dental education and research or to any public purpose connected with dentistry.

The preliminary examination in Arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects; and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter no

undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the commencement of professional education, and it is required by some of the licensing bodies, all of whom insist upon a curriculum covering four academic years. Qualifying licences are granted by the Royal Colleges of Surgeons of England and of Edinburgh and of Ireland; by the Royal Faculty of Physicians and Surgeons, Glasgow; and by certain of the universities in the United Kingdom.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square; the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street; Guy's Hospital; and the London Hospital. In the provinces there are the Leeds University School of Dentistry; the Liverpool University School of Dental Surgery; the dental departments of the Universities of Manchester, Sheffield, and Birmingham; and the Newcastle-on-Tyne Dental Hospital and School. In Scotland there are the Incorporated Edinburgh Dental Hospital and School; and the Incorporated Glasgow Dental Hospital. In Dublin there is the Incorporated Dental Hospital of Ireland, and there is a department of dentistry in Queen's University, Belfast.

There are considerable variations in the order in which the different licensing bodies require the various subjects of the curriculum to be taken up, and every prospective dental student should study not only the regulations of the General Medical Council but also those of the body whose licence he hopes to obtain. This is the more important as in the case of some licensing bodies changes in the curriculum, with the view of making it more closely adapted to the needs of the practising dentist, have either already been made or are in contemplation.

THE EDUCATION OF CHILDREN.

ASSISTANCE FOR TERRITORIAL AND TEMPORARY OFFICERS. DURING the past five years the Committee of the War Emergency Fund has distributed some £18,000 in grants to assist Territorial and temporary medical officers, R.A.M.C., on their return to practice. The need for this assistance has practically ceased, and the Committee is now devoting attention to giving grants for the education of children. It is already paying the fees of twenty-seven sons and daughters of medical men who have held commissions; some of the boys are at Epsom, others at other schools, one son is at a medical school, and one daughter at a training college. The Committee would be glad to help those who were prosperous in practice before the war, and have found that, after three or four years' absence, they have not yet been able to re-establish their position, and find themselves unable to give their children the education they would previously have been able to provide for them. In suitable cases the Committee would be prepared to make grants to assist in the education at the medical schools or the universities.

The War Emergency Fund does not make grants to meet difficulties due simply to the increased cost of living, but it has proved of great value to the profession by giving help to officers whose income from practice has been diminished owing to their absence from home while on service. The Fund has in donations received £32,345 3s. 6d.; this amount was increased by interest on investments and deposit to £35,224 3s. Altogether 222 applications have been received, and grants amounting to £17,918 17s. 5d. have been made to 180 persons. The total working expenses of the Fund have amounted to £1,836. The Fund now holds £16,000 in National War Bonds. Communications should be addressed to the Honorary Secretary, 11, Chandos Street, London, W.1.

SUPERANNUATION FOR MEDICAL OFFICERS OF HEALTH.

THE Public Health Committee of the Association is desirous of obtaining particulars of those local authorities who have in force superannuation schemes for their officials, and would be grateful to medical officers of health and others who know of such schemes if they would communicate with the Medical Secretary on the subject at the earliest date.

The British Medical Association:

Its Aims, Objects, and Constitution.

THE BRITISH MEDICAL ASSOCIATION, founded in 1832, was established to promote the medical and allied sciences and to maintain the honour and interests of the medical profession. It holds periodical meetings for the discussion of all questions of interest to members of the medical profession, it publishes the *British Medical Journal*, and it has instituted lectures and scholarships, and makes grants for the promotion of the medical and allied sciences by research.

Its constitution is founded on territorial Divisions, formed of the members resident in the area. The Divisions number 270. For certain purposes Divisions are combined into Branches. The members of a Division elect a member or members of the Representative Body.

The conduct of the affairs of the Association and the determination of its policy is committed to the Representative Body, which meets annually or more often, as it may determine.

The Council is the Executive of the Association. It is elected on a composite franchise, partly by the Divisions and Branches, partly by the Representative Body, and includes also representatives of the Navy, Army, Air Force, and Indian Medical Services elected by the Representative Body. The Council and Representative Body are assisted by Standing Committees, among which may be mentioned the Science, Medico-Political, Hospitals, Insurance Acts, Public Health, and Naval and Military Committees. There are Committees also for the Dominions, Scotland, and Ireland. There are Federal Committees for Australia and South Africa.

A member of the British Medical Association has the right among other things—

(*a*) To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.

(*b*) To take part by personal vote, or (at the choice of the Division) by voting paper, in the election of the representative of his Division to the Representative Body which determines the policy of the Association.

(*c*) To receive the *British Medical Journal*, which is published weekly, and is the most comprehensive medical periodical published in the British Empire, giving a complete conspectus of progress in clinical, scientific and medico-political affairs.

(*d*) To receive the help and and advice of the central officials in any professional difficulty.

(*e*) To the free use of the lending and consultation libraries.

The subscription to the British Medical Association is 3 guineas a year for members resident in the United Kingdom. A member who joins within two years of the date of his registration as a medical practitioner pays 1½ guineas a year until he has been registered four years. Members joining after June 30th pay half the subscription for that year.

All duly qualified British medical practitioners are eligible for election as members of the British Medical Association. Full particulars can be obtained on application to the Medical Secretary, British Medical Association Building, 429, Strand, London, W.C.2: the Scottish Medical Secretary, 16, Rutland Square, Edinburgh; or the Irish Medical Secretary, 16, South Frederick Street, Dublin.

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EIGHTY-NINTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF SURGERY.

Professor J. RUTHERFORD MORISON, D.C.L., LL.D., F.R.C.S., President.

DISCUSSION ON ACUTE PLEURAL EMPYEMA.

OPENING PAPER
BY

HENRY WADE, C.M.G., D.S.O., M.D., F.R.C.S.ED.,
Assistant Surgeon, Royal Infirmary, Edinburgh; Lecturer in Clinical Surgery, University of Edinburgh.

THE incidence of an acute suppurative process within the closed pleural cavity is of so frequent occurrence that all of us may claim to have had a wide personal experience of treating it, so much so that I fear with most of us our practice has become standardized, and we have come to believe that with reference to it there is nothing more to be said. When, however, you have come to believe that there is nothing more to be said on any surgical subject, my advice is to come to Newcastle, consult its surgeons and hear especially what Professor Rutherford Morison has to tell you. As one who was for many months the privileged guest of the surgeons of Newcastle I can assure you that you will leave with the conviction that you have still a great deal to learn, and the atmosphere of personal self-satisfaction will have been replaced by one of keen critical observation with a view to improving your surgical judgement and technique. I for one, therefore, am not surprised that this common ailment has been put down for discussion here, and certainly I would be very much astonished if we did not all benefit very much by it.

In opening this discussion I purpose confining myself to those cases where suppuration within the closed pleural cavity has to be dealt with. We learned during the war certain lessons of value in the treatment of empyema following gunshot wounds of the chest. Fortunately, however, this type of injury is unknown to us in civil practice, and therefore it need not be further obtruded in our present discussion, except to apply those lessons we were taught.

I have formed the opinion that I might serve your interests best if, instead of endeavouring to provide you with any statistical analysis of one's own cases, or a critical review of the points of differential diagnosis or exact method of treatment, I rather deal with the subject from another standpoint and consider with you certain aspects of the surgical pathology of this disease and bring before your notice certain points in the comparative surgical pathology of suppuration within the pleural cavity.

In common with all infective processes wherever met with, two factors are essential for the development of a pleural empyema—(1) a living seed must be implanted in (2) a suitable soil. The seeds of infection that are most commonly met with are, of course, the pneumococcus, streptococcus, staphylococcus, and *Bacillus coli communis*. These reach the pleural surface borne in the blood stream, or carried in the lymph stream, or by direct extension from a septic focus in the lung, or through the eroded diaphragm or parietal pleura.

With the common paths of infection we are all familiar, but there is one channel which I am sure is frequently the portal of entrance, and that is through the diaphragm by a lymphatic spread from some primary source of infection within the peritoneal cavity. Any pathologist who has performed many *post-mortem* examinations in cases of acute infective abdominal disease must have been impressed with the remarkable frequency with which in these the upper surface of the diaphragm was injected and inflamed and the neighbouring pleural cavity the site of the earliest stage of infection. We all realize also how the stormy convalescence of a patient recovering from an abdominal suppurative process is so frequently interrupted by the development of a secondary pleural suppuration.

In considering the surgical pathology of a purulent pleural effusion it is, of course, important to realize that in many cases, if untreated, a natural spontaneous cure would result, the different stages and varieties of which we have all observed in the course of our surgical work. This natural cure is brought about by the usual process of localizing the infection by the inflammatory adhesions that surround it. This is followed by the process of dissection, and the abscess comes to point between the ribs and opens on the surface to discharge its contents, or not infrequently it may rupture into an air passage and evacuate its contents—a proceeding that may be followed by an astonishingly rapid and complete cure, so much so that I remember as a student attending a meeting of medical men in the south of Scotland when a certain fine old doctor spoke so highly of this that he seriously advocated this form of natural cure. Some of us, of course, have seen the dissecting empyema which has eroded the diaphragm and come to point on the loin, or even one where it has reached the thigh before it came to the surface.

A natural cure is, of course, possible even without the content of the abscess cavity being evacuated, and this may take place by a process of natural sterilization of the purulent fluid, its inspissation and calcification leading to the formation of a subcostal pleural chest-plate, which, at a subsequent operation, we may find lying beneath the ribs, turning the edge of our knife and almost defying our further passage inwards. With this process of natural cure we are familiar in every known human disease, with the exception of malignant tumours, and even here I am not prepared to say that a spontaneous cure does not sometimes take place.

The justification for our operative treatment resides in the mortality that attends Nature's surgery and the permanent local damage to which it gives rise in its course. From the unevacuated pleural pus virulent poisons are absorbed which produce a profound toxaemia. The fluid exercises a baneful pressure on the lungs and heart, which, if unrelieved, may prove fatal, and where this does not take place a collapsed lung has its stroma inflamed, and an interstitial pneumonia results, producing a cirrhotic lung.

The operative treatment is essentially that of an acute abscess—that is, to evacuate the pus. This is a simple but not always a safe or satisfactory procedure, and to-day I trust we will hear much as to the best technique to employ. The dangers that attend it, as they appeal to me, are first of all those of the operating table, secondly, those of the surgical ward, and thirdly, those of the convalescent home—the first being essentially an anaesthetic risk, the second a dressing risk, and the third the failure of the lung to expand and to rise to the chest wall.

To obviate the first most employ, wherever practicable, a local anaesthetic. Where, however, the age of the patient or his circumstances do not permit of this and a general anaesthetic has to be used, it is my practice to make this the one operation at which the director of the operating theatre, whose commands must be obeyed, is the anaesthetist.

The prevention of a mixed infection arising after the operation, in my opinion, can be best assured where the method of drainage employed is one where the pus is evacuated through a long tube into a vessel containing an antiseptic such as 1 in 40 carbolic.

To promote expansion of the lung it is my belief that the sooner the patient is out of the surgical ward to the convalescent home the better. To bring it to the costal pleura some of us employ the method of lung exercises where water is blown from bottle to bottle. Personally, I am a strong believer in getting the patient up and out into the open air.

As I have already said, many of us on reviewing our cases do not feel absolutely satisfied with our present results, and we are here to seek for better, and we expect to get many suggestions how to obtain these. It appears to me that in our search for them certain valuable lessons are to be learned from comparing the pathology of suppuration within the pleural cavity, the abdominal cavity, and such a joint cavity as the knee-joint, and this aspect of the question I propose now to deal with.

Many—probably most of us here—have witnessed a gradual evolution of the treatment of acute abdominal suppuration, until, at the present day, a stage has been reached which, although capable of further improvement, is in the main most satisfactory. We can remember when,

purulent fluid having been evacuated from the peritoneal cavity, the peritoneum was disinfected with various chemical agents. These proving more harmful than beneficial were discarded, and were replaced by washing out the cavity with an abundant stream of saline solution.

The third stage was where this form of treatment was in its turn replaced by evacuating the purulent accumulation and a process of mechanical cleansing of the cavity and inflamed bowel and the introduction of multiple drainage tubes into the various peritoneal recesses employed. This period was also that when multiple openings were not infrequently made in the dilated and paralysed small intestine with a view to draining off its toxic content.

The present stage may be said to be one of evacuation of the purulent accumulation, closure of the original wound of entrance, with or without the making of a suprapubic stab drain, the most ideal course being to determine the necessity or otherwise of this latter proceeding by examining at the time a film made from the purulent fluid withdrawn; according to the nature and variety of the cells present and the abundance and situation of the organisms the decision for or against complete closure is arrived at.

This satisfactory surgical technique, which has been accompanied by so marked an improvement in the results obtained, has been the result of the joint efforts of the clinical surgeon, the surgical pathologist, and the general practitioner working in cordial conjunction towards a common object.

The clinical surgeon revealed the common portals of entrance of infection—the appendix, the perforated gastric or duodenal ulcer, and the pus tube. He demonstrated how the only rational treatment was to seek at once for this and deal with it. This he taught the general practitioner, and the penalties of delay were graphically pictured by Murphy of Chicago, who preached the doctrine that there was "no surgical treatment for acute suppurative peritonitis."

The surgical pathologist taught us the cause of death in acute suppurative peritonitis, which was never the passage of organisms into the circulation, but always the passage of their poisons only, the streptococcus liberating its endotoxin in thirty-six hours, the *Bacillus coli communis* in forty-eight. The virulence of this poison he demonstrated, and how the natural protective barrier to absorption was the lymph exudate was first shown by Dudgeon and Sargent. To them we owe the recognition of the wisdom of not destroying this barrier by washing it away or by mechanical measures for cleansing the peritoneal cavity. We realized then that instead of washing organisms out of the body we were washing virulent poisons into the system.

To Beattie and others we owe our knowledge of the cytology and bacteriology of a healing peritonitis. They taught us that thick creamy pus may be a sterile fluid, and how a slightly turbid watery discharge may be virtually an emulsion of virulent free germs. They taught us to welcome with joy the appearance of the large mononuclear phagocyte—especially when it was present in abundance—and an active cellular phagocyte. With a microscope in the operating theatre or at the bedside we can thus now determine with an exact accuracy the prognosis of the case and direct the treatment accordingly.

The use of the suprapubic drain, the Fowler position, the value of the intraperitoneal instillation of oxygen, are thus scientifically determined. The rôle of the omentum, the antibacterial properties of the serous exudate, is understood. When to drain and when not to drain, when to remove a drain and when to reinsert it, we clearly realize.

The surgical pathology of suppuration within the pleural cavity is essentially similar. Unfortunately the common portals of entrance of infection are not so suddenly and dramatically revealed, so that they can be dealt with, and the dissemination of infection thereby prevented; but this in its turn will come. In the meantime I would ask you what physician or surgeon has done for the pleural cavity what Dudgeon, Sargent, and Beattie did for the peritoneal cavity? Can the physician tell us more from the study of the fluid drawn off by the aspirating needle than the nature and abundance of the infecting germ? Does he possess cytological data on which he can base an accurate prognosis?

In one case I saw this carried out with success. The story will interest you. As part of my early training to qualify as a surgeon I was for two years one of the pathologists to the Royal Infirmary in Edinburgh. One day there came to the department a certain physician grieved for the fate of a friend from whose pleural cavity he had drawn off a fluid richly laden with large epithelial-like cells, which he could only account for on the assumption of the presence of a carcinoma of the pleura. Beattie was present at the time when the slide was examined, and he was able to reassure him that, contrary to this, the outlook in his friend's case was undoubtedly favourable, as it was a fluid richly laden with the mononucleated cells of the inflammatory exudate from a healing pleurisy, a prognosis borne out by the patient's rapid recovery and the active life as a medical man he has since then led.

I have frequently heard the practice of washing out the pleural cavity condemned on account of its risk on physical grounds: but what of its influence on the lymph's barrier against the spread of infection? To what extent is the examination of the fluid withdrawn used as a guide as to when to drain and when not to drain, and when to remove a drain that has been inserted?

We will now consider the surgical pathology of acute suppurative arthritis of the knee-joint, our knowledge of which has been much increased by the opportunity the war afforded us of studying those cases when it followed penetrating wounds of the joints. When you have reviewed the course of treatment such injuries received during the progress of the war you will agree with me, I am sure, that it followed in its broad outline the course of evolution along which the treatment of acute abdominal suppuration had progressed.

I speak as one who gained his knowledge of this subject in the practical school of bitter personal experience and observation. For three years I was consulting surgeon to the Egyptian Expeditionary Force, and during this period I can confidently claim to have examined the majority of the cases of penetrating wounds of the knee-joint that occurred with the troops of Allenby's army and the wounded prisoners they brought in. At first the effect on one was most depressing, especially when a weekly visit was paid to one of the general hospitals. The sequence of events was so disappointingly uniform.

At one's first visit one was shown by a new, keen and enthusiastic young surgeon a case of early suppurative arthritis of the knee-joint in a young soldier. It appeared to have caused no profound impairment of his general health and to be producing no intense pain. The patient was anxious that at all cost an effort should be made to save his limb, and with an unshaken faith in the most modern method of treatment, the young surgeon was confident of obtaining a successful result. If it was at the period when continuous irrigation by normal or hypertonic saline was being widely employed, one found he had cunningly devised an arrangement whereby a constant gentle stream of the fluid flowed through the joint. At the time all was well, and, reluctant to damp his keenness, particularly as there was nothing better to offer him, one left him hoping that one's unexpressed pessimism would prove unjustified.

At the visit next week, pain, want of sleep, and septic absorption were noticed to be showing their effect on the patient, and locally the wound was not satisfactory; suppuration still continued, pocketing of pus was now commencing, and only too often the patient had set out on a progress which, although interrupted by several attempts to save the limb by operative interference, ended in an amputation through the thigh to save the patient's life.

The progress was so uniform—initial satisfaction, continued suppuration, local pocketing of pus, disorganization of the joint, oedema of the limb beyond, undermining of the patient's health, and finally, the unendurable suffering of involuntary movements of the disorganized articulation, and ultimately amputation.

As with acute suppurative peritonitis, we first of all drained and washed out with antiseptics, then drained and washed out with salt solutions. Then we drained alone and depended on the tubes inserted and the position we put the limb into to achieve our object, which was ready and free escape of the pus. Ultimately we realized the vital importance of the dual factor producing the suppurative process, and as we could not with any degree of certainty remove all the seeds of infection implanted we operated on these cases early, and by excising all the

damaged tissue around the bullet track removed the fertile soil in which they grew and prevented infection developing in the great majority.

In some where this was done and in many where immediate treatment was impossible, suppuration still took place, and in dealing with these the best results we obtained were by the use of bipp according to the method described by Rutherford Morison in the BRITISH MEDICAL JOURNAL of October 20th, 1917.

In certain respects the problem of the infected pleura resembles that of the suppurating knee-joint. When infection is established the vital factor in limiting the spread and destroying it is the formation of the plastic adhesions within the articulations. Continuous or intermittent irrigation prevents this, and is consequently inexpedient. The ideal course of treatment is here again demonstrated to be a closed method.

If the lessons of the peritoneum and the knee are to be applied to the pleura they are:

1. Surgical intervention at the inception of the infection.
2. Removal of the portal of entrance where such is possible.
3. Free and open operation to obtain this will be warranted in many cases.
4. The method of dealing with a case of empyema will be one where the suppurating cavity, having been dealt with, will be closed.
5. The data for an accurate prognosis and scientific treatment will be found in a combined bacteriological and cytological examination.
6. The use of this method will probably isolate a group of cases where complete success will follow a treatment consisting of aspiration of the content of the closed cavity, subsequently repeated if necessary, and combined with the introduction of some mild irritant as is contained in Rutherford Morison's bipp.

The criticism is, of course, warranted that the local factors in operation in a case of acute pleural empyema render the problem of its successful solution so unique as to demand a special line of treatment and to invalidate the application of the analogy of the cure of peritoneal and articular suppuration.

In certain respects this is a just criticism. It is therefore worth our while to analyse carefully the accuracy of the analogy. What evidence exists in favour of the origin of an acute pleural empyema from a single primary focus comparable to the manner in which the perforating appendix produces a suppurating peritonitis or the wound of the knee-joint produces a suppurating arthritis?

The pathogenesis of acute pleural empyema that appeals to me as the most rational is one that accounts for it as usually arising from a sudden escape into the pleural cavity of an infecting fluid brought about by the rupture of a subserous abscess. This primary source of infection will usually be found as a small abscess or necrotic area lying beneath the visceral pleura on the surface of the lung. In certain cases we, however, know that it may be due to erosion of the diaphragm, or an infection through the costal or mediastinal surface of the cavity. Its pathogenesis is therefore very similar to the development of acute suppurative peritonitis secondary to a suppurating appendicitis or perforated ulcer of the stomach.

This idea is not a novel one, and has already been very clearly put forward by Moschcowitz. On theoretical grounds it appeared to him that it was very probable that purulent infections of the pleura were, in the majority of cases, due to a gross contamination of the pleura from a focus on the lung, just as similar infections occur in the peritoneum. According to him, empyema in most instances results from the rupture of a small subpleural pulmonary abscess. The most commonly accepted explanation that the suppurative process arises from the pleura becoming infected by contiguity from the inflamed lung beneath he considered an insufficient explanation. To this theory he points out two objections, the first being that this mode of infection does not occur in any of the other closed serous cavities of the body. As he remarks, a diffuse peritonitis rarely, if ever, occurs unless there has been a perforation of the appendix, or its walls are so necrosed as to permit the easy transmission of bacteria into the cavity. This is likewise true of the other hollow viscera of the abdomen. The second objection is that infection of the pleura by contiguity would presume a direction of the lymph current opposed to that demonstrated and accepted by physiologists and anatomists. To controvert these authorities a double set of lymphatics have been assumed, one passing from the hilum to the pleura, the other passing in the reverse direction. This contention is only a hypothesis and not a fact.

The scourge of influenza—which so frequently produced a virulent empyema—that swept through America in the spring of 1918, provided the opportunity of confirming the presence of small subpleural pulmonary abscesses as the foci from which the infection had reached the pleural cavity. Before this exceptional opportunity for pathological investigation occurred, Moschcowitz many years ago found at an autopsy an empyema that had arisen in this manner. Being on the outlook for it at Camp Lee in the spring of 1918, he found it present in a great many instances. Dunham, who was associated with him on the Empyema Commission, demonstrated a perforated subpleural abscess in every case of empyema that came to autopsy.

The situation of the rupture will determine the type of empyema that is produced. If it be on the convex surface of the lung, as is most common, a general or diffuse empyema results. If the disease is located in a fissure an interlobar empyema results. When the abscess is on the medial aspect of the lung, there are retrosternal pus pockets between the lung and the mediastinal pleura.

He cites a further proof that ruptured subpleural pulmonary abscesses occur in empyema in the frequent experience that irrigation of empyema cavities with an irritating solution, such as Dakin's solution, results in coughing and choking, showing that communications exist with an air passage. He believes these communications exist in every empyema. When rupture takes place the circumstances for the development of a rapid and diffuse infection are favourable owing to the presence of a small amount of serous fluid in the pleural cavity which is present in every case of diffuse pneumonia, this serous accumulation being exactly comparable to that which is found within the peritoneal cavity where an unruptured infection exists within the abdomen.

If it be granted that such is the common mode of origin of an empyema, it would appear at first glance that the rational surgical treatment would be early operation to deal with this portal of entrance by its removal, disinfection or closure, as the appendix is amputated or the perforated duodenal ulcer closed. But can the pleural cavity be opened with the same freedom, facility, and safety as the peritoneum or the knee-joint?

In Breslau, eighteen years ago, I assisted at several operations in Sauerbruck's pneumatic chamber, and it was then thought that the pleural cavity could only be opened inside a building resembling closely the gun turret of a battleship. As far as I am aware, a Sauerbruck's pneumatic chamber has never been constructed in this country, and I think the continent of America only possesses one, so that as a practical proposition it is ruled out. This negative pressure method has therefore been replaced by simpler and more practical positive pressure apparatuses that achieve the same object. The unique experiences the war afforded modified very much our outlook on this problem, however, and the impression left on the minds of many of us was that under ordinary anaesthesia the pleural cavity could be opened with a safety, freedom, and facility not unlike that experienced in an exploratory laparotomy.

Is this impression justified? The recent experimental investigations of Graham and Bell will help to answer this question. In their experiments they found that normally the mediastinal structures are so mobile that they offer practically no resistance to pressure on either side. From the standpoint of pressure relationships the thorax may be considered as one cavity instead of two. Roughly speaking, the degree of asphyxia which will follow the creation of an open pneumothorax will depend upon (1) the relationship of the amount of air entering through the pneumothorax opening to the amount of air permitted to pass down the air inlets to the lungs, and (2) the ability of the individual to compensate by increasing either the rate or amplitude of his respiratory movements, or both.

They noted that the ability of the animal to withstand an open pneumothorax is dependent upon his ability to

compensate by increasing his respiratory effort, and it was a very striking fact that usually the restoration of negative pleural pressure could be instantly accomplished by simply closing the pleural opening, thus making it a closed instead of an open pneumothorax.

In investigating the relationship of amount of air entering the thoracic opening to amount of air entering lungs they showed that an opening about 5 by 10 cm. (2 by 4.1 inches) is the largest at which compensation can be theoretically established in the human being, even for short periods, if the mediastinum has normal mobility. As regards their experimental results and the clinical findings in war wounds of the thorax, they claim there is no discrepancy, for, as they point out, in the latter case, although the opening made may originally be large, by the packing off of the cavity and other means it is reduced in calibre by the surgeon in all cases. A healthy adult without pneumonia and with good respiratory muscles should be able to stand for a short time without death an opening of about 51.5 square cm. (5 by 10 cm., or 2 by 4.1 inches).

The almost instantaneous response in the character of the respiratory movements which follows the creation of an open pneumothorax cannot be satisfactorily explained at the present time. It is not due to asphyxia. It is not due to the stimulation of nerve endings by the admission of cold air.

The anatomical and physiological difficulties in carrying out a free and open exposure of the pleural cavity are therefore such as to answer our question in the negative. But still the dangers and difficulties are not insuperable, and they therefore alone do not veto the operation. A much more serious contraindication to an early free exploratory opening of the chest in such cases is the fact that in the great majority of empyemas it is associated with pneumonia, and at this stage the patient is in a state of profound toxaemia and a most unsuitable subject for such treatment.

The test of actual experience of the early operative treatment of empyema was recently afforded in the United States of America, where during the influenza epidemic so many cases occurred in their large military training camps. The mortality attending this treatment was extremely high, and the Empyema Commission that was appointed to investigate this subject came to the conclusion that "the evacuation of the pleural exudate by operation early in the disease involves greater risks without compensating benefits than the removal by aspiration. Much of the relief offered by operation without its attendant dangers can be afforded by aspiration repeated according to indications. The condition of the patient at this time calls for medical rather than surgical treatment." Graham and Bell experimentally confirmed the accuracy of these clinical findings in their cases of empyema experimentally induced in dogs.

The dogs that had had early drainage showed a slightly higher mortality than those which received no treatment of any kind. In their general discussion they claim to have definitely established that an operation for empyema performed too early in the course of the disease is accompanied by such very grave danger that in their opinion the risk of harm by operation outweighs any advantages which it may have. They consider the safest time to operate is where the exudate is becoming frank pus, then there is less danger of creating an open pneumothorax, and the patient is in a much better condition to withstand its harmful effects.

When a case is treated by repeated aspiration it is interesting to observe how, occasionally, the pus becomes sterile. I have observed this sterility under two forms—that where free organisms are absent from the films made and no growth is obtained on culture, or, as I have observed recently, where streptococci were present in the films made but no growth occurred when suitable media were inoculated. No surgical ailment probably requires more careful investigation before treatment is carried out, and none repays better an accurate and exact study.

The exact diagnosis of an acute pleural empyema is made on the general signs the patient reveals of profound septic absorption, the physical signs of accumulation of fluid within the cavity, and the detection of pus when the exploring needle is introduced. Of all the methods of physical examination the one that appears to me most satisfactory is an *x*-ray examination of the patient. The screen is of more value than the plate, and where the patient can be examined in the upright posture the most exact diagnosis of the situation of the fluid and the effects it is producing in the neighbouring organs can be made. Where repeated puncture has failed the *x* rays will frequently clear up the doubts entertained.

When operation is undertaken adhesions fortunately have formed which prevent a widespread collapse of the lung, but the firm inflammatory exudate that is coating it and the interstitial pneumonia throughout its substance are factors that interfere with its rapid expansion. Our attention is therefore directed to the solution of the problem as to how we can most rapidly and successfully sterilize the cavity and cause it to rise to the costal pleura. Can this be most rapidly accomplished by the Carrel-Dakin method of treatment?

The value of the Carrel-Dakin method of draining a suppurating wound has been fully tested by a number of investigators in cases of recent acute empyema. The general consensus of opinion would appear to be that in such cases the end achieved does not justify the labour expended on it. The mortality of the disease has not been appreciably influenced by it, nor has the process of healing been expedited. Those who have employed it most claim that its special sphere of usefulness is in cases of chronic empyema with a persistent discharging sinus where the lung has failed to rise to the chest wall and obliterate the cavity. They claim that the thick rind of dense inflammatory tissue that is coating the lung and covering the pleura is softened and dissolved by the use of this chemical agent, so that, in addition to the cavity being cleansed, it is also rendered more mobile and the rise of the lung facilitated.

The most recent records of the Mayo clinic show that most excellent results follow this line of treatment in such cases. Hedblom, under whose care these cases are placed, makes a routine practice of carrying out a period of preliminary Carrel-Dakin treatment with all of them when they first come under his supervision. In some no further treatment is required, the cavity being entirely obliterated. In all the dimensions of the cavity are diminished, and, being rendered more sterile, subsequent operation is easier and safer.

When considering the possibility or advisability of early or primary closure of the empyema cavity that has been opened by operation we have, as I have said, our experience of the peritoneum and knee-joint to guide us. We also know that the usual natural method of healing in the ordinary case is one where the lips of the wound usually are sealed some considerable time before the lung has risen to the chest wall, an *x*-ray photograph in such cases showing the closed pneumothorax that remains for many days after the wound is healed.

Can we not, therefore, in suitable cases anticipate this by primary closure at the time of operation? If so, our natural guide as to the case that is suitable for such treatment would appear to me to be the one we employ in the abdomen—the cytological and bacteriological findings observed in the fluid withdrawn—our prognosis being based on the nature of the cells present, the abundance of the mononucleated cells of the inflammatory exudate, the activity of the phagocytosis of the polymorphonuclear leucocytes, the presence or absence of free organisms, and the extent to which they are being phagocytosed by the leucocytes.

The treatment of the persistent chronic empyema cavity hardly comes into our present discussion, but as it has been raised already in referring to the use of the Carrel-Dakin method of treatment, it suggests one other thought to me. I would like to bring forward a suggestion which perhaps is worthy of being tested, and it is whether a similar or even better result might not be obtained by the use of bipp, or possibly even simple paraffin, which has the great advantage over Dakin's solution of being able to be used in a closed cavity. I suggest this owing to certain observations that I was able to make during the war. We employed bipp in many cases of septic wounds. One feature was most noteworthy in all of them, and it was the astonishing change that took place in the degree of induration of the neighbouring parts even where it had failed to cure the source of infection—as where a knee-joint had been bipped and amputation later on had to be carried out. At the time of the original treatment the inflamed parts in the neighbourhood of the wound were firm, tense, and indurated and fixed together; whereas a

week or two later, as was confirmed at the operation, they were soft, pliable, and mobile. It appears to me that the paraffin in the remedy was probably responsible for this, and in support of this idea I would quote the results obtained by the use of ambrine, or No. 7 paraffin, in the treatment of burns. In these cases a similar result followed its use. Soft and delicate tissues surrounded the site of the primary damage, so that when the wound healed the best and most delicate of scars resulted. Beck's paste probably also owes its great value to a similar cause.

In opening this discussion on acute pleural empyema I realize clearly that there are many other aspects of this subject which warrant full and careful criticism, but I would desire to offer as my contribution the following suggestions:

1. A combined cytological and bacteriological examination of the fluid withdrawn should be more widely employed, as offering the prospects of affording fuller and more accurate data on which to found our operative treatment.
2. Suppuration within the pleural cavity is especially suitable for treatment by methods which obviate the necessity for opening the chest, or by methods where an immediate or early closure after it has been opened are carried out.
3. The value of the treatment by aspiration alone should be again carefully reviewed.
4. The value of methods where, after aspirating the content, an antiseptic is introduced, such as Murphy's method, where 2 per cent. formalin in glycerin is introduced, should be further considered.
5. Where simple drainage is practised the ideal opening is not only one which allows free escape of the purulent content at the time, as when a rib is resected, but it should also be such as will readily seal itself off when the tube is withdrawn, as when minor intercostal thoracotomy is performed.
6. The benefits to be derived from a free opening of the pleural cavity by major intercostal thoracotomy warrant its employment in cases which give promise of developing into chronic and persistent cases.
7. The value of disinfection and immediate closure in these cases should be more fully tested.
8. The Rutherford Morison technique is the best at present available for carrying out the same.

DISCUSSION.

Mr. ANDREW FULLERTON (Belfast) emphasized the analogy between the knee-joint, the peritoneal cavity, and the pleural cavity. The drainage tube had been completely abolished in the treatment of infections of the knee-joint during the late war. It was used much less frequently now in the treatment of infective conditions of the peritoneal cavity, and the same evolution of treatment was evident in the case of the pleural cavity. With our present knowledge it might be impossible to abandon the use of the drainage tube altogether in chest cases, but it should be removed as soon as possible to avoid secondary infection from the outside. It might not be possible, as the result of this discussion, to lay down rules for the treatment of acute empyema, but Mr. Wade had crystallized the opinion of modern surgeons as to the management of these cases. Aspiration might first be tried; if this was not successful the pleural cavity might be opened, fibrinous masses, clots, etc., turned out, and the cavity closed without drainage. Later, as a last resort, the drainage tube might be necessary, but every precaution should be taken to prevent secondary infection, and the tube should be dispensed with as early as possible.

Mr. T. P. DUNHILL (London) said: There are three points upon which I would like to speak. First, it has been established that it is possible to close a thorax, after removing the infecting foreign body and evacuating the fluid. In some cases subsequent daily aspiration is necessary. The same procedure is possible in cases of acute pleural pneumonia. Not every case of primary suture will be successful, but the fact that some are justifies the procedure in such cases as it appears possible. The cavity should be emptied by suction, not by swabbing. Secondly, there are certain cases in which pus is suspected, but cannot be readily detected. In many such cases my chief, Mr. Gask, has performed what is really an exploratory operation. Where there are real grounds for suspecting the presence of pus, it has, I believe, always been found, though often far from the place where it has been thought to be. I am sure this procedure will prevent many cases from becoming very ill, and so necessitating an operation when they are less able to stand it. Thirdly, with regard to anaesthesia. In this latter type of case I should like to speak of the value of intratracheal anaesthesia, as introduced by Mr. Kelly. It is not suggested that it should be used in acute cases associated with pneumonia, but for the cases where one has to spend some time in carefully searching, intratracheal anaesthesia gives a degree of comfort and safety not attained by any other method.

Mr. PURVES said: Mr. Wade has made reference to the knee-joint cases which he and his colleagues had to deal with in the East. I am glad to have this opportunity of emphasizing his remarks as to the change in results consequent on the application of the principles laid down by Professor Rutherford Morison. Prior to the adoption of them the results of knee-joint infections were disheartening. There appears to me the strongest encouragement to adopt the line indicated by Mr. Wade in these cases of acute pleural infection, the results of which are too often disappointing.

Mr. G. H. EDINGTON (Glasgow) said: The question of the bacteriology of the individual case is of importance, the most favourable in my experience being the pneumococcal cases. Further, the physical character of the exudation would seem to have some connexion with the prognosis: those cases where pus is thick and where there are bulky fibrinous masses present heal more rapidly. If the exudate be watery, the patient's general condition is not so good, and convalescence is slower. I believe that chemical or physical interference with the pleural sac should be reduced to a minimum. I never wash out or sponge out the cavity; the most I ever do is to loosen fibrinous masses with the finger. Even if the pus be stinking it is usual to have the discharge become quite sweet in a day or two. Success depends largely on attention to asepsis, and with due care in dressing the drainage tube need not be looked on as inviting secondary infection. As a rule, in acute empyema I find myself able to dispense with the tube in from seven to fourteen days. I think that Mr. Wade's comparison between pleura and peritoneum is a little misleading. The abdomen is not a rigid cavity like the thorax; and, in the latter, adaptability rests almost entirely with the lung, which, to begin with, has its normal expansibility impaired, and so obliteration of cavity is delayed.

Mr. JAMES BERRY (London), speaking as a former surgeon to a chest hospital, desired to emphasize two small points which he thought of some practical importance. The first concerned the operation for large empyema with considerable dyspnoea. In such cases it was of the utmost importance that the patient, whether under a general or local anaesthetic (and he thought the latter often preferable), should never be turned over towards the sound side, as this threw the whole weight of the fluid on to the sound lung, and was not unlikely to cause great increase in respiratory distress or even sudden death. He was in the habit of operating upon such cases from below, keeping the patient upon the back, but with the whole of the affected side projecting beyond the edge of the operating table, the patient being held in that position by an assistant. The operator sat on a very low stool, and could thus open the thorax as far back as he desired without any disturbance of the patient's dorsal position. The other point concerned after-treatment. It was of great importance to get the lung to expand as soon as possible after operation. He had found that laying a rather large square of gutta-percha tissue directly over the operation wound favoured expansion of the lung by causing a valve-like closure, allowing fluid to exude freely from the thorax beneath the tissue, but preventing air from entering the pleural cavity during respiration.

Mr. F. C. PYBUS (Newcastle) said that he had been profoundly dissatisfied with his results. He regarded early

diagnosis as of greatest importance. Of late he had been making a larger incision and had been irrigating the pleural cavity with flavine and also mopping out the cavity. It was important to get the patient out of bed as soon as possible.

Mr. ALBERT LUCAS (Birmingham) said that the most important point was the nature of the infection; pneumococcic infections would clear up readily, but not so streptococcic infections. His practice was repeated aspiration, and if the result after a number of times was not satisfactory then he found it necessary to drain. The cases met with in war were not comparable to those in civil practice. The presence of the foreign body made all the difference. There was some danger in carrying too far into civil life the practices of war surgery of the chest. He agreed with the condemnation of the drainage tubes. The danger of the anaesthetic in performing the drainage operation was lessened by the method of repeated aspiration. The application of elaborate methods of drainage as that suggested by Mr. Wade was worse than the use of the drainage tube. It was of importance to get the patient out of bed and into the fresh air.

Mr. C. P. CHILDE (Portsmouth) emphasized the danger of drainage tubes, and pointed out that close personal attention to these cases was necessary. He mentioned one extreme case in which he had removed three large drainage tubes which had been lost in the pleural cavity of a soldier.

Mr. H. N. FLETCHER (Brighton) emphasized the importance, while giving drainage to the pus, of at the same time keeping the chest wall "closed," avoiding the entry of the outside air into the pleural cavity. This was of great importance in allowing expansion of the collapsed lung. Further, one of the lessons of the chest surgery of the war was the marked improvement in the patient's general condition directly the wound in the chest wall was closed and the sucking in and out of air discontinued. The question arose as to which cases could be safely sewn up after washing out, etc., and which not. Here the surgeon should be guided by previously ascertaining the bacteriology and cytology of the pus, as laid down by Mr. Wade. Should the case be one of pure pneumococcal infection, it would probably be safe in most cases to close the chest wall, having first washed out the pus, lightly swabbed off all the fibrinous clot from the pleural surfaces, and finally siphoned off all remaining fluid from its cavity. Should, however, streptococci or *B. coli* be present, the following method of dealing with the situation was suggested—namely, to do as before, but to close the pleural muscles and skin tightly round a rubber tube of small calibre, just long enough to traverse the chest wall and no more, stitch it to the skin, and insert a glass stopper in the outside end. This stopper should be removed twice daily, and the patient, lying so that it was in the most dependent position, should be asked to cough out what fluid remained — that is, with each expiration — while with each inspiration the tube was nipped so that no air could enter the pleural cavity. The stopper was then replaced. The tube was removed as soon as the temperature had been normal for three to four days, and as soon as the bacteriological and cytological examination of the fluid coughed out showed definite evidence that the infection had been satisfactorily overcome. Mr. Fletcher cited a case of serious streptococcal and pneumococcal infection in which this method had answered admirably, the wound being healed, with good air entry into the lung, in three and a half weeks.

Dr. W. MARTIN (Cardiff) had found the chief difficulty in the anaesthesia, and advocated local rather than general anaesthesia. He thought that a drainage apparatus was of importance, and suggested a short tube with a rubber flange all round which could be made to adhere to the skin; attached on the outer side of this flanged tube was a short rubber tube which would collapse and prevent the entrance of air into the pleural cavity while not interfering with the exit of pus.

Mr. HADLEY (Western Australia) thought that sufficient attention had not been paid to the focus of infection, and he would have been glad of some information as to why some cases of pneumonia were complicated by acute empyema and others were not.

Mr. MCADAM ECCLES (London) said that, when an undergraduate, both the abdominal and the thoracic cavities were sealed spaces, to explore which was almost impious. Some felt that to leave the patient who had infected fluid in the abdominal cavity to die was criminal. Boldness in opening the cavity proved that if Nature was in this way helped, the patient recovered because the peritoneum was well able to take care of itself. The thoracic cavity had remained sacred longer than the abdominal. He had now come to the conclusion that the pleural cavity dealt with infective material even better than the abdominal, provided that the actually infected area was accurately found and the fluid completely evacuated. Drainage with the shortest of tubes was not essential for longer than forty-eight hours. Then he believed in secondary suture of the skin incision. This not infrequently held perfectly, but if not, a further small opening through the primary incision evacuated a much less infected fluid, and the pleura then dealt with the remaining infection. In pneumococcal cases the wound should be closed in forty-eight hours; in streptococcal, closure must not be undertaken until the temperature had been normal for at least four days. Closure meant quicker expansion of the lung; continued drainage meant retraction of the lung.

Mr. C. FIRMIN CUTHBERT (Gloucester) said he thought that after opening a chest for acute empyema it was very important to maintain asepsis during the whole period of after-treatment, and subsequent dressings ought not to be entrusted to nurses. After the first outrush of pus the finger should be inserted as far as possible towards the vertebrae to remove any masses of thickened pus and also to be quite sure that no separate loculations of pus were locked up. So often it happened in the convalescence of a case of empyema that the temperature went up again and the patient was very ill. When the finger was inserted into the pleural cavity a further pocket of pus was let out. For some years he had been in the habit of not using a drainage tube but of passing into the chest one very long strip of gauze bit by bit so as to prevent adhesions taking place in the pleural cavity and thereby leading to such loculations of pus. The presence of the gauze against the surface of the lung seemed to act as a stimulus for the lung to expand, and also to prevent adhesions from forming and therefore mechanically interfering with rapid lung expansion which was so essential. The presence of the gauze strip packing also closed what would otherwise be a suction wound of the chest, which had the effect of producing a further collapse of the lung and which it was essential to avoid. The long gauze strip should be removed each day and a fresh strip packed in bit by bit. It was surprising how easily this dressing was done and how quickly the lung expanded; within a fortnight only a very short strip of gauze could be passed into the rapidly closing cavity.

Brevet Lieut.-Colonel F. P. CONNOR, D.S.O., I.M.S., expressed disappointment that a greater advance had not been made in this branch of surgery. As compared with the treatment of suppurative conditions of the abdomen, the results of the treatment of acute pleural empyema left much to be desired. The condition resembled in some respects acute abscess of the liver, though the pathology was very different. In India aspiration was tried as a preliminary measure to ascertain the nature of the infection and to relieve symptoms. If operation became necessary a free opening was made and a drainage tube avoided if possible. More knowledge was wanted as to the exact site of origin of pleural empyemata. If the cause could be treated more efficiently, whether in the lung or hilum, recovery would be much more rapid.

Mr. W. S. DICKIE (Middlesbrough) thought the discussion had been regrettably vague, dealing chiefly and often apparently on opposite lines with points of detail. This was due to the fact that there had been no clear initial definition of what was meant by acute pleural empyema. Acute infective pleural conditions presented themselves in different forms demanding different lines of treatment, and no one method was universally applicable.

Mr. ARTHUR COOKE (Cambridge) deprecated the pessimism of the last two speakers and stated that this discussion could not have taken place ten years ago, as treatment by the open method would then have been

agreed to unconditionally. Now the treatment of empyema was in a transitional stage, and most speakers who admitted they used a tube did so with reticence and almost with shame. Were it possible to remove the source of infection in the thorax as it was in the abdomen by excision, probably more cases would lend themselves to immediate or early closure. As it was, the time factor and the nature of the infection were of great importance, and cases should be treated in groups either by aspiration, opening and closing, short drainage, or prolonged drainage.

Mr. H. S. SOUTTAR (London) thought that the success of operations for empyema depended on close attention to detail. He agreed that they were best performed under local and regional anaesthesia, but considered that under many circumstances this was not practicable. When a general anaesthetic was employed it was important that the patient should be placed on the affected side and almost on the face, and not afterwards moved. The incision should be placed at the lowest point of the cavity and just behind the mid-axillary line for the comfort of the patient and to avoid occlusion by the collapsed lung. It should be large enough to allow of thorough exploration. If large enough, the opening would act in a valvular manner, no tube would be necessary, and the opening would close without secondary suture.

Reply of Opener.

Mr. HENRY WADE, in reply, said: A previous speaker has criticized unfavourably the fact that so many of those who have taken part in the debate have confined their remarks to questions of detail in the treatment of cases of acute empyema. I am sure I am only voicing the general feeling of this meeting when I say that in holding such views he is in a minority of two. We all have valued extremely the points in his technique that Mr. James Berry has narrated to us, and we are unanimously of the opinion that it would have been impossible for a clearer and more succinct or more valuable description of the operative treatment to have been given by anyone than that we have just had the privilege of listening to from Mr. Souttar. I am extremely glad to find that the suggestion I put forward with reference to a more extensive cytological and bacteriological examination of the fluid withdrawn in cases of acute pleural empyema has been so favourably received. Certain speakers have referred to the prognostic value of the type of organism revealed on examination. Thus we have heard it stated that where the pneumococcus is present the infection may be assumed to be of a milder nature than where it is a streptococcus. In my opinion this conclusion is not warranted in all cases, for not only does the pathogenicity of the individual organism vary with the individual strain, but also to a very considerable extent with the nature of the soil in which it is implanted. As an illustration of this I would remind you that the pneumococcus was found in many cases to have been the virulent and deadly organism that carried off so many men in the prime of life during the terrible influenza epidemic that occurred in the last months of the war. I am sure many like myself have met with cases of streptococcal infection that were mild in nature and rapidly cured. In conclusion, Mr. President, I wish to thank yourself and this meeting for the kind reception given to my paper and for the many valuable lessons I have learned from this discussion.

INTUSSUSCEPTION: AN ANALYSIS OF THIRTY-SIX CASES.

BY

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THE following series represents all cases of intussusception in which I operated during the period April, 1903, to February, 1914. The case summaries are followed by an analysis and consideration of the main points illustrated.

A. SUMMARIES.

Case 1.—Male, aged 4 months, April 19th, 1903. Two days' vomiting and blood per anum; sausage-shaped swelling; rectal examination negative. *Operation:* Ileo-caecal intussusception reduced by pinching; caecum opened to confirm reduction demonstrated great thickening of ileo-caecal valve. Death twenty hours later.

*Case 2.**—Male, aged 18 months, August 21st, 1904. Two and a half days' vomiting and pain; no tenesmus; enema brought away blood; rectal examination, blood and slime. *Operation* showed irreducible ileo-ileal variety; sheath gangrenous, and at four inches from its upper end a Meckel's diverticulum which did not participate; resection. Death in six hours.

Case 3.—Male, aged 4 months, October 14th, 1904. One day's vomiting, straining, and blood and mucus per anum; abdominal swelling above and to left of umbilicus. *Operation* showed ileo-colic extending to just beyond splenic flexure; reduced by pinching, but last inch or so required traction, ileum being much thickened. Recovery.

Case 4.—Male, aged 3 months, January 6th, 1905. Five hours' screaming, vomiting, and straining; blood per anum; apex 1½ inches in from anus; swelling left hypochondrium and flank. *Operation* showed ileo-caecal type, easily reduced except from mid-transverse colon back; enlarged mesenteric glands. Recovery.

Case 5.—Male, aged 5½ years, March 20th, 1906. Fall downstairs seven days before; abdominal pain, vomiting, constipation; enema returned bloody; abdominal facies, visible peristalsis; swelling left iliac fossa. *Operation:* Ileo-ileal, with gangrene of entering and sheathing layers; resection of 99 cm. of bowel. Death in two and three-quarter hours.

Case 6.—Male, aged 70 years, August 31st, 1906. One day's vomiting and diarrhoea; motions bloody; swelling right iliac fossa; hiccough and spasms of pain. *Operation:* Ileo-caecal extending to splenic flexure, with entrance remaining in right iliac region; reduced. Recovery.

Case 7.—Male, aged 4½ months, September 6th, 1906. Sixteen hours' crying, spasms of pain, blood per anum; swelling lower abdomen behind left rectus; apex just within anus. *Operation:* Rectal injection of one pint reduced swelling to ascending colon; caecum brought out for completion of reduction; ileo-caecal. Recovery retarded by severe gastro-enteritis.

Case 8.—Female, aged 1 year and 9 months, March 28th, 1907. Two days' vomiting and screaming, followed by blood per anum; ovoid mass right iliac fossa directed towards umbilicus. *Operation* showed ileo-ileal, beginning 6 in. up from ileo-caecal junction, and extending through ileo-caecal valve (ileo-colic) to transverse colon; large intestine emptied by pinching; but ileal part jammed and sheathing bowel gave way. Resection. Death in thirty-six hours. Part removed about 20 in. long; returning layer oedematous and greenish.

Case 9.—Male, aged 2 months, April 26th, 1907. Twenty hours' vomiting and passage of blood and mucus from bowel; vertical sausage tumour to left of hypogastrium; apex just within anus. *Operation:* Ileo-caecal, with difficult reduction at splenic flexure, also jamming at hepatic flexure; rupture of colon on manipulation: resection. Death in twelve hours. No gangrene, but great oedema of intussusceptum. Resected portion measured 12 to 14 in.

Case 10.—Female, aged 10 years, June 14th, 1907. Fourteen days' vomiting and constipation; abdominal facies; dullness right iliac fossa; no blood or mucus passed. *Operation* showed easily reduced ileo-ileal with gangrene; resection of loop, and Paul's tubes. Death in fifteen hours, apparently from toxaemia.

Case 11.—Female, aged 7 months, June 27th, 1907. Four hours' crying and vomiting; slime per anum; subhepatic tumour. External manipulation reduced tumour, with gurgling. *Operation* showed about 1½ in. of ileum intussuscepted into colon; ileo-colic type; reduction easy. Death in forty-eight hours; temperature 103° F.

Case 12.—Male, aged 10 months, July 1st, 1907. Eight hours' crying, vomiting, and passage of bloody mucus from bowel; tumour in situation of transverse colon. Under chloroform, tumour manipulated into right iliac fossa; then one pint of hot water run in, after which hardly noticeable fullness in ileo-caecal region. *Operation* showed about one inch of intussusception remaining; reduced by pinching and traction; caecal dimple observed and pinched out; caeco-ileo-caecal type. Recovery.

Case 13.—Male, aged 4 years, July 8th, 1907. Twenty-four hours' pain, vomiting, and passage of blood and slime; tumour left flank; tumour reduced by manipulation and irrigation, but always recurred. *Operation* showed colo-colic intussusception in sigmoid; reduced by pinching; transverse and part of ascending colon lumpy and irregular. Recovery.

Case 14.—Female, aged 5 months, October 23rd, 1907. Nineteen hours' crying, vomiting, and bloody motion; subhepatic tumour; injection returned with blood-stained shreds and mucus. *Operation* showed colo-colic intussusception at splenic flexure, about 3 in. long; reduced by pinching, and after reduction constriction found in ascending colon, 3 to 4 in. up from caecum, and apparently marking junction of returning layer with sheath; enlarged mesenteric glands. Recovery.

Case 15.—Male, aged 7 months, February 13th, 1908. Signs (not specified) for twenty-six hours; vertical tumour to left of middle line and down into pelvis; apex felt in rectum; injection diminished swelling, which retreated to splenic flexure.

* For details vide *Transactions*, Glasgow Pathological and Clinical Society, vol. x, 1903-05, p. 111

Operation showed complicated type, ileo-ileal, ileo-colic, ileo-caecal; reduction easy except for last inch or two of ileum, which remained fixed after caecum freed; reduced by prolonged squeezing; oedematous part of ileum very hard, 1½ in. long, and clear bowel between it and ileo-caecal junction. Recovery.

Case 16.—Male, aged 5 months, March 24th, 1908. Almost three days' symptoms (not specified); apex in rectum; tumour to left of middle line, down into hypogastrium; manipulated and fluid run in. *Operation:* On opening abdomen, brought out bowel; intussusception in ascending colon, short of hepatic flexure; ileum easily reduced; caecum remained invaginated and reduced with difficulty. Death, twenty-second day, from gastro-enteritis, which commenced fifth day. Type was caecal, ileo-caecal.

Case 17.—Male, aged 4 months, August 1st, 1908. Tenesmus for some weeks; twenty-four hours ill and passing blood and mucus; subhepatic tumour, horizontal; injection. *Operation:* Tight intussusception of ileo-colic type in ascending colon; reduced by pinching; last three inches of ileum hard, thickened, and crushed. Recovery.

Case 18.—Male, aged 5 months, August 2nd, 1908. Twenty-one hours of crying and with bloody stools; transverse mass to right of umbilicus disappeared with irrigation. *Operation* showed a completely reduced ileo-caecal intussusception; caecum and neighbouring colon and last three inches of ileum bluish, thick-walled, and hard. Recovery.

Case 19.—Male, aged 4 months, April 29th, 1909. Sixteen hours' crying and straining; five hours later passage of blood; tumour right flank; irrigating fluid obstructed. *Operation:* Reduced by finger in abdominal cavity till caecum reached; bowel brought out and reduction completed by pinching and traction; caecum much indented and infiltrated; caecal, ileo-caecal type. Death in fifty-five hours.

Case 20.—Male, aged 9 months, May 22nd, 1909. Ill for five days; passage of blood from bowel for three days; rigidity of abdomen, and violent screaming for one day; sausage-shaped tumour across upper abdomen to left hypochondrium. *Operation:* Partial reduction by external manipulation; caecum brought out and reduction completed by pinching; ascending colon and caecum infiltrated and stiff, and dimple present on outer side of caecum; caeco-ileo-caecal type. Recovery.

Case 21.—Male, aged 8 months, August 21st, 1909. Duration of illness not recorded; tumour reached splenic flexure. *Operation:* Manipulation reduced as far as hepatic flexure; bowel brought out; reduction completed by pinching, last inch being hindered by "band" stretching from medial side of colon outwards to right flank, and which required division; enlarged ileo-colic gland. Appendix not congested; ileo-caecal valve infiltrated. Fixation of colon by the "band" indicated intussusception largely ileo-colic type. Death in forty-eight hours, very suddenly. *Post mortem:* Negative findings.

Case 22.—Male, aged 1 year and 11 months, April 24th, 1911. Six hours' crying; three hours later blood per anum, and severe straining; abdominal facies; round mass, 2 in. diameter, behind right rectus, at level of umbilicus. *Operation:* Injection caused swelling largely to disappear; unreduced ileo-caecal intussusception found, and reduced with difficulty by pinching and traction. Recovery.

Case 23.—Male, aged 8 months, May 20th, 1911. Severe pain; bilious vomiting; blood per anum, duration not recorded; sausage tumour right hypochondrium. Reduction by fluid and external palpation. Laparotomy confirmed reduction, and showed dimple in outer pouch of caecum; caeco-ileo-caecal type. Recovery. Similar attack three months previously.

Case 24.—Male, aged 5 months, December 17th, 1911. Nineteen hours' crying and pain; enema returned bloody; resistance behind lower part right rectus; rectum negative. *Operation:* Pinching and traction on very tight intussusception caused tear of sheathing bowel; ileo-ileal type, with Meckel's diverticulum forming apex. Death in four and a half hours from shock.

Case 25.—Male, aged 6 months, April 16th, 1912. Blood per anum for sixteen hours; swelling behind left rectus, apex per rectum. Partly reduced by injection. *Operation* showed ileo-colic, ileo-caecal type, tightly jammed; peritoneum tore in places during reduction, and last inch difficult (ileum through valve). Death in twenty-four hours.

Case 26.—Male, aged 4 months, May 2nd, 1912. Twenty-three hours' screaming; nineteen hours later, very bloody stool; tumour doubtfully palpable. Injection failed to enter. *Operation* showed egg-sized lump ileo-caecal region; partly reduced by pinching, then brought out and found ileo-caecal completely reduced; 1 in. ileo-colic reduced by further pinching. Recovery.

Case 27.—Male, aged 8 months, May 2nd, 1912. Symptoms and duration not recorded. Injection *plus* manipulation through abdominal wound effected reduction; caecum brought out and found completely reduced without signs of type of intussusception; enlarged mesenteric glands. Recovery.

Case 28.—Female, aged 8 months, May 13th, 1912. Ten hours before operation began to cry; six hours later vomiting, and blood and mucus per anum; pinched appearance, with flaccid abdomen, and mass left iliac region, three hours later. *Operation:* Injection caused mass to disappear, but on opening abdomen mass found in transverse colon, and then manipulated back to hepatic flexure, where traction was necessary; last part to be reduced was ileal, very tight, about eight inches above ileo-caecal valve; type ileo-ileal, ileo-colic, ileo-caecal. Recovery.

Case 29.—Male, aged 1 year, June 2nd, 1912. Vomiting for two and a half hours, and blood and slime per anum; vertical mass right flank. *Operation*, after large injection, showed empty caecum, and ascending colon containing mass which reduced by traction. Sheath was lower three or four inches of ileum, and type was ileo-ileal, then ileo-colic. Enlarged glands at ileo-caecal junction and inner side ascending colon. Recovery.

Case 30.—Male, aged 10 months, June 25th, 1912. Nineteen hours previously awoke crying and vomiting; normal motion; two hours later blood in napkin, and twice again. Under $CHCl_3$ mass in lower epigastrium, especially in right side; manipulated into caecal region; saline injection returned bloody. *Operation:* Ecchymosed appendix fished out; then ileo-colic intussusception, apex two-thirds up the ascending colon. After reduction apex represented by dimple four inches from lower end of ileum; type was ileo-ileal, ileal-colic, ileo-caecal. Recovery.

*Case 31.**—Male, aged 10 years, June 27th, 1912. Eight days previously vomiting and severe pain for a few hours. Five days later recurrence, with melaena; hard mass behind right rectus, at appendix level. *Operation* showed intussusception into lower ileum, and extending about six inches into ascending colon; gangrenous patch on lip of sheath; resection and anastomosis. Death in a few hours from shock. Apex formed by an invaginated Meckel's diverticulum, and type was ileo-ileal, ileo-colic.

Case 32.—Female, aged 1 year and 9 months, September 22nd, 1912. Pain and passage of blood previous day, and succeeded by normal motion; recurrence of bloody motions; no swelling palpable. *Operation* showed much wrinkled lower ileum of grey colour; wall thinned 1½ in. up from termination, and appearance of having been intussuscepted for 3 to 4 in.; appendix kinked by old adhesions. Death in twenty-four hours. Case evidently of ileo-colic type, which had undergone *spontaneous reduction.*

Case 33.—Male, aged 4 months, October 25th, 1912. Crying, and blood per anum, for six hours; tumour low down behind left rectus; apex in rectum; swelling disappeared on irrigation and manipulation under $CHCl_3$. *Operation* showed mass unreduced in subhepatic region; reduced and brought out; dimple in caecum, outer pouch; great congestion of colon. Type was caecal, ileo-caecal. Recovery.

Case 34.—Male, aged 2 years and three months, February 27th, 1913. Diarrhoea for one week; abdominal pain, bilious vomiting and bloody motions for fourteen hours. $CHCl_3$, tumour left flank. *Operation* showed terminal part of transverse colon intussuscepted and reaching beyond splenic flexure; easy reduction; extravasation in mesentery. Result not recorded. Type, colo-colic.

Case 35.—Female, aged 3 years and four months, June 20th, 1913. Since previous day, pain, vomiting, and passing mucus and blood per anum; mass in left flank, and apex high up in rectum. Irrigation no effect; external manipulation reduced from rectum. *Operation* permitted of manipulation up to splenic flexure; apex in transverse colon proximal to splenic flexure, and easily reduced. Recovery. Colo-colic type, with very mobile descending colon and sigmoid flexure.

Case 36.—Male, aged 7 months, February 13th, 1914. Four days' vomiting and diarrhoea, and traces of blood in stools; lump felt on fifth day; apex within anus. $CHCl_3$, reduced by external manipulation into right iliac region. *Operation* showed caecum and appendix visible; above was unreduced subhepatic invagination of colon wall; mobile ascending colon, with ileo-colic mesentery; dimple present in caecum, and in outer side of commencement of ascending colon. Recovery.

B. Analysis.

Analysis of the cases above recorded yields information on the following points:

Sex.—Males, 28 (77.7 per cent.); females, 8 cases.

Age.—*Under 1 year*, 24 cases (66.6 per cent.), the average being 6.15 months; 1 to 2 years, 5 cases; 2 to 3, 3 to 4, 4 to 5, and 5 to 6 years, 1 case each; 10 years, 2 cases; and 70 years, 1 case.

Symptoms.—Abdominal pain, evidenced by screaming and by spasm of the abdominal muscles, was noted in 25; vomiting in 21; the passage of blood per anum in 30; localized sausage-shaped swelling on palpation of the abdomen in 31 cases. The apex of the intussusception was felt per rectum in 9 cases.

Operation.—Twenty-four cases were operated upon in the course of the first day of the symptoms, the periods ranging from two and a half hours to twenty-four hours, with an average of sixteen hours; 9 were operated upon after the first day, the periods ranging from two to fourteen days, the average being four and a half days; in 3 the period was not recorded. As regards operative procedure, in the early cases of the series laparotomy and manipulation was the method employed. Later the operative procedure gradually evolved into the following routine: A general anaesthetic ($CHCl_3$) was administered. If there was a palpable sausage-shaped swelling present, taxis was tried. Unless the swelling was reducible with

* For details, vide *Proceedings*, Roy. Soc. Med., vol. xiv, 1921.

General Table.

No.	Sex.	Age.	Duration of Symptoms.	Result.	Remarks.	Type.
1	M.	4 mos.	48 hours	Death	20 hrs. later	Ileo-caecal.
2	M.	18 mos.	60 ,,	Death	6 hrs. later; resection	Ileo-ileal; Meckel.
3	M.	4 mos.	24 ,,	Recovery	—	Ileo-colic.
4	M.	3 mos.	5 ,,	Recovery	Enlarged glands	Ileo caecal.
5	M.	5½	7 days	Death	2¼ hrs; resection	Ileo-ileal.
6	M.	70	24 hours	Recovery	—	Ileo-caecal.
7	M.	18 wks.	16 ,,	Recovery	Retarded by gastro-enteritis	Ileo-caecal.
8	F.	21 mos.	48 ,,	Death	36 hrs. later; resection	Ileo-ileal, ileo-colic.
9	M.	2 mos.	20 ,,	Death	12 hrs. later; resection	Ileo-caecal.
10	F.	10 yrs.	14 ,,	Death	15 hrs. later; resection	Ileo-ileal.
11	F.	7 mos.	4 ,,	Death	48 hrs. later	Ileo-colic.
12	M.	10 mos.	8 ,,	Recovery	—	Caeco-ileo-caecal.
13	M.	4 yrs.	24 ,,	Recovery	—	Colo-colic.
14	F.	5 mos.	19 ,,	Recovery	Enlarged glands	Colo-colic.
15	M.	7 mos.	26 ,,	Recovery	—	Ileo-ileal, ileo-colic, ileo-caecal.
16	M.	5 mos.	68 ,,	Death	22 days later; gastro-enteritis	Caeco-ileo-caecal.
17	M.	4 mos.	24 ,,	Recovery	—	Ileo-colic.
18	M.	5 mos.	21 ,,	Recovery	—	Ileo-caecal.
19	M.	4 mos.	16 ,,	Death	55 hrs. later	Caeco-ileo-caecal.
20	M.	9 mos.	3-5 days	Recovery	—	Caeco-ileo-caecal.
21	M.	8 mos.	—	Death	48 hrs. later; enlarged glands; band across colon	Ileo-colic, ileo-caecal.
22	M.	23 mos.	6 hours	Recovery	—	Ileo-caecal.
23	M.	8 mos.	—	Recovery	—	Caeco-ileo-caecal.
24	M.	5 mos.	20 hours	Death	4½ hrs. later	Ileo-ileal; Meckel.
25	M.	6 mos.	17 ,,	Death	24 hrs. later	Ileo-colic, ileo-caecal.
26	M.	4 mos.	23 ,,	Recovery	—	Ileo-colic, ileo-caecal.
27	M.	8 mos.	—	Recovery	Reduced before bowel brought out of abdomen	Not discovered.
28	F.	8 mos.	10 hours	Recovery	—	Ileo-ileal, ileo-colic, ileo caecal.
29	M.	1 yr.	2½ hours	Recovery	—	Ileo-ileal, ileo-colic.
30	M.	10 mos.	19 ,,	Recovery	—	Ileo-ileal, ileo-colic. ileo-caecal.
31	M.	10 yrs.	3 days	Death	24 hrs. later resection	Ileo-ileal, ileo-colic; Meckel.
32	F.	21 mos.	24 hours	Death	24 hrs. later	Ileo-colic.
33	M.	4 mos.	6 ,,	Recovery	—	Caeco-ileo-caecal.
34	M.	27 mos.	14 ,,	—	—	Colo-colic.
35	F.	39 mos.	24 ,,	Recovery	—	Colo-colic.
36	M.	7 mos.	5 days	Recovery	—	Caeco-colic.

light taxis, saline fluid was run into the rectum from a height of 1 to 2 ft. The body was held up by the lower limbs during the injection, and when the fluid ceased to run in or was beginning to be ejected the tube was withdrawn and the buttocks were forcibly approximated. Taxis was repeated during and after the injection of the fluid. In some cases the saline very considerably reduced the swelling; but usually manipulation was required in addition. After reduction had been carried as far as possible, *laparotomy* was performed through the right rectus, with the mid-point of the incision at the level of the umbilicus. Pinching by the fingers in the abdominal cavity still further reduced the mass, till the caecum was reached. It was generally found necessary to bring out the caecum in order to complete the reduction, the last part being usually very tight and difficult. The bowel was then inspected for signs of gangrene, tumour, or abnormality; dimpling of the caecum, if present, was rectified, and the parts were then returned into the abdomen. Through-and-through silkworm-gut sutures were employed to close the abdominal wound, but were not tied till the peritoneum had been closed by continuous catgut suture. Even if apparently complete reduction had been obtained by injection and external manipulation, laparotomy was always performed in order that the parts might be inspected; and the results showed that very seldom indeed had complete reduction been effected by non-operative treatment. A sedative (nepenthe) was usually necessary shortly after the operation; and a small dose of castor oil was administered within twenty-four hours, with the object of forestalling or lessening toxic absorption from the bowel.

Anatomical Types.—The cases presented marked differences in their anatomical details, varying from simple to complex. In the following classification an endeavour is made to indicate the main types found at operation and their relative frequency.

1. *Ileo-caecal*, 7 cases (19.4 per cent.). Cases 1, 4, 6, 7, 9, 18, and 22. In this type the ileo-caecal valve forms the apex of the intussusceptum, and there is more or less invagination of the caecum and colon. Allied to this type, and possibly included with it by some writers, is

1a. *Caeco-ileo-caecal*, 6 cases (16.6 per cent.). Cases 12, 16, 19, 20, 23, and 33. In this type the wall of the caecum is found to be thickened and oedematous; and it is also found that, after complete reduction of the ileum and ileo-caecal valve, the outer pouch of the caecum presents a marked dimple. This depression is situated between the anterior and postero-external taeniae, and requires for its reduction firm pinching of the oedematous wall of the bowel. The appearances suggest that the lateral pouch has formed the apex of the intussusceptum; but, even if this be so, the ileo-caecal valve is not far behind it, and the type might quite fairly be included with the ileo caecal variety proper. This would give us in the present series an aggregate percentage of 36.

2. *Colo-colic*, 5 cases (13.88 per cent.). Cases 13, 14, 34, 35, and 36. In three of these the transverse colon was the seat of intussusception; in two (14 and 36) intussusception seemed to have begun in the ascending colon.

3. *Ileo-colic*, 4 cases (11.1 per cent.). Cases 3, 11, 17, and 32. The apex is formed by the invagination of the ileum through the ileo-caecal valve, and the caecum and ascending colon remain in their normal situation in the abdomen. In Case 32 the intussusception had been completely and (?) spontaneously reduced before the abdomen was opened; but the appearance of the wall of the ileum showed that it belonged to this type.

4. *Ileo-ileal*, 4 cases (11.1 per cent.). Cases 2, 5, 10, and 24. In these cases there was strangulation of the bowel, and all died. Three of the cases required resection. Two presented a Meckel's diverticulum, and in one of them (24) this was evidently the source of the intussusception. Of the four cases, one was aged 5 months; the others were 18 months, 5½ years, and 10 years respectively—well above the average age of 6 months.

Of the remaining cases, 9 were examples of combinations of two or more of the preceding types.

5. *Ileo-colic, ileo-caecal*, 3 cases (8.33 per cent.). Cases 21, 25, 26. In these the intussusception began as the ileo-colic type. The protruding ileum was subsequently accompanied by the ileo-caecal valve, and so involved invagination of the caecum and colon. The reduction of the portion of ileum which had prolapsed through the ileo-caecal valve was only effected at the last and with difficulty.

6. *Ileo-ileal, ileo-colic*, 3 cases (8.33 per cent.). Cases 8, 29, and 31. Beginning as ileo-ileal, the invaginated bowel progressed through the ileo-caecal valve. It was found at operation that the sheathing bowel was the lower ileum. The first case had had symptoms for forty-eight hours and gangrene of the bowel had ensued; resection was performed with fatal result. The second case was operated upon within three hours of onset, and reduced by traction. The third case was not operated upon till the third day, gangrene had resulted, and death followed in a few hours after resection and anastomosis. In this case the apex had been formed by an invaginated Meckel's diverticulum.

7. *Ileo-ileal, ileo-colic, and ileo-caecal*, 3 cases (8.33 per cent.). Cases 15, 28, and 30. As the name indicates, the intussusception is first of all of the ileo-ileal type, progressing to ileo-colic, and finally carrying the ileo-caecal valve along and invaginating the caecum and colon. All three recovered, although, as can be readily understood, the reduction in this variety of case entailed a good deal of manipulation.

8. *Not determined*: 1 case (27) was reduced before laparotomy and when the bowel was inspected there were no indications of the type to which the intussusception had belonged.

Gangrene.—Gangrene had occurred in 6 cases (2, 5, 8, 9, 10, and 31). In these cases, with the exception of 9, the intussusception was of the ileo-ileal type, and in two (8 and 31) had progressed to ileo-colic.

It has to be remembered that in the ileo-ileal type the entering layer is tightly packed into bowel of a diameter similar to its own. On physical grounds, therefore, the compression of the entering and distension of the returning and sheathing layers would be abnormally great and the blood supply correspondingly endangered. With the exception of 9, in which the duration of symptoms was twenty hours, the element of time had also to be reckoned

with. In the remaining five cases the symptoms had lasted for 2, 2½, 3, 7, and 10 days respectively. In Case 9, although of the ileo-caecal type and of comparatively short duration, the different layers of bowel were so firmly caught that the colon tore on manipulation (pinching and traction). In all six resection was performed and in all with fatal results. The sheathing bowel was affected in five cases, and in one of these the entering bowel was also gangrenous; in the sixth case there seemed to be generalized gangrene of the parts implicated in the intussusception.

Etiology.—The operative findings threw very little light on the etiology of the condition. With the exception of a Meckel's diverticulum in two cases (24 and 31), there were no visible indications of what had caused the intussusception. In two other cases (35 and 36) there was a mobile colon; and enlarged glands were noted in Cases 4, 14, 27, and 29. The remaining 28 cases showed nothing abnormal. It is doubtful what effect, if any, the above-mentioned conditions exerted in the production of the intussusception, and we are, I fear, thrown back on the hypothesis of disordered peristalsis of obscure origin.

Results.—In the 35 cases in which the result was recorded there were 21 recoveries (60 per cent.) and 14 deaths (40 per cent.). In recording results the *duration of symptoms prior to operation* must always be taken into account. The relationship of result to time of operation is shown in the following table:

Period of Operation.	Numbers.	Recoveries.	Deaths.	Not Recorded.
First day	24	16	7	1
After first day ..	9	3	6	—
Not recorded ...	3	2	1	—
Totals	36	21	14	1

Reference to the general table and to this shows recovery in 7 cases operated upon within twelve hours of the onset of symptoms; in 9 the period was twelve to twenty-four hours; in 3 over twenty-four hours; and in 2 the period was not recorded. The period in recovery cases varied from two and a half hours to five days.

In one of the deaths the period was under twelve hours; in 6 the period was twelve to twenty-four hours; and in 6 it was over twenty-four hours. In one case the period was not recorded. The period in fatal cases varied from four hours to fourteen days.

These figures undoubtedly support the general view as to the value of the time element in estimating results; but they also show that time is not all-important.

In three cases (2, 5, and 24) death occurred within a few hours after operation, and apparently resulted from shock. One case (16) died on the twenty-second day from gastro-enteritis. The remainder ranged from twelve to fifty-five hours, giving an average of 31.3 hours after operation. Death was usually preceded by a rapid rise of temperature to 102° or 103° F., and the facies (pallor, sunken eyes) was that of toxaemia.

The following figures show the *relationship of death to anatomical type:*

Ileo-caecal	7 cases	2 deaths.
Caeco-ileo-caecal	6 ,, ...	2 ,,
Colo-colic	5 ,, ...	0* ,,
Ileo-colic	4 ,, ...	2 ,,
Ileo-ileal	4 ,, ...	4 ,,
Ileo-colic, ileo-caecal ...	3 ,, ...	2 ,,
Ileo-ileal, ileo-colic	3 ,, ...	2 ,,
Ileo-ileal, ileo-colic, ileo-caecal	3 ,, ...	0 ,,
Type not recorded	1 ,, ...	0 ,,

* Result in one case not recorded.

Conclusions.

Consideration of the various points illustrated by the above series of cases would lead to the following conclusions:

1. Marked preponderance in males; frequency three and a half times as great as in females.
2. Majority (68 per cent.) of cases occurred in the first year, and of these the average was 6.15 months.
3. More than one-third of the cases were of the ileo-caecal (including caeco-ileo-caecal) variety.
4. Visible proof of etiology was not found at operation.
5. Death rate (40 per cent.) largely depended on length of interval before operation, and, secondary to this, on gangrene; it was highest in ileo-ileal cases.
6. Resection gave invariably fatal results.

DISCUSSION.

Mr. McADAM ECCLES said that with regard to the causation of intussusception it was important to remember that the internal muscular coat of the small intestine in particular was rather spiral than circular, and that when irregular peristalsis occurred the distal portion of the ileum became cone-shaped, so as easily to slip through the ileo-caecal valve. With regard to operation, for success it should be performed early and with as much promptness, not hurriedness, as possible.

Mr. F. J. S. HEANEY (Liverpool) pointed out that the rigidity of the parts concerned in the intussusception on account of oedema was an insurance against immediate recurrence.

Mr. E. W. G. MASTERMAN (London) referred to a case of a boy of about 10 in whom, it being impossible to reduce an intussusception and the general condition being unfavourable to resection, he did a lateral anastomosis above and below the intussusception. The patient made a complete recovery. Although this was not a recognized orthodox method, it might in suitable cases be a more hopeful alternative to complete resection, in view of the very high mortality of the latter.

Mr. ARTHUR COOKE expressed surprise that in the opener's list of thirty-six cases only two were traced to Meckel's diverticulum, as he had had two cases where this cause was operative out of three consecutive cases. He considered that excision of gut was looked upon with too great gravity, and quoted a case where excision of 27 inches of intestine was followed by normal recovery. The presence or absence of toxaemia was the governing factor.

Dr. D. G. GREENFIELD (Rushton) said that the importance of the diagnosis before the operation of blood and mucus passed per rectum had to be recognized. He had recently observed two cases very early after the apparent occurrence of the intussusception, and a notable feature was extreme pallor of the patient, lasting for a few moments at a time, recurring at intervals of a few minutes, amounting almost to collapse in each instance. He thought that if this sign was definitely observed operation might be proceeded with without waiting for the usual classical evidences of intussusception.

Mr. CHILDE (Portsmouth) said that, in regard to prognosis, broadly put the matter could be stated thus: If operation were undertaken early and reduction effected with comparative ease the patient recovered; if operation were delayed so that resection was necessary, the patient invariably died. He recommended the bimanual examination with one finger in the rectum, and the other hand on the abdomen under an anaesthetic. Like many other surgical conditions early diagnosis and early operation were called for.

THE BEST METHOD OF OPERATIVE APPROACH IN CASES OF ACUTE APPENDICITIS.

BY

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IT may be said by some that the consideration of the best method of the operative approach, when dealing with cases of acute appendicitis, merely resolves itself into a question of a particular surgical technique, just a matter of surgical handicraft, as it were, because so many methods and such a multitude of incisions have been advocated from time to time. This, however, is not my view, and it seems to me that, given a case which with some confidence a surgeon is able to diagnose as acute appendicitis, there is probably a method which, on the whole, is the best in the interests of the patient, and should, therefore, be adopted. It is only because I am firmly convinced that the route taken by the surgeon may make, in many cases, all the difference between life and death to the patient

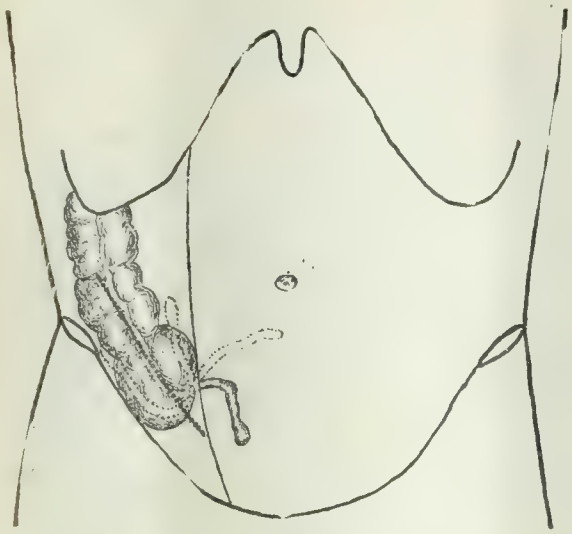


FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.



FIG. 5.



FIG. 6.



FIG. 8.



FIG. 9.



FIG. 10.



FIG. 11.



FIG. 12.



FIG. 13.

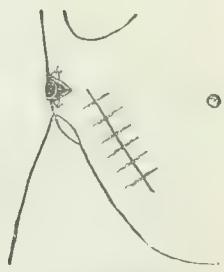


FIG. 14.

Description of Illustrations.

FIG. 1.—Variations in position of appendix. Right semilunar line shown. Heavy dotted line indicates line of incision. There is nothing original in the position of this incision. It is practically the same as McBurney himself recommended many years ago.

FIG. 2.—The skin and fat are divided and the external oblique exposed, partly muscular and partly tendinous.

FIG. 3.—The external oblique is divided and the internal oblique exposed. Some surgeons would now split the internal oblique and the transversalis in the line of their fibres. A gridiron incision is not a suitable one for cases of acute appendicitis; a far better view is obtained by dividing these muscles in the same line as used for the external oblique.

FIG. 4.—The internal oblique and transversalis are divided and the peritoneum exposed. The subperitoneal tissue is often found infiltrated with exudate.

FIG. 5.—The peritoneum is divided and the caecum is exposed. Even when this stage is reached there may be no indication as to the position in which the appendix is lying.

FIG. 6.—The lower and inner part of the wound is retracted, and part of the appendix is seen swollen and deeply congested and hanging down into the pelvis. Some adjacent coils of small intestine are seen. The omentum is not represented in any of the illustrations, nor is any peritoneal exudate.

FIG. 7. See p. 396.

FIG. 8.—The outer part of the wound is retracted, and the appendix is seen swollen and inflamed on the outer side of the caecum. Before the abdomen is opened it may be quite impossible to tell with any certainty whether the appendix is on the inner side, beneath, or on the outer side of the caecum. In such a case as this, if a semilunar line incision is used, healthy omentum or small intestines will very likely appear when the peritoneum is opened, and must be pushed aside before the infected area is reached. Through the oblique incision recommended these two structures may not be seen at all.

FIG. 9.—Operation on a young woman of 20 with acute appendicitis in which the usual incision revealed only a coil of small intestine in the iliac fossa. The incision was extended upwards, and the appendix was found inflamed and adherent to the front of the colon, as represented in the illustration. The caecum had not descended. The illustration demonstrates how extremely inappropriate a mid-line, or even a right semilunar line incision, would have been in this case, but how easy it was to deal with the unusual condition found by extending upwards and outwards the oblique incision made over the iliac fossa.

FIG. 10.—Commencing closure of the wound. A tube is placed at the lower and inner angle of the wound and extends to the bottom of Douglas's pouch. This is a case in which a collection of pus has been found in the pelvis, and the surgeon considers that drainage is necessary. The peritoneum and subperitoneal tissues are united with interrupted catgut sutures. For this layer and for the suturing shown in the subsequent illustrations many surgeons would use a continuous suture.

FIG. 11.—The transversalis and internal oblique are sutured.

FIG. 12.—The external oblique is sutured.

FIG. 13.—The skin is sutured. In many cases in which there is no large collection of pus the wound may be united completely without the employment of drainage.

FIG. 14.—In many cases in which the appendix is lying on the outer side of the caecum the only collection of pus found is in the right flank, and in these it may be best to close completely the original wound and to drain by a separate stab puncture in the loin, as seen in the illustration.

that I am bringing this matter forward for consideration by this Section to-day. Successful results in operating on acute appendicitis can, of course, be obtained by many methods, and it is probable that the man behind the method is the most important factor of all.

I am well aware that it is impossible in many cases for the surgeon to be confident of the exact condition he will find when it is his duty to open the abdomen of a patient who has been in perfect health two or three days previously, and in whom it is evident that a very grave intra-abdominal condition has arisen. There is more than one abdominal viscus which is liable to sudden derangement of function, and the early symptoms may not enable the surgeon to decide which viscus is at fault. Under these circumstances most of us would choose an incision in or near the mid-line of the abdomen, because the operation is an exploratory one, an accurate diagnosis not being possible; and although such an incision may be a wise one under the circumstances, I do not think it is at all a good one if the case turns out to be one of acute appendicitis.

The method, therefore, which I recommend to-day is one which I have found the best for cases of acute appendicitis in the first few days of the illness, and in which the surgeon can be reasonably confident of the correctness of his diagnosis. The method does not so much apply to a case to which the surgeon may not have been called until the patient has been ill for ten to fourteen days, not nearly so common a condition of affairs at the present time, by the way, as it was twenty years ago, and when there may be a pint or two of pus in the abdomen.

There are to my mind certain governing conditions of fundamental importance which should be remembered when an operation on a case of acute appendicitis is undertaken, and some of them are:

1. That the shortest route should be chosen to the infected area, and the fullest possible view obtained of it, to enable the surgeon to deal adequately with the extent of the infection found.

2. That the intestines and the other abdominal viscera around this area should be disturbed as little as possible, but with the reservation that the treatment of the infection must be efficient. I believe that it is of vital importance that these cases should be dealt with by following the disease where it leads, and with the minimum disturbance of other abdominal organs in the neighbourhood.

3. That the operation should be performed as rapidly as possible, but again with the same reservation as in 2. The late Dr. Murphy told us that in these cases we must get in quickly and get out quickly, and this is advice which we should all remember.

4. That in all cases, with very few exceptions, the appendix should be removed. If a surgeon wants to cure a patient with acute appendicitis within a reasonable time the appendix must be removed. There are two cases in Norwich at the present time in each of which I opened a large abscess nearly a year ago, and both are still draining. It may be objected that in the search for the appendix existing adhesions will be disturbed, healthy peritoneum will be opened up, resulting in spread of the infection. In my view the result depends on how the search is conducted. If adhesions are widely separated in many directions the area of the infection may be extended, but if careful separation is carried out, beginning at the end of the caecum, where the base of the appendix must be, the patient will not be put in grave danger. In my opinion the danger has been greatly exaggerated, and, furthermore, the risk of a septic focus in the abdomen and a discharging sinus persisting for months, due to an unremoved appendix, is by no means to be disregarded. A septic pylephlebitis has not infrequently been set up by an old focus due to appendix trouble, and after this complication has arisen I know no medical or surgical means of combating it. If the surgeon be called to a patient who has been ill for a long time, and is in a critical condition from septic absorption, or if he or she be old and feeble, it may be impossible, in the time allowed, to find the appendix in the wall of the abscess cavity; but even in these cases the end of the caecum should be inspected to see if the base of the appendix can be exposed and the organ removed. But, as I said before, the cases in which the appendix should not be removed are very few and far between.

I feel, Mr. President, that I ought to have made this communication to an audience in any other centre rather than in this city, because although the particular incision recommended—an oblique one over the iliac fossa—is one which I have myself practised for twelve or fifteen years, I was not aware until comparatively recently that you had yourself strongly advocated this route not less than twenty-five years ago, and have continued to do so from time to time since. Others have also recommended an incision in the same situation. But I think it is worth while to bring the matter up again for consideration, because the conditions which should govern the procedure of the operation, and which I have already mentioned, can only be adhered to by using this particular incision. I know surgeons who habitually use the mid-line or the right semilunar line incision in cases of acute appendicitis operated on during the first two or three days of illness, and these incisions I would strongly urge are not the best to use under the circumstances.

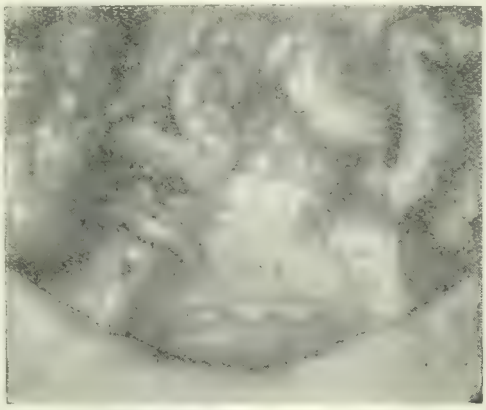


FIG. 7.—Reproduced from Kelly's classical work, *The Vermiform Appendix and its Diseases*. The appendix is seen hanging down into the pelvis with its tip disappearing into a pool of pus. The advisability of opening such an abscess by a separate mid-line incision or through the rectum or vagina is considered in the text.

Now the first of the four conditions alluded to above and which I deem to be of such importance—namely, "that the shortest route be chosen to the infected area and the fullest possible view should be obtained of it," leads me at once to the consideration of the anatomy of this region. The illustrations are home-made products, and in making them I have endeavoured to show roughly what I myself see at these operations, leaving out unessential details.

There are one or two points worth considering in connexion with the operation itself. If the appendix is not seen quite early in the operation, I believe it is a good thing to retract the lower and inner part of the wound, and to see if the appendix is hanging over the pelvic brim—a very frequent position and one which usually is associated with a collection of pus in the pelvis. Even if the appendix is found in the iliac fossa with only a drachm or so of pus around it, there may be an unsuspected collection of some ounces of pus in the pelvis which has trickled down in a narrow stream. Unless the pelvis is explored in these cases this collection may be overlooked, and I believe that some of the cases of acute appendicitis which have apparently improved for a day or two after the appendix, found lying in the iliac fossa perhaps on the outer side of the caecum, has been removed, but have died subsequently at the end of about a week with signs of generalized peritonitis, may be instances in which an unsuspected pelvic collection of pus has been left behind.

To drain a pelvic collection (Fig. 7) some surgeons are in the habit of making a separate mid-line puncture just above the pubis, even when the original incision has been over the iliac fossa. I do not believe that this is ever necessary. If the collection in the pelvis needs drainage it can be just as efficiently secured by a tube put into the pelvis at the inner end of the oblique incision recommended.

Opinions as to the best method of draining a collection of pus in Douglas's pouch, the result of acute appendicitis, vary. Some surgeons open these through the vagina or rectum. This method has the advantage of dependent drainage. Some will drain by one of these routes although there is also an opening above through which the abscess has been opened. I am well aware of the fact that when such an abscess has burst spontaneously through the

rectum the patient's symptoms have subsided and the patient has apparently recovered, but how long does the discharging track into the rectum persist after the patient is apparently quite well?

I do not believe that this drainage through the rectum or vagina is necessary or desirable. Drainage through the abdominal incision is all that is required, and although Nature may evacuate an appendicular abscess per rectum, that is no reason why we should adopt her route if we know of a better.

An objection may be raised that this method of operating severs many muscular fibres, and so is liable to cause a ventral hernia. When it has been possible to close the wound completely after removal of an inflamed appendix and the wound has healed by first intention, I have never known a hernia to develop. If it is necessary to insert a tube, then the tube track is, of course, a weak spot in the abdominal wall, and a hernia may result. But the possibility of this sequela is of no importance whatever in view of the urgent condition of the patient, which should override every other consideration. Furthermore, a hernia in this situation is the easiest one in the body to cure by a secondary operation.

I hope that I have demonstrated to you that when the caecum is on the right side of the abdomen an appendix in any position can be removed through the incision I have advocated. By an extension of the wound down and in, the appendix hanging down into Douglas's pouch can be sought for and removed and the pelvis drained. By an extension up and out the appendix can be exposed when it is lying just below the liver, and through the middle of the incision the appendix in intermediate positions can be dealt with. This incision also offers the easiest method of approach whereby the surgeon can, by his operation, fulfil the conditions named at the commencement of this paper.

DISCUSSION.

Mr. HAMILTON RUSSELL (Melbourne) did not think that Sir H. Ballance's advice to sever the internal oblique and transversalis fibres transversely could be sound. It was quite true that if they were accurately brought together, and if then healing without suppuration occurred, no hernia would result, and all would be well. But if the wound suppurated, or if a tube had to be used, hernia was practically certain to supervene. In the great majority of cases ample room could be obtained by the muscle-splitting method. One had as further resources (1) to extend the muscle opening into the rectus sheath; and if that was still insufficient, to (2) incise the muscles transversely in one-half of the exposed area only, subsequently bringing all the muscle so incised into accurate apposition, and so practically reconverting the case into the muscle-splitting method.

Mr. RUSSELL COOMBE (Exeter) disagreed entirely with the suggestions made by the writer of the paper in regard to the incisions. His preference was for incision just within the semilunar line, which had proved invariably satisfactory in his hands and had not resulted in hernia. If drainage were necessary it was easily accomplished through the lower end of the incision.

Mr. E. W. G. MASTERMAN (Camberwell, London) wished to refer to two points. First, with regard to the site of the incision, he agreed with the last speaker that for suppurating appendicitis—which formed the great proportion of his cases—an incision along the outer edge of the rectus was much to be preferred to an oblique incision. He reserved the "gridiron" incision for cases in which he did not expect to have to drain. He could not at all agree with the method of cutting across the fibres of the transversalis muscle, especially in cases needing drainage. Ventral hernia was far more likely to follow an oblique incision than one in the semilunar line. The second point was the removal of the appendix. It would be a mistake to make too absolute a rule about this. Some cases, especially retrocaecal ones with many adhesions, were very difficult to remove, and although those who, like Sir Hamilton Ballance, doubtless had a very low percentage of cases in which this was not done, younger surgeons, who had less experience, would be wiser not to spend too much time over efforts at removal which might by greatly prolonging the operation seriously imperil the patient's chances. Many cases where the appendix was left got quite well, and if necessary the appendix could be removed under more favourable conditions at a subsequent operation.

Mr. H. S. SOUTTAR considered that a muscle-splitting incision at McBurney's point was best for all cases of appendicitis. By extending the split in the internal oblique and transversalis into the rectus sheath, and then downwards towards the pubes, a large triangular flap is mobilized, giving the freest access to the whole of that region of the abdomen.

Mr. MCADAM ECCLES said: The one point is a free exposure of the infected area, with as little damage as possible to the overlying parts. I would say, never open the rectus sheath when operating for acute infection of the appendix; always keep on the outer side of the rectus. Never cut the internal oblique and transversalis muscles; separate their fibres. Never cut the anterior branch of the eleventh thoracic nerve, which is apt to be cut when the muscle fibres are divided. I have seen quite a number of cases of right inguinal hernia develop within a year of the primary operation, when the appendix scar is sound.

Mr. MARCUS MAMOURIAN (Ashton-under-Lyme) advocated the gridiron incision. He found that it was best to cut the internal oblique in the line of its fibres with a sharp knife, and not to separate them with a blunt-pointed instrument.

Sir HAMILTON BALLANCE, in his reply, said that he could not justify an operation through an incision big enough to admit only two fingers. He wanted to see the area of operation. He agreed that hernia frequently resulted if a tube had been used, as obviously a weak spot was left in the scar, but it was a hernia easy to cure. With increasing experience the number of appendices left behind in an operation in the acute stage was becoming smaller.

DEMONSTRATION.

THE following are short notes of the cases demonstrated by Professor RUTHERFORD MORISON in the War Pensions Hospital, illustrating (1) the bipp method of treatment of infected wounds; (2) the treatment of bone cavities, especially dealing with fat grafts; (3) the value of Lane's plates in certain bone graft operations. Professor Rutherford Morison showed cases illustrative of a new principle in surgery—namely, that if an infected wound or an abscess be treated by operation and the thorough application of suitable antiseptics it may heal, regardless of the variety of infection, by "first intention." He did not regard the bipp method as the last word to be said on this subject, but meanwhile it was the best he knew, and the results obtainable were surprising.

Bone Cavities.

This method had made it possible to treat bone cavities by filling them with fat grafts and closing them up with success. This was a matter of national importance. The chief difficulty was to get the bone cavity and fat covered by healthy skin. If this could be done, healing by "first intention" followed a satisfactory operation. If fat was exposed healing was much delayed, but the grafts were not extruded and with proper wound treatment would eventually become vascularized and replaced by new bone.

Case 1.—Pens. L., aged 33. Wounded August 18th, 1918: Fractured tibia. Five previous operations. Final operations (by Mr. Cuff): First operation May 29th, 1920; second operation June 22nd, 1920. Healed April 18th, 1921—ten months. Delay due to separation of skin edges and exposure of fat.

Case 2.—Pens. W. W., aged 21. Wounded September 7th, 1916: Large bone cavity in femur. Many previous operations—more than ten. Last operation July 2nd, 1920 (Professor Morison): cavity filled with fat grafts. Skin flap sloughed over cavity. Healed March 21st, 1921—eight months.

Case 3.—Pens. J. E. S., aged 21. Wounded October 9th, 1918: Fractured femur; large cavity. Ten previous operations. Last operation (Professor Morison) August 31st, 1920. Healed October 30th, 1920—two months. (Case not shown.)

Case 4.—Pens. G., aged 23. Wounded April 27th, 1915: Fractured femur; large cavity. Six previous operations; never healed. Final operations (Professor Morison):—First stage (September 16th, 1920): Cavity cleaned, bipp technique. Second stage (October 15th, 1920): Wound healed over bipped gauze; opened up; cavity filled with fat grafts. First dressing November 6th, 1920 (three weeks). Wound over cavity healed by first intention, but broke down in centre later (December 4th, 1920). Soundly healed February 14th, 1921—four months.

Case 5.—Pens. T. S., aged 25. Wounded October 4th, 1918: Fractured tibia. Seven previous operations. Last operation (Professor Morison) September 24th, 1920: Cavity filled with fat grafts. Healed April 18th, 1921 (six and a half months). Delay due to separation of skin edges and exposure of fat grafts.

Case 6.—Pens. B., aged 23. Wounded November 10th, 1918: Fracture of tibia. Twelve previous operations; at one fat grafts were used, but no bipp, and the fat suppurated out. Final operation for bone cavity October 8th, 1920 (Professor Morison): Cavity bipped and fat grafted. Some infection of wound, but insufficient to disturb exposed fat grafts. February 25th, 1921: Wound healed. March 30th, 1921: Radiant heat; scars broke down. Healed April 28th, 1921—six months.

Case 7.—Pens. D., aged 43. Wounded May, 1918. Large bone cavity in upper end of ankylosed humerus cured by muscle grafts. The case is shown specially to illustrate the difficulty of treating shoulder wounds, and partly because he is the only case we have had here showing bipp poisoning in the first degree. Operated October 21st, 1920. On October 28th bipp absorption. Not at all ill, but blue line round teeth. April 28th, 1921: Still sinuses in soft parts, but bone cavity healed long ago.

Case 8.—Pens. B., aged 43. Wounded June 2nd, 1915: Fractured tibia. Five operations since. Fat graft used at one of them, but no bipp, and fat suppurated out. Final operation for bone cavity, November 2nd, 1920 (Professor Morison). Skin flap partially sloughed, exposing fat. Still not quite healed. Small sinus. This man is in bad health from some stomach trouble, and his skin rebels against either bipp or flavine.

Case 9.—Pens. C., aged 29. Wounded April 16th, 1918: Fractured femur. Eight previous operations. Final operation for bone cavity, November 15th, 1920 (Professor Morison). The wound has alternately healed and broken down again. Was healed on April 18th, 1921, but broke down superficially eight days later. Still a small sinus.

Case 10.—Pens. McB. Wounded December 8th, 1916: Fractured femur. Twelve previous operations. Last operation November 19th, 1920 (Professor Morison). January 6th, 1921: Returned from Christmas leave all healed—seven weeks and five days.

Case 11.—Lieut. H., aged 24. Wounded April 9th, 1917: Fractured humerus. Eight previous operations. Last operation November 19th, 1920 (Professor Morison): Cavity in upper end of humerus filled with muscle graft from deltoid. Healed December 14th, 1920—twenty-five days. (Case not shown.)

Case 12.—Captain A., aged 26. Wounded August 13th, 1918: Fractured femur. Ten operations since failed to secure healing of sinus in thigh. Operation for bone cavity November 26th, 1920: Fat grafts (Professor Morison). Wound entirely healed December 20th, 1920—twenty-four days. (Case not shown.)

Case 13.—Pens. M., aged 28. Wounded July 1st, 1916, in right knee. Five operations previous to fat grafting. Last operation February 3rd, 1921 (Professor Morison). Healed February 27th, 1921—twenty-four days.

Case 14.—Pens. B., aged 28. Wounded September 26th, 1915: Fracture of right femur. Never been healed. Many operations. Discharging sinus. Numerous acute flares-up and several abscesses incised in different places. Operation February 9th, 1921 (Mr. Irwin): Muscle graft in cavity. Healed March 2nd, 1921—three weeks.

Case 15.—Pens. H., aged 28. Wounded December 20th, 1915: Fractured humerus. Sixteen operations on arm—never healed. Last operation, fat grafts, April 1st, 1921 (Professor Morison). Healed April 18th, 1921—seventeen days.

Case 16.—Pens. L., aged 23. Wounded October 25th, 1917: Fractured femur. Sixteen previous operations. Last operation for bone cavity, fat grafts, April 8th, 1921 (Professor Morison). Healed April 18th, 1921—ten days. Some serum escaped since sutures were removed. Soundly healed May 2nd, 1921—twenty-four days since operation.

Case 17.—Pens. D., aged 25. Wounded September 18th, 1916: Fractured femur. Persistent sinus. Wound healed periodically; never remained healed for more than five weeks. Seven previous operations. Last operation April 29th, 1921 (Professor Morison): Cavity in femur filled with fat grafts. (Large sequestrum removed with difficulty.) May 2nd, 1921: Dressed first time; wound looked perfect. June 10th, 1921: Small piece of loose bone felt in sinus—could not be removed. July 18th, 1921: Sinus now very small: no bone felt.

Case 18.—Pens. H. Wounded April 23rd, 1917: Fractured tibia. Never healed for more than three months. Eleven previous operations. Last operation May 12th, 1921 (Mr. Irwin): Cavity cleaned; bipp technique; combined fat and muscle graft. May 21st, 1921: Dressed. One small granulating surface centre of scar. June 9th, 1921: Wound entirely dry and healed—four weeks after operation.

Case 19.—Pens. C., aged 26. Wounded November 17th, 1917: Fractured humerus. Six previous operations. Never healed. Last operation July 8th, 1921 (Professor Morison): Cavity cleaned; bipp technique, and filled with fat grafts and one strip of deltoid. July 14th, 1921: Dressed first time (six days). All healed except small area size of little finger-nail at bottom of incision scar. Healed July 27th—seventeen days.

Bone Grafts.

Professor Morison had brought bone graft cases to illustrate the fact that repair would follow bone grafting if a Lane plate was used to fix the graft, when other methods had failed.

Case 1.—Pens. C., aged 30. Wounded April 14th, 1918. Four previous operations. Gap in humerus. Operation November 17th, 1919 (Professor Morison): Bone graft, 2 plates. Dressed December 28th, 1919. Wound opened up; graft exposed; plates removed. Union lower end of graft; upper end free. November 30th, 1920: Graft still exposed, but union firm at both ends. July, 1921: Same as in November.

Case 2.—Pens. P., aged 24. Wounded October 27th, 1918. Non-union of radius. Last operation September 1st, 1919 (Professor Morison): Bone graft to radius fixed with long Lane plate. October 31st, 1919: Lower screw sprung. Discharged with good union of bone and useful hand. Worked regularly till January 24th, 1921, then returned to have plate removed as the lower end was projecting under skin and causing inconvenience. January 28th, 1921: Removal of plate—seventeen months later. First dressing, February 14th, 1921—seventeen days. Healed by first intention.

Case 3.—Pens. P., aged 38. Wounded September 28th, 1918: Fracture of radius. X ray showed gap in radius. No union. Operation November 5th, 1920 (Professor Morison): Bone graft—two plates. Dressed December 6th, 1920—thirty-one days. Wound dry; one small granulating area unhealed. Abundant callus and bone appeared firm. In two months the patient started work—working in a shipyard. The new bone was quite strong.

Case 4.—Pens. S., aged 26. Wounded September 21st, 1917. No union of tibia. First operation for bone grafting, October, 1919 (Mr. Cuff), by Albee method, which failed as graft did not unite. Last operation December 10th, 1920 (Professor Morison): Bone graft—three plates. Dressed first time, January 14th, 1921—five weeks. Not quite healed. Leg felt firm. Quite healed March 11th, 1921. Bony union firm with abundant callus. April 28th, 1921: Now strong thick tibia. Plates to be removed. May 3rd, 1921: Plates removed. May 13th, 1921: Dressed. Skin partially sloughed. No bone exposed. June 13th, 1921: Still a little discharge from granulating areas. Union firm—big mass of bone. Patient walking on calliper splint.

Case 5.—Pens. R. P. W., aged 32. Wounded April 13th, 1917. Seven or eight operations before admission. Head of humerus had been removed for ankylosis of humerus to scapula. Last operation January 21st, 1921 (Professor Morison): Bone graft—upper end driven into glenoid; plate at lower end. First dressing March 7th, 1921—six weeks, three days. All healed except two small granulating areas. Large mass of callus. Bones appeared to be united. April 15th, 1921: One small granulating area unhealed. Union at both ends quite firm. Large mass of callus. Good movement of scapula. May 6th, 1921: Operation. Plate removed. June 13th, 1921: Healed, big mass of callus, but union not yet strong. June 17th, 1921: Arm put up on abduction frame with plaster-of-Paris.

Case 6.—Pens. C. A. M., aged 21. Wounded April 28th, 1917: Fracture of humerus. Three previous operations—wiring and step method and bone-grafting of humerus. Last operation January 28th, 1921 (Professor Morison): Bone-graft and plating. Dressed March 11th, 1921—six weeks. All healed except one small granulating area. Union of the graft appeared firm. Second dressing April 22nd, 1921—six weeks. Entirely healed and union firm.

Case 7.—Pens. K., aged 27. Wounded September 16th, 1916: Fracture of left humerus. Five or six previous operations. Attempts to obtain union by step method and wire and plate humerus. Last operation February 4th, 1921 (Professor Morison): Bone graft and plate. Dressed March 18th, 1921—six weeks. One or two small granulating areas in scars. Union of the graft appeared to be quite firm. April 28th, 1921: Humerus thick and firm. An old scar has ulcerated in neighbourhood of plate, which will now be removed. Plate removed July 15th, 1921.

SECTION OF OTO-RHINO-LARYNGOLOGY.

G. WILLIAM HILL, M.D., B.Sc., President.

DISCUSSION ON PROBLEMS IN CONNEXION WITH THE EARLY DIAGNOSIS AND TREATMENT OF MENINGITIS OCCURRING IN AURAL CASES.

OPENING PAPER

BY

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Consulting Surgeon to St. Thomas's Hospital, etc.

MENINGITIS is the most complex and most dangerous complication of aural disease.

CASE I.

Quite recently I saw a man, aged 40, who for five years had had an intermittent purulent discharge from the left ear. He had been taken ill suddenly with pain in the ear and fever. Three days later the pain was intense and the temperature 104°. The complete mastoid operation was done; in the evening he was somnolent and the next day he died. I saw him in consultation the day after the mastoid operation had been done; he was dying of general meningitis.

This case is an example of malignant meningitis secondary to untreated chronic aural suppuration, and ought not to have ended fatally. The persistence of the disease in the temporal bone is the indication for operation. The indication for operation is not, and ought never to be, the onset of an intracranial complication. We do not await the onset of general peritonitis before removing an inflamed gall bladder, a suppurating Fallopian tube, or a diseased appendix.

CASE II.

A boy, aged 12 years, had a cold on a certain Friday; on Saturday and Sunday he complained of pain in both ears. On Monday evening I saw him; he was drowsy, the temperature was 104° F., there was oedema over the left mastoid and both tympanic membranes were bulging. There was no discharge from either ear. The pulse was 120. The same evening the tympanic membranes were incised and the operation for acute mastoid suppuration was done on the left side. The lateral sinus was exposed for 1 in.; part was pink in colour and inflamed. The next morning he was little, if at all, better, and during the afternoon he was drowsy, complained of headache, was restless and vomited. The temperature was 102°, the pulse had come down to 80, the pupils were somewhat dilated and reacted slowly, tenderness was manifest over the right mastoid, and the optic discs were pinker than normal. The same evening an operation was performed on the right mastoid of an exactly similar character to that which had been carried out on the left side; every cell of the pneumatic mastoid was full of pus, and the dura over the lateral sinus and beyond was red. Lumbar puncture was now done and 2 oz. of clear fluid under pressure withdrawn. The next morning there was no headache, no sickness, no drowsiness, and the pupils reacted well. Convalescence was rapid, and on both sides practically perfect hearing was regained.

This is an illustration of meningitis serosa complicating bilateral acute mastoid disease. The case clearly emphasizes an important fact—namely, that the operation in very acute mastoid inflammation is not complete till lumbar puncture has been done.

Cases are sometimes met with in which meningitis and aural suppuration occur at the same time from the same infection—for example, in general pneumococcus infection, in cerebro-spinal meningitis, and also possibly in influenza; but in most instances meningitis occurring in aural cases is a secondary effect of the ear condition, and if preventive treatment had been carried out would not have occurred. The opportunity for prevention is sometimes not offered, and, alas! is certainly not always taken. In every aural case with acute symptoms, especially when the ear disease is of old standing, it should be carefully considered whether the ear disease alone can account for the symptoms. In most, if not in all such cases, examination of the cerebro-spinal fluid is an essential element in the diagnosis. It is idle to hope that a mastoid operation will cure a case of commencing meningitis maligna.

The symptoms which lead to the suspicion that an aural case is complicated with meningitis are diffuse headache, irritability alternating with somnolence, fever, occasional vomiting, and a pulse more rapid than the temperature would warrant. The patellar reflexes are often suppressed, and Kernig's sign may be present. The cerebro-spinal fluid is under increased pressure. It may be clear or turbid, and in either case may or may not be sterile. According to Barries,[1] constant sterility of the cerebro-spinal fluid obtained by lumbar puncture with severe symptoms indicates the presence of some other suppurative intracranial complication, especially localized pachymeningitis interna suppurativa, or brain abscess, to which, and not to general suppurative meningitis, the symptoms are due.

CASE III.

A man, aged 40 years, came under my observation. I need not detail the history, but attacks of severe headache, drowsiness, dream state, rise of temperature, and nausea were present. More than thirty of these attacks occurred, and were all relieved by lumbar puncture. As time went on the attacks were associated with momentary unconsciousness and were preceded by an aura of a bad taste or a bad smell. The patient kept peppermints in his pocket in case the bad taste came on. The signs induced by the uncinate cortical discharging lesion became the prominent feature of the case. Operation was carried out and an ounce of pus was evacuated from the temporo-sphenoidal lobe. The pus yielded a pure culture of *Staphylococcus aureus*. The lumbar puncture fluid was always milky in appearance and sometimes contained as many as 4,000 polymorphs to the cubic millimetre. It was examined on each occasion for bacteria but without success. The cell proliferation was due to a toxin, not to a micro-organism. The patient recovered.

The varieties of meningitis met with in association with ear disease are (1) meningitis serosa; (2) meningitis suppurativa; (3) meningitis tuberculosa; and (4) the posterior basic meningitis of infants. The first three varieties may be either localized or diffused.

Meningitis Tuberculosa.

This is variously associated with ear disease. Sometimes the meninges become directly infected from a tuberculous temporal bone, and sometimes aural symptoms occur late in tuberculosis. Suppurative tuberculous disease of the temporal bone, by the time it comes under treatment, is always a mixed infection, and thus a meningitis arising therefrom may be either tuberculous or non-tuberculous. An operation on a child with tuberculous temporal bone disease may prove fatal in thirty-six hours, the patient never really recovering from the operation. This fatal event happens occasionally after operation on a tuberculous bone in other parts of the body—for example, the femur—and is explained by the presence of miliary tuberculosis of the meninges which has up to the time of operation produced no symptoms, or none which can be recognized.

I do not propose to discuss the symptoms of meningitis tuberculosa, except to remind you that focal cerebral symptoms may occur which may vary considerably during the course of the illness, and which may lead to brain abscess being suspected. It is well to beware of being led astray in this matter; the rapid pulse and the rise in temperature are generally sufficient to exclude abscess, and, further, the history may disclose the fact that the child was dull and irritable even before illness was suspected.

The more hopeful cases are those with local patches of tuberculous meningitis in continuity with a tuberculous temporal bone. In such circumstances a contralateral hemiparesis or an ipsolateral squint may be observed which in some cases may yield to a complete local operation followed by lumbar puncture.

CASE IV.

A boy, aged 9 years, had a watery discharge from the right ear off and on for three years. For six weeks he had had pain in the head on running. For two weeks there had been violent headaches and severe vomiting. Squint of the right eye due to paralysis of the external rectus had been noticed for one week. Operation forthwith; the mastoid was filled with tuberculous granulation, and the dura was granulating over a considerable area. Lumbar puncture; much fluid removed. The patient made a complete recovery.

CASE V.

Male, aged 12, had right purulent otorrhoea, vomiting, drowsiness, and weakness of left arm. The temperature was 100° and the pulse 110. The temporo-sphenoidal lobe was explored for abscess. The autopsy showed tuberculous meningitis.

CASE VI.

A girl, aged 6, had right ear disease and left hemiplegia. The physician's diagnosis was tuberculous meningitis. No operation. The autopsy showed chronic abscess of the right temporo-sphenoidal lobe.

In meningitis maligna it is not sufficient simply to drain off that quantity of fluid which causes the increased pressure. No one outside a lunatic asylum would dream of treating acute spreading suppuration in the thigh by a trocar and cannula. Why should anyone expect to arrest acute spreading suppuration of the meninges by a cannula? In a spreading suppuration of the soft parts of the thigh, besides the primary incision, counter openings would probably be required in order to obtain free drainage. Secondary incisions of the arachnoid membrane in spreading subarachnoid suppuration cannot be done. All the more, then, should we determine to make the opening into the cisterna as wide as possible.

Posterior Basic Meningitis.

The posterior basic meningitis of infants and young children is a febrile epidemic disease, and is interesting to the aural surgeon in that the tympanum almost always contains pus or muco-pus. The striking sign is the retraction of the head. The drum membranes are often unaffected, appearing quite normal, but on incision pus or muco-pus escapes. This little operation is often followed by a notable remission in symptoms.

I drained the cisterna magna for the first time in 1891, at Great Ormond Street Children's Hospital, by trephining the occipital bone close to the foramen magnum.[2] This is commonly known as the Parkin operation.[3] In cases of posterior basic meningitis the foramen of Magendie may be blocked by the septic exudation, and it is necessary not only to open the cisterna magna but also to break through the pia matral expansion forming the posterior half of the roof of the fourth ventricle.

Meningitis Serosa.

Fluid accumulates more or less rapidly in the subdural, subarachnoid and ventricular spaces. It is well known that an infective focus in the neighbourhood of a serous membrane may so influence it as to lead to a serous effusion into the cavity. For instance, a pleural effusion, which may long remain serous, may be due to suppuration around caries of the rib, or to an abscess deeply placed between the lobes of the lung and quite shut off from the general pleural cavity. In the same way an appendicular abscess or a pyosalpinx may cause serous peritonitis. In like manner extradural suppuration may and often does give rise to meningitis serosa.

The sero-toxic inflammation is ordinarily diffuse, but it may be restricted to the particular part of the cranial cavity nearest to the focus of suppuration. In temporal bone disease the portion of brain liable to infection is the cerebellum or the temporo-sphenoidal lobe. A sero-toxic meningo-encephalitis may occur, the inflammation spreading to the cerebral cortex underlying the affected meninges. Symptoms then may arise indicating disease of some particular portion of the brain. In such cases the diagnosis is made by the cure of the disease by operation. Serous meningitis is most frequent in childhood and early adult life. It is common in acute and fulminating mastoid inflammation, when some portion of the dura exposed at the operation may be found inflamed. In such cases it is far better to expose the dura freely than to leave inflamed bone in contact with this membrane.

The symptoms which may be expected in meningitis serosa are headache, drowsiness, rise of temperature, relatively slow or rapid pulse, restlessness, furred tongue, nausea, aching pain in different parts of the body, absent knee-jerks, and dilated sluggish pupils. Lumbar puncture gives striking relief in most of these cases, and may prevent a serous meningitis from becoming purulent.

The lesson which I have learnt from these cases—and I wish again to lay stress on it—is that in acute mastoid inflammation the operation is incomplete without the performance of lumbar puncture. I also desire to urge that in serious acute mastoid suppuration the wound should be left widely open, and especially is this desirable when the dura is exposed and is known to be inflamed. I am very certain that some cases that I have seen in consultation, and in one or two in which I was myself the operator, the anxious condition of the patients after the operation was the direct result of closure or partial closure of the superficial wound. To close a wound in cases of acute inflammation is contrary to the fundamental principles of our art and science.

Meningitis Suppurativa.

The ordinary and very fatal form of meningitis suppurativa is subarachnoid meningitis, but there are other forms of meningitis suppurativa which are localized or which spread but slowly: (1) a sheet of pus may extend over the arachnoid membrane in the subdural space for some distance, or (2) pus may be limited by the fusing of the membranes together around the area of inflammation. In such cases the signs and symptoms may seem to indicate brain abscess, but a critical study of them ought to negative pus *in* the brain. I have published cases illustrating these various points.

In all cases a blood count should be done and the organism which has caused the infection isolated.

What are the resources of surgery when suppurative meningitis has commenced? It is obvious that the mastoid operation alone will not arrest the disease. Lumbar puncture is a temporary expedient. Incision of the dura will not drain the subarachnoid space.

Otitic meningitis is to some extent comparable with acute peritonitis: both conditions are secondary to an infection without the serous cavity, which must be remedied in order to effect a cure. In peritonitis the causative disease is approached through the serous cavity, and the primary and secondary conditions are dealt with in one comparatively simple operation. In otitic meningitis the operation for the cure of the primary disease does not reveal the condition of the serous cavity (the subdural space), and there is, moreover, a third condition to be remedied—namely, infection of the subarachnoid space, which is the greatest danger, and which opening the subdural cavity does not affect. If confronted with an acute infection of the retroperitoneal tissue in addition to peritonitis we should certainly effect drainage.

In acute purulent lepto-meningitis drainage of the subarachnoid space is the only surgical measure which can succeed. Can we do this efficiently?

The onset of meningitis maligna is sudden and unexpected, like a lightning flash in a clear sky; early diagnosis and prompt and correct action are as urgently required as in laryngeal obstruction or acutely strangulated hernia. I believe that frequent lumbar puncture, puncture of the cisterna magna cerebello-medullaris through the foramen magnum, and even irrigation of the subarachnoid space from a puncture of the ventricles to the lumbar theca are but trifling with a fatal disease. Free drainage is indicated as the only efficient and only hopeful plan of treatment.

Translabyrinthine drainage has one great advantage. It opens the sheath of the arachnoid which lines the internal auditory meatus, and thus forms an ideal but all too narrow a drainage tube for the subarachnoid space. Some cases have been saved from death by this method combined with lumbar puncture, but many more have died. Translabyrinthine drainage certainly should be done when there is pus in the labyrinth. Translabyrinthine drainage may give exit at first to large quantities of infected fluid, but the channel leading from the subarachnoid space tends to become blocked and is thus rendered ineffective for continuous drainage.

CASE VII.

A general was wounded in the head at Gallipoli. Both parietal bones were fractured near the vertex, and haemorrhage occurred from the sagittal sinus. I saw him a week later; he was then unconscious. The wound was very foul, foetid plugs were pulled out from the sinus, and some loose pieces of bone removed, a flap wound of the cortex of the right hemisphere leading into the lateral ventricle was found. Lumbar puncture gave exit to much turbid fluid. The next morning the patient was conscious; irrigation with large quantities of saline solution was carried out from the ventricle to the lumbar theca. The saline solution was coloured with methylene blue, the colour appeared in the escaping lumbar fluid in 25 seconds. This treatment was carried out every day. The patient remained conscious, but died from hypostatic pneumonia at the end of three weeks. The autopsy showed that the meningitis had been cured.

In this case the meningeal spaces and probably also the ventricle were directly infected at the time of the injury. The resulting meningitis was subdued. The large opening

into the ventricle in this case was very favourable to the treatment I adopted. The operation of puncture of the ventricle in cases of meningitis in civil practice in order to carry out irrigation from the ventricle to the lumbar theca has in my hands failed to save life.

When meningitis maligna is recognized at an early stage, the question presses whether the mastoid disease shall be dealt with, or whether efficient drainage of the subarachnoid space alone should be carried out. The first is advisable, but the second is imperative and essential. The point is a difficult one to decide—and each case must be judged separately. The longer an anaesthetic is administered, the less is the chance of recovery. On the whole I should be inclined to recommend that in selected cases free drainage of the subarachnoid space should alone be attempted.

I suggest that the occipital bone should be exposed by the T-shaped Cushing incision, the bone below the inferior curved line, including the posterior boundary of the foramen magnum, removed, and, in some cases, part of the posterior arch of the atlas taken away, the dura widely opened, *the posterior border of the cerebellum raised*, and the arachnoid membrane forming the posterior wall of the cisterna magna incised from side to side. The breadth of the cisterna magna varies from 3 to 7 cm. The depth in the middle line just behind the vermis is 2 cm. The cisterna magna should be drained by placing within it strips of thin rubber tissue or strips of ribbon gauze. It is only because I have not seen one of these cases since the armistice, except in a moribund condition, that I have not attempted this method of treatment.

Dr. Irvine Haynes, in the *Transactions of the American Laryngological, Rhinological, and Otological Society* for 1912, contributes a thoughtful study of the surgical treatment of meningitis. The previous paper in this volume is by Dr. Samuel Kopetzky on the pathology of meningitis. These two papers form an admirable symposium of our knowledge of meningitis. In the following year (1913) the *Transactions* of this society contained a capital paper by Dr. Ewing Day. During the preceding twelve months he had seen twelve cases of suppurating meningitis, nine of which he had drained by Haynes's method. One recovered.

Haynes suggested and practised exposure of the occipital bone below the inion by means of a median incision, the removal of the central portion of the bone, and incision of the dura mater. By this pathway the cisterna magna was exposed and drainage effected.

The median incision does excellently in children, in whom the parts are easily retracted; but in adults the addition of a short transverse incision (as in the crossbow incision of Cushing) greatly facilitates the operation, and is in no way harmful. An inadequate exposure is to be deprecated. I am keen on a very free visual operative field as an aid to the effectual carrying out of free drainage.

When the cerebellum lies low or is forced down through the foramen magnum the division of the arch of the atlas is, I believe, essential to the free visual exposure of the cisterna magna. The surgeon should see what he is doing, and not be content to move a probe about inside the dura mater till a gush of turbid fluid appears. The procedure recommended will not present any difficulties to those surgeons who are familiar with operations in this region.

At an early stage of meningitis maligna the cell elements of the brain are poisoned by the toxins of the disease. It is important to avoid the further poisoning of the cells by the administration of chloroform. When feasible then the anaesthetic chosen should be nitrous oxide and oxygen

After a craniectomy over the cortex and incision of the dura I have watched the flood of greenish-yellow fluid slowly spreading underneath the arachnoid between the convolutions. What is required is a method of drainage ample enough to reverse the normal current in the cisternae and in the streams and rivulets of cerebro-spinal fluid, and to divert the flow of fluid in them towards the region of drainage. I venture to think that free, unhindered, spontaneous drainage of the cisterna magna will do what no puncture can possibly accomplish. Early diagnosis and prompt operation can alone lead to a successful result.

"And danger, like an ague, subtly taints
Even then, when we sit idly in the sun."
Troilus and Cressida, Act III, Sc. 3.

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DISCUSSION.

Sir JAMES DUNDAS GRANT (Consulting Surgeon, Central London Throat and Ear Hospital) congratulated the Section on having the subject placed before it in the light of the principles of general surgery by Sir Charles Ballance. The view that in suppurative meningitis free drainage should be effected before removing the primary focus seemed revolutionary, but was obviously correct in view of the time lost in the carrying out of the radical mastoid operation. The accessibility of the cisterna magna through the occipital bone with the "cross-bow" incision had been demonstrated by Sir Charles Ballance's operations on the posterior fossa, at many of which the speaker had been present. The speaker felt sure that earlier adoption of this method of drainage would give good results. The cases in which the speaker had obtained recoveries were in his opinion of the serous variety, and had yielded to radical mastoid operation and repeated lumbar puncture.

Mr. MUSGRAVE WOODMAN (Surgeon, Ear, Nose and Throat Department, General Hospital, Birmingham) remarked that the operation of suboccipital drainage was difficult, and certainly sanguinary, but relatively safe. He called attention to the bilateral and symmetrical approach to the occipital region, which was necessary, cases of sudden death having been known to occur after a unilateral operation. He asked whether the removal of the posterior wall of the foramen magnum and arch of the atlas was necessary in all cases. He had found it difficult to define the exact position of this operation in dealing with meningitis; he thought it was clearly inapplicable to acute toxic cases, but suggested that it was of considerable value in disease which, although widespread, was not particularly virulent.

Mr. HUNTER TOD, F.R.C.S. (Senior Surgeon, Ear, Nose and Throat Department, London Hospital, etc.), said that apart from the intrinsic value of Sir Charles Ballance's communication, the discussion was of considerable importance in calling attention to the necessity of an early diagnosis in otitic meningitis, for on it successful treatment very greatly depended. He hoped that the report of this discussion would be read by many medical men, especially general practitioners, who, as a rule, first saw the patient. Sir Charles Ballance had compared the pathology of meningitis with that of peritonitis, but it must be remembered that meningitis affected much more vital parts than peritonitis. Peritonitis, formerly so fatal, was now treated with success because it was diagnosed very early; but if a surgeon only saw a case of peritonitis at the stage in which there was already profound toxaemia, could he save the case by an operation?

In meningitis, toxaemia, which might occur with very great rapidity, played a very large part in bringing about a fatal issue in spite of treatment, surgical or medical. For this reason operation could only be advocated in the earliest stage of the disease. Sir Charles Ballance had suggested that the operation for draining the cisterna magna should be undertaken in the first instance, and before performing the mastoid operation, but Mr. Hunter Tod said that he did not understand how this could arrest the infection from the primary focus.

He quoted two cases:

CASE I.

A man, aged 59, on the Thursday of Ascot week had a slight sharp attack of earache in the right ear, which soon passed off. He went to Ascot on the Thursday and Friday. On the Saturday, whilst watching a polo match, he felt severe pains in the head and became rapidly ill. He was taken to London and his doctor called in a nerve specialist, who diagnosed an irritative brain lesion, possibly sunstroke. A lumbar puncture showed increased tension of the fluid, which was opaque. The withdrawal of the cerebro-spinal fluid relieved the symptoms to a certain extent. Next morning, Sunday, he was worse and lumbar puncture was repeated with similar results. I was then called in consultation. On examination of the ears I found that there was a slight redness of Shrapnell's membrane on the right side; beyond this there were no signs of disease of the ears. Owing to the history of earache and the appearance of the tympanic membrane I was convinced that the primary focus causing the meningitis was in the attic region of the right ear, and although I felt the patient might not recover I advised immediate operation as a possibility of saving life.

Operation.—I operated within an hour and a half of seeing the patient. The tip of the mastoid seemed normal, but there

was some red fluid in the cells of the attic region. On puncturing the tympanic membrane no fluid was found in the tympanic cavity. Those present at the operation would not believe that the mastoid was infected. The patient died next day.

Bacteriological Examination. The cerebro-spinal fluid taken on Saturday showed abundant polynuclear cells, but no micro-organisms. The fluid taken just before the operation contained a few streptococci. A culture taken from a small portion of the mastoid bone grew profuse colonies of streptococci.

In this case it was undoubtedly proved that the apparently slight disease of the attic region was the cause of the meningitis, and suggests that if I had operated on the Saturday night, when perhaps there was only serous meningitis and before profound toxaemia had occurred, the patient's life might have been saved.

CASE II.

A boy was admitted into the London Hospital with all the symptoms of meningitis, although still quite conscious. There was a history of earache on both sides, but more especially on the right. There were no external signs of disease and no pain on pressure over the mastoid processes. There was a history of previous otorrhoea for two or three days on the right side.

Examination showed slight congestion of Shrapnell's membrane on both sides, but more marked on the left side, in which there had been no pain at all. Paracentesis was performed on both sides, nothing but a little blood escaping. Owing to the unreliability of the symptoms, and being unable to tell which was the affected ear, I did nothing further except lumbar puncture; the fluid withdrawn was excessive and opaque.

The boy died the next day. At the autopsy I examined the ears myself. On the right side the mastoid cavity and middle ear seemed normal, except that the mucous membrane was somewhat swollen. On the left side, which had given rise to no symptoms, a small localized extra- and intra-dural abscess, the cause of the meningitis, was found at the tip of the petrous bone corresponding to the roof of the Eustachian tube. The attic region and also the mastoid cells contained pus, but the tympanic cavity was not affected.

Mr. Tod said that such cases showed how difficult it was to determine where the focus of the infection was situated and what surgical measures should be adopted. He therefore advocated that in all cases in which there was a suspicion of meningitis, and in which there had been the slightest symptoms of an inflammatory aural infection, the mastoid should be opened, especially in the attic region and as far forward as possible along the tegmen tympani; and, in addition, that lumbar puncture should be performed, repeatedly if necessary. He believed that if this course were followed without delay successful results would be more often obtained.

Dr. DAN MCKENZIE (Surgeon, Central London Throat and Ear Hospital) said he would like to hear the opinion of the Section upon the question of the danger of septic meningitis following an accidental penetration of the dura mater during operation. He suggested that the danger had been exaggerated. He had himself accidentally wounded the dura on several occasions, but had not so far seen meningitis result therefrom. Simple treatment of such a wound seemed to prevent meningeal infection. This treatment consisted in removing the inner table of the skull around the dural wound and in the deliberate conversion of what was usually a puncture into an incision, between the lips of which some strands of gauze were inserted as a drain. But whether or not that treatment had had anything to do with the subsequent freedom from serious sequelae, the experience of these wounds had led him to the conclusion that, as brain surgery in general plainly showed, there was, if proper precautions were taken, no more risk in opening a healthy dura than in opening the peritoneal cavity. For this reason it might be claimed that even in the milder forms of meningeal infection a relatively free opening of the meningeal spaces might be undertaken without any fear of serious consequences, provided always that the modern aseptic technique was strictly adhered to. At the present stage of knowledge and attainment the two guiding principles in the treatment of septic meningitis were, first, the removal of the primary focus of infection, and, secondly, the drainage of the meningeal spaces. Of these, the first, as all knew, might present insuperable difficulties. It might be easy, it might be difficult, but it was often uncertain. When it could be accomplished there was no doubt, as the older records showed, that septic meningitis might get well without further surgical measures. Nowadays, however, few would contentedly leave such a case to Nature. It should certainly be treated by lumbar puncture and the withdrawal of cerebro-spinal fluid as often as seemed necessary. Some would go further, for, guided by the opinion he had already expressed as to the absence of danger in incising even the healthy meninges, they would open the meninges in the posterior fossa of the cranium if the symptoms were at all pronounced. With regard to the diagnosis of meningitis, he found that as time went on he was inclined, in the more slowly developing cases at all events, to give more regard to the symptoms—irregular pyrexia, headache, vomiting, nystagmus, and rigidity of the spinal muscles of the neck—than to the state of the cerebro-spinal fluid. It had repeatedly been his experience to find the changes of the fluid—cytological, chemical, and bacterial—deferred to a stage in the disease when the patient was beyond help, though this was not invariably the case. Sometimes, on the one hand, the cerebro-spinal fluid had given timely warning of danger, and sometimes also, as the records show, cases might be saved by operation even at a late stage. But in any case in which meningeal symptoms were present it was surely better to intervene early than to temporize until the cerebro-spinal fluid gave undoubted token of the presence of the graver forms of the disease. Having attacked the primary focus of infection, the surgeon had to face the meningeal infection; that might be treated in one of two ways—by repeated or continuous spinal tapping, or by drainage through the posterior fossa. Both might, of course, be used in combination. With regard to the relative advantages of these two routes, it was to be remembered that by opening the meningeal spaces in the posterior fossa the disease was attacked close to the site of origin, and drainage here, if it could be secured, removed what was perhaps the most gravely infected part of the cerebro-spinal system, whereas lumbar tapping must necessarily distribute the infection. Meningeal drainage was often difficult to maintain. Personally, he incised the dura of the posterior fossa close to the labyrinth, and inserted a tube through the opening as far as the cisterna magna. Events being otherwise favourable, success seemed to depend largely upon the freedom with which the cerebro-spinal fluid could be induced to flow.

Mr. J. F. O'MALLEY (Surgeon, Ear, Nose and Throat Department, University College Hospital) said that the suggestion of any new line of treatment in such a serious condition as meningitis, where a certain operative procedure was pursued in one case and the patient recovered, and a similar course was unsuccessful in another case of the same type, was of the utmost importance. The ideal method of surgical treatment of any disease of a septic nature was efficient drainage, and in consequence the condition was attacked by the direct removal of the septic focus. For this reason he was disposed to deal with a case of otitic meningitis by the transmastoid route, accompanied by repeated lumbar punctures. The separation of cases of meningitis into serous and purulent could easily be comprehended, the former being the active response of the serous membrane to the toxic action of a septic focus, and the latter the actual spread of the suppurative lesion. Malignant meningitis was not so easy to understand, from the point of view of its causative agents or the pathological mechanism present. It would be of the first importance if Sir Charles Ballance could give a definite clinical picture of a typical case, as its early recognition would determine the need for the most urgent and vigorous line of treatment. Heretofore the diagnosis had usually been made when a meningitic case terminated fatally at an early stage of the disease. Personally he was inclined to the view that an acute encephalitis was the greatest factor in producing the fatal result and not a pure meningitis, and that this was the reason for the poor response to drainage; in cases where a gross sepsis was found in the mastoid and middle ear, and this was removed, together with the relief of intracranial pressure by lumbar puncture, the result was often gratifying. Where this sepsis was very manifest and the organism causing the suppurative infection of the meninges was not streptococcal, the prognosis was most hopeful.

Mr. W. FRANK WILSON (Assistant Surgeon, Throat and Ear Department, Royal Victoria Infirmary, Newcastle-on-Tyne) gave particulars of a case of chronic middle-ear suppuration with meningitis and lateral sinus infection

(perisinusitis). Three days previous to admission to the Royal Victoria Infirmary, Newcastle-on-Tyne, the patient had severe headache and was dull and stupid, with alternating periods of somnolence and restlessness. There had been rigor on the morning of the day of admission to hospital; there was marked tenderness over the left mastoid and down the same side of the neck, and retraction and rigidity of the head and neck. The patient was very restless and shouting. The temperature was 103° F. Lumbar puncture yielded 30 c.cm. of turbid fluid, and polymorphs and pneumococcal organisms were found in it. Radical mastoidectomy was performed; the antrum was full of foul cholesteatomatous masses; the sinus far forward was covered with foul-smelling greenish pus; the roof of the antrum was absorbed, the dura exposed and covered with pyogenic membranes. The sinus was not thrombosed, but the internal jugular vein was tied in the neck because of the definite history of a rigor and to anticipate general systemic infection. The dura over the antrum and forward to the roof of the tympanum was freely exposed and all infected bone removed. The wound was flushed and left open and drained with bipped ribbon gauzes. The patient, who made an uneventful recovery, was shown among the cases from the Royal Victoria Infirmary at the afternoon demonstrations.

OTITIS MEDIA.

BY

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I SUPPOSE few will question the fact that otitis media, taking all classes of cases from simple earache to chronic suppuration and to chronic mastoiditis, is an exceedingly common disease in this country, and is responsible for an immense total of incapacity of varying degree, and directly or indirectly for not a few deaths.

The Registrar-General's report for 1919 gives 1,015 deaths in England and Wales in that year from "diseases of the ears," and I think it fair to presume that a certain number of the 2,576 deaths registered as "meningitis, other forms," had also their origin in aural disease.

This being so, the general lack of recognition of its seriousness by the public is, in these times of lay interest in matters medical, difficult to understand. Even more incomprehensible is it that there are apparently still some medical men who look upon the disease as one of relatively little importance. In consequence, only in a minority of cases is systematic or skilled treatment undertaken in the acute stage when the prospect of cure is best, and the treatment when adopted is too often not in accord with the acknowledged principles of sound and rational surgery.

The penalties of these errors are: (1) Diminution of hearing power, due to some loss of mobility of the ossicular joints. (2) Acute mastoiditis. (3) Chronic otorrhoea with its risk of chronic mastoiditis and its possible complications and sequelae.

Course and Treatment of Acute Cases.

With the exception of the relatively few cases caused by direct injury, otitis media results from infection arriving by way of the Eustachian tube. The inflammatory process affects the lining membrane of the tympanic cavity, which, like other mucous membranes, responds by turgidity and increased secretion. The latter being either unable to escape owing to swelling of the lining membrane of the Eustachian tube, or being for this reason unable to escape with sufficient rapidity, causes increased pressure within the tympanic cavity. The tympanic membrane can be seen to be first dulled, then usually slightly injected, then fixed and more or less flattened, and finally bulging; these changes sometimes taking place with great rapidity.

It is only in quite the earliest stages that treatment by anodynes, vapours or catheterization is useful. Such a case should be watched carefully and inspected frequently, and as soon as bulging can be certainly seen, though it be only slight, an incision should be made. My opinion has received important support from Sir Charles Ballance's paper this morning.

The external auditory meatus should first be cleansed by filling with hydrogen peroxide, leaving for some minutes, mopping out, filling with pure alcohol, and after a short time mopping out again. Then, preferably under gas or other general anaesthetic, a vertical incision, not a puncture, is made through the membrane behind the handle of the malleus. The escaping fluid varies much both in quantity and quality. I have seen but a drop of it almost water-white; I have seen larger quantities of mucous character; I have seen it intimately mixed with blood so as to seem a large quantity of unusually fluid blood, and once I saw a large quantity of blood-stained pus in a case which was opened only a few hours after the first onset of pain. This last was in an exceedingly acute influenzal-pneumonic infection, but being relieved early, it healed within a fortnight or so with no appreciable loss of hearing and did not go on to mastoiditis. I have mentioned the necessity of cleaning the meatus, and it should not be necessary to insist on the very obvious fact that antiseptic precautions are required throughout.

After evacuating, a very light packing of aseptic strip or ribbon gauze should be put into the meatus. It should not be tight enough to impede in any way the outflow of fluid; but it should absorb what is in the meatus, so that when it is withdrawn little or no further manipulation is needed before redressing. The outer dressing may be aseptic and absorbent (dry), or may be an antiseptic fomentation, as may be considered desirable. Discharge may be profuse for several days, but if the incision has been made early enough healing will take place and good hearing be recovered.

Though it is not denied that cases of such fulminating acuteness do occur that mastoiditis seems to be almost the primary feature, the cases usually seen where incision is done, and a mastoid operation has to follow, are almost without exception those in which the myringotomy is too late. That operation properly done and in due time, and properly guarded from external secondary infection, has no harmful after-effects; on the contrary, the incision heals with great rapidity and hearing is quickly recovered. Even in those "too late" cases of great virulence in which a cortical mastoid follows, the membrane is far more likely to heal where free drainage has thus been established.

The occurrence of discharge is not necessarily a contra-indication to this little operation, as the original perforation may sometimes be found to be wholly inadequate to secure free discharge, and bulging and pain may in such case continue until so relieved.

It is also necessary to insist on careful antiseptic treatment of the ear, whether the discharge be already purulent or not, as my experience on many bacteriological tests has been that the original flora found on incision are either single species or relatively simple combinations, whereas the flora of chronic suppurative cases are very numerous and complicated.

This is strong evidence that in a very large proportion of cases the chief cause of chronicity is secondary infection from without. Other causes of chronicity more generally recognized are (1) the persistence of the original source of infection—for example, the nose, throat or nasopharynx; and (2) the infection of the mastoid antrum and cells which communicate with the tympanic cavity. Such sources of persistent infection when proved present must be dealt with appropriately.

Ionization in Chronic Cases.

For chronic otorrhoea limited to the tympanic cavity or to other cavities accessible therefrom, no method of treatment gives results in any way comparable to those obtainable by zinc ionization. To see the ear of an adult, which has suppurated continuously from childhood in spite of treatment, cease to do so entirely after even one such treatment, is a striking, but as Dr. Friel will corroborate me in saying, not at all an infrequent experience.

The rationale and technique of ionization are sufficiently explained in a paper by Dr. Friel which, with my own comments, was published in the *Transactions of the Royal Society of Medicine* (April, 1921). It will suffice, therefore, to show two appliances for making it more effective. The first is a metal fitting which holds the zinc rod, and is also adapted to carry two wires, one being an insulated one, for the purpose of electrolyzing granulations or the roots of polypi. It is made to attach to the speculum of an old pattern of pneumatic speculum, the whole instrument being used to aspirate out air bubbles and to ensure the

complete filling of the tympanic cavity. The other is Sir Dundas Grant's attic syringe, which can be used to wash out the attic and to fill it with solution. To this I have had added an additional tube, which is straight, to facilitate a complete filling of the tympanic cavity through the perforation when the latter is so small as not readily to admit fluid otherwise. It is by such details of preparation that the scope of benefit in this procedure is likely to be extended.

The question of the cases suitable for treatment by ionization was dealt with in Dr. Friel's paper, and I will only say that I think we shall be able in the near future to bring a greater range of cases within the curative scope of this form of treatment by the preparation for it of cases now considered unsuitable.

The complete cessation of all discharge, the disappearance of granulations which were visible upon the inner tympanic wall, the drying of the interior of the tympanic cavity, and, in cases where the perforation was a small one, sometimes the complete healing and obliteration of the perforation, are observed results.

In cases of otorrhoea treated in other ways it is frequently found that when the ear becomes dry the hearing is much less acute than when it is discharging; when the cessation is due to ionization this diminution of hearing power apparently does not take place, or at all events not nearly to the same extent. On the contrary, in most instances the hearing is improved, and in many cases very markedly. Patients volunteer this statement without being questioned on the subject. Mothers have also remarked that their children have heard and noticed sounds to which they were before indifferent. I have also heard a patient remark the hearing as improved at a stage when the discharge had diminished but not altogether ceased. I can give no physiological explanation of this, but quote it as an observed fact, which was neither sought nor expected. It appears to be the usual if not the universal experience, and is, of course, a point of very high importance. I have not as yet gone into this matter by means of detailed standard tests.

ZINC IONIZATION IN THE TREATMENT OF SUPPURATION IN THE MAXILLARY, FRONTAL, AND SPHENOIDAL SINUSES:

WITH ESPECIAL REFERENCE TO TECHNIQUE.

BY

A. R. FRIEL, M.D., F.R.C.S.I.

THE principles which determine whether zinc ionization is a suitable form of treatment in a case of chronic suppuration in one of the larger air sinuses, and which govern the method of applying it, are the same as in chronic otorrhoea. These were described at a meeting of the Otological Section of the Royal Society of Medicine in February, 1921. The technique, however, is more difficult than in the tympanum. The nasal sinuses are not so accessible, and they communicate with a passage open at both ends, one of which it is desirable to block during the actual treatment. The posterior choana can be closed by means of a small balloon introduced in a collapsed condition into the nasopharynx. It is firmly fixed at the end of a straightened vulcanite Eustachian catheter provided with a short piece of rubber tubing and a stop-cock. When inflated it closes the opening of the nose into the pharynx. As this converts the nose into a well when the patient is lying down, it is easy to keep a sinus full of fluid after it has been filled. It also prevents the patient from swallowing a large quantity of zinc sulphate solution.

To convey the current to the area involved a metal terminal dips into the fluid in the sinus. In the case of the tympanum this was a simple matter. A zinc wire was soldered to the end of a flexible insulated wire attached to the positive terminal of the battery, and was prevented from touching the skin of the meatus by being enclosed in a vulcanite speculum. The current was thus forced to flow to the tissues through the zinc solution in the meatus and tympanum. The same principle is adopted here, but the method is somewhat different. The flexible wire is soldered to a metal catheter which is introduced into the affected sinus. It serves the double purpose of conveying the zinc solution and the electric current. To prevent the latter passing directly to the tissues the outer surface of the catheter is covered by rubber tubing or varnish. The current then flows to the solution from the inside of the catheter and from the solution to the tissues, carrying the zinc ions to them.

Before introducing the zinc solution into a sinus it is necessary to wash away all pus from its interior. Warm normal saline solution is suitable for this purpose. When the sinus is washed clean the saline is washed away by the warm zinc sulphate solution (zinc sulphate 75 gr., glycerin 2 oz., water to 70 oz.).

The position of the patient is important. The sinuses are irregular in shape, and may present diverticula or recesses. As it is essential that all pus and air should be removed from the sinus to allow the zinc solution to come in contact with the whole of the infected area, we endeavour, by remembering the position of the natural openings, to place the head in such a position as facilitates the object we have in view. It has proved convenient to have the patient lying down and to get him to move his head when desirable.

The *maxillary sinus* is washed by first puncturing the wall of the inferior meatus with a Krause's trocar and cannula. Then, when the washing is completed, the cannula is removed and the electrode—the catheter covered with rubber tubing—at once introduced. To fill the sinus, and keep it full, a small reservoir of solution is attached by rubber tubing to the catheter, and a gentle trickle is maintained after the fluid is seen to appear at the anterior nares. If for any reason the flow ceases, air pressure is applied to the surface of the water in the reservoir by putting on a lid in which there is a pipe connected with an air bellows. The barrel of a syringe from which the piston has been removed forms a suitable reservoir. The hole through which the piston passes can be easily closed by a piece of brass tubing connected with an air bellows. The tubing is only inserted when it is necessary to exert pressure on the surface of the fluid in the barrel. A current of 10 to 15 milliampères for a quarter of an hour is ample. When the ionization is finished nothing further is done. If the cavity has been rendered sterile and there are no polypi or granulations to secrete serous fluid liable to decompose, the discharge from the sinus should be entirely absent when the patient is seen the following day, and should not recur.

In the *sphenoidal sinus* the procedure is carried out through the natural opening. This sinus is the one in which, apart from the difficulty in finding the opening, the conditions are simplest.

When the *frontal sinus* is being ionized the patient's head must hang backwards over the end of the table, and in addition the foot of the table should be raised to ensure the sinus being dependent.

Ten milliampères for the frontal sinus and seven for the sphenoidal for ten minutes is an effective dose.

Coexistent ethmoidal disease is a contraindication to ionization of the maxillary or other sinuses, as reinfection would be so likely to occur.

When we realize that zinc ionization is an antiseptic procedure we see at once its sphere of usefulness. In all these cases of chronic sepsis in the ear and nasal sinuses it seems to be the infection of the discharge which occurred during an attack of acute inflammation that is the basic factor in causing chronicity. Other conditions such as polypi or caries may be superadded, and these require treatment of another sort, but in many cases the septic discharge is the sole factor in keeping up the trouble. When the exudation on the surface of the mucous membrane is sterilized, a coagulum is formed by the action of the zinc ions on the albumin present, and this for a short time forms a barrier between the tissues and the exterior. Then the tissues, freed from dealing with the irritation of septic material, rapidly recover their functional and structural integrity.

I would select two cases to illustrate what has been said. A woman had suffered for some weeks from headache and a purulent discharge from the left side of the nose. The maxillary antrum on puncture was found to be full of foetid pus. There were no polypi in the nose, no evidence of ethmoidal disease, and no decayed teeth. After ionization the discharge immediately ceased.

A case of what may be described as pansinusitis was that of a man with septic teeth, empyema of the right and

left maxillary antra, both ethmoids, both frontal sinuses, and one sphenoidal sinus. There was also a discharging opening at the inner angle of the right orbit which communicated with the frontal sinus. The teeth were removed, the antra opened, and the ethmoids curetted. Each frontal sinus was ionized twice, and an autogenous vaccine given. The sphenoidal sinus was ionized and suppuration in it ceased at once. The opening into the orbit closed without any further treatment, and in a short time all discharge from the nose ceased and did not recur.

HARE-LIP AND CLEFT PALATE: A WAR INFLUENCE.

BY

J. L. AYMARD, M.R.C.S., L.R.C.P.,

PORT ELIZABETH.

(*Abridged.*)

I HAVE no intention in this short article of going fully into the question of the treatment of hare-lip. I would, however, remark that war experience impressed upon me the fact that no tissues need be sacrificed. For instance, I find that the mucous border need not always be completely detached, but can almost invariably be incorporated into a useful backing support, helping to give that prominence to the upper lip which is essential to success.

One refinement suggested by extensive work with cartilage relates to the usually lost philtrum in hare-lip. I have been able to restore this prominent feature, with excellent result, by the insertion of small strips of septal cartilage. Together with many other surgeons, I make a practice of closing the hare-lip first, the idea that such practice interferes in any way with the palate operation being quite obsolete.

The worst enemies of the plastic surgeon are sepsis, insufficient blood supply, and tension. All these are constant companions of the cleft palate operation. The wonder is not that cleft palates are so often operative failures but that they ever succeed. Careful examination prior to operation in such cases often reveals not only the presence of adenoid masses but very frequently a condition of rhinitis sicca with accompanying pus.

Let us reflect what happens when we perform the more common Langenbeck operation; let us assume that the parts are healthy though congenitally defective prior to operation, what condition do we immediately create? We raise two flaps off the bone, thereby at once creating four raw surfaces. The nasal surfaces of both the flaps are left bare, as also the bony areas. All these surfaces invite infection, with the result that the wound breaks down. Lane's operation gets over the difficulty by opposing raw surfaces, and for this reason the plastic principles are correct. The measure of success of the palate operation must, however, be judged by its ultimate functional utility, to obtain which the sacrifice and displacement of tissues must be reduced to a minimum. When once surgeons realize that raw surfaces must be reasonably protected, and also recognize the above causes of failure, success will invariably follow.

Early in 1917, at Aldershot, I made several attempts to support tissues with mass paraffin, but failed. Had I skin-grafted the under surface of my flaps these failures would probably have been successes, and much valuable tissue would have been saved.

The grafting of cavities has long been a recognized practice; but it was left to Esser, in 1917, to demonstrate how a cavity could be made and filled with graft-covered dental stent, which was left until the cavity was lined and fit to be opened out to make the extended surface which was the object of the procedure.

My present method of dealing with the cleft palate is based upon Esser's principle. In my first case I worked upon the theory that a graft-covered support of wax secured through the nostrils would not only support the palate but cover the posterior raw surface. I am satisfied that, although I failed to secure the plug in position for more than thirty-six hours, such an operation is feasible and practicable were there no easier method. For three weeks the palate looked perfect, but suddenly broke down. The failure, I think, was due to the inclusion of a portion of the graft in the central incision, producing a weak union. In my second case I worked upon the idea of partially embedding two masses of graft-covered wax in the usual relaxation cuts, and securing them with ligatures. This procedure was a total failure, and the whole broke down at the end of twenty-four hours.

It then occurred to me that Esser's method could be applied, provided a substitute were found for the dental stent. A suitable case presented itself four months ago in a boy of 12 years, with a history of previous operative failure. With the assistance of Drs. Mathew and Gilbert of Port Elizabeth, I performed the operation.

I made small incisions in the usual position internal to the last tooth and carefully freed the hard and soft palate with blunt forceps. I thus formed a pocket on each side, and plugged with gauze. I had previously prepared a wax mass, consisting of paraffin 1 oz., beeswax 2 drachms, iodoform 1 grain, bismuth carbonate 2 grains. I cut two almond-shaped plugs from this mass. I next cut two large Thiersch grafts from the inside of each thigh, approximately 2 in. by 1 in. Each graft was then spread over its wax cone and held in position with medium-sized Kocher forceps. Dr. Gilbert held the edges of the pocket open, and having removed the gauze I dropped the graft-covered wax into the cavity, securing each in turn with one suture. This was the first stage of the operation. The insertion of the wax had practically closed the cleft and made the parts immovable.

The next step as originally intended was to wait ten days, then incise along the cleft border, remove the wax and suture the raw edges. This procedure was adopted upon the fourteenth day. The patient made an uneventful recovery, and the speech was very greatly improved.

The points of interest are many. It occurred to us after reflection that the parts being approximated by the wax, probably a slight incision along the edge and a few sutures would have caused union in the first place. The wax could have been removed later through the original incision. No inconvenience was caused by the mass of paraffin in the pharynx, and the immobility of the palate was marked, and, of course, a most valuable adjunct to success.

Full feeding was permissible from the first, and no attempt was made by Nature to expel the graft-covered foreign body. War experience taught me that a wax body not covered by graft was sooner or later expelled. Here plastic surgeons will appreciate my remarks; does not this open up a whole field of valuable possibilities?

I may not use paraffin plugs in future; I may use plugs of iodoform gauze covered in wax, but the principle of the operation I shall repeat in every other detail upon the first opportunity, with the exception that I shall probably leave the plugs in three weeks instead of ten days.

To sum up: this operation provided protection for all raw surfaces and consequent risk of sepsis, absolute fixation which no other means have so far been found to combat, and the use of free feeding from the first; lastly, the natural position of the tissues is disturbed as little as possible, and the possibility of a useful palate can be hopefully looked forward to.

This operation was performed upon a boy of 12 years, as mentioned above, but I would not hesitate to do the same upon a child of 2 years of age. There appears to be little or nothing to be gained by operating at an earlier age, and much to be lost. A functionating palate, after all, is the only result worth aiming at.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF DELAYED CHLOROFORM POISONING.

AN operation was performed on a patient, a girl aged 13 years, suffering from acute appendicitis of forty-eight hours' duration, and a gangrenous appendix, with about a drachm of foul pus, wrapped round with omentum, was removed *en masse*. Open ether was the anaesthetic administered at first, but as the child appeared very "chesty" chloroform was resorted to later. Very little of the latter anaesthetic was used, and the duration of the operation was just under half an hour.

The patient had completely recovered from the anaesthetic in six hours' time, and she remained comfortable

until early on the Wednesday morning (the operation took place on a Monday) when vomiting recommenced. All day she was very restless, and on Thursday she passed into a stage of active delirium, continually crying out and trying to get out of bed. By Thursday night she became comatose, and finally died at 1.30 on Friday morning.

The urine was examined on the Wednesday and found to contain sugar. Acetone was noticed in the breath on Thursday, but owing to the child being incontinent it was not possible to get a sample of urine to test for its presence.

On *post-mortem* examination the kidney and liver presented marked fatty changes. The following report was received from the Clinical Research Department, St. Bartholomew's Hospital:

Fresh section as well as permanent section of the liver and kidney show widespread fatty degeneration. Especially the distribution of this fatty degeneration in the intermediate zones of the liver lobules is characteristic of late chloroform poisoning.

Royal Salop Infirmary. ALFRED MERRIN, F.R.C.S.I.

NERVE CELL DEGENERATION.

By means of over-staining sections of the central nervous system with aniline blue-black and then partially decolorizing them I have succeeded in demonstrating a series of changes in degenerating nerve cells which differ somewhat from those shown by Nissl's method. In the first place the cell body stains a pale reddish-brown, and the granules appear to be near the surface, are perfectly globular, and are all of the same size. Further, they are much smaller than Nissl's granules and stain a dark brown, showing up very clearly. The nucleus consists of a beaded network or closely packed mass of darker brown granules, rather larger than those of the cell body, and in the midst of them lies a perfectly spherical nucleolus, black in colour and very sharply defined.

The changes in the degenerating cell appear to consist of:

1. Withdrawal of cell granules from the zone of origin of the cell processes, together with the appearance of one or more colourless refractile globules in the nucleolus, which subsequently become extruded.
2. The appearance of extranuclear and extranucleolar globules staining black and the disappearance of granules from the cell body. At this stage the nucleolus may split into two or three smaller globules of equal size.
3. Vacuolation may occur before or after the disappearance of the granules from the cell body, but seems quickly to be followed by disintegration of the nerve cell. By the time that vacuolation has begun the nucleus becomes blurred and its granules are difficult to make out, while the nucleolus remains clearly visible.
4. The nucleolus persists as a sharply defined globule even when there is nothing left of the cell but a granular mass which is very nearly amorphous.

I propose to take an early opportunity of bringing my preparations to the notice of neurologists.

Epsom. H. W. EDDISON.

Reviews.

THE PSYCHOLOGICAL PROBLEMS OF INDUSTRY.

IN the opening chapter of his *Introduction to the Psychological Problems of Industry*[1] Mr. FRANK WATTS suggests that the use of mathematical methods by some psychologists and the distaste of others for public controversy help to account for the light esteem in which, as he thinks, psychologists are held. If psychologists are lightly esteemed—a proposition we should certainly not be prepared to endorse—these can hardly be the explanations. Most men in the street regard pure mathematicians and even philosophers with awe; to eschew the common interests of mankind has even been mistaken sometimes for evidence of mental superiority. A better reason than Mr. Watts gives is that the average English reader likes to know "where to have" his author. He likes a mathematician, let us say, to behave as such. The reader of the late Isaac Todhunter's *Algebra* may not be moved to raptures by the proof of the binomial theorem, he may even think it dull, but he would not have been better pleased had the author attempted to brighten the subject by introducing disquisitions on things in general—say, on the historical importance of the binomial theorem in Western Europe. To apply these considerations to Mr. Watts's own book, we remark that the first one hundred pages are devoted fairly strictly to business; certain experimental methods are described, and the interpretation of the results indicated. In his desire to make things easy Mr. Watts has not perhaps sufficiently emphasized the dangers which await the beginner when he handles statistical methods, but his reader will at least obtain a quite clear idea of the way in which some experimental methods have enriched our knowledge of the human side of industry.

The remainder of the book treats of subjects which the professional psychologist is hardly, if at all, better qualified to treat than any other thoughtful and experienced man. This is not to say that what Mr. Watts has written is uninteresting; it is, on the contrary, a thoughtful study of existing social organization. But the point we wish to make is that "Ideals in Industry," "State Socialism," "Industrial Democracy"—to take a few of Mr. Watts's headings—are too remotely connected with, though, of course, they are not disconnected from, motion study and the measurement of fatigue for it to be advisable to include them in the same volume. Psychology, according to Mr. Watts, is a new science (he presumably means experimental psychology). Being a new science it must not claim a mandate over too extensive territories. This caution is needed because the *average* quality of "new" psychological work is not high. Success needs the coexistence of two faculties, the mental and physical deftness of an experimenter, and that quantitative aptitude which discerns the truth behind and can manipulate massed figures. A cynical professor of philosophy who remarked that students who had not sufficient brains to learn either philosophy or physiology took up experimental psychology was grossly exaggerating, but his sneer had a small basis of truth. Within the purview of medicine, opinions may and do differ as to the ultimate importance of Freud's own work; but there is no doubt at all that a sensible proportion of the growing psycho-analytical "literature" is mere trash. Similarly while the pioneers of "scientific management" and motion study, notably F. B. Gilbreth, were scientific investigators of a high class, some of their self-styled disciples in America are, as Hoxie has pointed out, charlatans.

To Professor Spearman more than to any other psychologist belongs the credit of perceiving that experimental psychology must be thoroughly permeated by the spirit of mathematical reasoning before it can take rank amongst the approved instruments of investigation. We should have welcomed a sketch of the methods of the mathematical psychologists in Mr. Watts's book, even at the cost of making it duller and causing the omission of some agreeable but loose reasoning from analogy.

[1] *An Introduction to the Psychological Problems of Industry.* By F. Watts, M.A. London: G. Allen and Unwin, Limited. 1921. (Demy 8vo, pp. 240. 12s. 6d. net.)

OCULAR PATHOLOGY.

WE extend a very cordial welcome to Professor VICTOR MORAX's work on ocular pathology,[2] for it is some years since a really good book on this subject was published. The author is well known in this country, and those who were privileged to hear his Bowman Lecture in 1919, and to be present at Oxford this summer, when he opened a discussion on post-operative infection, will not readily forget his masterly addresses: his reputation is world-wide, and justly so. From a man like Morax, who has done so much original work on ocular pathology, we should expect a work which is likely to be a classic, and we may say at once that in the volume before us the author has realized all our hopes.

The subject in its modern sense comprises histology and bacteriology as well as pathology, and the book has been written from this standpoint. It forms the last part of the new edition of the *Manuel d'histologie pathologique* of Cornil and Ranvier, and was to have been published at the end of 1914, but the war delayed its appearance.

Morax handles his subject according to the method of clinical examination in general use—that is, from before backwards, from the lids to the orbit. In each chapter

[2] *Pathologie Oculaire.* By V. Morax. Paris: Librairie Félix Alcan. 1921. (Roy. 8vo, pp. 446; 204 figures, 4 plates. 45 fr. net.)

certain grand divisions are made, such as congenital lesions, traumatisms, infections, atrophies, and new growths. In order to economize space illustrations are made to take the place, as far as possible, of verbal descriptions; in consequence the work is illustrated in a lavish manner with original photographs which have nearly all been derived from the author's clinic in the Lariboisière Hospital. The coloured plates are excellent; three of them are devoted to bacteriology.

Where all is so good it would be invidious to try and express an opinion as to which is the best chapter, but we conclude that the palm will be given by most readers to that on the conjunctiva.

The number of books dealing with this special subject is not large, many of them are out of date and out of print; in our opinion, this book is the best that has appeared since the publication of a similar work by Treacher Collins and Mayou. A copious bibliography and a very full index add materially to the value of the book.

We offer our hearty congratulations to French ophthalmology on the fact that the year 1921 has seen the publication of two such books as Terrien's on the surgery and Morax's on the pathology of the eye.

MEDICAL APHORISMS.

SIR THOMAS HORDER has published, in a handy little volume entitled *Medical Notes*,[3] the *obiter dicta* he has at various times contributed to the *St. Bartholomew's Hospital Journal* and other periodicals. It is now a quarter of a century since he collected in the thirty-second volume of *St. Bartholomew's Hospital Reports* the 258 "clinical aphorisms from Dr. Gee's wards," which were subsequently given to a wider public in a volume that contained also some of the papers of that great bedside teacher.

That Sir Thomas Horder should dedicate these extracts from his own clinical teaching to the memory of his former chief—Samuel Gee—is a gracious if natural act of piety, and it is inevitable that the reader should not only expect but find evidence of this devotion in unconscious or perhaps deliberate imitation. The resemblance, however, is not so much in the matter as in the form and style, in fastidious care in the use of terms and elimination of the superfluous word. In fact, comparison of the two sets of aphorisms suggests that pains have been taken to avoid repetition. The opening remark, "Paraphrasing the well-known description of his art attributed to Demosthenes, it has been said of medicine that the most important thing is diagnosis, the next most important thing is diagnosis, and the third most important thing is diagnosis," might well have been said by Gee, and, as it is put in inverted commas, possibly he was the anonymous speaker. A few of the "notes" are admittedly critical, such as those on some of Sir James Mackenzie's and Sir Thomas Lewis's views on the heart, but as a rule it is his own experience rather than that of others that supplies the text. Successful clinical teaching, such as is embodied in these pages, demands a somewhat dogmatic tone, and as few laws are without their exceptions, it would no doubt be possible to dispute the universal applicability of these well-expressed conclusions. A special charm of some of these *obiter dicta* is a well-balanced antithesis—for example, "Than pleurisy there are probably few diseases more often diagnosed without adequate reasons; there are probably few diseases that exist more often unsuspected"; and again a little further on we read, "Lobar pneumonia not infrequently recrudesces, but rarely relapses; bronchopneumonia often does both." There is, too, a pleasant flavour of mild surprise excited by the warning that "the first thing to say (to oneself) about a systolic bruit heard at the aortic base is that the case is probably not one of aortic stenosis." While the value of instruments of precision is fully realized, the danger that reliance on their use may interfere with the cultivation of clinical observation is indicated in a paragraph ending with the sentence: "the great value of an instrument is to determine the degree of a condition rather than its existence."

From even a superficial study of these two sets of aphorisms, the first of which was edited by the author of the second, the reader cannot but be struck, in spite of the remarkable foresight of Gee, by the changes in the subject matter of medicine that have taken place in the interval, and accordingly he will welcome as well-timed the appearance of Sir Thomas Horder's attractive contribution to our store of medical aphorisms.

[3] *Medical Notes.* By Sir Thomas Horder, M.D., F.R.C.P. London: Henry Frowde, and Hodder and Stoughton. 1921. (Post 8vo, pp. 112. Price 6s. net.)

INDIAN HYGIENE.

THAT *Indian Hygiene and Public Health*,[4] by GHOSH and DAS, has met a want and found an appreciative public, is shown by the fact that four editions have appeared in nine years—1912, 1914, 1917, 1921. While not claiming originality, standard works on hygiene have been consulted and utilized, with special reference to the application to India of the principles inculcated.

Four new chapters appear in the present edition—on animal parasites, especially hookworm, school hygiene, maternity and child welfare, and village sanitation. The advice therein given is good, but in the present state of Indian sanitation is rather a counsel of perfection not likely of attainment in any near future. Cremation is naturally recommended as the best method of disposal of the dead. But to be satisfactory cremation must be complete. Throughout rural India, nine-tenths of the whole country, the bodies of the poor are usually only somewhat charred by burning, and then thrown into a watercourse, swamp, or tank—a very different thing, which indeed can hardly be called cremation.

Under "Plague" the authors state (p. 390) that the first epidemic of this disease recorded in India was in 1612. The Rev. E. Terry, Chaplain to the Embassy under Sir Thomas Roe, sent by James I to the Emperor Jahangir in 1615–19, describes this epidemic in his work *A Voyage to East India*. All the staff of the Embassy, except Roe himself, were attacked; seven died, including the surgeon, whose name has not been preserved. He must have been one of the first British medical officers to serve in India. The symptoms given do not resemble those of modern plague. Jahangir himself, and his third son, afterwards the Emperor Shah Jahan, were attacked but recovered. Jahangir in his memoirs describes the epidemic as widespread but seldom fatal—a marked difference from modern plague epidemics, with their mortality of 80 to 90 per cent.

The authors' style is usually good, especially considering that English is not their native language. The type is clear, and there are not many misprints; several of those noticed are mere transpositions of letters. One specially disfiguring misprint is the use of a small "p" in the Christian name of Sir Pardey Lukis, the late Director-General, in the preface.

NOTES ON BOOKS.

THE current number of the *Journal of Anatomy* contains a paper by Professor John S. B. Stopford, of Manchester, on tactile localization; he finds that it is possible to obtain fairly accurate information about the power of localization in the hands and fingers, and to express the result numerically; localization on the wrong segment of a finger may occasionally occur in apparently normal individuals who show no other disturbance of sensation, and he therefore concludes that many of the tests at present in use, which only show gross errors, may lead to mistakes. The same issue contains a paper by Dr. Hillyard Holmes, lecturer in applied anatomy (medical) in the University of Manchester, on the auriculo-ventricular bundle in mammals, and another by Dr. Thurstan Holland on rare ossifications seen during *x*-ray examinations, of which an account was given in the Epitome of August 27th, No. 189.

In a small book, entitled *Sulphur and Sulphur Derivatives*,[5] Dr. HAROLD AUDEN gives a clearly phrased account of some of the more notable sulphur compounds and derivatives, with a view to stimulating popular interest in large-scale chemical manufacture. The volume itself is apparently one of a series of publications dealing on similar lines with forms of industry which, though they result in common every-day commodities, involve the successful application of advancing scientific knowledge.

[4] *A Treatise on Hygiene and Public Health, with Special Reference to the Tropics.* By Birendra Nath Ghosh, F.R.F.P. and S., and Jahar Lal Das, D.P.H., Calcutta University. Fourth edition. Calcutta: Hilton and Co. London: Simpkin, Marshall, Hamilton, Kent and Co. 1921. (Crown 8vo, pp. 531; 62 figures. 6 rupees, or 9s. 6d. net.)

[5] *Sulphur and Sulphur Derivatives.* By Harold A. Auden, M.Sc., D.Sc., F.C.S. London: Sir Isaac Pitman and Sons. 1921. (Crown 8vo, pp. 101; illustrated. 3s. net.)

THE BRITISH ASSOCIATION.

MEETING IN EDINBURGH.

THE eighty-ninth annual meeting of the British Association opened in Edinburgh on Wednesday, September 7th. The work of the sections, thirteen in number, began on the morning of Thursday, September 8th. The reception, writing and ladies' rooms are at Parliament Hall and Advocates' Library. The inaugural general meeting was held in the Usher Hall, where also the evening discourses and citizens' lectures will be given. The sections meet in the University buildings.

THE PRESIDENT'S ADDRESS.

The president, Sir T. Edward Thorpe, C.B., F.R.S., gave his address on Wednesday evening. He began by recalling that the virtual founder of the Association was Sir David Brewster, that the first meeting was held in York in 1831, and the first meeting in Edinburgh in 1834. At the second meeting in Edinburgh, in 1850, Sir David Brewster presided, and urged the recognition by the State of the importance of scientific research. At the next meeting, in 1871, Lord Kelvin—then Sir William Thomson—in his presidential address maintained the same doctrine, urging that experimental research should be made an object of national concern. These appeals eventually met with response, through the establishment first of the Cavendish laboratory at Cambridge, and afterwards of the National Physical Laboratory, which has accomplished so much both for science and technology. Lord Kelvin in his presidential address urged the Association to undertake the institution of a system for the dissemination of information concerning the results of recent or contemporary investigation. Much, Sir Edward Thorpe said, had been done in this direction, and the need of the day, in view of the increased cost of printing and paper, was co-operation among the various distributing societies. The present high cost of book production, which in the case of specialized books was about three times what it was in 1914, was exercising a most prejudicial effect upon the spread of scientific knowledge. Turning then to the institution of the Department of Scientific and Industrial Research he spoke with enthusiasm of the work that Board had done and was capable of doing; it had fostered research, and had been useful in preventing repetition and overlapping of investigations, and in ensuring that the fullest possible use is made of the results of research. Recently, he said, a departmental committee had been set up to report as to the best method of dealing with inventions made by workers aided or maintained from public funds, so as to give a fair reward to the inventor, to secure the utilization in industry of suitable inventions, and to protect the national interest.

THE MOLECULAR THEORY OF MATTER.

Sir Edward Thorpe then traced the history of the molecular theory of matter—a theory which he said dated back in a crude form to the earliest times, a theory which had never ceased to interest speculative thinkers, and a theory which began to receive full development in the kinetic theory of gases worked out by Joule, Clausius, and Clerk-Maxwell. Since then physicists and chemists had been speculating as to the inner mechanism of the atom; any satisfactory theory must appeal alike to the physicist and the chemist; it must account for the nature of chemical affinity and of valency, and the difference in characteristics of the chemical elements. The investigation of what Lord Kelvin called "the superlatively grand question—the inner mechanism of the atom" has, Sir Edward Thorpe said, profoundly modified the basic conceptions of chemistry. The discovery of the electron, he continued, the production of helium in the radio-active disintegration of atoms, the recognition of the existence of isotopes, the possibility that all elementary atoms are composed either of helium atoms or of atoms of hydrogen and helium, and that these atoms, in their turn, are built up of two constituents, one of which is the electron, a particle of negative electricity whose mass is only 1/1,800 of that of an atom of hydrogen, and the other a particle of positive electricity whose mass is practically identical with that of the same atom—the outcome in short, of the collective work of Soddy, Rutherford, J. J. Thomson, Collie, Moseley and others—are pregnant facts which have completely altered the fundamental aspects of the science. Chemical philosophy has, in fact, now definitely entered on a new phase.

Isotopes.

The theory that all elementary atoms are composed of helium atoms or of helium and hydrogen atoms may be regarded as an extension of Prout's hypothesis—with, however, this important distinction: that whereas Prout's hypothesis was at best a surmise, with little, and that little only weak, experimental evidence to support it, the new theory is directly deduced from well-established facts. The hydrogen isotope H_3, first detected by J. J. Thomson, the existence of which has been confirmed by Aston, would seem to be an integral part of atomic structure. Rutherford, by the disruption of oxygen and nitrogen, has also isolated a substance of mass 3 which enters into the structure of atomic nuclei, but which he regards as an isotope of helium, which itself is built up of four hydrogen nuclei together with two cementing electrons. The atomic nuclei of elements of even atomic number would appear to be composed of helium nuclei only, or of helium nuclei with cementing electrons, whereas those of elements of odd atomic number are made up of helium and hydrogen nuclei together with cementing electrons. In the case of the lighter elements of the latter class the number of hydrogen nuclei associated with the helium nuclei is invariably three, except in that of nitrogen, where it is two. The frequent occurrence of this group of three hydrogen nuclei indicates that it is structurally an isotope of hydrogen with an atomic weight of 3 and a nuclear charge of 1. It is surmised that it is identical with the hypothetical "nebulium" from which our "elements" are held by astro-physicists to be originally produced in the stars through hydrogen and helium.

Sir J. J. Thomson was the first to afford direct evidence that the atoms of an element, if not exactly of the same mass, were at least approximately so, by his method of analysis of positive rays. By an extension of this method Mr. F. W. Aston has succeeded in showing that a number of elements are in reality mixtures of isotopes.

It has been proved, for example, that neon, which has a mean atomic weight of about 20.2, consists of two isotopes having the atomic weights respectively of 20 and 22, mixed in the proportion of 90 per cent. of the former with 10 per cent. of the latter. By fractional diffusion through a porous septum an apparent difference of density of 0.7 per cent. between the lightest and heaviest fractions was obtained.

The atomic weight of the element chlorine has been repeatedly determined, and, for special reasons, with the highest attainable accuracy. On the oxygen standard it is 35.46, and this value is accurate to the second decimal place. All attempts to prove that it is a whole number—35 or 36—have failed. When, however, the gas is analysed by the same method as that used in the case of neon it is found to consist of at least two isotopes of relative mass 35 and 37. There is no evidence whatever of an individual substance having the atomic weight 35.46. Hence chlorine is to be regarded as a complex element consisting of two principal isotopes of atomic weights 35 and 37 present in such proportion as to afford the mean mass 35.46. The atomic weight of chlorine has been so frequently determined by various observers and by various methods with practically identical results that it seems difficult to believe that it consists of isotopes present in definite and invariable proportion.

Argon, which has an atomic weight of 39.88, was found to consist mainly of an isotope having an atomic weight of 40, associated to the extent of about 3 per cent. with an isotope of atomic weight 36. Krypton and xenon are far more complex. The former would appear to consist of six isotopes—78, 80, 82, 83, 84, 86; the latter of five isotopes—129, 131, 132, 134, 136. Fluorine is a simple element of atomic weight 19. Bromine consists of equal quantities of two isotopes—79 and 81. Iodine, on the contrary, would appear to be a simple element of atomic weight 127. Boron and silicon are complex elements, each consisting of two isotopes—10 and 11, and 28 and 29, respectively. Sulphur, phosphorus, and arsenic are apparently simple elements. Their accepted atomic weights are practically integers.

All this work is so recent that there has been little opportunity, as yet, of extending it to any considerable number of the metallic elements. These, as will be obvious from the nature of the methods employed, present special difficulties. It is, however, highly probable that mercury is a mixed element consisting of many isotopes. Lithium is found to consist of two isotopes, 6 and 7. Sodium is simple, potassium and rubidium are complex, each of the two latter elements consisting, apparently, of two isotopes.

The accepted atomic weight of caesium, 132.81, would indicate complexity, but the mass spectrum shows only one line at 133. Should this be confirmed caesium would afford an excellent test case. The accepted value for the atomic weight is sufficiently far removed from a whole number to render further investigation desirable.

The Structure of the Atom.

While these new facts do not invalidate or even weaken periodic law they confirm the opinion that the expression as Mendeléeff left it is imperfect. Moseley showed that the real sequence was the atomic number, not the atomic weight. All these new observations illustrate the fact that science advances by additions to its beliefs rather than fundamental or revolutionary changes in them.

The nature and quantity of the materials of which atoms are made up being known, it is seen that the properties of the atom will in part depend upon the way in which the electrons are arranged in the atom. The arrangement will depend partly on the forces between the electrons and partly on those between the electrons and the positive charges (protons). Mathematical investigation showed that it was possible that the positive charge should be at the centre with the negative electrons around it on the surface of a sphere, providing that the electrons were not too numerous. The mutual repulsion of the electrons resented overcrowding, and Sir J. J. Thomson had shown that when there are more than a certain number the attraction of a positive charge is not able to keep the electrons in stable equilibrium. The number of electrons which can be accommodated on the outer layer will depend upon the law of force between the positive charge and the electrons, and Sir J. J. Thomson has shown that with a law of force of a simple type this number will be eight.

The Periodic Law.

To show the bearing of this result as affording an explanation of the Periodic Law, let us, to begin with, take the case of the atom of lithium, which is supposed to have one electron in the outer layer. As each element has one more free electron in its atom than its predecessor, glucinum, the element next in succession to lithium, will have two electrons in the outer layer of its atom, boron will have three, carbon four, nitrogen five, oxygen six, fluorine seven, and neon eight. As there cannot be more than eight electrons in the outer layer, the additional electron in the atom of the next element, sodium, cannot find room in the same layer as the other electrons, but will go outside, and thus the atom of sodium, like that of lithium, will have one electron in its outer layer. The additional electron, in the atom of the next element, magnesium, will join this, and the atom of magnesium, like that of glucinum, will have two electrons in the outer layer. Again, aluminium, like boron, will have three; silicon, like carbon, four; phosphorus, like nitrogen, five; sulphur, like oxygen, six; chlorine, like fluorine, seven; and argon, like neon, eight. The sequence will then begin again. Thus the number of electrons, one, two, three, up to eight, in the outer layer of the atom, will recur periodically as we proceed from one element to another in the order of their atomic weights, so that any property of an element which depends on the number of electrons in the outer layer of its atom will also recur periodically, which is precisely that remarkable property of the elements which is expressed by the Periodic Law of Mendeléeff, or the Law of Octaves of Newlands.

Valency.

The valency of the elements, like their periodicity, is a consequence of the principle that equilibrium becomes unstable when there are more than eight electrons in the outer layer of the atom. For on this view the chemical combination between two atoms, A and B, consists in the electrons of A getting linked up with those of B. Consider an atom like that of neon, which has already eight electrons in its outer layer; it cannot find room for any more, so that no atoms can be linked to it, and thus it cannot form any compounds. Now take an atom of fluorine, which has seven electrons in its outer layer; it can find room for one, but only one, electron, so that it can unite with one, but not with more than one, atom of an element like hydrogen, which has one electron in the outer layer. Fluorine accordingly is monovalent. The oxygen atom has six electrons; it has, therefore, room for two more, and so can link up with two atoms of hydrogen: hence oxygen is divalent. Similarly nitrogen, which has five electrons and three vacant places, will be trivalent, and so on. On this view an element should have two valencies, the sum of the two being equal to eight. Thus to take oxygen as an example, it has only two vacant places, and so can only find room for the electrons of two atoms; it has, however, six electrons available for filling up the vacant places in other atoms, and as there is only one vacancy to be filled in a fluorine atom the electrons in an oxygen atom could fill up the vacancies in six fluorine atoms, and thereby attach these atoms to it. A fluoride of oxygen of this composition remains to be discovered, but its analogue, SF_6, first made known by Moissan, is a compound of this type.

The term "atomic weight" has thus acquired for the chemist an altogether new and much wider significance. It has long been recognized that it has a far deeper import than as a constant useful in chemical arithmetic. For the ordinary purposes of quantitative analysis, of technology, and of trade, these constants may be said to be now known with sufficient accuracy. But in view of their bearing on the great problem of the essential nature of matter and on the "superlatively grand question, What is the inner mechanism of the atom?" they become of supreme importance. Their determination and study must now be approached from entirely new standpoints and by the conjoint action of chemists and physicists. The existence of isotopes has enormously widened the horizon.

POISON GAS.

The crisis through which we have recently passed has had a profound effect upon the world. The spectacle of the most cultured and most highly developed peoples on this earth, armed with every offensive appliance which science and the inventive skill and ingenuity of men could suggest, in the throes of a death struggle must have made the angels weep. That dreadful harvest of death is past, but the aftermath remains. Some of it is evil, and the evil will persist for, it may be, generations. There is, however, an element of good in it, and the good, we trust, will develop and increase with increase of years. The whole complexion of the world—material, social, economic, political, moral, spiritual—has been changed, in certain aspects immediately for the worse, in others prospectively for the better. It behoves us, then, as a nation to pay heed to the lessons of the war.

The great war differed from all previous interneccine struggles in the extent to which organized science was invoked and systematically applied in its prosecution. In its later phases, indeed, success became largely a question as to which of the great contending parties could most rapidly and most effectively bring its resources to their aid. The chief protagonists had been in the forefront of scientific progress for centuries, and had an accumulated experience of the manifold applications of science in practically every department of human activity that could have any possible relation to the conduct of war. The military class in every country is probably the most conservative of all professions and the slowest to depart from tradition. But when nations are at grips, and they realize that their very existence is threatened, every agency that may tend to cripple the adversary is apt to be resorted to—no matter how far it departs from the customs and conventions of war. This is more certain to be the case if the struggle is protracted. We have witnessed this fact in the course of the late war. Those who, realizing that in the present imperfect stage of civilization wars are inevitable, and yet strove to minimize their horrors, and who formulated the Hague Convention of 1899, were well aware how these horrors might be enormously intensified by the applications of scientific knowledge, and especially of chemistry. Nothing shocked the conscience of the civilized world more than Germany's cynical disregard of the undertaking into which she had entered with other nations in regard, for instance, to the use of lethal gas in warfare. The nation that treacherously violated the Treaty of Belgium, and even applauded the action, might be expected to have no scruples in repudiating her obligations under the Hague Convention. April 25th, 1915, which saw the clouds of the asphyxiating chlorine slowly wafted from

the German trenches towards the lines of the Allies, witnessed one of the most bestial episodes in the history of the great war. The world stood aghast at such a spectacle of barbarism. German *kultur* apparently had absolutely no ethical value. Poisoned weapons are employed by savages, and noxious gas had been used in Eastern warfare in early times, but its use was hitherto unknown among European nations. How it originated among the Germans—whether by the direct unprompted action of the higher command or, as is more probable, at the instance of persons connected with the great manufacturing concerns in Rhineland—has, so far as I know, not transpired. It was not so used in the earlier stages of the war, even when it had become a war of position. It is notorious that the great chemical manufacturing establishments of Germany had been for years previously sedulously linked up in the service of the war which Germany was deliberately planning—probably, in the first instance, mainly for the supply of munitions and medicaments. We may suppose that it was the tenacity of our troops and the failure of repeated attempts to dislodge them by direct attack that led to the employment of such foul methods. Be this as it may, these methods became part of the settled practice of our enemies, and during the three succeeding years—that is, from April, 1915, to September, 1918—no fewer than eighteen different forms of poison—gases, liquids, and solids—were employed by the Germans. On the principle of Vespasian's law, reprisals became inevitable, and for the greater part of three years we had the sorry spectacle of the leading nations of the world flinging the most deadly products at one another that chemical knowledge could suggest and technical skill contrive. Warfare, it would seem, has now definitely entered upon a new phase. The horrors which the Hague Convention saw were imminent, and from which they strove to protect humanity, are now, apparently, by the example and initiative of Germany, to become part of the established procedure of war. Civilization protests against a step so retrograde. Surely comity among nations should be adequate to arrest it. If the League of Nations is vested with any real power, it should be possible for it to devise the means, and to ensure their successful application. The failure of the Hague Convention is no sufficient reason for despair. The moral sense of the civilized world is not so dulled but that, if roused, it can make its influence prevail. And steps should be taken without delay to make that influence supreme, and all the more so that there are agencies at work which would seek to perpetuate such methods as a recognized procedure of war. The case for what is called chemical warfare has not wanted for advocates. It is argued that poison gas is far less fatal and far less cruel than any other instrument of war. It has been stated that "amongst the 'mustard gas' casualties the deaths were less than 2 per cent., and when death did not ensue complete recovery generally ultimately resulted. . . . Other materials of chemical warfare in use at the Armistice do not kill at all; they produce casualties which, after six weeks in hospital, are discharged practically without permanent hurt." It has been argued that, as a method of conducting war poison gas is more humane than preventive medicine. Preventive medicine has increased the unit dimension of an army, free from epidemic and communicable disease, from 100,000 men to a million. "Preventive medicine has made it possible to maintain 20,000,000 men under arms and abnormally free from disease, and so provided greater scope for the killing activities of the other military weapons. . . . Whilst the surprise effects of chemical warfare aroused anger as being contrary to military tradition, they were minute compared with those of preventive medicine. The former slew its thousands, whilst the latter slew its millions and is still reaping the harvest." This argument carries no conviction. Poison gas is not merely contrary to European military tradition; it is repugnant to the right feeling of civilized humanity. It in no wise displaces or supplants existing instruments of war, but creates a new kind of weapon, of limitless power and deadliness. "Mustard gas" may be a comparatively innocuous product as lethal substances go. It certainly was not intended to be such by our enemies. Nor presumably were the Allies any more considerate when they retaliated with it. Its effects, indeed, were sufficiently terrible to destroy the German *moral*. The knowledge that the Allies were preparing to employ it to an almost boundless extent was one of the factors that determined our enemies to sue for the Armistice. But if poisonous chemicals are henceforth to be regarded as a regular means of offence in warfare, is it at all likely that their use will be confined to "mustard gas," or, indeed, to any other of the various substances which were employed up to the date of the Armistice? To one who, after the peace, inquired in Germany concerning the German methods of making "mustard gas," the reply was: "Why are you worrying about this when you know perfectly well that this is not the gas we shall use in the next war?"

I hold no brief for preventive medicine, which is well able to fight its own case. I would only say that it is the legitimate business of preventive medicine to preserve by all known means the health of any body of men, however large or small, committed to its care. It is not to its discredit if, by knowledge and skill, the numbers so maintained run into millions instead of being limited to thousands. On the other hand, "an educated public opinion" will refuse to give credit to any body of scientific men who employ their talents in devising means to develop and perpetuate a mode of warfare which is abhorrent to the higher instincts of humanity.

This Association, I trust, will set its face against the continued degradation of science in thus augmenting the horrors of war. It could have no loftier task than to use its great influence in arresting a course which is the very negation of civilization.

MEMORIAL TO SIR VICTOR HORSLEY.

THE following further subscriptions have been promised or received on behalf of the memorial to the late Sir Victor Horsley, C.B., F.R.S., particulars of which were published in our issue of January 1st, p. 19, February 19th, p. 281, and May 7th, 1921, p. 683:

FOURTH LIST OF SUBSCRIPTIONS.

£5 5s. Donald Armour, C.M.G., Ernest Clarke, Colonel Littlewood, C.M.G., W. Rushton Parker, Dr. C. E. Reynolds (Los Angeles), G. E. Twynam.

£3 3s. Sir N. M. A. Abbot-Anderson, M.V.O., C. S. Handley.

£2 2s. Dr. C. Bolton, Herbert H. Brown, Captain L. F. Hine, Dr. A. Jones, Edward F. Maynard, Dr. A. McCormick (Sydney), Dr. J. J. A. Neil.

£1 1s.—Dr. J. Blamey, Dr. C. E. Evans, Dr. J. Lockhart Gibson (Brisbane), Dr. E. G. L. Goffe, F. P. Mackey, Dr. Nabarro, Professor J. T. Wilson.

£1.—Dr. L. de Zilwa (Ceylon).

7s.—J. W. Papillon.

£2 9s. 3d. National Hospital (Queen Square).

The amount acknowledged in previous lists is £818. A meeting of the Executive Committee will be held at the end of October to decide as to the disposition of the fund. Subscriptions should be sent to Mr. Edward J. Domville, O.B.E., Symondsbury, Bridport, one of the honorary secretaries; the other honorary secretary is Sir William Arbuthnot Lane, Bt., 21, Cavendish Square. The honorary treasurers are Sir Frederick Mott, K.B.E., Maudsley Hospital, Denmark Hill, S.E., and Dr. H. H. Tooth, C.B., C.M.G., 34, Harley Street, W.

The first number, dated July, 1921, has appeared of the *Burmah Medical Times*, a small monthly periodical published in Rangoon.

MR. E. G. FENTON, F.R.C.S.I., has recently communicated to the Royal Dublin Society a paper on the physiography and glacial geology of Southern Patagonia, in which dreary land he spent seven and a half years. It is very flat, with a slight incline towards the Atlantic. The surface is a thick layer of coarse shingle, which lies on well stratified middle tertiary rock. There are a few river valleys and a number of undrained hollows. In places the surface is partly covered by late lava. The puzzle is to account for the shingle, which not only covers the whole of the land surface at all elevations, but extends, as Darwin found during his voyage in the *Beagle*, for hundreds of miles into the Atlantic. Dr. Fenton's suggestion in outline is that the shingle was deposited by ice, and that the ice advanced and receded more than once. His paper was communicated to the society by Professor Cole, F.R.S., and his suggestions will no doubt have the careful consideration of geologists.

British Medical Journal.

SATURDAY, SEPTEMBER 10TH, 1921.

THE DANGERS OF CARBON MONOXIDE IN LIGHTING GAS.

THE report has been published of a Departmental Committee appointed, under the chairmanship of Sir William Pearce, M.P., by the Board of Trade, to inquire as to the desirability of prescribing any limitation in the proportion of carbon monoxide used in ordinary lighting gas. At present there is no legal limitation; but since the report of a previous committee, appointed by the Home Office in 1898, gas containing a very high percentage has not been distributed in this country.

The present committee reports "that it is not necessary or desirable to prescribe any limitations of the proportion of carbon monoxide which may be supplied in gas used for domestic purposes." If there were reason to believe that gas undertakings will continue to follow the present practice in this country of keeping the percentage of carbon monoxide within moderate bounds we should hesitate to criticize the present report. The country is certainly sick of official restrictions on industry. The committee's report, however, is extremely likely to induce the directors of gas undertakings to make a series of dangerous experiments on the public; and we consider it our duty to point out the dangers quite clearly, as the committee has evidently failed to realize them.

The former committee made a very thorough experimental inquiry into the dangers of poisoning by lighting gas in dwellings. This inquiry showed (1) that the danger of poisoning is entirely due to the carbon monoxide in the gas; (2) that where ordinary coal gas is distributed poisoning by gas in houses is extremely rare; whereas in American towns, where carburetted water gas (containing about 28 per cent. of carbon monoxide, as compared with 7 per cent. in coal gas) is distributed in place of ordinary coal gas, cases of poisoning are very frequent, a large proportion of these cases being suicidal and a certain proportion homicidal; (3) that nearly all the cases are due to unlit gas being left turned on at night in bedrooms.

The experiments showed quite clearly why an increase in the proportion of carbon monoxide causes such a totally disproportionate increase in the risk of poisoning. It was found that when ordinary coal gas was allowed to escape in a room, even with a burner removed, it was almost impossible to produce a poisonous atmosphere at the sleeping level, however long the escape lasted. The gas always passed out through the walls, roof, etc., at a sufficient rate to prevent the percentage of carbon monoxide in the air from rising to the danger level. This was so in even comparatively small rooms. When, however, the percentage of carbon monoxide in the gas is considerably increased, a poisonous percentage at the sleeping level is easily produced. The American records show that, with carburetted water gas, poisoning may even occur although a window is left open.

It might be expected that because the risk of poisoning by ordinary coal gas is so very trifling, the additional risk due to a considerably higher percentage of carbon monoxide in lighting gas would still be quite small. Neither actual statistics nor the results of experiments justify this expectation. From the figures quoted by the present committee, as compared with those of the former committee, it seems clear that there has been during the last few years in this country a great increase in the number of cases of poisoning by lighting gas, though the number is still small in comparison with the number in the United States. The increase in this country has been coincident with increase in the partial admixture of water gas with coal gas. The water gas may either be made in a separate plant, or by the addition of steam to ordinary coal gas retorts, though of this latter addition the report, quite unjustifiably, takes no account.

No analyses or experimental investigations of any kind seem to have been made by, or for, the committee. Nor does it publish any summary of the evidence submitted to it. Its references to the statistics of poisoning by lighting gas are very meagre and unsatisfactory, and no mention is made of the large number of cases of suicide by lighting gas in the United States and the increasing number in this country. Nevertheless it publishes in full an extraordinary memorandum from an unnamed official of the United States Public Health Service. It appears that this official thinks that an increase in the percentage of carbon monoxide in lighting gas is of no practical importance. He also imagines that the toxic action of carburetted water gas is largely due to the illuminant constituents, as "these are soluble in lipoidal tissue, and hence will be retained to a certain extent in the nerve cells."

There are often distinct economic advantages to be gained by supplementing by means of water gas the manufacture of coal gas; but it is very improbable that public opinion in this country will tolerate the risks which to all appearance will be run if the gas distributed contains as high a percentage of carbon monoxide as in towns in the United States. We do not favour putting legal restrictions on any industry unless a clear case has been made out for their necessity. We hope the necessity will not arise in this instance; but we also fear that gas engineers may be misled to such an extent by the present report that restrictive legislation may very soon become imperative.

It is always a difficult matter to balance risk to life against economic advantages; but so far as we can judge, the present committee has both exaggerated the economic advantages of a very high percentage of carbon monoxide in lighting gas and greatly underestimated the risk to life. It is at least evident that the report is quite unconvincing, and that the dangers due to increasing percentages of carbon monoxide in lighting gas will require to be watched with great care by members of the medical profession, and particularly by medical officers of health.

TREATMENT OF CANCER OF THE BREAST.

THE August part of *Medical Science* contains an article by W. G. S. and C. L. entitled "Statistics relating to the treatment of cancer of the breast by excision, supplemented by radiation," which well illustrates the difficulties to be encountered in the statistical analysis of clinical data, difficulties which von Kries regarded as insuperable,[1] and which are indeed very formidable.

Prima facie, the problem is not complex. Is the

[1] *Die Principien der Wahrscheinlichkeitsrechnung*, Freiburg, 1886, p. 244 et seq.

expectation of cure greater when treatment by radiation supplements excision? The technique of excision reached a high level many years ago; carefully compiled series of statistics exist, and it is reasonable to suppose that, given absolutely long series of cases, the proportion of advanced cases will not be correlated with the method of treatment.

But, so soon as one examines the data, difficulties arise. In the first place, many published series have to be discarded because the proportion of cases lost sight of is large or there is reason to suspect a special selection of data. Having winnowed the data in this way, we have to decide upon the method of comparison, the statistical criteria to be adopted. If, for instance, one method yields a larger proportion of early recurrences and also a larger proportion of survivals after, say, five years, are we to regard that as the preferable method? When we reach this stage we find that the data are absolutely insufficient in number to permit of useful sub-tabulation. Thus Tichy of Marburg reports upon 62 cases not x-rayed after operation and 61 in which the scar was x-rayed at least once or the scar and also the axillary and supraclavicular region were x-rayed several times. Of the former series, 7 gave recurrence within a year, 20 within three years, and 13 remained free from recurrence after five years. Of the latter series 23 had recurrence within a year, 37 within three years, and 19 remained free from recurrence after five years. Hence, according to the face value of these figures, the combined treatment saves more lives ultimately but shortens the average period of freedom of those who are destined to suffer a recurrence. It is of course a fairly simple statistical operation to determine whether these two series might be expected to have arisen by mere random sampling of a "universe" in which the probabilities of recurrence and of ultimate survival are constant—that is, to decide whether the large differences in the percentages are "significant." But, assuming such a calculation to have been made and to have yielded large odds against such divergencies, no cautious statistician would draw any important inferences therefrom. He would need data permitting him to assess the influence, if any, of age upon the expectation; he could not safely postulate an equal distribution of age in such small samples, and many other disturbing factors, all of which must be evaluated numerically, suggest themselves. It will be seen, then, that the numerical solution of the problem is not a simple matter of contrasting percentages even when the probable errors of "simple random sampling" can be computed.

If, however, we waive these difficulties and confine ourselves merely to the one question of survival after five years, then there seems no important difference between the various series and methods. Halsted for 204 operations before supplementary use of radiation reports 20 per cent. alive and well after five years; the Marburg series, as we have seen, gives 21.0 per cent. without and 31.1 per cent. with radiation; a Tübingen series (130 not x-rayed, 144 lightly x-rayed) gives 27.7 per cent. and 20.3 per cent. (we quote the percentage; there is some error in the actual number, which is printed as 5—that is, 3.5 per cent.). Lehmann and Scheven report 27.7 per cent. (total number not given) free from recurrence in five years without radiation. Brattström's series, 296 cases not apparently treated by radiation, gave 23 per cent. free from recurrence after five years. We cannot extract comparable percentages from Hoffmann's series.

A general review, therefore, suggests that a verdict of not proven must be given, or rather that the hearing must be adjourned until further evidence is available. It is, we think, quite certain that no useful results can be derived from the publication of short series of cases without full details, making it possible to combine individual experiences, or—which is equally important—to show why they cannot be pooled. It is not, as some have urged, an inherent defect of the statistical method, but the faulty presentation of data, which leaves problems such as these unsolved.

We believe that instruction not so much in statistical analysis as in the compilation and recording of data ought to be an important if humble part of the training given in the newly established teaching units of the great medical schools. Far too little use has been made of numerical data, partly because the method of recording has been unsatisfactory, partly because medical students (and their teachers) have not even an elementary knowledge of statistical principles. Such a problem as the one here discussed cannot, of course, be solved solely by analysis of hospital records, but those records would furnish an important element to the solution, and the students trained on sound lines would be able in after-life to assemble further data, which only general practitioners of medicine can collect.

THE TERMINATION OF THE WAR.

AN Order in Council has declared that the thirty-first day of August, 1921, shall be treated as the date of the termination of the war. Consequent upon this the Local Government (Emergency Provisions) Acts of 1916 automatically ceased to be operative on September 1st. The last section of the earlier of these Acts, however, enabled the Local Government Board to continue any portion of the Acts for a period not exceeding one year. The Ministry of Health, having taken over the powers of the Board, has made an Order continuing the whole of the later Act and certain portions of the earlier. This action of the Ministry restores the old scale of fees paid to a medical practitioner for notifying to a medical officer of health cases of infectious disease. All such certificates dated on and after September 1st will be paid for at the rate of two shillings and sixpence if the case occurs in his private practice and of one shilling if in his practice as medical officer of any public body or institution. It is of importance to note that it is still necessary for the medical attendant to notify the medical officer of health of a case of infectious disease occurring in a building in the occupation of His Majesty's forces, or where the patient is employed by the Admiralty, or the Army Council. The fee for this service is one shilling, except in the case of a medical officer who holds a commission in any of his Majesty's forces, in which case no fee is payable. Another result of the official termination of the war is dealt with in a circular issued to local authorities by the Ministry of Health on August 30th. It appears that during the war certain appointments of medical officers of health and inspectors of nuisances received the sanction of the Minister only for the duration of the war. This sanction is extended to March 31st next, the day before there comes into force the Public Health (Officers) Act, 1921, which gives security of tenure to these officers. In the case of these war-time appointments the approval of the Minister to their continuance must be obtained at the latest by April 1st, 1922. Local authorities are also reminded that a new scale of temporary increases of remuneration for civil servants came into force on September 1st, and that although it is for the authorities to decide what amount of increase shall be made to its own officials, the new scale must not be exceeded.

THE BRITISH ASSOCIATION.

THE President, in opening the meeting of the British Association in Edinburgh on Wednesday, did not let off any intellectual fireworks. His address was sober and informing; it did not seek to tickle the credulity or excite the fears of the people, but in its concluding passages Sir Edward Thorpe gave expression to the detestation aroused in the minds of most British men of science—of chemists, perhaps, in particular—by the German use, in April, 1915, after long preparation during peace, of poison gases as a method of warfare. The method has found defenders even here; it is possible to understand the argument that the gases used killed few, though they incapacitated many for a time, without thereby being brought to agree that poison gas is a legitimate means of civilized warfare. Apart from the fact that damage is often more permanent than the apologists seem to suppose, there must surely be a warp in the mind which makes it a reproach to preventive medicine that in this last war it preserved the lives of combatants who in earlier times would have been killed by disease. The greater part of Sir Edward Thorpe's address was devoted to an explanation of the molecular theory of matter. There has been much discussion on the subject among physicists and chemists during the last ten or twelve years, although the fundamental conceptions which are now being worked out took origin at a much earlier date. The present advanced position of the subject is in large measure due to the experimental and theoretical work of Sir J. J. Thomson, of Sir Ernest Rutherford, of Professor Soddy, and of Sir W. H. Bragg and his son, Professor W. J. Bragg. The progress made has been noticed from time to time in our columns, and it is highly interesting and instructive to have Sir Edward Thorpe's consecutive account, which is extraordinarily clear and graphic, and moreover free from mathematical complication.

LEONARDO DA VINCI.

IMMORTAL for his "Mona Lisa" and "The Lord's Supper," and famous for his powerful influence on young Raphael and his controversy with Michael Angelo, Leonardo da Vinci (1452–1519) has a special interest for the medical profession on account of the scientific activity of his versatile mind, which did much for anatomy and physiology. The publication of the Anatomical Contributions of Leonardo da Vinci by Jacob Dybwad of Christiania was begun in 1916 and completed in 1919, about 425 years after these famous studies were made. It is appropriate therefore that Dr. John C. Hemmeter[1] of Baltimore should have taken this opportunity of publishing a tastefully illustrated essay on "Leonardo da Vinci as a Scientist." His genius was most comprehensive; he was one of the first in the age of the Renaissance to undertake a philosophic organization of the empirical knowledge of Nature, and, long before Bacon, usually regarded as the father of natural science, he experimented and took as his motto: "Experiment never deceives, it is only our judgement that goes astray when we make deductions not inherent in the former." He was a great physicist. His *Codex Atlanticus* laid the foundation of measuring distances at sea, and in his treatise on hydraulics he discussed the equilibrium of liquids and recognized the nature of wave motion long before Newton's time. As a military engineer he had many ideas; he invented the "architonitrus," a copper contrivance that ejected projectiles by means of steam—a sort of steam cannon; he built revolving mitrailleuses (machine guns), and designed a swimming belt, a diving apparatus, various flying machines, and three hundred years before Lenormond (1787) had drawn a parachute with adequate dimensions for safety. By discovering the laws of inertia and motion he prepared the way for Galileo's and Newton's investigations into the movements of the heavenly bodies. His invention of the camera obscura led him to utilize it in explaining the functions of the eye, and thus entitles him to a division of the honours for the founding of physiological optics with Keppler, who furnished the mathematical proof a century later. Leonardo made a magnificent series of anatomical drawings from dissections made by Antonio Marco, and these led John Hunter to assert that he was the best anatomist and physiologist of his time, and, with his teacher, the first to rouse the true spirit in the study of anatomy. The physiology of movement attracted his artistic attention, and he explained walking, quite in the sense of modern physiology, as a constant falling forwards. The function of the heart as a pump to drive the blood into the arteries was established by him a hundred years before Harvey's complete discovery of the circulation. In Professor Bayliss's *Principles of General Physiology* there is a copy of a drawing of the anatomy of the vascular system with a reproduction of his mirror writing; it has sometimes been thought that Leonardo was left-handed, but Dr. Hemmeter believes that he was ambidextrous, and others suggest that he adopted the mirror writing as a protection against ecclesiastical interference. Leonardo's history presents some features interesting to the student of the conditions that lead to the production of human genius, for he was the illegitimate son of the husband of four wives and was brought up with eleven legitimate children, none of whom showed any sign of genius or artistic talent. Nothing is known of his mother, but it is possible that genius had remained latent on her side for generations. Leonardo's father was 23 years of age at the time of his distinguished son's birth; this is a striking exception to the general conclusion of Casper L. Redfield's laborious investigation—namely, that, as a rule, great men are the sons of fathers who average 40 years of age at the birth of their eminent sons.

[1] J. C. Hemmeter: *Annals of Medical History*, New York, 1921, iii, 26–44.

RED FATIGUE.

AN instructive paper by Dr. Edridge-Green on the effect of red fatigue on the white equation[1] should be studied by those who are interested in the rather abstruse question of colour vision. The white equation is the amount of pure spectral red, green and violet required to match a simple white. The author used an apparatus of the Abney type, with modifications suggested by Captain Fulton; with this apparatus portions of the spectrum are passed through slits, and are recombined on a white surface by means of a lens. The experiments are performed in the dark and stray light is excluded. The wave lengths of the three lights are given; in making the equation, the red and violet slits are kept unaltered, while the amount of green passed through is varied by opening or closing the green slit. It is stated that the equation is easy to make, the mean deviation being very small; the size of the portion of the spectrum in the green for the normal equation being equal to thirteen scale divisions. The light used for the red fatigue allowed red rays of a length of from λ 630 $\mu\mu$ to the end of the red end of the spectrum to pass. Edridge-Green gives the results of observations conducted on himself and on others; his results, put shortly, show that after red fatigue only about half as much green is required in the equation; in his own case, after five seconds' red fatigue, the green in the equation was exactly halved. In any experiments of this nature, it is essential not to allow the red fatigue to be too great, or a blue-green after-effect is obtained, which will prevent correct observations being made. In conclusion, the author insists that the results of his experiments are quite inconsistent with the three-sensation theory. The white equation and its match cannot, he contends, be due to similar physiological processes, or both would change in the same ratio.

[1] Proceedings of the Royal Society, B, Vol. 92. Communicated by Professor W. M. Bayliss, F.R.S., April, 1921.

THE PULSE RATE IN YELLOW FEVER INFECTION.

IN his thirteenth instalment on the etiology of yellow fever, a subject which he has for some time been investigating in America, Noguchi collaborates with A. E. Cohn[1] in an electrocardiographic research into the behaviour of the heart in the experimental infection of guinea-pigs and monkeys with *Leptospira icteroides*, the organism obtained from yellow fever patients, and also for purposes of comparison with *Leptospira icterohaemorrhagiae*. In man the pulse rate in yellow fever tends to be slow in the early stage and in the second stage, in which it may fall to 30 to 40 beats per minute, and may continue to be slow during convalescence; in fatal cases in the final stage it may be either rapid or slow. After death cardiac lesions are not constant, except perhaps the degenerative changes and frequent endocardial and pericardial ecchymoses associated with fever. In icterohaemorrhagic jaundice, formerly known as Weil's disease, the pulse rate is usually slow in proportion to the temperature, and this even in the cases without jaundice. In Cohn and Noguchi's investigation electrocardiographic records were taken before and after the inoculation of the animals with *Leptospira icteroides* and *L. icterohaemorrhagiae*, and thus the pulse rate could be accurately counted and the mechanism of slowing analysed. Slowing of the heart occurred during the febrile periods of both these experimental infections and in all cases until the day of death the mechanism of the slowing was of a simple variety—a slowing of the whole heart depending on the sinus, the pacemaker of the heart. On the day of death, although increased length of the auriculo-ventricular interval occurred, incomplete heart-block was noted on only one occasion.

ILLICIT TRADE IN COCAINE.

IN an article discussing the subject of dangerous drugs and the Opium Convention on August 27th we said that there was reason to fear that smuggling was widely spread, and it was pointed out that as long as any country produces and distributes tons of these perilous drugs irrespective of their legitimate destination, avenues of illicit traffic will be available, and police courts and inquests will periodically disclose what is but a fraction of the evils brought about by the abuse of these narcotics. We are accustomed to finding Germany the evil genius of Europe, and if one quarter of what Dr. Courtois-Suffit recently alleged before the Académie de Médecine is true it would be difficult to find words too strong to condemn the part now being played by German speculators in the clandestine distribution of cocaine. Dr. Courtois-Suffit, who is a medical expert attached to the Paris courts, gave, in conjunction with his house-physician, M. René Giroux,[2] a long account of the increase in this clandestine commerce; he stated that large quantities are smuggled in from Germany by French and American soldiers of the Army of Occupation, who reach France on leave or on demobilization. They seem to be able to get it through the Customs without much difficulty, and easily find purchasers not only in Paris, but at Nice, Monte Carlo, Marseilles, and Biarritz. A number of seizures have been made, and, according to Dr. Courtois-Suffit, the drug, as a rule, bears the label of Merck of Darmstadt. In one case a demobilized soldier stated that a German he met sold him a kilogram of cocaine for 600 francs; in France the soldier was offered 13,000 francs, but the bargain was not completed before he was arrested. In another instance a French dealer in Paris bought 14 kilograms from an American sergeant at the rate of 200 francs a kilogram, and was selling it at 10 to 12 francs a gram. It was calculated that he had made a profit of about 130,000 francs. The prices at which cocaine is said in these instances to have been sold in Germany are extraordinarily low; 600 francs at present day rates would be equivalent to about 3,500 marks, and 200 francs to about 1,200 marks. The most recent list issued by Merck we have been able to consult is dated December, 1920; cocaine hydrochloride was there priced for export at 8,000 marks a kilo. On the other hand, owing to the tightening up of regulations in other countries, the amount exported through legitimate channels may have diminished, and holders of large stocks in Germany may be anxious to get rid of them even at very low prices. However this may be, Dr. Courtois-Suffit seems confident of his facts, which have been ascertained during inquiries conducted by the French law courts. He is therefore justified in arguing that when such immense profits are possible a fine—which under the present law cannot exceed 10,000 francs—is useless as a deterrent. The fines actually inflicted are very much smaller, and imprisonment, which can be imposed in addition to a fine, is very seldom undergone. Dr. Courtois-Suffit urges that the French law should be amended to render the punishment more severe, and that greater care should be taken at the Customs; but he has to admit the difficulty, owing to the small bulk of the drug, of preventing smuggling, and says, moreover, that a certain amount of cocaine is brought to France by aeroplane. As was pointed out in our article of August 27th, national action, if isolated, is not likely to have the desired result. So long as cocaine, for example, is manufactured in excessive quantities unscrupulous dealers will find a means of smuggling so portable a drug. The action must be international, and the preliminary investigation suggested by Mr. Wellington Koo, the Chinese Minister, seems to be a step in the right direction. The council of the League of Nations has, at his suggestion, decided to ascertain approximately what are the amounts of opium, morphine, cocaine, and the other drugs enumerated in the Convention, which are in fact required for legitimate medical purposes.

[1] A. E. Cohn and H. Noguchi, *Journ. Exper. Med.*, Baltimore, 1921, xxxiii, 683 & 92.
[2] *Bull. de l'Acad. de Méd.*, June 21st, 1921, p. 720.

TREATMENT OF LEPROSY.

AT the request of the Surgeon-General of Trinidad, made through the American Consul in that island, the Surgeon-General of the United States Public Health Service has, with the consent of the Treasury Department, undertaken to send to Trinidad a quantity of the chaulmoogra oil preparation used by that service for the treatment of leprosy. The amount to be supplied will be sufficient for 500 treatments. The courtesy of the United States Government departments concerned must be freely acknowledged; but the fact that the Government of the United States was applied to by the medical authorities of an important British colony for this assistance appears to show that there is something lacking in the relations between the colonial medical authorities abroad and at home, and in the co-operation between the different British Government departments, more particularly as the researches on the therapeutics of chaulmoogra oil in leprosy have been largely carried out by distinguished officers of the Indian Medical Service.

PROVIDENT HOSPITAL SCHEME FOR LONDON.

THREE of the large metropolitan teaching hospitals—the London Hospital, St. Thomas's Hospital, and the Royal Free Hospital—have decided to offer their services to members of the National Provident Scheme for Hospital and Additional Medical Services, and this scheme will come into operation in London on November 1st next. The London scheme is based upon the Sussex scheme, of which an account first appeared in the BRITISH MEDICAL JOURNAL of January 22nd, 1921, p. 129. Its aim is to offer to those who come within certain prescribed limits of income, as well as to all those insured under the National Insurance Acts, the higher resources of medicine free of charge beyond payment of their annual subscriptions. The number of members will be limited; applications from those wishing to participate will be dealt with in the order in which they are

received until it is necessary to close the list. The Organizing and Executive Committee of the scheme consists of Sir Arthur Stanley, Lord Dawson of Penn, Sir Alan Anderson, Mr. McAdam Eccles, and Mr. J. F. Gordon Dill (Honorary Secretary). A leaflet giving in outline the scope of the scheme and the facilities offered, together with an extract from the rules, may be obtained on application to the Honorary Secretary, 77, Cambridge Terrace, Paddington, W.2. The Committee, believing that the public are determined to save the voluntary hospital system, launches the London Provident Scheme in the expectation that it will be welcomed, and that its extension to other parts of the country is only a matter of time. They are assured that wherever the scheme attracts a sufficient membership the financial anxiety of the London hospitals will be considerably lessened. It will afford, also, to those in receipt of small but regular incomes a means of providing during health for the expense of illness.

TRYPANOSOMIASIS.

WE are informed by the Colonial Office that the Tropical Disease Prevention Association is sending out a mission under Dr. Claude H. Marshall, a Senior Medical Officer in Uganda, whose services are being lent by the Government of Uganda for that purpose, to investigate certain methods of treating trypanosomiasis. Dr. Marshall first described in the BRITISH MEDICAL JOURNAL of May 22nd, 1920, his treatment of sleeping sickness by combined intravenous and intrathecal injections of organic arsenical preparations. Further reports on this subject by Dr. Marshall and Dr. S. M. Vassallo and by Professor J. W. H. Eyre and Dr. Marshall appeared in our issues of May 28th and August 20th, 1921.

CONGRESS OF THE HISTORY OF MEDICINE.

AT the second Congress of the History of Medicine in Paris last July it was agreed that the third Congress, to be held in July, 1922, should take place in London. There will be a meeting for business purposes towards the end of this year in Paris, which will be attended by Dr. Charles Singer, President of the Section of the History of Medicine of the Royal Society of Medicine, when the permanent organization of the Congress will be discussed. A meeting of the Section of the History of Medicine at 1, Wimpole Street, will be held on Wednesday, October 5th, at 5 p.m., to forward the arrangements for the London Congress of 1922, and to this meeting all those interested in the matter are invited, whether Fellows of the Society or not.

EPSOM COLLEGE.

SEVERAL Council exhibitions will shortly be awarded at Epsom College to the "sons of such duly qualified medical men as shall in the opinion of the Council be among the less fortunate members of their profession." Holders of these exhibitions pay only 50 guineas a year instead of the usual fee of 100 guineas. "France" Pensions of £30 a year will also be awarded to several medical men, not under 55 years of age, whose income, independently of any allowance from the College, does not exceed £100 a year. Forms of application can be obtained from the Secretary, Mr. J. Bernard Lamb, 49, Bedford Square, W.C.1, and must be returned to the office by Friday, September 23rd.

WE much regret to announce the death of Dr. T. Arthur Helme, consulting surgeon to the Manchester Northern Hospital for Women and Children, who was a prominent member of the Council of the British Medical Association and President of the Lancashire and Cheshire Branch.

THE programme has now been issued for the meeting of the British Orthopaedic Association at the Shropshire Orthopaedic Hospital, Oswestry, on September 24th and 25th. Visitors will be shown round the hospital and Sir Robert Jones will hold an out-patient clinic; there will be a number of demonstrations and visits to after-care centres. On September 25th operations will be performed by the honorary staff.

England and Wales.

REPORT OF THE METROPOLITAN ASYLUMS BOARD.

THE Report of the Metropolitan Asylums Board for 1920–21, which has just been published, states that from present indications a very heavy seasonal rise in infectious diseases may be expected during the autumn and winter.

Infectious Diseases.

The last annual report contains particulars of the exceptional increase in the number of cases of infectious fevers admitted to the Board's hospitals during the autumn and winter of 1919–20. The increase continued to be very marked throughout the year 1920. The number of patients admitted during the year was 35,916, and at the end of the year there remained 7,465 patients under treatment in the hospitals. Admissions were 13,954 more than in 1919, and the number remaining under treatment at the end of the year was 2,675 more than at the end of the previous year. The lowest number under treatment at any time was 3,512 on July 2nd, 1920, and the highest 8,669 on November 23rd. The number of diphtheria cases received was 10,636, and the number of cases of measles 526.

The serious epidemic in the autumn of 1920, which was the largest epidemic with which the Board has had to deal in its history, required unusual efforts by the medical and nursing staffs to meet successfully the unprecedented demands which that epidemic made upon the infectious hospitals. A special report of the measures then taken is included in the present report; this was issued by the Infectious Hospitals Committee last February, and was dealt with in our issue of March 5th (p. 361). After reaching its highest point at this period, the number of patients under treatment did not fall as rapidly as was anticipated, the lowest number (including tuberculous patients in the fever hospitals) reached up to the date of the publication of the present report being 5,755 on June 10th, 1921, when the figure again began to rise. In this connexion the following comparative figures are instructive:

Seasonal Rise.	Highest Number under Treatment and Date.	Minimum to which Numbers Subsequently Fell and Date.
1920–21	8,669 (Nov. 23rd, 1920)	5,755 (June 10th, 1921).
1919–20	5,210 (Dec. 21st, 1919)	3,739 (July 2nd, 1920).
1907–8 (previous highest seasonal rise)	7,158 (Nov. 19th, 1907)	3,283 (July 4th, 1908).

In the metropolitan area 43,958 cases of infectious disease (exclusive of whooping-cough and zymotic enteritis) were notified during the year 1920, or 16,640 more than in the previous year.

The number of cases of small-pox admitted to the hospitals of the Board during the year 1920 was 50, but only 20 of these cases came from the metropolitan area; there were 7 deaths. The medical superintendent of the small-pox hospitals reports that five separate outbreaks occurred in London: at the 3rd London General Hospital, Wandsworth, in Poplar, in Stepney, in Erith, and at the Seamen's Hospital, Greenwich.

Venereal Diseases.

The Board has been concerned with the treatment of venereal diseases in London since 1917, and in June, 1920, a new hospital of 52 beds was opened at Sheffield Street, intended not for the prostitute class, or for persons who had been convicted in police courts for soliciting or other offences, but for girls who had followed soldiers from the country, or who had been infected as the result of an occasional lapse into immorality. It was thought that the girls in question would be found in poor lodging houses and would be willing to go to an institution for treatment and remain there for some time, though there would be no power of detention, and that when cured they would, for the most part, go home and return to normal life. The results of the medical work were satisfactory when the patients were willing to avail themselves of the treatment and to remain for the period necessary; there is ground for the belief that good work, both medically and socially, has been done in many cases, though it

became apparent that the class of case received has not been that which the Board expected. At the same time there is no doubt that accommodation should be available for the type of women who have come to this hospital, however hardened; but Sheffield Street Hospital, situated as it is in the most central part of London without any grounds at all, seems hardly a suitable place in which to carry on this work.

Tuberculosis.

By the National Insurance Act, 1920, "sanatorium benefit" ceased on May 1st, 1921, to be included among the benefits conferred by the Act of 1911, and the arrangements entered into by the Metropolitan Asylums Board with Insurance Committees have come to an end. The London County Council recently estimated that the total number of beds required for London for the treatment of tuberculosis is 2,550; the provision actually made by the Metropolitan Asylums Board has been 2,154, with 883 additional beds available for children. The total number of tuberculous patients under treatment in the institutions of the Board was 2,148 (on March 31st, 1921).

Mental Hospitals.

The number of patients in the Board's mental institutions for the year 1920 were as follows:

Remaining on January 1st, 1920	5,446
Discharged during the year	188
Died	594
Admitted	875
Remaining on December 31st, 1920	5,539

The average annual number of admissions during the past ten years has been 985. Of the patients admitted, 499 were under 16 years of age, 93 of these being under 5 years of age. Of the 376 admissions over 16 years of age, 195 were between 70 and 80, 85 between 80 and 90, and 3 over 90.

Finance.

The total expenditure of the Board for the year amounted to £1,872,013, which is equal to a rate of 9.86d. in the pound. The expenditure in the principal departments was as follows: Infectious hospitals, £712,941; mental hospitals, £519,928; children's institutions, £187,185; tuberculosis institutions, £153,740. This expenditure, which falls principally under the headings of food and other supplies, salaries and wages, and up-keep of buildings, has risen with the increases of cost under each of these headings throughout the country, but the estimates for the financial year 1920–1921 do not entail any further increase.

Scotland.

THE THIRTEENTH CENSUS OF SCOTLAND.

IN 1801, when the first official census of Scotland was taken, the population numbered 1,608,420; since then a census has been taken every ten years, and each has shown an increase in the number, the stages on the upward path being 1821, when the population exceeded 2,000,000; 1861, when it exceeded 3,000,000; and 1891, when it rose above 4,000,000. It is now (on Census day, June 19th, 1921) within a hundred thousand of 5,000,000, being 4,882,288. The intercensal increase, however, is the smallest which has occurred, and is only 121,384; the previous smallest (173,552) was recorded in 1861. But the diminished growth of population is more clearly shown by the intercensal rate of increase, which was only 2.5 per cent.; this contrasts with a previous lowest of 6 per cent. in 1861 and of 6.5 per cent. in 1911; in most of the other decades the rate was above 10 per cent. A marked drop in the intercensal rate of increase is, then, the first outstanding feature in the Census returns. In England and Wales the intercensal rate of increase was 5.03 per cent.

The second feature is the increase in the excess of females over males. The male population numbered 2,348,403, and showed an intercensal increase of 1.7 per cent.; the females numbered 2,533,885, with an intercensal rate of increase of 3.3 per cent. North of the Tweed, therefore, the excess of females over males was 185,482, and was greater than the excess ascertained at any previous Census, the only one approximating to it being that reported in 1861. From 1861 to 1901 the rate of excess was a falling quantity; but in 1911 it had begun to go up again, and, as has been stated, in 1921 the upward tendency is unprecedented. In England and Wales, with a total population of 37,885,242, the excess of females over males was 1,720,803. In Scotland at present there are about 1,090 females to 1,000 males, and in England and Wales about 1,095 females to 1,000 males. In Midlothian the excess of females was at its highest, being 36,430; in Edinburgh the surplus was 36,181, whilst in Glasgow—with a total population of 1,034,069 as against Edinburgh's 420,281—it was only 24,979.

The third outstanding feature in the Census returns is the massing of the population in certain areas. For instance, Glasgow contains 21.2 per cent., or more than a fifth of all the people in the country; Lanark, with 1,539,307, has almost a third of the entire population; and Midlothian, with 505,378, has about a ninth. The tendency to crowd into the towns continues, and the country districts are becoming more and more empty; the Highlands in particular are suffering, and the six chief Highland counties, which contained over 471,000 persons in 1851, now contain only 401,000, the decrease in the last decade having been 10,000. With this has to be conjoined the decline in the use of the Gaelic language; there are now 10,314 persons speaking Gaelic only, as compared with 18,400 in 1911, and there are now 151,159 speaking both Gaelic and English, as compared with 183,998 in 1911, and the decline has been steady during the last thirty years. The total number of persons returned on the schedules as entitled to medical benefit under the National Insurance Acts was 1,619,202, of whom 1,123,513 were males and 495,689 females.

More details are necessary before the various influences which have led to these changes in the population of Scotland can be defined; but four, at any rate, seem to have been at work—namely, a falling birth rate, the losses chiefly amongst the males due to the war, arrest of emigration during the war, and increase in the number of marriages, and recently in the birth rate, since the war; the first and second influences will to some extent have been counteracted by the third and fourth. It is an interesting fact that this Census has been carried out during the occupancy of the Registrar-Generalship of Scotland by a medical man—namely, Dr. J. Craufurd Dunlop.

RARITY OF SECOND ATTACKS OF WHOOPING COUGH EPIDEMIC.

The Scottish Board of Health has received a report from Dr. Shearer, one of its medical officers, who visited St. Kilda on August 23rd to inquire into an outbreak of whooping-cough, of which word was received by wireless from the ss. *Dunara Castle* on August 19th. Dr. Shearer found that cases of whooping-cough had occurred on the island towards the end of July, and that in all but one of the seventeen inhabited houses whooping-cough was present, the exception being that of Nurse Mackenzie, who had only returned to the island with her two boys the night preceding his visit. Cases were to be seen in different stages of the disease from the late catarrhal to the late paroxysmal, but no one was seriously ill, and in no case was there any complication. There was a similar epidemic on the island twenty-nine years ago, and, so far as the present epidemic is concerned, there is a clean line between those above and below the age of 29 years. Not one person over that age has developed whooping-cough, but of the forty inhabitants under that age all but four are sufferers from the disease. These four are the nurse's two boys and a little girl, all of whom had just returned from a holiday on the mainland, and a young woman, aged 27, who had whooping-cough when on the mainland several years ago. This would appear to be strong proof of the rarity of second attacks.

Ireland.

DUBLIN MILK SUPPLY.

THE Public Health Committee of the Dublin Corporation, appointed in conjunction with six members of the Council to report on the milk supply and prices, has issued its report, in which the establishment of municipal milk dépôts is recommended as a possible solution of the difficulty. The Committee states that inasmuch as the representatives of the Dublin Cowkeepers' Association

submitted details of working expenses, which alleged that the cost of production of their supply totalled 2s. 3½d. a gallon, the Committee secured information that milk was supplied at 2s. 2d. a gallon by a vendor who purchased milk in the Drumcondra area, and that the Dublin Union and other large consumers were purchasing milk at 1s. 10d. a gallon, supplied by members of the Cowkeepers' Association, and is convinced that these circumstances prove that the figures submitted as to the cost of production are not reliable. While regretting that reliable information could not be obtained to enable it to fix a fair price, the Committee in recommending the establishment of municipal milk dépôts points to the success of such a policy in relation to other local authorities.

In Portrane and Richmond Asylums the Committee found that the cost of production with paid labour was 9d. a gallon, and exclusive of patient labour 6d. a gallon. The contract prices to Dublin Union hospitals range from 1s. 6½d. to 2s. 5d. per gallon, and the prices paid by retailers of rail-borne milk range from 1s. 2d. to 1s. 6d. per gallon. The deputation from the Dublin Cowkeepers and Dairymen's Association submitted figures showing that with a capital invested of £1,200 the total cost for twenty cows for a period of twenty-six weeks was £837 15s., being a net cost per cow of £41 7s. 9d. On further investigation it was found that nine of the thirteen contractors to the Dublin Union were members of the association, and the contract price ranged from 1s. 6½d. to 1s. 10d. a gallon. A return of the prosecutions showed that for twelve months to June 30th, 1921, nineteen members of the association had been proceeded against, and since that date up to August 23rd ten cases were pending.

The Committee ascertained from the manager of the Plymouth Co-operative Society, Limited, which had the reputation of supplying milk to that city very efficiently and economically, that up to the middle of July the society purchased its supply at 1s. 4d. a gallon, and distributed it to customers at 2s. 4d., and from the middle of July to the end of September their purchasing price is 1s. 8d. a gallon.

Correspondence.

CAPILLARY PRESSURE.

SIR,—In his letter (August 13th, p. 259) Dr. Gillespie ascribes views to me which I have never maintained, and then proceeds to abuse—a common method of attack, and one which requires an answer only in so far as to prevent some readers from mistaking Dr. Gillespie's dogmatism for scientific truth. I have never failed to realize the obvious fact that there must be a greater pressure inside than outside the capillaries in order to maintain patency, but what I do maintain is that the difference of pressure is very small.

When the skull is trephined and the dura mater incised the brain bulges into the trephine hole. A tube filled with water is screwed into the trephine hole, covered at its cerebral end with thin rubber, and connected at its other end to a manometer and pressure bottle. An air-bubble index is introduced into the glass part of the tube beforehand. The air bubble is forced outwards by the pressure of the brain against the rubber membrane. It pulsates with each heart beat and respiration. It can be brought back to the zero position by raising the pressure bottle, and the manometer then indicates the brain pressure. Such is my brain-pressure gauge described twenty-five years ago. Now the pressure of the brain is circulatory in origin; it ceases the moment the heart is stopped. It is the pressure left over after the arterial pressure has expanded the arteriole-capillary-venous network. The pressure in the brain pressure gauge overcomes the systolic expansion of the brain and pushes the brain back into its normal position. Now be it noted that the least rise of venous pressure increases the pressure of the brain and tends to expand it. Such expansion is seen in the anterior fontanelle of the crying infant. In the torcular Herophili, a bony cavity in the dog, a tube can be screwed in so as to measure the cerebral venous pressure. This pressure and the brain pressure closely agree, and the least rise of cerebral venous pressure raises the brain pressure. Therefore I am right in assuming that the cerebral capillary and venous pressures are very close together. Such a conclusion is borne out by the fact that the pressure of the blood escaping from a cut in the finger is close to that measured directly by the insertion of a hollow needle into a vein of the arm. The bleeding finger with severed capillaries, arterioles and venules is pushed into a tube connected with a manometer and the hollow needle in the vein is connected with another manometer. Both measurements are here direct.

The Roy and Graham Brown method applied to arterioles, capillaries, and venules in transparent tissues gives me similar readings to the direct method, just as the armlet sphygmomanometer gives readings of arterial pressure very closely approximate to direct readings taken with cannula in the artery and manometer. The Roy and Graham Brown method has shown me that when the heart is stopped it takes the least pressure (1 to 2 mm. Hg) to drive the corpuscles along the capillary vessels as quickly as they move in the natural conditions of the circulation. We cannot justly ascribe results obtained with glass capillary tubes and viscous fluids to living tissues. The comparison made by Dr. Gillespie of the physical conditions pertaining to garden-hose pipes, hypodermic syringes and needles with these conditions existing in the blood vessels is unwarrantable. The relation of capillary wall to blood may be, and probably is, such that frictional resistance is reduced to the least possible amount—to that of one layer of oil slipping over another. Dr. Gillespie says that to force the blood through there must be required a considerable difference of pressure between arterioles and venules. There is no "must" about it, and my observations show that very little pressure indeed is required.

When the Roy and Graham method is used on the frog's web the capillaries at the edge of the web first are compressed, corpuscles ceasing to pass through them, then those further in, and so on as the pressure rises, until the arterioles are compressed.

It is just to assume that the pressure in the compressed vessels rises to that in the vessels which feed them. In the case of the capillaries at the edge of the web, this pressure is that in the capillaries a little further in. As I pointed out in my first letter in answer to Dr. Gillespie, if the internal tension of the capillaries was considerable—like that of a soap bubble—these vessels would empty themselves into the veins when the heart is stopped. This is not the case. There is, of course, a difference of tension between the inner and outer surface of a capillary, but this is so small as to be negligible. Let Dr. Gillespie get out of his armchair and proceed by experiment to prove the opposite which he so dogmatically asserts. His criticism of Dr. McQueen for writing "kinetic energy" in place of "that pressure which maintains kinetic energy," is a quibble. The meaning was plain.—I am, etc.,

Loughton, Aug. 25th. LEONARD HILL.

SIR,—Dr. Henderson (August 20th, p. 301) accuses me of "ascribing to Professor Leonard Hill views, statements, and assumptions which the latter has never made." The only ground for this sweeping statement, that I am aware of, is the omission by me (July 16th, p. 96) of the word "practically" in a quotation from Dr. Hill, which omission was pointed out by Dr. McQueen (July 30th, p. 171). I had no intention of misrepresenting Dr. Hill in the matter, and quoted the same passage again (August 13th, p. 259) including the word "practically," and showing why this word was needed when one was speaking of arteries and not when speaking of capillaries.

In the second paragraph of his letter Dr. Henderson asks, "If the pressure within the veins of the eye is greater than that outside their walls, how does Dr. Gillespie expect the aqueous to drain into the venous sinus of Schlemm's canal?"

My reply is that the pressure in Schlemm's canal is less than that in the anterior chamber, and that when Dr. Henderson speaks of "the veins of the eye" he seems to forget that there are veins and veins in the eye. There is no flow from Schlemm's canal into the retinal veins nor into the venae vorticosae of the choroid, in both of which comparatively high pressure is required to maintain their patency against intraocular pressure.

The only veins into which there is a flow from Schlemm's canal are the anterior ciliary veins, which lie outside the

sclera, and in which therefore the pressure required to keep them open is only a little greater than atmospheric pressure. That the direction of the flow is as stated above has been shown by injection of colouring matter into the aqueous, and subsequent examination of where the colouring matter had penetrated to. See the *Encyclopédie Française d'Ophthalmologie*, 1905, p. 139.

Hence there is no question of uphill flow, and Dr. Henderson's sneer at equations and formulae is uncalled for.—I am, etc.,

Knock, Belfast, Aug. 23rd. JOHN R. GILLESPIE.

THE FORMOL-GEL REACTION IN SYPHILIS.

SIR,—The experience of Mr. Murray Stuart (August 13th, p. 263) in relation to the uselessness of the above test is similar to our own in this laboratory.

Professor Beattie and I examined some sixty serums with this method and controlled them by the Wassermann reaction. In the Wassermann test we obtained double positive, positive, and negative results, but the formol-gel method gave negative results in all cases. A few of the tubes seemed to show a more or less solid column, but this was purely a surface tension phenomenon, for on shaking the tubes the fluid nature of the contents was at once obvious. The tubes showing the apparent increase in viscosity did not correspond to the serums giving positive Wassermann reactions.—I am, etc.,

F. C. LEWIS,
Assistant Lecturer in Bacteriological Methods, University of Liverpool.

August 23rd.

AUTO-SERUM IN THE TREATMENT OF DISEASE.

SIR,—I have seen lately in the lay press a reference to a method of treatment for cancer which is ascribed to Dr. Caudier of Paris. This is said to consist in the injection under the skin of serum derived from the patient's own blood, which presumably contains substances which, when thus reintroduced into the system, strengthens its defence against cancer. It is apparently claimed by Dr. Caudier that the effect is rapidly to improve the general condition of the patient, and to reduce the size of the tumour.

I have not observed any allusion to this method of treatment in any recent medical periodical, but in an address on "The specificity of cancer and the general principles of its treatment and prophylaxis," which I delivered to the East Yorks Branch of the British Medical Association, and published in the *Lancet* of May 28th, 1910, I made the following statement:

"On the other hand, should the causal agent be found to be a bacterium, success may follow the exhibition of a cancer vaccine, prepared after the methods of Wright; or of an anti-cancerous serum. Until such serum can be procured from an individual cured of, or rendered immune to, the disease, *the effect of auto-serum might be tried*. This may contain a self-generated antitoxin; or, if it contains the toxin itself, its injection in small amount may act as a vaccine and stimulate the leucocytes to increased phagocytic activity."

Although I confined myself to an abstract statement, without mentioning any concrete example (for a reason given later), I had in mind experiments made with auto-serum in 1907 and 1908, in cases of cancer occurring in my practice.

In September, 1907, a man, aged 67, was admitted to the Driffield Poor Law Infirmary suffering from disease of the left elbow. He said he had been discharged from a city infirmary in the neighbourhood as incurable, having refused offered amputation. His elbow presented the appearance of a huge fungating epithelioma, a mass covered with suppurating granulations, discharging freely and emitting a most vile odour. There was great pain present which prevented sleep.

I decided to experiment on this man by injecting auto-serum and explained to him what would have to be done, expressing the hope of relief if not of cure. He was as eager as myself to try this treatment, and gladly consented.

Ten c.cm. of blood were drawn from the right median basilic vein by a large antitoxin syringe and allowed to coagulate in a sterilized test tube. The serum was then poured off, centrifuged, and stored in 0.5 c.cm. ampoules and sealed up. The ampoules were then sterilized. On September 25th, 1907, 0.5 c.cm. was injected hypodermically into the posterior aspect of the right forearm, and a similar dose was given weekly until the supply was exhausted. Fresh supplies of blood were drawn as required and treated as before, and the injections were continued until twenty-three had been given, the last being given on February 23rd, 1908. After several injections there was marked improvement. Pain disappeared entirely and rapid diminution of the mass set in, the discharge gradually ceased, and by the time that the last injection was given only a few small granulations remained, the elbow being normal in size.

Though greatly elated by the success of this treatment I felt it desirable to make certain of the nature of the disease. A few granulations were detached and sent to the Clinical Research Society. To my great chagrin the report stated that the disease was tuberculous.

As my thoughts and efforts were concentrated upon the treatment of cancer, I was too greatly disappointed to care to report the successful result of the action of auto-serum in tuberculous disease, and it may be that further experiment by others will confirm my experience and that another weapon may be provided against a disease which is quite as malignant as cancer, or disprove it.

In several cases of undoubted cancer, in private practice, I attempted the same treatment, but in every case the patient refused to permit me to obtain a second supply of blood, and I was thus prevented from bringing my experiments to a positive or negative conclusion.

The fact that one was only a general practitioner was too heavy a handicap, but, in hospitals for cancer, with proper laboratory facilities, this method of treatment might be thoroughly tested, since at least some of the patients might be found to be as willing, in their own interests, to co-operate with the surgeon as my patient was. At the same time success is, in my opinion, only probable on the presumption that the parasite responsible for cancer is a microphyte and not a protozoön. In the latter case some mineral parasiticide is indicated such as is successful in syphilis. Molybdenum has not been tried, and if an oscol of this metal can be prepared I should be glad to experiment with it, and there is abundant material.—I am, etc.,

A. T. BRAND, M.D., C.M.,
Late Major R.A.M.C.

Driffield, E. Yorks, Aug. 8th.

CERVICAL RIBS.

SIR,—In an annotation in the BRITISH MEDICAL JOURNAL of August 27th, p. 332, on "Rib Pressure and the Brachial Plexus," the statement is made that "Sir William Thorburn in 1904 was the first in this, and, perhaps, with the exception of Borchardt, in any country to apply *x* rays in the diagnosis of a cervical rib."

In the BRITISH MEDICAL JOURNAL of June 8th, 1901, p. 1395, is a report on a case of cervical ribs by T. E. Gordon, F.R.C.S.I., illustrated by drawings from two radiographs of two cases. One case was radiographed for Mr. Gordon *before August 27th, 1899*, and a cervical rib found on each side.—I am, etc.,

Liverpool, Aug. 27th. C. THURSTAN HOLLAND.

VACCINE THERAPY AND CYSTITIS.

SIR,—The discussion on cystitis in the Section of Neurology at the Annual Meeting of the British Medical Association, Newcastle, reported in the issue of the JOURNAL for August 27th, p. 305, seems to call for some comment from one who—to quote the words of the opener—is sceptical as to the value of vaccine therapy (in cystitis), but who is, perforce, bombarded daily with specimens of foul urine, with urgent requests for a vaccine.

The real trouble is this, that the practitioner nowadays is apt to fly to a vaccine before submitting his patient to an expensive course of surgery and radiology. In this he is wrong from the scientific point of view, and I venture to say that no responsible pathologist would suggest a vaccine for the treatment of a bacterial infection of the urinary tract (I dislike the limitation "cystitis") until investigation into its cause had been made. Personally I always either refuse to make a vaccine at all or point out that it will be useless unless it is regarded as an adjunct to, and not a substitute for, accurate surgical diagnosis. But vaccine may be bought from a shop, though consequent discredit of vaccine therapy as a science not infrequently follows. I think that pathologists should refuse to supply a stock vaccine without bacteriological examination of the patient and some knowledge of the clinical history of the case.

It does not, however, follow that vaccines are useless in urinary infections. Provided they are made from the organisms responsible for the infection—and here the serum-resisting test is of great value—and are used concurrently with, and not as a substitute for, diagnosis, the disinfection of the tract is in many cases accelerated by their employment.

The essential factor lies in consultation on the individual case between the surgeon and the pathologist, each being anxious to assist and not supplant the other.—I am, etc.,

London, W.C., Aug. 29th. A. KNYVETT GORDON, M.B.

A RETROSPECT OF NATIONAL INSURANCE.

SIR,—In your leader of August 20th, p. 291, while discussing Dr. Alfred Cox's communications to the American Medical Press upon the subject of national health insurance, with reference to the procedure adopted under the Act to deal with excessive prescribing, you state that Dr. Cox does not believe that "the procedure has deprived a single insured person of any drugs really necessary for his treatment; but the system evidently does not favour 'elegant pharmacy' or luxury in prescribing."

I think it very unfortunate that these should be the opinions of one who carries the weight and exerts the influence of Dr. Cox: there must be few medical men working the Act but must challenge his first statement. The procedure adopted to deal with excessive prescribing is the one outstanding defect in the administration of national health insurance; and, with all respect to the weighty opinion of Dr. Cox, this procedure is responsible for the belief—the justifiable belief—amongst insured persons that there is such a thing as "insurance medicine," and that this medicine is of a very inferior type, from every point of view, when compared with "medicine for private patients."

The question raised is one for very serious consideration, and one which some of us will do our utmost to ventilate before the Committee which the present Minister of Health proposes to set up to consider the present administration of the Act. Looked at from the point of view of the patient, the procedure has led to a system of prescribing which, if it excels in simplicity, does not enhance the reputation of the medical art as a healing art. To use such terms as "luxury in prescribing" and "elegant pharmacy" in the half-sarcastic, deriding fashion of Dr. Cox is to cut at the root of one of the most important, if not the most important, qualification of the efficient physician. When one is really ill, as some of us know from bitter personal experience, a pleasant medicine of the kind classed by Dr. Cox as "luxury" often makes all the difference to the patient; the illness becomes more easy to bear, less prolonged, and one of its most disagreeable features—the swallowing of a disgusting medicine, its disagreeableness enhanced, and prolonged by the state of the mucous membrane of the mouth—is avoided.

The procedure which Dr. Cox favoured with his benediction is responsible, in many cases, for a class of treatment which is little less than a scandal. Medical practitioners are coerced by the fear of being surcharged into a routine method of treating insured persons. I was told recently by a well-known physician from the North of England that it was an ordinary thing to find forty to fifty men being brought before the Panel Committee for over-prescribing, and surcharged. By another I was told that the Glasgow Insurance Committee saves thousands of pounds in the year by this process of surcharging. Does Dr. Cox really believe that such procedure adds to the dignity of the profession, to the self-respect of the general practitioner, or in the end makes for efficient prescribing? It is too big a question to discuss in such a letter as this, but a careful study of the question, and the institution of inquiries in many different parts of the country has led me to the conclusion that the average Panel Committee is quite unfitted to deal with this matter; in the large majority of cases gross injustice is done to men who prescribe conscientiously in the best interests of their patients. The average medical man simply has not time or inclination to appeal against these unjust decisions; takes a simpler method of dealing with the matter, and the patient suffers. In this county we are fortunate in possessing a Panel Committee and an Insurance Committee who look upon this matter from the broad point of view of the interests of the insured and doctors alike, and we have never been forced to surcharge any practitioner. The Insurance Committee agrees with the Panel Committee that the procedure is a most vicious one. It strikes one as extraordinary when one reads of the proceedings of these Insurance Committees all over the country to note the suspicion, distrust, and antagonism of the officials and lay members towards the doctors, and their readiness to make grave charges upon what, on investigation, turns out to be mere trivialities. There is no doubt but that the procedure of Panel Committees in dealing with over-prescribing fans this flame of antagonism and suspicion. Is it not natural that a committee of laymen, ignorant of disease and its treatment, should look with suspicion upon a system in which medical men fine one another to the extent of thousands of pounds for treating over-generously their patients in the course of treatment? Panel Committees who take their duties lightheartedly without considering the broader issues at stake, are weaving a rope to strangle the profession.

To possess the art of prescribing elegantly and efficiently is to possess the highest qualification for general practice. If it becomes a lost art it will shake the very foundations of Insurance Practice, reduce it to the level of Poor Law practice in the days of Oliver Twist, and for such a state of affairs none will have to shoulder greater responsibility than Dr. Cox, and those who, like him, uphold the present vicious procedure of dealing with over-prescribing.—I am, etc.,

Croit Mhàiri, Tain, Ross-shire, August 20th. ENEAS K. MACKENZIE.

CHRONIC INFECTIONS AND MENTAL ACTIVITY.

SIR,—As one who has been intimately connected with a medical school for many years I have been struck with the number of men of first-class ability, many of them consistently first of their year, who have either died of tuberculosis or have had to subordinate considerations of successful work to those of health. A critical survey of our hospital staffs, recruited for the most part from the best students, reveals the fact that many of them have suffered from infections of some sort—tuberculosis of bones, joints or lymphatic glands, appendicitis, gastric or duodenal ulcer, chronic rheumatism, colitis, and cholecystitis. So striking is this in one hospital that I know of that it has been facetiously remarked that it is a necessary qualification for a post on the staff that the applicant shall have had a major operation! The work of Lane, Rosenow, and others affords proof that the great majority of abdominal, and indeed of all, operations are the direct result of chronic infections.

Is it merely a coincidence, then, that such a large number of our best men show the results of chronic infections, and that so few of them live to extreme old age? It is, I think, a recognised fact in toxicology that many substances which are toxic in large doses act merely as stimulants when administered in minimal amounts. The immediate effect of a dose of tuberculin or other vaccine is similar to that produced, I am told, by a glass of good champagne. Literature is full of examples of lucid exposition and extraordinary heights of eloquence resulting from the moderate drinking of alcohol, and a very able student of my own time was in the habit of taking a hypodermic injection of strychnine before an important examination, apparently with strikingly good results. If we assume that in a case of moderate tuberculous infection small amounts of tuberculin are being continuously absorbed into the circulation, the effect would be a mild, but frequently recurring, stimulation of the brain and the brilliance of the after-dinner speaker produced, with this difference, however, that instead of spasmodic results the effect would be continuous. Might this not afford a reasonable explanation of the apparent incompatibility between robust health and intellectual attainment? No doubt there are exceptions to the theory implied in this supposition, and examples are to be found where a large brain accounts for exceptional achievement. Such examples will occur to anyone, though the big brain may be a doubtful blessing. Of the two biggest-brained schoolboys I have known, one became "soft" and had to be confined, and the other committed suicide by dividing his femoral artery with a pocket-knife. In general I should feel disposed to suggest that "brains" in the great majority of cases are not due

to mere size of cranial content (which is fairly constant), but rather to extraneous causes, one of which may be excessive stimulation by microbic toxins.

These reflections have an obvious bearing on the problem of preventive medicine. The abolition of acute infections—such as small-pox, typhus and typhoid fevers, scarlatina, etc.—can only be beneficial. It may be otherwise with the chronic infections. Conceivably their disappearance might result in the curtailment of human achievement, and in the sacrifice of short-lived brilliancy to long-lived mediocrity.—I am, etc.,

Belfast, Aug. 24th. S. T. IRWIN.

Obituary.

JOHN WARRINGTON HAWARD, F.R.C.S.,

Consulting Surgeon, St. George's Hospital.

THOSE acquainted with medical life in London in the years between 1875 and 1910 will hear with regret of the passing of a familiar and friendly personality. John Warrington Haward died on August 20th, at Manor End, near Berkhamsted, Herts, where he had lived for ten years since his retirement from the active practice of his profession.

Warrington Haward, who was the youngest son of the ten surviving children of James Haward, was born on November 13th, 1841, and was the grand-nephew of Francis Haward (1759–91), "engraver to H.R.H. the Prince of Wales." He entered at St. George's in October, 1860, and after a career prophetic of the future, as shown by his gaining the William Brown scholarship for three years and many prizes, qualified at the two Colleges in 1863, and in 1868 became F.R.C.S. He was house-surgeon at the Westminster Hospital (1864), and then for two years at the Hospital for Sick Children, Great Ormond Street, where he formed a firm friendship with the late Dr. Samuel Gee. In 1867 he returned to St. George's as demonstrator of anatomy, subsequently becoming surgical registrar (1870–72), curator of the museum and demonstrator of morbid anatomy (1873–75), assistant surgeon and surgeon to the orthopaedic department (February 24th, 1875–80), succeeding the late B. E. Brodhurst in the latter capacity, and full surgeon from 1880 till 1900, when, in accordance with the inexorable twenty years' rule, he automatically became consulting surgeon, though as a member of the weekly board he continued to take a most active part in the management of the hospital, being chairman of the Nursing Committee from 1904 to 1915. From 1870 to 1878 he was assistant surgeon to the Great Ormond Street Hospital for Sick Children, and he was on the staff of the Cripples' Nursery from 1874 to 1882, when he became consulting surgeon. The list of charitable societies and committees on which he served is too long to detail, but for thirty years he was closely identified with the Invalid Children's Aid Association, being chairman of the Executive Committee (1903–15); for twenty years (1898–1918) he was treasurer of the Society for the Relief of the Widows and Orphans of Medical Men.

His published work covered a wide field; in the seventies he was much interested in anaesthetics, writing six papers on the subject, including that on "Ether and chloroform as anaesthetics" in the fifty-fifth volume of the *Medico-Chirurgical Transactions*. *A Treatise on Orthopaedic Surgery* (1881) and *The Management of Invalid and Crippled Children* were the fruits of his early work on these special lines, whereas his paper in the *Medico-Chirurgical Transactions* for 1897 on irreducible hernia, with its analysis of eighty-five cases under his observation, gave the ripe experience of a general surgeon near the end of his active hospital practice. His Hunterian Lectures, given in 1906 at the Royal College of Surgeons of England, on phlebitis and thrombosis, may well, like the late Sir George Humphry's paper in 1859, have been inspired by his own sufferings. As a representative surgeon he naturally contributed to contemporary standard works, such as Timothy Holmes's and Hulke's *System of Surgery* (1879), Heath's *Dictionary of Surgery*, Quain's *Dictionary of Medicine*, and Latham and English's *System of Treatment* (1912). In addition to those already mentioned, he made many communications to the medical societies of his day, such as the Clinical Society (fifteen papers), of which he was honorary secretary and vice-president, the Pathological Society, of which he was also vice-president, and the then premier society, the Royal Medical and Chirurgical, where he passed through practically every office save that of honorary librarian, and was president when in 1907 it became expanded into the Royal Society of Medicine, in which he again was active in various ways, being at one time president of the surgical section (1908–09). It may be recalled that he was one of the first to describe the bony metastases of primary carcinoma of the thyroid. Among his less severely technical writings were "The employment of ladies in hospital nursing" (*Contemporary Review*, February, 1879), and the introductory address, "On liberty and authority in relation to medicine," at the opening of the winter session at St. George's Hospital Medical School on October 3rd, 1881.

Mr. Warrington Haward married in 1876 Amy Cecilia, daughter of James Nicholls, M.D., F.R.C.S., of Chelmsford, and later of Wiveliscombe, Somerset, and their exceptionally happy life in London was spent, as their friends well remember, at 5, Montagu Street, Portman Square, 18, Savile Row, and 57, Green Street. Mrs. Haward and two sons, the elder of whom, Lawrence, is in charge of the Art Gallery at Manchester, survive him. He was buried on August 23rd at Potten End Church, near Berkhamsted, Herts.

Sir HUMPHRY ROLLESTON writes: Mr. Warrington Haward was a cultivated and scholarly surgeon, much interested in literature and art, as is shown by appropriate references in some of his published papers and essays, and had a broad and philosophical outlook on life and his profession. Though a most capable operator, he was wisely conservative and safe rather than brilliant and daring in surgery. He was one of those unselfishly willing to undertake the laborious and somewhat thankless work of committees, treasurerships, and chairmanships. In addition to holding office as treasurer of St. George's Hospital Medical School for some years he was much in request at the Royal Medical and Chirurgical Society, of which he was in 1906 the last President, at the Royal Society of Medicine, and at an extraordinary number of medical and charitable bodies. An excellent man of business, he was an ideal member or chairman of a committee, for while holding an outspoken and impartial position as to what was right, his influence was always directed to soothing the acerbities and susceptibilities of advocates of policies who, often, no doubt, because they had vigorous convictions, presented their side of the question with some lack of tact and even of consideration for their opponents. By a timely conciliatory but firm speech he often turned the opinion of a meeting and thus left the happy feeling that the proper course had now been smoothly adopted. His delightful personality made him loved as well as respected, and his only failing, if such it be, was complete want of any faculty for self-assertion. This trait was characteristically shown by his directions that his funeral should be extremely simple, and it was thus in a beautiful Hertfordshire village that a few friends saw the final breaking of a valued link with the past.

Mr. STEPHEN PAGET writes: He was a good example to all of us; he was unselfish, courteous, honourable; one of the best men in our profession. If he had been more ambitious of his own advancement he would have gained more public recognition; but he was content to work quietly, and to give a great part of his active life in the service of all of us. He had more admirers than he knew of. He loved friendship and kindliness and sympathy. He had no enemies: it was not in him to make them. None of us who remember him can even imagine him suspicious of other men, or ungenerous, or glad to hear or to repeat things said against them; he was above all that; unfailingly gentle and charitable. In the later years of his life he had to bear the hardship of failing health and failing vision—a heavy burden for a man so fond of books, a thorough scholar of English literature. He bore this hardship bravely, and held on so long as he could to his work for us.

T. H. MORTON, M.D.ABERD.,

Sheffield.

BY the death of Dr. Thomas Henry Morton on August 26th the Sheffield Division of the British Medical Association loses its oldest member. He was born in Burmah in 1838, where his father was a British Commissioner. He received

his early education at Newark, and was then apprenticed to Dr. Slater of Bawtry. Later he passed to the old Sheffield Medical School, where he attended the prelections of Drs. Law, Favell, Jackson, Overend, and Bartolomé. He obtained the diplomas of M.R.C.S. in 1861 and the L.S.A. in 1862. For a time he acted as demonstrator of anatomy at his old school, and then entered general practice by acting as assistant to Dr. MacKinder of Gainsborough. In 1864 he settled in Brightside, Sheffield, and conducted a large practice in this area for nearly thirty-four years, retiring in 1898. He took the M.D.Aberd. in 1876.

A sound practitioner and a good surgeon of the old school he found time to keep himself acquainted with medical progress. His confrères held him in the highest respect, and honoured him in 1880 by making him President of the Sheffield Medico-Chirurgical Society. He contributed occasionally to medical literature. For many years he was a familiar figure at the annual meetings of the Association, which he used greatly to enjoy. He maintained his interest in medical affairs to the last.

Dr. Morton had many hobbies. He was a connoisseur and collector of old oak. His collection was justly admired, and was considered one of the finest in Yorkshire. An ardent disciple of Isaac Walton, he enjoyed nothing better than a day with the rod, incidentally picking up any piece of old oak which caught his fancy. He was an accomplished photographer, and was particularly successful with interiors of cathedrals and churches. During the great epidemic of small-pox in Sheffield in 1888 Morton made a fine collection of lantern slides depicting the various phases of the disease. He was the only Fellow of the Royal Photographic Society in Sheffield, and he was very proud of the fact. He was a churchman, and for many years took an active part in the work of St. Mary's Church. He was beloved by his patients, and his benevolence to his poorer patients was a marked trait in his character. He leaves a widow for whom much sympathy is felt. He had no family.

WE regret to record the death, on August 31st, at Kelvinside, Glasgow, of Dr. JOHN ALEXANDER, in his 71st year. He received his medical education at Aberdeen and at the London Hospital, graduating M.B., C.M. (with highest honours) in 1874, and M.D. in 1877, of Aberdeen University. After holding resident appointments in London and at Paisley, he became at a comparatively early age medical superintendent of the Western Infirmary, Glasgow. In the eight years during which Dr. Alexander was superintendent the Western Infirmary became doubled in size, and made very considerable progress in its reputation as a teaching school. On retiring from the office of superintendent he was appointed to the honorary medical staff, and after acting as a dispensary physician became an assistant physician to the infirmary. He was also an examiner in medicine at Aberdeen University. He is survived by two sons and a daughter.

DR. JOHN EDWARD DUNN of Preston, who died suddenly shortly after his return from a holiday at Blackpool, was educated at St. Thomas's Hospital Medical School, where he was prosector of anatomy and prizeman in 1879–80. He took the diplomas of L.R.C.P.Edin. and M.R.C.S.Eng. in 1883. He was consulting medical officer of the Preston Royal Infirmary, certifying factory surgeon and district medical officer and public vaccinator of the Preston Union. He was a member of the Preston Division of the British Medical Association. He was a justice of the peace, and had been mayor of Preston in 1897–98.

WE regret to record the death of NORMAN J. MCKIE, M.D.Edin., for upwards of thirty years in practice in Newton-Stewart, Wigtown, and the surrounding widely scattered district. Abandoning rural practice in the beginning of the year to take up, for a time at least, the less strenuous life of a ship's surgeon, he joined the Cunard–Anchor Line, and was appointed to the ss. *Algeria* on the Glasgow–New York service. Unfortunately, however, he did not complete his first voyage. Death came with startling swiftness, and he was buried at sea. Dr. Norman McKie was associated very intimately with the life of the district he so faithfully served. A man of high culture, he made several notable contributions on the archaeology of his surroundings. More particularly was he a heraldic student of high skill, solving the graving of many important historical stones which from time to time were laid bare in the south-west of Scotland. Before he took leave of the countryside he knew and loved so well the public showed their appreciation by entertaining him and presenting himself and his wife with valuable gifts. His widow and two young sons are left to mourn his loss.

DR. HERBERT KIDSON WALLACE died suddenly at Sunderland on July 29th, aged 46. He was the third son of the late Rev. Dr. Wallace of Sunderland and Hamilton, and was educated at Glasgow, where he graduated B.Sc. in 1893, M.B. and C.M. in 1896, and M.D. in 1905. He was medical officer and public vaccinator of the Bishop-Wearmouth Central District of the Sunderland Union. He took a temporary commission as lieutenant in the R.A.M.C. on May 15th, 1915, was promoted to captain after a year's service, and served up to the end of the war.

DR. RICHARD PRICE of Ashton-under-Lyne, who died recently after a short illness, received his medical education at Owens College, Manchester. He took the Scottish triple qualification in 1893, the D.P.H.Vict. Manch. in 1911, and graduated M.D.Durh. in 1913. He was medical officer of health for Hurst Urban District, and was a town councillor and chairman of the Education Committee. He gave much time and attention to local health and education matters, and his labours were highly appreciated by his townsmen. He was medical referee under the Ministry of Pensions, and had held a temporary commission in the R.A.M.C. during the war. He was accorded a military funeral, which was attended by representatives from all sections of the community. His loss at the early age of 48 is greatly regretted by his professional brethren. He leaves a widow and one son.

DR. VICTOR DONALD ORR LOGAN, of Sefton Park, Liverpool, died in London on July 22nd, aged 35, from injuries received by being run down by a motor cycle in Bayswater. He was educated at Edinburgh, where he graduated M.B. and Ch.B. in 1909, and after filling the posts of resident medical officer at the Prince of Wales's Hospital, Tottenham, the Sussex County Hospital, Brighton, and St. Mary's Hospital, Plaistow, went into practice in Liverpool. He took a temporary commission as lieutenant in the R.A.M.C. on October 10th, 1914; was promoted to captain after a year's service; served in the 17th General Hospital in France and Egypt; and was severely wounded and taken prisoner in the battle of the Somme in August, 1916.

DR. WALTER OLIPHANT WALKER died on August 3rd at his residence, 112, Gilmore Place, Edinburgh. After taking the degrees of M.A. (with first-class honours in mathematics) and B.Sc. at the University of Edinburgh he began the study of medicine, and graduated M.B., C.M. in 1882. He acted as assistant at Campbeltown and Dunbar, and then began practice at Skane, Aberdeenshire, where he remained four years. In 1889 he returned to Edinburgh, and gradually built up for himself a considerable practice. He took a keen interest in his profession, and had a high reputation as an obstetrician. He was well known and highly respected in the district. For over thirty years he gave gratuitous service to St. Joseph's Home, an institution carried on for the aged and infirm by the Little Sisters of the Poor. His work in this connexion has been gratefully acknowledged by the Mother Superior. Dr. Walker, who was unmarried, was in his 64th year.

WE regret to record the death of Dr. WILLIAM FRANCIS COPLEY WOODHEAD, of Blackpool, which occurred on August 25th, in his 64th year. He was the son of a medical practitioner and was born in Leeds; he received his medical education at Leeds and Edinburgh, taking the diplomas of L.R.F.P.S.Glas. in 1885, and L.R.C.P.Edin. in 1889. Except for an interval of about eighteen months,

which he spent in Australia, Dr. Woodhead had practised in the Blackpool district for some twenty years. He was an old member of the British Medical Association, and only retired from active practice quite recently. He is survived by his widow and five daughters.

DR. RUSSELL STEWART WINGFIELD of Philadelphia died on August 23rd as the result of burns received in a fire which destroyed the American Red Cross children's hospital at Salonika on August 14th. The fire broke out in the hospital dispensary. Dr. Wingfield, who acted with great courage, succeeded in saving all the patients and staff, with the exception of one Greek interpreter. Dr. Wingfield, who was 26 years old, was born in Richmond, Virginia, and was a graduate of the University of Richmond and Medical College of Virginia. He enlisted in the American Army Medical Corps immediately on the American declaration of war and served as a State inspector of draft boards. After the war he became resident physician at the Stetson Hospital in Philadelphia, a post he relinquished to come to Europe in February last to serve with the Red Cross. He was at once sent to Salonika to take charge of the children's hospital at the Kalamaria refugee camp.

A SYMPATHETIC obituary notice of Sir Felix Semon by Sir StClair Thomson appears in the *Revue de laryngologie* of July 31st.

Universities and Colleges.

UNIVERSITY OF LONDON.

ROLL OF WAR SERVICE.

MANY others besides those who have themselves been members of the Officers' Training Corps of the University of London will welcome the *Roll of War Service, 1914 1919*,[1] published by the Military Education Committee of the University. It supplies a record of all the fallen and of the circumstances in which they died; a list of all those who received honours and awards, the citations accompanying such grants being quoted in full; and details of the services, whether abroad or at home, of all officers, former officers, and former cadets of the University of London Officers' Training Corps, known to have rendered commissioned service in the war between August 5th, 1914, and November 11th, 1918. The roll of the fallen contains 665 names, the total number of those who served being 4,276. Of these, 1,068 gained between them 1,726 honours and distinctions. Five officers were awarded the Victoria Cross, and photographs of them are supplied. One of them, J. Fox Russell, was a captain in the R.A.M.C., but, as in the case of two others of the group, he was killed in action. The frontispiece is a picture of the first adjutant of the Corps, Lieut.-Colonel A. E. Egerton, who, like so many others, was killed in action before the harvest of honours had ripened. There are three appendices, one of which deals with statistics, another with the establishment of the Corps at its initiation in 1909, and a third with its doings from that date to the spring of 1920. From the first of these we gather, but not too easily, that in the matter of the number of officers supplied by the medical schools of the University the place of honour belongs to St. Bartholomew's and Guy's, each of them sending 235.

UNIVERSITY COLLEGE.

The Primary Fellowship course in physiology will begin on Wednesday, September 21st, at 2 p.m.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

The Goldsmid Entrance Exhibitions of 112 guineas each have been awarded to A. E. Blake Pritchard, King's College, Cambridge, and N. L. White, St. John's College, Cambridge.

[1] *Roll of War Service, 1914 1919.* University of London Officers' Training Corps. London: Published by the Military Education Committee. 1921. (Roy. 8vo, pp. 371. Cloth, £1 1s.; half-leather, £1 11s. 6d.; full leather, £2 2s.)

THE movement known as Health Week has as its object to focus public attention for one week in the year on matters of health, and to arouse a sense of individual responsibility for health, without which all public health work must fall short of its aims. The Health Week Committee is working in co-operation with the National Baby Week Council, and local committees are being formed all over the country, comprising representatives of every public body and private society in any way concerned with health, and of every agency which has influence with any considerable section of the community. This year Health Week will be held from October 9th to 15th, and the secretary of the movement is Mr. E. White Wallis, 90, Buckingham Palace Road, S.W.

Medical News.

AT the opening of the Grosvenor telephone exchange as a relief exchange the numbers of certain medical subscribers in London have been altered. A list showing the members of the medical profession involved, and the date of transfer, may be seen at the Library of the British Medical Association.

THE Ministry of Pensions desire to call the attention of officers, nurses, and men, and widows and dependants of deceased officers and men who served during the great war, to the fact that any new claim to pension, grant, gratuity, or allowance in respect of disablement must be made within seven years after the date on which the claimant was discharged, or within seven years after the official date of the termination of the war (August 31st, 1921), whichever date is the earlier. A person is deemed to have been discharged from the service at the time when his active service terminated. Any claimant (including the widow or other dependent relative of a deceased officer or man) who desires to appeal to a Pensions Appeal Tribunal against the rejection of a claim to pension must do so within a period of twelve months after the date of the rejection or after the date of the commencement of the Act (August 19th, 1921), whichever is the later date.

THE Guy's Hospital biennial dinner will be held on Wednesday, October 26th, at the Connaught Rooms, London. Mr. Montagu Hopson will preside, and tickets, price 15s. exclusive of wine, may be obtained from Mr. Arthur W. Ormond, C.B.E., F.R.C.S., 7, Devonshire Place, Upper Wimpole Street, W.1.

WE have received a copy of the form of certificate referred to in the Order issued under the Dangerous Drugs Act, 1920, authorizing farmers and stockowners to purchase tincture of opium for administration to animals. The person holding the certificate must not have in his possession more than 32 oz. at any one time, and he may only purchase from the particular person whose name he writes on the certificate. The date of purchase and the quantity purchased must be filled in by the supplier on each occasion of any purchase by the holder. Bottles or vessels containing the tincture must be labelled with the words "For administration to animals only."

THE annual dinner of old students of University College Hospital will be held at the Imperial Restaurant, Regent Street, on Thursday, October 6th, at 7.30 p.m., when the chair will be taken by Dr. Henry D. Waugh. The secretaries are Dr. A. M. H. Gray and Mr. Gwynne Williams.

A VACATION course in pediatric surgery and orthopaedics will be conducted by Dr. H. L. Rocher, of the Faculty of Medicine of Bordeaux, from October 12th to 17th. Further particulars may be obtained from Dr. Rocher, Orthopaedic Clinic, 91, Rue Judaique, Bordeaux.

THE Home Secretary has appointed a committee to re-examine the question of the danger from the use of lead paints to workers in the painting trades, the comparative efficiency and cost, and the effect on the health of the workers, of paints containing lead and leadless paints respectively; and to advise whether any modification of the conclusions and recommendations of the Departmental Committees appointed in 1911 has become necessary. The members of the Committee are the Right Hon. Sir Henry Norman, Bt., M.P. (Chairman), Mr. Gerald Bellhouse, C.B.E., Dr. O. J. Kauffmann, Dr. Thomas M. Legge, C.B.E., Mr. Alan Munby, F.R.I.B.A., Mr. Alexander Scott, F.R.S., D.Sc., and Mr. H. O. Weller. The secretary is Mr. C. W. Price, of the Home Office, Whitehall, S.W.1, to whom any communications should be addressed.

A SPECIAL post-graduate course will be held at the North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham), in association with the Fellowship of Medicine and the Post-Graduate Medical Association, from September 26th to October 8th. Demonstrations and clinical lectures will extend over practically the whole day, from 10.30 a.m. to 5.30 p.m., and will include subjects from the various branches of medicine and surgery. Luncheon is obtainable in the neighbourhood of the hospital, and tea will be provided each day. The fee for the complete course, to those not members of the Fellowship of Medicine, is 5 guineas, or 3 guineas for either week. Applications to attend the course should be sent not later than September 22nd to the dean at the hospital, or to the Secretary of the Fellowship of Medicine at 1, Wimpole Street, W.1.

THE twenty-fifth French Congress of Medicine, the thirtieth French Surgical Congress, the third annual meeting of the Société d'Orthopédie, and the twenty-first

French Urology Congress will all meet at Strasbourg from October 3rd to 6th. The medical and surgical associations hold a common session the first day to discuss anti-anaphylaxis as presented by Widal, in addition to reports on the heart, lungs, and digestive tract. The main topics for discussion at the Surgical Congress are traumatic epilepsy, vaccine therapy in joint disease, and the remote results of treatment of mammary cancer. The Orthopaedic Society will discuss arthrodesis of the foot, ankylosis of the knee, and non-operative treatment of congenital luxation of the hip-joint, and the urologists anaesthesia of the urinary passages.

THE University College War Memorial Committee asks for assistance in completing two publications now in course of preparation; the first is the *Pro Patria* list of those who served in the war; it now contains some 3,000 names. Should there be any alumni by whom or their relatives papers of inquiry have not been received they are asked to communicate at once with Sir Gregory Foster, chairman of the committee and of the college. A War Memorial Album, containing the records and portraits of alumni who gave their lives in the war, is also in preparation. The committee has not yet been able to obtain full particulars of some eighty men known to have fallen. If the War Memorial Album form has not been received by relatives of any man who died, they are asked to communicate with the chairman.

THE second part of the third course of lectures and practical courses of instruction given at the Maudsley Hospital for the diploma of psychological medicine will commence on October 3rd, when Sir Frederick Mott will give the first of six lectures on the pathology of mental diseases, including brain syphilis; and Dr. Bernard Hart will begin a course of eight lectures on the psycho-neuroses. Courses on the practical aspect of mental deficiency by Dr. F. C. Shrubsall, on crime and insanity by Dr. W. C. Sullivan, and on symptoms of mental disease by Dr. E. Mapother, will begin in the same week. A series of demonstrations will be given by Dr. F. Golla, Dr. C. Hubert Bond, and Sir Frederick Mott. Full particulars can be obtained on application to Sir Frederick Mott, M.D., F.R.S., at the Maudsley Hospital, Denmark Hill, S.E.5.

ALTHOUGH flag days have rather fallen out of favour, there is one honourable exception which continues to be held every year—"Our Day," the flag day of the Joint Council of the Order of St. John and the British Red Cross Society, which this year will take place on October 1st. The peace work of the Joint Council includes contributions in support of hospitals, help to the Central Council for Infant and Child Welfare, dépôts for the hire of surgical and sick-room requisites, and a motor ambulance service throughout the country. Further particulars may be had from Sir Arthur Stanley, 19, Berkeley Street, W.1.

THE next international congress of urology will be held at Rome under the presidency of Professor Roberto Alessandri.

THE annual conference of public health officers and public health nurses of New York State will be held at Cornell University, Ithaca, from September 13th to 15th.

AMONG the subjects to be discussed at the second congress of French-speaking gynaecologists and obstetricians, which, as already announced, will be held in Paris from September 29th to October 1st, are the following: disorders of thyroid function in their relation with pregnancy; medical and social protection of the pregnant woman; indications for abdominal hysterectomy in labour (in addition to pelvic deformities); hysterectomy in acute puerperal infection; and radium therapy (*a*) in fibroid tumours, (*b*) in cancer of the cervix and body of the uterus, (*c*) in metrorrhagia (not including uterine cancer and fibroids). The secretaries of the congress are Drs. Brindeau, 71, Rue de Grenelle, and Couvelaire, 21, Rue Louis-David, Paris.

APPLICATIONS for training in some occupation other than nursing from nurses in receipt of a disability pension, who by reason of any disablement due to war service are unable to return to their pre-war occupation, must reach the Controller, Women's Training Branch, Ministry of Labour, St. Ermin's, Caxton Street, London, S.W.1, on or before October 31st, 1921.

THE dedication of a bronze tablet in honour of 185 graduates of Syracuse University College of Medicine who served in the great war took place during the recent commencement exercises held at the college.

IT is reported that Western Reserve University, U.S.A., has received 500,000 dollars from Mr. Samuel Mather to be used in the construction of the new medical college building.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"F. B. C." asks for help in the diagnosis of the following case. A young, married woman, aged 31, has dilatation of the left pupil during the day; at night this pupil tends to contract and becomes smaller than the right, which dilates normally in the dark. The left patella reflex is exaggerated, but the right is difficult to elicit. She is rather emotional.

DR. J. A. BALL. The gravel filter is probably too small, and the effluent from the cisterns is being passed through it too rapidly. Some other material (such as coke breeze), either in conjunction with the sand or otherwise, might be tried as a filtering material, but it is essential that the process of filtering should be slow.

INCOME TAX.

"T. B." has sold his partnership owing to ill health, and is now able to do "very light work." The inspector of taxes has notified him that he will be assessed at £250, and that he should give notice of objection in due course if that amount is considered excessive.

*** "T. B." is in effect starting a new source of profit, and in our opinion the more usual course for the revenue authorities to adopt is to leave the question over until the end of the first year of the new work. In this case an estimated assessment is being made beforehand, but that will not prejudice our correspondent if he gives notice of objection on receiving the formal notice of the assessment. That will necessarily put the matter in abeyance until "T. B." can supply particulars of his earnings for 1921. As the partnership was sold as from December 31st, 1920, a claim can be made, so far as "T. B." is concerned, for an adjustment, as between himself and the purchaser, of the tax payable for the financial year ended April 5th, 1921.

"DUNELM." sold his practice as from December 31st, 1920, but continues to receive payments from outstanding professional debts. Is he liable to income tax thereon for 1921-22?

*** No. "Dunelm," is not in receipt of any "income" from the practice for 1921-22; that income terminated with his sale of the practice, and what he is now receiving represents realizations of debts accumulated during his professional work. Of course, if he is doing some specialist's work he would be liable to assessment on any income arising therefrom. It would be advisable for him to see his local inspector of taxes and explain the whole position. He has a right to amend his return, or could appeal against an assessment made thereon.

"PURCHASER" inquires whether any deduction can be claimed for the cost of the purchase of the premises used for the practice which was compulsory, no alternative premises being available.

*** No portion of the cost of purchase can be deducted, but as from the date of the transfer a proportion of the net Schedule A assessment can be deducted in lieu of the proportion of rent. If a loan has been obtained in connexion with the purchase, income tax at 6s. should be deducted from the interest paid, unless it is paid to the bank, in which case an allowance can be claimed by application to the local inspector of taxes.

"W. S. M." has made his returns since 1909 on the usual basis of cash receipts; the inspector of taxes now claims to add to his returns one-third of the debts outstanding as at March 31st, on the ground that the *increasing* income of the practice is not fairly represented by the increase in cash receipts.

*** We feel rather strongly that this claim on the part of the local revenue official should be firmly resisted. The "cash basis" method has been recognized by the Board of Inland Revenue—except as regards a new practice—for many years as the best method of ascertaining the profits of a medical practice; it has been followed by the profession in, we believe, practically every case, even where through personal or general causes the income of the practice is declining and the circumstances accordingly are the converse of those obtaining in this case. A general rule of this kind becomes useless and unfair if it is to be set aside whenever it operates to the prejudice of the Revenue, and followed in all other instances. If, for example, "W. S. M." has purchased an additional practice, so that his present one may be properly regarded as "new" for this purpose, the inspector's action would be justified; but apart from some very exceptional circumstances of that kind, we think it should be opposed. We therefore suggest that "W. S. M." represent this view to the inspector, and if unable to convince him that the cash basis should be adhered to, should place the facts before the Secretary, Inland Revenue, Somerset House.

LETTERS, NOTES, ETC.

A Disclaimer.

MR. BECKWITH WHITEHOUSE, M.S., F.R.C.S. (Honorary Obstetric Surgeon, General Hospital, Birmingham), writes: It has been brought to my notice that in the issue of the London *Daily Mail* dated August 31st a paragraph is published in which my name occurs, with reference to a case of Caesarean section. I wish to disclaim any connexion with the publication of the same, and at the same time to enter a vigorous protest against the exposure of such medical details in the lay press.

Effect of X Rays on Bacteria.

DR. E. BAYLIS ASH (Moseley, Birmingham) writes: Whilst radiologist to the 38th Stationary Hospital, a limited amount of experimental work on the effects of soft *x* rays on bacteria *in vitro* was attempted; the results may be of interest. Cultures of *B. coli communis* and *Staphylococcus aureus* in Petri dishes were exposed to rays at a distance from the anticathode of 30 cm.; no filters were interposed and no covers used to the dishes. The dosage in all the exposures equalled fifteen times a Sabouraud pastille dose (B tint). The tube used passed 15 milliampères and a Bauer qualimeter registered 5–7 as a measure of the hardness of the rays. The cultures were placed in an incubator at 37° C. for twenty-four hours. At the end of this time examination of the growths in the case of both bacteria showed that fresh colonies had been thrown out at the periphery and that the growth of the bacilli and cocci was not inhibited. Microscopically no changes in bacteria could be found due to the rays. Apparently the above dosage was insufficient to sterilize the culture media; very much longer exposures would have been necessary, and these could not be given with the limited apparatus in use.

The Formol-Gel Reaction in Syphilis.

DR. M. W. BROWDY (London, W.) writes to express his agreement with Mr. A. Murray Stuart's opinion in the BRITISH MEDICAL JOURNAL of August 13th that this reaction is of no value in the diagnosis of syphilis. When the test was first described (he continues) I compared the result of thirty specimens examined by Professor Dean, of Manchester University, for the Wassermann reaction with the formol-gel test done by myself, and in no case did I find an agreement. Hence I discarded the new test.

Gas Disease of Fish.

SOME time ago a contributor to the *Fishing Gazette* suggested that fish in water directly below a big fall might get too much oxygen, and the editor of the *Fishing Gazette*, Mr. R. B. Marston, now (August 27th) finds confirmation of the theory in a paper by Professor Marianne Plehn, of the Biological Experimental Institute, Munich. The facts, however, do not seem to us to point in this direction. It appears that a rise in the temperature of water containing a large proportion of oxygen may be attended by a serious mortality in young fry. When examined many of the fry are seen to present bubbles in the peripheral vessels of the skin and mucous membrane, in the orbit, and in other places, and it is supposed that similar gas emboli in internal organs may cause death. Water at 20° C. can hold less oxygen than water at 10° C. As fish are cold-blooded animals their temperature is that of the surrounding water, and it is conceivable, of course, that when the temperature of the water rises rapidly, oxygen or any other gas dissolved in the fish's fluids may be liberated in the vessels or tissues; but in no ordinary circumstances can water be "super-saturated" with oxygen, as Mr. Marston supposes, unless under more than atmospheric pressure. The gas disease of fish seems to present a similarity to the caisson disease observed in divers.

London "Toll" Telephone Exchange.

AS we have already announced in this column, the Post Office is about to separate the longer distance from the shorter distance trunk telephone traffic and to erect a special exchange for handling the latter on more economical and expeditious lines. The exchange, which will be known as the London Toll Exchange, is now approaching completion, and is expected to be in full operation at the end of September. In designing the switching apparatus new facilities have been introduced for the operation of the calls, so that connexions to the provincial towns served by the exchange may be obtained on demand. These arrangements will involve a change of procedure on the part of the public and the staffs in the London exchanges. Under the new system a London subscriber wishing to call any provincial town within approximately twenty-five miles radially from the centre of London will ask for "Toll" instead of "Trunks." He will be connected to the London Toll Exchange, where the telephonist who answers will record particulars of the number and establish the connexion to the desired subscriber. We are informed that the call will usually be completed whilst the caller waits on the line, as in the local service. Cables to provide additional lines are being laid where necessary on the provincial routes. Many of these lines will be ready when the new service commences; but until the service is in full operation a short delay may be experienced on some routes during the busier hours of the day. When a call cannot be connected on demand, owing to the lines being engaged, a subscriber's application will be booked and completed as soon as the telephonist is able to find a free line, when the subscriber will be rung up as in the case of a trunk call; but on the completion of the various cabling schemes delays of this nature should be infrequent. In addition to the traffic outgoing from London, the Toll Exchange will deal with the traffic incoming from the provincial towns involved in the scheme. The more important of these are: Ascot, Aylesbury, Bishop's Stortford, Buckingham, Dorking, Egham, Gerrard's Cross, Hatfield, Hertford, High Wycombe, Leatherhead, Luton, Maidenhead, Potter's Bar, Rickmansworth, St. Albans, Sevenoaks, Slough, Staines, Tring, Uxbridge, Walton-on-Thames, Watford, Weybridge, Windsor, and Woking.

Motorists' Lighting Regulations.

IN view of the numerous inquiries received by the Automobile Association as to the effect of the expiry of the regulations made under D.O.R.A. in relation to the lighting of motor vehicles, the association points out that whilst the return to pre-war conditions would appear to (*a*) relieve motor cyclists (solo machines) from the necessity of showing a red light to the rear, (*b*) render it no longer compulsory for motor cars to exhibit a front light on the near side, (*c*) alter the lighting-up period to from one hour after sunset to one hour before sunrise (instead of half an hour in each case as under D.O.R.A.), etc., there are still a number of *local* by-laws in existence, some of which substantially vary the provisions of the general law. Further, notwithstanding the alteration in lighting-up times, the requirement of the Roads Vehicles (Registration and Licensing) Regulations that the registration number must be illuminated from half an hour after sunset to half an hour before sunrise is still in force. There is also the possibility of further legislative changes, and the Automobile Association advises motorists for the present not to make any alteration in their existing lighting arrangements.

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 30, 31, 35, 36, and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32, 33, and 34.

THE Chief Inspector of Factories announces the following vacant appointments: Hoo (Kent), Knottingley (Yorks, West Riding), Preston, West (Lancs.), Stevenage (Hertford), Catrine (Ayr), Carnoustie (Forfar).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

DISCUSSION ON RENAL EFFICIENCY TESTS.

OPENING PAPERS.

I.—HUGH MACLEAN, M.D., D.Sc.,

Professor of Medicine, University of London, St. Thomas's Hospital.

WITHIN recent years much attention has been paid to the question of renal efficiency tests, and much progress has been made in this field, particularly from the point of view of clinical medicine.

It is somewhat difficult in a conjoint meeting such as we have here to know how to discuss the problem. The particular points which immediately interest the practising physician are to some extent different from those to which the physiologist usually devotes his attention. On the other hand, it is the physiologist who very often paves the way for the physician, and a joint meeting at which the physiologist, the pharmacologist and the clinician meet on common ground cannot fail to be of great interest. In the short time at my disposal I propose to treat the subject more from the clinical than the physiological side, and to give my experience of certain tests of renal function which I have been using for several years.

For the physician the most instructive case of renal deficiency is that seen in severe acute nephritis. Here the renal cells are, temporarily at any rate, knocked out of action, and as a result the normal functions of the kidney are for the time in abeyance.

Speaking generally, the healthy kidney performs three special functions, which may be summarized as follows:

1. Excretion of waste products of nitrogenous metabolism (urea, uric acid, creatinin, purin bodies, etc.).
2. Removal of acid products from the body by which it helps to preserve the normal reaction of the body fluids.
3. Maintenance of the necessary concentration of salts in fluids and tissues.

In severe cases of acute nephritis nitrogenous waste products fail to be eliminated, and so there is an excessive concentration of these bodies in the blood. Little or no sodium chloride is present in the urine, and the water which should be eliminated is retained in the body, giving rise to oedema and ascites. Acid products are not excreted in the ordinary way, so there is some tendency to interfere with the normal mechanism for the regulation of the blood reaction. This condition persists generally for some time, but, in favourable cases, the renal cells sooner or later recover their function to some extent, and marked general improvement, accompanied by diuresis, sets in.

In such acute cases one of the earliest signs of improvement is the return of salt to the urine. The diuresis which usually follows is explained by the large accumulation of urea and water in the system. Indeed, the conditions are generally ideal for marked diuresis, since the excess of urea in the blood acts as a powerful diuretic whenever the renal tissues are sufficiently recovered to react to its stimulus.

In well marked acute nephritis no tests for renal efficiency are necessary, for the symptoms sufficiently indicate the condition. Later, however, it may be necessary to ascertain what progress is being made, and here tests of function are, in my experience, quite as important as, if not more important than, clinical symptoms. Of all renal tests perhaps the most important in such cases is the estimation of the retained nitrogenous products in the blood. The term "non-protein nitrogen" is generally used to express the total nitrogen derived from these bodies, and this non-protein nitrogen may be estimated. This, however, is a somewhat lengthy and difficult process, necessitating care and some technical skill if the results are to be depended on. Quite as much information is to be derived from the much simpler process of estimating the urea present, and the rapidity and ease with which this estimation can be carried out renders it of very great value in renal work. Personally, in routine work, when a blood examination appears necessary I always estimate the blood urea, and have never obtained any additional information from an estimation of the non-protein nitrogen as well.

Importance of Blood Urea and Non-protein Nitrogen Estimations.

Under ordinary conditions the blood always contains a certain amount of urea, but the exact amount which may be considered to represent the normal value is still not quite agreed upon. As the result of a very large number of experiments I have come to the conclusion that the blood of normal individuals may contain from about 15 to 40 mg. urea per 100 c.cm. blood. In young people the normal content lies towards the lower value, and perhaps the maximum should be placed somewhere below 30 mg.; but in elderly people with apparently healthy kidneys it is not uncommon to find a blood urea content of 40 mg. or even a little more. These figures refer to individuals on average ordinary diets. Anything over 45 mg. is suspicious, and when it rises to 50 mg. or over we may, in ordinary circumstances, be fairly certain that the kidneys are inefficient. Certain conditions, such as severe vomiting and diarrhoea, may so deplete the body of fluid that even healthy kidneys fail to maintain the blood urea within its normal limits, but such cases are comparatively rare. While the test is of very great value in many cases, it unfortunately gives no indication of any kidney defect in subacute and chronic cases of Bright's disease until the greater part of the renal tissue is out of action. Animal experiments have shown that three-quarters or so of the total kidney substance may be removed before any accumulation of urea or non-protein nitrogen is found in the blood. Chronic cases with high urea content give, as a rule, little trouble from the point of view of "present condition" and prognosis, for various other symptoms indicate the state of the kidneys with sufficient clearness. It is true that there are exceptions, but, on the whole, one can very often tell beforehand on clinical grounds alone that certain patients have a raised blood urea content.

It is important to note that the excess of urea or other nitrogenous constituents in the blood is not the cause of the symptoms from which the nephritic patient suffers, and it appears certain that urea has nothing to do with the production of uraemia. It is generally not very difficult to reduce the blood urea, even in advanced cases of chronic interstitial nephritis, by giving a diet largely composed of carbohydrates, but this does not relieve the patient. In one such case under my charge the blood urea was reduced from 120 mg. to an average of 30 to 40 mg. per 100 c.cm. blood, but though the blood urea was maintained at this lower level for a considerable period, the patient died of uraemia; his blood urea on the day before death was 30 mg.

The point to note is that a lowering of the blood urea is not necessarily any indication of improvement unless the patient continues on the same kind of diet as he had when the blood urea was found to be high. This unfortunately is frequently forgotten.

In considering the mechanism of urea excretion it is useful to remember that a patient suffering from even an advanced grade of chronic interstitial nephritis excretes practically the same amount of urea daily as does a healthy individual on a similar diet. This seems absurd, but it is of course obvious that if this were not the case the patient would soon become saturated with urea. There is, however, a marked difference between the mode of excretion in the normal and nephritic subject. The normal individual requires what we may term a "head" of 20 mg. or so of urea per 100 c.cm. blood in order to get rid of the 25 or 30 grams excreted daily in the urine. The nephritic, though he excretes as much urea in the urine as the healthy individual, can do this only when the head of urea in the blood is much higher, and this head may amount to 200 mg. per 100 c.cm. blood or even more. The blood urea content is therefore merely an index of the efficiency of the kidney, and when nitrogenous food is

This discussion took place at a combined meeting of the Sections of Medicine, Pathology and Bacteriology, and Physiology, Pharmacology, Therapeutics and Dietetics, with the Right Hon. Lord Dawson of Penn, Vice President of the Section of Medicine, in the chair.

largely withdrawn from the diet the necessary amount of urea can be eliminated in the urine with a smaller head of urea in the blood. Even on the same diet one finds variations in blood urea in chronic cases, so that a favourable prognosis should not be expressed as the result of a comparatively low finding unless estimations are made over prolonged periods.

In acute cases estimation of blood urea at periods of a week or ten days is one of the best methods of judging the progress of the disease and in a general way the same applies to subacute conditions. On the whole, the estimation of blood urea is of very great help in acute and subacute cases of nephritis and in advanced cases of interstitial nephritis, but in the latter especially, the results must be used with great care and discrimination. A mere increase in urea or non-protein nitrogen of the blood may mean little or much according to circumstances. The frequency of what must be accepted as acute or subacute exacerbations in chronic cases must be considered. Such exacerbations appear to be of frequent occurrence in patients suffering from renal disease associated with cardio-vascular trouble. In one case of this kind the patient had frequent attacks of mild dyspnoea and general malaise during which his blood urea reached 150 to 180 mg. per 100 c.cm. His urine always contained protein and epithelial casts. I first examined him three years ago when his blood urea was 180 mg. On the whole, the prognosis seemed to be bad. When I last examined him, a week ago, his blood urea was 45 mg. and he felt much better. At various intervals during the intervening period blood urea was sometimes high and sometimes as low as 50 mg. As might be expected, in a chronic case of this kind, other renal tests give no indication of any marked improvement in the function of the kidneys.

In one other type of case, to which I shall refer later, estimation of the blood urea is of very great importance. I mean the type of renal involvement associated with certain genito-urinary diseases such as enlarged prostate, in which surgical interference may be necessary. On the whole, the estimation of urea or non-protein nitrogen in the blood is one of the best tests we have for advanced renal deficiency, but the results must be interpreted with care and the clinical symptoms must of course never be forgotten.

The Diastatic Test.

Normally the blood contains a fairly definite amount of the enzyme diastase which changes starch into sugar. The healthy kidney excretes some of this in the urine, and the amount excreted daily is extraordinarily constant in different individuals. When the kidney is defective the daily excretion of diastase is much diminished. It is easy to estimate the amount of this ferment in the urine, and the so-called diastatic test is now extensively used in kidney disease. Generally speaking, this test is of value in conjunction with other tests, but should never be relied on alone. In the great majority of cases of defective kidney the amount of diastase in the urine is certainly low, but I have seen many patients in whom the kidneys were markedly involved, and yet the diastatic value was normal or above normal. In two patients under my care it was normal on each occasion on which the test was done, and yet both patients died in uraemia within a fortnight of entering hospital. These anomalous results are difficult to explain, and do not appear to depend on changes in the amount of diastase in the blood; at least, this was not so in the few cases I have investigated.

Various Dye Tests.

Of the many dye tests used in this connexion, the most popular at present is phenolsulphonephthalein. Undoubtedly this test often seems to give a fairly good indication of the state of the kidneys, but in my experience the results have not been very satisfactory. When the kidneys are capable of excreting from 40 to 50 per cent. of the dye in one hour there is probably not much disturbance of function. In conjunction with other tests it is undoubtedly of much value, but it is rather technical and, though apparently simple, is really somewhat difficult to carry out with success. The estimation of the amount of dye secreted requires a colorimeter, and though certain investigators consider that the results are accurate when they estimate the excreted dye directly by comparison with a standard in a test tube, it is certain that these results are usually very wide indeed of the mark. When carrying out the test in this way errors amounting to 20 and 30 per cent. are possible. Again, the rate of absorption when the dye is injected subcutaneously is somewhat doubtful, while a venous injection requires some practice and is not always easy. In spite of its drawbacks, however, it is undoubtedly useful when used in conjunction with other tests. Another dye, indigo-carmine, is sometimes of value, but, on the whole, is not very satisfactory.

The "Urea Concentration Test."

This test was introduced a few years ago by MacLean and de Wesselow, and has given very good results. It is carried out as follows: The patient is asked to empty the bladder, and immediately afterwards he receives by mouth 15 grams of urea dissolved in about 100 c.cm. of water. The bladder is emptied one hour and two hours after the urea has been given and the two specimens of urine examined for urea content. If either specimen gives a percentage of urea above 2, the kidneys are held to be fairly efficient; the higher the concentration the more effective is the renal function. The reason why two specimens are taken is that in certain patients the urea given by mouth may produce a diuresis, which tends to dilute the urine passed, especially during the first hour. In this case the second hour's specimen often gives satisfactory results. Indeed, in routine work it is often best to discard the first specimen altogether and rely on the result obtained from the second specimen. Not more than 100 to 120 c.cm. urine should be passed in the second hour. Occasionally, if there is much available fluid in the patient's system, it may be desirable to take a specimen after three hours or even to repeat the test, but this is seldom necessary. In patients with marked diuresis this must be allowed for in estimating the renal function.

The test possesses the advantage that it can be carried out by anybody; it requires no manipulative skill whatever, since all that is necessary is to estimate the urea in the urine by any of the modifications of the ordinary hypobromite method. Like every other test, it has its drawbacks, and must be used intelligently in connexion with the clinical symptoms and other tests. As the result of using it in over 10,000 patients suffering from various grades of nephritis it may safely be said that it is exceedingly useful as a simple means of ascertaining the state of the kidneys. That it possesses the advantage of indicating lesions of a much slighter degree than are detected by estimation of blood urea is obvious from the results of experimental work. In a large number of cases of acute nephritis in which recovery was slow and the blood urea was considerably raised, parallel estimations of blood urea and urea concentration power were carried out. It was found that long after the blood urea had gone back to normal the urea concentration test gave evidence of defective kidneys. It was, of course, impossible to imagine that the kidneys had quite recovered when the blood urea became normal, and there is little doubt that the "urea concentration test" will detect defective kidneys long before the condition is sufficiently severe to produce an increase of blood urea. If the test shows a concentration of urea over 2.5 or 3 per cent. it is quite certain that the kidneys are efficient, and this has again and again been demonstrated in cases of supposed uraemia. In each instance in which the test gave a urea percentage of 2.5 or over the supposed uraemia turned out to be something else. Indeed, in actual uraemia the test generally gives concentrations of urea in the region of 1 per cent. or lower.

Of all the procedures utilized in renal investigations from the clinical side, this simple test appears to give more information in the majority of cases than any other. The 15 grams of urea given by mouth never produce any bad effects; indeed, it may be safely given to patients showing symptoms of uraemia. Urea possesses a somewhat unpleasant metallic taste, but this may be overcome to some extent by the use of a little tincture of orange.

Ambard's Coefficient of Renal Excretion.

Ambard's so-called coefficient of urea excretion has been extensively employed, especially in America and on the Continent, as a means of estimating the functional activity of the kidneys. Ambard deduced the following constant K, which in normal healthy subjects he found to be 0.06 to

0.07; in patients with renal inefficiency it is claimed that variations in the K value indicate the extent of the damage. Ambard's formula is as follows:

$$K = \frac{Ur}{\sqrt{D \div \frac{70}{W}} \sqrt{C \div 25}}$$

Where Ur = Grams of urea per litre of blood.
D = Grams of urea excreted in twenty-four hours.
W = Weight in kilos.
C = Grams of urea per litre of urine.
70 = Standard body weight in kilos.
25 = Standard concentration of urea in grams per litre urine.

This imposing formula has been modified in America by F. C. MacLean, who makes use of the expression:

$$K = \frac{Ur}{\sqrt{\frac{D}{W}} \sqrt{C}}$$

Using this formula, K in normal individuals varies from 0.20 to 0.36.

Now, in examining either of these formulae, it is quite clear that the simplest way to influence K is to change the value of the numerator. On the other hand, fairly large changes in the figures making up the denominator produce but little effect, since they become active only in terms of their square or fourth root. Thus, in chronic nephritis, concentration of urea (C) is a very important factor, but in the formula comparatively large variations in C produce little effect on K. It would seem that the formula is of little value except in cases where the blood urea (Ur) is above normal, and in such cases it is unnecessary to work out a complicated mathematical problem, since the simple estimation of blood urea alone supplies us with as much information as the formula will give. In short, for practical clinical purposes, these elaborate expressions are, in my opinion, of little or no value.

Urea Concentration Factor.

Though elaborate mathematical calculations such as the above do not afford us much help, a good deal of useful information may be obtained by comparing the concentration of the urea of the blood at a given time with that in the urine secreted over a short period. Normal kidneys are capable of concentrating urea so that the urine contains 70 times or more the amount contained in an equal volume of blood. Thus, if a sample of blood is found to contain 20 mg. urea per 100 c.cm., and a sample of urine collected during the same hour as the blood was drawn shows a concentration of 1,400 mg. per 100 c.cm. (1.4 per cent.), it is obvious that the blood urea as it appears in the urine has been concentrated 70 times. This number represented by

$$\frac{\text{Mg. urea per 100 c.cm. urine}}{\text{Mg. urea per 100 c.cm. blood}}$$

may be low in nephritis, and when it gets below 10 the condition is grave. To avoid confusion with the "urea concentration test" this number might be referred to as the "urea concentration factor."

Salt Tolerance Test.

The retention of sodium chloride in the system is at once indicated by the presence of oedema, so that it is practically never necessary to perform a test for salt tolerance. Besides, it is quite useless to give a large dose of sodium chloride by mouth and ascertain how much of this is excreted in a given time, for the result obtained will depend quite as much on other factors as on the condition of the kidney. The body cells require a fluid containing about 0.6 per cent. chlorides (expressed as sodium chloride), and any marked change in this value is incompatible with life. When, therefore, the kidney is unable to excrete salt, a certain amount of water will be retained in the body in order to give the necessary salt concentration; if, on the other hand, the difficulty is to excrete water, then a certain amount of salt will be retained to give this optimum concentration. It is difficult, if not impossible, in any given case in which salt is retained, to say whether the primary defect is inability to excrete salt or inability to excrete water. Either condition produces the same result—oedema and ascites. If no oedema is present, we may be certain that salt is excreted all right. These observations are of importance, for it is no uncommon occurrence for nephritic patients to be limited to salt-free diets in cases where no oedema exists.

Relation of Blood Pressure to Renal Damage.

Generally speaking, as will be seen from the results quoted later, the more serious the renal damage the higher the blood pressure. This, however, is by no means always the case, and it is not uncommon to have very badly damaged kidneys without much increase in blood pressure. Comparatively frequent also is the case where the patient shows a decidedly high blood pressure, often accompanied by other evidence of cardio-vascular degeneration and slight albuminuria. Such cases are generally diagnosed as primary interstitial nephritis with secondary cardio-vascular changes. In many such patients it is found that the kidneys are comparatively unaffected, and I have on several occasions examined patients who were supposed to be suffering from uraemia and in whom the kidneys proved to be quite efficient. The subject is too extensive to be discussed here, but it is most important from the prognostic point of view to remember that clinical symptoms which suggest uraemia in conjunction with high blood pressure may not be uraemic at all, and that such patients may have comparatively healthy kidneys. In every case of suspected renal deficiency it is, however, most important that the condition of the cardio-vascular system should be thoroughly investigated.

General Survey of Methods of Examination of Renal Patients.

The above appear to me to be the most useful methods at present at our disposal for ascertaining the state of the renal function. Many other tests have been suggested from time to time, but they do not give us any information beyond what can be obtained by the means described. From the clinical standpoint we really do not require any more tests. We have too many already. What we need is some simple combination of tests which will give the necessary information and which we can all use with a view to increasing our knowledge of their real value. I would suggest the following scheme for the examination of a renal case; with the exception of the determination of blood urea and the estimation of diastatic activity, all the tests can easily be carried out by the general practitioner with the simplest of apparatus. As the result of a very large experience in testing renal cases I think I can state with reasonable certainty that all the information required can be obtained by means of the simpler tests described without carrying out either the blood urea or diastatic tests.

A study of the cases quoted below will show that the presence of protein and casts is no evidence of the extent of renal damage. Albumin may be present, even accompanied by casts, in quite efficient kidneys. To the relative amounts of albumin and globulin little importance is to be attached, except perhaps occasionally in the case of children and young people.

Scheme for the Examination of a Renal Case.

1. Estimation of blood urea or non-protein nitrogen.
2. Examination of urine (twenty-four hours' specimen) for protein, casts, blood, pus, etc. Estimation of diastatic activity.
3. Urea concentration test.
4. Condition of cardio-vascular system: blood pressure, condition of arteries, position of apex beat, nature of second aortic sound.
5. Presence or absence of oedema.
6. General condition of patient.

The accompanying table (p. 428) gives the results obtained in 20 patients who were sent to be examined for nephritis. No blood urea estimations were done, yet the condition of the kidneys is obvious, and blood urea estimations would give little further information.

Renal Tests in Surgical Work.

One of the most important parts played by modern renal tests is the estimation of renal function in patients suffering from certain genito-urinary diseases such as enlarged prostate.

When operative interference becomes necessary in such cases the result depends to a great extent on the state of the kidneys. All these patients should be carefully examined for renal function, for it often happens that a

Table showing Results in Twenty Patients Examined for Nephritis.

No.	Protein.	Casts.	D Value.	Specific Concentration Test.	Urine Passed in Second Hour. c.cm	Blood Pressure.	Remarks.
1	+++	Numerous Ep., Hy., Gr.	2	1.2	56	168	Bad.
2	Very faint trace	Nil	10	1.9	132	140	Good; slight diuresis in second hour.
3	++++	Some Ep., Hy., Gr.	1	1.1	104	145	Bad.
4	+	Few Hy., Gr.	10	2.3	52	148	Good.
5	Nil	Nil	20	3.5	35	140	Kidneys efficient.
6	++	Nil	20	1.8	80	136	Fairly good.
7	+	Few Ep.	20	2.3	70	143	Good.
8	+	Few Hy. and Ep.	15	3.5	45	145	Good.
9	+	Few Ep.	6.6	1.2	50	170	Bad.
10	+++	Hy. and Ep.	10	2.6	40	132	Fairly good.
11	+++	Numerous Hy. and Ep.	6.6	3.1	48	128	Very good.
12	Nil	Nil	10	1.4	220	150	Good; diuresis in second hour.
13	Nil	Nil	15	3.8	40	136	Kidneys efficient.
14	Trace	Few Hy.	4	1.1	82	160	Bad.
15	Trace	Nil	6.6	2.5	70	124	Good.
16	+++	Hy., Ep., Gr.	6.6	1.5	75	156	Fair.
17	+	Few Ep.	5	3	62	114	Good.
18	Nil	Nil	10	3.1	35	112	Kidneys efficient.
19	+++	Hy., Gr., Ep.	10	4	80	124	Good.
20	+++	Ep. and Gr.	10	2.9	60	110	Good.

Ep. Epithelial casts; Hy. Hyaline casts; Gr. Granular casts.

temporary inadequacy in renal action is present which clears up under careful non-operative treatment. An operation during the stage of renal inefficiency would very probably end in disaster, while at a later period, when the kidney condition improves, surgical procedures may be undertaken with every chance of success. In no case should an operation necessitating a general anaesthetic be undertaken on any patient whose blood contains 100 mg. or more of urea.

There is little doubt that in this sphere alone careful examination of the renal system has saved hundreds of lives. Probably many obscure deaths after surgical operations are due to unsuspected renal inefficiency.

II.—Francis D. Boyd, C.B., M.D.,

Professor of Clinical Medicine, University of Edinburgh.

To the clinician the functional capacity of an organ is of the utmost importance, and especially is this the case in renal disease, where the estimation of function is so helpful in giving an accurate prognosis and in regulating scientific treatment. It has long been recognized that in renal disease, especially in the chronic interstitial variety, there is an increase in the quantity of urine excreted during the night as compared with the normal. The elimination of waste products by the kidneys is inefficient, and, as a consequence, their work being insufficient during the day, they must work by night to keep up excretion—hence the increased excretion by night.

It has been advised, as an efficiency test of renal function, that two-hourly samples of urine be collected during the day period—7 a.m. to 9 p.m.—and the whole urine from 9 p.m. to 7 a.m. next morning. Measuring the quantity and taking the specific gravity of each sample may give information of value. The normal person will eliminate amounts of urine varying very greatly in volume during the day, depending on the amount of fluid taken. Moreover, it will be eliminated promptly after it has been ingested. During the night period of ten hours but little, if any, more urine will be eliminated than during any of the two-hour periods of the day. The specific gravity of the urine will also vary widely in the samples, from 1006 to 1025 or more. There is a similar response to meals. The sclerotic kidney, in proportion as it is diseased, will eliminate practically the same amount of water every two hours, irrespective of what may have been ingested, and the quantity during the night period may equal or exceed the total excretion during the day.

This tendency to uniformity in the amount of urine and specific gravity, and in the failure or delay in responding to the ingestion of food, has been known as "fixation" of the kidney, which means that the kidney is already working under high pressure and is unable to respond promptly to the additional work thrust upon it by the ingestion of food or fluid. Now, were this functional test reliable, it would be ideally simple for the practitioner, but unfortunately it is not. Dr. Malcolm Smith has been working at the point in my clinic, and we find that in a large number of cases the results are not constant. Fig. 1 is from an example of glomerular nephritis occurring in the course of subacute bacterial endocarditis, where the results are positive and where the uniformity of excretion is well shown. In Fig. 2, however, from a case of chronic interstitial nephritis with high blood pressure and nitrogen retention, the results are similar to those obtained in the normal hospital patient. We have had quite a number of the latter examples, so one fears that one cannot place much reliance upon the test.

Of the tests of renal efficiency by estimation of the capacity for excretion of medicinal substances by the tubules, after a considerable experience, we have discarded the potassium iodide test as not being sufficiently reliable. The most useful of such tests is the phthalein test of Rowntree and Geraghty. Dr. Maclean has dealt so fully with this aspect of the case that I would just wish to show a table from a few of our cases.

Table I.

No.	Case.	Phthalein Excretion.	Result.
1	Acute nephritis	61	Relieved.
2	Acute nephritis	65	Relieved.
3	Subacute nephritis	48	Improved.
4	Subacute nephritis	64	Improved.
5	Chronic interstitial nephritis	68	Improved.
6	Chronic interstitial nephritis	Not estimable	Death.
7	Chronic interstitial nephritis	Not estimable	Death.
8	Chronic interstitial nephritis	65	Improved.
9	Chronic diffused nephritis	68	Improved.
10	Chronic interstitial nephritis	34	Improved.
11	Chronic interstitial nephritis	68	Improved.
12	Chronic interstitial nephritis	73	Improved.
13	Chronic interstitial nephritis	50	Improved.
14	Chronic interstitial nephritis	25	Improved.
15	Chronic diffused nephritis	18	Improved.
16	Chronic diffused nephritis	22	Improved.
17	Chronic nephritis	34	Improved.
18	Chronic nephritis	12	Improved.
19	Chronic nephritis	31	Much improved.
20	Chronic nephritis	48	Much improved.
21	Chronic nephritis	54	Much improved.
22	Chronic interstitial nephritis	Nil	Death.
23	Acute nephritis	32	Cured.
24	Acute nephritis	19	Relieved.

This table would seem to show that improvement may take place even when the phthalein excretion is markedly low.

Working with Wohlgemuth's method, we have done a considerable number of observations on the enzyme content of the urine in renal disease, as a test of renal function, but we come to the conclusion that other

factors such as pancreatic function, are of such importance as to render the test insufficiently reliable as an estimation of renal function.

The estimation of the non-protein nitrogen of the blood as an indication of renal activity, and as a guide to dietetic treatment in nephritis, cannot be over-estimated. In a normal individual, on a mixed diet, the non-protein nitrogen of the blood has been placed by Folin and Dennis at 22 to 26 mg. per 100 c.cm. of blood, but in the ordinary hospital patient it will probably be found rather higher than this. In the nephritic the capacity of the kidneys for the excretion of waste nitrogenous bodies will vary very much, and each case should be studied and treated according to the findings. Table II shows the result of

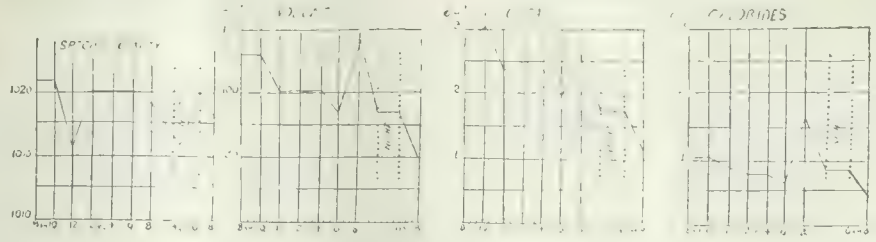


FIG. 1.

TABLE II.

No.	Case.	Non-protein Nitrogen in mg. per 100 c.cm.	Result.
1	Acute nephritis	46	Cured.
2	Acute nephritis	41	Cured.
3	Chronic diffused nephritis	52	Improved.
4	Subacute diffused nephritis	42	Improved.
5	Subacute nephritis	41	Improved.
6	Chronic nephritis	41	Improved.
7	Acute nephritis	45	Cured.
8	Chronic nephritis	35	Improved.

the estimation of the non-protein nitrogen in a number of cases where the findings were comparatively low.

In these cases the non-protein nitrogen of the blood was under 50 mg. per 100 c.cm. of blood, and in every case justified a fairly favourable prognosis.

In the second class of nephritics, those who show a figure of blood nitrogen from 50 to 100 mg. per 100 c.cm. of blood, there is very definite renal inadequacy with serious nitrogenous retention and indications for rigorous protein-free diet. In most of such cases the prognosis is bad.

Of the cases recorded in Table III, speaking generally, one would say that when the soluble nitrogen of the blood rises to between 50 and 100 mg. per 100 c.cm. there is grave renal inadequacy calling for a stringent protein-free diet, and even then the prognosis is grave. Two of the cases where the reading is high improved. Case 5, in which the non-protein nitrogen was 98 mg. per 100 c.cm., gave a positive Wassermann reaction. Under anti-syphilitic treatment improvement was marked, and before discharge from hospital the nitrogen content of the blood was practically normal. Case 12, where the nitrogen stood at 94 mg. per 100 c.cm., the phthalein excretion in two hours at 12 per cent., and the Wassermann negative, was of interest as one would have said that the prognosis here was really bad, but under the most rigid protein-free diet improvement took place and the patient was discharged from hospital relieved of symptoms.

At times the non-protein nitrogen of the blood will show a very high figure. Speaking generally, it may be stated that if the non-protein nitrogen rises above 100 mg. per 100 c.cm. the duration of the illness may be reckoned in days – seldom in weeks.

TABLE III.

No.	Case.	Non-protein Nitrogen in mg. per 100 c.cm.	Result.
1	Nephritis, uraemia	74	Death.
2	Cardiac disease, albuminuria	59	Death.
3	Subacute diffused nephritis	53	Death.
4	Chronic interstitial nephritis	80	Death.
5	Subacute diffused nephritis	98	Improved.
6	Subacute diffused nephritis	53	Improved.
7	Arterio sclerotic kidney	52	Death.
8	Chronic nephritis, uraemia	60	Improved.
9	Chronic interstitial nephritis, uraemia	54	Death.
10	Chronic nephritis	53	Improved.
11	Chronic nephritis	66	Improved.
12	Chronic nephritis	94	Improved.
13	Chronic nephritis	63	Improved.
14	Chronic nephritis	57	Greatly improved.

Table IV shows the figures given in a number of cases, the blood being taken within a few hours of their coming under observation. All the cases were examples of uraemia. Cases 2, 4, 5 and 7, showed convulsive phenomena. Case 1 died comatose without convulsions. Case 3 was drowsy for some days before death, and there were marked

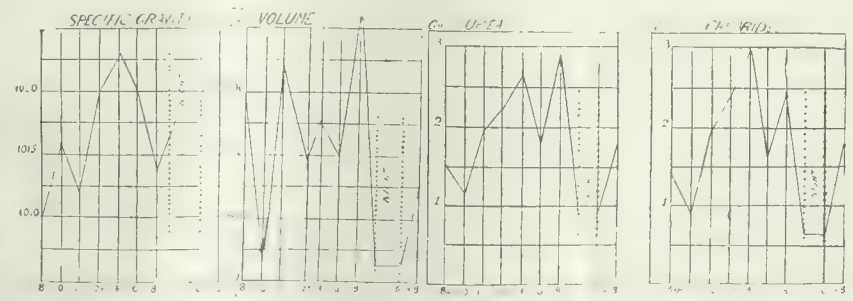


FIG. 2.

TABLE IV.

No.	Case.	Non-protein Nitrogen in mg. per 100 c.cm.	Result.
1	Nephritis, uraemia	220	Death.
2	Nephritis, uraemia	160	Death.
3	Nephritis, endocarditis	123	Death.
4	Tuberculosis of urinary tract, uraemia	228	Death.
5	Chronic interstitial nephritis, uraemia	139	Death.
6	Chronic interstitial nephritis, uraemia	139	Death.
7	Chronic interstitial nephritis, uraemia	120	Death.
8	Acute nephritis, oedema of glottis	103	Death.
9	Chronic nephritis, uraemia	120	Death.

alimentary symptoms pointing to uraemia. Case 7 was not so definitely uraemic as the others, and died of oedema of the lungs after tracheotomy had been performed for oedema of the glottis. Case 8 was drowsy, restless, and asthmatic, and died comatose. In all these cases the phthalein excretion was almost *nil* at the end of two hours. In every case one has seen where the non-protein nitrogen of the blood rises above 100 mg. per 100 c.cm. the prognosis was bad—as a rule death took place within a few days, in the most prolonged within two weeks.

The consideration of the soluble nitrogen of the blood as a test of renal function is of the greatest importance from a therapeutic standpoint. Without a knowledge of the proportion of non-protein nitrogen of the blood the adequate dietetic treatment of a case of nephritis is impossible. Given that knowledge, one will find that if the soluble nitrogen content of the blood is raised, a rigid protein-free diet will have a definite beneficial effect in diminishing the waste products in the circulating blood and in relieving symptoms. But this rigid protein-free diet is not always either necessary or desirable, and it is only by a consideration of the soluble nitrogen content of the blood that one is able to say whether it be necessary or no.

It is interesting to note that no conclusion as regards renal function can be drawn from an estimation of blood pressure. Table V shows the soluble nitrogen of the blood with the systolic blood pressure in the number of nephritics.

TABLE V.

Case.	Disease.	Nitrogen of Blood in mg. per 100 c.cm.	Systolic Blood Pressure.
1	Acute nephritis	46	134
2	Acute nephritis	41	104
3	Chronic diffused nephritis	32	140
4	Subacute nephritis	42	94
5	Subacute diffused nephritis	41	120
6	Chronic interstitial nephritis	41	220
7	Nephritis, uraemia	74	140
8	Subacute nephritis	59	122
9	Chronic diffused nephritis	53	160
10	Cerebral haemorrhage, chronic nephritis	80	170
11	Subacute diffused nephritis	98	172
12	Arterio-sclerotic kidneys, cerebral haemorrhage	52	170
13	Chronic interstitial nephritis	60	218
14	Chronic interstitial nephritis	54	180
15	Chronic interstitial nephritis	220	123
16	Chronic interstitial nephritis	160	88
17	Subacute nephritis, endocarditis	123	130
18	Chronic interstitial nephritis	139	192
19	Chronic interstitial nephritis	190	175
20	Subacute nephritis	57	110
21	Subacute diffused nephritis	41	139
22	Subacute diffused nephritis	56	130
23	Chronic interstitial nephritis	88	160
24	Subacute diffused nephritis	59	95
25	Chronic interstitial nephritis	162	190
26	Subacute diffused nephritis	36	110
27	Chronic interstitial nephritis	94	179
28	Orthostatic albuminuria	42	137
29	Chronic interstitial nephritis	72	205
30	Chronic interstitial nephritis	66	210
31	Chronic interstitial nephritis	36	140
32	Chronic interstitial nephritis	53	129

Study of this table shows that there is no relation between nitrogen retention and systolic blood pressure; that, in fact, systolic blood pressure may be markedly raised without any nitrogenous retention.

DISCUSSION.

DR. R. L. MACKENZIE WALLIS (Chemical Pathologist and Lecturer on Chemical Pathology, St. Bartholomew's Hospital) said that the chief tests he used were the water test, estimation of blood urea, diastase content of the urine, urea concentration test, and sugar in blood and urine. No one test was of value by itself, but collectively these tests were of value both in diagnosis and prognosis. Their application to cases of albuminuria in pregnancy had shown that the tests were of distinct value in diagnosis. In eclampsia and toxic kidney conditions in general the blood urea was normal, the diastase content of the urine light, the urea concentration test normal. The sugar in the blood was invariably subnormal, yet in the urine the normal urinary sugar was high. The cases of parenchymatous nephritis in pregnancy, on the other hand, gave almost exactly opposite results—namely, a high urea content of the blood, low urinary diastase, and a low urea concentration in the urine. The blood sugar content was high, but varied according to the severity of the renal damage. Estimating the normal sugar content of the urine, it was found that, like the diastase content of the urine, it was invariably low. There was a definite correspondence between the amount of sugar in the blood and sugar in the urine in cases of renal insufficiency.

DR. WILLIAM MACADAM (Lecturer in Pathology, University of Leeds) confined his remarks chiefly to some points of interest arising out of the investigation of renal function in a series of over fifty cases of obstruction in the lower urinary tract, in most instances due to prostatic enlargement.

In the investigation of general medical cases, the speaker said he had been impressed by the fact that excretion was not delayed in all forms of kidney disease, but that it was usually normal or indeed increased in cases of parenchymatous nephritis. Although this fact was pointed out by Maclean,[1] it appeared to have been lost sight of in several more recent papers on the urea concentration test, as also in the application of the various aniline dye tests.

In surgical conditions of obstruction in the lower urinary tract, urinary tests appeared to be unreliable as a guide to the state of the renal excretory function. This applied especially to cases associated with chronic cystitis and residual urine. Likewise the diastatic value of the urine was an uncertain guide under such conditions. Most of his observations had therefore been confined to blood analysis, chiefly the quantitative estimation of the urea nitrogen, creatinin, and the non-protein nitrogen.

Dr. MacAdam had found the estimation of the urea nitrogen to give the most useful and valuable findings. The non-protein nitrogen values had served simply to confirm the urea findings. The estimation of the creatinin in the blood was the least valuable in actual practice. Increased creatinin was found only when there was a marked rise in the urea and non-protein nitrogen values, while the absolute range of variation in the amounts of creatinin was very small. This nitrogen retention in the blood ceased rapidly when the mechanical obstruction in the lower urinary tract had been overcome and free drainage established. In a number of cases the urea nitrogen fell from 80 to 200 mg. per 100 c.cm. of blood to 20 to 30 mg. after seven to fourteen days of suprapubic drainage, the patients being kept on a diet of fairly constant nitrogenous content. This rapid fall in the blood urea nitrogen was exceedingly striking. It appeared to point to the fact that there might be marked defect in the excretory function of the kidneys without chronic interstitial changes in the renal parenchyma, and due solely to the mechanical effects of obstruction in the lower urinary tract. On the other hand, these findings showed that prolonged and progressive mechanical obstruction to the

[1] Maclean: *Quart. Journ. Med.*, 1919, vol. xii, p. 347.

outflow of urine was not a factor of great importance in the production of chronic nephritis, whether interstitial fibrosis, or fibrosis and lamination of the glomeruli. It was accepted that an appreciable increase in the urea nitrogen of the blood occurred only when the effective renal tissue was reduced to less than one-fourth of the total kidney substance. In cases of obstruction of the lower urinary tract a condition of marked nitrogen retention occurred which was not necessarily due to gross changes in the renal parenchyma. It appeared to be due to the mechanical obstruction acting on the kidney as a whole, and, in addition to the production of varying grades of hydronephrosis, there was a direct interference with filtration through the glomeruli without any gross changes in their structure. Correlation with the clinical condition of the cases had shown that the estimation of the blood urea nitrogen was of considerable practicable value as a guide to the functional renal efficiency in obstruction of the lower urinary tract. Mr. J. F. Dobson, whose cases the speaker had had the privilege of investigating, had shown in the Arris and Gale Lecture, 1921,[2] the advantage of preliminary suprapubic drainage, and of waiting until the blood urea nitrogen was within normal limits before carrying out prostatectomy.

Dr. D. WELLS PATTERSON (Assistant Physician, Royal Victoria Infirmary, Newcastle-upon-Tyne) said that for some months past he had, in the Newcastle War Pensions Hospital, been employing tests for renal efficiency as a routine proceeding. The tests used had been:

(1) The water excretion test.
(2) Fixation of specific gravity.
(3) Urea concentration.
(4) Estimation of diastase value.
(5) Estimation of excretion of chlorides.

He had come to the conclusion that, in chronic parenchymatous nephritis especially, the regular and careful estimation of the urea concentration and of the diastase value gave most useful information as to the progress of the case and helped the formation of an opinion as regards prognosis and as to the amount of protein in the diet which could be safely allowed. It was interesting to note that the cases admitted with a definite history of war nephritis showed that a very considerable amount of recovery had taken place as regards their renal efficiency, but in no case could the recovery be considered to be complete; there was, however, definite evidence of progressive cardio-vascular deterioration shown by increase in the blood pressure and by enlargement of the heart. It appeared to him that any estimate as to the future of these cases must take into consideration not only the amount of renal efficiency but must also be based on the most careful examination possible as to the condition of the cardio-vascular system.

Dr. R. ERRINGTON (Sunderland, D.C.M.S. Northern Region, Ministry of Pensions) said that the urea concentration and diastatic tests in the estimation of renal efficiency carried out on the lines suggested by Professor H. Maclean had been a great help in estimating the renal efficiency in ex-soldiers; at the same time it was essential to bear in mind that no single test was infallible in itself; a series of tests must be performed and a thorough physical examination made also. The presence or absence of protein in the urine was chiefly helpful in deciding the type of nephritis, and must not be taken as an indication of the efficiency or inefficiency of the kidneys. He had found, after an examination of very many cases of chronic nephritis occurring in ex-soldiers, that the results of the urea concentration and diastatic tests had invariably been borne out by physical examination. Only where the taking of 15 grams of urea caused marked diuresis was the physician apt to be led astray; in these cases dependence must be placed on other tests.

Professor MACLEAN, in reply, said he agreed in the main with the views expressed by different speakers. He could not, however, corroborate Dr. MacAdam's experience that the tests used were unreliable in cases of mechanical obstruction to the kidney. He had found them of great value in surgical cases where there was obstruction to the outflow of urine.

[2] Dobson, BRITISH MEDICAL JOURNAL, 1921, vol. i, p. 289.

SECTION OF OTO-RHINO-LARYNGOLOGY.

G. WILLIAM HILL, M.D., B.Sc., President.

DISCUSSION ON PROBLEMS PRESENTED BY HAEMORRHAGE IN CONNEXION WITH OPERATIONS ON THE TONSILS.

STATISTICAL RECORDS OF SERIOUS AND FATAL HAEMORRHAGE FOLLOWING OPERATIONS ON THE TONSILS.

BY

A. BROWN KELLY, D.Sc., M.D.,
Surgeon for Diseases of the Throat and Nose, Victoria Infirmary, Glasgow.

OF all the operations performed by medical men the commonest is that for the removal of tonsils and adenoids. The subjects may be suffering from signs or symptoms of interference with the physical and mental development, of a lowered state of resistance of the respiratory or digestive system, of implication of the ear, or of a systemic infection, and as a consequence may be reduced to a condition of semi-invalidism. Nevertheless, operation is rarely urgent, but usually a matter of expediency. These two facts—namely, the frequency of the operation and the comparatively healthy state of the majority of those undergoing it, make it imperative that we choose the best mode of procedure and eliminate as far as possible all attendant risks.

The most notable risks encountered are those associated with the general anaesthetic when such is used, and post-operative tonsillar bleeding. To-day we are concerned solely with the latter, and it is my duty to deal with the statistics of serious and fatal cases. I do not propose to carry you back to the dark ages preceding the birth of our specialty when the guillotine had not been devised or was still a rare possession. Tonsillotomy as then performed with volsella and bistoury, but without anaesthetic or forehead mirror, is suggestive of inevitable tragedy. Nor shall I detain you with an account of accidents which followed the use of the guillotine during the early years of the specialty. A number of these have been collected and published. I shall begin with the year 1887, which is convenient for my purpose, as that of the publication of the first volume of the *Journal of Laryngology*. In the late eighties and early nineties the usual treatment of enlarged tonsils consisted in removing more or less with Mackenzie's or Mathieu's guillotine. This simple procedure was followed every now and then by dangerous haemorrhage. In the first five volumes of the *Journal of Laryngology* ten such cases are described by nine writers. In one case the patient was a child of 7 years, and the accident was attributed to operating while the tonsils were acutely inflamed. Moure,[1] in relating the occurrence, states that he was unable to find the report of a single case of haemorrhage in a child after tonsillotomy. In the same volume—the fourth—the case of a girl of 14 years is described (Butler[2]) in which the stump had to be ligatured; the bleeding was ascribed to the hard, fibrous state of the tonsils. The other eight cases occurred in adults, mostly young men. Angular scissors were used in one instance (Clarke[3]), in the others a guillotine. Several of the operators, apparently in the hope of lessening the chance of bleeding, had aimed at cutting off "only a slice," or two-thirds of the organ. Haemorrhage set in, as a rule, a few hours after the operation. Styptics, cold and pressure usually failed; torsion, the actual cautery and ligature of the cut vessel occasionally proved effectual. In two cases the common carotid was tied, in one instance without controlling the bleeding; the patient recovered, however, after transfusion.

In the *Centralblatt für Laryngologie*, between January, 1887, and December, 1891, six cases are referred to, mention of which is not made in the *Journal of Laryngology*. I am unable to utilize these abstracts, however, as they are too brief, and the original papers are unobtainable.

A search was also made through the *Archives de Laryngologie* and *Monatschrift für Ohrenheilkunde* during the five years specified, but without gleaning any fresh cases. It may be mentioned, however, that in an addendum to an abstract in the last-mentioned journal Moritz Schmidt states that he had had severe haemorrhage after tonsillotomy on five occasions, so that for many years he had used the cautery snare, and had not had bleeding of any account in close on 1,000 patients operated on in this manner. The obvious conclusion to be drawn from the reports published during this quinquennium is that tonsillotomy in children is generally quite safe, but in adults it may be followed by profuse haemorrhage which is due to the firm, fibrous condition of the tissues preventing the retraction of the cut vessels, and as a consequence its control is difficult.

In spite of the comparatively rare occurrence of severe bleeding this led not a few to abandon tonsillotomy and to adopt some other procedure—for instance, puncture with the thermo- or galvano-cautery, the electric snare, electrolysis, discission, morcellement or punching, or escharotics. Discussions were held and many papers were published dealing with the respective advantages of these methods, all of which, however, were shown to be occasionally dangerous or to have decided objections. Alarming secondary haemorrhages were reported to have followed the removal of tonsils with the galvano-cautery snare, and even after their reduction with the cautery point.

In the nineties the need of dealing expeditiously with flat and small tonsils led to the introduction of a variety of tonsil punches; these were used alone or in conjunction with the guillotine. Many of us employed the latter procedure in children over a long period with very rarely a haemorrhage to cause anxiety. That the method was not always satisfactory is being borne in upon us now by the return of some of our patients who, as adults, complain of chronic lacunar tonsillitis, frequent quinsy, or a systemic infection.

With the dawn of the new century the harm which the stump of an amputated tonsil could cause was coming to be recognized, and, as a consequence, methods of effecting the total extirpation of the gland were being evolved. It does not fall to me to discuss these, but in considering the risks of bleeding from tonsillectomy it is necessary to distinguish the operation performed with the guillotine in children from that carried out by dissection in adults; further, the latter class should be subdivided into those requiring the operation on account of chronic lacunar tonsillitis, the majority of whom are women, and those, mostly men, in whom the indication is recurrent quinsy. It is chiefly—one might almost say only—in the last class that grave haemorrhages are to be feared. I do not mention the operation by dissection in children, or with the guillotine in adults, for these methods are seldom employed, although, as carried out by some of their exponents, they have much to recommend them.

I shall now consider haemorrhage following tonsillectomy, and in order to compare it with that due to tonsillotomy shall, as in the case of the latter, review the literature during the last quinquennium, from January, 1916, till December, 1920, when enucleation was more extensively practised than ever previously. It is impossible in the time at my disposal to attempt to analyse all the papers bearing on the subject that have been published in this period. I shall therefore refer chiefly to those of which abstracts have appeared in the *Journal of Laryngology*, *Centralblatt für Laryngologie*, or the *Laryngoscope*. The last mentioned journal has been chosen in this connexion, because in America a complication of haemorrhage—pulmonary abscess—has been frequent.

In searching through these volumes it soon becomes evident that single cases of severe haemorrhage are not reported unless a rare condition has existed or been suspected—for instance, a fault in the walls of the blood vessels (Hurd [4]), or an abnormality in the vascular supply of the tonsil (Lawson Whale [5]). On the other hand, writers bring forward large series of operations stating the proportion of severe bleedings and the methods adopted for their control. O. Wilkinson [6] in 200 consecutive tonsillectomies under local anaesthesia had 4 primary haemorrhages, in one of which it was necessary to ligate the vessel, and 3 secondary, of which one called for stitching the tonsillar cavity. Holger Mygind [7] reports that in 171 operations with knife and snare under local anaesthesia secondary haemorrhage took place in 14, or 8 per cent. Most of the patients were between 20 and 30 years of age; none was under 15. The bleeding was slight in 4 cases, moderate in 5, and severe in 4; it could always be checked by tying the vessel. Steiner [8] had 3 cases of secondary haemorrhage in 110 patients whose tonsils had been enucleated. In 70 tonsillectomies, Burger [9] had one bleeding, which was checked by gauze.

McKinney,[10] in a recent series of 50 tonsillectomies by the Sluder method under local anaesthesia in patients aged from 17 to 65, had four haemorrhages. These were comparatively severe in two cases in which the operation had been undertaken on account of renal disease. Beaman Douglas,[11] in his report of the tonsil work at the Post-graduate Hospital for the year 1919, gave some interesting details. Tonsillectomy was performed in 1,560 cases, most of which were in children. The house staff was summoned by the nurse on account of bleeding in 6.5 per cent. of the cases. In nearly every instance mutilation of the pillars or a remnant of tonsil was found. In 90 cases there was slight capillary oozing, which ceased spontaneously or with the application of a cotton pledget. In 6 instances the bleeding vessel had to be clamped, and in only one was more active treatment required—namely, suturing the pillars. In three years there had been four fatalities from haemorrhage. The author states that various modes of operating were employed, and that probably in no other institution with so many men working were such grades of efficiency and inefficiency represented.

In the discussion following the reading of the last two communications some noteworthy experiences were related. Abraham, when unable to check the bleeding at the operation, tied the vessel immediately, and had never had secondary haemorrhage. Hubbard considered ligation unnecessary. During twenty-five years he had removed a large number of tonsils but had not had serious bleeding and had never required to suture. Carter's cases averaged 40 a week. His recent statistics of over 3,000 cases showed neither a death nor an alarming haemorrhage.

Irwin Moore's [12] paper on haemorrhage following the removal of tonsils is probably the most important contribution that has been made to the subject under consideration. It contains, besides statistics, much that might serve as a basis for our discussion. I must restrict myself, however, to the author's own experiences. He states that he has had only one case of alarming haemorrhage amongst the many thousand tonsil operations he has performed. The patient was a boy, aged 6 years, whose tonsils had been enucleated with the guillotine. Profuse bleeding set in two hours after the operation, but was checked by sponge pressure and an injection of morphine and atropine. Irwin Moore had also seen in consultation and partly treated, during the five years preceding the publication of his paper in 1918, seventeen cases of serious or alarming haemorrhage following the removal of tonsils; of these, ten were in adults. In three adults the faucial pillars were sutured; in the others the treatment mentioned as having been used in his own case sufficed.

Tilley [13] in 1919 had had secondary haemorrhage in only two out of 575 cases of enucleation under open ether anaesthesia. Bowen [14] has had several very bad cases but has never seen severe haemorrhage in a small child. Courtenay Yorke,[15] in upwards of 6,000 cases, has never had to stitch the pillars or tie a bleeding point, and very rarely has had to apply a clamp.

On the other hand, Labouré [16] has had to ligature the external carotid in three cases, Kofler [17] in a patient with chronic nephritis and increased blood pressure, Lawson Whale in a girl, aged 13 years, with suspected abnormal tonsillar blood supply, and Panse [18] had a fatal haemorrhage in a lad of 17 with cardiac disease; the greatly swollen submaxillary gland was stated to have been injured during enucleation.

I now beg to direct your attention to a serious sequel of tonsillar haemorrhage—namely, abscess of the lung. C. W. Richardson [19] in 1912 drew attention to the occurrence of this complication after operations on the tonsils and upper air passages. Within the last five years a considerable number of cases following tonsillectomy have

been recorded in America. Thus, Simpson and Noah[20] have described two cases; Frank[21] has reported three, and by inquiry has learned of fifteen others; Koplik has had three in his service; Yankauer has seen four; Dean, Scrutton[22] and Beaman Douglas have had one each; Scudder, several; and Manges,[23] nine. This list is not exhaustive.

One of the most striking contributions to the subject is that of Manges, who, in his capacity as a physician, saw nine cases in one year in Mount Sinai Hospital. The mortality was 11 per cent. Resection of a lobe of a lung was needed in one case and operation for pneumothorax in another. Further, Wessler states that 28 per cent. of the cases of pulmonary suppuration that came to the *x*-ray department of this hospital were due to tonsillectomy.

Two explanations have been given of the mode of origin of pulmonary abscess after tonsillectomy. It has been attributed to the aspiration of blood containing septic matter squeezed out of the crypts during operation. This view is supported by the following facts: Almost all of the patients were operated upon under general anaesthesia while lying on the back; in the majority signs and symptoms developed within thirty-six hours; the abscess was solitary, and, as a rule, formed in the lower or middle lobe of the right lung.

According to the other view septic thrombosis of the veins in the tonsillar bed is followed by pulmonary infarction. This explanation accounts for a minority of the cases in which there is no trouble till after the lapse of from four days to two weeks. It is easily conceivable how an affection of the latter class setting in about a fortnight after tonsillectomy, when the patient has passed from under our care and returned home, may never be suspected as due to the operation.

I have had one case of lung abscess following tonsillectomy. The physician in charge of the patient doubted the connexion, but in spite of this and of certain obscure features, I regard the abscess as a sequela of the operation. The patient, a lady aged about 30, had her tonsils dissected out under local anaesthesia. There was no trouble or special bleeding at the operation, but on visiting her in the evening I learned that she had vomited blood thrice, and on examination I found a clot in the left tonsillar fossa. I might mention, in view of what subsequently transpired, that she fell sound asleep before I left her room. There was no further bleeding, but the left side of the throat kept sore. On the second day after operation her temperature rose, and on the fourth day it reached 104.8°. She then complained of pain in the chest and a small patch of friction was detected. Ten days later she was almost well, but still had discomfort and a membranous patch at the site of the left tonsil. I subsequently learned that about a week later there was a recrudescence of the pneumonia with effusion into the pleural cavity and that a rib was resected. She made a good recovery. In this case there was no aspiration of blood during the operation, and, although so somnolent, it could not have taken place afterwards, yet the pain in the chest was complained of on the fourth day. An embolic origin seems most probable and the "recrudescence" may have been set up by a fresh focus.

What are we to make of the various facts and statistics that have been submitted to you? Deductions from statistics are proverbially unreliable, and it appears to me that they would be specially so if based on the work of a number of men whose experience, manipulative dexterity, care, judgement and temperament varied greatly. The statistics prove at least that the operations in vogue for the removal of tonsils, when carried out competently in suitable subjects are very rarely followed by serious haemorrhage. In comparing tonsillotomy with tonsillectomy, it is not for one who during many years employed the former method with what appeared to be good results to decry it. My own impression, however, and that of my colleagues is that in children the removal of tonsils by the method of Whillis and Pybus is followed by rather less bleeding than we experienced when using the Mathieu guillotine and punch. My experiences of severe haemorrhage in children have been few and scarcely noteworthy; so far I have not required to employ special measures for its control. The most persistent bleedings I have had were in soldiers whose tonsils had been removed by dissection because of recurrent quinsy. In all of them the oozing ceased spontaneously, but not without considerable loss of blood. On only one occasion have I found it advisable to stitch the pillars; the patient was an adult male whose tonsils had been dissected out sixteen hours previously. This infrequency of the need of adopting special measures to check bleeding is not exceptional. I have asked several laryngologists, each of whom must have operated upon thousands of cases, as to their experience in this respect. One with a long and large record of work had stitched the pillars three times; several had done this once or twice, but most had never required to resort to any special treatment.

After all has been said grave bleeding must occasionally follow the removal of tonsils from causes over which the surgeon has no control, for instance, an abnormal vascular supply. The surprising fact is the rarity of its occurrence, and in this we must surely recognize the foresight of a kind Providence in placing the tonsils so as to make them easy of access, and acclaim man some credit in designing ingenious and safe methods for their removal.

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CONDITIONS PREDISPOSING TO HAEMORRHAGE IN TONSIL OPERATIONS:

CONTRAINDICATIONS TO OPERATION AND PROPHYLACTIC MEASURES.

BY

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SOME degree of haemorrhage is an inevitable part of any operation on the tonsils in which their nutrient vessels are severed. In the average case the bleeding ceases in a few minutes, and the total loss of blood is within fairly moderate limits. During 1912 and 1913 I made observations[1] as to the average blood loss from tonsil and adenoid operations in 1,600 consecutive cases, 1,510 of whom were under the age of 14; eighty were over this age, and only four over 30. The ordinary loss for the combined operation in patients under 14 lay between 2½ and 4 oz., and for patients over 14 from 3½ to 5 oz. The operation was complete tonsillectomy with the writer's guillotine,[2] under general anaesthesia, the arrest of haemorrhage being spontaneous. This average can be considerably reduced by applying gauze pressure to the cut surfaces immediately.

Haemorrhage beyond this moderate amount and which is sufficient to cause risk to the life of the patient is due to something unusual in the source of bleeding, either anatomical, pathological, or surgical, or to certain factors which inhibit normal clotting and the physiological arrest of haemorrhage. The following scheme indicates most of the conditions which may be present prior to or at the time of operation that are likely to increase the blood loss beyond the average, usually resulting from a technically perfect surgical procedure.

Anatomical.

General.—Age; Sex; short-necked, florid patients; menstruation; menopause; early pregnancy.

Local.—1. Large tonsils.

2. Abnormal vessels. (*a*) Concealed type: Large artery entering tonsil instead of previously dividing. (*b*) Visible type: Pulsating and tortuous ascending pharyngeal, internal carotid, and external carotid; abnormal large superficial veins; angioma of fauces.

Pathological.

Local.—1. Inflammation: Acute tonsillitis; chronic tonsillitis and pharyngitis.

2. Ulceration: Syphilitic, tuberculous, Vincent's angina, actinomycosis.

3. Fibrosis of tonsils: Due to recurring tonsillitis, or to recurring quinsies and abscess. (Erosion of vessels; adhesions.)

4. Innocent tumours: Lymphadenoma.

5. Malignant disease: Sarcoma; epithelioma; endothelioma.

General.—1. Blood states. (*a*) Congenital: Haemophilia. (*b*) Acquired: Purpura; temporary defective clotting due to infective diseases. Anaemias (especially secondary). (*d*) Leukaemia.
2. Blood vessel changes. (*a*) Arterio-sclerosis: Syphilis; nephritis; alcoholism; athletics. (*b*) Aneurysm: Internal carotid; external carotid; tonsil vessels (erosion of walls due to abscess).
3. Other conditions. (*a*) Exophthalmic goitre. (*b*) Heart disease.

Contraindications to Operation.

1. Tonsils. (*a*) Acute inflammation and quinsy. (*b*) Ulceration (erosion of vessels). (*c*) Malignant disease.
2. Vessels in tonsil region. (*a*) Pulsating and tortuous ascending pharyngeal, internal carotid, external carotid. (*b*) Aneurysm (of same vessels). (*c*) Angioma of fauces.
3. Blood states (affecting coagulability of the blood). (*a*) Haemophilia. (*b*) Purpura. (*c*) Anaemias. (*d*) Soon after infectious fevers. (Temporary.)
4. Physiological changes related to blood loss. (*a*) Menstruation. (*b*) Menopause. (Temporary.)
5. Other diseases (affecting tissues of vessel walls and vasomotor control). (*a*) Renal disease. (*b*) Cardiac disease. (*c*) Alcoholism. (*d*) Syphilis. (*e*) Thyroid gland toxin. (*f*) Suprarenal gland toxin. (*g*) Pituitary gland toxin.

Prophylactic Measures.

1. In children: Exclude haemophilia—if present, treat. In adults: Exclude diseases mentioned above—if present, treat.
2. Increase coagulability of the blood: Calcium lactate (? useless); horse serum; human blood serum; haemoplastin; coagulose; coagulin Kocher Fonio; pituitrin.
3. Increase constriction of vessels in arrest of haemorrhage. (*a*) Adrenaline. (*b*) Pituitrin.

Age.

The influence of this factor is generally admitted, profuse haemorrhage being much more frequent in adults than in children, due to (*a*) increased vascularity, (*b*) fixation of vessel wall (fibrosis), (*c*) disease of vessel wall and increased blood pressure (arterio-sclerosis), and (*d*) conditions which impair: coagulability of the blood temporarily.

Sex.

It is commonly stated that males are more prone to alarming haemorrhages than females. Some writers, such as Lee Cohen,[3] disagree with this view. If one enumerates the cases of dangerous bleeding reported in the literature prior to 1900, males are largely in the majority; but statistics based upon these records are liable to be fallacious, because haemorrhages in males were then more readily reported than others, the presumption being that they were haemophiliacs, and no blame could be attached to faulty technique and other causes. Damianos[4] and Herman,[5] who in 1902 collected records of 150 cases published during the previous sixty years, all of which were alleged to be haemophilia, found on analysis that only 7 were true haemophiliacs and that the bleeding in the remaining 143 was due to a spurting vessel in the wound.

Haemophilia being a rare disease, most recent observers regard the haemorrhage in the above cases as being surgical. Apart from haemophilia, in my opinion sex has no influence up to the age of puberty. Beyond this period females are prone to anaemias and blood changes likely to impair the normal arrest of haemorrhage. Beyond the age of 20, and especially in the fourth decade, males are more prone to diseases of blood vessels associated with alcoholism, nephritis, athletics, and syphilis.

Short-necked, florid patients are usually more full-blooded and bleeding is freer, due to increased vascularity.

Menstruation.

This has a definite influence. Several cases have been reported and referred to by various writers—Cocks,[6] Hill,[7] Irwin Moore,[8] Dunbar Roy (case of adenoids),[9] and others. I had a case six months ago in an otherwise healthy female. She was sent up from the country urgently for operation, without previous consultation, because she wanted to be well for some social event. The actual date of the catamenia and the week preceding it are the danger times for surgical interference; the week following cessation is quite safe. It is usually stated that the surgical haemorrhage may act vicariously for the menstrual period, but this does not explain the phenomenon. A possible explanation is a temporary diminished coagulability of the blood approaching the menstrual time, but many well known authors on gynaecology and obstetrics whose works I consulted do not touch this point. It is a fact that coagulability increases after loss of blood, and possibly a fall in blood pressure, and this may account for the comparative safety of the post-menstrual period. In regard to the menopause the same remarks apply. Early pregnancy is mentioned by Cocks.[10] I have no experience of its effect. Very large tonsil presupposes large nutrient vessels. Such cases often do bleed excessively.

Abnormal Vessels: Concealed Type.

A large calibre vessel may enter the tonsil direct, without first subdividing, which is the usual practice. Rapid loss of blood constitutes the chief danger to life in haemorrhage, hence the importance of the large source of bleeding, such as a large vessel or aneurysm. The loss of 1 lb. of blood in one hour is more serious than that of 4 lb. in twenty-four hours.

Visible Type.

1. Arterial. Tortuous and pulsating ascending pharyngeal, internal carotid, external carotid.
2. Venous and large superficial veins.
3. Angiomata.

Several cases of tortuosity with visible pulsation have been observed, which involved the ascending pharyngeal, internal and external carotid arteries, the loops of these tortuous vessels encroaching upon the field of operation; Skillern,[11] Brown Kelly,[12] Sachs,[13] Hulke,[14] Thompson.[15]

Demme[16] records that for ten years he examined 10,000 cases, at the request of Waldeyer and Franckel, for pulsation in the region of the pharynx, and found it in 200 cases, or 2 per cent., which sounds very alarming. The pulsation seen in these cases is not conclusive evidence that abnormal or unusually large vessels were present in all of them, as pulsation is easily elicited in thin, spare people, by transmission, if the tissues overlying large arteries are crowded on to the latter.

Extra large superficial veins rarely cause unusual bleeding. Angiomata would provide a source of large sudden loss, and therefore should be dealt with before operating on the tonsils.

Inflammation causes greater vascularity, and this predisposes to increased haemorrhage and possibly to defective clotting control. Ulceration, if sufficiently deep to produce changes in the vessel walls, will impair contraction and retraction.

Fibrosis in Tonsils.—This is due to involution, inflammation, or suppuration. Changes produced inside the tonsillar capsule on the arterioles of the gland have no effect on the haemorrhage of tonsillectomy, but increases that of tonsillotomy. The capsule in such cases is often firmly adherent to its bed, especially on the outer aspect, anteriorly, below the level of the large crypt, and these adhesions prevent the contraction and retraction of cut vessels by fixation of their sheaths. A cleanly cut vessel so fixed is liable to slip its clot on any increase in blood pressure, and would therefore be a source of secondary haemorrhage.

Suppuration.—This has at times caused erosion of tonsillar and extratonsillar vessels and severe haemorrhage, spontaneously, and also on opening the abscess. Somers,[17] Jenkins,[18] Hammond and Lord,[19] Newcomb[20] collected details of 51 such cases, 28 of which proved fatal. Partial erosion would also lead to changes in the vessels which predispose to defective arrest of bleeding in a subsequent operation. It is also conceivable that such an erosion may produce an undiscovered aneurysmal enlargement in a tonsillar vessel, comparable to that seen in pneumonic tuberculous cavities, which would prove a source of alarming haemorrhage during an operation. So far as I can ascertain no case of this type has been recorded, but it is possible that severe spontaneous haemorrhage following tonsil abscess, as in the case of Somers,[21] and some of those mentioned by Newcomb,[22] were of this nature.

Innocent tumours of tonsils, by reason of increased vascularity, cause excessive bleeding (Sewell[23]), while malignant disease does the same to a still greater extent.

Haemophilia should be diagnosed only when the individual has had repeated attacks of bleeding, if not from birth, from infancy. Coagulation time may be delayed to forty or sixty minutes, in proportion to the severity of the case.[24] In a normal individual the loss of blood increases the coagulability to a certain degree.[25]

Purpura is often a symptom of toxic blood states which appear to impair coagulation. Temporary changes similar to those of haemophilia are stated to be brought about by such diseases as typhoid fever, diphtheria, and erysipelas (Chevalier Jackson[26]).

Primary anaemia (chlorosis) is not a cause of excessive bleeding, but secondary anaemias are.

Arterio-sclerosis, causing changes in the vessel walls, is often associated with increased blood pressure and secondary anaemia, due to the original disease, all of which predispose to excessive bleeding.

Aneurysm in tonsil area is rare, but cases have been recorded. Bleeding from such a source would probably be quickly fatal.

Exophthalmic Goitre.—Some writers (Sewell) give this condition as conducive to excessive bleeding. This is not my experience. I operated on two cases this year for tonsils in adults, which gave only an average loss of blood. In 1912 I operated on a female aged 25, anaemic, who had a large parenchymatous goitre. She bled excessively, but as there were other factors such as tonsil fibrosis, very large tonsils, and a sharp guillotine, it is difficult to say how much depended on the influence of the goitre.

Suprarenal and Pituitary Disease.—I have not been able to trace records of operations done in the presence of these conditions, but as both glands are intimately related to blood vessel control and coagulation I should anticipate a possible adverse influence.

Heart Disease.—This is included by Hill [7] and Moore [8] in the list of predisposing factors, but I am not convinced that it is the rule. I operated last year on three cases with combined mitral and aortic valvular lesions in adults, the bleeding being quite normal.

Contraindications to Operation.

These are already set forth and dealt with in detail on subsequent pages. No operation should be undertaken during active inflammation, suppuration, or ulceration, nor until at least two to three weeks after complete subsidence of either condition. Aneurysm is a permanent contraindication. Abnormal tortuous arteries, if the tonsil is not involved in the loop, need not prevent operation, should the latter be important to the health of the patient, but the responsibility of the surgeon is greatly increased. Of haemophilia I have no personal experience. Osler [29] advises the avoidance of all sorts of operation, but some surgeons have successfully surmounted the difficulty by preliminary treatment to increase coagulability of the blood and by taking marked precautions to control any surgical bleeding during operation (Hill,[30] Graham [31]); other blood states contraindicate only temporarily. To menstruation and the menopause the same remark applies. Renal and cardiac diseases and alcoholism do not contraindicate permanently, but may do so temporarily, though they point to the need for special operative precautions against undue bleeding.

Prophylactic Measures.

1. Calcium lactate. There is considerable diversity of opinion about the effect of this salt upon coagulation time, but many practical surgeons still use it. (Lee Cohen,[32])

2. Horse serum in doses of 10–25 c.cm. thrice daily by the mouth for from three to eight weeks reduces the coagulation time, in Hill's [33] case from five and a half minutes to two and a half minutes, and Graham's [34] from fifteen to under five minutes. Hurd [35] used horse serum and coagulose without effect in a case of excessive bleeding after tonsil dissection.

3. Human blood serum. Forbes [36] used this in treatment of active haemorrhage, Goldstein [37] as a prophylactic if coagulation time exceeds seven minutes. The blood is drawn into a test tube and allowed to clot, then serum is decanted. This is best from a relative of the patient —10–15 c.cm. is given intravenously or 20–40 c.cm. subcutaneously; the chief objection is the danger of transmitting syphilis, and hence need for a Wassermann test.

4. Haemoplastin is of equine and bovine origin. My colleague, Kisch, has given it an extended trial as a routine prophylactic measure in nose and throat operations, and is pleased with the results. He gives 1 c.cm. subcutaneously fifteen minutes before and also at end of operation.

5. Coagulose is a dried serum and is commonly used for local application; 0.65 gram dissolved in 8–10 c.cm. of sterile distilled water can be used subcutaneously and intramuscularly. It assists clot formation. Coagulin (Kocher-Fonia) can be used like coagulose.

6. Adrenaline and pituitrin are vasomotor constrictors, raising the blood pressure and therefore interfering with fixation of clot. They are inactive by the mouth (Miller [38]). Pituitrin reduces coagulation time by one-half (Kahn and Gordon [39]), and its action begins in fifteen minutes and lasts for twenty-four hours. It is given hypodermically in 12 minim doses to children and 15 to adults fifteen minutes before operation.

As Weil [40] has pointed out, serums have a prophylactic value in reducing coagulation time, their action beginning twenty-four to forty-eight hours after injection and lasting two to three months. Intravenously they act best, next intramuscularly, then subcutaneously. By mouth and rectum their action is not so certain. The ideal method of using such measures as these in a case where conditions predisposing to excessive haemorrhage are present is the following: Give two doses of horse serum or haemoplastin at intervals of forty-eight hours hypodermically, the last being two days before the operation, and just prior to the latter procedure—say half an hour—inject similarly 15 minims of pituitrin. The coagulation effect of both preparations and the vaso-constrictor action of the latter are thus obtained.

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THE INFLUENCE OF OPERATIVE AND ANAESTHETIC TECHNIQUE UPON SERIOUS HAEMORRHAGE IN OPERATIONS ON THE TONSILS.

BY

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THERE are many surgical operations which are or have been practised for the removal of simple hypertrophy and diseased conditions of the tonsil, and as far as I know any one of them may be followed by serious post-operative haemorrhage. To discuss the technique of all these methods in their relation to such a complication would demand far more time than is at my disposal, and it would have little practical value, because the great majority of expert laryngologists in this country aim at the complete removal of the tonsil within its capsule. This being so we may divide operators into two classes—namely, those who enucleate with the guillotine and those who prefer the method of dissection. Therefore, the question we have to answer is: In what way does the technique employed in each method favour or hinder such haemorrhage?

Enucleation by the guillotine came into vogue about 1911 owing to its successful employment as a routine method by Whillis and Pybus of this city (Newcastle-on-Tyne). Sluder (U.S.A.) published a description of his technique in 1913. From 1911 to 1915–16 I employed the various types of guillotine which bulked so largely in the instrument makers' catalogues. Each new instrument was

extolled by its inventor as fool-proof, especially with regard to the question of haemorrhage, but experience did not confirm these assertions, and it was not long before I sold out my stock to less experienced friends at a 50 per cent. loss and found my old blunt edged Morell Mackenzie guillotine better than any of the later models which had been foisted on me. From 1915–16 to the present time I have employed the dissection method only, and follow a technique slightly modified from that advocated by Waugh in the *Lancet* of 1908.

Two reasons led me to discard the guillotine: (1) Enucleation by dissection seemed to me to be a better surgical procedure, and it is suitable for all cases; (2) the bleeding at the time of operation is less and more easily controlled, while serious post-operative haemorrhage has almost entirely vanished from my practice since I discarded the guillotine. The question as to whether dissection is a better surgical procedure than enucleation with the guillotine is not within the limits of discussion, so we must turn to the second point—namely, which is the better method from the point of view of post-operative haemorrhage?

In an endeavour to answer this question my conclusions will be drawn from an experience of more than 1,000 cases of enucleation in private practice. From 1911 to 1915–16 I employed the guillotine in some 500 cases, but, unfortunately, I kept no records with regard to serious post-operative haemorrhage. From 1915–16 to the present moment I have careful notes of 670 consecutive patients on whom the dissection method was employed. This series includes patients of all ages from 2 to 67 years of age, and amongst these were two males who weighed 17 and 18½ stone respectively.

My reason for excluding hospital patients is because there is so much divided responsibility in the preparation, administration of anaesthesia, nursing, and after-care of the patients. What is everybody's business is nobody's business. Nevertheless, it is not without significance that, when last week I asked my chief assistant in the hospital, "Have we had any cases of post-operative bleeding lately?" he replied, "We have had none since I have been here; one never gets haemorrhage if the arteries are tied." This was his opinion after six months' work in the in-patient and out-patient departments of University College Hospital.

My experience derived from this large series of consecutive cases of enucleation by both methods—they number nearly 1,200—leaves me in no shadow of doubt as to the advantages of dissection over the guillotine from whatever aspect of the question it may be viewed, and particularly with regard to the question of post-operative haemorrhage. If rumour were true my contention would be strengthened. We cannot altogether disregard the statement of the sisters and nurses in the nursing homes; when one is told they dread Mr. A.'s or Mr. B.'s tonsil cases "because so many of them bleed afterwards," one almost invariably finds after questioning that the guillotine operation was employed.

Before a meeting of experts such as this it would be a waste of valuable time to describe in detail the technique of either operation, but from the point of view of the immediate bleeding, or of the chances of serious post-operative haemorrhage, there is one outstanding difference between the methods which cannot be gainsaid.

When the guillotine is used the blood vessels are divided more or less sharply in a transverse direction as they enter the capsule, while in dissection they are peeled off and left with torn or shredded ends. In the first instance bleeding is free and the cut vessel difficult to secure, especially if it be surrounded by fibrous tissue resulting from chronic inflammatory changes. On the contrary, when the vessel is peeled from its surroundings the elastic tissue in the artery wall tends to contract and retract the bleeding point, while at the same time it is far easier to secure it in pressure forceps. Need I remind you that when a man's arm is cut clean off—for instance, by a chaff cutter—he almost always dies immediately from haemorrhage, but if the arm is caught in the machinery and torn off he will frequently recover, because Nature employs her elastic tissue to contract and twist up the bleeding arteries.

In my opinion it is owing to this physiological fact that I am able to report that in 670 consecutive cases of enucleation by dissection I have only had to return to 4 of them (about 5/8 per cent.) in order to check serious post-operative haemorrhage. [illegible] my memory may be depended on, at least 4 to 5 per cent. demanded measures for checking such a complication.

In children up to the age of puberty this natural tendency of a peeled-off artery to contract may be assisted by pressure continued for two minutes. For this purpose a firm plug of dry sterilized wool should be held in the points of a pair of long dissecting forceps and pressed into the empty tonsillar recess. To make assurance doubly sure, the tonsillar branch of the descending palatine artery may be ligatured, and I do this in a large majority of my patients, and without exception in those who, living at a distance, would not be within easy reach in case of necessity.

It is not difficult to see the vessel nor to recognize its position and apply artery forceps when the upper pole of the tonsil has been freed from its recess. After the remainder of the tonsil and its lingual extension has been dissected out, a ligature of sterilized thread or silk should be applied to the artery. A pad of sterilized wool is now placed in the tonsillar fossa, and the second tonsil is dealt with in a similar manner to the first.

May I offer you a technical "tip" with regard to the removal of the main portion of the tonsil? When the upper pole has been freed from its connexions the remainder of the gland will be most easily peeled from its bed by gently forcing downwards a small piece of dry sterilized gauze between the capsule and the surrounding tissues. The lower fibrous attachment or the lingual extension of the tonsil, as the case may be, should then be clamped with forceps and cut through on its medial aspect. Under no circumstances should the patient be allowed to leave the table until the tonsillar recesses are dry, and even the slow filling of these with blood I regard as an indication that further attention is necessary.

At this point I will make a dogmatic statement: "If the tonsillar branch of the posterior palatine artery be ligatured or securely crushed by forceps, and the patient leaves the table with the tonsillar recesses dry, there will be no serious post-operative haemorrhage." It will occasionally happen that in adults with fibrous and adherent tonsils it may be necessary to ligature one or even two additional vessels, especially in the lower and external wall of the recess near the base of the tongue.

I do not share the view that it is difficult to tie these vessels without special instruments, because if the artery forceps be gently tilted forwards and towards the middle line, the loop of ligature can be carried down in a long pair of dissecting forceps and passed round the bleeding point. A well known anaesthetist has probably shown many of my London colleagues the method which I employ for this purpose. It has proved so satisfactory in my hands that I have never yet had occasion to sew the faucial pillars together, nor do I possess any of the numerous instruments which have been invented for preventing post-operative tonsillar hæmorrhage. Incidentally, I have never used any of the prophylactic measures mentioned in Mr. O'Malley's paper.

To tie the bleeding point is an elementary principle in surgery, whereas to sew it up in the surrounding tissues seems to me to be in the nature of a surgical offence. Nor do I sympathize with those who pass a needle deeply to the bleeding point and ligature it with a quantity of the investing muscular tissue, because if sloughing occurs we may produce the very complication we seek to prevent.

It is not a fact that the time taken in enucleation by dissection is longer than that required for the guillotine, provided we are agreed that the patient does not leave the table before all bleeding has ceased. Certainly the actual removal of the tonsil is quicker with the guillotine, but my contention is that the bleeding will take longer to control, so that what we make on the swing we lose on the roundabout. On the morning of July 6th I enucleated the tonsils and removed the adenoids of two children. Dr. Rood and I entered the nursing home at 8.45 and left it at 9.25. Could the guillotine operator be more expeditious?

Position of the Patient.

In the thousand or more cases which form the basis of this communication every one of them has been operated on with a sandbag under the shoulders so that the head can be fully extended. In this position no blood can enter the stomach nor the lower air passages.

It is very important to train nurses as to the position in which the patient should be placed when returned to bed.

It should be the position of rest, lying on one side with the head slightly extended, the uppermost leg well flexed at the hip and knee, and the arm tucked into the chest in such a way that the uppermost shoulder is propped up and the chest given free play for normal respiratory movements. No pillow should be provided until the patient has fully recovered the pharyngeal and laryngeal reflexes. By such means we provide a free airway and free respiratory movements, conditions the value of which cannot be over-estimated in their tendency to prevent congestion which favours post-operative haemorrhage.

Some months ago I was suddenly called into the ward to see a patient who had been returned from the theatre some five minutes previously. She was nearly asphyxiated, and simply because the nurse in charge had allowed the patient's head to become so strongly flexed that breathing was impossible.

Anaesthesia.

I have ceased to use local anaesthesia for enucleation of the tonsils. It is possible to abolish pain and to produce an artificial anaemia by the addition of adrenaline to the novocain or eucaine. But retching is not always abolished and it hampers good work, while there is always a possibility of post-operative bleeding when the influence of the adrenaline wears off. In nearly all my cases ether is given by the open method until the throat reflexes are abolished, and chloroform is then administered through a Junker's apparatus during the actual manipulations of the operation. If the ether is preceded by a hypodermic injection of atropine (1/100 gr.) given forty-five minutes before the operation there will be no profuse secretion of mucus, and the patient preserves a healthy pink colour.

Ether is a stimulant and increases the general bleeding, but this occurs at the time of the operation when the surgeon is at hand and is prepared to stop it; as the patient recovers from the anaesthetic the tendency to haemorrhage from over-stimulation diminishes. On the other hand, chloroform is a depressant, and while there is less bleeding during the operation (as compared with ether) this tends to increase as the anaesthetic wears off and the blood pressure rises. If bleeding now occurs the surgeon may not be within reach. Furthermore, we never know when the chloroform is going to claim an unexpected victim.

SURGICAL REMOVAL OF THE TONSILS:

LOCAL METHODS OF ARRESTING SERIOUS HAEMORRHAGE FROM THE TONSILLAR BED.

BY

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IN response to the invitation to contribute a paper at this meeting on local methods of controlling haemorrhage during removal of the tonsils, I will endeavour to place before you not only my own personal experience but also that of other operators as recorded in the extensive literature on the subject.

Excessive haemorrhage after removal of the tonsils, though apparently more frequent during recent years—since the necessity for complete enucleation in a considerable number of cases has been recognized—is rare in proportion to the large number of tonsils removed. Though exceptional, it is met with sufficiently often to merit serious attention. One writer remarks that "the removal of tonsils thoroughly performed is usually unattended by untoward results, still it is not entirely free from alarming, sometimes dangerous, haemorrhage, and although this appears to be the exception it should not be ignored, and the surgeon must always be prepared both mentally and manually to cope with a haemorrhage that may unexpectedly occur." The following classification of haemorrhage is that suggested by William Hill:

[illegible] the most common form, occurring during operation and continuing after excision is effected.

[illegible] secondary or reactionary, or, as unhappily called by [illegible] delayed haemorrhage, occurring within a few hours of cessation of the primary operative bleeding, usually five or six hours after operation. This is the type we frequently have to deal with in guillotine operations, in which the initial bleeding has apparently ceased at the time of operation, but has really continued and been overlooked.

Recurrent secondary haemorrhage; several attacks during the first few days—uncommon.

Late or true secondary haemorrhage several attacks occurring from the fourth to the seventh day—is due to separation of sloughs, and is very rare. I have only seen one such case, in the hands of a colleague.

It has been shown that swabbing the tonsillar bed with astringents and haemostatics such as liquor ferri per chloridi, styptic colloid, turpentine, hamamelis, "hazeline," adrenaline, paste of gallic and tannic acid, etc., whilst applicable to mild cases, cannot be depended upon in cases of excessive bleeding, the few cases reported in which they have been serviceable being undoubtedly due to the accompanying pressure, and valuable time should not be lost trying these remedies. Adrenaline increases the tendency to post-operative reactionary or secondary haemorrhage by preventing a strong clot forming in the terminal capillaries.

Though haemorrhage may at times be exceedingly troublesome, there is no reason why it should cause anxiety, or reach the stage that is exhausting to the patient, or dangerous to life, if we keep in mind that it can easily be controlled by proper surgical measures. Haemorrhage from the tonsillar bed should be treated like haemorrhage in any other part of the body. It does not matter whether the bleeding is arterial from a spurting vessel, venous bleeding, or capillary oozing from a large surface, if spontaneous stoppage does not occur, then, as in haemorrhage elsewhere, the really efficient and only certain method of checking it is compression or ligature.

INCOMPLETE TONSILLECTOMY—SO-CALLED TONSILLOTOMY—AND COMPLETE TONSILLECTOMY CARRIED OUT WITH THE GUILLOTINE UNDER SHORT ANAESTHESIA.

This operation is generally carried out with the patient lying in the recumbent posture with the head partially extended on the neck. Some operators prefer the head in the lateral position.

The Treatment of Haemorrhage at the Time of Operation.

Haemorrhage may be brisk at first for a few seconds, but it generally ceases spontaneously in from three to five minutes, especially in children. Any free bleeding should be controlled by sponge or swab pressure, and the patient's head, if lying on the back, should be turned over to the side so that any blood in the pharynx may run out of the corner of the mouth.

The free use of ice or iced water at this time is very efficacious in controlling moderate bleeding following enucleation under short anaesthesia, and ensuring spontaneous stoppage by quickly exciting vasomotor contraction of the muscular coat of the vessels, but it is of very little use, if any, in excessive late haemorrhage.

The Treatment of Haemorrhage occurring after Operation.

As previously stated, a reactionary haemorrhage may be a continuation of a primary haemorrhage. If it occurs after the primary bleeding at the operation has ceased, it generally comes on between three and six hours, though severe cases of secondary haemorrhage, due to separation of sloughs, have been reported in which even twelve days have elapsed, but these are rare. In case the bleeding does not stop at the time of operation, or, having stopped, recurs later, the pharynx should be thoroughly inspected by means of an efficient head-light, and the tonsillar region cleared of blood by sponging, and steps taken for its control either by continuous sponge pressure, the ligaturing of vessels or bleeding areas, or the temporary suturing of the faucial pillars.

The most serious type of reactionary bleeding, which may lead to extreme exhaustion or death, is a slow persistent oozing from the entire surface of the wound, the blood being swallowed by the patient. In these cases very little blood may be seen on inspection of the throat, but the patient has recurring attacks of vomiting of large quantities of blood from the stomach. With this type of case a large clot is apt to form in the bed left by removal of the tonsil, which keeps the vessels from undergoing retraction. A portion of the clot may hang down the side of the pharynx like a wick, and not only keep up the bleeding, but also cause irritation, coughing, and expectoration, which increases the haemorrhage. It is important when such a clot forms to remove it, for it generally accompanies and covers extensive capillary oozing. I have

seen, in consultation with my colleagues, a number of cases in which the bleeding promptly stopped after removal of the clot. This clotting must not be confused with the normal clotting of blood in the severed vessels. With reactionary haemorrhage a much larger total loss may occur, and these are the most serious cases. The loss of a pint of blood may cause much more pronounced effects in one individual than in another of the same age, sex, and general condition. Infants and young children bear any loss badly, and a relatively small loss may be fatal. As we should expect, the deaths from haemorrhage following these operations are most common in the young.

If the bleeding is general and cannot be specially localized, the firm pressure of a sponge under the thumb in the tonsillar bed, with the corresponding finger below the angle of the jaw, or on the vessels of the neck, and kept in position for ten or fifteen minutes, generally suffices to stop the bleeding. A haemostat is recommended by some operators, so as to exert pressure on the tonsillar wound, the most convenient for this purpose being the one designed by Watson-Williams. The chief objection, however, to a clamp is that it causes great discomfort and distress to the patient and gives rise to constant coughing and straining, which may start bleeding from the opposite tonsillar bed. The haemostat has been described as an old-fashioned and non-surgical method of controlling haemorrhage. Harmon Smith reports one case in which the haemostat was kept in position for sixteen hours with no recurrence of bleeding, and another in which bleeding recurred after the haemostat had been in position for twenty-one hours, necessitating its replacement, when it was left on for forty-seven hours, resulting in sloughing in the throat and necrosis of the tissues. He says considerable oedema of the cervical region may result.

If haemorrhage occurs from a spurting vessel, and if the bleeding point can be seen, it should be seized with long-handled artery forceps and the vessel ligatured. When the bleeding points are concealed under the faucial pillars they are best found by retracting the anterior pillar with forceps or hook. One of the chief sources of haemorrhage is the tonsillar branch of the descending palatine in the dome-shaped upper part of the tonsillar bed. It is best found by drawing up the supratonsillar margin of the palate.

The Dissection Method of Complete Tonsillectomy under Prolonged Anaesthesia.

The question of greater liability to haemorrhage by this method compared with partial removal need not be considered in view of the fact, which is readily admitted, that in removal by dissection, if properly carried out, bleeding can be more easily or completely controlled.

A similar posture to that employed in a low tracheotomy or thyro-fissure is recommended. It is the posture employed by many of my colleagues. (Fig. 1.)



Fig. 1.—The recumbent posture.

The patient is placed in the recumbent position with the shoulders raised on a sandbag and the head lowered and well extended on the neck. This brings the chin, middle line of the neck, and sternum almost in a direct line. The trachea slants downwards towards the post-nasal space, and the hard palate becomes almost horizontal with the table; the tongue is drawn forward from the mouth by a tongue clip. The operator sits or stands at the head of the table. Any blood from the tonsillar region passes into the post-nasal space or pools in the concavity of the hard palate, and can easily be seen and removed with swabs. A free respiratory passage is assured, and the inspiration of blood made impossible.

Some operators prefer the lateral position, and stand on the right hand side of the patient. In this position blood flows into the dependent cheek and out of the mouth. This posture, however, in my opinion, is not as convenient or safe as the former position.

Treatment of Haemorrhage at the Time of Operation.

In a few cases bleeding may retard or temporarily embarrass the operator; when it occurs during the dissection it is generally of an oozing character and may be controlled or checked by means of a cotton-wool or gauze swab placed between the partially separated tonsil and the tonsillar bed. It may be necessary to apply a fresh dry swab from time to time during the dissection. If a spurting or bleeding vessel is encountered during the dissection, pressure forceps should be applied at once and the vessel ligatured.

Treatment of Haemorrhage Immediately Following the Operation.

After removal of the first tonsil, if there is still bleeding, the tonsillar bed should be packed with a gauze swab and firm pressure applied with the finger. If, a few minutes later on removal of the swab, there is only a slight oozing, a fresh, dry swab is again placed in the tonsillar bed and removal of the second tonsil commenced.

After removal of the second tonsil, swab pressure is again applied to both tonsillar beds until they are quite dry. If, however, much bleeding continues and no special bleeding point can be observed, the bleeding area or areas should be at once seized with pressure forceps and ligatures applied.

It is one of the golden rules of the present day method of removal of the tonsils that the patient is not removed from the table until all bleeding points or oozing have been stopped and the throat is practically dry.

The Ligaturing of Bleeding Vessels or Areas.

To enable this to be carried out easily, the anaesthetic must be continued or the patient again anaesthetized. A full and direct view is obtained by the posture previously described and the employment of a tongue spatula to the base of the tongue further assists in exposing the lower poles of the tonsillar beds.

Any spurting or bleeding vessels can be picked up and securely ligatured. When no bleeding vessel can be seen but only a small bleeding muscular area, this can likewise be seized by forceps and ligatured. The ligaturing of bleeding areas may be readily achieved and the slipping of ligatures prevented by passing a needle (by a method described later) with a ligature through the musculature of the tonsillar bed, thus surrounding the bleeding area (Fig. 2). A careful search, however, generally reveals a bleeding point.

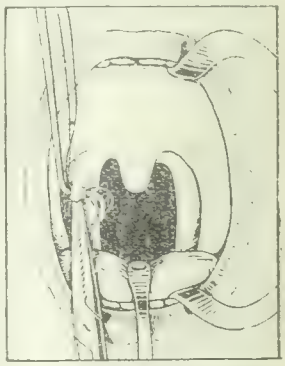


Fig. 2.—Ligaturing of bleeding vessels or areas.

In the event of failure of ligature to stop the bleeding or in cases in which oozing is of a general character and difficult to locate, it may be advisable to temporarily suture the faucial pillars. This procedure, if properly carried out, is a sure preventive of secondary haemorrhage, especially in adults of plethoric disposition.

Temporary Suturing of the Faucial Pillars.

This procedure, which is simply a form of prolonged compression, has generally been looked upon and described as an operation of considerable difficulty. It is, however, much more simple than is generally supposed, provided the proper instruments are used and the patient is placed in the recumbent-extended-head posture already described, the operator sitting or standing at the head of the patient. Or the recumbent posture may be employed with the head half turned to the right side whilst the operator stands

on the right side of the patient. A general anaesthetic is absolutely necessary with children, though occasionally in a courageous adult local anaesthesia may prove sufficient.

The instrument I recommend is really a half-circular needle with the eye close to the point, and set at a definite angle to a slender shaft 3½ in. long attached to a flat handle 4 in. in length. This makes a very useful instrument 7¼ in. in length. The important points are the angle at which the needle is attached to the shaft and its attachment to the long flat handle, which enables it to be used without getting in the way of the lower jaw or the mouth-gag, while the gag need not be changed from the position in which it was originally placed on either side.

When the patient is in the recumbent-extended-head position, the needle, threaded with a catgut ligature 18 in. in length, should be passed by orientating the needle from before backwards, in the case of the right side, first through the anterior faucial pillar, and then through the posterior, about ¼ in. from their edges, whilst in the case of the left side the needle should be passed from behind forwards, first through the posterior and then through the anterior pillar (Fig. 3). If the patient is lying in the recumbent-lateral-head position the needle is passed in the opposite direction.

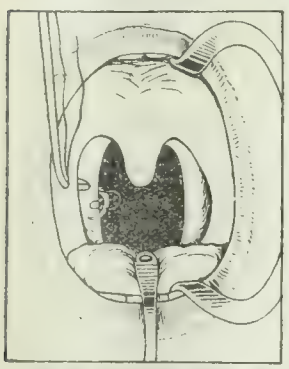


FIG. 3.—Temporary suturing of the faucial pillars.

After the needle has been passed through both pillars, the ligature is caught by the hook at the eye of the needle and drawn through and out of the mouth, while the needle is withdrawn in the opposite direction over the remainder of the ligature. The two ends of the ligature are then in the position for tying, and may be secured before tying by artery forceps, while a second or third ligature is passed in a similar way. The tonsillar bed may be then packed with a strip of 1 inch gauze by means of nasal dressing forceps, whilst each ligature is drawn together and tied by introducing the fingers deeply within the mouth. In most cases it is quite sufficient to draw the pillars together without packing the tonsillar fossa. The ligatures may be left undisturbed until they have been loosened by sloughing—if no gauze has been inserted in the fossa—but it is better that they should be removed in twelve hours to avoid the risk of retained sepsis, especially in those cases in which a gauze packing has been inserted in the tonsillar bed. The ligatures may be easily cut by means of a small pair of angular scissors, with immediate release of the faucial pillar.

Temporary suturing of the faucial pillar causes very little discomfort; adult patients complain of less pain than when the pillars are gaping and the tonsillar beds are exposed, and there is no more liability to adhesion between or contraction of the pillars if the ligatures are released the morning following the operation; contractions or the formation of fibrous adhesions may be prevented by the early exercise of the palato-glossal muscles. In those cases of incomplete tonsillectomy in which a portion of the tonsil has been left behind and bleeding occurs the ligatures should be passed not only through the faucial pillars, but also deeply through the tonsil stump.

The Treatment of Reactionary or Secondary Haemorrhage.

The continuation of a primary haemorrhage or the occurrence of a true secondary or reactionary haemorrhage is avoided or rendered unlikely by the ligaturing of vessels, or the suturing of the faucial pillars. If it does occur it is probably due to slipping of a ligature or to improper or careless suturing of the pillars, and indicates the necessity of again anaesthetizing the patient and searching for and ligaturing the bleeding point, or resuturing the pillars.

The risk of subsequent haemorrhage can be minimized by keeping in mind the predisposing and exciting causes, and by attention to the following precautions:

1. Those cases in which surgical procedures are contraindicated should be excluded or postponed. (See Irwin Moore: "The treatment of enlarged or diseased tonsils in cases where surgical procedures are contraindicated," *Journ. Laryngol. and Rhinol.*, October, 1919.) The only two cases of serious haemorrhage which I have had in my own personal experience belonged to this class, and were undoubtedly due to my own precautionary neglect.

2. Refusal to operate on any patient unless in hospital or nursing home should be insisted upon.

3. Careful attention must be given to the preparation of the patient for operation. The operation of tonsillectomy is still looked upon by many practitioners in too light a manner; consequently small consideration in some cases is paid to ordinary surgical procedures. In all cases there should be a period of preparation, and this is equally as important as for a more serious operation. It should not be forgotten that the general health of these patients is indifferent or bad, and that many are suffering from septic tonsils with toxic absorption and have poor resisting power.

The administration of a purgative two days prior to the operation, the prohibition of smoking and alcohol for at least three or four days, plain and light food for twenty-four hours, with nothing for four hours before operation, is indicated. Rest for twelve hours before operation conduces to a placid nervous system and consequently better vasomotor control.

The use of prophylactic measures, such as calcium lactate or horse serum, in those cases in which even moderate loss of blood is very undesirable, as in anaemias.

4. The co-operation of an expert anaesthetist is necessary. In no operation are the services of an expert anaesthetist of greater value, and the success of the operation and the question of haemorrhage may be in no small way dependent on his skill. A clear respiratory passage should be assured and an adequate intake of air maintained throughout the anaesthesia so as to avoid unnecessary congestion and increased blood pressure. In this connexion it is important that the tongue should not be allowed to fall backwards and obstruct the air passage. The passage of blood into the larynx or stomach during the operation, interfering with normal respiration and causing coughing and retching, should be prevented by posture and sponging.

The employment of open ether—or more correctly designated by William Hill the enclosed ether–open ether sequence—is the method of choice, preceded by an injection of atropine in all cases of enucleation by dissection, since it produces a deep, prolonged, but safe and non-congestive anaesthesia. It does not produce any more congestion or subsequent bleeding than chloroform. Apart from its effect in reducing mucous secretion, Waugh has confirmed from collected reports that atropine acts as a haemostatic. The deep and dangerous chloroform anaesthesia considered necessary by some operators for the dissection method of enucleation in order to reduce the bleeding during operation and obtain a bloodless field, increases the risk of reactionary or secondary haemorrhage, and is now, I trust, a thing of the past.

5. Selection of surgical procedures in which easy control of bleeding may be definitely secured at the time of operation, before the patient leaves the operating table. A dry tonsillar bed is what we must specially aim for. This is secured by the following means:

(*a*) Posture of the patient—a position which fully exposes the pharynx and facilitates the securing and ligaturing of vessels is necessary. This is best attained by the tracheotomic or thyrofissure position already described.

(*b*) Skilful operative technique must be employed so as to avoid damage to the faucial pillars and musculature of the tonsillar bed. The various opinions expressed by different operators as to the frequency or otherwise of post-operative haemorrhage appear to support the view that the amount of bleeding depends to no small extent on the technique of the operation and the skill of the operator. Removal, if improperly or incompletely performed, may result in damage to the muscular fibres of the faucial pillars or the superior constrictor of the pharynx with resulting bleeding from the contained vessels. Post-operative haemorrhage is frequently caused in this way.

(*c*) Encircling the surgical pedicle after completion of dissection. Blunt guillotines, dissectors, or snares must be employed for encircling, etc.

(*d*) All bleeding vessels or areas must be ligatured, and in addition in all adult cases the temporary suturing of the faucial pillars, as a preventive of secondary haemorrhage, is necessary.

6. There must be adequate post-operative supervision and care. Many haemorrhages occur owing to lack of attention to post-operative care. It is advisable therefore to keep constant observation for some time after operation. The patient should be placed in bed in the lateral position



FIG. 4.—The post-operative posture.

(Fig. 4), so that if oozing does occur the blood trickles into the cheek and out of the mouth, where it may be seen by the nurse, instead of into the stomach. Whilst the patient is recovering from the anaesthetic a cork or bobbin placed between the teeth is useful in keeping the mouth open and preventing swallowing. Expectoration should be prevented, for, according to one writer, it may cause the sucking of the clot from the end of a severed vessel, and so encourage persistent bleeding. If the patient is restless after recovering from the anaesthetic, sleep should be encouraged by an injection of morphine in doses of 1/12 to 1/8 in children and 1/6 to 1/4 in adults. This prevents vomiting and reduces the blood pressure.

If a child is allowed to lie on its back the blood may trickle into the stomach, and this may not be detected until the sudden vomiting of a large quantity of blood occurs, and the patient is found to be in a collapsed condition. If the patient looks pale, is restless, with irregular shallow sighing breathing and a rapid pulse, it is highly probable that bleeding is taking place. The nurse should therefore be instructed that her chief duty is to watch the movements of the larynx to see that the patient is not swallowing an appreciable quantity of blood.

Mr. Mark Hovell has recently reminded us of the fact that all enlargements of the tonsils do not necessarily require enucleation. Mr. Hovell also referred to the number of modern instruments designed for dealing with bleeding during tonsillectomy as an indication of the risks of the operation. These additions to, or improvements in, our instrumentarium indicate, in my opinion, that we, as specialists, are now thoroughly conversant with and prepared for such risks. Recent experience has shown that as a result of more careful and perfect operative technique we have reduced those risks to a negligible quantity. We are now not only able to prevent or control any bleeding which may occur during or after operations or treatments in either childhood or adult life, but also to remove into safety any septic tonsil or tonsillar stump left over from a previous incomplete operation. The stigma which has so long been attached to this operation owing to bad or imperfect technique should now be a thing of the past. I reciprocate most heartily the hope expressed by a recent writer that: "From now onwards there will be less indiscriminate operating and more skilful work done." This should constitute the keynote of our work.

PRACTICAL CONSIDERATIONS ON THE TREATMENT OF HAEMORRHAGE DURING AND AFTER OPERATIONS ON THE TONSILS.

BY

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HAEMORRHAGE which, if unchecked, will prove fatal, may result from tonsillectomy by any of the methods in vogue at the present time, and apart from fatality, a loss of blood sufficient to blanch the patient and to lead to a prolonged and tedious convalescence is surely to be regretted, particularly since we know that it can be avoided. In this, therefore, as in other surgical operations, it is the plain duty of the surgeon so to contrive as to reduce the loss of blood to the least possible quantity, and this can be done in the usual manner at the time of operation by seizing and ligaturing all bleeding points in the tonsil bed.

The bleeding should be controlled and the surgeon should see that the wounds in the throat are quite dry before the patient leaves the operating table. In other words, if a patient has a severe haemorrhage after tonsillectomy the surgeon is to blame. But while, as I have said, severe haemorrhage may attend any of the modern methods of removing the tonsil, there can be no doubt of this: that some methods lead to more haemorrhage, and are more liable to be followed by severe haemorrhage, than others. Enucleation of the tonsils in children, for example, by means of the guillotine, if a bluntish instrument be used, is seldom followed by serious bleeding, the amount lost averaging no more than six or eight ounces. Nevertheless, serious haemorrhage does sometimes surprise us in children even when a blunt guillotine is used.

In patients over 15 years of age, on the other hand, enucleation with the guillotine under a short anaesthesia has so often led to serious haemorrhage in my own private and hospital practice that I have abandoned the method. In adults the least amount of bleeding occurs when the tonsil is removed by blunt dissection under local anaesthesia, the snare being used to sever the final attachment at the lower pole of the gland. So much difference is there in the quantity of blood lost, and in the risk of serious haemorrhage, between local anaesthesia and general anaesthesia in this operation in adults, that the former may be classified as a minor operation in surgery, while the latter is decidedly major.

There are, however, many adult patients who will decline operation under local anaesthesia, and as local anaesthesia is unsuitable for children, the surgeon must be ready to operate by either method, and prepared to control whatever bleeding his operation produces. It may be, and it often is, difficult to bring haemorrhage during or after operation to a standstill, but I have not yet ever found it to be impossible. If we are operating with the guillotine the operation is so rapidly accomplished that any attempt at controlling the haemorrhage during the separation of the tonsils is, of course, out of the question. But during a blunt dissection, and especially during the relatively slow process of snaring, bleeding may be minimized by the simple act of holding the loosened tonsil in its bed until the severance is completed. After the removal of one tonsil the bleeding should be arrested before the second tonsil is attacked. (Obviously this rule is not applicable to rapid guillotine enucleation in children.)

It seems sometimes to be assumed that the usual variety of bleeding in the tonsil bed is from an artery. But this depends upon the anaesthetic and upon the position of the patient. All who have operated on adult patients under general anaesthesia, and in the recumbent position, will agree that the free haemorrhage characteristic of such operations is largely venous, just as it is in external dissections of cervical regions; they will also agree that it is often difficult to control by simple sponge pressure. In addition to that I have been forced on several occasions to ligature an area for the arrest of capillary haemorrhage, both during and after operation.

To detect in a large wound in a red mucous cavity the point or points from which blood is freely welling or spouting; to catch up these points deliberately one by one with pressure forceps until all have been brought under control; and finally to apply with slippery gloved fingers a ligature round each point, tying the ligatures with

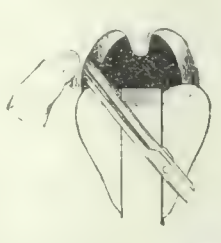


FIG. 1.—Exposing a bleeding point on the posteride aspect of the anterior pillar of the fauces.



FIG. 2.—Application of ligature to the bleeding point.

forceps in the depths of the pharynx, constitutes a series of steps both tedious and difficult to accomplish. The task, however, can be facilitated and abbreviated by practice, and in order to acquire skill and speed it is a good plan to make a rule of tying all, not only the major but also the minor points of bleeding.

The usual sites of such bleeding points are, in order of frequency, the posterior aspect of the anterior pillar of the fauces: the bed of the tonsil about its middle; the lower end of the wound on or near the tongue; and, most inaccessible spot of all, the upper pole of the wound under the hood of the soft palate. Spouting vessels are, generally speaking, easily seen and caught, although a cut artery in the anterior pillar, playing like a hose upon the bed of the tonsil, is apt to be mistaken for a vessel in that bed. But so frequently is a vessel in the pillar to blame that one may make it a rule, in any free haemorrhage, to catch this part up with the forceps before attending to any other possible source of bleeding. The pillar may be gently picked up with a long pair of dissecting forceps and turned round so as to expose its raw posterior surface and the bleeding point upon it. But this is not always necessary, for if we use a long, straight pair of pressure forceps and nip the raw posterior surface of the pillar, not with the point, but with the side of the forceps, pressing in the pillar between its jaws from in front with the forefinger of the disengaged hand, no exposure is required. The vessel is caught, and the amount of bleeding is at once materially reduced. It will be observed that the point of the forceps is free. The ligature is now passed round the shaft of the forceps, given one turn of the knot, and slid down by means of a pair of dissecting forceps over the free end of the pressure forceps, tightened, and finally tied. As ligature material I find silk much more easy to manipulate than catgut.



Pillar forceps with point free.

On the tonsil bed, if a bleeding point is seen, it may be seized like the artery on the anterior pillar with straight pressure forceps. But in this situation the point of the forceps almost invariably becomes engaged, and it is difficult—sometimes, indeed, it is impossible—to get a ligature tied beyond the point without pulling the forceps out so much as to tear them off the loose friable tissue. For that reason I frequently make use of an old-fashioned pair of tongue forceps for seizing the vessel, since it is easier to pass the ligature over their obtuse oval end. These forceps may also be used for bleeding points or areas near the tongue.

I cannot support the practice of suturing the faucial pillars for haemorrhage because I have seen the bleeding continue in spite of the suturing. I have not yet found it necessary to ligature either carotid, nor should that measure ever be blindly adopted. Arterial bleeding it will check; venous bleeding it will have no effect upon. In any case, ligature of the carotid is unnecessary if the bleeding points in the tonsil wound can be seized.

Post-operative Haemorrhage.

Without for a moment denying the occurrence of reactionary haemorrhage, I must say that when I have had a case of post-operative haemorrhage I have never felt able to throw off the self-reproach that the bleeding was not reactionary but only prolonged, and that it had arisen from my own oversight. This view of the question is, moreover, supported by the fact that the post-operative loss of even a few drachms of blood is now quite rare in my practice. Nevertheless, in spite of every care, post-operative—or, if you like, reactionary—haemorrhage will occasionally occur, so that we must be prepared to cope with it.

Post-operative haemorrhage from the tonsil wound is very often concealed haemorrhage, unless measures are adopted to prevent that concealment, and the first indication that the wound is bleeding consists in the vomiting by the patient of a large quantity of blood, little or not at all darkened by the gastric juices. This event should always be reported, and it should lead to an immediate inspection of the wound. If ignored, the vomiting will recur two or three times, and then the patient becomes faint and we have to deal with the effects of a severe haemorrhage. The fainting, as a matter of fact, often leads to a cessation of the flow; but all the same, this stage should never be reached. It is worth noting that if the patient is returned to bed with a dry throat he is seldom sick after the anaesthetic, and if he is the blood ejected is scanty and very dark. In order to prevent concealment of haemorrhage the patient, when he is returned to bed, should be laid on one side with the face semi-prone, in order that blood from the pharynx may gravitate into the mouth. This hint I owe to our President, Dr. William Hill, and I have found it of great value.

When haemorrhage is found to be in progress after operation immediate steps should be taken to check it. At the same time if the patient has become blanched and faint the general treatment for acute anaemia should be instituted. Under illumination by headlight or mirror the throat is examined. If one tonsil wound contains a clot, that is the culprit. If both contain clots then both are bleeding. The clot is removed by sponging, and search is made for the bleeding point or area. During these manipulations our work is facilitated by a Doyen's gag in the patient's mouth. Curiously enough the gag has a soothing and supporting influence upon a nervous patient.

If the bleeding point or points can be seen they should be picked up with pressure forceps as described above and ligatured. It suffices, no doubt, to leave the forceps on without any ligature for a couple of hours, but, for some reason I cannot understand, pressure by forceps is painful while the pressure of a ligature is painless, or, at all events, no complaint is made.

Should the bleeding point escape detection in spite of a close search, or, as frequently happens, should we fail to secure it with forceps or ligature, there is no need to prolong the attempt. Watson-Williams's clamp may be at once applied. In doing so it is important to see that the inner blade of the clamp, which should be well padded, is accurately apposed to the area containing the bleeding point, and that it is well sunk in the tonsil bed, as thereby retching and pharyngeal spasm are avoided. Children get quickly accustomed to the presence of the clamp, but in adults a small dose of morphine hypodermically hastens their reconciliation with the intruder.

The clamp may be removed in two or three hours, and it seldom requires to be reapplied, but it may be left on for as long as twelve hours if care be taken to relax it for a little from time to time and to shift the outer blade to fresh areas on the cheek. Otherwise the pressure may cause some reactionary pain and swelling. I should like to take this opportunity for expressing my gratitude to Dr. Watson-Williams for a very useful aid in time of trouble.

With regard to internal haemostatics I have never been able to satisfy myself as to the reliability of the calcium salts, but recently I have been trying haemoplastin and am inclined to regard it as helpful. It is, however, expensive.

My chief object in speaking to-day has been to urge the view that the removal of tonsils is a cervical dissection from within, and that the old rule in such dissections of arresting all haemorrhage at the operation, with forceps and ligatures if necessary, should invariably be followed.

LIGATURE OF THE EXTERNAL OR COMMON CAROTID VESSELS IN SERIOUS TONSILLAR HAEMORRHAGE.

BY

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THE question as to whether it is ever necessary to resort to ligature of the external or common carotid vessels in the neck, and whether such ligature is to be relied on, is one which is made more debatable by the exceeding rarity of the occasions arising for the employment of this manœuvre in cases of operations on the tonsils for hypertrophy or infection.

The occasions on which the necessity for ligature of the carotid artery may arise are:

1. Very severe haemorrhage arising in the fossa at the time of operation, which cannot be controlled by the means usually employed.

This form of haemorrhage is due to an abnormal position of the internal or external carotid artery or facial artery, so that a loop of the main artery runs into the tonsillar fossa and is severed during the operation.

2. Severe haemorrhage occurring during the first or second day after operation.

3. True secondary haemorrhage occurring during the sixth to the fourteenth day after the operation, which continues in spite of the more conservative methods of treatment.

Butlin, who classifies the bleeding after operation on the tonsils in this way, sums up the methods of treatment so admirably that I will, without apology, quote his opinion:

First. Should violent arterial haemorrhage immediately follow operation it may result in instant death. The only chance of saving life in such a case would seem to be to thrust the finger or swab forcibly into the hole left by the removal of the tonsil so as to arrest the haemorrhage, and to open up the neck from the outside and attempt to find the bleeding vessel.

Second. Haemorrhage may take place suddenly and violently some few days after operation, and may be repeated. In some cases the bleeding has stopped spontaneously, in others when the patient became faint. "I have never," he says, "found it necessary to adopt any surgical procedure in any case of this kind."

Third. In secondary haemorrhage, Butlin is against the ligature of the carotid artery. To sum up, he says: "I have made a careful study of the literature relating to such cases, particularly of those in which heroic measures have been adopted, with the conclusion that the only cases in which they were justifiable were those in which sudden and violent haemorrhage immediately followed the performance of the operation."

With regard to Butlin's statement that the bleeding points should be sought for in the neck, and the artery not be tied in continuity, the following two cases may be quoted in support of that view. The first case is one of severe haemorrhage immediately following operation on the tonsils and adenoids, the second a war wound of the neck which gave the same clinical picture as that of an uncontrollable haemorrhage from the tonsillar fossa.

CASE I.

This case has been previously reported by Harmer. A child was operated on for enlarged tonsils and adenoids at the Metropolitan Hospital. After the tonsils had been cut with the guillotine an attempt was made to remove a large pad of adenoids with Löwenberg's forceps. This caused violent haemorrhage. Pressure was applied. The child became blanched and pulseless, and the bleeding ceased. Mr. Harmer was sent for; on his arrival the girl, who had not bled in the interval, suddenly started bleeding furiously, and died in a few seconds.

A *post-mortem* examination was made, which showed that a loop of the internal carotid artery, which projected into the pharynx, had been completely severed, so that a segment of the artery had been removed by the forceps. The cut ends of the artery had immediately retracted.

In this case, which was a wound of the internal carotid artery, the cut ends had so far retracted that they could not be seized from the pharynx. Ligature of the common carotid or the proximal end of the internal carotid would not have controlled the haemorrhage, as the cut upper end would have continued to bleed owing to the free anastomosis with the opposite side through the circle of Willis. The only method of treatment in this case would have been to control the haemorrhage in the pharynx with pressure, either with a swab or the thumb, while an attempt was made to cut down upon the carotid artery and find and tie the bleeding points in the neck.

CASE II.

Though the haemorrhage in this case was due to a war wound and not to an operation on the tonsil, the clinical picture was similar enough to show that ligation of the external carotid in continuity below the wound is not sufficient to control the haemorrhage from the wound of the vessel above. I plead in extenuation for quoting this case the extreme rarity of the occasion arising in tonsil operations for ligation of the external carotid.

The patient, an adult, was wounded on the left side of the neck by a small splinter of shell, which had damaged the external carotid artery and had caused a small traumatic aneurysm of that artery. The entrance wound had dried and was clean, but the further progress of the shell fragment had caused a wound of the lateral pharyngeal wall, just behind the tonsil, which was in communication with the aneurysm, and through which blood continually leaked into the throat. Operation was therefore decided upon.

During the induction of anaesthesia the patient stopped breathing and air could not be forced in or out of the chest with artificial respiration. Tracheotomy was performed, when breathing recommenced, and on the patient's coughing a large blood clot was expelled from the larynx and lower pharynx, which had collected there during the induction of anaesthesia from the leaking aneurysm. The patient thereafter breathed quietly. An incision was made along the anterior border of the left sterno-mastoid muscle and the external carotid found and ligatured. The artery was then followed up and the aneurysm defined. In attempting to separate the aneurysm from the surrounding tissues the friable false coat of the aneurysm was torn; a furious bleeding occurred, which was apparently undiminished by the ligature of the vessel below. After some difficulty the artery above the aneurysm was found and ligated and the bleeding completely ceased. The wound was sutured and the patient made an uneventful recovery. This case simulates closely the wounding of the external carotid artery in removal of a tonsil, and shows the uselessness of mere proximal ligature of the vessel in such cases.

With regard to severe haemorrhage during the first or second day, if the haemorrhage is so severe that it cannot be controlled by some local method applied in the tonsil bed, the delay in getting the patient to the operating theatre and the induction of anaesthesia would probably prove fatal, as the success of ligature of the artery in the neck depends on immediate operation, while the bleeding is temporarily controlled by pressure in the tonsillar fossa. Hope of success is only possible when the patient is already anaesthetized in an operating theatre, with good light, the necessary instruments and assistance.

Turning now to the secondary haemorrhage, this is an occurrence which has happened to most of those who have performed operations upon the tonsil for a long period of time. It is surprising that with an open septic wound, or a septic cavity which is highly vascular, and which is never at rest, secondary haemorrhage is not more common. Let us not probe the mystery but be grateful.

Secondary haemorrhage from the tonsillar fossa is seldom very severe, but rather a steady ooze which is difficult to control owing to the friable nature of the septic tonsil bed and surrounding tissues. The collapse of the patient is out of all proportion to the amount of blood lost, and is due to sepsis. It is sepsis that we have to combat primarily. If the tonsillar fossa can be rendered less septic, the clots and sloughs removed, and pressure applied by some such method as ligature of the faucial pillars over a small plug of gauze, then if we can combat the local and general septic condition the bleeding will cease. Ligature of the carotid artery in continuity has been performed in such cases with little effect, the bleeding often continuing in spite of ligature. Lee Cohen, in the *Journal of the American Medical Association*, quotes a case in which he ligatured the common carotid artery in a case of severe secondary haemorrhage. The ligature of the vessel did not control the haemorrhage, and the patient died.

In patients suffering from the advanced sepsis which accompanies bad secondary haemorrhage it is unjustifiable to submit them to a severe surgical procedure which is of very doubtful value in stopping the bleeding, which will seriously militate against the recovery, and which may prove fatal.

To sum up, then, it would seem that the correct procedure to adopt in cases of immediate, very severe haemorrhage, uncontrollable in the tonsillar fossa, is the temporary arrest of the haemorrhage by pressure in the fossa and the immediate cutting down on and ligature of the divided vessel in the neck. If the bleeding point be not found it would be justifiable to compress the common, external and internal carotid arteries in rotation in the wound to see if compression of any one of them diminished the flow from the tonsillar fossa; if so, a ligature in continuity of that vessel might temporarily diminish the bleeding so as to allow of clotting, if the bleeding came from an abnormal facial artery of moderate size. In cases of delayed or secondary haemorrhage it would seem that ligature of the external or common carotid artery is not to be relied on and is unjustifiable.

TREATMENT OF COLLAPSE FOLLOWING SERIOUS LOSS OF BLOOD IN OPERATIONS ON THE TONSIL.

BY

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London.

THE treatment of collapse following serious loss of blood from the tonsillar bed is a problem which every one who operates to any extent upon the throat will have to face during his practice. The physiology of collapse and shock is so complex and at the present time so debatable, and the cause of the condition of collapse which occurs after operation on the tonsils with subsequent serious haemorrhage is made up of so many factors, that it will be better not to analyse the condition, but to discuss the methods by which it may be treated. Collapse may follow serious loss of blood immediately after operation, or it may occur after secondary haemorrhage. These two conditions are totally different; they require different methods of treatment and will therefore be dealt with separately.

In regard to the treatment of collapse following serious loss of blood directly after operation, loss of blood, with

the consequent diminution of body fluids, is the chief cause of the collapse; before treatment of the collapse, therefore, the bleeding should be controlled. The three main essentials in the treatment of collapse are:

1. Absolute rest.
2. Warmth.
3. Supply of fluid to the body.

1. *Absolute Rest.*—The patient should be laid flat in bed, without a pillow, in a darkened room. A competent nurse should look after the patient. All anxious relatives should be rigidly excluded from the room, as they tend to make the patient restless. The patient should be treated with confidence, as any anxiety of those looking after a patient easily transmits itself to the patient, and restlessness ensues.

In adults morphine should be given, as this not only induces sleep but also diminishes the tendency to bleeding. Morphine (gr. 1/4) and atropine (gr. 1/100) may be given. The atropine tends to diminish the secretion of mucus at the back of the throat and so makes it unnecessary for the patient to clear his throat and allows greater rest to the part. Again, if the collapse is severe some observers prefer to give 1/30 gr. of strychnine with the morphine. In children, who tolerate morphine badly, nepenthe 3 to 10 minims, according to age, may be given; or potassium bromide gr. x, and chloral hydrate gr. v, per rectum in a small saline injection.

2. *Warmth.*—The patient should be lightly covered with previously warmed blankets and surrounded with hot-water bottles. If this fails to warm the patient, he should be cradled and warmed by means of electric resistance bulbs within the cradle.

3. *Fluids.*—For the cases of collapse of moderate degree rectal saline is the most effective method of supplying the patient with fluid. It is not advisable to give the patient large drinks by the mouth, as it tends to start bleeding and vomiting, and the pain of swallowing makes for restlessness. In cases of collapse of moderate degree it is better to under-treat than to over-treat your patient. If the bleeding is controlled and the patient can sleep, in the majority of cases the collapse will pass off and the above-mentioned treatment will prove effective.

Passing now to cases in which the collapse is of a very profound degree and the treatment outlined above proves ineffective, more active methods must be employed. The chief of these is intravenous infusion with (1) blood, (2) gum saline, or (3) normal or hypertonic saline.

1. The infusion of blood, either whole or citrated, is the most efficient method of dealing with collapse following severe haemorrhage. It is not necessary here to go into the technique of blood transfusion, but a few rules may be laid down for its use:

(1) When it is considered necessary to give blood do not wait, as blood given *in extremis* has not the same effect. If the patient has severe collapse a donor should be found whilst the less active treatment is being attempted. If the treatment proves ineffective the donor is present when the blood is most needed; if rest prove sufficient nothing is lost. (2) The patient's and the donor's blood should always be grouped. Try to get a donor of the same group as the patient; if not, let the donor be Group IV. If the group be not known, blood of a different group may be infused into the patient and symptoms arise which may cause the death of the patient. (3) At least 500 c.cm. of blood should be given. In an adult 750 c.cm. can be given if obtainable. (4) Absolute quiet should be enforced during and after blood transfusion.

2. Gum saline, which consists of gum acacia 50 grams, sodium chloride 9 grams, and tap water 1 litre, is readily sterilizable and will keep. It is not so effective as blood in cases of pure haemorrhage and its effects are not so lasting, but as a first measure which is easily to hand it is extremely useful. Five hundred cubic centimetres should be given intravenously, and if no improvement occurs blood should be given in half an hour or the gum infusion repeated.

3. With regard to intravenous saline infusion, the effect of the infusion into the vein in cases of collapse is so transient that if gum is available it should always be given in preference to saline.

Pituitrin, 1 c.cm., or injection of camphor, grs. ii or iii in sterile olive oil, may temporarily improve the patient until the infusion can be performed. Rest, sleep and warmth are all-important.

Collapse after secondary haemorrhage is due almost entirely to sepsis, and it is this condition rather than the loss of blood that must be combated. The bleeding should be stopped if possible and then treatment of the sepsis undertaken. Intravenous infusion of blood or gum are practically useless in this condition, gum being rather more effective than blood, but still disappointing. The patient should take as much fluid as possible by the mouth. If vomiting occurs and the patient is unable to retain much fluid, continuous subcutaneous injection of saline should be employed, as it is necessary to get fluid into the patient to dilute the toxins circulating in his blood. The infection is practically always due to the *Streptococcus pyogenes.* Therefore 50 c.cm. of antistreptococcic serum should be given both intravenously and subcutaneously. The sensitized streptococcus vaccine of Besredka should be given (if obtainable) in doses of 50, 100 and 500 millions on three successive days. If the antistreptococcic serum or the vaccine be not available, normal horse serum given intravenously in saline is helpful, but not to so great a degree. Some observers claim that the intravenous injection of 1 c.cm. of 1 in 1,000 hydrarg. perchlor. in saline is very effective in septicaemia; it should be given on successive days.

In addition to these methods of combating general sepsis, the local condition should of course be attended to and the tonsillar fossa kept as clean as possible. Rest and sleep are as important as in any other form of collapse. These few remarks may give some indications of the line of treatment to be adopted in dealing with cases of collapse following severe loss of blood from the tonsillar fossa.

THE PLACE OF THE ANAESTHETIST IN OPERATIONS ON THE TONSIL.

BY

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I SHALL deal with this subject from two aspects—the prevention and the arrest of haemorrhage. The former certainly falls within the anaesthetist's province and his ministrations go some way to make or mar the success of the surgeon's efforts. To be intelligently helpful he must avoid everything that may cause congestion in the tonsillar area. This involves such considerations as the choice of anaesthetic and method of administration, and the maintenance of a perfectly free airway. In the former connexion I would just say in passing that ethyl chloride given alone, while an excellent anaesthetic for those who wish to operate rapidly, leaves no time for dealing with haemorrhage, and so need not concern us here. Its tendency is of course at first to raise blood pressure and flush the small blood vessels, but this is generally followed by some circulatory depression which assists in the sealing up of bleeding points during the recovery stage.

For many years I regarded chloroform as the only suitable anaesthetic for these cases. There is this to be said for it in this connexion, that it lowers blood pressure, and, indeed, if pushed to the brink of the fourth degree of narcosis, haemorrhage will surely be negligible. But independently of the risks associated with chloroform, there arises the question whether it is not, on the whole, better to maintain the blood pressure at a reasonable height during the operation, thus ensuring all points likely to bleed being secured at the time, and avoiding the risk of reactionary haemorrhage, perhaps involving renewed surgical procedures for its arrest. On the other hand, one does undoubtedly on occasion see fairly free haemorrhage with chloroform, due probably to the difficulty in some individuals of maintaining a sufficiently deep narcosis with a Junker's apparatus.

On the whole, I think that a properly conducted ether narcosis, in addition to being much safer, is better from the point of view under consideration. Of course, much depends on the method of administration. If you neglect to give atropine in sufficient dosage and proceed to induce anaesthesia with a Clover's inhaler, paying little regard to the oxygenation of the patient's blood, you are simply

asking for trouble. On the other hand, if the method recently advocated by Dr. Rood,[1] and strongly supported by Dr. Tilley and others, is carried out boldly and in all its detail, the prospects of haemorrhage during operation are no greater than with chloroform, and the quiet breathing and entire freedom from all reflex disturbances, attained at practically no risk, are of the greatest assistance to the surgeon.

With trifling modifications I have adopted this method for the past two years, and am convinced of its value from this and every point of view. At first I used to give morphine as a preliminary, but experience soon convinced me that the action of morphine on the respiratory centre hindered the development of the profound ether narcosis desired. Just a suspicion of ethyl chloride on the mask helps to abolish consciousness quickly and renders the induction more pleasant to the patient. The above remarks apply equally to ethanesal, which I have largely used during the past few months in place of ether.

Having settled the question of the anaesthetic, it remains for the anaesthetist during the operation to keep the airway as free as possible. Any respiratory obstruction causes venous engorgement and increases haemorrhage. The tongue must be kept forward. The effect of widely opening the gag must be observed and regulated. In some, obstruction immediately develops from this cause. Much depends on the position of the head; if this is well extended it is less likely to occur. From the anaesthetist's point of view the ideal position is the dorsal, with the head extended and resting on its vertex; the airway is unimpeded, the gag can be well opened, blood gravitates away from the glottis, and he can watch the progress of events, and meet emergencies half way.

Whether the anaesthetist shall be of assistance in the arrest of haemorrhage is a matter that rests with the surgeon. Some may resent his intrusion, others welcome it. If his co-operation is desired it is of first importance that, as far as possible, his hands should be free of other service and his mind of other cares.

To promote these objects let him therefore maintain anaesthesia with the safe drug ether, using a Shipway apparatus. This as a rule is quite easy when the really deep narcosis has been induced. Should any difficulty arise a hot water jacket to the ether bottle will overcome it. He should work the bellows with his foot. Last, but not least, he requires a really suitable, self-retaining, easily adjustable gag with an attached terminal for the rubber tubing. The ordinary Doyen's gag has many imperfections and requires constant attention; it is difficult to readjust with one hand; the thickly leaded dental plates take up too much space, and their steep lateral curve encourages rotation; a tendency for the lower lip to get nipped between the plate and the teeth is a constant source of anxiety. To obviate these defects I have modified it somewhat. The instrument which I have devised is fitted with a spring and slide attachment, rendering it easily adjustable with one hand only; the leaden plates are much thinner, only gently curved from side to side, and provided with a little step that intervenes between the lip and the teeth. Once in position it practically requires no attention. Being provided with two suitably curved and nippled terminals it can be used on either side of the mouth, and there is little risk of the rubber tubing being displaced by the surgical manipulations.

Surgeons have frequently impressed on me the importance of not damaging the anterior pillars when sponging, and, however well developed one's tactus eruditus and sense of direction, a clear view of what one is doing has its advantages. In sponging I recognize two objects: First, the mopping up of blood when haemorrhage is free, to keep the airway clear. This is best done with a marine sponge, which soaks up more blood and entangles clots more readily than wool swabs. The other object is the exercise of pressure on the tonsillar bed during every brief interval in the surgical procedures. This is, I think, best done with gauze or wool mops. A good service of mounted swabs is desirable but not always obtainable. The anaesthetist should have with him a few pairs of sponge-holding forceps; with these he can readily pick up and throw out swabs from a little pile set out within easy reach. The toothed ring-slide sponge holder I regard as an abomination. It requires two hands to fix and remove the swab, which, when fixed, is often very insecure.

I conclude with an apology and a tribute. An apology for these very simple, commonplace remarks—perhaps more suitable for a clinical lecture than for this audience. An acknowledgement of the debt I owe to laryngologists. What little knowledge of these matters I possess have I not gleaned it here an ear, there a sheaf from members of this Section?

REFERENCE.

[1] *Proc. Roy. Soc. Med.*, vol. xiii, No. 6.

INFLUENCE OF OPERATIVE TECHNIQUE IN THE PREVENTION OF HAEMORRHAGE.

BY

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THERE are few experiences more terrifying to the patient than serious haemorrhage after removal of the tonsils. I can remember with vividness the salt taste in the mouth, the difficulty in breathing, the coughing and spluttering, and, above all, the sense of impending death which assailed the sufferer. Personal experience impressed these facts on my mind with an indelible pen. No trouble we can take is too great to avoid this distressing complication, and we owe it to our patients and to the credit of the operation to save them, if possible, from this disaster.

In my experience—but it is only a personal one—an increasing number of cases in children and adults tend to bleed after operation. Nor is this surprising considering the septic state of many of the tonsils we are required to remove. In thirty-two consecutive cases of adult tonsils I have examined bacteriologically before operation, pneumococci have grown in fifteen, streptococci in eleven, influenza bacilli in four cases, and diphtheria bacilli and *M. catarrhalis* once each.

Preliminary treatment is of value, but I attach not the slightest reliance on the use of serums or in drugs designed to increase the coagulability of the blood. In men the quantity of meat and tobacco consumed should be severely restricted. In doubtful adult cases the blood pressure and coagulation time should be known. A preliminary heavy dose of atropine (1/50 in men and 1/75 in women) is given and the throat sprayed with 10 per cent. cocaine.

In describing the following technique I gladly acknowledge the lead I have had from Mr. Tilley. The operation I adopt is one of dissection with ligature of the vessels, but without suture of the pillars.

The head is placed in the fully extended position and the tongue drawn out and a sandbag is placed under the shoulders. The tonsil is grasped with some form of vulsellum forceps and drawn out of its bed. The anterior and posterior pillars are carefully separated by fine-toothed forceps or curved scissors, and the main artery to the upper pole is isolated, clamped, and tied. The tonsil is then grasped with Hett's forceps, lifted out of its bed, and gradually teased away with blunt forceps, gauze dissection or a small scalpel, taking care to keep the blade of the knife directed against the capsule of the tonsil, and the separation is thus completed. Beyond indicating the general method, I have purposely refrained from entering into a discussion of operative details.

Each artery can be seen spurting immediately it is cut; it is clamped at once and tied. It is better to tie off each one as it is exposed. For practical purposes the arterial supply enters the tonsil in three groups. The artery to the superior pole is the main source of blood supply and should be clamped before being divided; it is very delicate and the tissues around it soft. If missed it retracts and is very difficult to pick up. The middle group is represented by one or more vessels; they are easily seen on the side wall of the fossa and picked up, and the tissues around are firm and take the forceps well. The artery to the lower pole forms the third bleeding point. It is often deep down, and the tongue has to be lifted with a retractor to get a clear view. When once exposed the tissue holds the forceps well and the vessel is easily tied.

Ligature of these vessels is not the difficult art it might be imagined, even in situations in which the sense of touch alone is available. Two simple rules greatly assist the object in view: (1) The point of the artery forceps must be always turned towards the centre of the mouth. (2) The catgut used should be fairly fine and strong and somewhat stiff; a loop is made and carried down over the point on the tip of the index finger by the sense of touch. If there is still a general ooze after all arterial bleeding has been arrested I apply a pad of adrenaline for a few seconds, swab the cavities out with tincture of benzoin and then insufflate with xeroform powder.

Advantages of the Operation.

1. The anaesthetic is absolutely safe; I have never had a moment's anxiety from this source; ether alone is given, and recovery is rapid and often without vomiting. I have never had a case of post-operative pneumonia.

2. All arterial bleeding is checked by the clean surgical process of ligature, and serious haemorrhage is almost impossible.

3. The anterior and posterior pillars can be preserved with accuracy in every case, and a perfect anatomical appearance in the throat remains even after enucleation of the most difficult tonsils.

4. This technique with its necessary instruments is available for the efficient arrest of haemorrhage in any mouth operation.

Disadvantages.

Let us consider frankly the objections to the operation:

1. The length of time required. Certainly it takes longer than a guillotine operation. It should never take more than a quarter of an hour, and in the easy tonsils usually removed by the Sluder method not more than five minutes are required. Is not the time well spent in making certain of the arrest of all haemorrhage and thus guarantee our patients against that universal nightmare?

2. The difficult anaesthetic. I should prefer to call it a specialized anaesthetic. The technique is not difficult; a deep open ether is pushed until the pupils are wide, and in my clinic it is maintained by a catheter passed through the nose and with the eyelet hole immediately above the larynx. By means of Shipway's apparatus or even a Junker's inhaler a strong stream of ether is delivered just above the larynx. By these means even the strongest man can be kept well under with the mouth wide open under ether alone. The absence of chloroform has an advantage both for the surgeon and the patient. The method is one slightly modified from that used by Dr. Rood of University College. A great advantage of ether is that the blood pressure is at its highest during the operation and falls after the anaesthetic is over; haemorrhage, therefore, that is arrested at the time is unlikely to occur after the patient is returned to bed.

3. The difficulty of the technique. Again, it really is a difficult operation in many cases, but a mastery of this technique renders the task of tackling any operation in the mouth easy, and is well worth acquiring. It gives the operator singular pleasure in its performance, and the result when accomplished is all that could be wished for.

4. It is an unnecessary surgical procedure when simpler methods avail. I agree that in many cases of children the Sluder method is all that can be desired. Dissection should be reserved for those cases when a doubtful history of bleeding is present, or in cases of small highly septic tonsils. In my own practice I dissect all adult tonsils, or those in which the tonsils have previously been partially and inefficiently removed. I regret to say that cases of large and comparatively aseptic tonsils—the delight of all throat surgeons—come with increasing rareness into my hands.

The treatment of post-operative haemorrhage is reduced to comparatively simple means. If the haemorrhage has not quickly stopped with local haemostatics I advise the ligature of the bleeding vessels. Open ether is given, and an anaesthetic is taken easily and with avidity. It is far better to do this at once rather than that the patient should be exhausted by fruitless and painful efforts at local applications, and the whole operation is a matter of a few minutes only.

I greatly prefer to ligature the vessels rather than to close the tonsil beds by sutures, and my reasons are as follow:

1. The anatomical appearance of the throat is better preserved without suture.
2. Freedom of the anterior and posterior pillars with the muscles they contain is necessary for comfort in the throat and for the singing voice.
3. There is a danger of sepsis when closing in a septic cavity by sutures sufficiently closely placed to arrest haemorrhage.
4. There is some risk of injury to vessels running deep to the tonsil bed when passing the curved needle, especially when the tonsil bed is soft and friable from septic infiltration.

Lastly, the main point of my paper can be summed up in one word—if we are to avoid haemorrhage in all cases we must tie the vessels, and the technical skill so acquired is invaluable in the arrest of established haemorrhage either in our own cases or in those of our colleagues to whose assistance we may be called.

AN ARTERY FORCEPS FOR LIGATURES IN THE TONSILLAR BED.

BY

GILBERT CHUBB, F.R.C.S.,

Surgeon to the Throat Hospital, Golden Square.

IN general surgery the method of choice for obtaining haemostasis is the artery forceps and ligature. That this method is not more commonly employed in tonsillectomy is due partly to the haemorrhage sometimes appearing to be a general ooze from the tonsillar bed, partly to the undoubted technical difficulty of the procedure in this situation.

The first difficulty, when it exists, is usually due to excessive trauma of the muscular tissue of the tonsillar bed. More frequently, however, it is only apparent, and a careful inspection will reveal one or more discrete points as the source of the haemorrhage.

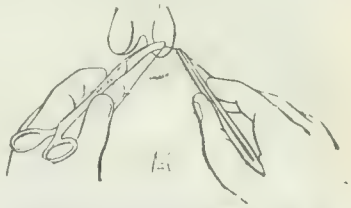


FIG. 1. The ligature thread, held taut by either hand, being passed under the point of the forceps holding the bleeding point.

The second difficulty is largely overcome by the technique described by Mr. Tilley, in which the ligature thread, held taut at either end, is passed under the point of the artery forceps in the manner shown in Fig. 1. In the case of the ordinary artery forceps, however, it is often difficult to retain the thread under the point of the forceps while the knot is tied. Either so little tissue is taken that the necessary tension on the ligature and counter pressure upon the forceps results in the detachment of the latter, or else so large a bite is taken that it is impossible to get the ligature under the point of the forceps at all.

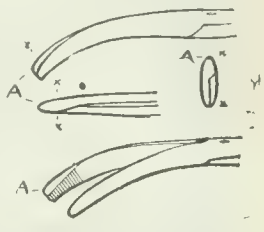


FIG. 2.—The point of the forceps, seen from the side from above, and open. A section immediately behind the point is also shown. The point "A" always projects above the tissue however large a bite is taken.

The modified artery forceps now described does away with both these difficulties. However great a bite is taken there is always a point (marked "A" in Fig. 2) which is available for the retention of the thread. No counter pressure is required upon the forceps, and only the slightest tension upon the ligature. With this instrument I habitually tie the ligatures unaided. Fig. 2 shows the manner in which the exposure of the point "A" above the tissue is ensured, and shows also the converging lines down which the first knot of the ligature readily slips as it is tightened. The instrument has been made for me by Messrs. Mayer and Phelps.

THE USE OF THE CLAMP IN THE TREATMENT OF TONSILLAR HAEMORRHAGE.

BY

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ONE is, of course, in full agreement with the speakers who have pointed out the value of careful selection of cases, and of operation under ether, tying bleeding points, and completing a surgical toilet of the tonsillar bed before sending the patient from the operating theatre. Unfortunately, in the first place, in hospital work it is not always possible to attain this ideal. Many cases are still of necessity submitted to operation in the out-patient department, a short anaesthetic of gas or ethyl chloride alone being available. In such cases the full toilet is not possible. In the very great majority bleeding ceases in a minute or two when the gag is released. If it continues to be free the difficulties encountered with a vigorous and thoroughly frightened child are not few.

Rarely cases occur in which, after a careful dissection or guillotine enucleation, bleeding has apparently been arrested and the patient is sent back to bed. A few hours later—or, it may be, with separation of a slough a few days later—a further bleeding more or less sharp occurs. In such a case the position is more serious, as skilled assistance may not be at hand.

Whatever method we adopt for the control of severe bleeding, whether ligation or suture, these require anaesthesia and time, and their facility certainly depends on the skill of the operator. Either as a sole method of treatment or as a preliminary to other methods some form of tonsil clamp is of great value.

The clamp usually known consists of a hemispherical metal button on one leg of a pair of forceps; this is applied

to the bleeding point while the other leg provides counter-pressure by a flat plate outside the jaw. Unfortunately only a small part of the tonsil bed is compressed in this way, and it must often be a matter of some difficulty to hit off the exact point. Considerable pressure on so small a surface is ill tolerated. To meet these objections Dr. P. Watson-Williams early in the present century introduced the clamp which bears his name.

A large flat fenestrated blade is mounted on each leg of a pair of wide forceps with scissor handles. These blades are padded with several layers of gauze and even pressure thus obtained. The blade is large enough completely to cover the tonsil bed; to use the clamp one pad is placed on the tonsil bed, and the clamp closed. It is thus really a device for holding a swab firmly in the tonsil bed. No accurate application is necessary, and the smaller degree of pressure needed with this instrument is fairly well tolerated. If desired, haemostatics can be spread on the pad. It has been left *in situ* for eighteen and even twenty-four hours without ill effects and without great discomfort.

The advantages of the clamp may be briefly summarized:

1. Ease—it can be applied by an intelligent nurse; it certainly does not need any special knowledge to use it.
2. Rapidity—a few seconds suffice to clamp one or even both tonsil beds.
3. Efficiency—all bleeding is immediately arrested.
4. The clamp can be used as the sole treatment of haemorrhage.
5. Alternatively, it is very valuable to be able to apply a clamp while making preparations for further operative treatment of the bleeding.
6. Alternate clamping of both sides may help to decide which is bleeding if doubt arises.

The sense of security which this instrument gives is very valuable. One can be left at the bedside of every patient for twenty-four hours after operation. It is a great boon to feel that if bleeding occurs one will get a message to the effect that it has been arrested, not that it continues. Whether any further treatment is ever necessary is debatable. A series of several thousand cases in Bristol have not produced an example. As a simple, rapid and effective method of dealing with tonsillar haemorrhage the clamp is indispensable. It is, in fact, the laryngologist's tourniquet.

OBSERVATIONS ON OSSICULECTOMY.

BY

Sir JAMES DUNDAS-GRANT, F.R.C.S.,
Consulting Surgeon to the Central London Ear and Throat Hospital.

SIR JAMES DUNDAS-GRANT said that although ossiculectomy appeared to be considered out-of-date, he was convinced that in suitable cases it was of the utmost value. He considered that the indications for ossiculectomy were in cases when, as a result of suppurative inflammation, the ossicles were fixed so as to interfere with hearing power by impeding the mobility of the stapes, or to interfere with the application of the artificial drum; also in cases when by their presence they blocked up the outlet of the attic and prevented the escape of thickened discharge or cholesteatomatous collections, producing vertigo, headache, or other correlated disturbances. These were the practical indications, although it was usual to give a prior place to caries of the ossicles. Theoretically this last seemed the most obvious indication, but the diagnosis was very uncertain and the influence of the conditions somewhat doubtful.

CLINICAL NOTES ON CASES.

SIR JAMES DUNDAS-GRANT described a case of suppuration in a subdivided maxillary antrum with "nasal ganglion neurosis" suggesting malignant disease. The patient complained of very severe pain in the upper part of the left nasal fossa, of over a year's duration, and there was great suspicion of an early development of malignant neoplasm. The antrum was opened and a bony partition was found shutting off the posterior half of the cavity, behind which was a quantity of broken-down granulation-like tissue bathed in pus. The pathologist to whom it was referred reported that there was no sign of new growth or tubercle, and eventually recovery was complete.

Mr. W. FRANK WILSON (Newcastle) read a paper on a fatal case of a "shawl pin" in the oesophagus. The object of his paper, he said, was to point out the danger of the "blind attempt" to extract foreign bodies from the gullet; in this case attempts had been made in another hospital to recover the pin by a coin-catcher, which got stuck and required an anaesthetic before it could be withdrawn, the pin remaining behind. Five days after the accident happened the patient was removed to the Newcastle Royal Infirmary, but on account of symptoms of acute septic infection it was considered inadvisable to attempt oesophagoscopy. Gastrostomy, however, was performed when the symptoms had improved a few days later, but a purulent discharge continued to come from the throat, acute general peritonitis supervened, and death occurred eight days after the gastrostomy. At the *post-mortem* examination there was found an impacted foreign body in the oesophagus, purulent mediastinitis, empyema, and acute peritonitis. He pointed out the necessity in cases of this type for a thorough *x*-ray examination, and considered that coin-catchers, umbrella probangs, and similar instruments should now be considered definitely obsolete. He remarked that in cases of this nature inability to swallow at all, or ability to swallow with pain and difficulty the merest sip of water, indicates a grave injury to the gullet, independently of the size of the foreign body.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANTHRAX IN THE NASAL CAVITY.

(*Abridged.*)

I VENTURE to present the following case as one of interest from the point of view of the localization of the lesion. The patient, aged 35, a crossing-sweeper, came to my out-patient department of the Turkish Faculté de Médecine, at Haidar Pasha, Constantinople. Six days previously he noticed a swelling situated on the right side of the face, and a right nasal obstruction, accompanied by a discharge of mucus and blood. Until that date he had been in good health and had no contact with animals.

His face was pale and his expression drawn, and on examination I discovered a diffuse and flaccid swelling over the malar, lower eyelid, and submaxillary region. That portion of the neck near the manubrium sterni was equally oedematous. The right nasal cavity was obliterated by a fibrinous mass (infiltrated by a secretion of blood and mucus), some of which could be easily detached, but part was firmly adherent to the concha inferior, which bled slightly in an endeavour to remove it with the forceps. The mucous surface of the concha inferior was superficially ulcerated towards the apex and the whole mucous membrane congested, while here and there it was eroded to such an extent that even with the removal of the detachable portion the man was unable to breathe through that nostril. On the left side and in the throat there were no signs of infiltration. His pulse was 120, his temperature 104°. No evident organic pulmonary or cardiac lesions were present. The spleen was slightly palpable.

The immediate examination of the nasal secretions showed the existence of the characteristic bacillus of anthrax and some streptococci. The culture from the nasal secretion grew some pure anthrax and nothing else. Irrigations of hydrogen peroxide were carried out, iodine applied locally, and injections of camphor, and brandy by the mouth were given, but ten hours after admission the patient died. He had shown signs of slight tetanic contractions of the limbs, and was in a toxic comatose state—signs which present themselves in the last stage of anthrax infection. Unfortunately, no *post-mortem* evidence could support this view, as the parents refused permission, but as far as could be ascertained before death, there were no signs in the lungs or viscera.

With the absence of other external and visceral signs it was, in my opinion, a case of primary localization of anthrax in the nasal cavity, followed by a toxaemia which caused his death. The existence of a pseudo-membranous growth and intense congestion of the mucous membrane with erosion dating from a week previous, suggested a nasal diphtheria, but the oedematous swelling with the typical pallor of the skin and an absence of adenitis gave me the impression of an anthrax infection. It could not be definitely elucidated in what way the bacillus was deposited in the nasal cavity, probably by infection from the fingers or by dust, and from this localization the toxaemia followed.

ZIA NOURY PASHA, M.D.,
Professor to the Oto Laryngological Clinic,
Turkish Faculté de Médecine,
Haidar Pasha, Constantinople.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ZANZIBAR BRANCH.

A MEETING of the Zanzibar Branch of the British Medical Association was held at the Health Office Laboratories, Zanzibar, on May 10th, when an interesting pathological demonstration was held, followed by discussions. A series of specimens of liver, lung, spleen, and heart were shown to demonstrate echinococcosis in cattle; points raised in the subsequent discussion included the frequency of echinococcosis in milch cattle, the absence of *Taenia echinococcus* in dogs, and the rarity of the disease in cattle in Central Africa. There was evidence which pointed to the milch cows arriving with the infection from India; statistics of the frequency and situation of echinococcal cysts in cattle supplied by veterinary officers were quoted. Other specimens demonstrated included carcinoma of the liver in a Swahili, presented by Dr. Phippen; *Entamoeba histolytica* and *coli* with their cysts; trypanosomes found in cattle from Tanganyika territory, closely resembling *T. rhodesiensi*, trimorphic with post-nuclear forms; malaria, with markedly pigmented parasites and crescents, a heavy infection from Pemba; and a graph of ankylostomiasis.

Reviews.

A NEUROLOGICAL HANDBOOK.

DR. CAMPBELL THOMSON'S handbook on *Diseases of the Nervous System*[1] has been familiar to students and practitioners for some years. That a third edition has been called for recently is sufficient evidence of the useful place it fills, as a not too voluminous monograph on a special branch of medicine. The present edition is enlarged, and naturally contains much new material which has resulted both from recent research and from the extensive neurological experience provided by the war.

The earlier chapters dealing with anatomy and physiology, reflexes, rigidity and contractures, and the general functions of the brain, are brief and concise and very valuable as laying down important general principles. There is a short but useful chapter on the paths of infection of the central nervous system, where due recognition is paid to the work of Orr and Rows. Perhaps the chapter on the autonomic system is the least satisfactory part of this section of the book, and might have been expanded with advantage; nor can the chapter on lumbar puncture be considered quite adequate to the importance of the subject, and the various changes in the cerebro-spinal fluid in different diseases could have been described in greater detail; we find, for example, no reference to Lange's colloidal gold test.

The syphilitic diseases of the central nervous system are treated together in a separate section, an arrangement which has permitted them to be presented adequately and in a manner affording recognition of their importance and of the more modern views on their pathology. The accounts of the systemic diseases of the spinal cord, of disseminated sclerosis, and of poliomyelitis are clear and satisfactory. We have noticed a few omissions and statements to which exception may fairly be taken. Thus the pathological foundation of paralysis agitans might have been stated more explicitly in view of the light thrown on this and allied conditions by the knowledge gained from the distribution of the lesions in encephalitis lethargica. In a description of the signs found in chorea we were surprised to read that "an extensor plantar response and hypotonus of muscles are indicative of lesions of the pyramidal tract." Hypotonus is no part of a pyramidal lesion, nor, we think, is an extensor plantar response commonly found in chorea. The lessons of the war and the recent developments of psychotherapy and psycho-analysis are utilized in bringing up to date the chapters on the functional nervous disorders. It is perhaps a little surprising to find the opinion still stated that "anaesthesia is the symptom most commonly found in hysteria." By inclusion of a chapter on encephalitis lethargica and reference to Dr. Head's new views on aphasia, as well as other new material in neurology, the author has succeeded in embodying much fresh information. Though criticism of certain passages in such a book may be easy, yet, on the whole, it can be praised as providing in a moderate bulk a lucid presentation of its subject. To the student it will form a useful volume as it emphasizes the importance of those general principles of neurological diagnosis in which the ordinary textbooks of medicine are too often lacking. The illustrations are quite good and form a valuable addition to the book.

[1] *Diseases of the Nervous System.* By H. Campbell Thomson, M.D. Lond., F.R.C.P. Third edition, revised. London and New York: Cassell and Co., Ltd. 1921. (Cr. 8vo., pp. 583; 120 figures. 15s. net.)

DISEASES OF CHILDREN.

DR. SHEFFIELD'S *Diseases of Children*[2] represents the experience of nearly thirty years' work in New York, and aims at an early up-to-date representation of the subject to students and practitioners of medicine; thus, the preface states that "the fads and fetiches of the erratic reformer and senile reactionary are eliminated." The observations of others are quoted quite as freely as can be expected in a work of this size dealing with such a wide field, for although there are nearly 800 pages, the print is large; in fact, rightly or wrongly, the reader sometimes feels the want of the note of personal opinion that would naturally be expected from long apprenticeship in clinical investigation, and thus the book is less attractive than some of the existing and well-known treatises. The author has, however, struck out a new line in preferring the new name "hemorrhea congenita" for haemophilia, and in including under the heading "hemorrhea acquisita" the various forms of purpura, among which purpura fulminans is, contrary to the opinion generally held, said to be identical with Henoch's purpura, in which abdominal symptoms are prominent. Infantile scurvy is regarded as probably directly due to microbic infection or toxaemia resulting from intestinal putrefaction, and disposed to by malnutrition and a diet deficient in vitamins. In the description of "pestis Americana," the unfamiliar name employed for yellow fever, reference is made to Noguchi's recent work on the *Leptospira icteroides*; but the mild form of typhus described by Brill in New York is not mentioned. In the account of infection of the urinary tract with the colon bacillus, treatment by hexamine in combination with potassium citrate (3 to 5 grains of each) is recommended, but the essential factor in successful treatment is to render the urine alkaline, and for this larger doses of the citrate are required, and hexamine can then have no effect, for to be effective it requires an acid urine. The best feature of the volume is the illustrations, which are mainly original, though some of the coloured plates, showing the naked-eye character of the stools, are due to the courtesy of Dr. Hector Charles Cameron.

[2] *Diseases of Children.* Designed for the use of Students and Practitioners of Medicine. By Herman B. Sheffield, M.D. London: Henry Kimpton. 1921. (Med. 8vo, pp. 798; 238 figures, 9 coloured plates. 48s. net.)

BURKE AND HARE.

ON November 3rd, 1828, the Edinburgh *Evening Courant* startled its readers by an account of the arrest of two men charged with the murder of a woman whose body was found at Dr. R. Knox's dissecting rooms. The publication among Notable British Trials of Mr. ROUGHEAD'S *Burke and Hare*[3] must revive interest in the career of these extraordinary criminals — extraordinary because of the motive of their crimes.

In all the accounts of the murders and of the contemporary occurrences recorded in Mr. Roughead's book the reader of to-day is struck by the absence of even an attempt at regulation of the proceedings consequent upon a death, such as registration and disposal of the body. This laxity rendered the sale to anatomists of unburied corpses easy and safe, and so little seems to have been thought of such a course, that Syme, as we are told,

[3] *Burke and Hare.* Edited by William Roughead. Edinburgh and London: William Hodge and Co., Ltd. (Demy 8vo, pp. 280; 15 illustrations. 10s. 6d. net.)

attempted to arrange for a supply of subjects by buying the bodies of poor persons who died from natural causes directly from their relatives. Sentiment and the custom of "waking" the corpse frustrated Syme's plan, but it seems that there would have been no legal objection to it. The resurrection men normally provided the schools with anatomical material, and their activities were supplemented by the amateur enterprise of zealous medical students, among whom in Edinburgh Robert Liston was as bold and successful as a body-snatcher as he afterwards became as a surgeon. But Burke and Hare were neither of them resurrectionists. These two drunken Irish workmen appear quite accidentally to have hit upon an easy way of getting a living without hard work. An old pensioner having died in Hare's tenement in debt to his landlord, the latter, with the aid of his friend Burke, in order to repay himself stole the body out of the coffin and sold it to Dr. Knox for £7 10s. He was told to "bring more"! The pair next assisted a sick man to be rid of the mortal disease of life by means of a pillow, and after that entered upon a course of brutal and cold-blooded murder, which by their own confessions in nine months cost thirteen women, two men, and one boy their lives; the bodies were easily disposed of to Dr. Knox and his assistants for £10 each without any awkward questions being asked. The usual course was to decoy the victim to their den — Burke seems to have been well endowed with powers of blarney—to make her drunk upon whisky, and then to suffocate her, one ruffian holding his hands over the mouth and nose of the victim, while the other lay upon her chest and abdomen, compressing them and frustrating the efforts of the limbs to free the respiratory apparatus. Mrs. Hare and Burke's paramour McDougal were certainly accomplices who helped to decoy the women and richly deserved the hanging which unfortunately they and Hare escaped. It is noteworthy that most of the victims were women. They were, perhaps, more easily cajoled by impudence and sham friendliness, and they were certainly easier to overpower and to transport when dead, while their bodies fetched as good a price as those of males. It is significant that in the case of Daft Jamie, the last but one of the series and the only able-bodied adult male victim, a very severe struggle took place before the murder was consummated.

It is commonly said, and with truth, that the receiver is worse than the thief. What, then, shall be said of Dr. Knox, who, in the course of nine months, bought sixteen unburied bodies from the murderers—bodies showing no sign of mortal disease, some of them not yet cold, and two of them those of persons known to his assistants to have been alive and well on the previous day? Mr. Roughead holds—and we agree with him and with Christopher North—that the best that can be said for Knox is that he was criminally negligent. It seems clear that he not only avoided inquiry as to the cause of death, but that he even prevented its being made by others. That neither he nor any of his assistants was charged with being an accessory after the fact is astonishing. In excuse of Knox it may be urged that the bodies of Burke and Hare's victims formed but a small proportion of the subjects supplied to his school. The needs of Edinburgh were so great that Scotland could not satisfy them, and bodies were shipped thither from as far off as Ireland and London. In that mine of information on this subject, *The Diary of a Resurrectionist*, edited by the late Mr. J. B. Bailey, there are various entries such as "Pack'd 4 and sent them to Edinborough," and "Sent 12 to the wharf for the above place." This was in 1811. What condition the bodies were in on delivery in Edinburgh may be imagined, seeing that the Leith packet was sometimes as long as six weeks in making the passage owing to contrary winds. Indeed, it would appear that some of the bodies supplied by the resurrection men cannot have been of much value for minute dissection, seeing that some of them were exhumed after they had been buried for months. The diarist records sorrowfully in more than one entry that the corpse was not marketable owing to its putridity.

Knox was a brilliant anatomist and lecturer, *primus et incomparabilis*. He had hitherto had a most successful career; his lectures in the extramural school at one time attracted more than five hundred students, and quite outshone those of the University lecturer, the third Munro, who probably owed his appointment more to nepotism than merit. Although of a jealous and cantankerous nature and quarrelsome with those of his own standing, Knox was popular with his students, who warmly espoused his cause and testified their faith by subscribing for the purchase of a gold cup, with which he was presented soon after the trial. But this was the culminating point of his career. From one cause and another he failed in Edinburgh and then in Glasgow, and drifted to London, where he appears to have eked out a precarious livelihood as a general practitioner at Hackney, and by lecturing at such places as Dr. Kahn's museum, a claptrap and somewhat indecent exhibition, which will be remembered by senior members of the profession as situated near the site of the London Pavilion Music Hall. He was at one time pathologist to the Cancer Hospital. In his latter years his former assistant, Sir William Fergusson, is said to have helped him pecuniarily from time to time. He died in 1862. His assistants, who must be held to share to some extent his culpability, all became well known in after-life, and one of them just mentioned rose to the very top of the surgical tree. Alexander Miller and Wharton Jones both achieved renown, the one in Edinburgh and the other in London.

In R. L. Stevenson's gruesome shocker, "The Body Snatcher," which appeared in the Christmas number of the *Pall Mall Gazette* for 1884, one of "Dr. K——'s assistants," Wolfe MacFarlane, appears in a very unfavourable light as a suspected murderer and a dissipated rake who afterwards became a celebrated London doctor. This description cannot be held to apply to Fergusson, but readers of the story when they hear of "the great man's still greater London Doctor" who had been assistant to "Dr. K——," could not fail to think of the President of the Royal College of Surgeons of England, Sergeant Surgeon to Her Majesty, F.R.S., and a baronet. Wharton Jones, despite his scientific attainments, never occupied a prominent position in the estimation of the lay public. Fergusson's connexion with the Burke and Hare scandal was not forgotten in Scotland, for when he came forward as a candidate for the representation of Peebles in the House of Commons he was driven from the hustings by cries of "Daft Jamie," and retired from the contest. This may have been the work of an astute election agent on the other side, but it could not have succeeded had not feeling been so strong that Fergusson could not stand against it.

Mr. Roughead says that the Anatomy Act, which put an end to the activities of Mr. Jerry Cruncher and his like, was the result of the disclosures made in the trial of Burke and Hare. It might have been expected that this would be so, but the astonishing fact is that it was not. A bill to regulate the supply of subjects for dissection passed the House of Commons in 1829 but was thrown out by the Lords. It needed the public indignation aroused by the crime of Bishop and Williams in 1830 to force the Anatomy Act of 1832 through both Houses of Parliament. Burke confessed to having killed a boy of 12, whose mother he had already smothered, by breaking his back. Dr. Knox and his assistants bought the body, as they had that of the mother, and neither suspected violence nor discovered the cause of death. At any rate they held their tongues. Bishop and Williams found less complaisant anatomists on the occasion of their attempt to emulate their Irish predecessors. When they took the body of the unfortunate Italian boy, whose neck they had broken, to King's College in London, the vigilance of Partridge and Beaman lead them to suspect foul play, to search for and discover the cause of death, and to secure the immediate arrest of the murderers.

Mr. Roughead's book contains some most interesting illustrations and much information on body-snatching in Scotland, as well as verbatim reports of the legal proceedings and much other matter. The impression left upon our non-legal mind is that the prosecution was bungled, and that with the evidence obtainable, which however was not all called, it should have been possible to convict all four of the accused, or, at least, to have avoided accepting Hare as King's evidence, and so letting this scoundrel loose upon the public. The book is appropriately dedicated to the Professor of Forensic Medicine in the University of Edinburgh, Dr. Harvey Littlejohn, whose acumen has been displayed in the unravelling of so many tangled stories of crime.

A TEXTBOOK OF PATHOLOGY.

THE second edition of the *Textbook of General Pathology*[1] by Drs. J. MARTIN BEATTIE and W. E. CARNEGIE DICKSON, will be welcomed by those who require a readable work containing in one volume up-to-date knowledge. The book is based on the teaching of the Edinburgh school, and is dedicated to the memory of the late Professor W. S. Greenfield, whose pupils and disciples the authors proudly acknowledge themselves to be. As in the previous edition the illustrations are on a generous scale, and fulfil their purpose admirably—a feature that should enable the reader to acquire the information he is seeking with a minimum of time and effort.

In order to include the advances made during the war the chapters on necrosis and gangrene have been expanded, and a series of new figures inserted to illustrate the process of repair and the varied cytology of inflammatory exudates. The section on tumours has been carefully revised, and here the illustrations are particularly good and helpful. The section on granuloma is excellent so far as it goes, but would have been improved had the authors included an illustration of lymphadenoma. The description of animal parasites is comprehensive, and particularly useful to a student preparing for examination.

Although in the present instance the authors have performed their task with a high degree of merit and success, the frontiers of pathology are being expanded at such a rate that before long it may be almost impossible to give a concise yet catholic description of the state of knowledge on even general pathology in a single volume. Possibly in the future the textbook of pathology will be divided into two portions—one dealing with the common lesions which everyone should know and know well, and the other being an appendix to which the rarer conditions are relegated. The objections to such an arrangement from the scientific point of view are obvious, but clearly the alternative is a series of volumes by a plurality of authors, each subject being dealt with by an expert. Such a work as Kolle and Wassermann's well known textbook of pathogenic micro-organisms, which runs to eight volumes, has still to be compiled for pathology.

It would seem that at the present time the tendency is more and more towards making pathology a science of the living rather than of the dead; undoubtedly a result of the unit system of teaching medicine and surgery is to emphasize the need of the utmost that pathology can offer in order to explain the symptoms and course of disease, and in order also, when possible, to furnish data and material for specific treatment. How great that requirement is to-day can readily be appreciated by those whose duty and privilege it is to assist, however imperfectly, professors of medicine and surgery in their arduous task of bringing to bear all available knowledge for the elucidation and treatment of individual cases of disease.

ACUTE ABDOMINAL AFFECTIONS.

THE little book, admirable in everything but its slangy title, in which Mr. ZACHARY COPE describes *The Early Diagnosis of the Acute Abdomen*, should be in the hands of every practitioner and every student. It should be in their hands daily, for there is every inducement. The writing is simple and clear, the type and display are good, the arrangement of the matter plain, and the importance of the subject can be measured in lives saved. It is not to be expected that every surgeon would agree with every one of Mr. Cope's dicta, but every surgeon will agree with the great majority of them; which means that among his many readers support will be forthcoming for everything he says.

It is by no means easy to promise diagnosis and stick to diagnosis only; treatment for most authors will turn up like King Charles's head for Mr. Dick. Mr. Cope has been admirably severe with his pen in this respect, and is justified by the result. He opens with a chapter on the principles of diagnosis in acute abdominal disease, most aptly headed with Bacon's phrase, "There is surely no greater wisdom than well to time the beginnings and onsets of things." The first law, "Thou shalt make a serious and thorough attempt at diagnosis in every case," could we but incline our hearts to keep it, would, as he shows, soon solve the whole problem, for practice indeed makes perfect. Chapters II and III deal with the method of diagnosis. Forty pages are then devoted to appendicitis, thirty to perforated ulcers, and Chapter VII opens up the subject of intestinal obstruction; in turn, intussusception, cancer of the large bowel, and volvulus, strangulated and obstructed herniae, are considered; then abdominal emergencies of pregnancy and the puerperium, followed by cholecystitis and other causes of acute pain in the right upper quadrant of the abdomen; the colics; abdominal injuries; the acute abdomen in the tropics; acute abdominal disease with genito-urinary symptoms; spreading and general peritonitis; and finally, diseases which may simulate the acute abdomen.

It might be possible to find sins both of commission and omission, but the criticism would be captious. The reviewer read almost every word, and is sure the author's own experience is reflected, so that even in the few instances where it may not correspond with his own it is no matter, or rather, it is food for his own reflection. Let us repeat: an admirable little book.

DEEP RADIOTHERAPY.

A USEFUL and clearly written account of the technique of deep radiotherapy is contained in a small book[6] by Dr. CH. GUILBERT. Commencing with a definition of the maximum deep dose, he goes on to point out that it may be given either at one sitting or in a series, according to the condition of the patient. He then discusses the physics of deep radiotherapy, and the question of the distance of tube and the depth in regard to absorption of radiations; tables are given showing the diminution of radiations by absorption and dispersion calculated in relation to their passage through a centimetre of water. The third chapter discusses fully the various methods of measuring the output from an *x*-ray tube; the reasons why the more usual methods are insufficient are stated, and it is shown that the only reliable one is that based upon ionization. The ionto-quantimeter of Szilard is described and illustrated. The importance of filtration and the necessity for correct and suitable filters is made plain with the help of charts and tables; the practical point being to obtain as homogeneous a stream of *x* rays as possible. In a chapter on apparatus it is pointed out that the progress of the recent German technique in deep radiotherapy has been made possible by the perfection, during the past few years, of the *x*-ray tube; and that this has led to the construction of the apparatus designed by Dessauer, which is capable of an output of from 150,000 to 200,000 volts. The chapter which follows this—on cutaneous reaction—is largely based upon the work of Professor Wintz; the definite curative doses are stated, and it is pointed out that as cicatricial tissues are more sensitive to *x* rays than healthy, there is danger in carrying out the treatment after operation. Full details are given as regards accessory precautions to be taken for augmenting the safety of the patient. The final chapter deals with the different methods of the actual application of deep radiotherapy, portals of entry, and so on. The book concludes with a short account of the indications for this method of treatment, its dangers, and certain ill effects which it produces. Those interested in the late advances in deep *x*-ray therapy will find in this book a very clear account of the essentials which direct the way to a successful technique.

ALFRED NEWTON.

THE *Life of Alfred Newton*, by Dr. A. F. R. WOLLASTON,[7] with a preface by Sir ARCHIBALD GEIKIE, appears fourteen years after the death of this mid-Victorian zoologist, who, though professor of comparative anatomy at Cambridge for forty-one years (1866–1907), and a striking personality, did not come much in contact with the ordinary under-

[1] *A Textbook of General Pathology.* For the Use of Students and Practitioners. By J. Martin Beattie, M.A., M.D., and W. E. Carnegie Dickson, M.D., B.Sc., F.R.C.P.Edin. Second edition. London: William Heinemann (Medical Books), Ltd. 1921. (Roy. 8vo, pp. 541; 252 figures. 31s. 6d. net.)

[2] *The Early Diagnosis of the Acute Abdomen.* By Zachary Cope, M.D., M.S., F.R.C.S. London: Henry Frowde, and Hodder and Stoughton. 1921. (Demy 8vo., pp. 238; 58 figures. 12s. 6d. net.)

[6] *Technique de la Radiothérapie profonde.* Par le Dr. Ch. Guilbert, Chef de Laboratoire de Radiologie des Hopitaux. Paris: J. B. Baillière et Fils. (Cr. 8vo, pp. 67; 20 figures. Fr. 4.)

[7] *Life of Alfred Newton.* By A. F. R. Wollaston, with a Preface by Sir Archibald Geikie, O.M. London: John Murray. 1921. (Pp. 372; 5 illustrations. 18s. net.)

graduate working at science with a view to medicine. Biology from at least 1880 onwards was more on the lines of comparative embryology and laboratory work than on those of the vertebrata and field work, and the latter, and particularly ornithology, appealed specially to Newton, who was more influenced by Gilbert White of Selborne than by anyone else. In ordinary life he was a strict Tory, a trait perhaps too strongly insisted on by Mr. A. C. Benson in his "Leaves from the Tree," which originally appeared in the *Cornhill Magazine* for 1911; but he was open to new ideas in connexion with his own subject and was one of the first eminent zoologists to accept and champion Charles Darwin's views. His investigations into the extinction of the garc-fowl, or the great auk, form an interesting chapter of an attractive book. Sir Arthur Shipley, now Master of Christ's, who was for a long time Professor Newton's demonstrator, has contributed a reminiscent account of his chief, and has reproduced the Cambridge of the late forties and early fifties. Dr. F. H. H. Guillemard writes sympathetically of a friend of nearly forty years' standing, and admits that in the light (or should it be darkness?) of these *post-bellum* days he must be counted an extinct type, as much as the great auk or dodo about which he delighted to write.

Dr. Wollaston has charmingly constructed this *Life* of his former teacher, which reads more like an autobiography, and is, indeed, in great part skilfully told by letters. The influence of Professor Newton, like the reader's interest in his story, was rather personal than academic. His biographer, by sympathetic and judicious use of the material at his disposal, has given us a full-length portrait of a great naturalist and a very human character.

NOTES ON BOOKS.

DR. NORMAN LUMB, in his *Gonococcal Infection in the Male*,[8] has contributed yet another to the large number of works on gonorrhoea available to students and practitioners. The aim in preparing this book has been to describe only those methods of treatment that have justified themselves by their results, and to describe them fully, so that a reader who is entirely ignorant of the subject will be enabled to carry out the treatment from the details given. The newer methods of treatment which have not yet proved their worth are merely mentioned or described briefly. Amongst the latter is ionization. Dr. Lumb's experience of this treatment has been that "in the acute stage disappearance of the purulent discharge resulted after six or seven times, but that the muco-purulent flow remained for a long period." We agree with the author that much unreliable evidence has been produced in support of electro-therapy, owing to the fact that cases have been regarded as cured without any sufficient bacteriological examination. In the chapters dealing with the complications of gonorrhoea the author furnishes an indication of their relative frequency from a large number of army cases, thus enabling the reader to obtain some idea of their importance in venereal practice. The chapters on the urethroscope contain much that has been already published in a former work; the instrument recommended is Wyndham Powell's. It is difficult to be original on a subject about which so much has been written in recent years as the subject of gonorrhoea, but Dr. Lumb's work at any rate has the merit of being clearly written and eminently practical.

The author of *The Technique of Psycho-analysis*,[9] Dr. SMITH ELY JELLIFFE, writes mainly for beginners. He deals with the subject principally as a method of obtaining knowledge of the causes of the behaviour of individuals, and has much to say as to when its use should be avoided. He is an experienced writer, with a profound knowledge of the literature of his theme, but the utility to students of his present work would be greatly increased by compression. There are so many statements in the nature of *obiter dicta* that a beginner might easily complete its perusal without obtaining any very clear view of what it is that the writer is mostly desirous he should learn.

In *Foot Care and Shoe Fitting*[10] Drs. W. L. MANN and S. A. FOLSOM provide a well illustrated and fully detailed account of nearly everything appertaining to marching capacity so far as it depends on the condition of the feet. Both the authors are officers in the navy of the United States of America, and many of the references are to matters with which we on this side have no acquaintance. Nevertheless, the authors give a great deal of general information, and make many observations of interest to all who are acquainted with the great importance of the subject considered. The number of these has been immensely increased by the experience of the late war.

Dr. D. A. CROW, in his small book on *Pyorrhoea Alveolaris in its Clinical Aspect*,[11] deals with the clinical signs, symptoms, and treatment of the disease. He makes a strong appeal to the medical profession for a more serious recognition of the many complications and diseases resultant from pyorrhoea. He is most drastic in his treatment, and we do not think he is justified in the extreme measures he always advocates. The illustrations of clinical conditions and the diagrams showing the surface area of teeth, and therefore the absorbing area in cases of pyorrhoea, are good. These latter were first shown by Mr. J. G. Turner some years ago. In a foreword Sir Frank Colyer says that the best treatment for pyorrhoea is to inculcate measures of prevention rather that wait for the disease to assert itself and then attempt a cure. We fully agree.

We have received the second quarterly number (June, 1921) of *Maternity and Child Welfare*, the organ of the Lady Chelmsford All-India League. The objects of the League are stated in the title. It hopes to further these aims by improving the methods of the uneducated *dhais*, or native midwives, whose services are the only help in childbirth available to the great majority of the women in India; by training female health visitors to work among *parda* women; by the organization of child welfare exhibitions; and by opening maternity homes. Membership is open to all ladies in India, European and Indian, and branches have been started in most of the principal cities. In several child welfare centres have been opened. Exhibitions have been successfully held in Delhi, Calcutta, and Bombay. How great is the scope for such work may be gathered from the statement that the mortality of infants during the first year of life is about 430 per 1,000 in Bombay, 360 in Madras, and 200 in smaller towns, as compared to about 90 in England. Besides the actual mortality, much blindness in India is due to ophthalmia neonatorum. An interesting account is given of measures taken in the Bijapur to prevent and, if necessary, to treat this disease, such measures necessitating the daily inspection, for five days after birth, of every child born in the town. Another article describes an attempt to continue the education of Indian girls in hygiene and first aid by special classes, conducted under the *parda* system for married girls, after leaving school. The proportion of Indian girls who attend school is small, and, of those who do, most cease attendance at about 10 or 11, an age at which education has hardly begun.

What is called the 12th–15th edition of GUTTMANN'S *Medizinische Terminologie*[12] has been issued. As we pointed out in noticing the previous edition, it is a German medical dictionary for the use of persons acquainted with that language. It does not give equivalents in other languages, except occasionally the Latin term. The price has been increased from 33 to 90 marks.

MESSRS. SUTTLEY and SILVERLOCK, Ltd., of Blackfriars Road, London, S.E., have prepared a "Suttlock" register (price 7s. 6d.) for use by pharmacists and dealers in drugs under the Dangerous Drugs Act. The Act and the regulations made under it are printed in the volume, and there are a series of registers of the various transactions of wholesale and retail buying or selling of opium and its preparations and cocaine and its derivatives.

MESSRS. CASSELL AND CO., LTD., announce the twelfth, revised, edition of Bruce and Dilling's *Materia Medica and Therapeutics*.

[8] *Gonococcal Infection in the Male*. By Norman Lumb, O.B.E., M.B., B.S. 1920. London: John Bale, Sons and Danielsson, Ltd. (Demy 8vo, pp. 329; 165 figures. 25s. net.)

[9] *The Technique of Psycho-analysis*. By Smith Ely Jelliffe, M.D. Second, revised enlarged edition. Nervous and Mental Disease Monograph Series, No. 26. New York and Washington: Nervous and Mental Disease Publishing Company. (Med. 8vo, pp. 181. 2·50 dols.)

[10] *A Manual on Foot Care and Shoe Fitting*. By W. L. Mann, Ph.B., A.M., M.D., and S. A. Folsom, M.D. 1920. Philadelphia: P. Blakiston's Sons and Co. (Cr. 8vo, pp. 124; 58 illustrations.)

[11] *Pyorrhoea Alveolaris in its Clinical Aspect*. By D. A. Crow, M.D., B.Ch. Edin. London: Baillière, Tindall, and Cox. 1921. (Cr. 8vo, pp. 127; 14 figures, 6s. net.)

[12] *Medizinische Terminologie*. By Walter Guttmann. Berlin and Vienna: Urban and Schwarzenberg. 1921. (Roy. 8vo, pp. 1311; 464 figures. M. 90.)

HEALTH OF LONDON IN 1920.

THE example of the Ministry of Health in expediting the issue of its annual reports is having a good effect elsewhere, and many medical officers of health are recognizing that the interest in a report decreases in proportion as the period to which it refers recedes from the date of issue. In pre-war days the report of the medical officer of health for the London County Council was often fourteen or fifteen months old and correspondingly stale; Dr. W. H. Hamer is therefore to be commended for speeding up his report for 1920, a copy of which reached us at the end of August.

Vital Statistics.

The population of the county of London estimated by the Registrar-General at the middle of 1920 was 4,531,971. It is now known that this was an overestimate, for the Census figures at the middle of 1921 were 4,483,249. An anticipated increase of 31,000 in 1920 since the 1911 census did not materialize, and there was an actual decrease of about 38,000. In a total population of 4,500,000 this overestimation is so slight that it hardly affects the statistics given in the report. The number of marriages registered in London during 1920 was 49,185, and the marriage rate of 22 per 1,000 of the population was well above that of the years immediately preceding the war. There were 120,529 births, equal to a rate of 26.4 per 1,000, compared with 18.2 per 1,000 in 1919 and 16.0 in 1918. The death rate was 12.6 per 1,000, and was the lowest recorded in London since the introduction of registration. In 1919 the death rate was 13.6 and in 1918 it was 19.2. There was an equally satisfactory decline in the infant mortality rate. In 1919 it was 85 per 1,000 births, the lowest ever recorded in London. In 1920 there was a still further drop to 76 per 1,000 births, which may be attributed to the increased activities of the maternity and child welfare workers. The result of these activities may best be seen in certain of the metropolitan boroughs. In ten years the rate has fallen in Shoreditch from 140 to 91, and in Bermondsey from 138 to 85. The lowest rate in 1920 was in Hampstead (48) and the highest in Bethnal Green (95).

Infectious Diseases.

Except in the case of small-pox and typhoid fever, there was a marked increase in the number of cases of the principal infectious diseases notified during the year. Of small-pox there were 19 cases in addition to 7 which occurred on board vessels arriving at the Port of London. There were 22,705 cases of scarlet fever and 207 deaths, compared with 12,935 cases and 147 deaths in 1919. Of diphtheria there were 13,780 cases and 1,023 deaths, compared with 9,459 cases and 775 deaths in 1919; and of measles the deaths were 1,016 in 1920 and 353 in 1919. The typhoid cases numbered 387 and the deaths 48 in 1920, and 342 and 63 respectively in 1919. It should be stated that the 1920 figures are for fifty-two weeks and the 1919 for fifty-three weeks. A great deal of pains seems to have been taken to trace the origin of the cases of small-pox, and in this connexion, as well as in the diagnosis of doubtful cases, the expert assistance of Dr. W. McC. Wanklyn appears to have been invaluable. Commenting on the inquiries which were made, Dr. Hamer refers to the great risks which are constantly arising of the introduction of small-pox into London through the importation of infected persons or material from abroad.

"The question may be raised as to how long it will be possible to keep small-pox at the present low figure. The answer is that under existing conditions there is a constant risk that small-pox will strongly reassert itself and assume a more prominent position than it does at present. Small-pox is a world disease. In British India in 1918 there were 93,000 deaths from small-pox. In this country, with its large influx of passengers from all parts, it can only be hoped to put off the evil day of the return of small-pox as long as possible; under present conditions it is not possible definitely to escape what is in effect a universal scourge. The case would be a very different one if general use were made of vaccination. Countries such as Holland and the Philippine Islands have rid themselves almost entirely of small-pox and any scare of it by means of vaccination, but our population is largely unprotected and is yearly becoming more so."

The behaviour of typhoid fever in London in 1920 has not caused Dr. Hamer to alter his opinion that the great decline of the disease in the latter half of the last century was due in the main to improvement in water and food supplies, and that the continued and accelerated fall of the last twenty years was mainly attributable to improvement effected as regards supplies of shellfish and fish from certain quarters. He combats the importance attached to "carriers," and also the opinion that preventive inoculation has caused a lowered incidence of the disease among young men since the war.

There were no cases of plague, cholera, or typhus fever in London in 1920, though two cases of the last-named disease were notified and admitted to one of the hospitals of the Metropolitan Asylums Board, where the diagnosis was revised after a period of observation. Since 1915, when 674 cases were notified, there has been a steady decline in the number of cases of cerebro-spinal fever occurring in London. In 1920 there were 144 definite cases, and 108 terminated fatally. In only 17 instances were the patients over 20 years of age, and 65 were under 3 years. Of encephalitis lethargica there were notified 149 cases, and the diagnosis was confirmed in 130 instances. The fatal cases numbered 48. The disease was most prevalent among those from 10 to 20 years of age, but the mortality was highest at ages above 40.

Tuberculosis.

The death rate from phthisis in the civil population of London in 1920 was 1.05 per 1,000, compared with 1.20 in 1919. The actual number of deaths was 4,791 and 5,332 in the two years respectively. Tuberculosis, other than phthisis, caused 954 deaths in 1920 and 992 in 1919. It is noticeable that the medical inspection in elementary schools discovered 155 cases of phthisis in 1920, and 352 in 1919. Of other forms of tuberculosis, 227 cases were discovered by the same means in 1920, and 575 in 1919. The County Council during 1920 passed important resolutions, modifying the tuberculosis scheme adopted in 1914. These include provision for the appointment of tuberculosis officers as assistants to the borough medical officers of health in order to secure a fuller measure of co-operation between the tuberculosis officer and the officers of the borough public health department; the prevention of the congestion at dispensaries owing to the retention of doubtful cases under observation for long periods and the prolonged treatment of patients by means of drugs; and more adequate arrangements for following up those patients who discontinue attendance at a dispensary. The congestion at dispensaries is to be met by making definite appointments with patients for their attendance and by establishing "consulting centres" to be equipped with "observation" beds and using the dispensaries more as centres for diagnosis and consultation than as treatment centres. There is also to be developed the fullest possible co-operation between the dispensary and the school medical service, so that all doubtful cases may be kept under observation at the school instead of the dispensary. The staffing of the dispensaries is to be so rearranged that the working week shall be thirty-six hours and the medical staff on the basis of one doctor for every 160 deaths from tuberculosis in the area served by the dispensary, part-time officers being employed for lower number of deaths.

Venereal Diseases.

The London County Council has participated since 1917 in a scheme for the diagnosis and treatment of cases of venereal disease with the county councils of Buckingham, Essex, Hertford, Kent, Middlesex, and Surrey, and the county borough councils of Croydon, East Ham, and West Ham, except that the Kent county council makes separate arrangements for diagnosis. Under this scheme there are twenty-eight hospitals and seven hostels where free treatment can be obtained. During 1920 there attended for the first time at the hospitals 23,612 London residents, or 2,704 more than in 1919. At the end of the year there were 297 practitioners on the approved list, who between them sent 11,234 pathological specimens for examination, a considerable increase upon the number sent in 1919.

A DEPARTMENTAL COMMITTEE appointed last January by the Board of Trade has made a report (Cmd. 1492, price 1d. net) on the question whether it is necessary or desirable to prescribe any limitations of the proportions of incombustible constituents supplied in gas. While the evidence received appeared to the Committee to indicate that for certain uses the harmful effect of CO_2 is very considerably greater than that of nitrogen, the Committee nevertheless judged it to be insufficient to enable it to determine at what point a limitation of the proportion of any or all incombustibles becomes necessary or desirable. In concluding a careful and well-considered report the Committee recommends that the matter should be reconsidered after an interval of three years, when the therm basis of charging for gas has become general throughout the United Kingdom.

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SATURDAY, SEPTEMBER 17TH, 1921.

CEREBRO-SPINAL FEVER AND MENINGOCOCCUS TYPES.

DURING the recent epidemic of cerebro-spinal fever in this country 98 per cent. of the strains of meningococcus obtained from military cases were found by M. H. Gordon and W. J. Tulloch to resolve, when submitted to the agglutination and absorption test, into one or other of four different groups or types; and P. Fildes found that meningococci present in naval cases were included within these same groups. From a study of meningococci derived chiefly from cases in the civil population, however, F. Griffith and W. M. Scott were led to dispute the sufficiency of this classification, because they found evidence of the existence of a number of intermediate strains. In view of this divergence of opinion it is of interest to note that the strains of meningococcus present during a recent outbreak of cerebro-spinal fever in Denmark were carefully studied with the agglutination and absorption test by Ferdinand Wulff[1] in the State Serum Institute at Copenhagen, under the direction of Professor Th. Madsen. Cultures of the meningococcus were examined from 80 cases of cerebro-spinal fever occurring in Copenhagen and its neighbourhood, 37 of the patients being under 15 years of age. It is noteworthy that 50 of these 80 cases developed rashes, chiefly of a petechial character, and that 19 of the patients suffered from septicaemia without meningitis.

Altogether 283 strains of meningococcus were investigated: 50 from the cerebro-spinal fluid of cases of meningitis, 13 from petechiae occurring in patients who developed septicaemia without meningitis, and 220 from the nasopharynx. These 283 strains were cultivated from 268 individuals—both nasopharyngeal and cerebro-spinal meningococci being isolated from 11 cases of cerebro-spinal fever, and both nasopharyngeal and petechial strains from 4 cases of meningococcal septicaemia. The cerebro-spinal and petechial strains, 63 in number, were differentiated into five types—A, B, C, D, E. To Type A belonged all the petechial strains and 46 of the 50 cerebro-spinal strains; the four others were all serologically different from one another. Out of 100 nasopharyngeal strains 93 belonged to Type A, 2 to Type D, and 5 to Type E. The grouping, therefore, was as follows:

Sources.	Types.				
	A.	B.	C.	D.	E.
Cerebro-spinal ...	46	1	1	1	1
Petechial	13	0	0	0	0
Nasopharyngeal ...	93	0	0	2	5
Total ...	152	1	1	3	6

In addition to the strains included in this table, the nasopharyngeal strain alone was isolated from 11 cases of meningitis and from 6 cases of septicaemia without meningitis. All of these 17 strains proved to be specimens of Type A, and accordingly the cases yielding them were regarded as due to that type. Thus out of 61 cases of meningitis 57 yielded Type A, and this same type was present in all of 19 cases of septicaemia without meningitis. Out of the 80 cases of cerebro-spinal fever investigated, therefore, no less than 76 were due to a single type of the meningococcus.

As regards carriers, 215 contacts of cases in the civil population showed 8 per cent. of carriers, 6 per cent. being carriers of Type A. Among 328 contacts of military cases the Type A carrier rate was 7 per cent. Out of 163 soldiers who had been on service for over a year, and who had not been in contact with patients suffering from cerebro-spinal fever, no less than 33 per cent. were found to be carriers, 15 per cent. being carriers of Type A. On the other hand, among 565 new entries coming from different parts of Denmark and swabbed one or two days after joining up, not one was found to carry Type A, although 7 per cent. of them carried other types of the meningococcus.

In 25 cases the question of the purity of the type infection was examined by testing a number of different colonies on the primary culture, and in every instance only a single type of the meningococcus was present. In all of 15 cases where the meningococcus present in the nasopharynx was compared with that in the cerebro-spinal fluid or petechiae of the same patient, their serological identity was established. The stability of the types was tested repeatedly during their cultivation for a period of two to twenty-one months and found to remain unaltered. In all of 21 carriers of Type A, who were examined repeatedly, the same type of meningococcus was present throughout. Nasopharyngeal cocci that did not conform to any of the five pathogenic types were also studied serologically by Wulff; their relations were found to be intricate, so that it was not possible to classify them into sharply defined types.

Since 95 per cent. of the Danish cases were found to be due to a single type of meningococcus, a striking feature of these observations is the evidence they afford of the value of the agglutination and absorption test for defining the prevalent infection in this outbreak of cerebro-spinal fever. A further feature is the confirmation which they offer of the chief points made out during the recent outbreak in this country as regards the monotypical character of the infection in individual cases, the stability of the types, and the serological diversity of nasopharyngeal micro-organisms with which the meningococcus is liable to be confounded. It is all the more interesting, therefore, to find that the prevalent type of the Danish outbreak differs serologically from any of the four types of meningococcus identified in our outbreak, specimens of which were sent to Professor Madsen by Dr. Gordon. We are informed by the latter, however, that through the courtesy of Professor Madsen he has had an opportunity of examining the chief strain of the Danish outbreak, and that while he agrees that it is serologically distinct from any of the specimens sent by him to Denmark, he has found that it agglutinates well with a serum prepared in 1916 against a strain of one of the subgroups of Type II defined by Tulloch. A few strains of this subgroup were obtained from cases at Liverpool about that time; but the type did not spread. It would seem from the observations of Wulff that the chief types prevalent during the recent outbreak in this country are rare in Denmark, and so far the type particularly prominent here when cerebro-spinal fever spread rapidly among troops in training in the early months of 1915—namely, Type I—does not appear to have been identified in Denmark in a single case

[1] *Undersøgelser over Meningococtyper.* M. Ferd. Wulff. Gyldendalske, Boghandel, Copenhagen. 1921.

HEALTH AND LABOUR TURNOVER.

THE latest report[1] of the Industrial Fatigue Research Board is entitled "A statistical study of labour turnover in munition and other factories." In the preparation of the valuable series of reports which the Board has already published two sources of information have been relied upon. It has often been necessary to collect through the investigating staff current data of a kind suitable for the task in hand, but where appropriate records already existed, even though kept originally with a quite different object in view, these have been used. The present report has been based chiefly on a statistical examination of the employment records kept by certain national and controlled factories during the war. It also comprises, however, facts and figures drawn from certain other factories (all too few in number) where a complete system of record keeping is in force, and this has enabled some comparison to be made between peace-time and war-time periods of employment. The records deal almost exclusively with women workers.

Labour turnover, which is defined as the rate of change in the working staff, has a double bearing upon efficiency and fatigue. If high it implies much waste of time, for the time spent in teaching and learning a task must prove more profitable the longer the worker remains at her job after she has attained her highest degree of efficiency. Labour turnover may also be used, with certain limitations, as an index to the internal conditions of a factory, though fluctuations in the duration of employment are influenced by many external factors, such as the state of trade, competition for labour, and the habits of the working population in the neighbourhood. But variable factors of this kind, it is argued, affect the factory as a whole, and will not as a rule invalidate comparisons between the different departments in the same factory. It may, for instance, be found that the labour turnover in one department is continuously higher than that of the other departments, or that there has been an abrupt rise from the normal. The former effect may be due to such causes as fatigue or ill health following upon unduly long spells of work, defective hygienic conditions, or faulty selection of workers. The latter effect may be traced to some such cause of friction as the appointment of an unpopular departmental manager or foreman, or the introduction of a piece-rate which is regarded as unjust. The selection and maintenance of an efficient working staff is undoubtedly one of the most important problems in factory management. As Professor E. L. Collis said at the Guildhall discussion on industrial efficiency and hygiene, there is need of vocational selection of workers, and healthy working conditions make for a stable personnel.

As in a previous investigation by Dr. Major Greenwood, a feature common to all the labour turnover tables examined was found to be the high rate of loss in the first three months of service. This furnishes another argument in favour of vocational selection to discover the aptitude of applicants for employment, and as a large number of beginners leave from ill health or physical incapacity such tests should without doubt be accompanied by medical examination for fitness. As might be expected, ill health has an important bearing on labour turnover. A table in the report shows that the three-monthly rate of loss from this cause at one factory rose as high as 14.6 per cent. in the case of married women and 10.4 per cent. among single women; the figures for all the factories are high enough to suggest that more might often be done to lessen this source of wastage. The cases falling into this class were not attested by medical certificate, hence they could not be taken as a strictly accurate measure of sickness. An analysis of the sickness cases attested by medical certificates during a certain period tended to show that the incidence of sickness increased with the length of service. The increase was greater among married women and the general level higher; this, however, may have been due in part to age, as the average age of the married women was higher than that of the single women. From the results recorded, it seems clear that not only would the services of a medical officer be valuable to advise as to the physical capacity of each applicant, but continuous medical advice and supervision — as Dr. Rhoda Adamson showed in her work among women munition makers at Leeds—might do much to prevent breakdown at the later stages of service.

In his paper on the importance of industrial medicine to the community, read at the annual meeting of the British Medical Association at Newcastle, Professor Collis touched again upon the medical aspect of labour turnover. A heavy economic burden upon employers and employed has, he said, been recognized in the drift of workers from one place of employment to another. Workers newly engaged have more accidents and more sickness than the more permanent staffs; they are also less productive units. He showed that where medical supervision of entrants and hygienic conditions of employment exist the labour turnover can be reduced to less than a third of its present extent.

In the present investigation it was found that women doing heavy work had on the whole a better record than those in certain factories where lighter work was being done. Factories situated in different places under different local conditions are not, however, strictly comparable; further, such disturbing factors as lack of uniformity in recording facts cannot be altogether avoided. But, as the authors observe, the usefulness of their results lies in the points in which the factories are alike rather than those in which they differ. Thus it is established that the high leaving rate in the early months of service in factories is not confined to munition works or to the war period, but is also to be found in factories engaged in peace-time industries, and it is still a source of economic loss. Lastly, and this is perhaps of most significance, the labour wastage among women from such causes as ill health, incompetence, and dissatisfaction, is very large. The remedy for a good deal of the discontinuity of employment so arising may, it is thought, be found in organized welfare work under medical guidance. The general effect of the report is to suggest that periodical surveys of the labour turnover, if carried out systematically in different departments of each factory and founded on data carefully recorded, might prove of great value.

[1] Reports of the Industrial Fatigue Research Board. No. 13: A Statistical Study of Labour Turnover in Munition and Other Factories, by Gladys M. Broughton, Ethel M. Newbold, and Edith C. Allen. (General Series No. 4.) London: H.M. Stationery Office. Price 3s. net.

THE ROCKEFELLER FOUNDATION.

IN its work of furthering scientific truth in medicine the Rockefeller Foundation recognizes no frontiers. It endeavours to stimulate research by keeping open the channels of communication between men of science in different countries and different continents, and fosters the growth of educational and research institutions. It encourages the application of scientific knowledge to the practical needs of the community in general, and by

increasing the common store of the knowledge of disease and diffusing this information as widely as possible throughout the world, it seeks to aid the progress of international goodwill. In the year 1920, according to the review[1] of the work of the Foundation which is given in the well-written report by Dr. George E. Vincent, it aided six medical schools in Canada, gave £1,000,000 to University College Hospital, London, for the development of medical education, and established and maintained a modern medical school in Peking. It assisted the Government of Czecho-Slovakia to reorganize its public health system, and carried on campaigns against hookworm disease in Queensland and the West Indies, against yellow fever in South and Central America and West Africa, and against malaria in the southern States of the United States and the West Indies. France, where the war-time anti-tuberculosis work has been brought to a point where it can soon be left entirely in French hands; Belgium, where a million francs have been given for medical research and a contribution promised to the rebuilding of the medical school of Brussels University; Germany, Austria, Brazil, and other countries likewise owe a debt of gratitude to the Foundation for aid in different medical activities. The report explains how, following on the recommendations made in 1913 by the Royal Commission on University Education in London, together with certain other influences and considerations, the experiment was begun of establishing full-time clinical units in four of the London schools of medicine. Two representatives of the Rockefeller Foundation arrived in London at this juncture on their way to the Continent and, recognizing the possibilities in University College and the hospital and medical school, formed the opinion that it would be proper for the Rockefeller Foundation to provide funds for the development of the new system of teaching at that hospital. As the result of subsequent negotiations the trustees authorized the concluding of an agreement by which the Foundation promised to contribute about five million dollars towards the realization of the new plans of University College and the hospital and medical school, the sum being almost equally divided between the building and endowment for educational and research activities. As part of the understanding for the future the two separate bodies—the University College faculty and the hospital—are each to be represented in the other by at least four professors. An account of the details of this gift was given in a special article and a leading article in our issue of June 19th, 1920. The report expresses the hope that "this formal interlocking will be a symbol of the effective team-work between the university laboratory men and the bedside teachers upon which the success of this unique London medical centre will ultimately depend."

EXPERIMENTAL RICKETS.

MUCH work has been done on the pathogeny of rickets and many different views have been advocated; indeed it has been suggested that it would be hardly an exaggeration to assert that almost every specialist in children's diseases has his pet hypothesis as to the causal factor. The old conception that the diet is at fault, especially as regards deficiency in fats, protein, or calcium salts, has been assailed. Thus, from a comparison of the feeding of rickety and non-rickety infants Dr. L. Findlay and Miss Ferguson came to the conclusion that the evidence was against the view that a deficiency of milk, butter, the fat-soluble A substance or protein was a determining factor; following von Hansemann's theory of "chronic city" they laid stress on the importance of inadequate air and exercise in causing the metabolic error manifested in rickets. This conclusion was adversely criticized by the Medical Research Council's Committee upon Accessory Food Factors (Vitamins) (1918), which described rickets as a deficiency disease due to diets which are unbalanced in that they contain too little of those substances rich in the antirachitic factor, which has a similar distribution to the fat-soluble A factor, and is possibly identical with it, and too much of substances deficient in this respect, thus summarizing Dr. E. Mellanby's results. Recently Shipley, Park, McCollom, Simmonds and Parsons[1] found that by the use of faulty diets, especially those deficient in the fat-soluble A or in both that substance and calcium, a condition indistinguishable from human rickets could be produced in rats; they felt justified in concluding only that faulty nutrition was the cause of the observed bony changes. On the other hand, Drs. Zilva, Golding, Drummond and Coward[2]—using pigs, which are especially suitable for this purpose—while cautiously stating that their results do not justify any definite information on the relation of the fat-soluble factor to the etiology of rickets, were not able to induce undoubted rickets in sucking-pigs fed from birth on a diet rigorously restricted in the fat-soluble factor. From experiments on rats Sherman and Pappenheim also throw doubt on the importance of a deficiency of the fat-soluble A substance in the production of rickets. By means of a simple diet, inadequate for growth in the amount and character of the protein and in the content of fat-soluble A, they constantly caused rickets in young rats, and then, solely by the substitution of 0.4 per cent. secondary calcium phosphate (K_2HPO_4) for a small part (one-seventh) of the calcium lactate present in this diet, completely prevented the development of rickets, though no effect was produced on the body weight. This is held to prove that rickets may be induced or prevented without change in either the protein or vitamin components of the diet, and, as had been shown previously by others, that an adequate supply of calcium does not in itself protect against the disease. The protective action of the potassium phosphate is not clear, and the authors carefully guard themselves from being thought to support the view that rickets is due to a deficiency of potassium or phosphorus. They suggest that the quantitative relation of the inorganic ions, rather than an absolute deficiency of any one of them, may be a determining factor, and that very possibly, under certain conditions of diet in which there is an unbalanced quantitative relationship of the organic as well as the inorganic foodstuffs, rickets may develop. They state definitely that their experiments and conclusions do not exclude the possibility of causes of rickets other than those discussed in this article. The recently published metabolic studies of rickets by Drs. L. Findlay, D. Noël Paton, and J. S. Sharpe[4] show that bony changes somewhat resembling rickets, but really of the nature of osteoporosis, and not of true rickets, can be caused by a calcium-low diet.

CHARLES CALDWELL, M.D.

HOWEVER edifying the lives of the virtuous and successful may be, there is often more interest in following the struggles of the erratic and gifted with adversities due to faults of temperament. Of such the life story of Charles Caldwell (1772–1853), as told by Dr. W. S. Middleton,[5] is an example; his biographer says of him that though by Nature's gifts and personal attainments he was one of the prominent men of his day, grim fate, well seconded by his own morbid spirit of controversy, has caused his name to be almost forgotten. He was of mixed French and Irish blood, being descended from the Colvilles; he was left an orphan at the early age of 14; quite undaunted, he took charge of a grammar school, thus recalling the much

[1] *The [illegible] Foundation. A Review for the Years [illegible]* (Review by C. Vincent, President of the Foundation. [illegible]).

[1] [illegible]

[2] S. S. Zilva, J. Golding, J. C. Drummond, and K. H. Coward, [illegible]

[3] H. C. Sherman, [illegible] V. M. Pe[illegible] *Johns Hopkins Hosp. Bull.*, Baltimore, 1921, xxxiv, 189.

[4] [illegible] *Medical History*, New York, 1921, [illegible] 173.

lampooned Sir Richard Blackmore, who "first set up the whipping trade . . . in vain his drugs as well as birch he tried, his boys grew blockheads and his patients died." Caldwell had a magnificent physique and commanding presence, was an adept in all athletic exercises, courtly, an eloquent speaker, and a diligent worker. So far he had the makings of an Admirable Crichton, but his egotism was colossal, he was inconsistent, and so contentious as to be an impossible colleague. After preparing for the Presbyterian ministry he started medicine at Philadelphia at the age of 20, and paid diligent court to the great Benjamin Rush. In 1793 Philadelphia was ravaged by yellow fever, and Caldwell acted as a devoted nurse to the stricken patients; from the knowledge then gained he maintained that the disease was not directly contagious, thereby winning the approval of Rush, at whose suggestion he translated Blumenbach's *Physiology* from the difficult German-Latin text. Between 1793 and 1805 he had yellow fever three times; without grasping the causal relation he remarked the concomitant swarms of insects, especially of mosquitos, during epidemics of the fever, and advocated hygienic reform in Philadelphia and the drainage of swamps. In 1794 he acted as surgeon in the "whisky rebellion" in Western Pennsylvania, and as the result of personal experience recommended the cold water treatment of fever, thus anticipating James Currie (1797). Rush adopted this method without, it is alleged, giving Caldwell due credit, and their relations became strained, though subsequently, when, acting on a hint from Rush, he translated Senac's *Treatise on Remitting and Intermitting Fevers*, Caldwell dedicated the volume in flowery language to his former teacher. This peaceful interlude, however, was of short duration, for, failing to obtain the professorial chair vacated by Rush, he became embittered and launched out into controversies whenever an excuse arose. Though he was the author of the dictum, "Every man when in health may, if he please, bridle his tongue," yet in 1846 he confessed that for fifty-five years he had never been free from a contest against some opinions or doctrines which he considered to be erroneous. That he had a feud with Benjamin Smith Barton, at different times professor of botany and natural history, materia medica, and medicine, in Pennsylvania University, is not strange, for that preposterous person believed that swallows hibernate in the mud at the bottom of lakes or in tree stumps, and maintained also that goitre, as well as malaria, was miasmatic in origin. A rather pleasing instance of Caldwell's inconsistency is, that though his great disappointment was the failure to succeed Rush, he maintained an unswerving friendship with Chapman, who stepped into Rush's shoes. Although accused of "using more words to say nothing than any American of the last century," his egotistic autobiography provides a rich store of personal information about the prominent figures of Rush, Adam Kuhn, Joseph Priestley, and Caspar Wistar "the bustler," and the early days of the University of Pennsylvania. Caldwell was one of the progressives who in 1802 practised Jennerian vaccination; in the following year he started clinical teaching in the almshouses, but he was not, as has been asserted, the first in Philadelphia to start instruction on these now familiar lines. Opinions as to his abilities as a teacher vary, very possibly because he practised in so eminent a degree the gentle art of making enemies. In 1819 he left Philadelphia to take the chair of medicine at Lexington, where he became Dean of the Medical Faculty. In seven years he had the second largest medical school in the United States; but troubles arose, and in 1837 he migrated to Louisville to become professor of medicine, medical jurisprudence, and clinical medicine; but here again the atmosphere became heated and uncomfortable, and with the disadvantage of age his connexion was severed in 1849. He died after an attack of erysipelas in 1853, and was buried at Louisville "near the scenes of his last conquest and defeat."

"BACTERIUM PNEUMOSINTES."

In the course of a prolonged investigation of the nasopharyngeal secretions of influenzal patients, eight reports on which have now appeared, Olitsky and Gates,[1] working at the Rockefeller Institute for Medical Research, have cultivated anaerobically, from secretions obtained within thirty-six hours of the onset of uncomplicated influenza, a minute filter-passing bacilloid body 0.15 to 0.3 microns in length with constant cultural characters and capable of indefinite propagation on artificial media. This organism, which has been named *Bacterium pneumosintes* (σίντης= injurer) and is not of the nature of ordinary bacteria, was also recovered from the unfiltered and filtered lung tissue of rabbits and guinea-pigs inoculated with unfiltered and filtered nasopharyngeal washings of patients in the early stage of influenza. It has also been obtained from cultures contaminated with various bacteria, such as the influenza bacillus, streptococci, pneumococci and staphylococci, and has been experimentally cultivated in symbiosis with them. Cultivation of material from controls, such as persons not suffering from influenza some of whom had acute coryza, and the lungs of rabbits, gave uniformly negative results. Intratracheal injections of mass cultures of this organism into rabbits and guinea-pigs induced changes in the blood and lungs indistinguishable from those obtained with the nasopharyngeal secretions of patients with early influenza. A noteworthy feature of the organism is that it reduces the resistance of the lung tissues of inoculated animals to accidental or experimental infection with ordinary bacteria—for example, those found in the pulmonary complications of influenza. Thus a series of rabbits injected intratracheally with a third generation of *Bacterium pneumosintes* were given twenty-four hours later, into the ear vein, small doses of a Type 4 pneumococcus or of the influenza bacillus which had proved subinfective for normal control animals; as a result there was more or less extensive lobar or bronchial consolidation, from which the organism injected into the ear vein was recovered, the rest of the lung showing the haemorrhagic oedema and emphysema characteristic of *B. pneumosintes* alone. In view of the discussion as to the virus of epidemic influenza—some, such as Opie, F. S. Lister, and Fildes and McIntosh, supporting the claims of *B. influenzae*; others, such as W. G. MacCallum, believing the virus to be an organism differing from those as yet described and ungrowable and unstainable; and others again pleading for a filter-passer—these observations are of the greatest interest. Olitsky and Gates preserve, however, a wise caution and refrain from the tempting conclusion, at any rate in the present state of knowledge, that the organism they describe is the real etiological agent of influenza.

[1] P. K. Olitsky and F. L. Gates, *Journ. Exper. Med.*, Baltimore, 1921, xxxiii, 713-729; xxxiv, 1-9.

READY-MADE REVIEWS.

There are various ways of reviewing books: at the one extreme we have Sheridan's advice, "you should never read a book before reviewing it, as it prejudices you so." Intermediate methods are to write some *ex cathedra* remarks on the subject, and leave the author's views to take care of themselves; or—a slight advance on this method—to abstract the preface. Finally, we have the honest review, containing a measured criticism written after absorbing the whole contents of the book. A reviewer has a considerable influence in determining the immediate sale of a work, but many examples of works ultimately successful which were damned by the critics on their first appearance might be quoted. Publishers are entitled to push the sale of their wares, and, though the parodist has stated that "sweet are the uses of advertisement," all the available methods are not equally attractive and some are not well advised in the interest of a new book. It might perhaps be urged that it is partly to save the busy editor of a journal or

his assistants the trouble of reading and expressing an opinion on a book that some publishers (not in this country) have adopted the custom of sending with the copies to be reviewed a printed or typed statement of the scope of the book, of the aim of the author, and of the success with which his efforts have been attended. Frequently this statement is accompanied by a request that it should be inserted in an early issue. How far this method may have borne the fruit desired we do not know, but as it is continued and as its use would seem to be extending, presumably it has not failed entirely. It is, however, possible that the reviewer may resent the publishers' suggestion to praise blindly, and be stimulated to look even meticulously for material suitable for criticism. In any case the practice is undesirable and it is possible that some reviewers might regard it as an insult to their intelligence, if not their integrity.

HEALTH AND HOUSING IN JOHANNESBURG.

IN his report for 1919–20 Dr. Charles Porter, Medical Officer of Health for Johannesburg, touches on several points of general interest. The chief event of the year was the enactment of the Public Health Act, due largely to the efforts of Sir Thomas Watt and Dr. J. A. Mitchell, now Secretary for Public Health. The Johannesburg death rate was 10.9 for whites, 17.5 for natives, 27.5 for Eurafricans, and 25 for Asiatics. This white death rate compared favourably with that of London and the great English towns, of Paris and New York, and also of the South African towns, except Durban (9.5) and Pretoria (9.2), both of which are relatively non-industrial and much less urbanized communities. The white infantile mortality was 81.4 per 1,000 births, as compared with 106 in the great English towns, 80 in Cape Town, 66.5 in Durban, and 84 in Pretoria. There was a mild recrudescence of small-pox in July and August, 1919, and several threatening outbreaks, which were limited, however, by the keenness of the infectious diseases staff, to a total of 77 cases. As regards enteric fever, regulations, for which the Council had long asked, have recently been gazetted for the control of "carriers." Dr. Porter draws attention to the nuisance from septic tanks, and particularly the danger of well-water pollution, having regard to the rapid urbanization of residential districts, the large and increasing number of borehole wells, and the contravention (often deliberate, it is said), both by architects and property owners, of the requirements of the by-laws. The main feature, however, of the report is the section on town planning and housing. A sketch is given of the progress of Johannesburg from a miners' camp in 1886, and the defects due to its hasty development and to the absence at that time of knowledge of town planning principles, which have resulted in "enormously costly street upkeep, dangerous rectangular 'collision' corners, disregard for street 'vistas,' and 'sweating of the land' by crowding of dwellings on site." The functions of the Township Board established in 1905, and the scope of the town planning section of the Public Health Act, 1919, are quoted, and the hope is expressed that wholesome regulations will soon be framed embodying various important principles, and incidentally checking the combination of "Queen Anne" front elevations of houses with unsightly "Mary Ann" backs. The Government Housing Committee of 1919 found much bad housing, shortage of houses and consequent overcrowding, and the Asiatic Inquiry Commission commented strongly upon the Malay location, which Dr. Porter calls a festering menace to the community. The Council's efforts during the past two years to face and solve the native and coloured housing question are recorded with approval. It appears that the Johannesburg Council has constant difficulty in securing much-needed sites, whether for native housing or other purposes, owing to the price demanded "rocketing" beyond all reason when the Council is the buyer. In New Zealand they have a short way with this kind of profiteering: the owner of land required is offered the Government rateable value, *plus* 10 to 20 per cent., and if he refuses this offer he must specify, and in future pay rates upon, his own valuation. Finally, Dr. Porter urges the importance of proper housing of natives, and then, but not before, the closing and demolition of slum property; the need for powers to control the influx of unemployed natives, and to take over, on reasonable terms, land required for public purposes; and the extension of the water-carriage system of sewage disposal.

FRUIT PRESERVATION.

THE report of the Food Investigation Board[1] for the year 1920 contains the results of the researches which have been conducted under its direction on different articles of diet, in addition to the rather more technical reports of the Engineering Committee and of the Oils and Fats Committee. The results so far published of the investigations on fish and meat preservation have already been noted in our columns, and the present report gives a full account of the researches which have been carried out in fruit preservation. Dr. Cyril West and Dr. Franklin Kidd have conducted experiments on the storage of English apples, and have found that for storage purposes 1° C. is the most satisfactory of the temperatures tested; a humidity of 85 per cent. saturation is better than a humidity of a smaller percentage for cold storage. In regard to the effect of cultural conditions upon storage, clay soil is preferable to chalk, and chalk preferable to fen land; wooden boxes were found to be more satisfactory for packing than stout cardboard cases; "gas" storage tests (storage in an average concentration of 14 per cent. carbon dioxide and about 8 per cent. oxygen) were so satisfactory that they are to be carried out next season on a commercial scale, this method of storage having approximately doubled the storage life of the varieties of apples tested. Mrs. Franklin Kidd, who studied diseases of gathered fruits, found that while apples grown on grass land showed only 4.5 per cent. of disease due to moulds, and 3.5 per cent. due to "gas-spot," apples grown on cultivated land were less resistant to diseases, 12 per cent. suffering from attacks from moulds, and 18 per cent. from "gas-spot." The Hon. Mrs. Onslow conducted an investigation on the oxidizing enzymes of fruit, with special reference to discoloration, and as a result she found that fruits can be placed in two classes—those which contain a complete system of ferments which cause *post-mortem* changes in flavour and colour, such as the apple, pear, cherry, peach, strawberry, banana, and grape; and a second class which lack such ferments, and consequently undergo no such discoloration, such as orange, lemon, raspberry, black currant, gooseberry, and tomato. The latter class could be successfully preserved in air for several months by freezing, while the former class could not be kept successfully in air owing to the disagreeable flavours and changes in colour which the enzymes caused, but if kept in the frozen condition in an atmosphere free from oxygen—for instance, nitrogen—the normal flavour and colour were retained. Investigations of this kind are of real service, for their practical outcome may be to increase the popularity of fruit as an article of diet.

THE ninth Norman Kerr Memorial Lecture will be delivered before the Society for the Study of Inebriety by Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P., late Principal Medical Officer to the Local Government Board, on Tuesday, October 11th, at 5.30 p.m., in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole Street, W.1. The subject is, "Some International Aspects of Alcoholism, with Special Reference to Prohibition in America."

[1] H.M. Stationery Office. London, 1921. Price 1s. net.

Scotland.

The British Association in Edinburgh.

By Thursday, September 8th, all the thirteen sections into which the British Association has been divided were actively engaged in the discussion of the various subjects set forth in the programme. In several of these sections matters interesting to the medical profession were dealt with. In the Chemistry Section, for instance, the President, Dr. M. O. Forster, F.R.S., gave an address on the laboratory of the living organism, in which he drew a fascinating picture of the processes going on in one's body at breakfast time, from the first preliminary appetizing sniff of the sizzling bacon, through all the following specific actions up to satisfaction; breakfast ought not to be a hurried compromise between hunger and the newspaper. He touched also on malt liquors, and suggested that if children were encouraged to cherish the same intelligent sympathy with yeast cells which they so willingly displayed towards domestic animals and silkworms, perhaps there would be fewer crazy dervishes to deny us the moderate use of honest malt liquors and unsophisticated wines, fewer pitiable maniacs to complicate our social problems by habitual excess. In the Zoology Section Professor E. S. Goodrich dealt with some problems in evolution, and pointed out that it could not be maintained that whilst old-established characters were inherited, newly-begotten ones were not, or were less constant in their reappearance. By experimental breeding it had been shown that the newest characters might be inherited as constantly as the most ancient, provided they were possessed by both parents. But it had also been shown that the green colour of chlorophyll—a very old character in plants—could be abolished by cutting off the light from a germinating seed. A strongly hereditary character was the presence of the paired eyes of vertebrates, yet the addition of a little magnesium chloride to the sea water in which the eggs of Fundulus were developing would give rise to embryos with a median eye. For a character to reappear in the offspring it was essential that the germinal factors and the environmental conditions which co-operated in its formation in the ancestor should both be present. Factors might be transmitted, but characters, as such, never were. The characters of the adult, being responses, were not present as such in the fertilized ovum from which it developed; they were produced anew at every generation. Professor Goodrich referred to the experiments made by Professor Guyer of Wisconsin, in which an environmental stimulus had apparently given rise to a heritable mutation. By injecting a fowl repeatedly with the substance of the lens of the eye of a rabbit an antilens serum had been obtained; on injecting this sensitized serum into a pregnant female rabbit, while the mother's eyes remained apparently unaffected, some of her offspring developed defective lenses; on breeding the defective offspring for many generations these defects were found to be inherited; when a defective rabbit was crossed with a normal one the defect seemed to behave as a Mendelian recessive character, and the defect might be inherited through the male as well as through the female parent, and was therefore not due to the direct transmission of antilens from mother to embryo in utero. Professor J. Arthur Thomson discussed the problem of "modification species," and raised the question whether species makers had not from time to time been deceived into making species out of what were just nurtural effects; he illustrated his contention by the description of an antipatharian colony which had altered its ordinary mode of growth on account of the presence of a polychaet worm. Professor Cossar Ewart criticized the scale origin of feathers, and drew attention to the study of the nestling feathers (prepennae) which precede the true feathers (pennae). Sir Walter Morley Fletcher gave the presidential address in the Physiology Section; he dealt with the aims and boundaries of physiology, and pointed out how the war had brought to the front new problems in connexion with terror, physical damage, chemical attacks, and the strains of aviation—all in their effects upon the human body. Hormones and vitamins had to be carefully investigated. "The nation had seen a Minister fall whose control of the people's food was not based upon physiological law, and his successor gain renown whose adoption of the teaching of physiological experiment was early and faithful." Sir Edward Sharpey Schafer followed and emphasized the statement that histology must be treated as an integral part of physiology, and that physiology was an independent science and not merely a branch of medical science. Dr. H. S. Langfeld of Harvard (U.S.A.) gave the address on the study of personality in the Psychology Section; he believed that the Freudian psychology had contributed much to the study of character in that it had struck at the roots of the motives for our actions; the analysis and measurement of mental traits was a great problem for the present time. Dr. Langfeld described an experimental method by which it was possible to detect deception by means of the blood pressure.

On Friday, September 9th, Professor W. D. Halliburton spoke on the perennially attractive subject of giants, "feeble and usually short-lived persons," and he linked them up with the little pituitary body with its vast potentialities and great usefulness. In the joint meeting of the Geographical and Anthropological Sections Sir Arthur Keith opened a very interesting discussion on the origin of the Scottish people, dwelling on the obscure "harpoon folk"; Professor Bryce of Glasgow and Dr. J. F. Tocher also spoke. In the Psychology Section there were some outstandingly medical matters dealt with, such as consciousness and the unconscious, by Professor C. Lloyd Morgan, of Bristol; psycho-analysis and suggestion in shell shock, by Dr. W. Brown, London; and on forgetting, by Professor T. H. Pear, Manchester. Molecules and dye-stuffs interested the Chemistry Section; the origin of the bony vertebrates and the soil protozoa were discussed in the Zoology Section; and in the Physiology Section kidney deficiency tests, vitamins, and the pulmonary circulation under the influence of pituitary extracts engaged attention. All the sections continued their meetings on Monday and Tuesday, September 12th and 13th, and some went on till Wednesday, September 14th.

The Health of Glasgow in 1920–21.

The one hundred and forty pages in which Dr. A. Kerr Chalmers, the medical officer, has described the health conditions of Glasgow for 1920 are full of data of supreme importance for the student of the hygiene of great cities. Dealing as he does with a mass of human beings second only in size to London within the British Isles, Dr. Chalmers has to look at all his problems in the large. For instance, there is the size of the staff by whose means he carries on the work of safeguarding Glasgow, and the various subdivisions of the work into port local authority, bacteriological laboratory, fever hospitals, tuberculosis sanatoriums, child welfare, venereal diseases, tropical diseases, veterinary, housing, and many other departments; the large chart (opposite p. 18) which the report contains gives some idea of the magnitude and the ramifications of the organization which is controlled from the head office, with its secretary, general clerks, typists, and others to the number of 75, and its divisional staff of 256, not including the bacteriological and veterinary workers; but the work itself is not so to be represented, although the pages devoted to the special account of the small-pox outbreak, by Dr. A. S. M. Macgregor, give an inkling of the immense amount of activity which was called into being by this one feature in the epidemiology of 1920.

The Small-pox Epidemic.

For some fifteen years Glasgow, like Scotland generally, was remarkably free from small-pox; the years 1901 and 1904 had witnessed considerable outbreaks, but then a period of freedom had come, to be broken in March, 1920, when two small groups of cases occurred, traceable in one instance to a ship which had arrived from Bombay. At that time, as Dr. Chalmers points out, two new factors had to be taken into account in the city conditions; one was the presence of a large number of unvaccinated children in the population who would act as danger points, and the other was the return to civil life of many adults who had been revaccinated while on war service, and who would therefore act, so to say, as non-conductors of infection. With regard to the former factor, there was immediate evidence of its influence in the occurrence of small-pox among the unvaccinated according to age; of the unvaccinated who were attacked with the disease 87.8 per cent. were under 15 years of age, and only 12.2 per cent. above it. The percentages in the 1901 outbreak were 65 and 34

respectively. Of course, with the first signs of the outbreak in 1920 vaccination and revaccination were offered freely, and some 225,000 persons responded; to these Dr. Macgregor adds 100,000 ex-service men who had been recently revaccinated, and about 124,000 children who had been born and vaccinated within ten years. In this way a total of 449,000 protected persons had been built up by the end of the outbreak out of a population of 1,115,000; so that considerably less than half the people of Glasgow had been vaccinated and revaccinated. No wonder that the opinion is expressed that "this proportion of recently vaccinated persons is insufficient to protect the city against a possible further severe outbreak." In an addendum Dr. Macgregor brings the results up to the close of March, 1921: of the vaccinated attacked by small-pox, there were 429, of whom 69 died (a mortality of 16.1 per cent.); of the unvaccinated attacked, there were 128, of whom 47 died (a mortality of 36.7 per cent.); and of those doubtfully vaccinated there were 21, of whom 9 died (a mortality of 42.9 per cent.). If the cases be divided into those under and those above 15 years of age, a marked contrast is discovered between the vaccinated and the unvaccinated; there were 30 vaccinated cases under 15 years, with no deaths, as against 112 unvaccinated cases, with 38 deaths; there were 399 vaccinated cases over 15 years, with 69 deaths, as against 16 unvaccinated cases over 15 years, with 9 deaths. The whole of Dr. Macgregor's special report is worthy of close study, and what he has to say regarding the notification of chicken-pox and missed infections is peculiarly interesting. The "missed" cases arose in various ways: some of them were instances of so virulent a form of small-pox that death occurred before the distinctive signs appeared, and the deaths were entered as uraemia, malignant scarlet fever, and miliary tuberculosis, etc.; others were examples of the very mild form of the disease, the individuals moving about freely among the population unsuspected until more severe cases arose from them and were traced back to them.

Venereal Diseases.

Another interesting portion of the report deals with the scheme which is being worked in Glasgow to counteract the venereal diseases. The most gratifying feature of the year's record was the improvement in the proportion of attendances to new cases treated outdoor: in 1919, 4,976 out-patients made 50,452 attendances, or an average of 10 attendances each patient; in 1920 the corresponding average was 14; but from many indications it can be seen that the medical officer of health is not easy in his mind about the future, and is far from satisfied with the means at his disposal for fighting this dread scourge of modern life. He says it is a common observation that few patients will attend clinics until they become non-infective, but cease to come as soon as pain or discomfort is lessened; and he adds:

"As such persons may become active spreaders of the disease legislation has been suggested with the object of penalizing such action when established. It is possible that these proposals are based on too hopeful a view of the willingness of patients to comply with restrictive legislation, and at present there is no way of applying the preventive provisions of the Public Health Act to venereal diseases save by first making them notifiable. The notification of primary syphilis would be a practicable proposal, because the disease can be treated to a non-infective stage, but gonorrhoea, from the difficulty of establishing a non-infective condition, would present much the same administrative problem as does pulmonary phthisis. A beginning would be made, however, were there power to insist that either or both of the parents of a child suffering from gonorrhoeal ophthalmia neonatorum should place themselves under treatment."

Dr. Chalmers, too, is not happy about ablution centres, and he asks whether we can, with any hope of being listened to, appeal to the honour of youth to keep itself chaste by avoiding occasions of infection, and then tell the young man that he may make a safe exchange with chastity at the nearest ablution centre. A formulated public opinion is certainly greatly to be desired.

Births and Deaths.

The number of births which took place in Glasgow during 1920 was 32,992, the highest recorded in the present city, nearly 7,000 in excess of 1919, and giving a rate equal to 29.26 per 1,000, as compared with one of 23.18 per 1,000 in 1919. This rate should presumably be a little higher, as the population of Glasgow has been found by the Census to be somewhat less than was estimated. The marriage rate, which is often associated with the birth rate, was 9.8 per 1,000 in 1914, 10.3 in 1915, 8.6 in 1916, 8.3 in 1917, 9.4 in 1918, and 9.0 in 1919; it rose to 12.4 in 1920. The deaths in Glasgow (after correction for institutions, etc.) numbered 16,765, as against 18,237 in 1919; this gives a death rate of 15.3, exactly the same as that in Dundee, but higher than Edinburgh (13.3), London (12.6), and Manchester (13.4), and lower than Liverpool (16.0). The infantile mortality was 106 per 1,000 live births, as compared with 114 in 1919; but the greater fatality of this first year of life in the case of illegitimate as contrasted with legitimate children is shown more clearly than ever in 1920, the rate among the illegitimate being 181, and among the legitimate 101. In this relation the pages devoted to the extensive and intensive maternity and child welfare work are well worth careful study; much is being done in preparing a better soil, and the medical officer of health may really believe that some fruit is already being gathered.

THE SANITARY ASSOCIATION OF SCOTLAND.

The forty-seventh annual congress of the Incorporated Sanitary Association of Scotland was held in Dundee from September 7th to 10th. At the annual business meeting Dr. G. Clark Trotter, Medical Officer of Health, Deptford, London, was elected President, and Mr. Thomas Bishop, Deputy Chief Sanitary Inspector, Edinburgh, and Dr. Matheson Cullen, Scottish Board of Health, Edinburgh, Vice-Presidents. Major W. S. Patton, M.B., formerly Director of the Pasteur Institute of Southern India, and now lecturer on medical entomology in Edinburgh University, delivered a popular lecture on mosquitos and disease. On Thursday morning the President (Dr. Clark Trotter) delivered an address on home environment and a sanitary conscience in relation to public health, in which he emphasized the value of home visitation, home instruction, and direct personal hygienic teaching in the progress of public health; he drew striking instances from Salford and Paisley (where he was medical officer of health) in confirmation of this statement, for in these places there had been voluntary and official home visitation, with a remarkable fall in the infantile mortality rate in both cases. Housing had to be attended to. Whilst he spoke of the great value of official child welfare work, he deplored the passing of the family doctor in the old sense. Mr. Robert Mitchell, Chief Sanitary Inspector, Dundee, raised the question, To what extent is the Rats and Mice Destruction (Scotland) Act likely to be effective? The Act was an aftermath of the war, and Mr. Mitchell thought it had serious defects. For instance, the onus of extermination was laid upon the occupier of premises and not upon the owner; yet infestation was usually the result of structural defects for which the owner was responsible. There would require to be co-operation between owner, occupier, and officials if the Act were to be a success. It was calculated that there were 41,000,000 rats in the country, or one for each head of the population, and that one rat could destroy at the rate of £1 per annum. Gassing was the best method of destruction, for it killed not only the full grown but the newly born rats in the nest. Mr. Peter Fyfe, Director of Housing, Glasgow, dealt with construction and reconstruction in housing. He held that those who opposed the continuance of the State subsidy were playing into the hands of communistic agitators. To economize on housing in the present appalling state of matters was a blunder of the first magnitude. Ex-Provost Raffan read for Dr. A. J. Wilson, Medical Officer of Health, Airdrie, a paper on lessons of the great war on the control of infectious disease, with as a text "The bacillus kills more than the bullet." Speaking of small-pox, Dr. Wilson said we had escaped a pandemic of that disease such as followed the war of 1870–71 largely because nearly all the troops engaged in the recent war had been protected by previous vaccination. Disinfection on the largest possible scale, and in the shortest possible time, was the principle of primary importance against lice-borne diseases. Mr. Allan W. Ritchie, Chief Sanitary Inspector, Edinburgh, spoke on the dangers of dirt and vermin under the heading of cleansing of persons and houses. On September 9th the chief subject discussed

was Dr. G. Arbuckle Brown's paper on the sanitary construction of schools, in which emphasis was laid on the provision of cloak rooms for the prevention of pediculosis, on lavatories, and on the abolition of common drinking cups in connexion with fountains. Lieut.-Colonel Gerald Leighton, M.D., contributed a paper on the standardization of meat inspection; Dr. G. Matheson Cullen introduced a discussion on factors making for increased efficiency in industrial life; and Dr. J. F. Tocher, county analyst, Aberdeenshire, spoke on the need for consolidating the law relating to the sale of food and drugs. A resolution was passed calling upon the Scottish Board of Health and the Government to take action which would enable the authorities to deal in a compulsory manner with persons and houses in a verminous condition.

England and Wales.

Memorial to Dr. R. W. Michell of Cambridge.

It has been suggested by many of his old friends that some form of permanent memorial should be instituted at Cambridge in memory of the late Dr. Robert Williams Michell, who lost his life during the war as a result of wounds received whilst rescuing wounded from "No Man's Land" on the Somme. An obituary notice, with an appreciation by Sir Clifford Allbutt, was printed in the JOURNAL of July 29th, 1916. A sum of money has already been guaranteed for the purpose of a memorial to one who will long be remembered for his unfailing qualities as a personal friend and adviser, as well as for his unselfish interest and assistance in connexion with Cambridge rowing. Further, in the words of the Regius Professor, "Michell was an example of a man in busy general practice who transacted it all in the spirit, method, and assiduity of science." It is proposed that the memorial should take the form of a challenge cup, known as the Michell Cup, to be awarded every year to the college boat club gaining most marks under a scheme that has been drawn up. The suggestion is that subscriptions be limited to £2 2s., which should be sent to Dr. C. H. S. Taylor, 3, Trinity Street, Cambridge.

Infant Welfare in Manchester and District.

The Manchester and Salford Council of Social Service has recently been investigating the extent to which official and voluntary organizations in Manchester and Salford were fulfilling their statutory obligations, and were availing themselves of the permissive powers given to them in recent public health legislation. A report by that Council gives the results of this investigation, although a great part of it has been sterilized by the financial difficulties that have stopped so many of the promising schemes of the late Minister of Health. The reporting committee decided that it would be misleading to issue a report based on hopeful expectations which were to be no longer entertained; it seemed that in only one material respect were things better than in 1914, the war having caused the public to appreciate the danger of producing physical inefficients in discreditably large numbers. To ensure that infant life should be normal in an industrial environment minimum standards of space, comfort and sanitation must be enforced in all dwelling-houses, with a maximum standard per acre of population and a maximum standard of smoke in inhabited areas. The birth and nurture of children in infancy is a natural function, which in normal conditions requires no special training, and in many industrial areas real progress can only be made when sustained and determined effort has gradually brought conditions back to the normal. It is suggested in the report that girl children at school should be specially trained in the functions and duties of motherhood in order to overcome the abnormal conditions in industrial districts, but the whole subject must be simplified and set out in plain language before the great mass of fathers and mothers who have the voting power which constitutes political pressure. The report contains many other points of interest, including a section on camps as an adjunct to city life, and an appendix on the permissive powers and statutory orders of local authorities.

Australia.

Director-General of the Australian Army Medical Services.

Major-General Sir Neville R. Howse, V.C., K.C.B., F.R.C.S.Eng., has been appointed Director-General of the Australian Army Medical Services. The appointment is for five years at a salary of £1,500 per annum. Sir Neville Howse distinguished himself in the Boer war as a lieutenant in the New South Wales Lancers, and for his bravery at Vredsfort was awarded the Victoria Cross. He was soon afterwards placed in charge of a field ambulance and promoted to the rank of major. In 1914, at the outbreak of the great war, he went to New Guinea as principal medical officer of the Australian forces, and having completed his work there he left with the first Australian Division for Egypt. He was subsequently appointed Assistant Director of Medical Services of the division, and superintended the removal of the wounded in the Gallipoli landing. For his conspicuous services in this work he was created a C.B. In 1916 he became Director-General of Medical Services of the A.I.F.; he received the K.C.B. in the following year.

Military Hospitals.

The A.I.F. ceased to exist on April 1st last, and since then the Repatriation Department has been responsible for all the patients in the military hospitals. The Repatriation Commission arranged to take over the entire administration of the hospitals formerly conducted by the Defence Department in Brisbane, Adelaide, Perth, and Hobart. By mutual arrangement the Defence Department continued the conduct of the hospitals at Caulfield in Victoria, and at Randwick in New South Wales, for the treatment of repatriation cases in these respective States, the Repatriation Commission providing the funds to meet all necessary expenditure. It has now been decided, however, that the Repatriation Commission shall from July 1st assume the entire control of these institutions, and thus establish a uniform system of civilian hospital provision for military patients throughout the Commonwealth.

Sydney University.

Owing to the increases in the personnel and the salaries of the teaching staff of the Sydney University the Senate has decided to approach the Government for an increased grant of £15,000 per annum. This is required to meet the increased cost of chemicals and apparatus, as well as the increases in wages and salaries. The Senate states that the amount of compensation to be given to the university on account of the free attendance of public exhibitioners was fixed at £20,000 per annum in 1913. Since then the increase in the prices of all materials has been so great that in some instances the cost is more than double the pre-war price. To meet this increase the Senate has already found it necessary to raise the fees of paying students by 50 per cent. The exhibitions referred to are allotted on the basis of a percentage of the population, and have now reached 200 annually. These students enter the university for a course of at least four years, and this is equivalent to £200.

Considerable difference of opinion has for some time existed in regard to the method of making appointments to the university staff. Professor MacCallum urged that when vacancies on the teaching staff occur or when new lectureships or professorships are established a committee should be appointed to consider and report to the Senate in each particular case whether it is most advisable to proceed (1) by making inquiries among recognized authorities with a view to inviting an application, or (2) by promotion, or (3) by advertisement. The Senate, however, decided that in future the permanent posts on the teaching staff shall be filled by election after applications have been invited by advertisement, unless the Senate resolve, upon a report of a committee of inquiry, that a proposed teacher is of such acknowledged reputation in the subject to be taught that no one else of equal eminence is likely to apply.

Radium for the Royal Prince Alfred Hospital.

In 1918 a parcel of radium valued at £1,000 was presented by Sir (then Mr.) Hugh Dixson, the condition of the gift being that during the war the radium was to be

in the possession of the Royal Prince Alfred Hospital for purposes of medical research and application, and that as soon after as was possible the chancellor of the university and the chairman of the board of directors of the hospital should meet and agree whether its use in medical or physical science would be for the greater benefit to society generally. If they decided in favour of physical research, the radium was to become the property of the Sydney University absolutely. If medical science should have the preference, the radium was to be in the possession of the Royal Prince Alfred Hospital for a period of five years, when a similar meeting would decide the question for a further period. A meeting of the two officials was held recently, and it was decided that the radium should remain in the possession of the hospital for the next five years.

MAIMED SOLDIERS.

An effort is now being made to provide a hostel for maimed and limbless soldiers in New South Wales. Attention has been directed to the large number of these unfortunate men who are seen begging in the city streets, and it is felt that some home should be provided for those who are unmarried or unattached which they could make their headquarters, and from which an effort might be made to establish them in some business. The Red Cross has already taken the initiative in establishing a pottery business, and a number of men who have suffered double amputations are accommodated at the Red Cross Home known as Rose Hall, in Sydney, where they are supplied with wheel chairs and motor cycles. About 1,000 men have returned to New South Wales more or less maimed, and a large number of them have already secured employment through the Limbless and Maimed Soldiers' Association, but it is desired that some provision should be made for rendering assistance to any of these soldiers who may require it at any time. At a meeting recently held at Government House an interesting account of the work already being done for these men was given by Colonel Moseley and Mr. Owen of the Limbless and Maimed Soldiers' Association. It was stated that there is about £600 in hand for the building, and various schemes for raising further funds are being considered.

Correspondence.

LONDON PROVIDENT HOSPITAL SCHEME.

SIR,—It will doubtless be within the knowledge of your readers that certain of the large London hospitals have decided to offer their services to members of the National Provident Scheme for Hospital and Additional Medical Services. We are now in a position to announce that the National Provident Scheme will definitely come into operation in London on November 1st next. To those who are considering its adoption in other areas we have offered all the help and advice we can give, as we are assured that wherever the scheme attracts a sufficient membership the financial anxiety of the hospitals will be steadily lessened.

The scheme offers to those who come within certain prescribed limits of income, as well as to all those who are insured under the National Insurance Acts, practically all the higher resources of medicine free of charge beyond the payment of their annual subscriptions, and its advantages to the community are self-evident. But there is a larger issue at stake. Men and women who are in receipt of small but regular incomes can by joining the Provident Scheme provide, during health, for the irregular and critical expense of illness. These persons do not ask for charity, and are not fit subjects for it, but when they are ill their income stops, and they cannot afford the heavy costs of medical treatment outside the hospitals. They have consequently been forced hitherto to accept, in whole or part, treatment provided by charity for the sick poor, or alternatively, to go without.

The voluntary hospitals are now asking their patients to contribute towards their cost to the hospital, and members of the Provident Scheme will not only escape this inconvenience of call upon them in illness, but have the satisfaction of knowing that they are paying their way, and that they are helping the governing bodies of the several voluntary hospitals to maintain the high traditions and advantages of the voluntary system of hospital administration of which the nation is so justly proud.

The hospitals and other bodies co-operating in the scheme in London can supply to a limited number of members all the services promised, but as the success of the scheme will depend upon the satisfaction of its members, and as it is essential that the hospital and other medical and surgical benefits should be rendered promptly to members who require them, we have decided to limit strictly the number of members. Applications from those wishing to join the scheme will be dealt with in the order in which they are received until it is necessary to close the list.

We believe that the public are determined to save the voluntary system, and for this reason we launch the Provident Scheme in London with every confidence that it will be welcomed, and that its extension to other parts of the country is only a matter of time.—We are, etc.,

ARTHUR STANLEY,
DAWSON,
ALAN G. ANDERSON,
W. MCADAM ECCLES,
J. F. GORDON DILL,
Organizing and Executive Committee of the National Provident Scheme.

3, Fenchurch Avenue, London, E.C.3,
Sept. 7th.

*** As stated in our last issue, an explanatory leaflet, giving particulars of the scheme in London, may be obtained from the Honorary Secretary, 77, Cambridge Terrace, Paddington, W.2. This shows that the facilities will include arrangements for consultation, nursing, dental services, laboratory and *x*-ray examination, massage, electrical and radium treatment, hospital treatment, and ambulance transport.

VITAMINS AND DEFICIENCY DISEASES.

SIR,—Beri-beri is called a disease of deficiency, and so it is; but it might be called as truly a disease of excess. The vitamin B is not essential to health. Men can live in perfect vigour wholly on flesh, fruit, and vegetables—all B negative; but they dare not add to that dietary a daily ration of 1 lb. white bread or white rice without great danger of beri-beri, and the risk is the greater when work and hunger force the body to attempt to utilize what might otherwise be allowed to pass through. The disintegration of food during digestion and the reassembling of the molecules for assimilation is a complicated process, and it seems evident that the vitamin B is essential for the proper assimilation of grain; without it I believe a toxin is liable to be formed in the intestinal wall which causes the beri-beri symptoms. If the toxin be denied, the only alternative is that a chemical constituent of the nervous system is withdrawn to secure the assimilation of the decorticated cereals, and the nerves thus left defenceless. I think it was Dana who described the redskin's feast of grass seeds; but primitive man discovered the advantage of cultivating grain to furnish a wholesome satisfying food which could be stored without putrefaction; it was left to modern man to perfect the decortication and find it delcterious.

The vitamins are synthetized by plants for their own purposes, and water-soluble C is certainly No. 1. B or No. 2 is an allotropic form more stable and resistant, invented by plants as they spread to new lands where continuous growth was impossible owing to a cold or dry season. Stored up in the seed, on the advent of suitable conditions it is reconverted into C (No. 1) and germination and growth proceed. The vitality of seeds varies immensely, depending apparently on the amount of B and the protectiveness of the husk or shell. It is noteworthy that the subtropical Citrus family, famed for the amount of C in the mesocarp, cannot store it, and the seeds die on drying in the course of a few hours. None of the vertebrates can synthetize the vitamins or transmute one sort into another, but they can store up uncertain quantities of them. The herbivora take the vitamins directly from the plants, and the carnivora obtain all they need of C and A from what is stored in their prey. So we may take it that the A of cod-liver oil is derived from plankton through innumerable hosts, and that the quantity so obtained is far beyond the requirements of the cod in adult life. The

quantity necessary of any vitamin seems to be small. It was found in Mesopotamia (BRITISH MEDICAL JOURNAL, January 17th, 1920) that 2 oz. oatmeal gave enough B to safeguard the oatmeal and a daily ration of 1 lb. white bread which had previously been causing beri-beri; and the milk of the lioness contains enough C to make orange juice unnecessary.

I have seen a lot of scurvy in the last two years, and here too I cannot avoid belief in a toxin of excess. No one calls rheumatism a disease of deficiency; it seems here rather a disease of excess (the everlasting sour gruel and sour milk), and the two diseases have common symptoms. I have seen cases with disabling rheumatoid pain in legs and arms yet with only the faintest sign of scurvy in the gums. (The brawny swelling of the shins is not a feature of this type.) From the scurvy point of view all foods may be classed as living or dead. Vegetables, fruit, flesh, milk, are living till killed by overcooking or decomposition, and grain is dead unless malted. If the natives get nothing but sour gruel made from finely-ground maize day after day, the original store of vitimin C is exhausted before long, and all the sooner if the store was small through the previous home-feeding being deficient in C in times of drought. That a small amount of living food with C is necessary for the assimilation of dead food is clear, but the relationship is not so evident as in the case of grain feeding.

Milner Fothergill of old advised exercise for diabetics so that some of the sugar should be used up in the muscles. Is not diabetic gangrene a sign of intoxication of the tissues by excess? A recent correspondent urged excess of starches as the cause of rickets; and I can well believe it when the age of infants or confinement of puppies prevents the excess being worked off, as Fothergill advised with regard to sugar. If so, this again is no deficiency but a toxin from excess.—I am, etc.,

Mgamboti, S. Africa, July 7th. P. H. WALKER.

RETROGRADE CATHETERIZATION FOR STRICTURE.

SIR,—I was interested to read Mr. W. J. Foster's article on "Retrograde catheterization for impermeable stricture of the urethra," in your issue of June 25th, p. 931, but the device is well known to surgeons in Nigeria, and probably other tropical countries where impassable strictures, accompanied by urinary fistulae in the perineum and scrotum, are so common.

It must be a rare event that either an external urethrotomy or a retrograde catheterization is required in those strictures that are unaccompanied by urinary sinuses, for it is almost always possible to dilate such strictures in the ordinary manner or perform an internal urethrotomy. Even in cases with retention of urine, if the bladder is drained suprapubically through the puncturing trocar, within a few days' time it will usually be found possible to pass a fine guide under an anæsthetic (with or without the aid of a urethroscope), and subsequently larger sounds or the internal urethrotome. I have therefore not performed retrograde catheterization as a help to dilatation of a stricture, but only as an aid in finding the bladder end of the urethra in the perineum in the performance of Wheelhouse's external urethrotomy, when a stricture has been accompanied by urinary sinuses.

In tropical countries strictures with urinary fistulae are frequently so neglected that when the cases present themselves for operation to the surgeon the perineum often consists of a mass of inflammatory and scar tissue almost cartilaginous in texture, and unless a fine whalebone guide can be passed down the urethra into the bladder it is impossible, in many instances, to find by dissection in the perineum the vesical portion of the urethra beyond the stricture.

As a matter of fact, of late years in this hospital in Calabar I have made it my practice to start a Wheelhouse's operation with an extraperitoneal suprapubic cystotomy and perform retrograde catheterization in all instances where no guide, however fine, can be passed into the bladder. It ensures the certainty of finding the urethra, frequently saves a tedious and perhaps futile dissection, and the combined operation can be completed in half to three-quarters of an hour. The bladder and abdominal walls are sewn up after the operation and a No. 10 silver catheter tied into the bladder through the urethra for three days, and subsequently soft rubber catheters tied in until a week has expired. I leave no drainage tube in the bladder, and seldom one in the abdominal wall down to the bladder.

Of course external urethrotomies are far more commonly performed in the tropics than at home; indeed, they form a large section of a surgeon's operative work out here.

I extract the following paragraph from the scientific section which I wrote for the *Calabar Annual Medical Report* in 1917, which may be of interest:

"Retrograde Catheterization and the Combined Suprabubic and Perineal Operation for Urethrotomy. This device is not unknown to surgeons in West Africa, for it has been carried out on several occasions. In countries where skilled medical aid is not available, the tissues around those structures of the male urethra which are associated with urinary sinuses have often progressed to such an advanced state of chronic fibrotic inflammation that it is impossible to find the bladder end of the urethra from an incision made in the almost cartilaginous mass of scar tissue of which the perineum then consists. The penile end of the urethra having been found in the perineum by the aid of the metal staff passed in the usual direction, the distal end is found by opening the bladder extraperitoneally above the pubes and catheterizing it from this end towards the perineum. It is not always easy, however, to find the vesical end of the urethra, and much time may be wasted in attempting to do so. Should any difficulty arise the following manœuvre should be carried out: A pair of tenaculum forceps are passed into the bladder and fixed on to the inner coats of its wall in a spot behind the trigone. The bladder is then lifted up, when it will be found that it is so loosely attached to surrounding structures that it may be turned almost inside out, so that the vesical urethral opening comes readily into view and may be catheterized easily. It is because I have not heard of this device being performed before that I have reported the matter here."

I am certainly not the first surgeon to institute retrograde catheterization in Nigeria. I believe Dr. George Mann Gray, of Lagos, and probably other surgeons, practised the combined operation before myself.—I am, etc.,

E. E. MAPLES, M.D.Lond., F.R.C.S.Eng.,
Senior Medical Officer, W.A.M.S.
Native Hospital, Calabar, Southern Nigeria,
Aug. 5th.

VACCINE THERAPY AND CYSTITIS.

SIR,—I should like to endorse Dr. Knyvett Gordon's remarks upon this subject. Like Dr. Gordon, I am most sceptical about the results of vaccine therapy in infections of the urinary tract, because only a small percentage of these infections are suitable for vaccine treatment alone, though in suitable cases, and as an adjunct to surgical and other treatment, vaccines are extremely effective. Like Dr. Gordon, I repeatedly receive specimens of urine with such inquiries as, "Is there a germ present? If so will a vaccine do any good?" My reply is, "The germ present is so-and-so; as to whether a vaccine will be of any benefit or not depends entirely upon the clinical condition."

While the prevailing view-points exist—namely, that all vaccines are the same no matter by whom prepared, and that a sign or symptom indicates some particular disease—the present unsatisfactory results will continue.

Mr. Dobson states that "inaccurate diagnosis is at the root of the present unsatisfactory position as regards the treatment of urinary infections." The failure of many forms of treatment is explained by this fact, as the particular treatment used was never meant for the actual disease existing. Mr. Dobson, however, sweepingly condemns vaccine therapy, though admittedly carried out under these conditions.

It is not a sceptical bacteriologist that is required, but one with a sound clinical knowledge, to help to diagnose the exact condition and to advise how much or how little effect a vaccine is going to produce, and what other concomitant treatment it is necessary to carry out. In my own experience I know that vaccines have been given for such conditions as nephroptosis, tuberculous kidney, stone in the ureter, etc., and vaccine therapy in urinary infections condemned as a result.

The essential factors in vaccine therapy are: (1) Accurate clinical diagnosis; (2) determination of what surgical or dental concomitant treatment must be carried out; (3) expert experience in obtaining the essential organism. Other important factors are (4) the actual technique used in preparing the vaccine, and (5) regulation of dose and

interval according to clinical indications. As the end results of an operation depend upon the accuracy of diagnosis, judgement, and operative ability of the surgeon, so the end results of a vaccine depend upon the same attributes in the bacteriologist.

I find that these attributes are recognized by the public, though a large proportion of the profession are apparently oblivious to them. When a patient is cured—say, of rheumatoid arthritis—after he has been unsuccessfully treated by other bacteriologists, he will make the remark that "a good deal seems to depend upon who makes these vaccines." The end result upon which the patient gauges the value of the vaccine is dependent upon the attributes of the bacteriologist as mentioned.

In conclusion, I would point out that the effects produced by vaccines follow a definite scientific law, with definite limitations and indications. Vaccines can take a most important part in the treatment of urinary infections, as in infections elsewhere. The maximum benefit can only be obtained by the close collaboration of the surgeon or physician with the clinical bacteriologist, and it is upon those lines that vaccine therapy will develop. No advancement is likely to occur from the indiscriminate administration of emulsions of bacteria.—I am, etc.,

S. G. BILLINGTON, M.B., F.R.C.S.

Wolverhampton, Sept. 10th.

TREATMENT OF EMPYEMA.

SIR,—I have read with great interest in to-day's issue of the BRITISH MEDICAL JOURNAL the discussion in Newcastle on the treatment of acute pleural empyema. On May 29th, 1920, you published my paper on "The immediate closure of empyemata," which I am justified in saying was original, and that I was the pioneer in this treatment of empyema.

I pointed out how unsatisfactory the old treatment of empyema was, and advocated in that paper the following important points:

1. An incision sufficiently large to introduce the whole hand into the pleural cavity in order to free all adhesions and remove all fibrinous clots.
2. Washing out the pleural cavity with a non-irritating antiseptic, such as flavine.
3. Filling the pleura with either flavine or 2 per cent. of iodoform in sterile paraffin.
4. Immediate closure of the wound to prevent a "sucking wound." It stands to reason that if a drainage tube is used the atmospheric pressure in the pleura is greater than in the lung itself, and the lung does not expand again as it should do.
5. A most important point, which has been overlooked by all the speakers: the daily evacuation of the retained fluid by the painless insertion of an aspirating needle between the edges of the wound. As the lung re-expands, it gradually pushes out the retained fluid which bulges under the skin.
6. An immediate bacteriological examination of the pus in the empyema is essential, as is also the daily evacuated mixture of iodoform and paraffin and pus taken out by the syringe.

I see no reason why a pneumococcal infection of the pleura should not be treated on the same lines as a tuberculous one, and surely there is just as much danger of secondary infection.

The two important points, therefore, in favour of the immediate closure of empyemata are the early re-expansion of lung and abolishing the danger of secondary infection.

I do hope that other surgeons who have more material than I have to work upon will read my paper, follow my technique, and publish their results. My results have been very satisfactory, and I am quite sure we are working on the right lines when we do away with a drainage tube. The day has come when we must realize that there is such a thing as "the abuse of drainage tubes."

In reading Mr. Wade's paper—on which I very sincerely congratulate him—and the discussion which followed, I see no mention of the name of the man who really ...ized modern surgery by his work in France. ... my consulting surgeon in the 3rd Army in ... Sir Henry Gray of Aberdeen. It was he who ...icated excision and primary suture of wounds, ... closure of the abdomen, the cranial cavity, and ... joint for gunshot wounds, and the operative ... of penetrating gunshot wounds of the chest. ... said elsewhere, it is the application of his methods to civil surgery which inspired me to work on the abuse of drainage tubes[1] and the immediate closure of empyemata.[2]—I am, etc.,

Windsor, Sept. 10th. FRANK HATHAWAY, M.D.

ASYLUM ADMINISTRATION.

SIR,—It was with very great satisfaction that I read your interesting review in the BRITISH MEDICAL JOURNAL of August 20th on Dr. Lomax's book entitled *The Experiences of an Asylum Doctor*, and also the articles in several lay newspapers, and I must say that I largely agree with most of the statements and opinions expressed therein.

I have had very considerable experience of medical and administrative work in British asylums, and also of the treatment of insane and of borderland cases, both inside and outside of such institutions. My official knowledge was principally acquired during a number of years of service in four large asylums as an assistant medical officer. For several years I had the privilege of being deputy superintendent of two large asylums in southern counties, where, like all other members of the staff, I received much kindness and consideration from the authorities.

In all the places where I did duty the patients were humanely cared for, but I am strongly of opinion that more should be done for their mental well-being and happiness. Earlier and more sympathetic treatment is necessary. As one correspondent states, that is left too much to chance, which is not just the method adopted in modern medical practice in dealing with other forms of illness or disorder.

The subject most urgently demands thorough public investigation by independent medical and lay experts, and great revisions and alterations are necessary. These will, I fear, increase the cost of treatment, but they will pay the nation abundantly: first, in fewer cases having to go to asylums; and secondly, for those whose mental state requires institutional care, in providing (*a*) a happier time during their detention, (*b*) a higher proportion of recoveries, and (*c*) better results in those who are discharged.

Perhaps I should explain that I am willing to express my opinions on the subject because I am in an independent position. I sincerely trust that the present treatment of the insane will be carefully and impartially investigated in the light of modern scientific knowledge and recent psychological teaching, and that better methods will very soon be introduced into this important but backward branch of medicine.—I am, etc,

Southsea, Aug. 29th. W. J. MACKEOWN, M.B., B.S., D.P.H.

TREATMENT OF ARTHRITIS.

SIR,—I have read with much interest Sir William Willcox's article in the BRITISH MEDICAL JOURNAL of June 4th, 1921. I am glad to see that he sides so strongly with the authorities on arthritis who believe in infection as opposed to uric acid. I think it is greatly to be deplored that so many labels are used. In my opinion only one is necessary—acute or chronic cerebro-spinal toxaemia.

Amongst etiological factors he speaks of streptococcal or *Bacillus coli* infections as being prominent in most cases. Personally, I believe that in all cases there is an underlying germ such as that of measles, diphtheria, scarlet fever, tuberculosis, syphilis, typhoid, or malaria, at work; the streptococcus or *B. coli* being purely secondary and probably defensive rather than otherwise. One would imagine that such germs as I have mentioned readily leave the system if one accepted Sir W. Willcox's apparent view as expressed in the paragraph commencing "Arthritis from specific infections." What about carriers? Once such a germ enters the human system it never leaves. In my opinion there is no such thing as "non-specific infective arthritis." Streptococci, staphylococci, and the *B. coli* group are to my mind the refuge of the bacteriologically destitute. I most strongly take exception to the statement, "Disease of the nervous system is not associated with infective arthritis or the various forms of fibrositis." How does he explain such symptoms as mental depression, phobias, irritability, pain, insomnia, abnormal

[1] BRITISH MEDICAL JOURNAL, June 29th, 1918, p. 718.
[2] Ibid., May 29th, 1920, p. 734.

reflexes, spastic and wasted muscles, deflections and contractions of toes and fingers, and glossy, wasted skin?

I think he is wise in saying that cure can only be looked for in early, comparatively acute cases when vaccines are employed. Once the disease has reached the well-established chronic stage a prolonged, persistent course of treatment is required calling for accurate knowledge, skill, dogged perseverance and tact. On general principles the greater the experience of the practitioner in handling such cases the better it will be for the patient and his own reputation.

Finally his suggestions for treatment in chronic cases are of such an elaborate nature, and his subdivisions, such as panniculitis, are so numerous and bewildering that the whole is impractical to the general practitioner.

I personally pin my faith to continuous counter-irritation, which in skilled hands is efficacious in any form of arthritis or fibrositis.—I am, etc.,

Bournemouth, Aug. 21st. W. J. MIDELTON.

CHRONIC INFECTIONS AND MENTAL ACTIVITY.

SIR,—Mr. S. T. Irwin's presentation of a novel aspect of preventive medicine—his hint that the eradication of chronic infections may "result in the curtailment of human achievement and in the sacrifice of short-lived brilliancy to long-lived mediocrity"—makes a piquant essay. There is pathos in his picture of the race for a professional ideal, and the young "men of first-class ability, many of them consistently first of their year," dying by the wayside or doomed to finish their course at the walk; something pathetic, too, in his tale of that hospital staffed by promising men who, most of them, hold life by virtue of "a major operation." But once the thrill of its novelty passes, his idea fails to grip the imagination. The lack of a saving sense of humour becomes insistently apparent, and continued reflection provokes awkward thoughts—as that *Mens sana in corpore sano* offers, still, a hopefuller goal to humankind.

Apart from the toxin implication, Mr. Irwin's idea is not new. Back to the early days of the world you can trace it, and its prettiest expression is still the Grecian epigram, with its Roman echo, "Whom the gods love, die young." You may add, if you like, Wordsworth's complement, "They whose hearts are dry as summer dust burn to the socket." But, the words of Menander, Plautus, and Wordsworth notwithstanding, the notion is only in part true. Permit me to spill here, without sense or order, a few names whose owners were brilliant in or into middle age. The gods, we dare not doubt, loved Pasteur, Koch, Leonardo da Vinci; they loved Galileo, Hugh Miller, Tyndall, Darwin, Lamarck, Humboldt, Buffon, Harvey, Herbert Spencer, Lister, Walter Scott, Dickens, Thackeray, Meredith; and I am certain that, when they are not justly offended, they laugh with, and love, Bernard Shaw, whose "unbearable brilliancy" owes nothing to either toxins or alcohol.

Alcohol!—that suggests the other pretty conceit. At least I hope Mr. Irwin errs in his dictum, "Literature is full of examples of lucid exposition and extraordinary heights of eloquence resulting from the moderate drinking of alcohol." Psychologists insinuate that people most readily forget those facts which tend to refute their pet theories. There is a possible explanation of the mystery that, to me, literature appears rather deficient in such examples. Anyhow, try as I may, I cannot recall these numerous passages of exposition and eloquence. Memory rings with the rumour of fine things—always the tantalizing rumour—never the substance in black on white. So far as my knowledge goes, that is characteristic of alcohol.

But, rather than ask Mr. Irwin to accept my word for it, I shall quote the Great Cham of Literature. There was nothing bigoted or small about his views on alcohol—no Pussyfoot Johnson was Doctor Samuel—he knew (practically, too, if that be counted an advantage) what he was talking about. Yet Boswell commends, as "a very judicious practical advice," Dr. Johnson's warning that a man who has "been drinking wine at all freely, should never go into a new company. With those who have partaken wine with him, he may be pretty well in unison; but he will probably be offensive or appear ridiculous to other people." A critical reporter, you see, could not credit him with lucid exposition or eloquence, whatever rumour might say.

On the question, "whether drinking improved conversation," the Doctor was equally emphatic:

"No, Sir, before dinner men meet with great inequality of understanding; and those who are conscious of their inferiority have the modesty not to talk. When they have drunk wine, every man feels himself happy, and loses that modesty, and grows impudent and vociferous; but he is not improved; he is only not sensible of his defects."

When Sir Joshua Reynolds suggested "that moderate drinking makes people talk better," Johnson replied:

"No, Sir; wine gives not light, gay, ideal hilarity; but tumultuous, noisy, clamorous merriment. I have heard none of those drunken—nay, drunken is a coarse word—none of those *vinous* flights. . . . I admit that the spirits are raised by drinking, as by the common participation of any pleasure: cock-fighting or bear-baiting will raise the spirits of a company, as drinking does, though surely they will not improve conversation. . . . I indeed allow that there have been a very few men of talents who were improved by drinking; but I maintain that I am right as to the effects of drinking in general." Later he added: "I do not say it is wrong to produce self complacency by drinking; I only deny that it improves the mind."

Both in France and Germany literary men confronted with this question have denied that alcohol promotes either real eloquence or lucid exposition, and British scientists and authors have testified to the same effect. Quantity, then, rather than quality comes from alcohol; but only on a rigid quality basis can you reckon literature. The same argument should apply to the harvest from toxin activity if it be indeed, as Mr. Irwin conveys, "similar to that produced . . . by a glass of good champagne." There would appear to be little reason to expect "first-class ability" and men "consistently first of their year."

Hence alternative explanations are desirable. Is it not possible that chronic infections, impairing the capacity for and pleasure in strenuous outdoor sport, conduce to that prolonged study from which emerges the well-informed youth who captures the prizes of his year?—I am, etc.,

Belfast, Sept. 12th ROBERT WATSON.

MEDICAL IMPRESSIONS OF THE MINERS' STRIKE.

SIR,—Allow me to thank your correspondents—whose contributions appeared in the issues of July 30th and August 13th—for their impressions in this matter.

Obviously statistics are beyond the reach of myself and of your other correspondents, and at best we can only record our individual experiences. But as our experiences appear to differ so widely, I am left with the hope that a way will be found of bringing the evidence furnished in the letters of "An Old Country Doctor" and of Mr. Walter Garman before the notice of the Commission to be appointed by the Minister of Health to investigate the workings of the Insurance Act, for it would appear to me that this Commission will be materially assisted in arriving at what should be a fair capitation fee per insured person payable to colliery medical practitioners. There does not appear to be any medical work required in co. Durham and Staffordshire in respect of the miner. But is it not the fact that some of the greatest opposition to the Insurance Act came from the North of England and Midland counties colliery practitioners, on the ground that their work under the Act would be increased and miserably underpaid? "Ils dansent sur un volcan!"—I am, etc.,

GENERAL PRACTITIONER.

IT is proposed to hold a large food exhibition at Olympia, London, in September, 1922. It will embrace raw materials and the preparation of food, and will include dairy produce, beverages, refrigerating plant, cooking utensils, and the construction of model factories.

THE National Housing and Town Planning Council has issued a printed memorandum on the present housing situation, containing suggestions for action by the housing committees of the local authorities; they include the steps to be taken to secure an extension of the period during which the housing subsidy shall be given, notes on the cost of building, and observations on the need for the maintenance of good standards of lay-out, construction, and design. These subjects will be discussed during the autumn at conferences arranged by the Council, as will also the steps which should be taken to arrange a future town planning policy.

Obituary.

SIR PETER FREYER, K.C.B., M.A., M.D., M.Ch.,

Surgeon to St. Peter's Hospital; Lieutenant Colonel Bengal Army (ret.).

We regret to announce that Colonel Sir Peter Johnston Freyer, K.C.B., Bengal Medical Service (retired), died at 27, Harley Street, London, on September 9th, aged 70. He was born on July 2nd, 1851, the son of the late Samuel Freyer of Ballynahinch, Galway, and educated at Erasmus Smith's College, Galway, Queen's College, Galway, Steevens's Hospital, Dublin, and Paris. He graduated as B.A. in 1872, and as M.D., M.Ch. in 1874, at the Queen's University, Ireland, in each case gaining first class honours and a gold medal; and in 1886 received the degree of M.A., *honoris causa*, from the Royal University, Ireland, which had by that time taken the place of the Queen's University. He entered the Indian Medical Service as surgeon on September 30th, 1875, passing first into the service, becoming surgeon-major and surgeon-lieutenant-colonel after twelve and twenty years' service respectively, and retiring on May 3rd, 1896. Nearly the whole of his service was spent in civil employment in the North-West Provinces, now the United Provinces of India, where he held the civil surgeoncies successively of Moradabad, Bareli, Allahabad, Masuri, and Benares, and was also for a short time surgeon on the staff of the Lieutenant-Governor.

After he retired from the I.M.S. he began a new career in England as a consulting surgeon in his special line, the surgery of the urinary organs, and in 1897 was appointed surgeon to St. Peter's Hospital for Stone, London, an appointment which he held till his death. When the recent great war started, in 1914, he rejoined for service as consulting surgeon to Queen Alexandra's Military Hospital, to the Indian hospitals in England, and to the Eastern Command in general. From April 10th, 1918, to April 10th, 1919, he held a temporary colonelcy in the R.A.M.C., and on resigning that post was promoted to an honorary full colonelcy on the retired list, and also received for his services the C.B. on January 1st, 1917, and the K.C.B. on June 4th, 1917. In 1894 he represented the Indian Government at the International Medical and Surgical Congress at Rome, and in 1904 received the Arnott memorial medal for original surgical work.

Throughout his career, while he was a first-rate general surgeon, his special bent was towards the surgery of the urinary organs. He was the first surgeon in India to bring into regular practice and to popularize Bigelow's operation of litholapaxy for stone in the bladder; and after his retirement from India he may be said to have originated—he certainly perfected and brought into common use—the operation of suprapubic prostatectomy, one of the great advances of modern surgery.

He was the author of several works on his own speciality: *Litholapaxy*, 1885, with enlarged editions in 1886 and 1896; *Stone in the Bladder*, 1900; *Stricture of the Urethra and Enlargement of the Prostate*, 1901, third edition 1906; *Surgical Diseases of the Urinary Organs*, 1908; and articles on diseases of the prostate and vesical calculus in Burghard's *Operative Surgery*, vol. iii, 1907.

Any account of Freyer's career would be incomplete without some reference to the once famous fee of a lakh of rupees—100,000 rupees, at the then rate of exchange about £6,600—which he received from the Nawab of Rampur in the eighties. This was not a fee for a single visit or for a short course of treatment, but for a long course of regular treatment extending over sixteen months and including a serious operation. The patient was the brother of the then Nawab of Rampur, and for family reasons was very anxious to outlive his brother, the Nawab, and succeed to the principality as reigning Nawab. This, through Freyer's treatment, he was able to do. Immediately after his accession he made a public presentation to Freyer of the fee at the first durbar or court he held after his succession. The Government of India raised objections to the receipt by a medical officer of so large a sum of money, and (or so at least it was currently reported) first ordered him to return the money to the Nawab, and later either to do so or to retire from the service. Freyer declined to do either, on the ground that he had well earned the money, and in doing so had broken no rule of the service, but had only done what he was entitled to do. In the end this view of the case prevailed. The grant and receipt of this large fee, however, was what gave rise to the rules and regulations regarding acceptance of fees from Indian chiefs and gentlemen of high position, which created so much heart-burning and ill-will in the Indian Medical Service some twenty years ago, and which remained a source of discontent until the rules were amended on fairly reasonable terms soon after the late Sir Pardey Lukis became Director-General, eleven years ago. Freyer was subsequently promoted to the first-class civil surgeoncy of Benares, one of the most lucrative stations in the province, where he was surgeon to the Prince of Wales Hospital. In the end he retired, partly for health reasons, having received a blow on the eye from a lunatic in the Benares Asylum, which caused him to fear loss of sight. The Nawab of Rampur, who died long ago, also appointed him his medical officer.

Mr. J. W. THOMSON WALKER writes:

With the death of Sir Peter Freyer the profession loses one of its most striking and virile figures, and his colleagues mourn the loss of a stimulating and interesting personality. Freyer had two careers, each of which was crowned with success. Of the Indian career I cannot write, for he spoke little of it to his friends, although he may have discussed it with his intimates. With his career in London I had the advantage of being in close touch.

The London period had a central pivot around which all else revolved—namely, suprapubic prostatectomy. The operation that goes by his name, and that by his powerful advocacy was rapidly adopted throughout the surgical world, occupied more than any other subject his thoughts and absorbed his energy during the last twenty years of his life. It was the one surgical subject that appeared to him really worth discussing with his colleagues, and the discussion sometimes overflowed from the operating room to the dinner table. It would be ungrateful, as it is unnecessary, to raise again the points of controversy that raged around Freyer's claim to have originated the operation of suprapubic enucleation of the prostate. But apart altogether from the question of priority, looking around one can see no one who could so rapidly and with such dramatic force and completeness have changed the whole outlook of prostatic surgery as he actually did.

As a surgeon Freyer had many peculiarities that shocked the feelings of the purists of aseptic surgery. But there was character about his surgery as there was in everything else about the man. On familiar ground Freyer's operating was decided, purposive and rapid, and in some operations, especially that of litholapaxy, the manipulation was graceful. His technique was simple, and did not vary during the whole time that I knew him in London. Two characters always impressed me in Freyer's operations: he was thorough and conscientious. He looked to the ultimate result far more than the casual visitor to his operating theatre, who saw only a somewhat dramatic timed operation on the prostate, might have imagined.

As a debater Freyer had a quick grasp of the essential points of a subject. It took him but a second to see the weak point of one argument and the strength of another, and he wasted little time on fine distinctions. He was a fluent speaker and had a vein of wit, at times not without a tinge of sarcasm. When roused by a subject near to his heart he spoke with much force. As a descriptive writer Freyer cultivated a simple, direct style that was always lucid and usually convincing. His vocabulary was not extensive, but it sufficed for the subjects that most interested him and on which he wrote with greatest authority. In writing he always kept the high road to the goal at which he aimed; by-paths leading to other view-points and shady lanes of philosophic doubt had no attraction for him. As a result, his articles and books were easily read and assimilated by a wide circle of varying knowledge.

It was, I know, a source of sincere pleasure to Sir Peter Freyer that in 1920 he was asked to become the first president of the newly-formed Section of Urology at the Royal Society of Medicine; and it will be fresh in the memory of the members of the Section how keenly and with what conscientious care, in spite of failing health, he performed the duties of president. Freyer's character, as it appeared to a colleague, was that of a man with tremendous driving force, great determination, and fixed purpose. It was unavoidable that a man of this character

should wound the susceptibilities of some, but there was a kindly and sympathetic vein in Freyer's character that was touched more easily than many imagined.

A former colleague writes: A good many members of the Indian Medical Service have, from time to time, attained to high professional eminence in this country after leaving India. But they have usually been men who, like Drs. Charles Murchison and W. S. Playfair, had only spent a few years in India, and resigned the service while still young men. It has been given to few, like Freyer and the late N. C. Macnamara, to serve for twenty years or more and gain success and reputation in India, and then to earn still greater success in England, after their retirement. For many years Freyer managed the annual dinner of the Indian Medical Service, and the success of these yearly reunions was greatly due to his excellent management. He was always ready to help junior colleagues with his advice and assistance, and was most popular with his brother officers. *Multis ille bonis flebilis occidit.*

Previous to the removal of the body of the late Sir Peter Freyer for interment in his native place in the far west of Ireland, there was held, on September 12th, at 27, Harley Street, a memorial service, which was attended by about fifty of his most intimate friends and colleagues. The Irish Medical Schools' and Graduates' Association—on the executive of which he had served for seven years (the latter part being as Chairman of Council)—was represented by Sir Havelock Charles, G.C.V.O., Dr. Gubbins Fitzgerald, Dr. James Stewart, and Dr. Swift Joly.

T. ARTHUR HELME, M.D.EDIN., M.R.C.P.LOND.,
Consulting Surgeon, Northern Hospital, Manchester.

DR. T. ARTHUR HELME, whose death occurred at Rhosneigr, Anglesey, on September 5th, in his 61st year, was notable not only as a distinguished gynaecologist and obstetrician and a brilliant and successful operator, but as a leader of the profession in the arduous paths of medical politics. He was for a considerable time a member of the Central Council, and late president and honorary secretary of the Lancashire and Cheshire Branch of the British Medical Association, while during the war he was chairman of the Medical War Committee for Manchester and Salford.

Born at Lancaster, Thomas Arthur Helme was educated at the Royal Grammar School there and at the University of Edinburgh, graduating M.B., C.M., with honours, in 1885. At his final medical examination he was awarded the Buchanan scholarship, which carried with it the appointment of assistant to the professor of midwifery and gynaecology, and he was house-surgeon in the gynaecological wards of the Royal Infirmary and in the Royal Maternity Hospital. After holding these appointments he proceeded to Strasbourg, and as a result of his research work he was awarded a gold medal for the thesis for his M.D. degree, which he obtained in 1889. In 1890 he was appointed Freeland Barbour research scholar of the Royal College of Physicians of Edinburgh. He was a student also at University College, London, was an exhibitioner and gold medallist in materia medica in the University of London, and obtained the diplomas of M.R.C.S.Eng. and M.R.C.P.Lond. in 1894.

He had already made a mark in his special department of medicine, so that it was rather a surprise to his friends when he joined the well-known Dr. John Priestley in general practice at Fallowfield, Manchester. He did not, however, find the work of general practice so congenial as he expected, and, on the opportunity arising, Dr. Helme applied for and was appointed to the post of resident obstetric surgeon at St. Mary's Hospital, Manchester. After fulfilling his term of office there he was appointed assistant gynaecologist, and subsequently honorary surgeon, to the Northern Hospital for Women and Children. Although always hampered by ill health he soon built up a large practice all over the north of England as a consulting gynaecologist, and he published numerous papers on his speciality in the medical journals.

To those who did not know Dr. Helme's very keen sense of public duty it may, therefore, have been surprising that such a busy consultant, handicapped by his health, was eager to give up so much of his time to the interests of his fellow practitioners and the profession at large. He took a leading part in the campaign associated with the passage of the National Insurance Bill into law, and he never spared himself in endeavouring to uphold the dignity of the medical profession. When the Manchester Insurance Committee was formed he became a representative of the local medical profession upon it, and he was chairman of the Manchester Local Medical Committee.

One of the small band of Edinburgh graduates who have established the reputation of Manchester as a famous school of gynaecology, he always retained his interest in his old university, and was president last year of the Manchester Edinburgh University Club. Two years ago, before he had reached his sixtieth year, he was compelled to retire from the active practice of his profession on account of ill health, and was appointed consulting physician to his hospital.

Two of his brothers are medical men: Dr. J. E. Helme of Silverdale and Dr. G. Edgar Helme of Rusholme, Manchester; and another brother is Sir Norval Helme, lately M.P. for Lancaster.

We are indebted to Dr. T. A. GOODFELLOW for the following appreciation: Arthur Helme came to Manchester more than thirty years ago, and after a short, though what was to prove a valuable, experience in general practice, undertook the work of a consultant in obstetrics and gynaecology. He was a man of delicate physique, but of great determination; a sound diagnostician and a careful and successful surgeon, whose sympathy and kindness endeared him to his hospital and private patients alike. Early in his career he took a deep interest in medico-political work, and the profession in Manchester has probably never known a more devoted servant in this branch of activity. For many years Helme's personality was inseparably connected with the developments of the British Medical Association in Lancashire and Cheshire, and so it happened that when the crisis of the National Insurance Bill came his colleagues turned to him as their natural leader. There are many who remember with astonishment the amount of concentrated energy which a man of his constitution was able to devote to this work, for he was then in mid-career in a busy consulting practice, and his chairmanship of mass meetings of the profession, close committee work and innumerable conferences, both locally and in London, must have sufficed to satisfy the most ravenous appetite; but Helme felt that a great trust had been delivered into his hands, and his fixity of purpose permitted him to be satisfied with nothing less than the best that was in him. The final conference between the chairman of the Manchester Insurance Committee and delegates from a mass meeting, held at a late hour on the night before the Insurance Act was to become operative, is historical in that from it was evolved the "Manchester and Salford system" of working the Act, and the part taken in it by Helme—himself a strong opponent of the bill—was that of an able diplomatist. In 1915 a strong Medical War Committee was appointed by the whole profession—the most comprehensive and virile medical committee that Manchester has ever known—and there was never any doubt as to the selection of its chairman. In this office Helme's wide experience of the varying types of city and suburban practitioners, and his knowledge of the broad principles upon which the central organization was likely to act, were of very great value to his colleagues; the harmonious co-operation of non-panel and panel practitioners under the unique terms of the "Manchester Scheme," was to a great extent the outcome of his wise guidance and forethought. Ill health unhappily prevented him from presiding over the deliberations of that committee during the last eighteen months of its existence; but in his retirement he must have felt, as did so many of his colleagues, that his arduous labours on behalf of the medical profession and of the community had borne ample fruit.

GUSTAV MANN, M.D.EDIN., B.SC.OXON.

MANY in England, especially Oxford graduates, will hear with deep regret of the death, at Tampico on July 18th, of Dr. Gustav Mann in his 57th year, following an acute attack of dysentery.

Gustav Mann was born at Darjeeling, the eldest son of Gustav Mann and Marianna Stovel. Having graduated in

Edinburgh, he acted as assistant to Professor William Rutherford in the Physiological Department of the University from 1892 to 1894, was demonstrator of physiology in Oxford University from 1894 to 1908, and was professor of physiology at Tulane University in New Orleans from 1908 to 1916. For some time he acted as chemical analyst to oil companies. Finally he went to Tampico, where he was doctor to several of the oil companies, and had acquired a large practice in the treatment by inoculation of diseases of the skin. His health was severely impaired by the death of his younger son from malaria in 1920.

He was awarded the gold medal for his thesis for the degree of doctor of medicine of Edinburgh University. His researches in histology and physiology earned him the Dobbie-Smith gold medal (1889), and the Gunning-Victoria (1894), Goodsir (1895), Ellis (1900), and Rolleston (1900) prizes. Among his numerous publications were articles upon the mechanism of fertilization and the evolution of plants, the comparative anatomy of the brain, and the histological changes during activity and rest in neurons and the glandular cells of animals and plants. In 1902 he published his *Physiological Histology*, which must be regarded as the foundation of the conception of histological staining as a method of biochemical analysis. This work was followed in 1906 by *The Chemistry of the Proteids*. Gustav Mann was a genius, with the eccentricity of a genius and the genius's difficulty in expressing himself clearly in writing and speech. His enthusiasm for research was unbounded and his capacity for work astonishing. In order to maintain his capacity for work at the maximum he reduced his nourishment to a level which kept his weight at 7 st., and for long periods he would allow himself no more than four hours of sleep. Many will recall the mattress in his laboratory at Oxford, which enabled him to eliminate the distinction between night and day. As a practical histologist he had no equal.

He married Agnes Sinclair Orvez, fourth daughter of the late Francis Orvez of Edinburgh, who survives him, with one son.

Universities and Colleges.

CONJOINT BOARD IN IRELAND.

At the Conjoint Examinations in Ireland by the Royal College of Physicians and the Royal College of Surgeons the following candidates have been successful:

FINAL PROFESSIONAL EXAMINATION.—M. Barton, H. C. Bell, W. B. Burke, D. Clem, J. H. B. Crymble, R. H. Dolan, T. E. Dorran, C. J. C. Earl, M. A. English, M. Elyan, J. A. Fitzgerald, John Hewitt, F. W. Greene-Kelly, Alexandra H. C. Ledlie, J. I. Levi, B. A. McElhinney, Joseph McGuire, Michael Moloney, Eveleen M. Murphy, Mary C. O'Brien, P. J. Quigley, G. E. Strahan, John Shannon, T. A. C. Strevens, A. D. Watchman, B. Scher.

DIPLOMA IN PUBLIC HEALTH.—C. H. Brennan, R. G. Griffin, M. J. Loftus, J. P. de Villiers, R. MacLeod.

The Services.

NAVAL AND MILITARY HYGIENE.

THE annual general meeting of the Navy, Army, and R.A.F. Hygiene Group of the Society of Medical Officers of Health will be held at the house of the Society on Friday, September 30th, at 4.30 p.m. After the election of officers for session 1921-22 and other business, Major-General Sir W. G. Macpherson, K.C.M.G., C.B., will read a paper on the disposal of latrine contents, with special reference to immediate incineration. All members of the society are invited to attend and take part in the discussion.

Surgeon Rear-Admiral Sir P. W. Bassett-Smith, K.C.B., has been nominated to succeed Lieut.-Colonel H. R. Kenwood, C.M.G., as president of the group for the coming session.

HONOURS.

THE following appointments to the Order of the Indian Empire have been made for services during the operations in Mesopotamia:

C.I.E.—Colonel Arthur Hugh Morris, R.A.M.C., Lieut.-Colonels Alfred Eugene Berry, I.M.S., and Maxwell Mackelvie, I.M.S., Major (Acting Lieut.-Colonel) Henry Warwick Illius, I.M.S.

The following appointments to the Military Division of the Order of the British Empire have been made for valuable services rendered in connexion with military operations in Mesopotamia:

C.B.E.—Major and Brevet Lieut.-Colonel William Haywood Hamilton, C.I.E., D.S.O., I.M.S., and Lieut.-Colonel and Brevet Colonel Harold Hugh Norman, R.A.M.C.

O.B.E.—Major Arthur Samuel Arthur, R.A.M.C., Captain and Brevet Major Alan MacDonald Dick, I.M.S., Captain William Andrew Morton Jack, I.M.S.

The officers mentioned by Lieut.-General Sir J. A. L. Haldane, Commanding-in-Chief, Mesopotamian Expeditionary Force, "whose distinguished and gallant services and devotion to duty are recommended as deserving of special recognition" include:

Colonel A. H. Morris, C.B.E., and Lieut.-Colonel and Brevet Colonel H. H. Norman, R.A.M.C.; Lieut.-Colonel and Brevet Colonel T. C. Mackenzie, D.S.O., Lieut.-Colonel G. J. Houghton, D.S.O., Major A. S. Arthur, Captain (Acting Major) C. M. Gozzey, M.C. (killed), Captain H. C. Gooding, M.C., Captain A. N. Mines, D.S.O., M.C., and Captain C. H. K. Smith, M.C., R.A.M.C.; Lieut.-Colonels A. E. Berry and M. MacKelvie, Major and Brevet Lieut.-Colonel (temporary Colonel) W. H. Hamilton, C.I.E., D.S.O., Major (Acting Lieut.-Colonel) H. W. Illius, Majors J. W. H. Babington and A. A. MacNeill, Captain and Brevet Major A. M. D. Dick, Captain E. Cotter, Captain W. A. M. Jack, and Captain J. W. Pigeon (killed), Indian Medical Service.

Medical News.

IN correction of a paragraph in the JOURNAL of August 27th we are asked to announce that the Swiss Society of Balneology and Climatotherapy will give a series of lectures and practical demonstrations at Lausanne from October 3rd to 8th, and that the yearly meeting of the association will be held on October 8th and 9th at Bex-les-Bains. The council will be pleased to welcome English physicians at Lausanne or Bex; information may be obtained from Dr. F. Wanner, Avenue de Rumine 45, Lausanne.

THE annual distribution of prizes at Charing Cross Hospital Medical School (University of London) will take place in the out-patients' hall of the hospital on Wednesday, October 5th, at 3.30 p.m. The prizes will be presented by Sir Frederick Mott, K.B.E., M.D., F.R.S., and Sir Herbert Waterhouse, M.D., F.R.C.S., will take the chair. The annual dinner of past and present students will be held on the evening of the same day at the Adelaide Gallery, Gatti's Restaurant, at 7 for 7.30 p.m. The chairman will be Sir James Galloway, and the guest of the evening Sir Frederick Mott. Tickets (12s. 6d. each) may be obtained from the Dean, or may be paid for at the door.

THE opening ceremony of the winter session at King's College Hospital Medical School (University of London) will be held at Denmark Hill on Friday, September 30th, at 3 p.m. The introductory address will be given by Lord Gorell. The annual dinner of past and present students will be held at 7 for 7.30 on the same day at the Café Royal, Regent Street, W., with Mr. F. F. Burghard, C.B. (senior surgeon of the hospital), in the chair.

AT the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W.C., post-graduate courses will be given during the winter term beginning on October 3rd. Three courses will be given: (1) Clinical lectures and demonstrations, (2) neuro-pathology, (3) lectures in the anatomy and physiology of the nervous system. A fee of £8 8s. will be charged for the clinical lectures and demonstrations. Those taking this course will be entitled to attend the course in pathology without further payment. The fee for the pathological course alone, or for the course in anatomy and physiology, is £5 5s. Holders of the Fellowship of Medicine's ticket for the National Hospital will be admitted to the clinical lectures and demonstrations and to the course in pathology.

A COURSE of twelve lectures on the management and feeding of infants and young children will be given by Dr. Eric Pritchard (physician in charge of the Infant Welfare Department) to qualified medical practitioners, commencing Wednesday, October 5th, at the St. Marylebone General Dispensary, 77, Welbeck Street, Cavendish Square, at 6 o'clock in the evening. The subjects include "Causes of infant mortality," "How to conduct an infant consultation," "Breast feeding," "Artificial feeding of infants," "Uses of dried milk and patent foods," "Management of difficult cases," "Treatment of minor ailments," "Rickets," and "The feeding of children between 9 months and 2 years." Students taking out this course may attend the infant consultations held by Dr. Pritchard on Tuesdays at 11 a.m. and Thursdays at 3 p.m. at the Dispensary. Visits will be paid on Saturday afternoons to the Nursery Training School, 1 Wellgarth Road, Golders Green. The fee for the course is two guineas, payable to the Secretary, 77, Welbeck Street, W.1.

DR. CLARENCE L. STARR, senior surgeon to the Hospital for Sick Children, Toronto, has resigned that post to accept the chair of surgery at Toronto University. Dr. Starr served during the war as lieutenant-colonel in the C.A.M.C., being attached to the Ontario Medical Hospital at Orpington, Kent.

BARON GOTO, who has recently been appointed Mayor of Tokyo, is a member of the medical profession, having formerly been a professor in a prefectural medical school in Japan, and later attached to the Public Health Department in the Ministry of Home Affairs. He graduated M.D. in the University of Berlin in 1892; he has had a remarkable public career, and was at one time a member of the Japanese Cabinet. According to the *Japan Medical World*, important sanitary and other improvements in the city of Tokyo, involving an expenditure of 800 million yen, have been proposed by the new mayor and have already been approved by the county council.

A SURVEY of mental disease in the United States shows that on January 1st, 1920, there were 232,680 persons with mental disease in institutions in the United States. Of these, 40,515 were mental defectives, 14,937 epileptics, 1,163 alcoholics, and 808 persons addicted to drugs. In the hospitals of New York State there are 38,903 patients, of whom 5,762 are mental defectives, 1,683 epileptics, 67 alcoholics, and 156 drug addicts. These figures are interpreted as meaning that out of each 100,000 persons in New York State 374.6 are afflicted with mental disease and 55.5 are mental defectives.

THE *Riforma Medica* states that the Government of Czecho-Slovakia has organized a system of insurance against disease, obligatory for all with incomes less than 20,000 crowns, and optional above this. The choice of the medical practitioner is to be unrestricted.

AN institute of hydrology and climatology, containing laboratories, a museum, and a library, was inaugurated recently at the College of France. Lectures in hydrology will be given, and courses will be held to train specialists for watering-places and thermal and climatic stations.

THE sixth International Congress of Physiotherapy will be held at Madrid in May, 1922, under the presidency of Professor Calatayud Costa.

AN institute for research in tropical diseases is to be founded in Panama City as a memorial to General Gorgas, the Government of Panama having already presented the site. A committee has been formed in America, of which Dr. Franklin H. Martin is chairman, to raise maintenance funds for the institute.

THE Broad Street Hospital, New York, announces that on October 15th it will open a post-graduate school of medicine intended particularly for ships' surgeons; one of the chief features will be a course on tropical diseases. Each course will last one month, and will be repeated indefinitely, so that ships' surgeons who are in New York for a week can take part of the course and then continue it when in New York again. The secretary of the post-graduate school is Dr. Maximilan Stern.

DR. ALEXIS CARREL has been elected a national associate of the French Academy of Medicine, of whom there are only twenty; Dr. Carrel, who is, however, of French birth, is the first to be elected when not resident in France.

THE twenty-sixth congress of the Italian Medical Society will take place at Naples from October 25th to 27th, with Professor Antonio Cardarelli as president.

AN international congress of ophthalmology will be held in Washington, U.S.A., at the end of April next.

RECENT statistics show that the infant mortality in France is 11.9 per 1,000.

UNDER the Sale of Food Order, 1921, local authorities for the purposes of the Sale of Food and Drugs Acts are invested with the power of enforcing the requirements of the Order regarding the labelling of imported produce, the composition of jam and marmalade, and the composition of dripping, margarine and other edible foods. The enforcement of the provisions regarding the weight of bread and tea is now also entrusted to the local authorities for the purpose of the Weights and Measures Acts. In a circular issued recently by the Ministry of Health to local authorities giving the essential details of these Orders, it is pointed out that bread must be sold by weight, and a loaf must weigh one pound or an even number of pounds. Tea, whether contained in a packet or not, must be sold by net weight and in multiples of ounces or pounds. Any imported meat, bacon, ham, or lard must, when exposed for sale, bear a label with the word "imported" or words disclosing the country of origin; eggs which have been imported into the United Kingdom must not be sold as "fresh" or "new laid," unless the description similarly includes the word "imported" or words disclosing the country of origin. In regard to jam, the water-soluble extract must not be less than 65 per cent. of the jam, and not more than 10 per cent. must consist of added fruit juice; marmalade must be made of citrous fruits and fruit juices, unless the other varieties of fruits or vegetables used are mentioned in the description.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediscra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"T. M. C." was out of professional practice from January 1st to June 15th, 1921. The inspector of taxes writes: "The assessment for 1921-22 is on £1,225, the average, and this will fall to be apportioned as regards the allowances to the various persons interested in the practice during 1921-22." What is "T. M. C." to return?

*** Assuming the average assessment to be correct, the locomotion expenses will have already been taken into account, and the "allowances" in question will be the personal ones—that is, £225 for self and wife, life assurance, etc. The amount to be returned by "T. M. C." is the proportion applicable to the period from June 15th, 1921, to April 5th, 1922—that is, £987, and he is liable to payment of tax on that sum, less the appropriate personal allowances.

"N. A. B." bought a second-hand Standard two-seater in February, 1917, for £170—original price, £195; in May, 1920, he bought a new 20-h.p. Austin four-seater touring car for £695, selling the Standard car for £310, the price of a new Standard being then £595. What allowance can be claimed?

*** The figures suggest that the cost of a two seater Standard in May, 1920, in a condition similar to that in which "N. A. B." purchased his Standard in 1917, might reasonably be placed at 170/195 of £595 = £518. On that assumption our correspondent would be entitled to an allowance of £518 − £310 = £208; the balance of his net expenditure of £385 represents improvement of his professional assets.

"H. E. G." inquires as to the position with regard to tax payable for the second year of a restarted practice.

*** The assessment has been made on the basis that the practice is a new one; in that case "H. E. G." is entitled during the first three years to revise his return at the end of the financial year by application for a reduction of the sum assessed to the actual profits of the year, under a provision introduced into the Income Tax Acts in 1917. If the second instalment be paid, it would *pro tanto* increase the amount repayable; but this seems to be a legal requirement, though insistence on it does not appear necessary, as the mode of adjustment on "applications" is by way of repayment. It is, perhaps, advisable to mention that this right of adjustment to the profits of the year does not apply to purchased practices, but only to new ones in the full meaning of the term.

"C. J. M." inquires whether the assessor is correct in insisting that tax must be paid on honoraria in respect of hospital appointment.

*** We are not aware of any regulation under which honoraria which are granted for services rendered are exempt from taxation, but the Board of Inland Revenue agreed some time ago to acquiesce in the practice of treating the honorarium as a professional fee falling into the general receipts assessable under Schedule D. In many instances the expense of attendances at the hospital equals or exceeds the amount of the annual honorarium, and in such cases the

practice referred to does give substantial exemption as the inclusion of the amount receivable is counter-balanced by the inclusion of the expenses incurred in that connexion. We suggest that "C. I. M." should notify the local inspector that he will include all fees, whether assessable Schedule D or Schedule E, in his general return of professional profits.

LETTERS, NOTES, ETC.

CHRONIC NASOPHARYNGEAL INFECTION.

DR. H. BODKIN (Bloemfontein, O.F.S., South Africa) writes: I suggest that in the cases of "chronic nasopharyngeal infection, chronic toxaemia, and distressed heart in children," so interestingly and ably described by Dr. C. Paget Lapage in an address published in your issue of July 2nd, the actual focus of infection lies deeper than there depicted; that it is within the nasal accessory sinuses, particularly the sphenoidal sinus and posterior ethmoid; and that direct treatment to these cavities will produce results, when douching of naso-pharynx and drill have failed.

TREATMENT OF HICCOUGH.

DR. E. F. O'FERRALL (Brixton, S.W.) writes: The examples quoted in the contributions you have published during the last few months suggesting hiccough as a prodrome of encephalitis lethargica and other diseases are instances of *post hoc* or *propter hoc*. The number of cases which can be quoted in support of the contention are perilously few, and of the hiccoughs, epidemic or otherwise, where there are no sequelae, we have no records. Regarding treatment, the following case, which occurred a few weeks ago, was instructive: A man, between 50 and 60, was attacked without assignable cause with violent hiccough, which, however, only once occurred during sleep. Intermittent attacks followed at frequent intervals for three or four days. I tried all the usual remedies, including large doses of morphine and inhalations of chloroform, without result. As a last resort I introduced a rubber stomach tube during an exacerbation of the spasm, and, like magic, it stopped instantly. True, the hiccough recurred after an interval, but the same remedy never failed, and after five or six hours the trouble was at an end. It was quickly discovered that it was unnecessary to run the tube into the stomach—a few inches into the oesophagus sufficed. No vomiting ensued. The inference is obvious. I am aware that the stomach has been washed out under similar circumstances, but this simple remedy seems to be worthy of record.

VON PIRQUET'S TEST.

DR. T. GERALD GARRY, M.B.E. (Cairo), writes: In the account of the International Tuberculosis Conference, appearing in the JOURNAL, Dr. Wilkinson is reported as having said the von Pirquet test is unreliable, while Sir Humphry Rolleston counselled as not Utopian a periodic census of all persons, classifying them by means of von Pirquet's test, and segregating them accordingly, either temporarily or permanently. I think, considering the serious differences of opinion so frequently expressed concerning elementary points in medical practice, some means should be adopted to prevent at least the perennial discussions to which they give rise.

INFANT MORTALITY IN HONG KONG.

WE have received from Hong Kong a copy of the *Hong Kong Daily Press* of May 26th, 1921, containing a report of a meeting of the Hong Kong Sanitary Board, when questions were asked and official replies given regarding a statement attributed to Mrs. Neville Rolf, a member of the Commission sent out to the Far East by the National Council for Combating Venereal Diseases, in reference to infant mortality in Hong Kong. Dr. Koch, a member of the Sanitary Board, stated that the following cablegram had been published by Reuter: "At a meeting of the National Council on Venereal Diseases, to which the mission to the Far East presented its report, Mrs. Neville Rolf declared that she was never so ashamed of being an Englishwoman as she was in Hong Kong, where the registered infant death rate was eight hundred higher than the birth rate, despite British occupation for eighty years." In reply to questions by Dr. Koch, Dr. W. W. Pearse, Medical Officer of Health, gave the following answers: "(1. Vital statistics in the colony are officially the affair of the medical officer of health. No information as to infant mortality was asked from me by Mrs. Neville Rolf and I do not know how she obtained her figures; (2) no infant mortality rate has been calculated; (3) the infant mortality rate in a given locality is the ratio of the deaths of infants under 1 year of age in that place during one year to the number of children born in that place during the same period. In Hong Kong we do not know (1) how many children are born here in any given year, nor 2 how many children who die here are brought to the colony in bad health, and therefore cannot calculate a corrected death rate. All deaths are registered in order that burial may take place, but it is not the custom of the majority of the Chinese to register births. Birth rates are calculated at so many births per thousand of the population per annum, and therefore are not comparable with infant mortality rates. Such births as are registered here are chiefly those of males—for example, of 400 births registered during the first quarter of 1921, only 90 are of females, equal to 22.5 per cent., while 1,456 births attended by registered midwives during the first four months of this year show 100 males to 85.7 females."

THE ISLANDERS OF THE PACIFIC.

LIEUT.-COLONEL T. R. ST. JOHNSTON writes from Government House, Leeward Islands: I wish to correct a slight error in the review of my book, *Islanders of the Pacific*, in your issue of July 2nd (p. 14), and that is that I am there spoken of as being now the Governor of the Falkland Islands. I was Acting Governor there last year at the time the book went to press, hence possibly the mistake; but since then I have moved to the West Indies, being at the present time Acting-Governor of the Leeward Islands. The Governor of the Falkland Islands is Mr. J. Middleton, C.M.G.

BADLY LIGHTED WORKROOMS.

"PANEL PRACTITIONER" writes: The remarks of "An Old Colliery Doctor" and J. Boyd Prummer are timely. Those of the public who remember that thrice within the last three years the miners have seized the nation by the throat and tried to strangle it, and those of our profession who, like myself, have seen children dying in rooms in which there were no fires owing to want of coal, are not likely to be comforted by reflecting that the strikers are the better for a nice long holiday. But I am concerned for a section of the public who appear to be in a worse plight than miners owing to the exigencies of their occupation. I refer to those compelled to work in rooms artificially lighted. As a result of building over the back gardens of the houses in the central parts of most old towns in order to obtain an increased office space this condition unavoidably comes to pass. Such extensions necessarily encroach on each other, and daylight—not to mention sunlight cannot be introduced. Many people, therefore, have to work for long hours under conditions which eventually react unfavourably on their health. For these I suggest "a fortnight's holiday every three months."

MADEIRA AND THE CANARY ISLANDS.

"S." writes: I would strongly advise intending passengers to take with them a good supply of insect powder, etc., as many of the boats are infested with bugs, which are dormant in northern latitudes but become very aggressive directly the warm weather is reached. They are very elusive, and I was for some days on my first voyage under the mistaken impression that I was suffering from urticaria, and dosed myself with calcium lactate until I had a confidential chat with the ship's doctor.

POSTAGE TO PLACES ABROAD.

SEVERAL correspondents resident abroad have mentioned in recent correspondence that letters from this country are often insufficiently stamped. The Postmaster-General has now issued a circular calling attention to the fact. Such letters, he states, are duly forwarded and charged on delivery with double the amount of the deficiency; the surcharge is retained by the foreign administrations. The prepaid rate of postage on letters for all foreign countries except the United States of America and Tangier is 3d. for the first ounce and 1½d. for each succeeding ounce or fraction of an ounce; from the United Kingdom to British possessions generally, the United States, Tangier, and H.M. ships and troops on foreign stations, the letter rate is 2d. for the first ounce and 1½d. for each succeeding ounce or fraction thereof.

VACANCIES.

THE Home Secretary gives notice that, in consequence of the resignation of Dr. J. A. Dewar, the appointment of Medical Referee under the Workmen's Compensation Act for the Sheriffdom of Forfar is vacant. Applications should reach the Private Secretary, Scottish Office, Whitehall, S.W.1, not later than October 1st.

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THE SENSATIONS AS REFLEX MANIFESTATIONS OF DISEASE.

BY

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(From the St. Andrews Institute for Clinical Research.)

In a recent communication Sir James Mackenzie[1] has put forward the thesis that the early symptoms of disease reveal themselves in a disturbance of the normal reflexes. This hypothesis, which was arrived at by the members of the St. Andrews Institute for Clinical Research, involves a wider conception of what is meant by "reflex" than the term is usually held to denote. Any definition of reflex action has to be an elastic one, comprising as it must such widely differing varieties as the axon reflex and the conditioned reflex of Pavlov, but the whole subject of reflex action must be viewed from a different standpoint if sensations are to be included in the same category.

According to this theory the body is regarded as a highly complex and efficient mechanism, the actions of which are co-ordinated and controlled by innumerable reflexes. In a state of health the reflexes are nicely balanced and in constant play one with another. Variations of balance in either direction occur within certain limits and provide for the physiological necessities of the organism as a whole. Symptoms of disease show themselves by a disturbance of balance which in the initial stages may be similar to that occurring in normal physiological conditions, the difference being that in the case of disease the physiological stimulus is absent or is insufficient to account for the altered condition.

As an example may be cited the breathlessness, increased cardiac action, and other phenomena associated with severe and prolonged muscular exertion. These are physiological variations of balance in a number of reflexes. The same disturbance occurs more readily with increasing age and may still be regarded as physiological, though it reveals a failing power of response in the various organs of the body. In certain diseased conditions—for example, in hyperthyroidism, the same disordered reflexes arise from a stimulus which in the normal condition is ineffective. The injurious agent acts upon some portion of the arc of one or more of the reflexes, and the normal balance is disturbed.

The symptoms of disease are illimitable, just as the reflexes are, and many of them are common to a number of different conditions. They tend, however, to group themselves in a definite manner, and it is hoped that by careful study and long-continued observation it may be possible to classify these groups and to arrange them upon a scientific basis. This can best be done by observations on the behaviour of the body itself in the earliest stages of disease. The body furnishes an apparatus more sensitive than any laboratory instrument, and the slightest deviation from the normal reveals itself in altered reflexes before the most elaborate physical and chemical tests are applicable. Further, the body, in its response to an injurious agent, indicates, in a manner which no laboratory test can do, its capacity for successful resistance, and so furnishes the skilled observer with material for prognosis as well as diagnosis. It consequently falls to the lot of the general practitioner, who most frequently sees the earliest symptoms of disease, to detect the meaning of symptoms as revealed by this most elaborate and sensitive of all mechanisms—the living body.

In order to understand the meaning of symptoms it is first of all essential that there should be a clear knowledge of the structures and mechanism on which they are based. The reflex arc in its simplest form consists of a receptor, afferent nerve fibre, nerve centre, efferent nerve fibre, and an effector. Disease may alter the normal reflex by attacking any one or more of these parts of the reflex arc.

For practical purposes one may divide the arc into three parts—the receptor, the centre, and the effector. The reflex, however, is probably in all cases much more complex than is usually represented, and this complexity is determined by the nature and extent of its connexions in the central nervous system. The reflex centres are all more or less linked up together. Interconnecting neurones with their synapses largely determine the special characters of reflex action as worked out by Sherrington. Even in the simplest reflex involving muscular movement there is co-ordination, a function which is exercised by the reflex centre. An afferent impulse on reaching the reflex centre passes to one or many neurones, the extent of its spread varying according to the character and strength of the stimulus. The activity of some nerve cells is increased while others are inhibited. Thus in a reflex producing flexion of a limb the efferent neurones of the flexor muscles are stimulated, but the efferent neurones of the antagonistic extensors are inhibited. Reciprocal innervation exists, and the impulse is so co-ordinated in the reflex centre that a co-ordinated response takes place in the effectors. Physiological evidence is lacking as to the exact nature of the mechanism involved in the visceral reflexes, but there is some reason to believe that reciprocal innervation is of very general occurrence.

The most common of the early symptoms of disease are sensations, especially those of exhaustion and pain. The ordinary physiological conception of the reflex finds no place for these sensations, but from a clinical point of view they may be regarded as reflexes provided one adopts a wider conception of what the reflex really signifies.

Receptors are universally distributed throughout all living structures in the body, and each is normally excited by an adequate stimulus differing in character according to the structure of the end organ excited. The nerve impulse travels by afferent nerve fibres to some part of the brain stem and its prolongation the spinal cord. The true reflex centres are found in what is developmentally the oldest portion of the central nervous system, and with the possible exception of the senses of smell and sight, all afferent impulses pass to that portion of the nervous system which is represented by the mid-brain, pons Varolii, medulla oblongata, and spinal cord. Many of the important visceral centres have been roughly localized, but it is a mistake to regard them as separate units. The centres are frequently diffuse, freely connected, and more or less interdependent. A powerful stimulus, such as that occasioned by the spasm of a ureter endeavouring to get rid of a calculus, provides an impulse which sets up a number of reflexes. The predominating result is pain referred to certain areas of the outer body wall, but the impulse spreads widely, producing vomiting, vasomotor, cardiac, respiratory and other disturbances. The sensation of pain is just as clearly a reflex as is the occurrence of vomiting. In the case of sensations the effector organ is the cerebrum, whether one regards their perception as taking place in the cortex or in one of the cerebral basal ganglia. The cerebrum is to be looked upon as a distinct organ with very definite functions, not the least of which is the translation of afferent impulses into sensations. The cerebrum responds to the impulse, and is in this case the effector organ; its response is the sensation of pain, or whatever sensation the afferent impulse evokes. The response by the cerebrum is as a rule only one of the results of an afferent impulse; even the sense of pain, although the most obvious symptom, may not be the essential part of the reflex. Sherrington has shown that in the spinal animal the painful stimulus is prepotent, although in this animal it cannot evoke the sensation of pain. In other words, the painful stimulus gives rise to an impulse, which, by virtue of its special character or strength, commands the pathways in the reflex centres involving many neurones and producing a great variety of responses or symptoms.

But the cerebrum can act as a receptor as well as an effector, that is to say, it can, in response to an adequate stimulus, initiate a reflex. The perception of sensation excites a number of special processes, including, it may be, memory, judgement, or other phenomena associated with cerebration. Such activity may result in an impulse which, from the point of view of the present argument, must be regarded as afferent in that it goes to the reflex centres. It is there co-ordinated and distributed to the effectors. In this sense the conditioned reflex of Pavlov is a double reflex. In the first the receptor is at the periphery and the effector is the cerebrum, in the second the cerebrum acts as the receptor and the impulse passes through the reflex centres to bring about the final response in a peripheral effector.

This conception of the central nervous system is an unusual one, but provides a working hypothesis which appears of value from a clinical point of view. It exalts the importance of the reflex centres, the really vital portions of the central nervous system. The cerebrum, and the same is true of the cerebellum, is looked upon as a distinct organ which can receive and initiate impulses, but these impulses are sorted and to a large extent co-ordinated in the lower reflex centres. The thesis, pushed to its logical conclusions, involves one in seeming absurdity. Voluntary muscular action becomes in this sense a reflex. Initiated in the cortex cerebri, it passes as an afferent impulse to some part of the reflex centre, and is there translated into efferent impulses which result in co-ordinated movement.

Voluntary muscular movement cannot be classified as a reflex in the restricted physiological sense of the term, and it might be better to employ some other term to denote the conception the wider view requires. It is difficult to find a term which expresses the general meaning so well as that ordinarily implied by "reflex," and it is at least open to question whether one cannot justifiably extend its scope to include the greater part of the mechanism whereby voluntary muscular contraction is produced. Mental processes can initiate visceral reflexes. Recollections of various kinds, mental excitement, anger, shame, and other conditions provide impulses which provoke widespread activity of the reflex centres. The resulting cardiac, vasomotor, and other visceral phenomena are undoubtedly reflex, and why should not the simultaneous contraction of voluntary muscle be included in the same category? It is true that the contractions of striped muscle can be inhibited by the will, while there is no such control over the visceral responses; but this power of inhibition is largely acquired by education and is not always complete. Many voluntary actions have much in common with the reflex. The proper swing of a golf club, and in fact skilled movements generally, show many of the characteristics of reflex action, and it is possible that they actually are reflexes. It is, indeed, in many cases difficult to determine when an action ceases to be voluntary and becomes a reflex.

There is ample reason to believe that voluntary movement and the reflex action of voluntary muscles do in many instances make use of essentially the same mechanism, and this is all that the St. Andrews view of the reflex requires. Whether all voluntary action is to be regarded as reflex involves serious problems with which we are not concerned.

The cerebrum and cerebellum occupy a very special position. While capable of acting as effectors and as receptors in the reflex arc they have their own distinctive functions, and, moreover, they exercise a control over the lower reflex centres. The control exercised by the cerebrum is mainly that of inhibition, that of the cerebellum is a reinforcement of the activity of the reflex centres. The response of the body to a given stimulus is greatly complicated by the controlling influence of these organs and the same influences complicate the altered reflexes brought about by the action of injurious agents in disease.

Reflexes are frequently grouped in pairs, the one being antagonistic to the other. Examples are seen in the voluntary muscles which are grouped to form opposing forces: the heart has accelerator and inhibitor nerve fibres, the blood vessels vaso-constrictor and vaso-dilator fibres, and so on. Opposing reflexes are nicely balanced one against the other, but the balance is in some cases influenced by this third factor acting upon the centre—namely, a control by the cerebrum and cerebellum. The influence of the cerebellum is mainly concerned with the postural reflexes, and the importance of the reflex in the maintenance of posture is well known. In a recent article Blundell Bankart[2] has given an excellent description of the postural deformities which arise from alterations in the normal reflexes. Slight postural changes may be early indications of disease, and their production is the result of a disturbance of balance of certain reflexes. Temporary alterations may be physiological, as in fatigue, but they may be pathological, and if the conditions persist actual structural deformity may ensue.

Head, in a Croonian lecture upon diseases of the nervous system, points out that the manifestations of disease comprise both loss of function and outbursts of excessive activity. He ascribes these phenomena to a "release of function," and divides them into categories entitled "disintegration" and "escape from control." It may be true that, as Hughlings Jackson taught, "destructive lesions never cause positive effects, but induce a negative condition which permits positive symptoms to appear." By the impairment or destruction of one reflex arc a negative condition is produced, the normal balance of the reflexes is disturbed, and positive symptoms arise from over-action of other reflexes which are no longer held in check. The same results are shown even more strikingly outside the central nervous system. If the activity of the vagus nerve is impaired by the use of atropine the heart beats more rapidly. The heart is released from the function of vagus control, but the real interpretation of the condition lies in a disturbance of the reflexes controlling the organ, impairment of vagus activity resulting in over-action of the accelerator mechanism. Many examples of a similar nature might be given. The term "release of function" may be more appropriate to some of the conditions described by Dr. Head, but the principle underlying them is the same, and Sir James Mackenzie's theory of disturbed reflexes provides a working hypothesis of wider application.

The theory is being tested at the St. Andrews Clinical Institute, and is found to be of great value in the elucidation of the early symptoms of disease. It enables the drawing up of a rational classification of symptoms, and gives a clue to their relative importance.

Incidentally it has revealed to members of the institute, and to others who have attended the clinics, the necessity of a closer correlation between the teaching of anatomy and physiology. Both subjects form the basis of any rational conception of the problems which have to be solved in medicine, and a thorough grounding in the anatomy and physiology of the mechanism of the living body is the first essential of medical education.

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A British Medical Association Lecture

ON

SOME POINTS IN ABDOMINAL DIAGNOSIS.*

BY

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WE all know the admirable lists of physical signs and symptoms carefully compiled in textbooks, the perusal of which makes differential diagnosis appear so straightforward and almost infallible, but we know, and to our cost, that in actual practice we find ourselves at our wits' end to make a diagnosis, and that the difficulty arises from overlapping of the signs and symptoms of widely different lesions and of what are called atypical cases. So instead of adding to the lists compiled in this manner I will discuss some of the difficulties we encounter, and try to give some hints whereby we may learn to avoid in future those failures we have all perpetrated. In brief, were we able to ascertain and elucidate in our minds those small warnings which precede nearly all acute lesions we would be led naturally and spontaneously to the climax they inevitably end in, and the crisis ceases to be a matter of doubt and is revealed as a clear inevitable event; it becomes a logical deduction. Much as is the bursting of an explosive charge inevitable when the lighted fuse reaches the detonating charge, so a gastric ulcer or chronic appendicitis or a gall stone inevitably flares up into a crisis. The exceptions to an inevitable flare-up are few and far between, and our proper mode of conduct is to advise an early operation and not to rely upon the very doubtful chance of a "flare-up" not occurring. Where we find our real difficulty is in unravelling the warnings, since so often various acute "crises" in their early stages have

* Delivered before the Worcestershire and Herefordshire Branch, British Medical Association, April, 1921.

many signs and symptoms in common. This leads to the next point I want to emphasize, namely, the taking of the history.

THE CLINICAL HISTORY.

My personal experience has impressed me with the fact that a history of a case may be acquired most laboriously and painstakingly, and yet be of comparatively small value in diagnosis. All the facts of the case may be recorded, but they bear no relation to one another; they have no sequence; they fall over one another and confuse us. Yet the taking of a history is the actual unravelling and elucidation of those warnings which, as I have indicated, nearly always precede the crisis or climax, and is the key to its logical diagnosis. It is in the taking of a history that one person may ascertain new facts, or correlate and elucidate already acquired facts in their true bearings, and so be enabled to stick to the real course of events and avoid the many by-paths amongst which a mere jumble of events is so apt to lead the unwary.

The taking of a history does not mean asking questions merely; it entails the guiding of the answers, since in all cases there are salient facts and others which are immaterial, and one salient fact leads up to the succeeding ones, and if we miss the hint conveyed by one salient fact and do not follow it up, we lose our way and fog our minds. For example, gastro-intestinal symptoms may be set up by genito-urinary disease, or a nervous lesion, or by certain poisons; and unless we are put on the right track we are apt to treat the symptom as the disease. This is where the personal factor enters. The taking of a good history—one, that is, which will inevitably lead to what I have called a logical deduction, in other words a diagnosis—necessitates a good working knowledge of all the abdominal viscera in health and disease.

CAUSES OF ABDOMINAL CRISES.

Diseases, or crises, such as we are now discussing may have common origins. The essential cause of acute cholecystitis and appendicitis are usually the same—namely, a septic condition of the gastro-intestinal tract. Why should one individual's appendix be unable to resist the infection while his gall bladder is proof and his neighbour's appendix resist while his gall bladder succumbs? Here we have the personal factor of the patient to consider, his personal habits, diet, leanness or corpulence, constipation, and a thousand and one other things in general, while in particular there is the organ involved. I believe a person to be born with a vast inequality in the initial capacity of his various organs to sustain the work thrust upon them, and, above all, in their ability to resist bacterial invasion or the effect of toxaemia. In fact, a man may be a millionaire in liver and a pauper in pancreas. This is what used to be called "constitution," and if the particular characteristics are familial and not individual a family history assumes a new aspect towards other diseases than tuberculosis and syphilis. I believe such a familial characteristic can frequently be established with regard to arterio-sclerosis and renal disease, and insurance companies charge a higher premium to insure the child against appendicitis if its parents have suffered from that disease.

If we consider the common causes of abdominal disease, we shall find that if we look for primary causes alone to elucidate the enigma of a crisis we are often disappointed. Many times, indeed, the primary cause will have disappeared. We all recognize the disappearance of the primary causal rheumatism and the unhappy persistence of the cardiac disease, or of the primary septic urethritis and the persisting ankylosed joints, or of scarlet fever and the persistence of the chronic nephritis. We do not equally recognize this in cases of acute abdominal crises, such as is best illustrated in a case of gastric ulcer where all the septic teeth have been extracted and a clean mouth now exists, although the very fact that many teeth are absent is in itself a proof that much sepsis must have existed at one time or another in the mouth, and have contaminated the stomach mucosa.

The factor of time in producing a crisis is not sufficiently appreciated. If a patient has acquired a gall stone, however long it may remain quiescent, sooner or later with the lapse of time other factors arise which cause a disturbance of the equilibrium hitherto maintained between the stone and the gall bladder. Other stones form, and one is propelled into the orifice of the duct by some trivial accident, and is just small enough to be firmly grasped by the peristaltic action its presence excites, and thus produces gall-stone colic, while if it is carried far enough it may obstruct the main duct and so cause jaundice; or duodenitis is set up by an indiscretion in diet or an increase of sepsis, and a stream of virulent germs gains access to the ducts and gall bladder and sets up acute cholecystitis in the already damaged organ. At any rate, given an initial lesion, time is more than likely to witness an increase in its virulence or superimpose a complication. It is this complication which is the crisis we are called upon to diagnose and treat.

An appreciation of the nature of the sequelae which must, according to my opinion, sooner or later arise in every initial lesion suspected or known to exist, narrows considerably the difficulties of diagnosis of a crisis in being, and leads me again to emphasize the need to hark back far enough in the past history for strong presumptive suggestions of an initial lesion, and in the light of that presumption to assess the existing crisis as the inevitable termination to that particular lesion. It would save many lives and much pain and danger were we to advise our patients to accept early operation once an initial lesion is recognized, instead of deferring it till an inevitable crisis arises.

THE PATHOLOGICAL ELEMENT IN DIAGNOSIS.

In diagnosis there are two chief considerations: one is the pathological, the other the anatomical. An accurate appreciation of the predominating signs or symptoms will help very greatly in narrowing down the possible lesions from the pathological standpoint. If a case is seen moderately early one should then be able to locate the lesion as in one or at most two possible organs, so making an anatomical diagnosis. It must be in the experience of all of us that at a late stage of an abdominal crisis the whole aspect of a case may alter by the addition of a complication, so that neither a pathological diagnosis—that is to say, of the primary lesion—nor an anatomical is possible.

Some acute lesions result in the predominance of one feature such as: (1) Gastro-intestinal disturbance (vomiting, diarrhoea, intestinal obstruction, meteorism); (2) profound toxaemia; (3) pain and its concomitants; (4) the signs of haemorrhage; and (5) peritonitis.

One of the most important of the gastro-intestinal disturbances is intestinal obstruction. What is intestinal obstruction? Academically this is easily answered, as its name implies mechanical interference with the onward flow of the intestinal contents. Actually it is not so easily answered. Its manifestations are confused with a totally different condition—namely, physiological obstruction. The first difficulty arises because so many lesions which are said to produce intestinal obstruction do not in the least obstruct the lumen of the bowel. What they do is to inhibit the peristaltic action, or, in other words, paralyse the gut. Take the case of a Littré's hernia, in which a by-pass—Meckel's diverticulum—is strangulated; this has no effect upon the lumen of the bowel, which is entirely patent throughout. Or take the case of a mass of great omentum strangulated in an external hernia: this has still less connexion with the lumen of the bowel, yet the effect is to stop the onward flow of the intestinal contents and death may result.

These lesions act first by inducing irritation, then inflammation and necrosis of the peritoneum, and at a later stage by systemic poisoning due to absorption of virulent poisons from the proximal side of the constriction. Peristaltic inhibition may be set up by the proximity of an abscess or an acutely inflamed organ, as is seen in pyosalpinx with pelvic abscess, or an acutely inflamed gall bladder. Then, again, torsion of an ovarian cyst or a pedunculated fibroid will produce all the symptoms of intestinal obstruction and be treated as such. In all these cases the interference with the normal action of the bowel is only a symptom. It is not the crisis, and thus we may be misled. Physiological obstruction is a passive obstruction generally induced by an inflammatory lesion or severe twisting of the peritoneum. Mechanical obstruction is an active lesion.

THE ANATOMICAL ELEMENT IN DIAGNOSIS.

Then we have the converse state of affairs, in which, after the onset of an actual gross obstruction from a band, one or more faecal evacuations occur, either spontaneously or as the result of treatment by an enema or saline purgative, and such an occurrence is accepted as a proof that, whatever the lesion, it is not intestinal obstruction. The fact is that if the big bowel is loaded with faeces and actual obstruction is set up in the small intestine or proximal part of the large bowel, the bowel can and often will spontaneously empty its contents, especially those lying in the rectum. Further efforts to relieve the patient, by enemas especially, or by saline purgatives, will then empty the contents of the pelvic colon and other portions of the big gut, but a time will arrive when all efforts to effect further relief fail. The sooner this state of affairs is reached and recognized, the better for all concerned.

If we make a routine examination of the rectum in every abdominal crisis, we can in some degree safeguard ourselves against making false deductions, for, assuming we find a loaded rectum and a descending colon with obvious contents (felt by the abdomen), we reason: "Now we must get rid of all the contents of the rectum and colon, and when that is effected then we must ascertain whether food from the small bowel (or from a part of the colon proximal to the assumed lesion) comes along and is evacuated." If this happens we may fairly make the deduction that the lesion is non-obstructive, and twelve hours should be the outside limit to set. If the rectum is empty and all our efforts to produce an evacuation are failures, we may take it that there is a mechanical obstruction, since there is always some residue in the colon and a considerable quantity in the small intestine.

The passing of flatus in small quantity at infrequent intervals, unaccompanied by any sense of relief to the patient or improvement in physical signs, must not be taken as evidence that intestinal obstruction does not exist; flatus in small quantity is readily formed in the rectum and colon distal to an obstruction. Thus the less we rely upon the complete cessation of the passing of flatus and faeces as proof of intestinal obstruction, and the more we rely upon the collateral signs and symptoms, especially increasing distension, outlining of the intestine and coiling, the absence of early profound changes in pulse and temperature but their steady deterioration, the better for the patient. We must always bear in mind that sudden change in the usual regular habits of a person's bowel associated with other gastro-intestinal symptoms, for instance, nausea or vomiting and colicky pains, is a highly suspicious event.

Mechanical obstruction varies greatly in its manifestations according to the site of the lesion. The nearer to the stomach the interruption the earlier does persistent vomiting arise, the less marked is the general distension, there are fewer coils, and as they more completely empty they are not so prominent, collapse and grave general symptoms supervene quickly, while the "classical" signs of complete absence of flatus and faeces are long delayed; if waited for, the patient will probably succumb. When the obstruction occurs at the pelvic colon, and especially if it be due to volvulus, we get a typical acute intestinal obstruction, with complete cessation of flatus and faeces from the onset, rapid formation of outlines and coiling, marked and increasing distension, steady deterioration of pulse, slight rise of temperature, foul tongue, and late onset of vomiting, but once established, persistent, distressing and of the gravest prognosis. Even in this instance a slight evacuation of faeces may occur at the onset. Meteorism, or great distension by gas in the intestine, is characteristic of a volvulus; a twisted sigmoid may fill the whole abdomen, pushing up and obliterating the liver dullness everywhere except in the mid-axillary line. A twisted caecum or small intestine may form coils of great dimensions.

INTUSSUSCEPTION.

In infants suffering from an acute crisis we have to distinguish between intussusception and entero-colitis. There are many signs in common—for instance, collapse, vomiting, diarrhoea, pain, pulse and temperature—but two very characteristic signs are present in intussusception: (1) the absence of the caecum, and (2) the presence of a tumour. The vast number of intussusceptions sooner or later carry on the caecum.

(1) In the commonest form, the ileo-caecal, the caecum is quickly carried away from the right iliac fossa; but if we are fortunate enough to be able to examine that region very soon after the onset of the crisis, we may detect a swelling there which is the beginning of the tumour formation. Usually, however, we see the case at a later stage; then we fail to feel the caecum, and a peculiar emptiness and absence of the normal elasticity is observed; there is obviously something wanting, and our fingers sink deeply into the region and may actually palpate the back of the hollow cavity of the iliac fossa. It is a very characteristic and early sign.

(2) The absence of the caecum proves that it must be elsewhere, and at an early stage we cannot find where it is, for the good reason that it is tucked up under the liver. We may be fortunate enough to catch it before it entirely disappears, as a definite vertical tumour just below the costal margin. When it has passed beyond the hepatic flexure it reappears as a horizontal (sausage-shaped) swelling about the level of the umbilicus, which is best felt during a quiescent period—that is, during the intervals between colicky pains.

If we examine the rectum at this stage we cannot feel the tumour, but we learn a definite fact—namely, that the rectum is empty of faeces; the finger returns covered by some amount of blood-stained mucus, but devoid of faeces. In acute entero-colitis a rectal examination will show, when the finger is removed, *there is always some amount of faeces adherent*, whether there be also blood-stained mucus or not, and very often the withdrawal of the finger will be followed by a slight escape of faeces or an explosive discharge of flatus, which does not occur in intussusception. The explanation is simple. In intussusception the big bowel very quickly empties itself, and nothing additional in the way of food residue can pass the obstruction to replace it, while the blood and mucus formed by the strangulation is passed along by the colicky contraction of the colon, and is found in the rectum quite early. In entero-colitis every spasm carries on some small quantity of faecal residue which suffices to stain the finger. It may contain blood and mucus, but the quantity of either is small in comparison with the amount found in intussusception. At a later stage the soft extremity of the intussuscipiens may be felt from the rectum and the finger actually passed into the lumen.

PULSE AND TEMPERATURE.

Pulse and temperature records are the best methods of recording progress in every lesion, but in abdominal crises such records are invaluable, especially if graphically recorded on charts; without them we are placed at a distinct disadvantage. The frequency and quality of the pulse afford the most constant and best general guides to increasing severity or improvement in a case. The nearer the diaphragm, the larger the area of peritoneum involved, the quicker is vomiting induced by the lesion, the more frequent is the pulse and the worse its quality. Similarly with internal haemorrhage, the more rapid the loss of blood or the more persistent the loss, the worse the pulse. Indeed, the long continuance of a state of collapse may be the only indication of internal haemorrhage, whether into the lumen of a hollow viscus or into the peritoneal cavity. If it is being extravasated into the retroperitoneal tissue it is invariably associated with severe pain from stripping up of the tissues. Grave lesions may start without a pulse alarming in frequency or quality, but steady deterioration will be noticed as the case proceeds; especially is this the case in non-inflammatory lesions. In an acute pelvic lesion, or one in which the organ or structure is retroperitoneal or excluded by adhesions from the general peritoneum, or in the case of the gastro-intestinal tract the more distant the lesion, the less is the relative frequency and quality of the pulse disturbed. A consideration of a pulse record is a valuable guide in prognosis.

The curve of the temperature is more erratic and appears less amenable to rules, as may be observed in gall-stone colic when a high temperature, often accompanied by a rigor, initiates a mild attack. Also in acute renal infection, such as an ascending infection by *Bacillus coli*, alarming temperatures may be recorded, yet a few days of appropriate treatment clears up the condition. It is notorious how slight a lesion suffices to produce a high temperature in a child or a nervous adult. On the contrary, in the aged and infirm we may find either an absence of or a low or

subnormal temperature associated with grave abdominal lesions.

In internal haemorrhage we regard a continued absence of a rise of temperature or a fall as one of our leading clinical signs, and if associated with a frequent small and weak pulse, sighing respiration, and restlessness, it is diagnostic. A continued low temperature, one only slightly raised, after the stage of collapse has passed, indicates a non-inflammatory lesion as distinct from a perforative or other peritoneal lesion; if continuously subnormal it indicates the supervention of a peritoneal lesion of a mild virulence. A sudden fall of a previously raised temperature, unless accompanied by equivalent signs of improvement, is generally a very bad sign.

Thus the associated condition of the pulse and temperature will often enable us to decide between a mucosal infection and a peritoneal lesion, and in conjunction with the absence of muscular resistance (rigidity) a good pulse is of good augury even though the temperature be high. A bad pulse with even a moderate temperature makes one anxious, since it gives ground to fear either that the cardio-vascular system is not of good quality or that there is profound toxaemia. For instance, in intestinal obstruction from bands, twists, or kinks—that is to say, non-inflammatory obstruction—the initial rise of pulse frequency and temperature is slight; but the steady deterioration of the pulse and rise of temperature, with the continuance of abdominal discomfort, increasing distension, intermittent pain, the onset of nausea and vomiting, the absence of flatus and faecal evacuation—these clearly indicate the diagnosis.

Often symptoms may appear to be better as a result of treatment. For example, in an acute case an enema or a laxative may produce a fair evacuation of flatus and faeces and the patient experiences relief, and a small drop in the temperature perhaps occurs; but if a careful estimate of the pulse frequency and quality fails to correspond and confirm the apparent improvement, we must discount the good impression and recognize that the good effect is solely due to removing a certain amount of the contents of the abdomen, so relieving tension, and not to any improvement of the actual crisis.

As distinguishing between thoracic and abdominal crises, the pulse, temperature, and respiration ratio is a valuable guide. If the respiration increases in frequency by 50 per cent. or over, the temperature rises rapidly to a high level (anything over 101°), and the pulse also increases in frequency, say to 100 and over, but is of good volume, big and bounding, a thoracic condition is almost certain. Each symptom may continue to get worse, but a rapid development of such a complex within a few hours, whatever the reflex pain in the abdomen and the apparent muscular rigidity, points conclusively to pneumonia. The diagnosis of a basal pleurisy is not so readily made by the pulse-temperature-respiration ratio alone, but the catchy character of the increased respiration, the stitch-like pain relieved by pressure, the early development of a "rub," associated with the others, is strong evidence that the lesion is in the thorax.

THE late Dr. Charles Albert Hingston of Plymouth, who died on April 5th, leaving net personalty of £86,269, has bequeathed over £25,000 to charitable institutions, including £200 to the Plymouth Public Dispensary.

Mr. Alfred Poynton, solicitor of Birmingham, who died on July 28th, has bequeathed £1,250 to the Children's Hospital, Birmingham, to endow a bed in memory of his daughter, £2,500 each to the General Hospital and the Queen's Hospital, Birmingham, for like purposes, £1,750 each to the Women's Hospital, the Orthopaedic and Spinal Hospital, the Blind Institution, the Eye Hospital, the Ear and Throat Hospital, and the Skin and Urinary Hospital, Birmingham, and £500 to the Birmingham Dispensary.

THE following are among the bequests made under the will of the late Mr. William Sutcliffe of Manchester, who died on May 25th: £1,000 each to the Manchester Royal Infirmary, St. Mary's Hospital for Women and Children, Salford Royal Hospital, and the Ancoats Hospital; £500 to the Northern Counties Hospital for Incurables; £300 each to the Northern Hospital for Women and Children, Cheetham Hospital, and the Manchester Victoria Memorial Jewish Hospital; £250 to the Manchester Children's Hospital; £200 each to the Manchester and Salford Hospital for Skin Diseases, the Royal Albert Institution, Lancaster, and the Christie Hospital (Cancer Pavilion and Home).

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF VENEREAL DISEASES.

Colonel L. W. HARRISON, D.S.O., R.A.M.C., President.

PRESIDENT'S INTRODUCTORY REMARKS.

IN opening the first meeting of the Section, Colonel HARRISON remarked that this was only the second year in which the diseases known as venereal had been grouped for discussion by a distinct section. The bond uniting their interest in these diseases, which were similar only in the manner of their contraction, was forged by their interest in the public health. He hoped that the members of the Section would keep before them in these discussions and afterwards the public health ideal in the treatment of venereal disease. He feared that it was an ideal which was too often forgotten, and that the medical attendant was too prone to cease his efforts at a lower plane—the mere relief of the patient. It was only by aiming always at rendering the patient permanently non-infective, and being content with nothing less, that we should achieve any results of value to the public health.

DISCUSSION ON THE TREATMENT OF SYPHILIS.

TREATMENT OF SYPHILIS IN THE MALE.

BY

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A PAPER which opens a discussion ought to be provocative rather than constructive, interrogatory rather than didactic, and I propose to raise problems rather than aim at laying before you a cut-and-dried scheme for the treatment of syphilis. A little more than a decade has elapsed since the introduction of salvarsan, and the time seems ripe for a free discussion of some of the many points that have arisen since the arsenobenzol group of remedies came upon the field. I trust that one result of this meeting will be to clear up some matters on which there is still considerable divergence of opinion.

If I may for a moment be allowed to indulge in a personal note, I should like to say that my experience in the treatment of syphilis extends to exactly twenty-one years, so that for ten and a half years before salvarsan was introduced I had experience of the old remedies; and I will take this opportunity of saying that, although the Ehrlich-Hata discovery has wellnigh revolutionized the treatment of syphilis, it was quite possible in the old days to obtain excellent results from the careful and prolonged use of mercury and potassium iodide. I mention this in passing because it is sometimes forgotten. In those days mercury was our sheet-anchor, and, if properly administered, rarely failed us. But the introduction of the arsenobenzol group of remedies supplied us with new and invaluable allies. Their wellnigh dramatic effect in causing the disappearance of the outward and contagious lesions of the disease, especially those affecting the mucous membranes, was something that we had never been privileged to see before. But this was and is a qualified advantage, for it is capable of luring both patient and physician into a condition of ill-grounded security, since the disappearance of visible lesions does not indicate that the disease has been eradicated.

Modern research has contributed enormously to the efficient treatment of syphilis, but I am of opinion that the chief contribution has not been a therapeutic but a diagnostic one. By the recognition of the *Treponema pallidum* in a small, possibly innocent-looking, sore we are able to make a diagnosis at a very early date, and the earlier syphilis can be diagnosed the more efficiently can it be treated. If there is any ground for the recent statement that the special neurotropic strain of spirochaete has

a longer period of incubation than the ordinary, then early diagnosis and immediate and thorough treatment become more imperative, for by these means we may strike a lethal blow at the parasite before the infection becomes systemic.

If a case presents itself sufficiently early it ought to be possible to arrive at an accurate diagnosis long before the Wassermann reaction becomes positive. In my experience it is not the rule to get a positive reaction till fifteen to seventeen days after the appearance of the primary sore, and if made full use of these seventeen days are of incalculable value. The chancre and the enlargement of the adjacent lymphatic glands are the first indications of Nature's attempt to localize the infection.

The question arises, Is any good purpose served by the excision or destruction with the galvano-cautery of the primary sore? Theoretically this would seem to be the path of wisdom, wherever it is possible, for by so doing we remove the focus from which systemic infection is taking place. But it is doubtful if the real advantages are as great as one might *a priori* expect. For it is more than likely that during the period which elapses between the infection and the development of the primary sore the treponema has been finding its way along the lymph channels to the lymphatic glands; and the nearest lymph glands are probably already tenanted by numerous colonies of spirochaetes before they become palpable. Further, we have no precise knowledge of the exact moment when the treponema invades the blood stream. What is happening in what the French call the period of second incubation—the time which elapses between the evolution of the chancre and the cutaneous eruption? The difficulties of discovering the spirochaete in the blood are so great that we do not know when it breaks through the barrier of the lymphatic glands and invades the circulation. Till this fact is known we lack the knowledge that would enable us, on rational grounds, to decide whether we should excise the chancre, and, if so, what is the latest date at which such a procedure is advisable. But even in the absence of such knowledge I should like to hear the opinion of the Section upon this point. Personally, I believe that whenever it is possible the primary sore should be excised; and where this is not possible an attempt should be made to interfere with the viability of the spirochaetes within it by local inunction with Metchnikoff's ointment. Further, I believe that good may be done by inunction of the same ointment over the adjacent enlarged lymphatic glands.

The value of the arsenobenzol group of remedies being admitted, I should like to hear some considered opinions as to which is the most efficient, the handiest, and the safest of them to use. Those of you who have had experience of the original salvarsan will, I imagine, be prepared to admit that no substitute for it, and no modification of it possesses quite in the same degree the properties of maximum therapeutic effect with a relatively small degree of toxicity. Personally I have used salvarsan and neo-salvarsan, kharsivan and neo-kharsivan, arsenobillon, and N.A.B., as well as galyl. In my opinion salvarsan was the best of these, followed very closely by kharsivan. Nowadays I pin my faith to neo-kharsivan, which I have found to be uniformly reliable, and in the use of which I have never had the misfortune to meet with any of those serious by-effects which sometimes give rise to anxiety. But though it is an excellent and trustworthy remedy, one has sometimes found that a rebellious case, in which it has been found difficult to convert a positive into a negative reaction, will yield at once if for the neo-salt one substitutes a dose or two of salvarsan or kharsivan. I should like to know if any of you have had the same experience.

Having decided upon the particular preparation we intend to use, we have next to make up our minds as to the best method of using it. I take it for granted that most of you favour the intravenous route in all recent cases. The intramuscular route for administering arsenical derivatives is best reserved, if it is used at all, for chronic cases or for cases of nerve syphilis.

Since salvarsan was introduced opinion has varied almost from year to year as to the frequency with which injections should be administered, and as to the dose each should contain. We are still a long way from attaining to that *therapia magna sterilisans* with a single dose which was proclaimed with such a loud flourish upon German trumpets when salvarsan first entered the field. Now, the need of repeated injections is recognized on all hands. But there is no general consensus of opinion as to whether it is better to make use of massive doses of the drug in each injection, or whether it is preferable to give smaller individual doses in more frequent injections until the same aggregate dose is reached. I imagine that most of you have varied your practice in this respect from time to time. Like you, I have changed my procedure with the flux of the years, and now I am an advocate of massive individual doses. This question is, I am convinced, only secondary in importance to the question of the total aggregate dosage, and I trust the Section will discuss this matter thoroughly.

There is something to be said for both points of view. I give large doses because my aim is the greatest possible therapeutic effect in the shortest time. We must not forget the possibility that by repeated small doses we may confer upon the treponema unusual powers of resistance to the lethal action of the drug, thus rendering its complete eradication from the system a matter of greater and greater difficulty. And there is this further point, of immense practical importance to all in charge of venereal disease clinics: the average patient tends to cease his attendance long before he can be declared to be cured. I believe that in Liverpool something like 60 per cent. of all patients cease to attend the clinics before they are discharged. They constitute themselves the arbiters of their own cure, basing their opinion upon the disappearance of outward symptoms. That being so, and as there is at present no means for compelling a free Briton to subject himself to more treatment than he is inclined to undergo, it seems to me that the wise policy is to strike hard by every means in one's power at the disease while one has the opportunity. If a patient takes upon himself to cease attendance before his course is over, we may then console ourselves with the thought that what treatment he had was thorough.

Another point upon which the Section might profitably express an opinion is whether it is better to administer mercury simultaneously with salvarsan, or whether it is better to follow up the salvarsan course with mercury at a later date. There are some *a priori* objections to combined simultaneous treatment. It may be urged that the coincident administration of two highly toxic remedies throws an undue strain upon the economy, and that in our endeavour to strike a lethal blow at the invading organism we may, by saturating the system with arsenic and mercury, do damage to the organs of elimination or cripple the natural mechanisms of defence upon the integrity of which a cure may ultimately depend. We should, however, remember that salvarsan and its congeners are only slightly organotropic, and that just as opium is well tolerated by a man in pain, so mercury is, as a rule, well tolerated by a person with syphilis.

My practice is to administer both remedies simultaneously and in as large doses as the patient can tolerate. It is hardly necessary to insist upon the need of a careful examination of the patient before embarking upon such active treatment. If his kidneys are sound and his heart, lungs, liver, and nervous system free from organic disease, his teeth in good condition, and his skin free from any disease of the sweat and sebaceous glandular systems, there is little danger of any serious by-effects of a toxic nature. It is, however, always necessary to bear in mind that we are not treating a disease, but an individual who is suffering from a disease, and, setting aside any preconceived ideas as to the best treatment, we must always be on the look-out for personal idiosyncrasies.

Mercury tends to produce toxic symptoms if it accumulates through the establishment of a vicious circle of partial elimination through the gastro-intestinal mucosa and partial reabsorption. This may be in large measure prevented if during a mercurial course one gives the patient collosol sulphur in doses of 2 drachms thrice daily after food. While, if massive dosage with salvarsan should unfortunately cause an exfoliating dermatitis, the skin condition can be rapidly influenced for the better by the use of intramine. I should like to hear some discussion of this serious complication. Its incidence seems to be very capricious. I have been fortunate enough to see very little of it in my work with salvarsan, but others would seem to have been less favoured. The worst case

I have met with in my practice was in a woman who had had very small doses—a little more than a gram in all of neo-kharsivan—when the eruption broke out.

I suppose we are all agreed that for routine hospital treatment there is no method of administering mercury so satisfactory as the intramuscular injection. But what should we use, soluble or insoluble preparations? And in what strength should we use them? I prefer the 40 per cent. grey oil. Some of you, I know, prefer a 10 per cent. mercurial cream; some of you may possibly prefer the salicylate of mercury, or you may choose to administer a soluble salt. In very obstinate cases calomel injections should never be forgotten. A course of them will sometimes alter the whole character of an intractable case. Mercury is an indispensable ally. It may not have the striking power possessed by the arsenobenzol group of causing symptoms to disappear in the course of a few hours, but it has powers, that I would only accord to salvarsan with hesitation, of worrying away at the last vestiges of the disease till it is eradicated. Intravenous injections of soluble salts of mercury cannot, in my view, be compared with intramuscular injections of the remedy. In obstinate cases, in which after the disappearance of all outward signs of the disease the Wassermann reaction persists as positive, I should like to commend to your attention the great value of mercurial inunction. This should not be carried out by the patient himself but by an expert rubber, and with the naked hand. The custom of giving a patient a supply of dilute mercurial ointment and instructing him to rub a piece the size of a bean into the groins or armpits every night is worse than useless. To get full value from mercurial inunction a large area of the cutaneous surface should be made use of at each treatment. The treatment should commence with a bath, after which the legs and arms should be shaved if they are very hairy. The first inunction should cover the whole of the back, from just below the vertebra prominens to the sacrum. The second should be applied to the whole skin surface of both thighs; the third to both legs; the fourth to both arms, from the shoulder-joint to a point midway between the elbows and the wrists. On the fifth night the rubber should return to the back again, and on the following evenings proceed seriatim as before.* The anterior abdominal wall should not be used for mercurial inunctions. Thin cotton underclothing should be worn during a course of rubbings, and a warm bath should be taken once a week. The rubbings are best carried out, at least in the secondary stage of the disease, in the evening, for there is evidence that the treponema is a nocturnal parasite and tends to swarm in the skin lesions in the evening hours.

The particular preparation of mercury to be used for inunction is a matter of choice. I advocate what are known as "mercurettes"—oblong blocks of cacao butter containing 30 grains of metallic mercury in fine subdivision in 60 grains of excipient. They are singularly free from irritating properties and penetrate the skin very satisfactorily. Twelve rubbings spread over a fortnight constitute a mild course, while twenty-four rubbings, with an interval of three weeks between each dozen constitute a full course. If due attention be paid to the emunctories and the teeth are kept clean, mercury given in this way is well tolerated and exhibits its full therapeutic effect. I never despair of converting the most intractable positive Wassermann into a negative till the patient has been thoroughly rubbed; and I commend this procedure very heartily to any of you who may not have made use of it in a rebellious case. It is, in my opinion, the ideal method for treating syphilis of the central nervous system, and far surpasses in efficacy any results I have ever obtained from the salvarsan treatment of such lesions.

In a city like Liverpool many of one's patients are seafaring men, and in order that treatment may not be unduly interrupted I am in the habit of prescribing for them, when their more intensive treatment with injections of salvarsan and mercury is over, a supply of Hutchinson's pills. They are easily carried, and armed with them a sailor may go to the ends of the earth and still keep up effective treatment. I order one pill three times a day for three weeks in every month. If the patient is to be away for a prolonged period I instruct him to continue this treatment for three months, and, if there have been no further symptoms, to rest for the fourth month and then begin again as before. In this way I find that a negative reaction, attained by intensive treatment, may be kept negative. Here it may not be out of place to mention that during periods of rest from active treatment I think it is a good plan to administer quinine in small doses in an acid mixture.

A matter of great difficulty to determine is when to cease treatment. We all know that the disappearance of outward symptoms is no criterion of cure. Long after all visible manifestations of syphilis have vanished the reaction given by the blood serum, and, more important still, by the cerebro-spinal fluid, may be positive. One immense service done by the Wassermann reaction is this: it has driven into our minds the knowledge (if such instruction were required) that syphilis is a disease characterized by long periods of suppression of outward signs. Nowadays I believe that every case is treated conscientiously and thoroughly until the Wassermann reaction becomes negative, if such a happy issue is attainable. That is all to the good. But is it enough? We are in danger of making a fetish of the Wassermann reaction, and regarding a negative reaction as a criterion of cure. There is probably only a slight risk of this happy optimism infecting practitioners like yourselves, who are largely engaged in the treatment of syphilis. But the danger is a very real one, and would seem to have engulfed some members of the profession who are not acquainted with the limitations of the reaction. A negative reaction, even after a provocative injection, is not in itself a criterion of cure, though it be repeated at regular intervals over the space of twelve months. It is, however, a goal at which we should aim.

Many factors may conspire to make the result a confusing one: for instance, the method employed in carrying out the test, the reagents used, the experience of the worker, not only in carrying out the test, but in reading his results. Probably we have all had experience of completely opposite reports from different laboratories on the same sample of blood. With a view to eliminating one factor that may introduce error, it may interest you to know that Professor Ernest Glynn has recently invented a machine which delivers absolutely accurate quantities of the necessary reagents into twelve or more test tubes at a time. This is a great improvement on the old practice of measuring the reagents with a pipette, and makes for mechanical accuracy.

The further the Wassermann test is divorced from simultaneous clinical observation, the more dangerous guide it becomes. We must never forget this: the Wasserman reaction is not an indication of the presence in or absence from the system of the living spirochaete; it is an indication of a reaction on the part of the living tissues to the activity of the spirochaete. At a given moment the organism may be quiescent, or it may not be present in sufficient number to provoke those changes in the patient's biochemistry which we recognize by the test. The reaction would then be negative, even though living spirochaetes—potential creators of disaster—were present in the system. And, on the other hand, a positive reaction does not necessarily mean that there are still living spirochaetes present. It is a presumptive proof that there are, but antibodies may continue to persist in the blood for a time after the organisms which provoked them are dead. In recent cases, where treatment has been thorough, it is unlikely that these antibodies resist elimination for any great length of time. In the old-standing case—the ancient tertiary with a long history of frequent recurrences—which continues to give a consistent positive reaction no matter what the treatment, it is worth while considering whether the antibodies may not remain locked in the system, and produce a strongly positive reaction long after the last spirochaete is dead. But we must never forget this, that it is out of the moiety of patients who give a consistently positive reaction that a pathetic host of tabetics and general paralytics will be gathered in the years to come.

I do not know whether the Dreyer-Ward flocculation test, the formol-gel reaction of Gaté and Papacostas, the Sachs-Georgi reaction, or the perethynol flocculation test of Vernes may yet be found to supply us with definite and reliable information as to the complete eradication from the system of the spirochaete. Such a help would be of

* For these practical details I am indebted to Mr. Arthur Padley of Liverpool, who is a professional rubber.

incalculable value. In its absence I cling to the opinion that even in the presence of a negative Wassermann reaction we should keep every case of syphilis which we have first encountered in the primary stage under observation and occasional systematic treatment for three years from the date of infection, and for four years if we have not seen the case until the secondary eruption is in full efflorescence.

You may chide me for being conservative and may suggest that I distrust my remedies and the evidence of the tests. My answer is that I have seen enough of syphilis to distrust the disease profoundly. And we must not be content with absence of visible symptoms and a consistent negative serum reaction. The blood serum may be negative and the cerebro-spinal fluid may remain positive. That way danger lies, and we should do all in our power to convert a positive cerebro-spinal fluid reaction into a permanent negative. If we succeed in doing that we shall have done all that is humanly possible to save our patient from the dread consequences of his infection.

It is not for me to dictate to you how you should treat your cases. There can be no routine hard-and-fast system of treatment for every case. We are seeking to eradicate a disease, but let us not forget that it is not a disease we are treating so much as a patient suffering from an attack of that disease, and consequently our treatment must be plotted out so as to give us the best possible results in each case. But we should make it our constant aim to treat each case with thoroughness, and with that end in view I append a scheme which, if modified to suit the individual, ought in most instances to give good results.

I do not wish to dictate the lines which the discussion should take, but I should like to invite your opinions upon a number of points that seem to me to be of considerable importance and upon which there is some divergence of view as well as of practice:

1. Whatever be the remedies we employ, whether is it better to give large and progressively increasing doses over a short period or small doses over a long period, or should we give small doses at very short intervals?

2. What are the best methods of introducing our remedies? (*a*) Mercury — should it be given intramuscularly, by inunction, or by the mouth; and, if given intramuscularly, are soluble or insoluble preparations the best? (*b*) Salvarsan—should this be given intravenously or intramuscularly or by a combination of both methods, and what considerations should influence us in choosing the route?

3. What is the rôle of potassium iodide in the secondary stage of the disease?

4. Can we define the precise parts played by salvarsan and by mercury in the treatment of the disease? In how far do their actions overlap, in how far do they differ?

5. Should we use both remedies separately or simultaneously?

6. Is there any ground for the opinion that salvarsan used without mercury may aggravate the type of syphilis, and by damaging the nerve cells predispose to what the French call "neuro-recidives"?

7. Does salvarsan used alone "tertiarize"—that is, advance the date of incidence of tertiary symptoms?

8. In the presence of a persistently positive Wassermann reaction (*a*) of the blood serum, (*b*) of the cerebro-spinal fluid, what course should we adopt, all other symptoms being absent?

9. Should we or should we not continue to treat a patient who has had no symptoms for twelve months, and who has given a consistently negative reaction during that time in both serum and cerebro-spinal fluid?

10. What number of injections of (*a*) salvarsan, (*b*) mercury, should constitute a course; and what is the smallest gross dosage we should aim at in our first course?

11. On what facts are we to base our opinion as to "cure"?

12. Have we reasonable grounds, in the light of modern experience, for promising a patient who is willing to persevere with treatment, and who comes to us in the secondary stage of the disease, but who is otherwise healthy, that he can be cured?

13. In the presence of a consistently positive serum reaction in a man who has been well treated, and who has had no symptoms for two or more years, are we justified in permitting marriage?

14. Can we hope for any permanent success by treating incipient cases of general paralysis of the insane or tabes with salvarsan and mercury; and how should we use them in such cases? Have intrathecal injections of salvarsanized serum justified their continuance in our armamentarium?

Scheme for the Treatment of an Adult Male Suffering from Secondary Syphilis (Wassermann Positive) but otherwise Healthy.

(A) A full course of neo-kharsivan consists of ten weekly intravenous injections as follows: 0.45, 0.6, 0.9, 0.9, 0.9, 0.9, 0.9, 0.9; rest fourteen days; then give 0.9 and 0.9. Total of neo-kharsivan 8.25 grams.

(B) A full course of Hg injections consists of twelve weekly doses each of 7 cg. of 40 per cent. grey oil.

1. Begin by giving (A) and (B) simultaneously.

2. Wait a month; then test blood and cerebro-spinal fluid. If both are negative, test again in three months. If still negative, wait three months, then give half (A) and half (B).

3. If reaction is positive at the first test, after completion of the first course, give one-half (A) and (B) in its entirety; and repeat if necessary at end of three months until the Wassermann reaction becomes negative.

2nd Year.—Even in absence of all symptoms, the Wassermann being negative, give one-half (A) and (B) in its entirety. This course may be divided into two parts and given at intervals of six months.

3rd Year.—No symptoms; Wassermann negative. Give one-third (A) and (B) in its entirety with potassium iodide for three months, dividing the treatment up over the year.

4th Year.—No symptoms; Wassermann negative. Give one-quarter (A) and (B) in its entirety with potassium iodide for three months, spreading treatment over the year.

In all cases the blood and cerebro-spinal fluid should be tested at regular intervals.

The scheme may be modified at any stage to meet the requirements of the individual case. A case met with in the primary stage would, in all likelihood, require less intensive treatment, while a tertiary case will need less arsenic and more potassium iodide.

To those who may consider that the amount of treatment suggested is excessive, I would say that it is better in dealing with a disease like syphilis to err on the side of too much rather than too little treatment. We have not yet succeeded in determining the golden mean.

SYPHILIS IN WOMEN AND CHILDREN.

BY

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MODERN methods of diagnosis and treatment of syphilis are an addition to, and not a replacement of, the methods employed by the older workers. Failure to recognize this fact has led to many cases being treated unsuccessfully. The disease, originally occurring in an extremely acute form, has become modified in the course of time. The older writers gave pictures of syphilis which indicate that it was originally of a much more severe type with much severer manifestations than those with which we are acquainted to-day.

The assumption, which is too prevalent to-day, that the modern aids to diagnosis, such as the Wassermann reaction and the methods of treatment which have been the results of Ehrlich's discovery, have rendered the observation of workers of past generations of no value, and that Ricord, Fournier, Colles and many others have left nothing behind them of which the study to-day is profitable or desirable, is one against which I wish to enter a protest. Nothing is further from the truth. The work of the past is as important to-day as it ever was, and there is not to-day, any more than there was in the past, a short cut to a therapeutic heaven.

The prevalence of that assumption is due to one feature of the disease which I am old enough to have had an opportunity of studying, and that is the tendency of the more acute manifestations to ameliorate in course of time. When I was a student I was taught that the manifestations of syphilis in its earlier stages, as they then occurred, were

less severe than they had been in the student days of my teachers. I am now able to tell my students that these manifestations are to-day less severe than they were when I was a student, even after making every allowance for the impressionable mind of youth. Further evidence on this point can be gained from a study of the writers of the eighteenth and seventeenth centuries. Even novelists—Smollett, for instance—gave pictures of syphilis of a type now fortunately unknown, while the traditional account of its first spread on a large scale into Europe, for which the wars of the Emperor Charles V are popularly supposed to have been responsible, describes the sufferers as dying of it as of an acute specific fever. This modification of type renders the diagnostic difficulties greater, and though the earlier symptoms are ameliorated, the later effects are, if anything, rendered more marked owing to the cutting down of treatment or neglect to ask for treatment of any kind.

The spread of syphilis is influenced by certain social conditions. A contagious disorder will obviously spread more widely in a dense than in a sparse population. The paper by Ehlers of Copenhagen on "Syphilis in Iceland," in the New Sydenham Society's publication of 1900, is worthy of perusal in regard to the distribution of the disease in a sparsely populated country, even when, as in Iceland, local customs and social conditions would seem in some ways to facilitate contagion. I need hardly refer to the late war for further instances of the rapid spread of parasitic diseases. It seemed almost impossible to deal successfully with many of them.

Importance of the Family Doctor.

The venereal diseases clinic should not be the only avenue of attack on the disease. Early diagnosis and continuous treatment are most important, and the co-operation of the family doctor is necessary for any real advance. Diagnostic difficulties are not greater than they were in years gone by, but diagnostic facilities are now much increased. The technique of modern methods of treatment is not difficult, and can quite easily be learnt if time is available. The family doctor can, with great advantage, treat a large number of the patients now attending clinics. Clinics should be much more largely consultative for diagnostic purposes, and should be used for such treatment as the family doctor feels he is not able to undertake, either on account of lack of time, or any other reason which may seem good to him.

The foregoing remarks apply especially to syphilis in women, the majority of whom will avoid the publicity of a special clinic, and a large proportion avoid consulting any medical practitioner at all. This is often from lack of knowledge of the possibilities of infection and the possible immediate and remote results. There are obvious difficulties in the recognition of primary symptoms by the patient herself, and if the site of infection is within the genital canal this is not possible.

The effect of the foregoing is that we have the following conditions:

(1) A contagious disease of which the severer manifestations have become ameliorated.

(2) A disease which is diffused more rapidly when conditions in which physical contact, direct or mediate, is either facilitated or unavoidable.

(3) That in women the earlier results of infections from sexual contact are more often than not overlooked altogether, the more so as the manifestations occur in a mitigated form.

(4) Pregnancy, either legitimate or illegitimate, may be the result of the sexual contact producing infection.

In women, therefore, syphilis is more likely to be undetected in its early stages than in the male, and from woman's mode of life it is more likely to be diffused by them extragenitally, to say nothing of the intrauterine transmission of the disease. Diagnosis and efficient treatment is more difficult with women than with men. The class of women liable to diffuse infection is emphatically not the ordinary prostitute. Of the first hundred women I treated four only were prostitutes, twenty-one were single women, and the remainder married women.

Diagnosis is easy if the usual clinical signs are present, but these are usually modified and seldom typical. A typical hard sore is rare. Sores are usually multiple, and induration may escape notice. The rash is often evanescent and atypical in colour. Enlarged glands can usually be found, and an injected throat, without soreness, is common. In ordinary gynaecological work it is unusual to meet with a large number of cases in which inflammation of the vulva, sores, papules, or herpetic eruptions occur, apart from certain well-defined affections which have other symptoms. Such conditions, therefore, while not evidence of venereal disease in general and syphilis in particular, should always raise some suspicion in the absence of the conditions on which they generally depend. As regards glands, enlargement of the epitrochlear glands, in the absence of a sore on the hand or arm, is almost pathognomonic. The later secondary and tertiary symptoms are usually unmistakable.

Such symptoms as miscarriage and premature labour should be to some extent discounted as diagnostic during the war period, as the probability of foetal scurvy, which can be experimentally produced in animals by food deficient in vitamins, might be expected to occur from similar causes. A further allowance must be made for miscarriages among munition workers owing to toxic absorption and T.N.T. and other poisoning.

The Wassermann Reaction as an Aid to Diagnosis.

This is particularly useful when controlled in doubtful cases by the use of several antigens of varied origin and composition and checked further by a modified Sachs-Georgi precipitation reaction. It should not by itself be taken as conclusive evidence. While it is liable to error on account of its occurrence in certain diseases, most of which are rare in England, and while the reaction is not always to be obtained in cases in which the clinical evidence of syphilis is unmistakable, I have found in my own cases that it is rare to obtain a positive reaction in cases in which there is not some definite clinical evidence.

It seems hardly necessary to state that the technique of obtaining the blood is a most important factor—for instance, I have heard the reaction condemned *in toto* as unreliable when the specimen of blood in question had been taken with a syringe recently boiled and still wet. The particular specimen was extracted and divided into two parts, one of which gave a positive reaction and the other a negative reaction, to the great mystification of the practitioner. The instance is of course capable of explanation as follows: the blood which first entered the syringe would become mixed with any undistilled water adhering to the syringe, while that which entered last, if the specimen was not shaken, would not become so mixed. It is not unreasonable to suppose that the blood which was drawn last and consequently the least contaminated with water, would give the real reaction, and that the haemolysis produced in the part first drawn and last expelled from the syringe would be so altered as to make the reaction valueless. It should, in my opinion, be stated that in any case in which any of the usual signs associated with syphilis are present and the Wassermann reaction positive, the patient should be given anti-syphilitic treatment.

In regard to the percentages of married women, widows, single women, and children respectively who have attended the Bristol clinic, married women and widows show 56 per cent. of the total, single women just over 30 per cent., and children under 15 years of age over 10 per cent. These are, of course, round numbers.

As regards the age distribution, the figures are as follows: Married women from 15 to 20 years of age, under 5 per cent. of the total; from 20 to 30 years of age, 45 per cent.; from 30 to 40 years of age, 35 per cent.; from 40 to 50 years of age, just over 12 per cent.; over 50 years of age, 5 per cent. Single women from 15 to 20 years of age, just over 30 per cent.; from 20 to 30 years of age, 58 per cent.; from 30 to 40 years of age, 5 per cent.; from 40 to 50 years of age, 5 per cent. These figures are not surprising and meet expectations as regards the younger women. I would, however, call the attention of the Section to the fact that nearly 20 per cent. of the married women are infected at ages between 40 and 60; it should be noted also that 90 per cent. of the infection among single women occurs below the age of 30.

As regards the Wassermann reaction, 76 per cent. of patients showing a positive reaction showed also positive clinical signs. Of the remainder, more than half can be accounted for by cases in which there was evidence from previous history which justified the suspicion of infection—for instance, mothers of children definitely affected with

congenital syphilis, the wives of syphilitic husbands, and women diagnosed as suffering from syphilis in whom clinical evidence had disappeared under treatment. There were approximately 10 to 12 per cent. of cases in which, though the reaction was positive, there were no clinical symptoms and no definite history.

A large number of cases were those of women suffering from vaginal discharge only; in 30 per cent. of these the reaction was positive, and the discharge ceased under antisyphilitic treatment. It is suggested that there is no reason why the endometrium should be exempt from syphilitic manifestations such as those which occur in the mucous membrane of the mouth. Further, it is also suggested that the pathological changes in the ovary, an organ normally subject to periodic gross tissue changes, are not infrequently due to syphilitic infections. The same suggestion may be made with regard to those conditions of the uterus which are manifested by such accidents of parturition as concealed accidental haemorrhage. Again, a certain proportion of cases of sudden death from cerebral lesions in women within the child-bearing age are undoubtedly often due to inherited or acquired syphilis.

Illustrative Cases.

A patient admitted to the maternity wards of the Bristol Royal Infirmary as a case of puerperal eclampsia, suffering from albuminuria and slight convulsive seizures, died twenty-six hours after delivery. On *post-mortem* examination death was found to be due to a ruptured aneurysm of the basilar artery.

Two cases of sudden death in single women, both of whom were between the ages of 35 and 40, were due to cerebral haemorrhage; in both aneurysm of the cerebral artery was found *post mortem*.

I should here like to refer again to the cases in which the Wassermann reaction was found to be positive in cases in which no other symptom but vaginal discharge was present, and also to the apparent value of salvarsan substitutes in the treatment of gonorrhoeal discharge. The evidence of definite clinical signs cannot be controverted by a negative Wassermann. If only one or two of the usual signs are present and the Wassermann reaction is positive a course of treatment should be given. In doubtful cases a common-sense consideration of the frequency with which the manifestations are met with in ordinary cases will generally lead to a right decision.

The influence of pregnancy on the Wassermann reaction seems anomalous. Quite a large number of patients presenting clinical evidence give negative reactions; but after parturition this anomaly seems to disappear in a certain time, and the reaction becomes positive, even where clinical evidence is lacking. A negative Wassermann reaction cannot be regarded as conclusive if taken when a patient is actually undergoing treatment. Mercurial treatment should be dropped for at least one week before the blood is tested.

Prognosis.

This is most difficult, especially when answering the question as to when marriage may take place. No patient can be looked upon as cured until she has received a full course of salvarsan substitutes amounting to from 6 to 10 grams, spread over a period of several months and accompanied by mercurial treatment, and a negative reaction to the Wassermann test is given on three separate consecutive occasions at intervals of three months. For practical purposes this amounts to active treatment lasting over at least fifteen months.

Treatment.

The particular dose of salvarsan substitute should be obtained in each separate case (see Harrison's *Diagnosis and Treatment of Venereal Disease in General Practice*, p. 228). The initial doses should be small, as some patients are intolerant of these drugs. This may be manifested in grave and even fatal results when large doses are used to begin treatment.

Description of Fatal Case.

The following illustrates the danger of administering large initial doses: A girl, aged 20, after being given a dose, amount unspecified, at a clinic in the north of England, was sent by train to Bristol to a rescue home. She arrived in a semi-comatose condition with marked jaundice. She became completely comatose and the jaundice increased. She was admitted to the Bristol Royal Infirmary with symptoms of acute yellow atrophy of the liver, and later she died. At the *post-mortem* examination the liver was found to show disturbance usually found in acute yellow atrophy.

Small injections at weekly intervals with a fortnight's interval between each dose should be employed. Between 1½ and 2 grams seems to avoid toxic manifestations; but should there be any indication of skin or conjunctival irritation a longer interval should be allowed to elapse. The urine should be tested in all cases. Certain patients have special signs of intolerance. One of my cases gets serious attacks of asthma whenever she has more than a few small doses at infrequent intervals. Mercury should be administered either by the mouth or by injections during the whole of the period of treatment with salvarsan substitutes and afterwards. In fact, a two years' course of mercurial treatment is still looked upon as a necessity. Intramuscular injections, though quite effective, should be avoided as a rule, as they cause considerable pain, and occasionally suppuration follows. The intramuscular treatment is, however, almost a necessity in the case of very young children. In the latter cases mercurial treatment—inunction—is carried on at the same time as other methods are used.

Pregnant women should be treated as in-patients in all cases in which accommodation can be found for them in the hospitals. In these cases, provided no symptoms indicating intolerance arise, treatment should be intensive. Constant supervision is, however, necessary in order to ensure that treatment is efficiently carried out, and to see that no avoidable risks are incurred in the course of treatment. Up to the present no cases have occasioned anxiety among my patients.

It is hardly necessary to go into details as to local treatment. The ordinarily accepted methods are usually quite sufficient. Old cases in which there are definite symptoms of affection of the nervous system also require a certain amount of careful watching, as alarming symptoms have arisen in such cases. Treatment should be made as effective as possible without being either so painful or so inconvenient as to lead to its discontinuance by the patients.

To summarize:

1. There are greater difficulties in women than in men, owing to the frequent failure of the patient to detect symptoms in herself.
2. A very large number of those affected contract the disease innocently.
3. Women are, on the whole, more likely to act as innocent carriers than men, especially of extra-genital infections.
4. Diagnosis is, on the whole, more difficult with women than with men.
5. Treatment is often interfered with by home duties, conditions of employment, pregnancy, and parturition.
6. The special social and family surroundings of women make the disease in their case more difficult to deal with, and perhaps of more importance than in the male.
7. Quite a large proportion of women suffering from syphilis come, sooner or later, into the hands of the gynaecologist for the treatment of various pelvic affections.

DISCUSSION.

Dr. JOHN ELLIOTT (Chester) said that it would be impossible for any one individual to deal with all the fourteen points which had been proposed for discussion by Dr. MacKenna in addition to the interesting charts and statistics which Professor Swayne had brought forward. For his own part, he was not so much interested in how to administer the remedies for syphilis as in how to administer them with safety to the patient. Accidents following salvarsan administration had been recorded comparatively frequently. In his own experience, which was now extensive, he had met with only one such case—a case of jaundice from delayed salvarsan poisoning—which he had recorded in the *Lancet* of June 4th, 1921. This case had recovered, and, after a period of rest and recuperation, was now being treated again with N.A.B., with the precautionary measures which he would now formulate.

1. Watch the patient, and if any patient complained of feeling ill stop the treatment at once. Patients who had an idiosyncrasy to salvarsan gave some indication early, which should be a warning. This was so in the case of jaundice he had quoted, when salvarsan treatment had fortunately been suspended early owing to the complaint of "feeling unwell."

2. The administration of liquor adrenalin. chlorid. (1 in 1,000) mxxv in water twice daily, with two intermediate doses of calcium lactate gr. xx in water, commencing on the day of injection and continuing for two or three days. This prevented the after-effects which were not uncommon after two or three days.

3. When mercury was administered coincidently with the salvarsan course, sulphur sublimate—a teaspoonful in treacle or syrup—should be given at bedtime each day. It assisted elimination and counteracted the tendency of mercury to interfere with the excretory activity of the kidneys.

4. Give some simple diuretic, such as barley water or whey.

If these simple directions were carried out less would be heard of salvarsan poisoning.

Mr. E. B. TURNER (London) stated that from his own experience since 1874 he could corroborate Professor Swayne's statement that syphilitic symptoms and early lesions were not so malignant and virulent at the present time as they had been between forty and fifty years ago. He wondered, however, whether the later manifestations, such as ataxy and general paralysis, were not more frequent now than in former times. He pointed out the absolute necessity for early diagnosis and prompt treatment, and said that the ideal at which to aim was a state of affairs in which the general practitioner took at once his smear, found his own spirochaetes, and immediately gave the first injection of salvarsan, or one of its substitutes, in order that the period of infectivity might be materially shortened. He hoped that the medical officers in charge of venereal disease clinics would do all in their power to institute post-graduate courses for the instruction of those practitioners who wished to perfect their technique in the treatment of these diseases, so that skilled attendance might be available for those sufferers who, particularly in rural and sparsely populated districts, were either unable or unwilling to attend a clinic. He hoped that in the future it would be a General Medical Council enactment that no student should be admitted to examination for his qualification unless he produced evidence that he had been properly and practically instructed in the diagnosis and treatment of gonorrhoea and syphilis. He considered that along these lines lay the best hope and expectation that the spread of this disease, with its dire results to the community, would be prevented.

Dr. EDWARD HARRISON (Hull) emphasized the importance of examining the most trivial looking sores for spirochaetes. He ventured to speculate whether it might not prove possible to find spirochaetes before the appearance of sore, and suggested the raising of a blister on the penis of a patient who had been exposed to infection. The serum might then be searched for the presence of spirochaetes. If a chancre were excised the inguinal glands should also be removed. No one would now remove a breast carcinoma without clearing the axilla.

Dr. DAVID LEES (Lecturer on Venereal Diseases, University of Edinburgh), said that before discussing the points raised by Dr. MacKenna, he would like to associate himself with Mr. E. B. Turner's remarks on the necessity of teaching post-graduates and undergraduates the principles of diagnosis and treatment of venereal disease. It was difficult, no doubt, for the practitioner to give the necessary time to make himself proficient in diagnosis and treatment, and this was seen in the condition of the cases reporting at clinics for treatment. Very few practitioners seemed to utilize either the staining methods or dark-ground illumination method in the early diagnosis of syphilis. The greater majority of them still trusted to the appearance of generalized syphilis and a positive Wassermann test, so that patients came for treatment at a stage when a definite cure could not be assured. Their greatest hope was, he thought, in teaching the undergraduate the principles of diagnosis and treatment; and he was very glad to be able to inform the meeting that Edinburgh University had taken that step, and made a knowledge of venereal diseases compulsory in their curriculum. Every student at his final examination at Edinburgh University must now pass a written and clinical examination on the subject. A three months' course, consisting of twenty-five clinical lectures, was given to final year students, and the standard to be attained was the same as in other special subjects, such as diseases of the ear, nose and throat, and diseases of the eye. If this were made compulsory in every teaching school, in a very short time one would disseminate throughout the country a body of young medical men with a sound working knowledge of the subject, who would appreciate much more than the profession did at present the absolute importance of early and efficient treatment.

Coming to the points raised by Dr. MacKenna, he mentioned the success which he had had in administering arsenobenzol preparations in small doses, daily or on alternate days, and more especially in cases where there were complications which contraindicated the giving of a large single dose. For example, in a patient with generalized syphilis, complicated with Vincent's angina and Ludwig's angina, doses of a "914" salt of 0.1 gram were given daily, and the end-result, after a total of 4 grams had been given, was better than one would have anticipated with weekly doses of 0.6. Several cases of albuminuria also reacted to treatment extremely well by these same methods. He was of opinion that in complicated cases, where there was reason to expect intolerance to a large dose, in this method of small doses one could give the drug with less risk and with rather better end-results. Salvarsan preparations he considered more potent when given intramuscularly than when given intravenously, and the discomfort following intramuscular administration of the "914" salts was in many cases negligible. With regard to mercury, intramuscular medication of the insoluble preparations was the most practicable and the most efficient method in an out-patient clinic. It had little or no pain associated with it, and signs of intolerance to mercury were not nearly so common as when the drug was given by the mouth. Inunction, although a very effective method, was not practicable in the average out-patient. It was an extremely useful and valuable method in children. He wished to emphasize the importance of continuation treatment after the symptoms had disappeared, and especially so continuation treatment with mercury and iodides.

In the clinic over which he had charge he tried to instil into the patient's mind the fact that mercury was as important in his treatment as "606." The patient came regularly at weekly or at fortnightly intervals for observation and for administration of mercury. He did not think it was right to send a patient away with a supply of this potent drug, in the shape of tablets or pills, in his pocket and to allow him to take these with impunity and without close observation, over a period of, say, two or three months. Not only was the system bad, but it tended to make the patient think lightly of his condition, and did not impress him with the importance and necessity of his being under observation until such time as the attendant was satisfied that the treatment could be stopped.

Colonel L. W. HARRISON (President of the Section), in closing the discussion, said that he was sure he was voicing the feelings of the meeting in expressing appreciation of the valuable papers read by Dr. MacKenna and Professor Swayne, and of the remarks made by the speakers who had taken part in the discussion. He would far exceed the time limit if he attempted to discuss each of Dr. MacKenna's fourteen points, and would therefore touch on only a few.

As to dosage, he was in favour of commencing with a comparatively small dose in order to test the patient's tolerance. He had originally fixed this at the amount which in the majority of cases would bring about disappearance of accessible spirochaetes in about twenty-four hours. He had been disappointed, however, with the therapeutic activity of the modern arsenobenzol compounds of all countries, since 0.45 gram of "914" did not now cause disappearance of spirochaetes in any but a small proportion of cases. He thoroughly agreed with Dr. MacKenna that the modern preparation was not a patch on the original "606." He considered that the intramuscular method of administering "914" gave better therapeutic results than "606" given intravenously. Unfortunately "914" administered in this way hurt, and he was glad that sulfarsenol had come, since it caused no more pain than an intramuscular injection of mercury, and seemed to give

excellent results. For intravenous injection he preferred silver-salvarsan, since it was convenient and seemed to act better than "914."

He preferred to give both arsenobenzol and mercurial remedies simultaneously unless there was a contraindication, as in cases of nephritis or in pregnant women, when he would commence with the arsenobenzol preparation. He believed in giving all remedies throughout the treatment rather than stopping the arsenobenzol, as many did, as soon as the Wassermann reaction was negative. On the vexed question of treating so-called inveterate Wassermann "reacters," he was in favour of keeping under treatment any such cases who had still before them some years of active life. It was out of the ranks of the Wassermann reacters that most of the late effects of syphilis were recruited, and it was in parts of the body which were subjected to stress, strain, or injury that recurrences took place. He admitted that at the last International Congress he had suggested as a possible explanation of a persistently positive Wassermann reaction that the tissues had formed the habit of elaborating those substances we discover by the Wassermann test and continued to do so after the parasite had gone. But he had always held that it was safer to go on treating the patient. Recently he had had the serum of a number of such cases systematically tested out to an end-point, and had often found a marked effect of the treatment on the strength of the reaction. Such serums, if tested in the ordinary manner, would be returned at the beginning and end of a given course of treatment as positive or strongly positive, and the clinician gained the impression that the treatment had had no effect because the true strength of the reaction had not been determined by the pathologist at the beginning and end of the treatment.

He was interested in the fact that no speaker had mentioned what had been termed "haemorrhagic encephalitis" amongst the toxic effects, and he thought it must be because this tragic complication, which was fairly common about 1912 and 1913, had become rare. He could not help thinking that the present rarity of encephalitis was due to the lower initial dosage now employed. On the other hand, he was very surprised that nobody also had mentioned jaundice, which was now much commoner than formerly. The true etiology of jaundice was still an unsolved problem. An interesting feature of the fatal form was its occurrence in outbreaks, which had been noted in other countries as well as in this—outbreaks which could not be traced to faults in the brand of remedy employed or the technique. He was convinced that, in the avoidance of severe toxic effects, nothing was more important than careful observation of the patient throughout the course. He had had the opportunity of watching the practice of many military hospitals during the war and of comparing their results under a programme of treatment which was very similar in all the hospitals, and the difference in toxic effects experienced by different hospitals was very striking. The hospital where every patient was examined carefully for signs of intolerance—skin, mucous membranes, and the sense of well-being—before each injection showed far less severe toxic effects than that where one dose was injected after another strictly according to programme, and without any regard to the fact that the patient might have an erythema, jaundice, or stomatitis, or was feeling thoroughly out of sorts.

He thought the point about the removal of or attack on a primary sore was that spirochaetes might be buried in it, more or less cut off from the general circulation by the thrombosis of vessels and by the fibrosis which had occurred, and that these could not be reached by remedies introduced into the circulation in the ordinary way. Spirochaetes had been demonstrated in the scars of primary sores as long as twenty-five years after infection.

DEMONSTRATIONS.

During the afternoon of July 20th demonstrations were held at which outfits for the treatment of venereal diseases, water-colour paintings of syphilitic lesions, and models of clinics were exhibited. The venereal clinic at the Newcastle Infirmary was also open to visitors and methods of administering arsenobenzol compounds demonstrated. The arrangements for these demonstrations were in the hands of Dr. Hudson (Newcastle), who must be congratulated on the excellence of the programme provided.

DISCUSSION ON THE TREATMENT OF GONORRHOEA.

OPENING PAPERS.

TREATMENT OF GONORRHOEA IN MEN.

BY

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IN opening a discussion on the treatment of gonococcal infection in the male I propose to take up certain aspects only of treatment, rather than attempt to cover the whole field of treatment, and to mention a few of the points which strike one as of importance in dealing with the material coming to an out-patient venereal clinic and the wards attached to it. The aspects of treatment I propose to touch on are:

(1) General treatment, including hygiene, diet, etc.;
(2) Local treatment of the urethra;
(3) Instrumental treatment; and
(4) Treatment through the blood stream.

Before treatment is instituted under any of these heads accurate diagnosis is essential—diagnosis of the extent of the involvement of the urethra and its adnexa, no less than diagnosis of the infecting organisms. For this purpose it is necessary not only to look at the amount of urethral discharge and inquire as to pain and frequency; it is also necessary to examine the urine carefully by the three-glass test, to palpate the urethra (for meatal chancre, for instance), the epididymis, and last, and of most importance, the prostate and vesicles.

The more thorough the initial examination the more information is gained and the more is the patient impressed with the importance of attending to, and the more likely is he to carry out, the instructions given regarding his treatment. It is failure to carry out these instructions by the patient, or failure on the part of the attendant to give him proper instructions, that gives rise to many of the early and late complications. Take a simple example: While everyone will exercise the greatest care in asepsis in passing an instrument into the urethral canal, in how many cases is the patient instructed how to practise asepsis or antisepsis before using a urethral nozzle or syringe? Similarly, in how few cases is a patient taught how to wash out the anterior or posterior urethra! Failure to give instruction in these and similar small details accounts to some extent for the discrepancy in the results of treatment of the out-patient as compared with the in-patient, and for the different results of the same general treatment in the hands of different practitioners.

General Treatment.

This aspect of the therapy of gonorrhoea is chiefly of importance during the acute stage. As in all inflammatory suppurating conditions, cleanliness, rest, simple diet, and the efficient acting of all the excretory organs of the body are essential. Alkaline diuretics combined with urinary sedatives are of greater value than any of the more reputed specific drugs, and much less harmful to the general condition. The combination of the sedative action and the mechanical flushing of the urinary tract outwards, as a result of diuresis, by increasing the amount of urine and the frequency of passing it, is the safest and best means of cleansing the tract. There is no appreciable danger in alkalinizing the urine if the drug is not exhibited over too long a period, and on an average seven to ten days is a sufficiently long period over which to induce this diuresis.

There are few, if any, other drugs required in the treatment of any case of gonorrhoea running a normal course. In the complications, however, and during the instrumental treatment often necessary as a result of the action of the gonococcus on the urinary tract, drugs, such as urotropin, salol, boric acid, etc., are of value, but should not be given in doses which will set up urethral irritation. Urotropin is a good example of this, and gr. v to gr. vii, t.i.d., is sufficiently large for almost any case. There are also certain drugs, such as ichthyol, and atropine and opium, which are helpful in prostatic and epididymis complications, while in joint complications iodides are often advantageously exhibited.

Local Treatment of the Urethra.

As with oral medication in general treatment, so in local treatment antiseptic therapy is more indicated in the acute than in any other stage of the disease. The infecting organism is then on the surface and amenable to antiseptics. In the hyperacute conditions, such as epididymitis, prostatitis, and vesiculitis, with their associated pain and high fever, the gross inflammatory condition should be allowed to subside to some extent before beginning to wash out the urethral canal.

Apart from cases with very severe inflammatory reaction, the earlier antiseptic treatment is instituted the better, and this is only natural, as in the early stages the infecting organisms are within reach of the antiseptic. Antiseptics can only act on the infecting organism when they are brought in contact with it; they have little or no action on infections of the submucous tissue or on those of the glands or gland ducts of Littré, of Cowper's glands or duct, or of those of the prostate and vesicles. When one considers the large number of cases in which Littré's glands and the prostatic ducts are involved, it is surprising that in such a large percentage of cases antiseptic therapy alone is relied on to clear up the infective process. This blind reliance on it alone is, without doubt, the cause of many failures in treatment. There is no doubt that with a view to obtaining penetrative power antiseptics are used in too great concentration in urethral therapy, and incalculable harm is thus done to a delicate structure. No increase of strength will increase the penetrative power of the drug, and the congestion set up by the stronger concentration is better attained by increasing the temperature of the more dilute antiseptic.

If the anterior urethra alone is involved, it is not advisable to wash out more than the part affected, and this is certainly easier to teach the patient than the more complicated posterior irrigation. If, however, there is the slightest sign of infection of the posterior urethra, the whole tract should be washed out, if only for the mechanical cleansing and vascularization which it sets up. In the male bladder infections are, in my experience, rare, and their risk and incidence is over-estimated.

In dealing with out-patients the gravity system is, I think, always preferable to the syringe. It is more easily manipulated by the patient, he has his left hand free to help to control the compressor muscle, there is not the same risk of using excessive force, and its bulk is not inconvenient when the syphon method with an ordinary jug or tumbler is used.

A great deal has been attained in the successful treatment of any patient when he has been taught to irrigate efficiently, whether intravesically or otherwise, and the time spent teaching him will repay itself in the lessening of the period of treatment. There are very few patients who cannot be successfully taught to irrigate the posterior urethra by the second or third day. When any difficulty is experienced the prone position or a little 2 per cent. alypin instilled into the urethra will invariably overcome the urethral spasm. The effort to overcome it should never be attained by using force, and it is never necessary to use a head of more than three to four feet to successfully accomplish the process.

The aim and object of irrigation in the early stages is: (1) surface cleansing, (2) antiseptic action, (3) venous congestion, with resulting flow of serum to the part. As the infection ages, irrigation for the purpose of the first two is less required. For the third—namely, the vascularizing of the urethral surface and consequent flow of serum to its surface—the most effective method of attaining this end is gradually to increase the temperature of the fluid from 104° to 110° or 112° F. rather than increase the strength. This temperature is quite comfortably tolerated by most patients, and the end-results of treatment as seen by the endoscope later on are much better than in cases where the stronger and more astringent preparations have been used.

In the stage when threads only are present in the urine and the discharge is only apparent in the morning but does not disappear completely, or when it recurs with slight exacerbations, other methods of treatment than irrigation must be exhibited. Of those in use, I have a preference for suction and dilatation of the urethra, which aim primarily at opening up the tissues and establishing drainage of the many side-tracks of the urethral canal. Subsequent to either of these methods antiseptics can be applied to the urethral surface with much greater effect.

Of the multiplicity of antiseptics recommended there are few if any which give better results than permanganate of potash or zinc, and seldom is any other required in any case seen early. If mixed infection has supervened, a mercurial antiseptic, such as hydrag. oxycyanide, 1 in 4,000, is more effective in getting the condition cleared up. Personally I have a preference for dichloramine-T, 1 in 4,000, which I find less irritating and as potent. A clear solution is preferable in the later stages of the disease, in that in using it one can see the condition of the prostatic secretion after massage by previously running into the bladder by gravity 8 to 10 ounces of the antiseptic lotion. In the occasional case which does not tolerate or react satisfactorily to the permanganates and di-chloramine-T, a silver salt is often effective in lessening the purulent process, and my preference in this group is for albargin 1 in 4,000. It has the advantage that it does not coagulate albumin, and that after being made into solution it can be used warm. This overcomes the difficulty experienced with the other silver preparations, of getting them into the posterior urethra without using force. In addition, it does not cause proliferation of the epithelium. I have not found it an advantage to use the gelatine and tragacanth preparations as recommended by Koll in preference to the aqueous solutions. In resistant cases, and even as a routine, picric acid, in a solution of 1 in 400 to 1 in 200, is an extremely potent germicide, and gives good results when tolerated. In the healing stages of the inflammatory process, when there is no longer gonococcal infection present, but simply a more or less damaged mucous surface, zinc and alum salts are the most efficient remedies we have in helping the urethral surface to regain its tone.

Speaking of local treatment generally, I think that too much stress has been put on antiseptic potency without considering the histology of the urethral canal. We cannot argue on the analogy of what happens in a test tube, and the effectiveness of any drug *in vitro* rarely holds good *in vivo*. There are no side-tracks in the test tube such as one finds in the urethral canal. There is no submucous tissue, no gland ducts of Littré, and no such inaccessible areas as the prostate gland and the vesiculae seminales. An antiseptic to be effective must reach the part, and the harmlessness of a drug for the anatomical elements of the urethra and for normal phagocytosis are much more important for the disappearance of gonococci than its antiseptic properties and so-called penetrative power. There is the additional factor that antiseptics in any concentration may have a harmful effect on the immunizing power locally of the blood serum. Any effort on antiseptic lines alone to discover the ideal means of treating urethritis is, I think, doomed to failure.

Instrumental Treatment.

This leads to the consideration of what additional means we have of helping to clear up an infection, and as in the early stages accurate diagnosis is essential, so in the case which is not clearing up owing to some complication, accurate diagnosis of the complication and of its site is essential. In cases where the organisms have invaded the lacunae or the gland ducts, whether of anterior or posterior urethra, instrumental examination by the urethroscope is, I consider, essential for accurate diagnosis. It may be carried out as soon as the acute inflammatory process has subsided, as evidenced by a clear first urine. It is practically painless, and with little or no damage to the tissues information can be gained which is much more accurate than that gained by the passage of a bougie *à boule* or of a solid instrument and subsequent palpation on it of the urethra.

The accuracy of diagnosis obtained by its use in the anterior urethra is invaluable in indicating the correct line of treatment. In all subacute or chronic cases not reacting quickly to treatment, this examination should be routine. Of the many lesions found "Littritis" and associated infiltrations of the mucous and submucous tissue round the mouths of Littré's gland ducts are the most common. I cannot say that I have found much help in topical applications to the openings of the gland ducts through the urethroscope. There is no certainty that the applying probe does not simply invaginate the tissues in front of it

and the potent antiseptics used certainly tend to cauterize and destroy the surface they touch. The electric cautery is a little, but not much more, effective, and the only cases in which intraurethral treatment through the endoscope is of decided benefit is in the opening up of a periurethral abscess, the removal of a polypus or similar conditions. Its best and greatest use is in diagnosis and in the observation of the effect of treatment. In ordinary Littritis and similar inflammations, reliance should be put more on the suction bougie to open up and drain the infected area so that it may heal from the base. I use the simple instrument devised by Mills, and it exerts an excellent influence on the course of many cases. It acts by Bier's congestion and increases the flow of serum to the part, without in any way destroying the surface epithelium, and is much more effective than the solid bougie in attaining its object of draining the lacunae and gland ducts and much more scientifically correct in its mode of action.

In dealing with infiltrations, and whether seen in the subacute stages of the infective process or later, Kollmann's dilator is more efficient in its dilating action than the solid bougie, and, if used with care, less likely to lead to damage of the urethra. In using both the anterior and the posterior instruments it is wise to have a fine stream of mild antiseptic passing over the stretched mucous surface during the action of the instrument; the appearance in the outflow of blood serum is an excellent guide as to when to stop, and a much better one than the sensations of the patient. Both before and after such urethral manipulations, whether it be suction or dilatation, the surface tissues of the urethra should be washed with a warm mild antiseptic, which, by reason of its heat, will act as a sedative, and by its antiseptic power destroy any bacteria present on the surface. This will prevent, in practically all cases, the so-called catheter fever, and is of great importance in the treatment of stricture.

The value of instrumental treatment in posterior urethritis *per se* is more limited. In such infections the whole genito-urinary tract is opened up to possible infection, and in a large percentage of cases both the prostatic and ejaculatory ducts and the gland tissues of the prostate and of the vesicles are infected. In such cases local antiseptics are of little use except for their vasodilator action and the consequent venous congestion they give rise to. Suction is not so effective and dilatation is not so often called for. In practically every case of posterior urethritis prostate and vesicles are more or less involved, and palpation of them and subsequent massage to empty the glands and open up the gland ducts is one of the most valuable methods we have of treatment, and is an essential in the later stages of every case of prostatic, vesicular, or epididymis infection. It acts in three ways: (1) It establishes drainage, (2) it increases the blood supply, (3) it gives the patient a dose of autovaccine.

As with instrumentation, prostatic massage should not be performed until such time as the acute inflammatory process has subsided and the urines are clear in the two- or three-glass test. To massage the prostate and vesicles satisfactorily a gentle stroking from without inwards and downwards is the method to be adopted rather than severe pressure, and the palpating finger is the only instrument which is of any use in doing it and the only method of gaining accurate information of the consistence and resilience of the affected part; eight to ten ounces of urine or of a clear antiseptic should be present in the bladder while it is being performed. The operation is much easier for the attendant and more comfortable for the patient and much more accurately done in the knee-elbow position, and, if the bladder is lifted up by the left hand pressing suprapubically, the emptying process is better accomplished. Examination of the urine passed subsequent to the massage or of the antiseptic if a clear one is used, gives valuable information as to the condition of the part, and the operation should be followed by a thorough intravesical irrigation with a mild antiseptic.

Prostatic massage hastens cure in cases of posterior urethritis, and makes the possibility of a residual focus of disease less likely, and in practically all cases improves the general health of the patient. It should be a routine in the treatment of every case of urethritis in the later stages, and should be persevered with until the prostatic urine is clear and free from pus cells. Of the other complications of gonorrhoea, the treatment of epididymitis has probably given rise to most controversy. Operative interference in the shape of injections of electrargol, 1 to 2 c.cm., is effective in aborting the condition if the case is seen early, but of little use except to ease pain in the established case. The onset of epididymitis is not a contra-indication to posterior irrigation, except during the twenty-four hours when the pain is acute, but the irrigation should be very gentle, and no force must be used to overcome the compressor muscle. Where the case is of some duration better results are, I think, attained by open incision, as in Hagner's operation, and puncture of any oedematous or purulent foci on the surface of the epididymis after incising the fibrous coat. Aspiration alone is of little therapeutic value, apart from temporarily easing the pain.

Epididymitis and prostatitis are excellent illustrations of extension of urethral infection in which the value of antiseptic therapy is limited, and in which the patient's recovery is dependent more on his own resistance. Apart from indiscretions on the part of a patient, a lowered resistance to infection or a very virulent infection may give rise to any complication, and in these and in metastatic complications such as arthritis, vaccines, serums, and other preparations have often been employed. In the more acute conditions, such as prostatic abscess which is accompanied by an acute toxaemia, gonococcal serum may temporarily help to tide over the acute process, but its effect is not lasting, and results are much better in the general run of cases from the use of vaccines.

Vaccine Therapy.

The conflicting results obtained up to now in vaccine therapy by various workers are, I think, more due to faulty methods of administration than to the failings of the therapy. There is no branch of treatment which is less taught in medical schools. Neither the pathologist, the bacteriologist, or the teacher of clinical medicine or surgery seems to think it comes within his province, with the result that most men are at first groping in the dark as to dosage and intervals between successive doses, and have to rely on the bacteriologist, who makes the vaccine and who never sees the clinical condition, to suggest a method of usage. No matter what the infecting organism, there are rarely two cases which will tolerate with advantage the same dosage, and each case must be studied as a separate entity. A vaccine alone will rarely cure any case, but in combination with careful local treatment it will in the large majority of cases improve the general tone of the patient, hasten the rapidity of the healing process, prevent the onset of complications, and give a more certain and lasting cure.

In gonorrhoea there are few cases of spontaneous cure, and the serology of the condition points to the fact that the gonococcus is slow to produce an immunity response in the body fluids. A good antigenic vaccine will stimulate and produce this response more quickly if one can avoid that period of increased sensitiveness which precedes the protected condition set up by the vaccine. In using polyvalent stock vaccines and autogenous vaccines this is attained by beginning with a low dosage and repeating the dose in gradually increasing small quantities, according to the clinical manifestations. In using detoxicated vaccine it is attained by the removal of the toxic material by chemical means from the organism during the making of the emulsion. On account of the limitation of dosage necessary with stock vaccines to avoid severe reactions, the immunity response cannot be stimulated so quickly or in so great amount as with detoxicated vaccines.

During last year, over a period of six months, in treating a series of 100 cases with a new fat-free vaccine, recommended to me by Dr. Wang, and prepared for me by the Royal College of Physicians laboratory, and at the same time treating a series of 200 cases on parallel lines with detoxicated vaccines, the rapidity of cure, the shortening of the acute stage, and the prevention of complications, were more marked with the latter vaccine, and it was distinctly the superior of the former in all types of case. The reactions with the fat-free vaccine, and especially the local and general reaction, are in some cases severe. I have had a similar experience with ordinary stock vaccines, both in reaction and in the end-results of treatment.

In using autogenous vaccines there is never the certainty

that the strain from which the vaccine is made is antigenically potent, and there is the drawback that valuable time is lost in waiting for it to be prepared. In cases of mixed infection, however, I have obtained the best results by combining detoxicated gonococcal vaccine with an autogenous vaccine of the secondary organisms present. This is chiefly noticeable in metastatic complications and in female patients, where a mixed infection is common and where antiseptic therapy is often unavailing. A point of some importance in considering the dose to be administered is the locality of the lesion. An acute prostatitis or salpingitis will not tolerate the same amount as a case of arthritis or anterior urethritis.

After the initial dose, which is usually a tentative one, the local, focal, and general reactions, and the general well-being of the patient are the best guides to further dosage, and should at all times be preferred to any rule-of-thumb method of automatic increase at fixed intervals. Severe reactions are an indication to decrease, or at any rate not to increase, the previous dose and to lengthen out the period between doses. Ten to twenty millions is a good average to start with in using stock or autogenous vaccines; one thousand to three thousand millions in the detoxicated. The earlier the vaccine is used the more effective it is, and even in cases which are seen early enough to be aborted the indication is to exhibit vaccine therapy at once.

Intramuscular injection is preferable to subcutaneous in the out-patient, in that it gives rise to much less local reaction and is more rapid in its action; the subcutaneous method gives perhaps a more sustained action, but local stiffness and pain are at times severe and interfere with the patient attending to his work.

Many non-specific substances have been used in the treatment of gonococcal infection through the blood stream, but in my experience with all of them the results are irregular and uncertain. Intramine, recommended by McDonagh, is variable in its action, but in combination with vaccines gives at times very good results, especially in cases of arthritis. It seems to intensify and implement the action of the vaccine. I have not been able to convince myself of the good effect of any of the other colloidal preparations recommended by this authority. Sulpharsenol, as recommended by Levy-Bing and Duroeux, in doses of 0.12 to 0.3 gram intravenously or intramuscularly, is helpful in cases of epididymitis and prostatitis, but is more erratic in its action than vaccines, some cases doing extremely well and others showing little or no change. Electrargol and luargol used intravenously give quite as good results, the former in doses of 5 c.cm. intravenously, the latter of 0.05 to 0.1 gram. Injections of foreign protein, such as non-specific serums and milk, only give results when the thermic reactions produced are intense.

I do not think we are as likely to arrive at the ideal treatment along the lines of any of these non-specific methods as we are by perfecting our methods of preparing and administering vaccines. Vaccine therapy is superior to protein or chemo-therapy in all stages of the disease, and of the vaccines available those which have been detoxicated are most active therapeutically. The only successful method of eliminating the gonococcus from the deeper tissues and the many side-tracks where it is certainly inaccessible to antiseptics is by increasing the antibody response.

Numerous workers in America, on the Continent, and in this country, Thomson, Dixon and Priestly, and Magner, have so perfected the complement fixation test as to be able to estimate this antibody response, but few of these workers are agreed in the estimate they form of what this response means in relationship to cure. In my experience a rapidly increasing and high antibody response seen serologically is coincident with rapid clinical improvement, and the test is of value in diagnosis, in control of the administration of vaccines, and in the test of cure.

If the ideal treatment is to be attained, I am convinced that it will be along the lines I have indicated, by the use of mild antiseptics applied to the inflamed part in combination with the administration of a strongly antigenic and specific vaccine; but the clinician must have working with him a competent bacteriologist or serologist to help in working out more accurately the methods of administering specific vaccines and of controlling their actions.

THE STANDARD OF CURE IN GONORRHOEA.

BY

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Introduction.

THE title of the subject about which I have been asked to speak is a comprehensive one. I feel, therefore, free to select those aspects of my allotted theme which appear to be of immediate importance, though others may be associated with a major degree of literary and scientific interest.

Although I am invited to address myself to a section of this Association which includes many experts, I am hopeful that the greater part of my audience are general practitioners. I can make no claim to advance anything which by reason of originality will prove to be of clinical value to the expert venereologist. I speak primarily to those practitioners who, although they have not elected to devote themselves to the study of venereal disease, are yet liable to be called upon to attend those who suffer from either of its manifestations. My primary theme is that the bulk of the profession still fail to realize the urgent need of applying the most stringent "standards of cure" in respect to every case of gonorrhoea, and that this failure is a potent causal factor in the production of much preventable disease. I append notes and suggestions concerning the final testing of men and women who have suffered from gonorrhoea.

The Failure to Realize the Need of a High Standard of Cure.

Much literary, journalistic, and oratorical energy has been devoted to impressing upon individuals the necessity of seeking medical treatment when suffering from gonorrhoea. Schemes have been drawn up embodying the modern conception of ideal standards of cure, and much attention has been given to the perfecting of the technique, bacteriological and otherwise, which is involved. The potential advantages, however, which otherwise might accrue from encouraging the public to seek treatment, and from the evolution of high standards of cure, will be largely discounted if general practitioners do not realize the necessity of subjecting every patient who has suffered from gonorrhoea to the most exigeant tests. I believe that most practitioners fail to realize their responsibility in this respect, by reason of the fact that but little effort has been made to impress its importance upon them.

I hold this belief on the following grounds: If it is remembered that instruction in venereal disease has not yet been made a compulsory subject in the medical curriculum; if it is also remembered how insufficient has been the endeavour to inculcate a sense of responsibility amongst practitioners, their lack of realization is not surprising. If it were generally known that gonorrhoea is reputed to be accountable for some two-thirds of all diseases of women, for so-called gonococcal rheumatism and for sterility in both sexes, it is inconceivable to think that practitioners would refrain from subjecting all patients to the most rigorous tests. Again, is it conceivable that any practitioner who knows that the larger percentage of cases of blindness in children is due to gonorrhoea, and is also acquainted with the large amount of reinfection which results from fallacious "cures," would refrain from utilizing the most searching tests?

Experts know to what an extent the community suffers, but I am afraid that their brethren in general practice do not. If the latter realized the statements of the Royal Commission on Venereal Diseases, if they were aware that it has been computed that some 50 to 60 per cent. of the male population have suffered from gonorrhoea, if again they were aware of the economic waste wrought by this disease, would they spare any efforts to secure safety for their patients and ultimate economy for the community? I say emphatically that no conscientious practitioner would be so lacking in altruism as to neglect this obvious course.

Every Patient must be Subjected to an Equally Rigorous Examination.

I admit that there is an increased tendency to set up a higher standard of cure than obtained formerly, but there is no doubt that a lack of consistency prevails. If a

patient be about to marry, or is already married, or if there is the possibility of the involvement of a medico-legal factor, the necessity of employing a series of rigorous tests is frequently realized. Compare, however, the position of the bachelor. Usually he is dismissed as cured without being subjected to the more stringent tests that are enforced when the patient is or is about to become a husband. Why should this selective treatment be meted out to the married man or the matrimonial candidate? Because his wife that is, or is to be, must be duly safeguarded. It is a terrible fate for a married woman to develop a pyosalpinx or other serious complication contracted from an infected husband. But it is more serious if many women should thus suffer, and without undue cynicism we must confess that such indeed will frequently be their fate if the bachelor be prematurely discharged as "cured."

Alleged Objections against the foregoing Suggestion.

I am aware that objections will be advanced against the materialization of the preceding suggestion.

(*a*) It will be submitted that formerly all cases have been, and now many are, discharged without undergoing a rigorous series of tests, and that without any general ill effects. I agree that probably many of these cases were quite cured and that no danger accrued. But it is important to realize that we have no statistical data as to the number of those who were not cured and who infected others. We do know from our experience of gonorrhoeal ophthalmia, pyosalpinx, gonococcal rheumatism, etc., that many patients who are discharged as cured develop sequela of serious importance. Moreover, it is not a question of numbers. Even if 90 per cent. of cases were cured, and all symptoms and signs had disappeared, that is no justification for allowing the remaining 10 per cent. to return to the world, liable to undergo suffering in themselves and free to inflict injury upon others. If such a policy were adopted with regard to any of the infective fevers, the crudeness, cruelty and tragic absurdity of such a proceeding would be realized at once.

(*b*) An additional objection will be advanced that the tests present such difficulties as will preclude the practitioner from carrying them out. With this objection I will deal later.

(*c*) It will be stated that the procedure will involve an expenditure of time on the part of the practitioner which many patients who are unable to attend a clinic will not be able to afford. In these conditions the medical man must be recompensed by the State. It is in the interests of the community that the amount of gonorrhoea be reduced, therefore such tests must be carried out, whatever be the expense entailed. The adoption of such a policy will eventually redound to the eugenic and economic welfare of the nation.

Suggestion of how the Information can be Spread.

If we accept the conclusion that every patient should be thoroughly tested before he or she can be regarded as cured of gonorrhoea, we are forced to promulgate our belief, since it is one of vital importance to the community. Although there is an improvement in the attitude of many practitioners in this respect, a necessity exists for widening and deepening the professional outlook. The necessity for carrying out such tests should be promulgated with such clearness and persistence as would speedily result in every practitioner instinctively regarding these final tests as being equally necessary as the clinical examination and the Wassermann reaction in respect to syphilis. The practitioner who discharges patients without subjecting them to such an examination and series of stringent final tests should be regarded as guilty of professional negligence. If it is wrong that a patient should be allowed to leave a venereal clinic without a thorough examination and tests, it follows that no private practitioner should discharge a patient as "cured" without subjecting him to similar measures. As more medical men act as assistants in clinics, the leaven of knowledge will gradually enlighten the profession. This will, however, take too long, and much suffering will be inevitable if no other steps are taken.

THE FINAL TESTS.

The recollection of some elementary points may help the practitioner to realize the nature of his task.

(*a*) His object is to determine whether there are any gonococci present in the patient. Gonorrhoea is generally confined to certain portions of the genito-urinary tract. At other times it assumes a metastatic form. When dealing with either variety it is necessary to make the most searching investigation of the genito-urethral tract and its adnexa. It is well to remember that this tract has many diverticula, whose entrances are extremely narrow, a fact explaining the facility with which these canals may become sealed by morbid accumulations.

(*b*) Certain of these diverticula are of a ramifying nature and the channels which connect their distal and proximal portions are tortuous. Examples may be found in the deep urethral glands, the vesiculae seminales, and, to a minor extent, in the prostatic tubules.

(*c*) It is necessary to remember the danger of subjecting a patient to the final tests without having given him or her efficient provocative treatment. I fear that sometimes, when practitioners have brought their patients to an apparently satisfactory condition, they at once proceed to the final tests. The results may be superficially satisfactory, but both patient and practitioner are living in a fool's paradise. After long treatment the probability is that most micro-organisms will have been eliminated, excepting those which are imprisoned in some of the diverticula. It follows, therefore, that if a test be instituted immediately after treatment, the chances of detecting the few remaining organisms will be remote, inasmuch as they will probably be hidden in some distant or occluded recess. It is therefore necessary to adopt a provocative course which will stir the latent diplococci into activity. Two results may ensue: (1) That they emerge from their lairs, (2) that they multiply.

Naturally the greater the number that are present the greater the chance of detecting some of them. Hence the importance which exists for postponing the final tests until a considerable time after the last treatment, during which interval the patient will have been subjected to a series of provocative treatments.

Method of Testing: (a) Introductory.

When the practitioner believes that his patient is cured he should cease therapeutic treatment for at least ten days. During this time provocative treatment should be administered. Often provocative measures are not adopted as frequently or thoroughly as is necessary to arouse any lingering micro-organisms. It may be objected that it is justifiable to apply such treatment as will conduce to any superficially placed gonococci evidencing themselves, but that the application of such stringent measures as will have the effect of exorcizing the gonococcus from its most cryptic lair is unnecessary and harmful. It will be urged to be unnecessary because if a few organisms be present the patient's resistive power will suffice to overcome them. It will be regarded as harmful because if the dormant organisms be awakened they may reinfect the patient and produce some serious complication not previously experienced. I would reply that our aim is to ensure that the patient is not harbouring any organisms which, if released now, will probably not produce reinfection, whilst if liberated later, when immunity has disappeared, they will almost certainly have that effect.

We can imagine a case in which there is a complete absence of any symptoms or signs suggestive of the presence of gonococci. A bacteriological and microscopic examination of the necessary secretions fails to discover any gonococci. One or more insufficient tests are carried out and result in the same negative findings. Some would conclude that it is improbable that any gonococci are present. Notwithstanding this apparent freedom from infection it is possible that organisms may be imprisoned in some primary or secondary diverticulum. Such a hiding-place may be found in some of the small diverticula of the urethra, of the prostate, of the ampulla of the vas, or of the vesicles, or the glands of Bartholini, or in Skene's tubules, etc. The organisms may remain in a state of malefic quiescence for months or for years. When eventually the small plug which obstructs their tubular habitat is removed the gonococci emerge with virulent results. The application of measures of provocation can go far to exorcize the inimical organism. If these are not adopted a male patient may pay the penalty by suffering from an attack of gonococcal rheumatism, iritis, or epididymitis, especially

if the lingering organisms are in the vesicles. The female may pay even a higher price for her practitioner's carelessness.

(b) A Course of Provocative Treatment (Male).

1. About five days after the patient is believed to be cured the prostate and vesicles should be massaged. This procedure is sometimes followed by a discharge the result of autoinfection. I consider this provocative measure fully deserves the importance assigned to it by Dr. Malcolm Simpson.

2. All treatment should then be suspended for ten days, and during this time the patient should consume alcohol. If there is any objection to submitting to this advice, a substitute should be advised in the form of stone ginger beer, or ginger ale, both of which beverages possess a provocative value, and the patient should be instructed to apply himself to a diet which is highly seasoned and redolent of sauces and salinity.

3. If at the end of the provocative period no untoward results have accrued, a large sound should be passed and the anterior urethra massaged over it. After the removal of the sound the prostate and vesicles should be massaged, and the patient should pass urine.

An instillation of silver nitrate 10 grains to 1 oz., should be administered and the urethra painted with a solution of silver nitrate, 10 grains to 1 oz. I hold that these provocations will generally oust any lingering organisms,* but as an additional provocative agent a gonococcal vaccine may be administered. If this latter procedure is carried out it should be arranged that the reactionary period should occur a few hours after the application of the foregoing measures. The patient should now be subjected to the series of tests mentioned below, the second one being carried out after an interval of a week. If no gonococci and no pus cells have been found as the result of either the first or second test the patient may then be discharged as cured. If, however, pus cells are found as the result of the first or second test, the patient must be subjected to a third one. Then if no gonococci are found he may be discharged. Provided that the clinical examinations (including the urethroscopic) have been efficiently carried out, experience shows that a patient can be discharged even if he still possesses pus cells. We must remember that some individuals are normally "purifers" or carriers of pus. It is well for patients to exercise alcoholic and sexual abstinence for a month after they have been discharged. It should be pointed out that such a period of quiescence is advisable in order to allow the tissues to return to their normal condition after the irritative measures to which they have been subjected, and that it is in no way associated with suspicion as to the validity of the cure.

Autoinfection the Result of Provocative Measures.

As a result of the provocative treatment administered to the prostate, vesicles and urethra after the cessation of treatment, it is possible that there may be a "flare up" of the hitherto quiescent disease. If no untoward results ensue the final tests may be looked forward to with hopefulness.

Scheme for the Final Tests (Male).

1. The patient presents himself, having retained his urine all night, or, if this is impossible, for at least five to six hours. The meatal orifice is cleansed with sterilized distilled water. Digital pressure is exercised along the urethra from the perineum forwards, and a specimen of any secretion is obtained with a platinum loop. A film is made from this specimen and a culture tube inoculated.

2. The patient passes the first and third portions of his urine into a sterilized jar. The intermediate portion of urine is not required.

The presence of threads or flakes must be noted; their shape, size, colour, consistency and disposition, whether floating or otherwise, must be observed. A bacteriological and microscopical examination of these should be carried out by the bacteriologist.

3. In the procuring of the prostatic and vesicular beads the patient rests upon his knees and hands. The method of massage is most important: The finger should exercise a firm degree of pressure upon the organ from its periphery to its apex; thus the contents of the straight portion of the prostatic tubules are expressed into the urethra. A process of gentle kneading and of rotary massage should now be carried out, followed by final pressure in the direction first mentioned. This will tend to dislodge the contents of any tortuous portion of the tubules or glands into the straighter portion, whence they are more easily projected into the urethra.

The vesicles should be massaged from above downwards and inwards, this being the direction of the main vesicular channel. A rotary and kneading action should be initiated, followed by pressure in direction of the long axis of the organs. A glance at a diagram of the tortuous ramifications of the vesicles will show how impossible it is to empty the contents of these organs by pressure exercised in one direction only. I am convinced that imperfect massage of the vesicles and resultant failure to evacuate their contents is a frequent cause of fallacious verdicts of cure. If the practitioner is suspicious concerning one or both vesicles, it is desirable that their contents be obtained separately from that of the prostate. Care should be taken that massage should be applied to the prostate only, the secretion of which should be milked forward along the urethra to the meatal orifice and specimens prepared. The anterior and posterior urethra should be irrigated with sterile distilled water, some of which should be left in the bladder. The vesicles should now be thoroughly massaged and their contents pressed forward along the urethra, a film made, and a culture tube inoculated. At times the vesicular contents take a retrograde course into the bladder, then the distilled water be examined for the secretion.

A Warning Regarding Prostatic Massage.

There is a point associated with obtaining the prostatic secretion concerning which I would utter a warning. There are some patients from whom secretion can be obtained upon the slightest degree of massage. Such a facile tendency may lead the practitioner into serious error. We will imagine that the left side of the prostate is massaged, and that a generous flow of secretion ensues. Inasmuch as a bead is secured no further massage is undertaken. The specimen is examined and found to be free from gonococci, and devoid, or relatively devoid, of pus cells. At the next test the same part of the prostate is massaged, a similar result follows, and the patient is discharged as cured. Before long he will return to his medical man, or possibly go elsewhere, complaining that he is still uncured. Another examination is made. The prostatic fluid is now found to contain a large number of pus cells, and possibly gonococci. The explanation is a simple one; the side of the prostate which was originally massaged was free from gonococci and pus cells. The opposite side was still abnormal, and had it been massaged at the first test the secretion would have been found to contain many pus cells and some gonococci. The moral, which for the sake of beginners I would enunciate, is that however easily prostatic fluid may be procured as the result of massaging one side only of the prostate the whole of the structure must be thoroughly manipulated, and, the resultant fluid having been mingled, the final specimen will represent an average of the entire secretion obtained. Neglect to massage as much of the prostate as possible will go far to account for those variations in reports which are received from bacteriologists.

I believe that the foregoing statement possesses a further moral. No orderly, no one excepting an experienced practitioner, should be allowed to undertake the task of procuring specimens for the final tests.

4. Additional urethroscopic examination: Before the patient was subjected to the course of provocative treatment he should have been thoroughly examined by the urethroscope and not allowed to undergo the tests until any abnormality of a possibly infectious nature had received adequate treatment. If there is the slightest suspicion as to the presence of any infected gland or sinus opening into the anterior urethra, a urethroscopic examination should be made after the foregoing tests and a specimen obtained. The most effective method of procuring this is by Mr. Wyndham Powell's new operating cannula.

Complement Fixation Test.

I am inclined to think that if a thorough series of efficient clinical, bacteriological, and microscopic examina-

* Provided that the vesicular or common ejaculatory duct is not obstructed by a muco-purulent plug, but if such a condition be suspected there is no object in carrying out tests whilst further treatment is still required.

tions are carried out there is no necessity to utilize the complement fixation test. Although my experience is a limited one, the results of this test cannot be compared to the comprehensive ones of the foregoing in respect to efficiency, and in every case it should, at present, be regarded as an adjuvant, and not in any sense as a principal means of determining whether a patient is still suffering from gonorrhoea. In cases of metastatic gonorrhoea I believe that it is of greater value, and without placing absolute reliance upon it, I would advocate the wisdom of employing it in such cases.

Final Tests in Women.

The general procedure in respect to provocative treatment is of a nature similar to that which is carried out with regard to men. No treatment should be administered for at least ten days before a test is made. Both the cervical and urethral canals should be dilated. The patient should be subjected to the provocative application of silver nitrate to the cervix, urethra, the glands of Bartholin, and Skene's tubules.

The question of vaccines is a difficult one. If one or both tubes are involved, the administration of vaccines may so light up a latent infection as to produce serious trouble. Great consideration is necessary to decide whether it is justifiable to take this risk. I believe that if there be grounds for suspicion it is wiser to adopt palliative or even surgical treatment during the quiescent stage rather than to expose the patient to the risk of an acute salpingitis flaring up with the possibility of an unsuccessful surgical operation. If there is no tubular involvement, then vaccines may be administered, although if the introduction of silver nitrate, etc., has been efficiently carried out they are probably superfluous.

Scheme of Final Tests (Female).

1. The vulval region, and especially the meatus urinarius and the orifices of Bartholin's ducts, should be thoroughly cleansed with sterilized water. The posterior wall of the urethra should be gently massaged (per vaginam) in order to express secretion. A platinum loop should be introduced into the urethra, and from the specimen of secretion obtained a film should be made and a culture tube inoculated.

2. Pressure should be exerted along the ducts of Skene and Bartholin and a specimen obtained by means of a pipette. The patient should micturate after a retention of at least six hours (see note on obtaining specimen of urine in males).

3. The uterus should be grasped bimanually and pressure exercised downwards towards the cervix.

4. A speculum is then introduced and the fornices and external surface of the cervix should be cleansed with sterilized distilled water. The cervix should be subjected to some form of massage and a film made and culture tube inoculated from the resultant secretion.

More Tests required for Women than for Men.

Owing to the greater tenacity or secretiveness of the gonococci when lurking in a feminine habitat it is not advisable to discharge a woman as cured after two or three tests. If she has passed these, no treatment should be given for two or three months; then after another provocative course a second series of tests should be made. If she passes these and no suspicious condition of the tubes is found she may then be discharged.

Objections against the Foregoing Tests.

Criticism may be directed against the foregoing measures by reason of the time required to carry them out. I would state that, with the exception of the urethroscopic examination, the whole procedure can be carried out within fifteen minutes. Even if considerably more time were necessary this would not afford an argument against the utilization of methods which are necessary to an exhaustive test. The results of incompetent examination may be so serious, and even dangerous, that nothing less than the most stringent measures should be employed.

Bacteriological Examination must be Carried Out by Experts.

It is of the utmost importance that the microscopic and bacteriological examination should be carried out by an expert. The practice which sometimes obtains of these examinations being made by practitioners possessed of but slight experience in so highly technical procedures is to be condemned.

The Relative Values of Clinical and Bacteriological Examinations.

I am aware that a section of venereologists place but small reliance upon the bacteriological and microscopical examination as constituting a necessary factor in testing patients before discharging them as cured. Their contention is that all necessary information can be obtained by skilled clinical examination and observation. On the other hand, there are those who are so influenced by bacteriological and microscopical methods that they are in danger of employing these in a manner verging on the mechanical, and through a lack of experience are tempted to evaluate clinical examinations very lightly. I believe we may here learn a lesson from the annals of syphilis, which tell of the brilliant results which were obtained by experienced clinicians before spirochaetes were thought of and when the Wassermann reaction was unknown. Just as competent syphilologists now regard the clinical and laboratory findings as complementary in relation to the investigation of syphilis so is it equally rational to cull and judicially interpret all information which can be obtained from these two provinces in respect to the determination of the cure of gonorrhoea.

CONCLUSION.

I would wish to state in conclusion that I believe the foregoing series of tests to include none that are unnecessary and, I hope, all that are needful. Inasmuch as I hold that the present-day schemes, as submitted by the National Council for Combating Venereal Diseases and the Ministry of Health, evidence a vast advance on their insignificant predecessors, so do I believe and hope that those which I have now suggested will be rendered obsolete in the immediate future by the advent of methods even more searching in their nature and convincing in their results.

I must offer my thanks to Mr. Hugh Lett, F.R.C.S., Director of the Genito-Urinary Department, London Hospital, for his permission to make use of the opportunities afforded me in his department, and also to Dr. Malcolm Simpson, with whom I collaborated in respect to an article on a "Method of Testing" published in the *Lancet*.

DISCUSSION.

Dr. T. W. BUCKLEY (Nottingham) congratulated the readers of the opening papers on the interesting points they had raised for discussion. He complained that great difficulty was experienced in interpreting pathological reports. Pathologists were often of little aid to the clinician. They were fond of sitting on the hedge and of returning a report to the effect that Gram-negative diplococci resembling gonococci were or were not present, as the case might be. He wished that they would make a plainer statement, and not fight shy of the word gonococcus.

Captain BAWDEN, R.A.M.C. (Military Hospital, Newcastle), asked Dr. Lees what he meant exactly when he said, "In order to get vaccines to act efficiently we must open up the tissues and vascularize them." Dr. Clarkson had said that he used silver nitrate solution for provocative action in the strength of 5 to 25 grains per ounce. He (Captain Bawden) thought this much too strong, 2 to 3 grains per ounce being sufficient. Referring to the standard of cure in gonorrhoea, Dr. Clarkson mentioned that a patient should not be considered cured until he had shown several negative smears, but he himself considered that this index of cure was apt to be misleading. Captain Bawden mentioned the case of a patient who contracted gonorrhoea two years ago. He thought he was cured, but found the discharge returned after imbibing alcohol, about January, 1921. He went to a doctor, who examined a smear and said he found no gonococci. The case then came under Captain Bawden's care. A smear was examined carefully for twenty minutes and no organisms found. A culture was made, and on examination the gonococcus was found in pure culture. Captain Bawden held that in the case of chronic gonorrhoea a patient could not be said to be cured until a culture failed to show the presence of gonococci.

DR. GORDON BATES (Canada) congratulated the readers of the opening papers on the successful way in which they had dealt with their subjects. He gave a brief summary of the methods that had been adopted in Canada for the combating of venereal disease, and described the working of a modified form of compulsory notification.

Lieut.-Colonel RITCHIE, R.A.M.C. (representing the League of Red Cross Societies at Geneva), spoke of the work which was being undertaken on the Continent. He stated that instruction in venereal diseases was now compulsory in Swiss universities, as was also the setting of a paper on this subject in the final examination for qualification.

Mr. KENNETH WALKER (London) said that he did not intend to contribute to the discussion beyond asking Dr. Townley Clarkson whether he would not add the riding of a motor bicycle to the list of provocative measures that might be adopted in deciding whether a patient were cured or not. He (Mr. Walker) had found cases of chronic prostatitis fail before such a test, even after they had successfully survived a season of fox-hunting. If any experience were likely to cause a recurrence in an uncured prostatitis it would be a fifty-mile ride on a motor bicycle over bad roads.

Colonel L. W. HARRISON (President of the Section) said that he was sure everyone present would leave the meeting with a higher ideal in the management of gonorrhoea thanks to Dr. Lees and Dr. Clarkson's papers. He could not help thinking, during the reading of those papers, of the remarks of his very superior officers which had often greeted his efforts to improve the treatment of gonorrhoea in the army, that "we got just as good results in the old days with a syringe as you seem to be getting with your new-fangled methods." Such a remark had always made him ask how it was known that the results were just as good; were the patients tested for cure, and how many came back with a relapse a few days after discharge from hospital? But he had never had a satisfactory reply.

Again, he could not help thinking, whilst Dr. Lees described his meticulous technique of treatment and Dr. Clarkson his elaborate test of cure, how unnecessary all this trouble ought to be considering how easy it was to cure gonorrhoea if the patient commenced treatment before the gonococcus had buried itself in the depths of the mucous membrane. It ought to be as instinctive in a male patient to take alarm and seek treatment the moment the first sign appeared as to jump when he was kicked, and the people who would eventually get that lesson driven home to the general public were the family physicians of the country. Without them we should achieve little, and gonococcus carriers would continue to spread gonorrhoea until we discovered a specific. The whole-hearted help of the general practitioner ought to be given in this struggle against gonorrhoea, and until it was given the disease would continue to be a reproach to the profession.

Dr. Lees would not be surprised when he joined issue with him on the question of confining the irrigation to the anterior urethra until signs of posterior urethritis appeared. Everyone knew that the moment to attack gonorrhoea was the moment when the infective material was planted on the surface. That was axiomatic. He would like to ask Dr. Lees by what test he detected the moment when the gonococcus was first planted on the posterior urethra. He himself knew of none. It was for this reason, as well as because of the superior flushing effect of a stream of lotion propelled by the bladder, that he preferred to allow the solution to enter the bladder just as soon as the sphincter could be coaxed into relaxing.

He was impressed by the value of cultural methods in diagnosis and test of cure. A microscopist was very apt to give up the search much too soon, and a culture was a good safeguard. He himself employed the complement fixation test, and he would certainly feel very chary of passing a patient for marriage who gave a positive reaction. He would like to suggest that the prostate be massaged about ten days before the blood test, as in some cases a doubtful reaction before the massage had been followed in his hands by a definitely positive about ten days later. He supposed that, provided this had not been a coincidence, it must have been due to the autoinoculation resulting from the prostatic massage.

In reply to the discussion, Dr. DAVID LEES said that before he replied in detail to the various aspects of the discussion on his introductory paper he would like to take up one or two points raised by Dr. Townley Clarkson in his very interesting and comprehensive paper. He emphasized two important points: first, that it took a considerable time to test the patient, and secondly, that it demanded a considerable degree of capability on the part of the clinician. It was important to remember both, and he stated that qualitative results were much more important than quantitative. In the clinic under his charge little or no stress was put on rapidity of cure as compared with certainty of cure, and cases were kept under observation for three to six months after apparent clinical cure. He was extremely glad that he had emphasized the question of the importance of thorough prostatic massage. He would have preferred him to emphasize even more than he did the importance of urethroscopic appearances, and especially the dilatability of the urethra. He could not, however, agree with him on the strength of the silver nitrate which he instilled into the urethra as a test of cure—namely, 5 grains to 1 oz., increasing up to 20 grains to 1 oz. He stated that it was only stimulating, but if one considered that the urethral mucous membrane was as delicate, if not more so, than that of the conjunctiva, one must hesitate in using this concentrated solution, and he thought that we had other less destructive methods, other more certain methods of testing for cure, which were less destructive to the tissues which they were trying to heal. He also considered that in the treatment of the female it was essential that the clinician should have a knowledge of gynaecology and be able to co-operate with the gynaecologist in consultation, rather than to hand over these cases completely to the gynaecological surgeon. Take, for example, a case of pyosalpinx, which starts as an endocervicitis; the removal of the offending tube, and, it might be, ovary, did not cure the gonococcal infection. One might as well say that the removal of the primary sore would cure syphilis, since such a case after operative treatment should certainly be under the care of the specialist in venereal diseases until the whole infective process was cleared up.

He would associate himself with the President in welcoming the very interesting statement from Dr. Gordon Bates as to the steps being taken in Canada to deal with venereal disease. He quite agreed with him that the preventive point of view was the important one and that a great deal could be done by the social worker attached to the clinic. He would welcome the adoption in this country of the modified system of notification, which, while it put a powerful instrument in the hands of those in charge of treatment, did not interfere with the liberty of the patient who carried out the instructions he was given. Dr. Buckley mentioned the difficulty he had in getting a definite report from the pathologist, and in this connexion he thought it was an advantage that every person in charge of centres should do a certain amount of clinical pathology, and, in doubtful cases, examine smears of his own patient. As he stated, Thompson's detoxicated vaccine was of decided value in subacute and chronic cases, the preparation containing secondary organisms assisting and making more certain the cure. He had found in his work that pure detoxicated vaccine was quite as useful in the acute cases as that containing secondary organisms; in the chronic and in some of the very early cases it was a valuable adjunct in abortive work. The cases of *Bacillus coli* infection which Dr. Buckley mentioned were not always, he thought, secondary to a gonococcal condition, and, although difficult to treat, very often reacted to antiseptic therapy supplemented by the administration of an autogenous vaccine.

Colonel Harrison had joined issue with him on the question of anterior irrigation only as against posterior irrigation in cases of anterior urethritis, stating that the posterior irrigation gave a better wash out, and asking on what grounds one could tell that the infection was confined to the anterior urethra only. He quite agreed with him that the two-glass test was not accurate; the three-glass test was more so; the age and severity of the infection were helpful in diagnosis, more helpful still was the condition of the prostate and vesicles, and the absence of frequency and urgency of micturition. In his own experience the time and the effort taken to teach a case of anterior urethritis how to irrigate into the bladder, unless

the irrigation was done by the surgeon himself, was very apt to lead to force being used, and to set up, if this force were used, complications which would not arise with anterior irrigation. This was especially so with the out-patient who was using a hand syringe, and it was on this account that he had advocated the gravity method at a height of two to three feet for both anterior and posterior work; and if, as should be, the case was under close observation during the first six or seven days, and was not progressing satisfactorily, it was not a difficult matter to detect the extension of the infection to the posterior urethra, when irrigation into the bladder should at once be commenced.

Colonel Harrison's remarks on the value of cultural methods in the test of cure could not be too strongly driven home. There were quite a number of male cases, and still more female cases, in whom bacteriological examination of the discharge failed to demonstrate the gonococcus, while a culture on the proper medium would show that the patient was still infective. He was in complete agreement with him also on the value of the complement fixation test, both in diagnosis of obscure latent conditions and as a test of cure. The technique of the test, however, was far from perfect in many laboratories as yet, and was now in probably the same position as was the Wassermann test ten years ago. It was a true serological test, and with improvement and perfecting of the technique should, he thought, be one of the most valuable tests in the very near future.

He finally asked the question: Why was this elaborate technique necessary in diagnosis and cure? Why did not the public appreciate the importance of gonococcal infection and come for treatment the first day of their disease? It was, as Colonel Harrison said, because the public were not educated to consider the condition a serious one. It was gradually dawning on them, and he thought the best method of driving it home more quickly to them was the educating of first the student, who would be the practitioner of the future, through him the practitioners of the present day, and through them the general public. Once they were educated to look on gonococcal infection with the same seriousness that they looked on syphilis, there would be fewer cases of self-treatment and fewer also of that type which was simply tinkered with until the condition had become chronic or some gross complication had set in.

In conclusion, he associated himself with the remarks of Dr. MacKenna on the previous day, in stating how much he felt that this Section, and he himself personally, owed to the President, Colonel Harrison, for the help which he had at all times given so many of them personally in their work, and for the impetus which he had given to the scientific study of venereal diseases throughout Britain.

RESOLUTION.

Before the meeting closed the following resolution was submitted and passed unanimously:

That this meeting desires to bring before the Council of the British Medical Association the necessity of such action as will ensure the inclusion of instruction in venereal diseases in the curriculum of every medical student, together with the institution of a test of proficiency in diagnosis and treatment as a condition of qualification.

It desires also to draw attention to the advisability of encouraging, by every means possible, the carrying out of post-graduate instruction in these subjects amongst general practitioners.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE LOCAL USE OF OXYGEN IN EMPYEMA.

ALTHOUGH in most instances the simple opening of an empyema and the insertion of a drainage tube is attended with good results, there are certain cases which do not pursue such a favourable course. In this paper I put on record cases under the care of Dr. T. Wardrop Griffith in which the local use of oxygen was attended with great benefit. Oxygen from a cylinder, warmed by passing through hot water contained in a wash-bottle, is passed through a sterilized rubber tube inserted deep down into the cavity, and allowed to flow for about ten minutes. An increase of pressure in the pleural cavity is avoided by employing such a width of tubing as will permit the easy escape of gas at the sides of the tube. Occasionally it will be necessary to keep the margins of the wound separated by means of forceps. A gentle stream of oxygen is all that is required. It is conceivable that collapse of the patient might occur if oxygen at a high pressure was suddenly introduced into the pleural cavity in spite of the precautions already mentioned. It is important, therefore, that the pressure of oxygen should not be very high. The tube should not be inserted before the oxygen has been turned on. A good idea as to the pressure of the oxygen can be obtained by allowing it to play on one's own skin. When the sinus is becoming narrow in the later stages it is desirable to stop the use of oxygen on account of the inefficient return of the gas at the sides of the tube. It will usually be quite safe during the first fourteen to twenty-one days after the operation. During the administration of oxygen by this method the patient experiences no pain or discomfort.

Case 1. L. H., aged 25, was admitted to the Leeds General Infirmary on April 18th, 1921. She had previously been treated for right lobar pneumonia beginning on April 1st; there was no crisis, and the temperature remained high. Empyema was diagnosed; it was opened in the usual way in the scapular line; four pints of thin yellow foul pus were evacuated, and a drainage tube inserted. Dr. J. W. McLeod, who made a bacteriological examination of the pus, reported: "Films show very numerous bacteria, including fusiform bacilli and coarse spirochaetes. Cultures negative at eighteen hours. Bacteria detected are probably anaerobes." The condition of the patient did not improve, and the temperature oscillated. The external wound was very foul and unhealthy and the patient very ill. I gave the first injection of oxygen on the evening of April 24th, believing that theoretically oxygen would be inimical to the presence of anaerobes. The same treatment was carried out on the following morning. On the morning of April 26th the patient's general condition was greatly improved; the wound was now healthy and the foul odour had almost disappeared. The temperature, which up to the time of the first injection had been oscillating, came down within forty-eight hours from 103° to 99.2°. On repeating the injections the temperature fell to normal. The patient made an uneventful recovery, and was discharged perfectly well.

From this case I turned to the treatment with oxygen of cases of empyema due to aerobic organisms, and I was surprised to notice the marked improvement in the following cases of empyema of pneumococcal origin:

Case 2.—N. R., aged 15. The empyema was preceded by pneumonia. The temperature remained normal after the operation; under oxygen treatment the empyema healed completely in three weeks.

Case 3.—J. W., aged 24. This was a case of empyema following labour and pneumonia. The empyema healed completely in four weeks.

Case 4.—M. H., aged 1½, was admitted to the Leeds General Infirmary on May 12th, 1921, with a diagnosis of pneumonia. The temperature came down after a week and the general condition greatly improved. During the course of the following two days the child became very ill, breathing very rapidly. There was dullness at the right base and the breath sounds were diminished. Exploration proved pus to be present. Shortly afterwards the empyema was opened in the right scapular line, several ounces of pus were evacuated, and a drainage tube inserted. The bacteriological examination of the pus yielded a pure culture of pneumococcus. The child gradually improved until May 28th, when the temperature began to rise. On June 1st she vomited, the temperature rose to 103°, and she was extremely ill. The temperature continued to oscillate in spite of the fact that drainage was good. I gave the first injection of oxygen on June 5th and on the following day two injections. The general condition improved, the temperature came down to normal, and remained there for the first time for ten days. The effect on the pulse rate and respirations was also well marked, both dropping to a normal figure. On June 7th, two days after the first injection of oxygen, it was noticed that the pus, which had previously been very thick, was now largely serous. The patient was making an uneventful recovery and the empyema was almost healed, when she unfortunately contracted chicken-pox. This was followed three days later by bronchopneumonia on the sound side and acute otitis media, and she died four days afterwards. *Post mortem* no pus was found in the pleural cavity, and the empyema was almost healed.

Three other cases of empyema following pneumonia, in children aged 2 years and 6 months, 2 years and 10 months, and 1 year and 3 months respectively, have all done very well under oxygen treatment.

L. GORDON, M.B., Ch.B.,
House-Physician, Leeds General Infirmary.

Reviews.

MEDIAEVAL SCIENCE.

Mediaeval Contributions to Modern Civilization,[1] edited by Professor HEARNSHAW, is a volume of lectures by various authors on religion, philosophy, science, art, poetry, education, economics, and politics. Science is undertaken by Dr. Charles Singer, and those who know his qualifications as a historian of science generally, and his special knowledge of the documentary sources for its obscure mediaeval period, will turn to his essay with great expectations. Nor will they be disappointed, for there can hardly be a more brilliant or clearly written outline of the subject in so short a space.

The writer has condensed with admirable skill the scientific history of some twelve centuries, yet he finds room not only for complete and instructive summaries of the work of individuals for example, Roger Bacon—but also for picturesque details of great movements, such as "the Arabian infiltration." The essay also stands out from its companions in being illustrated by two mediaeval schemes of the universe, two diagrams, and a tabular outline of the period, which illumines more than its own subject. Yet the reader will be struck by one notable defect, or rather peculiarity, for, except on the principle of "snakes in Ireland," he will find nothing about "contributions to modern civilization." The common view is that science, having made a brilliant start in ancient Greece, disappeared during the Middle Ages, the science of modern civilization being partly a new birth about three centuries old, partly "an outgrowth of classical antiquity." Dr. Singer admits that there is much to be said for this, especially if we adopt his definition of science proper as not "organized knowledge" but "the process which makes knowledge," scientific activity. This must be distinguished from science in the vulgar sense, which is knowledge, or supposed knowledge, of nature, or even "an attitude towards phenomena," and he defines the Middle Ages as the period during which knowledge-making barely existed and sometimes disappeared. Its origin may be traced back to the completion of the work of Ptolemy and Galen in the second century—an early date, but not unjustified, for Ptolemy signed the capitulation of science to superstition when he wrote the great mediaeval handbook of astrology, and at the same time gave mankind a system of the universe capable of explaining the phenomena, and satisfying all observations possible during the next fourteen centuries; while Galen summed up the medical sciences, including all that concerned the microcosm, with a completeness and systematic power which might well make future generations ask, Why go through all this again when it has been done in so incomparable a manner by this wonderful man? Their work would have caused a temporary check in knowledge-making even in favourable circumstances, but coinciding as it did with political disasters, a "failure of nerve," and a sense of the gathering darkness of the world, it marks a practical cessation of progress. Between the fifth and tenth centuries men not only cease to make knowledge, but, with one or two exceptions, anxiously disavow any wish to attempt it, as does Paul of Aegina in the preface to his medical compilation.

After the tenth century a sort of dawn appears; men make, or try to make, knowledge, but they do it apologetically. "We are as dwarfs on the shoulders of giants, so that we can see more and further than they, not by our own keen insight or stature, but because so raised aloft." This slightly condensed saying of the twelfth century Bernard Sylvestris was repeated in various forms down to the fourteenth century Guy of Chauliac by people who thought they had found something new. Guy seems the last (though sometimes called the first) eminent writer to use the simile, for after his time it was not thought so necessary to apologize for knowledge-making.

At the Renaissance "the recovery of the Greek texts, even if it enlarged the mental horizon, chained men's minds even more closely to the past." On the other hand, the Reformation helped to separate the material from the spiritual world, and to leave the former as "the acknowledged dwelling place of laws discoverable but not discovered." Then, in 1543, the publication of the *De revolutionibus orbium coelestium* of Copernicus and the *De fabrica corporis humani* of Vesalius showed that men were at last turning their faces from Ptolemy, Galen and other ancients and preparing to go forward in knowledge-making. The author concludes: "As the proof sheets of the *De revolutionibus* fell fluttering to the ground from the dying hand of Copernicus, something more than his great spirit had gone from the world; the whole system of mediaeval science was no more."

But how about "contributions to modern civilization"? The editor in his introduction suggests that the contribution of mediaeval science to succeeding ages is "that phenomena are but manifestations of occult powers." The statement is brief to obscurity, and might refer to the method of solving a problem by setting up one or more imaginary entities to whose volition or potency the result is attributed. Thus the action of a pump was ascribed to Nature's abhorrence of a vacuum, that of opium to "a dormitive virtue, the nature of which is to make the senses slumber," and the phenomena of heat to manifestations of an occult phlogiston. This was doubtless mediaeval, but it is surely a *damnosa hereditas*.

Possibly Professor Hearnshaw was thinking rather of neo-vitalism and psycho-analysis, but we shall perhaps all agree that the chief single, if not the only, contribution of mediaeval science to modern civilization was the introduction of the Arabic numerals.

EDWARD T. WITHINGTON.

[1] *Mediaeval Contributions to Modern Civilization.* A series of lectures delivered at King's College, University of London. Edited by F. J. C. Hearnshaw, M.A., LL.D., with a preface by Ernest Barker, M.A. London: G. G. Harrap and Co., Ltd. 1921. (Med. 8vo, pp. 257. 10s. 6d. net.)

PSYCHIATRY.

Psychiatrie[2] is the seventh volume of a French system of medicine entitled *Traité de Pathologie Médicale et de Thérapeutic Appliquée*, which is to consist of thirty-two comprehensive volumes, so that the editors, Drs. EMIL SERGENT, L. RIBADEAU-DUMAS, and L. BABONNEIX, have undertaken a big task. The section on psychiatry is divided into two volumes, the first of which we have now received; it comprises accounts of the general symptomatology of mental disorder, acute mania, psychasthenia and obsessions, melancholia, periodic psychoses, confusional psychoses, systematized delusional states, the mental state of hystericals and epileptics, and war psychiatry. The treatment of these various types of disorder is designedly not exhaustive. The aim is definitely clinical and the needs of the practitioner are kept constantly in the foreground. The various contributors are well qualified by their experience to present a balanced, practical, and useful description of the diverse clinical forms which mental disorders assume, and while the general purpose of the editors is to furnish articles of a didactic nature, the personal element is sufficiently in evidence to distinguish the volume from the ordinary textbook.

A general survey of this first volume gives rise to an impression that French psychiatrists are, on the whole, conservative. They do not appear to have been influenced to any extent in their classification, general conceptions, or psycho-pathological outlook by foreign schools of thought, so that French psychiatry has followed its own line of development. On the whole the various contributors to this volume confine themselves to a purely descriptive method of study, and do not seek for explanations of abnormal behaviour in terms of personality, conflicts, and wishes. The hereditary factor is perhaps unduly emphasized at times, and an unnecessarily fatalistic attitude as to the possibilities of therapeutic measures is adopted. This tendency is particularly marked in the discussion of psychasthenia, in which hereditary degeneracy is stated to be the one essential etiological factor.

The book will be found a useful introduction to French psychiatry from the purely clinical point of view, but the more specialized monographs will have to be consulted to gain a proper appreciation of much of the present and past work that has been done in France in relation to disorders of the mind.

[2] *Psychiatrie.* Tome I (Tome VII, *Traité de Pathologie Médicale et de Thérapeutic Appliquée*). Edited by Emile Sergent, L. Ribadeau-Dumas, and L. Babonneix. Paris: A. Maloine et Fils. 1921. (Demy 8vo, pp. 425. Fr. 25; post free, Fr. 27.50.)

ELECTROTHERAPY.

A Handbook of Electrotherapy, by Dr. GROVER of Colorado Springs, is intended to appeal to the twenty-five thousand physicians in the United States who are said to possess and employ some form of electrical apparatus for the treatment of disease. The author states that his work is meant to give practical instruction in electrotherapy, and that he has endeavoured to "boil down" the subject so that it may be understood and be useful to the entire medical profession. He considers that as so few medical colleges include electrotherapeutics in their curriculum many practitioners, owing to want of proper instruction, fail to obtain the favourable results which should follow on the skilled application of the various forms of electrical treatment. Like most books of this kind, the first subjects dealt with are the principles of electricity and the various forms of apparatus in use. The illustrations of this part are of the type usually associated with the catalogues of instrument makers. In discussing the treatment of various diseases the author adopts the plan of stating in the first place in a very concise manner his conception of the individual disease, and follows this with a paragraph or two to indicate his method of treatment. As an example we may quote his remarks on the subject of migraine:

"Cases of migraine are born, not made. The patients are always toxic. A course of auto-condensation consisting of five daily treatments and one treatment every two weeks thereafter will do much for these patients toward warding off the attacks."

Or again:

"Mycosis.—Any disease of the skin characterized by soft mammillated tumours or fungoid neoplasms. Treatment.—The ideal treatment for all fungoid growths on the skin is radiotherapy. Technic.—The dose at first should be small fractional H½ to H¼. Later on the dose may be increased to H½."

These two quotations are average instances of the author's method of writing. A fair criticism would be that the instruction imparted is hardly of the kind that would tend to accomplish the object of imparting to men who had not had proper instruction the necessary information to enable them to obtain those results which should follow on the skilled application of electrical methods. A chapter on roentgenology, which brings the book to a conclusion, is so short and wanting in essentials as to be of no practical value. The bibliography is so incomplete that even the writings of the late Dr. Lewis Jones are not referred to.

A fifth edition of *The Essentials of Medical Electricity*[4] is now available. The original book, published in 1905, as also the second edition, was written by Dr. E. R. Morton; for the last three editions, published respectively in 1916, 1918, and the present year, Dr. E. P. CUMBERBATCH, of St. Bartholomew's Hospital, is responsible. In the later editions a considerable amount of new matter has been introduced into the text and certain sections have been rewritten, so as to bring the volume up to date and increase its utility to students. This is probably why there are occasional duplications of statements, such as those dealing with the penetration of ions on pages 91 and 93. The volume concludes with an especially well-written chapter on the physics of electricity for the benefit of those whose knowledge thereof has grown rusty.

THE VICIOUS CIRCLES OF POVERTY.

SINCE 1911, when Dr. HURRY published the first edition of his *Vicious Circles in Disease*, his name has become intimately associated with the process whereby a primary disorder provokes a reaction that perpetuates such disorder, cause and effect acting and reacting on each other. By continued thoughtful endeavour he has expanded the range of his investigations not only as regards physical disease but into social disorder, and as a result we now have before us the second edition of *Poverty and its Vicious Circles*.[5] After quoting the definitions given by Adam Smith, Godard, Charles Booth, Rowntree, and others, poverty is described in broad terms as "a condition which lacks some of the requisites of efficiency whether in the individual or in the community." The causes of poverty are complex and their detailed study does not come within the scope of this volume, the object of which is to show how poverty, when brought about, perpetuates itself.

Of the four parts into which this study is divided, the first—on the vicious circles of poverty—occupies considerably more than half the volume; the earlier chapters deal with defective housing, defective feeding, defective clothing, defective education, defective credit, and the last with "artificial circles," in which measures designed as remedies do more harm than good; these are described under the headings of Poor Law relief, protection, indiscriminate hospital relief, free shelters, free feeding of school children, uneconomic rise of wages, fixing of prices of commodities, restriction of output, and indiscriminate alms-giving. In Part II the effects of vicious circles are described, poverty being shown to be worse than self-perpetuating and to be self-aggravating and often a fatal disorder. After these rather depressing considerations Part III, on "the breaking of the circle," which has been largely rewritten in the light of recent social reforms, discusses at length the effects of legislation of voluntary organizations—namely, those not under State control, such as friendly societies, trade unions, the co operative movement, and of individual effort. Part IV, or the conclusion, ends on the cheerful note that much can be done to transform the present conditions by practical schemes based on wise judgement and justice, and not by Utopian visions beyond the possibility of realization. Dr. Hurry must be congratulated on the result of his honest labours and on a scholarly and well-balanced presentation of a subject bristling with difficulties.

PUBLIC HEALTH.

SINCE the first edition of ROBERTSON and PORTER'S *Sanitary Law and Practice*[6] was issued in 1905 the output of public health legislation has been considerable, and has included two important Housing Acts; moreover, the creation of the Ministry of Health has materially affected the central administration. The fifth edition will be found to contain suitable references to all recent legislation, and by excluding out-of-date matter the volume has been kept within a reasonable size. We still hold the opinion we expressed when reviewing the first edition, that although it is a book on sanitary law, it contains a large amount of matter only remotely connected with the law. If this could be omitted space would be found for annotations on the Acts of Parliament and by-laws and regulations, which are very accurately transcribed, but many portions of which could be explained and commented upon with the greatest advantage by such experienced medical officers of health as the authors. We say this in no spirit of disparagement, but with a sincere desire to secure the improvement of a well established textbook, an improvement, we are certain, which would enhance the reputation of the authors. An attempt at the sort of annotation we have in mind has been made in the appendices of the fifth edition, which include the text of Orders and Regulations made from time to time by the central authority. Following most of these documents is a paragraph setting out the duties of the health official with regard to the particular Order or Regulation. This is excellent, and cannot fail of being helpful to a busy health officer. It is difficult to understand why a book which is essentially one for reference should be so badly indexed. There is no mention in the index of the Ministry of Health, and the Local Government Act, 1888, is indexed as the Local Government Board Act.

Although sustained and organized study of hygiene has been carried out in the United States of America only within recent years the literature of the subject is already of some magnitude. One of the latest additions to it is

[4] *The Essentials of Medical Electricity*. By Edward Reginald Morton, M.D., B.Sc., M.R.C.P. Lond. Fifth edition, revised and enlarged. London: Henry Kimpton. 1921. Demy 8vo, pp. 405, 76 figures; 11 plates. 10s. 6d. net.)

[5] *Poverty and its Vicious Circles*. By Jamieson B. Hurry, M.A., M.D. Second and enlarged edition. London: J. and A. Churchill. 1921. Demy 8vo, pp. [illegible], 6 plates. 15s. net.)

[6] *Sanitary Law and Practice: a Handbook for Students of Public Health and Others*. By W. Robertson, M.D.Glasg., D.P.H., M.R.C.P. Edin., and Charles Porter, M.D., B.Sc., M.R.C.P. Lond. Fifth edition. London: The Sanitary Publishing Company, Ltd. 1921. (Demy 8vo, pp. 779; 62 figures. 18s. 6d. net.)

[3] *Handbook of Electrotherapy for Practitioners and Students*. By Burton Baker Grover, M.D., Colorado Springs, U.S.A. Philadelphia: F. A. Davis Co. 1921. Demy 8vo, pp. 452; 102 figures. 4 dollars net.)

Public Health and Hygiene,[7] edited by Dr. W. H. PARK, of the Public Health Department, New York City, who has written the greater part of the book but has called to his assistance twenty-three other writers who deal with subjects on which they are specially competent to speak. It is stated by the editor that no attempt has been made to treat the subjects of public health law and administration, but we are glad that an exception has been made in the chapters on milk supplies contributed by Dr. Park, for it cannot be denied that the public health authorities in America have been remarkably successful in their efforts to obtain a clean and pure milk supply. The means that have been adopted are described plainly and lucidly. It is, however, discouraging, after reading of the elaborate precautions that are taken in all the stages of its progress from the cow to the consumer to ensure a cleanly milk supply, to be told by Dr. Park that "the attempt to bring the general market milk to the degree required for infant feeding can never be successful in a large city . . . no matter how complete or well organized the system of dairy inspection, it will not be possible to render entirely safe the ordinary commercial milk which is produced and shipped to a city." He considers therefore that milk should be pasteurized when it is intended for the use of young children. After the recent disquieting revelations made by Dr. Shadick Higgins to the St. Pancras Borough Council on the unsatisfactory methods of pasteurizing carried on in that borough we cannot be surprised at the warning of Dr. Park, who considers that commercial pasteurization should be subjected to careful supervision and frequent inspections and testing of the machines. The chapter dealing with the prevention of infectious diseases is very comprehensive and is quite on the lines of present-day methods. In connexion with several diseases the sections on the mode of control and general measures of prevention seem to be word for word those contained in other American textbooks, from which it would appear that they are copied from some official memorandum. If this is the case it is a pity the authoritative source is not acknowledged. The question of housing is dealt with in a comprehensive manner by Mr. Lawrence Veiller, the secretary of the National Housing Association of America. It comes as a shock to learn from him that there is a small school of sanitarians in America who consider that housing is not a health problem. He certainly is not a disciple of that school. Although he considers that good housing conditions require legislation for their attainment he emphasizes the importance of holding up to the community right standards. A lack of these standards, he maintains, is largely responsible for the bad conditions prevailing in many parts.

In a work such as that now before us, which includes contributions from more than a score of different writers, there must always be a certain amount of overlapping in the various sections, and apparently the editor of this book has not taken any great pains to prevent it, a defect which we hope may be remedied in future editions; there are also very few cross-references. Regarded as a whole, Dr. Park has brought out a reliable and comprehensive textbook which should certainly serve the purpose for which he states he intended it—namely, as a guide for public health officials, physicians, and medical students, especially in the United States.

GYMNASTICS AND MASSAGE.

FROM the preface to *Notes on Diseases treated by Medical Gymnastics and Massage*, by Dr. J. ARVEDSON, of Stockholm, it would appear that the volume has long been regarded in Scandinavia as the standard textbook on the subject. Into the English edition[8] some additional information has been introduced by the editor and translator, Dr. MINA L. DOBBIE. The general aim is to supply students of medical gymnastics with sufficient information about the morbid conditions they may have to treat to enable them to handle them intelligently. The method employed is to state succinctly in respect of each medical or surgical disease considered, first the characteristic pathological changes, then the commonly ascribed causes and symptoms; and, finally, to give a description of the treatment deemed desirable. The latter is likely to be understood fully by the student only if he has Kleen's *Massage and Medical Gymnastics* at hand, since the terms used in prescribing movements are recondite. An ordinary medical reader of this volume may possibly be surprised at the number and variety of the ailments with which the medical gymnastic student is expected to be conversant and prepared to handle. In respect of a very few, he is warned not to undertake treatment except under direct medical approval. Preceding the chapter on disease entities are some twenty pages of introductory matter. In these the student is told how to diagnose the conditions with which he meets, but is counselled to avoid as a rule attempts at prognosis. The different forms of cell degeneration are described, but the student is seemingly expected already to be familiar with the nature, structure, and function of cells of all kinds and other histological and bacteriological details. The terms "morbid changes" and "pathological changes" are both used, but what distinction the student should draw between them is not stated. He is informed, however, that both the quality and quantity of food administered are of importance, and that it should be divided into three or four meals a day, as otherwise the digestive organs are apt to be overworked.

[7] *Public Health and Hygiene, in Contributions by Eminent Authors.* Edited by William Hallock Park, M.D. Philadelphia and New York: Lea and Febiger. 1920. (Roy. 8vo, pp. 895, 135 figures. 10 dollars.)

[8] *Notes on Diseases Treated by Medical Gymnastics and Massage.* By Dr. J. Arvedson. Translated and edited by Mina L. Dobbie, M.D., B.Ch. London: J. and A. Churchill, 1921. (Cr. 8vo, pp. 288. 8s. 6d. net.)

NOTES ON BOOKS.

THE new number of the *Quarterly Journal of Medicine* contains an abridgement of Sir Thomas Lewis's Linacre lecture on the law of cardiac muscle, with special reference to conduction in the mammalian heart; an elaborate report of an investigation of metabolism in rickets by Dr. Leonard Findlay, Professor Noël Paton, and Mr. J. S. Sharpe. There is also a paper by J. W. McLeod, A. G. Ritchie, and C. A. Dottridge, on the incidence of infections with Pfeiffer's bacillus. The suggestion put forward ten years ago by Richter in America to the effect that the periodicity of influenza epidemics is due to the recurrence of a certain type of weather—namely, prolonged periods of anti-cyclonic conditions—is favoured. It is thought that the atmosphere at these periods may be more irritating to the lungs, and that consequently a microbe like Pfeiffer's bacillus, which apparently tends to persist in the adult human body chiefly as an agent of chronic bronchitis, would find a special opportunity for extended propagation—that is to say, for exaltation of virulence by passage.

The June number of the *Annals of Medical History*,[9] published in New York, announces that Sir D'Arcy Power has been co-opted an associate editor, in the place of the late Sir William Osler; the other representative from this country is Dr. Charles Singer. A striking feature of this well-got-up quarterly is the portrait on the cover, which changes with each issue; this time it is one of Jerome Cardan, the most famous physician in Europe when, in 1552, he travelled from Pavia to Edinburgh to consult on the case of John Hamilton, Archbishop of St. Andrews, and brother of the Regent of Scotland; the story of this great consultation is attractively told by Dr. Charles L. Dana in a finely illustrated article. In his essay on Montaigne and his claim to the notice of the profession, Captain J. S. Taylor, the editor of the *United States Medical Bulletin*, points out his medical bent, though he professed a horror of the faculty, and draws attention to his pitiless description of his own character and to his accurate observation of disease, especially in his own person. An unrecognized Anglo-Saxon text by a monk of Ramsay in Huntingdonshire is described by Dr. and Mrs. Charles Singer, who have determined its date as 1011; this manuscript, which is in the Bodleian, throws light on the theories held by the early English *physici*. Dr. Casey Wood describes the first scientific work on spectacles, published at Seville in 1623, and written by Benito Daca de Valdez, notary of the Holy Office (Inquisition); it is an extremely rare book, and of the eight known copies one is in Washington, one in the British Museum, and the others in Spain. Professor Howard Kelly establishes the claim of Dr. Lafayette Houghton Bunnell as the discoverer, in 1851, of the famous Yosemite Valley in California; and the stormy life of Dr. Charles Caldwell, of which we wrote last week, is sketched in detail by Dr. W. S. Middleton. There is a short editorial on William MacMichael, the author of *The Gold-headed Cane* and of the *Journey from*

[9] *Annals of Medical History.* Vol. iii (Serial No. 10), June, 1921. Edited by Francis R. Packard, M.D. New York: Paul B. Hoeber. Published quarterly. Yearly subscription, 8 dollars; single numbers, 2.50 dollars.

Moscow to Constantinople in the Years 1817–1818. Dr. F. R. Packard reviews, with well deserved praise, Professor Howard Kelly's and Dr. W. L. Burrage's *American Biographies.*

We have received from Messrs. J. and A. Churchill, the medical publishers, a copy of their new catalogue, which extends to 47 pages, and is illustrated by figures from a number of their publications. All branches of medicine, as well as several branches of science, appear to be covered.

Messrs. Churchill announce for early publication *An Introduction to Biophysics*, by Dr. D. Burns, Grieve Lecturer in Physiological Chemistry in the University of Glasgow, with an introduction by Professor D. Noël Paton, F.R.S.

Messrs. E. and S. Livingstone, of Edinburgh, have undertaken the agency of the American *Medical Record* in this country and the colonies.

APPLIANCES AND PREPARATIONS.

Pure Glucose.

GLUCOSE of special purity suitable for intravenous or subcutaneous injection was, it appears, until lately only obtainable from foreign manufacturers. We have now received from the British Drug Houses, Ltd., a sample of glucose prepared by them especially for this purpose, accompanied by a pamphlet summarizing its therapeutic applications and detailing the indications for its adoption, which are largely the same as those for normal saline solution; data for the preparation and administration of solutions are supplied.

Our analysis shows that the preparation is free from arsenic and the inorganic impurities which may be present in glucose being derived from reagents of manufacture. The glucose yields on incineration an ash consisting almost wholly of calcium sulphate, which amounts to no more than 0.2 per cent. It is free from acid products, and contains no perceptible amount of organic substance other than glucose. These characters distinguish the article as one possessing a degree of purity greatly excelling that defined by the tests of the *British Pharmacopoeia* for pure glucose, and one which is well suited for intravenous or subcutaneous injection.

A sample of the same product rendered anhydrous was also submitted to us by the same firm and found on analytical examination to be equally satisfactory. This preparation is made specially for use in the bacteriological laboratory, and also as an excipient for hypodermic tablets.

A Tonsil Haemorrhage Clamp.

Mr. COURTENAY YORKE, Aurist and Laryngologist to the Liverpool Stanley Hospital, etc., has designed a tonsil haemorrhage clamp which presents the following features: (1) Lightness; the weight is just over one ounce and consequently when in use causes no dragging pain. (2) The inner blade terminates in a small disc, roughened on the inner surface and intended to serve as a wool carrier. (3) The outer blade ends in an elongated plate, which makes counter-pressure behind the angle of the jaw. This plate is pivoted at its centre, so that it can be adjusted for use on either side. When the instrument is to be applied wool or ribbon gauze is made secure to the roughened disc so as to provide a soft rounded pad of requisite size. The counter pressure plate is set so that it is concave forward and inclined downwards and forwards. The blades are now widely opened and the inner one carried into the mouth until the pad enters the tonsil wound cavity. On closing the instrument the counter-pressure plate applies itself, automatically and without any guidance, to the side of the neck just behind the angle of the jaw. It only remains to adjust the pressure until the wound is sufficiently firmly held between the two blades. The application of the clamp causes very little discomfort, and one can easily be used on each side at the same time. As the act of swallowing cannot take place while the clamp is fixed, it is necessary to incline the patient's head so that the mouth contents can dribble out. The same instrument is serviceable at all ages; the size of the pad, however, must be adapted to the extent of the tonsil wound cavity. In sensitive patients a preliminary cocaine spraying of the fauces and the use of morphine will be helpful, while, if desirable, the pressure pad may be moistened with adrenaline or other styptic. The instrument is made by Messrs. Mayer and Phelps, London.



THE ADRIAN BROWN MEMORIAL LECTURE.

ADRIAN BROWN was the first Professor of the first established University School of Brewing in this country, and the first memorial address in his honour was delivered by Professor Henry E. Armstrong at Birmingham University in February last. It has since been published in the *Journal of the Institute of Brewing* (vol. xviii, New Series, 1921, pp. 197–260). Under the somewhat forbidding title, "The Particulate Nature of Enzymic and Zymic Change," Professor Armstrong has conceived and brought forth a most fascinating account, not only of the man who was a striking and lovable person, but more specially of his subject, and tells in quite poetic strain the stories of the barley-corn and the yeast-cell, which are veritable fairy tales of scientific endeavour and advance.

There is much in the lecture which appeals to the technical chemist, and it is the thesis that enzymes are never in true solution which gives its title to the address. But this conception, important as it is, forms after all but a small portion of the work, and more general interest will be felt in the wider issues which are raised. Just as the neighbouring town of Burton-on-Trent played so important a part in the development of Adrian Brown's genius, so also it influenced Professor Armstrong when he sang the praises of its chief product; not the beer of the present day, or its predecessor that of the war days, but of real beer with bottoms, not filtered and refined almost beyond recognition, as is the custom nowadays. Just as when reading Dickens's accounts of good square meals the appetite is stimulated, so when one hears of Professor Armstrong's recollections of real good drinks, told with gusto and accompanied with snatches of verse, the feeling of healthy thirst arises in the reader. The teetotaler stands revealed as a puny person and the prohibitionist as a pretender, as one scans Armstrong's scathing sentences on each. Even the physiological investigators who have attacked the problem do not escape. To investigate the effects of alcohol by estimating the rate at which a typist can work is declared to be childish. Suet pudding for lunch has much the same effect, yet the food reformer has not yet called suet pudding a drug nor classed it with morphine as a depressant. One of the many shibboleths our author takes the opportunity to expose is the present-day cry for organized research. True investigators are born, not made, and to expect real research from committees appointed *ad hoc* cannot but result, he thinks, in disappointment. Professor Armstrong with prophetic instinct looks forward to a glorified Burton-on-Trent, which will not only brew good beer, but will form the centre of work out of which many biochemical problems will be solved, for, after all, are not the bodies of the higher creatures, man included, congeries of cells akin to the yeast cell?

The story of Pasteur's work, which started from the examination of tartaric acid crystals, and which was diverted into the biological groove by the accidental observation that a mould preferred (to use with apologies this vitalistic subterfuge) to thrive upon one of the isomers and not the other, has never been better told, nor do I remember to have seen more clearly put the meaning of the asymmetric carbon atom and its mirrored image, and the important part it plays in nature.

The share in the rise of the science of brewing taken by other chemists, such as Horace Brown, Adrian's half-brother, Cornelius O'Sullivan, Griess, Böttinger, Emil Fischer and others, is outlined in a most interesting manner. But the contributions of physical chemists working, as so many do, in circumscribed grooves, meet with but little favour; their work, moreover, is obscured by their love of mathematics. The modern tendency of numerous biologists to express their results in formulae rather than in the King's English is a great bugbear to Professor Armstrong. As Huxley insisted, you get little out of the mathematical mill but what you put into it; unless the mill is worked with brains it cannot be effective. "The men in our ranks who have worked it have too often been chemists but superficially, and being without the sympathy which comes only of understanding have failed to notice the many factors at work." Whatever faults Professor Armstrong has, fear of plain speaking is not one of them; nor can he be accused of narrowness in his sympathies. Since he has turned during latter years to the biological aspect of chemistry and recognized its overwhelming importance, he appeals directly to the physiologist and to the medical man.

His address is so full of biological meat that it is difficult to make a selection from the mass of original thoughts he presents there, but to comment on all would mean an article longer than the lecture itself. I will therefore be content with one more reference, and this to a point of nomenclature. The word "vitamine" has for long stunk in the nostrils of the chemist. The loss of the final "e" has deprived it of much of its sting, but Professor Armstrong prefers to get rid of it altogether, and proposes in its place the word *advitant*. If only its coiner had been the first in the field! Vitamin is now, one fears, firmly rooted; one can only regret the difficulty there always is in uprooting these ill-advised expressions; still, if such be possible, *advitant* as a substitute appears free from all objection.

W. D. HALLIBURTON.

THE BALTIC INTERNATIONAL CHOLERA CONFERENCE.

IT appears that conditions in Russia are reaching a point that may have serious effects upon the health of Europe. One of the most productive districts of Russia, formerly the granary both for that country and for Europe, has been stricken by drought, which has destroyed the crops and reduced the Russian people to a state of famine. An emigration that is almost a panic has started, we are told, from the famine districts, and the horrors of the flight of those starving people have been increased owing to the fact that such diseases as cholera, typhoid fever, and scurvy continue to follow them. The districts from which the emigration started are stated to be already so affected by cholera that combative measures are impossible in present circumstances. The cholera epidemic is gradually spreading over the country, and the rest of Europe is faced with the danger of cholera. The three Baltic states, Latvia, Esthonia, and Lithuania, have decided, therefore, to assume the responsibility of making a sanitary cordon against the spread of the disease. A Baltic conference was suggested by Lieut.-Colonel Edward W. Ryan, M.D., the American Red Cross Commissioner to Western Russia and the Baltic states, and this conference was held in Riga from July 25th to 27th under his honorary presidency, with the Assistant Director of the Latvian Health Department, Dr. Kivitzki, in the chair. Dr. R. Adelheim of the University of Riga has prepared a report of the deliberations of this conference, which has been forwarded to us at his request by Colonel Ryan.

The conference agreed to adhere to the Paris Convention of 1903-1911, and it was decided to consider the decrees of the Convention of Paris as binding for the three Baltic states, and to induce the representative Foreign Offices to take the necessary steps for their formal adherence to the Convention. As regards relations with Russia, the conference found that no official records on the cholera epidemic had reached the Governments of the three Baltic states, but that nevertheless official papers in Russia did not deny the existence of cholera. Owing to diplomatic difficulties the conference refrained from declaring immediately that Russia was affected by cholera, but agreed to the request of the respective Governments to apply to the Soviet Government for immediate information on the question. The Esthonian representative said that his Government had some time ago applied to Russia for this information, but no reply had yet been received. Should, however, the reply of the Soviet Government to the inquiries of the conference not be received in the near future the Baltic states would of necessity proclaim Russia as an infectious country, and this decision would be followed by a strengthened frontier protection. It was agreed by the conference that whatever the reply of the Soviet Government should be, provided it contained confirmation of the existence of the epidemic, the whole of Russia was to be declared as infected by cholera and action taken according to Article 8 of the Convention.

The further work of the conference consisted in dealing with the internal measures to be taken against cholera, and unanimous agreement was reached on this subject. A restriction of railway traffic was found to be necessary in order that the health departments might confine the right of railway travel to such persons only as could show a certificate of health issued by the local authorities. Compulsory vaccination against cholera was not provided for as an invariable rule, but the medical officer in charge was authorized to apply compulsion should circumstances call for such action. The question of preventive measures on the adjacent frontiers was further dealt with, and it was agreed that there should be no interruption of trade and traffic, and therefore no frontier closing. The medical staff in a border zone twenty kilometres wide were to report mutually, through the frontier authorities, all cholera cases which occurred.

In order to co-ordinate the work of the three Baltic states it was decided that their bacteriological institutes should exchange as frequently as possible their epidemiological and bacteriological observations. The Governments of the Baltic states were requested to convoke periodical sanitary conferences and to form a permanent central bureau of representatives of the three states with the duty of examining health conditions. During the discussion the hope was expressed that this bureau might gradually grow into an Eastern Europe international sanitary board. As regards the measures to be taken in harbours, these were in conformity with those provided for in the Convention of Paris, Latvia establishing two observation points on the river Dwina in order to lock up the timber rafting, and similar measures were to be undertaken by the other states.

As soon as Russia should be definitely declared to be infected by cholera it was agreed to apply a strengthened military frontier protection, the three States closing their frontier with Russia; the exchange stations for flax and salt were also to be closed, as well as the other transit stations, with the exception of certain notified border stations. Should a cholera case occur in a train all passengers were to be considered as contagious, and kept under supervision for a definite period. Infected refugee transports were expected to arrive within a short time at the border stations, and it would be necessary to submit these refugees to observation in quarantine stations before they set off for other places. The position of Latvia was especially hard in this respect, as Lithuanian refugees would also pass through Latvian territory on their way home. Latvia possessed only one quarantine station, with accommodation at present for 2,500 to 3,000 people, and not only would it be necessary to enlarge this quarantine station, but another still larger had to be established. A shortage was reported in essential equipment such as beds, bedding, bacteriological apparatus and instruments. It was decided by the conference to request the aid of the American Red Cross in organizing European relief work, so that the first wall against cholera should not be in danger of collapse, and the infection spread from the harbours and the borders of the Baltic states throughout the world.

THE WEST INDIAN MEDICAL CONFERENCE.

THE West Indian Medical Conference, which was held at Georgetown, British Guiana, from June 28th to July 13th, was the second medical conference ever held in the West Indies, the first being the Quarantine Conference of 1904. The delegates to the Conference were: From Barbados, Dr. John Hutson, O.B.E., Public Health Inspector; from British Guiana, Dr. E. P. Minett, Government M.O.H.; from Trinidad, Dr. John Dickson, Deputy Surgeon-General; from Grenada, Dr. G. W. Paterson, Colonial Surgeon; from St. Lucia, Major H. E. Sutherland Richards, M.C., Chief Medical Officer; from Jamaica, Dr. E. D. Gideon, District Medical Officer. The London School of Tropical Medicine was represented by Professor R. T. Leiper, and Dr. John Anderson, of the Filariasis Commission. A representative from Dutch Guiana was also present in the person of Dr. J. Wolff, Government Bacteriologist of Surinam. The Conference was one of Government medical officers, called at the request of the Secretary of State for the Colonies, and was of an official character. Unfortunately, the colonies of British Honduras, the Bahamas, the Leeward Islands, St. Vincent, and Bermuda, were not represented. His Excellency the Hon. Cecil Clementi, C.M.G., the Acting Governor, presided, and the two vice-presidents were Professor R. T. Leiper and Dr. W. G. Boase, Acting Surgeon-General of British Guiana. Dr. E. P. Minett, Medical Officer of Health for British Guiana, acted as secretary of the Conference.

In his opening address the Acting Governor said that the most fundamental questions in every community were, could the inhabitants of the country be kept in good health? and did the population show year by year a natural increment? If these questions could be answered in the affirmative, the community was sound at the core; if the

answer was in the negative, then there was something wrong in the State.

From an administrative point of view one of the most interesting papers read during the Conference was that by Dr. Q. B. DE FREITAS on "Some difficulties of medical practice in British Guiana." He referred to the large size of the districts, to the insanitary state of the villages, and to the fact that in cases requiring hospital treatment the patient's friends were often unwilling for him to go into hospital owing to prejudice, ignorance, the great distance to be covered, and lack of means. Frequently a doctor was called in too late, and the ignorance of the people of the means of spread of infection made many difficulties. There were myriads of flies, there were no latrines, and drains were often stopped up. Frequently in infectious cases the district medical officer was not called, and the first intimation he had was a telegram from the medical officer notifying the case. Sometimes contacts were not inoculated owing to the delay in notifying the district medical officer of the diagnosis. Drinking water was of bad quality and insufficient quantity. There was a lack of trained assistance at childbirth, and there was difficulty in prosecuting unregistered midwives owing to lack of evidence. The examination of meat exposed for sale, in which tubercle might be present, was neglected. There was a lack of control of venereal disease. Building sites were often unhealthy and the dwellings of the people overcrowded. There was insufficient control of cow-byres and swine; cow-byres were frequently close to the houses and swarmed with flies, and thus food was contaminated. In uncontrolled areas vegetation often blocked the public roads. In country districts deaths were often uncertified; the villages were visited once a week by the Government Medical Officer, and in his absence the police N.C.O. decided if the death should be reported to the coroner or not. The discussion revealed the fact that there was no registration of deaths in Barbados, and that the infantile mortality there was the highest in the West Indies.

Miss CLAPHAM subsequently read a valuable paper on "Nursing in the West Indies," and pointed out that the provision of a nursing home was essential, and the introduction of a few trained English nurses would be most beneficial. Dr. MINETT referred to the excellent beginning made in local teaching by the appointment of a board of examiners by the Royal Sanitary Institute in Barbados, Trinidad, and British Guiana; he considered that hygiene ought to be taught in the schools. The interesting statement was made that there was little tuberculosis or leprosy and no filariasis in Grenada, but there was malaria there. On the contrary, filariasis, tuberculosis, and pellagra were prevalent in Barbados, and leprosy was found there, but no malaria. The papers by Mrs. MINETT, M.D., and Dr. WISHART on infantile mortality and child welfare were interesting and up-to-date, and Dr. Wishart also read a valuable paper on the sanitary and health problems of Georgetown. Dr. WOLFF said that the infantile mortality was lower in Paramaribo than in British Guiana, although more organized work was done in the latter. He put it down to the fact that midwives had two years' training at the military hospital at Surinam.

At the conclusion of the discussions of the different subjects, the delegates to the Conference passed the following series of resolutions, which were forwarded to the Secretary of State for the Colonies:

1. The most modern methods of promoting infant welfare, personal and public sanitation, and hygiene should be introduced.

2. In the interests of the health of an immigrant population in the West Indies there were recommended: (*a*) the provision of a pure water supply, (*b*) efficient surface and soil drainage, (*c*) a properly organized system of disposal of refuse and excreta, (*d*) effective control of mosquitos, and (*e*) the stringent enforcement of Public Health Ordinances and Regulations.

3. The West Indian Governments (i) should instruct their Agricultural Departments to promote the rearing of small live-stock by the labourers, to provide a suitable proportion of animal pretein for their daily dietary; (ii) should introduce educational propaganda in the schools to promote a knowledge of food value; and (iii) should consider the question of subsidizing local food industries, such as fishing, and the relaxation of duties on imported protein foodstuffs.

4. A survey of individuals in various districts of different colonies should be made to obtain information concerning local and racial factors which result in poor physique and industr al inefficiency.

5. A system of control of midwives should be inaugurated, including methods of training, registration, and supervision by a central authority.

6. The registration of stillbirths should be instituted, with confidential notification of miscarriages, in connexion with measures for infant welfare.

7. The West Indian Governments should adopt school medical inspection as a routine procedure.

8. Restrictive measures for venereal diseases were required, to include educational propaganda and the provision of free and confidential treatment at existing institutions.

9. Alastrim (recently epidemic in Jamaica) should be regarded as small-pox, and research as to its nature should be undertaken.

10. Revaccination of the population should be brought into force.

11. For the control of malaria there were recommended: (*a*) Strict observation of the antimosquito ordinances, (*b*) special attention should be given to the value of screening houses and institutions, and (*c*) mosquito netting should be generally used.

12. The diagnosis of yellow fever should be based on clinical signs and symptoms until an accurate diagnosis by laboratory methods was discovered, but there should be no relaxation of antimosquito measures.

13. The isolation of lepers after notification should be instituted, and arrested cases of leprosy should not be discharged from leper asylums under any conditions.

14. A supply of antitetanic, antidysenteric, and other serums and vaccines should be provided.

15. A united West Indian medical service should be established for the following reasons: (*a*) To provide for the granting of leave to medical officers at regular stated intervals, and for definite periods for considerations of health and for post-graduate study, thereby increasing the efficiency of the service; (*b*) to provide a recognized procedure for effecting promotion, which under present conditions, especially in the case of the smaller colonies, does not exist, thereby supplying inducements to good work and securing contentment; (*c*) to provide for the easy transfer of medical officers from one colony to another for limited periods for the interchange of ideas, and for enabling such officers to become acquainted with the varying conditions of practice in colonies other than their own, to the mutual benefit of the colonies concerned; and (*d*) to provide means to secure for the benefit of all the colonies the advice of officers specially qualified in all matters relating to medical and sanitary organizations.

16. The other colonies should adopt the recent leave regulations of British Guiana.

17. The early appointment of a sanitary commissioner for the West Indies was necessary, to be under the Imperial Government, and independent of local control.

18. The provision of an adequate whole-time staff for the Government Bacteriological Laboratory was necessary.

19. The training of the medical staffs in the Schools of Tropical Medicine should be compulsory for all officers before entry into the service.

20. All officers already in the service should take such a course, and be provided with free transport, full pay while taking the course, and the time so spent should not be regarded as leave of absence.

21. A West Indian medical magazine should be published and circulated.

22. The Colonial Office should approach the London School of Tropical Medicine to undertake research in the West Indies, and the Colonial Governments should secure local support for the specialists sent.

23. A West Indian medical conference should be held every three years.

The Acting Governor congratulated the delegates on their resolutions, and welcomed especially those recommending improved drainage and the provision of a supply of pure drinking water in British Guiana. He announced that a local loan of five million dollars for a permanent sea defence scheme was about to be raised, and said that he regarded it as an insurance, and the necessary preliminary to any effort to drain adequately the coast lands. He pointed out that the area now colonized in British Guiana was partially a reclaimed swamp, 4 ft. below the level of high spring tides.

ON the one hundred and sixteenth commencement day of Bowdoin College the Bowdoin Medical School, U.S.A., closed its doors after an existence of more than one hundred years. The reason is that the college officials feel that they are no longer properly able to maintain the medical school with the financial support available. The degree of Doctor of Medicine was conferred on the last commencement day upon only eight students.

ACCORDING to the *Boston Medical and Surgical Journal*, California, which has just added "Anaesthesiology, Hours 32" to the "minimum requirements for a physician and surgeon certificate," is the first State in the United States of America to place anaesthesia on the list of required subjects in the medical curriculum. The hope is expressed that it will shortly be transferred from the "elective" to the "required" list in every State in the Union.

British Medical Journal.

SATURDAY, SEPTEMBER 24TH, 1921.

THE CLASSICS IN EDUCATION.

THE committee appointed by the Prime Minister "to inquire into the position of classics in the educational system of the United Kingdom" has issued its report[1] in a volume of some 330 pages; it is an important contribution to our knowledge of the educational system of our own country. The committee consisted of twenty members, with the Marquess of Crewe as chairman and Mr. Christopher Cookson as secretary, but included only one man of science, Professor A. N. Whitehead, F.R.S., who occupies the chair of applied mathematics at the Imperial College of Science.

Nearly all the members of the committee are or have been engaged in teaching the subject of which the report treats, and while this experience gives their opinions great weight when dealing with measures for the improvement of classical training, it tends rather to detract from their authority when they come to speak of the value of such training for the general life of the nation. Nevertheless the report bears every evidence of an attempt at impartiality despite obvious gaps in the evidence collected. A large number of witnesses were examined and many others submitted memoranda, but we have not been able to discover the name of a single medical man among those examined, and only an insignificant number of distinguished scientists were called; these are omissions which seriously diminish the value of the report.

There are very few educated men in this country—certainly very few in the medical profession—who do not realize the value of the classics in education and who do not desire that the fine discipline they can give, the great lessons they teach, and the strength and consolation their wonderful literature affords, shall be fully open to succeeding generations of Englishmen. Medical men, at least as much as any other class of the educated community, observe with regret the signs of decay in the study of the older humanities, and are eager to hear of remedies. But they know well that the first step towards treatment is diagnosis. *Quomodo curares si causas ignorares?* All who read the report in this spirit and consider how and why the classics have passed into the dangerous position in which all admit they now are, will naturally throw back their memories to their school or college days to see if their own experience can aid them to explain the present situation.

The causes of the classical decline may be divided into two groups, external and internal. Since the war and for some time previously, education has been increasingly vocational, and there has been a tendency to specialize earlier and earlier. It is a tendency that has probably had, on the whole, a deleterious effect, not only upon the intellectual calibre but also upon the efficiency of those entering the learned professions. Teachers have been pestered with the demand for "useful studies" by short-sighted parents who know nothing of the art of teaching and little of the ultimate bases of either success or happiness. For this state of affairs the teacher of classics has been in no way responsible, and from the criticisms that arise from it every man of sense and judgement will desire to protect him.

But some at least of the difficulties placed in the way of the classics are of internal origin. Not only have these studies been badly taught, sometimes very badly, but they have been enforced in the training of those for whom they were clearly unsuitable and who were often incapable of profiting by them. Young pupils, often of active and excellent mental equipment, have been deprived of the kind of instruction from which they might have profited by the short-sightedness of the classical teachers, who, ensconced behind the parapets erected by the universities, were at one time not only unprogressive themselves, but also among the most ardent and effective opponents of the introduction of newer studies—notably science, modern languages, and history—into the school curriculum. Fortunately this type of opposition is rapidly diminishing, if it has not already disappeared, but it has left behind a trail of difficulties if not of bitterness, which would have been easier to counter at an earlier stage and with a more willing, intelligent, and unselfish surrender of an impossible position.

So far as school instruction is concerned—and it is the schools and not the universities we are discussing—the question can really be divided into two parts, which treat respectively of the scholar who will leave school between 16 and 18 with a school-leaving certificate which exempts him from the entrance examination of many universities, and of the scholar who leaves school at about 16 without this certificate. For the first class, from which the majority of medical students is probably drawn, there can be little doubt that a training in at least one ancient language is an asset which will stand him in good stead through life. It is true that at some universities he can obtain a degree without any knowledge of the basic language of western civilization; but without some acquaintance with Latin a student is not as fully equipped as is desirable for entry into one of the learned professions. Even if he is unable to use the language in a literary sense, the power and assurance that the training gives, the insight it provides into the nature of his native tongue, and, above all, the insight into the nature of language itself, is obtainable in no other way. Almost all who have examined the evidence in an impartial spirit are in favour of the retention or introduction of Latin in the curriculum of boys and girls who are to attain the school-leaving certificate standard, even though they will have no direct use for this knowledge.

The remaining class is in a different position. For those who leave school at or soon after 16, a class which includes a certain number of medical students, the question is not so much "what can be included?" as "what may be left out with least danger?" We may divide the types of study of such children into five classes—Mathematics, Science, History, Literature, and Language. Each of these types of study has its own advantages and trains certain sides of the mind and character, but all, with the possible exception of mathematics, are alike necessary for any good education, for any training that will enable the man—of whom the child is the father—to exercise all his faculties in happiness and completeness, with advantage to himself and to his fellow citizens. The first three classes we are not now considering, the last two demand our attention. Literature, a department once much neglected in schools but now happily

[1] Report of the Committee appointed by the Prime Minister to inquire into the position of classics in the educational system of the United Kingdom. London: Published by H.M. Stationery Office. To be purchased through any bookseller. (Price 2s. net.)

brought into greater prominence, can be studied by children in this class only in the mother tongue. By children who leave school at 16 a foreign language, whether classical or modern, can hardly be mastered sufficiently for literary appreciation.

There remains the last type of study, that of language. The primary need of the student must naturally be for a correct working knowledge of the structure and nature of his own tongue, a condition all too rarely fulfilled, and such a knowledge, everyone, we believe, agrees, will be greatly aided by even a slight acquaintance with a foreign language. The choice in at least 99 per cent. of cases will be between (*a*) Latin, (*b*) French, (*c*) Latin, together with French. Undoubtedly in favour of Latin is the fact that no other tongue gives such an insight into the nature of language, and no other demands such exactness of thought. But there are certain very serious drawbacks. This degree of exactness is only brought out in the process of composition, and the pupils that we are considering will hardly reach the level of composition. It is true that as a substitute for composition sentences may be set to be turned into Latin, but this is a dull and tedious discipline, deadening alike to teacher and to taught, and largely responsible for the real hatred of the classical tongues often encountered among pupils at school and sometimes carried into after-life. Drill in set exercises may be necessary, but should be reduced to a minimum in those whose career is not to be of a literary kind. Yet without either composition or set exercises, and with no facility in reading or power to appreciate the literature, it is indeed difficult to see what the teaching of a language can do. Any objection against Latin applies with greater force to a combination of Latin and French. The level of composition cannot be attained, and so the main value of the subject is missed.

There remains to be considered only the teaching of a modern language, and this, in an imperfect world, with imperfect teachers and imperfect pupils, is on the whole the best of the three alternatives. It is true that French forms by no means so rigorous a mental discipline as Latin; it is true that its constructions are more idiomatic than logical, that it is less exact in its modes of expression, too easy and too much like English in form and feeling to give the degree of insight into the nature of language afforded by Latin. But, on the other hand, it is sufficiently easy for the "composition" level to be reached, with average teaching capacity; it not only provides an equipment that may be directly applied vocationally, but, even more important, it can make life happier and fuller and more worth living. While, therefore, we feel that the investigations of the Classical Committee have abundantly established the claims of the classics to form a part of the curriculum of all pupils who remain at school after the age of 16, we are unconvinced by arguments adduced in favour of teaching it to those who will never attain the level of the leaving certificate.

The case of Greek we must consider more briefly. The world's debt to Greece is so vast and varied that all must wish a knowledge of it to be widespread among our educated citizens. Greek literature is, perhaps, the noblest and the most human that the world has yet seen; it can never fade from the memory of the human race, least of all from the memory of medical men. Was not our art the creation of the Greeks, among whom it flourished and progressed for nigh a thousand years, and have they not given us our method of investigation, together with the basis of our clinical, anatomical, and physiological knowledge, and even our very nomenclature? Yet we must face the facts. Greek has now been abandoned as a compulsory subject by every university in the country. It is unlikely that boys and girls who are early destined for scientific pursuits and have little linguistic power will have much opportunity for its study. Many lovers of Greek are depressed and see little hope for their study in the general education of the rising generation. Yet the signatories of the report—and we agree with them—see many hopeful elements in the situation.

There are, moreover, certain special lines of work to which Greek scholars may in the near future devote themselves. The activity in the work of translation from the Greek that has been so pronounced of late years, and not least in the department of medicine, answers a real demand on the part of the reading public for a wider and deeper knowledge of the thought and activity of Greece; it is no ignoble demand, and one which it is surely a high function of Greek scholarship to meet. But for the ordinary boy or girl who is destined for a scientific career something can be done to arouse interest in the glory that was Greece. We need simple textbooks that will teach something of the thought and art and science of the Greeks. Some masters, too, finding the deeper study of the Greek language crowded by necessity out of the curriculum, have hit upon the device of spending a few hours each term in teaching the bare alphabet of Greek and in giving a small vocabulary, and then, to satisfy the curiosity thus aroused, giving in the Greek a few well-known sentences—for instance, from the Lord's Prayer. It is an example worthy of imitation; a knowledge such as this can be conveyed as a mere recreation in the course of a very few hours. It is better than nothing, and is probably about all that is in the end retained by the average man who has had a classical training at school. It will at least enable him to use a Greek lexicon, will aid him in understanding the etymology of the large scientific vocabulary of Greek origin, and may even help him to take up the language again in later years. It was all the school equipment that was received by Francis Adams, the most eminent Greek medical scholar that this country has produced in modern times.

The classics may have to occupy a new place and fulfil a new function in the education of the generations that are to be, but the friends of the classics may assure themselves that those generations will insist on a continuation and extension of the study of those civilizations which form the very basis of our own.

LYMPHOSARCOMA AND ALLIED CONDITIONS.

THE clinically and alliteratively allied diseases lymphosarcoma, leucosarcoma, lymphoid leukaemia, and lymphadenoma have been a fertile field for speculation and attempts at scientific classification, but the inherent difficulties have been rather aggravated than smoothed by the nomenclature thus introduced. The term "lymphosarcoma" has been particularly unfortunate in the different meanings that have from time to time been attached to it. In 1863 Virchow used it for lymphadenoma or Hodgkin's disease, the latter name being invented by the late Sir Samuel Wilks in 1865; Kundrat in 1893, allying it more closely with sarcoma, applied this name to a growth arising locally in lymphatic tissue, infiltrating the surrounding structures, and giving rise to metastases like a true malignant neoplasm. In this country it has often been loosely used to describe any form of

sarcoma in lymphatic glands, and from the morbid histologist's point of view it has been most satisfactorily confined to a round-celled sarcoma with a delicate reticulum resembling that found in lymphoid tissue, thus indicating its architecture and not its origin. Dr. Webster,[1] however, in a recent elaborate paper, to which further reference will be made, includes under the heading of lymphosarcoma all cases of lymphoid tumour or general lymphoid hyperplasia without leukaemic changes in the blood. Leucosarcoma, a term somewhat unfamiliar in this country, was coined by Sternberg in 1908, and has fortunately, perhaps from its youth, only one signification—namely, more or less extensive invasive tumours of lymphoid tissue in various situations, especially the thymus, the mediastinum, and the retroperitoneal space, with blood changes of the acute leukaemic type. Cohnheim's label of "pseudo-leukaemia" for a condition resembling leukaemia, except that the blood changes are absent, was appropriate enough in 1865, but is now mainly of historical interest, for a differential count would probably relegate many such cases to the category of aleukaemic leukaemia or examples of leukaemia in a phase without an increased number of leucocytes but with characteristic changes in the proportions of the varieties of white cells present.

The monograph by Dr. L. T. Webster, of the Pathological Department of the Johns Hopkins University, to which we have already referred, is entitled "Lymphosarcoma, lymphatic leukaemia, leucosarcoma, Hodgkin's disease"; in it he gives details of 123 cases of these conditions and draws some interesting conclusions. In the first place he separates Hodgkin's disease or lymphadenoma as a distinct disorder, which can be definitely diagnosed by microscopical examination of a single gland, and an accurate prognosis thus provided. Lymphosarcoma, on the other hand, cannot always be diagnosed microscopically, and in the early stages it is unwise to give a certain prognosis. Emphasis is laid on the close relationship between leucosarcoma, lymphosarcoma, and lymphoid leukaemia, for leucosarcoma appears to combine the features of lymphosarcoma and lymphoid leukaemia, and in certain circumstances a localized lymphosarcoma may become generalized and, with a blood picture of lymphoid leukaemia, terminate as leucosarcoma, the three conditions being different manifestations of the same disease; the term "lymphadenosis, leukaemic or aleukaemic," is suggested to express this idea and to simplify classification until the etiological agents are discovered. In early life the primary focus may be in the small intestine or mediastinum, and spreading locally or generally, it may run a rapid course to end as leucosarcoma; later in life the primary focus may be anywhere and the course protracted. In many respects the process is comparable with that in tuberculosis, which in the young, starting in the abdomen or chest, subsequently generalizes, and in adult life may assume odd forms—renal, uterine, cutaneous, and so forth.

The lymphoid infiltration variously designated "lymphosarcoma," "leucosarcoma," and "lymphoid leukaemia," is, from Dr. Webster's point of view, best regarded not as a neoplasm but as a direct response to some chemiotactic agent derived from a living organism; so long as this agent remains confined to one part of the body the lymphocytic accumulation remains local, but when the first spreads the second spreads also. Another point of prognostic significance may be provided by observations made during microscopic examination of glands removed during life for diagnosis; evidence of amoeboid movement of the lymphocytes, as seen in tissue culture or by their spindle or elongated forms in fixed sections, indicates a rapidly fatal course.

[1] L. T. Webster, *Johns Hopkins Hosp. Reports*, Baltimore, 1921, xx, 251 314.

THE INSURANCE MEDICAL SERVICE.

SUGGESTIONS have recently been made in the public press, and by the officials of some approved societies, that there will be a proposal to reduce the capitation fee on which the payment to insurance medical practitioners is based. These suggestions were preceded by persistent unfavourable criticisms of the treatment of insured persons by practitioners. There may have been individual cases in which such criticism was justified; but to apply it to insurance practitioners at large, or to the insurance medical service in general, is palpably unfair, and is, indeed, a libel on the medical profession. There is no doubt that insurance practitioners, as a whole, have given their best services, abundantly, to these patients and have faithfully carried out their obligations. It may be that a wide inquiry, properly conducted at the appropriate time, would be a good method of reducing such ill-informed criticism to its proper proportions.

If an inquiry of this kind were determined upon by the Government it is obvious that the proper time for any reconsideration of the capitation fee would be when the results of such inquiry were made known. Meanwhile it can only be said that to reduce remuneration already considered by most insurance practitioners to be inadequate does not seem a reasonable method of improving the character of the service given, and that the circumstances in which the Arbitrators' award of 11s. was given, on March 5th, 1920, do not seem to have changed at all in any material respect. It is to be hoped that the suggestions that such reduction is to be proposed are irresponsible. If not, a situation will arise of great importance to the medical profession and to the public, and the organized bodies of the profession must be prepared to defend their own and the public interest.

The Insurance Acts Committee has issued to Panel Committees a report of its action during the past year, together with recommendations on various matters, including that of the suggested reduction of the capitation fee. The part of the report dealing with the question of remuneration is published in this week's SUPPLEMENT. The Insurance Acts Committee is the recognized executive of the Conference of Local Medical and Panel Committees, and its policy is determined by the decisions of that body. Before the next annual Conference is held, on October 20th, Panel Committees throughout the country will have had an opportunity of discussing the whole question. It will be for the Conference to decide the action which it considers necessary and for the Insurance Acts Committee to carry out that policy.

ENERGY VALUES OF FOODS.

IN war time the computation of energy values yielded by different diets became the principal occupation of some and an incident in the life of most medical men. Although a few special analyses were published, the great bulk of the calculations were based upon the figures printed in Bulletin No. 28 of the United States Department of Agriculture, which contains the valuable work of Atwater and Bryant. No work on this scale had been undertaken in England, and Sir William Horrocks, A.M.S., wisely directed members of his staff to undertake an inquiry, the results

of which are contained in a report by Dr. R. H. A. Plimmer,[1] who has produced a dictionary of analyses which will be the *vade mecum* of all having to deal with diets for many years to come. The range of foodstuffs analysed is very wide and the arrangement of the results convenient; a specially useful feature for the busy medical officer is the expression of the energy yields in terms of 100 grams, 1 oz., and 1 lb. The usual physiological factors—namely, 4.1 for protein and carbohydrate, 9.3 for fat—have been employed. As Dr. Plimmer remarks, a fuller study of the biological values of different foods is needed before a suitable standard modification to allow for loss through digestion can be accepted. At present a discount of 10 per cent. from the total energy value of a mixed diet is usually accepted. Dr. Plimmer cautions the reader that this, like any other dictionary, must be used with discretion. Not only is the proper basis of the food value of meat—to take one example—the lean rather than the whole, but the ordinary routine method of analysis does not discriminate between the flesh of the different animals. "Modern biochemistry is beginning to insist upon the nature of the amino-acid content of the protein, that is, upon the *quality* of the protein. It is not known whether the meat of different animals has the same composition in amino acids, nor is it known whether fore-quarter meat differs from hind-quarter meat, or the meat of young and old animals. The eye and palate can detect the poorer qualities of meat. These contain more gristle and elastic tissue; it is known that the protein of elastic tissue differs from other proteins in composition. The quality of such a protein and also gelatin is not so good physiologically as that of muscle protein." Another interesting note is on the difference in composition between fresh and dried eggs; the latter contain a larger proportion of undetermined substance, and Dr. Plimmer thinks that if the eggs used in making the commercial dried eggs have been kept before preparation a de-amination of the protein due to metabolic changes would explain the analytical results. Many people will use this book without fully realizing the great expenditure of time and the high order of skill which made its composition possible. Dr. Plimmer has performed a public service of great value, for which medical officers of health and medical superintendents will be especially grateful.

PREHISTORIC TREPHINED SKULLS OF GREAT BRITAIN.

IT is particularly during the holiday quarter of the year that the desirability of a hobby, or avocation in contrast to vocation or calling as the late Sir William Osler expressed it, strikes the medical man when for a time he gets away from his daily routine. He has doubtless a wide field to choose from, but on the strength of the dictum that "the proper study of mankind is man," there is much to be said for the selection of anthropology, especially as a medical man starts with considerable advantages in tackling this subject. Dr. T. Wilson Parry[2] at any rate must be of this opinion, for he has devoted much time and energy to a special branch of the subject; thus he admits to having travelled more than 250 miles to Cardigan, only to find that the Port Talbot skull did not show evidence of trephining as he had been led to suspect. In prehistoric times trephining was much in vogue in various parts of the world for causes other than organic disease, especially to relieve demoniacal possession, or the modern epilepsy, by the crude method of making a hole in the man's head for the exit of the evil spirit. Long before trephining was used for organic disease this operation was performed by the tribal medicine-men with this object, and the practice seems to have originated independently in many countries. France is very rich in neolithic trephined skulls; Dr. Wilson Parry refers to the stock in the Musée Broca and to a private collection of no less than 167 specimens in the possession of a medical man. Great Britain, on the other hand, is strikingly poor in records of this strange superstition. In the course of eight years' inquiry Dr. Wilson Parry has found only eight specimens with any pretensions to prehistoric trephination, one of these being the Port Talbot skull already mentioned; critical examination has reduced this small total very seriously. One is really an example of the well-known symmetrical congenital deficiency in the parietal bones in the skull of a microcephalic idiot, the considerable deformity of which may serve as an excuse for the opinion previously expressed by a medical man that bilateral primitive trephining had been done for troublesome manifestations; two other specimens illustrate posthumous trephining on empty skulls, possibly carried out in order to suspend them as trophies; another skull shows signs of bone disease and evidence that a sequestrum may have been hurried away by artificial means; another skull exhibits trephining for bone disease, but the patient must have died during or shortly after the operation, as there is no sign of any attempt at repair. Only two skulls show unmistakable evidence of trephining during life, and survival for a long time after, very probably with death from some quite independent cause; of these two one is very possibly not British nor prehistoric in date. From much investigation of the primitive method of trephining—and a visit to the Wellcome Historical Museum will leave no doubt that Dr. Wilson Parry has taken great trouble to perfect his knowledge—the operation is reconstructed, and it is pointed out that of natural objects used as surgical implements perhaps none could be more aseptic than freshly struck off flint flakes or newly chipped obsidian, and that this may explain why recovery after primitive trephining was not so uncommon as might have been expected.

CHLORINATION OF WATER SUPPLIES.

IN a circular issued at the close of last week to local authorities the Ministry of Health makes certain suggestions for ensuring the purity of water supplies in the circumstances now existing.[1] While there is said to be no immediate cause for anxiety, it is pointed out that the prolonged drought adds to the risk of water-borne diseases. Moreover, the prevalence of epidemics, particularly cholera, in some foreign countries, calls for special vigilance. The first and most effective line of defence against a polluted water supply is boiling; for obvious reasons this, however, is rarely practicable on a large scale or for any length of time, and resort must therefore be made to some other treatment of suspected water. During the war chemical disinfection, which had previously been looked upon with some disfavour for routine purposes, proved its value and practicability, and the best method of securing rapid and effective sterilization by chemical means is now recognized to be the use of chlorine.[2] This is most readily available in the form of chloride of lime (bleaching powder), but the liquefied gas or liquid preparations of chlorine can also be employed. By the adoption of chlorination during the war an unprecedented immunity from water-borne diseases was obtained in the British armies. The process is simple, and, as Sir Alexander Houston has shown, effective chlorination confers absolute, not merely relative, protection. Moreover, properly chlorinated water is not only quite innocuous, but can also be rendered tasteless to all but the most fastidious palates. The method is described in sufficient detail in an appendix to the Ministry of Health's circular, and the department offers its services to any local authority needing further guidance or information. General advice is given in the following sentence: "The occurrence of any outbreak of disease of a diarrhoeal nature, whether mild or severe, should lead to an examina-

[1] *Analyses and Energy Values of Foods.* H.M. Stationery Office. Through any bookseller. Price 6s. net.

[2] T. Wilson Parry, *Proc. Roy. Soc. Med.*, 1921, xiv (Hist. Sect.) 27–42.

[1] Ministry of Health Circular, No. 241, September 15th, 1921.

[2] "Water Purification in the Field," BRITISH MEDICAL JOURNAL, May 26th, 1917, p. 688.

tion of the water supply; and, if it is found to be of doubtful purity, measures should be taken forthwith either to provide a fresh supply from a source which is above suspicion, or so to deal with the suspected water, either by boiling or by chlorination, that there is no possibility of its serving as a means of spreading disease."

BRACHIAL PLEXUS LESIONS AND RUDIMENTARY RIBS.

MR. PERCY SARGENT'S paper on lesions of the brachial plexus associated with rudimentary ribs,[1] which contains an analysis of fifty cases operated upon, the majority having been traced for a period of two to twelve years, supplements his communication on this subject to the Clinical Section of the Royal Society of Medicine in 1913, and may with advantage be read in conjunction with Drs. Edwin Bramwell and Dykes's article on rib pressure and the brachial plexus recently noticed in our columns (August 27th, 1921, p. 332). These cases are not very rare, but they have, no doubt, often been regarded as examples of brachial neuritis or neuralgia, uniradicular palsy, progressive muscular atrophy, occupation neurosis, writer's cramp, or symmetrical atrophy of the hands. But, as Mr. Sargent points out, it must now be remembered that cervical ribs may be found in persons presenting similar symptoms but due to entirely different causes, so that there is a risk that futile operations may be performed on patients suffering from syringomyelia, toxic neuritis, and other conditions wholly unconnected with a coexisting cervical rib. In the discussion of the relation between anomalies of the ribs and the nerves constituting the brachial plexus, he refers to his examination of the composition of the brachial plexus during operations on a number of patients with rudimentary ribs, and concludes that though there is generally some prefixation of the brachial plexus associated with cervical ribs, and some degree of post-fixation with abnormal first thoracic ribs, this relation is by no means constant, and that the form and size of the abnormal rib do not bear any constant relation to the composition of the plexus. Indeed, if the plexus were always prefixed for a complete segment when a well developed cervical rib is present, symptoms should be absent; this often happens, but, on the other hand, the frequency of cases of cervical ribs with symptoms relieved by operation shows that the modified anatomical relations do not always work out satisfactorily. Mr. Sargent confirms Dr. Bramwell's conclusion that with a post-fixed plexus symptoms referable to the first thoracic root may be due to pressure exerted by a normal first thoracic rib. He finds that of the clinical forms of cervical rib that most often requiring operative treatment is represented by an abnormally large non-jointed costal process, continued onwards as a dense fibrous band to be attached to the first thoracic rib behind the sulcus nervi brachialis. He describes the symptoms as undoubtedly traumatic in origin; a sudden onset may be due to a strain, but the gradual appearance of symptoms results from the continued friction of the eighth cervical root or the lowest cord of the plexus caused by tightening of the band during respiration and movements of the arms; it is noteworthy in this connexion that nearly all the patients were engaged in active work. The symptoms are grouped into those due to damage of (1) somatic afferent fibres—namely, neuralgic pain and disturbances of cutaneous and deep sensibility; of (2) somatic efferent fibres—namely, wasting, weakness, and alteration of electrical excitability in the affected muscles; and of (3) sympathetic fibres—namely, circulatory disturbances (coldness, cyanosis, oedema) and certain paraesthesias (tingling, numbness, and feeling of coldness or swelling). The so-called "vascular" symptoms are vasomotor in origin and due to injury of the sympathetic fibres shortly after their entrance into the eighth cervical and first thoracic roots; the only instance in which Mr. Sargent has seen the subclavian artery pass over an abnormal rib was in a case of a rudimentary first thoracic rib. Analysis of the 50 cases showed that pain was cured in 19 cases and relieved in 8. As Sir W. Thorburn had stated in 1913 that he had never seen muscular wasting entirely cured, Mr. Sargent carefully criticized his 31 cases, and found that in 12 there was complete cure, in 12 incomplete improvement, and in 7 no improvement; the vasomotor symptoms were cured in 14 cases, relieved in 6, and not relieved in 2. Since the association of symptoms with cervical ribs has become generally recognized only in this century, it is interesting to note that Mr. Sargent has brought to light a case operated upon by Coote in 1861.

[1] P. Sargent, *Brain*, London, 1921, xliv, 95-124.

THE PROBLEM OF DEGENERACY.

IN a thoughtful and well-balanced paper, now reprinted in America, Dr. A. F. Tredgold has discussed the problem of degeneracy.[1] The experience and researches of the writer enable him to write with authority, and his views are of profound interest to the sociologist at the present time. By the term "degeneracy" is generally understood any marked falling away, either morally, mentally, or physically, from the average condition of the nation or race. Dr. Tredgold advocates a more restricted use of this term, and would regard degeneracy as the expression of a germ variation—an innate defect of potentiality. Those somatic defects which are due to inadequate or adverse environmental influences acting upon the embryo he prefers to include under the term "decadency." He discusses the difficult problem as to the causation of the "retrogressive" variations which lie at the root of social degeneracy, and refers especially to the views that germinal variations are to be regarded as the perpetuation of a defect which has existed in certain strains or stocks of the human race from the very beginning or from a simian ancestry; that they are spontaneous in origin, or that they have neither existed *ab initio* nor are spontaneous in origin, but are produced by the operation of natural processes and in obedience to natural laws. In the opinion of Dr. Tredgold the last is not only the most reasonable view in itself, but the only one which is supported by definite evidence; and although it is not yet possible to explain the manner of production of these germ variations, he contends that it is possible to advance certain considerations which carry us a step further towards the elucidation of the problem. Since differences of vulnerability of the tissues to disease exist in different individuals, so similar differences may exist in the case of the germ plasm. He suggests that in view of the evidence which is now available and is daily increasing, it is impossible to deny that germ cells may be adversely affected by the environment, and his own observations lead him to think that alcoholism, tuberculosis, and venereal diseases play an important part in this respect. The devitalization of the germ plasm thus produced has not only an unfavourable effect upon the immediately resulting offspring, but, since it is fundamental, may involve subsequent generations. The resulting degeneracy finds its commonest expression in a defective and abnormal constitution of the highest parts of the nervous system—in an impairment of neuronic potentiality which is germinal in origin, and may be transmitted generation after generation. Thus we have the pressing social problems of mental deficiency, insanity, and the various forms of inadequacy and instability. And however we may protect these abnormal types, create atmospheres to which they are able to make adjustments, endeavour to prevent or cure the various manifestations of their inferiority, the hereditary factor which Dr. Tredgold stresses lurks always in the background. At a time when the nation has been

[1] *The Problem of Degeneracy.* From the Smithsonian Report for 1918. Publication 2573. Washington: Government Printing Office. 1920. (Reprinted from the *Quarterly Review.*)

depleted of some of its best the eugenic problem becomes one of more than usual importance, and it is much to be hoped that the present need for economy may not react too unfavourably on essential health services. Those who are called upon to administer the Mental Deficiency Act—a measure directly concerned with the question of mental degeneracy — are certainly much hampered in their efforts by the present stringency in respect to financial assistance.

PUBLIC HEALTH IN ONTARIO.

On the completion of ten years' service in charge of the Provincial Board of Health for Ontario, Dr. John W. S. McCullough has published an interesting review of the progress of public health in Ontario during the last decade.[1] The earliest recognition of public health in Canada was the enactment of the Quarantine Act in 1794. The epidemic of cholera from 1832 to 1834 stimulated the Legislature of Upper Canada to action, and an Act to establish boards of health was passed by that body; but from this time to 1848 there was little or no further activity in respect to public health matters. In 1847, of 98,106 immigrants passed through the port of Quebec, over 5,000 died of typhus fever and were buried at Grosse Isle. An outbreak of cholera was doubtless the reason for an enactment establishing a Central Board of Health in 1849, and another outbreak in 1866 induced the Government to pass new regulations for the control of that disease. The confederation of the provinces of Canada took place in 1867, and in 1873 a Public Health Act passed in Ontario permitted the appointment of members of municipal councils and trustees of police villages to act as health officials—"local health committees," which were the forerunners of the present local boards of health. In 1882 the Provincial Board of Health for Ontario was established, and Dr. Peter H. Bryce was appointed permanent secretary, a post which he retained until 1904, when he became chief medical inspector to the Department of the Interior at Ottawa. He is the sole survivor of the early members of the Board, and public health development in Ontario and in Canada has owed much to his exertions. He has lived to compare the grant in 1882 of 4,000 dollars for public health services in the province of Ontario with approximately 550,000 dollars to-day. In Ontario progress in public health has been necessarily slow owing to the immense area of the province (some 403,000 square miles), the comparatively small and scattered population, and the difficulty of obtaining financial support from the lack of knowledge of the value of preventive medicine among the public. The ability and the energy of the successive medical officers, aided by the progressive spirit of the members of the succeeding boards, gradually brought about a change in public opinion. In 1912 the consolidation of the public health laws was secured, and the appointment of ten full-time district officers of health was provided for. There are now about 730 medical officers of health in Ontario, 90 per cent. of whom are part-time officers, and, as Dr. McCullough points out, "poorly paid at that." He makes the plea that the public must learn that prevention of disease is purchasable, and that, like everything else, cheap service is generally the dearest in the long run. This, however, appears be the biggest fly in his ointment, and he must be congratulated both on his publication and upon the progress which his province has made under his and his predecessors' guidance.

COURSES IN PSYCHOLOGICAL MEDICINE AT BETHLEM HOSPITAL.

To those who work in the field of psychological medicine, and, even more, those who propose to make their career in this branch of medicine, the possession of the diploma in this subject which is now granted by several universities has become a matter of importance, if not of necessity. To meet the demand for the instruction requisite for this diploma courses have for some time past been given at the Maudsley Hospital, and the Bethlem Royal Hospital has now arranged a full course of lectures and practical instruction, which will commence early in October. The course at Bethlem Hospital includes lectures and demonstrations on the anatomy, histology, and physiology of the nervous system; lectures on psychology, with demonstrations on experimental psychology; lectures on neurology, with demonstrations of the morbid anatomy and morbid histology of the nervous system; a series of lectures with clinical demonstrations on psychological medicine in its various branches; and a series of lectures with clinical demonstrations on mental deficiency. The lecturers include Sir Maurice Craig, Dr. S. A. Kinnier Wilson, Dr. William Brown, Dr. W. H. Rivers Rivers, Dr. E. D. Macnamara, Dr. A. F. Tredgold, Dr. W. H. B. Stoddart, Dr. R. H. Steen, and Dr. J. G. Porter Phillips, the physician superintendent, and other members of the staff. The lectures and demonstrations will be given and the practical instruction carried out according to a time table, which may be obtained on application to the Physician Superintendent, Bethlem Royal Hospital, S.E.1. The fees are 15 guineas for the full course and 10 guineas for either the first or the second part of the course.

THE BOARD OF CONTROL'S REPORT.

The seventh annual report of the Board of Control, for the year 1920, has just been published as a Blue Book; it is dated June 1st, 1921.[1] For reasons of economy it has been decided to suspend the publication of Part II of this report, which includes the Commissioners' report of their visits and most of the statistical tables. The year under review is noteworthy because in May, 1920, the bulk of the powers of the Home Secretary under enactments relating to lunacy and mental deficiency were transferred by Order in Council to the Minister of Health. At the beginning of 1921 the number of notified insane persons under care in England and Wales was 120,344, being an increase of 3,580 on that recorded on January 1st, 1920. The explanation of this is provided by a decrease of 3,565 in the number of deaths in institutions in 1920. The Board expresses the hope that a comprehensive measure for dealing with early cases of insanity without certification, which would have wide operation among all classes of the community, will be submitted to Parliament at the earliest practicable date. In the present report, to which we hope to refer later in more detail, the Commissioners deal with two or three specific complaints relating to certain asylums, into which special investigation was made.

The Harveian Oration before the Royal College of Physicians of London will be delivered by Dr. Herbert Spencer on Tuesday, October 18th, at 4 p.m. The Mitchell lecture by Dr. Parkes Weber, on the relation of tuberculosis to general conditions of the body and diseases other than tuberculosis, will be given on November 1st at 5 p.m. Dr. Michael Grabham will deliver the Bradshaw lecture, on subtropical esculents, on November 3rd at 5 p.m.; and the FitzPatrick lectures, on Hippocrates in relation to the philosophy of his time, will be given by Dr. R. O. Moon on November 8th and 10th at 5 p.m.

The Medical Research Council, in consultation with the Ministry of Health, has appointed the following Committee for the investigation of the causes of dental decay: Professor W. D. Halliburton, M.D., F.R.S. (Chairman), Dr. Norman G. Bennett, Dr. Leonard Colebrook, Dr. J. M. Hamill, O.B.E., Sir Arthur Keith, M.D., F.R.S., Mrs. Edward Mellanby, Mr. J. Howard Mummery, C.B.E., and Dr. C. J. Thomas. By permission of the Ministry of Health, Dr. J. M. Hamill will act as Secretary to the Committee.

[1] *Ontario. A Review of Ten Years' Progress.* By John W. S. McCullough. 1921. Provincial Board of Health, Ontario.

[1] Cmd. 221 | 1921. To be purchased through any bookseller or direct from H.M. Stationery Office. Price 1s. 6d. net.

REFLECTIONS OF A GENERAL PRACTITIONER.*

BY

A. MANKNELL, M.B., B.S.LOND.,

BRADFORD.

MANY worthy and learned men have gone before me in this office, men rich in experience, with the ability to place before you the critical results of acute observation and clearly drawn inferences; men who have added to the lustre of the position and to the sum of medical knowledge both in theory and practice. I have no such gems of learning and erudition to display, but must content myself with a few humdrum reflections upon the general practitioner and the growth of his knowledge and attainments.

Not to many of us is it granted to reach the perfection of knowledge and skill ascribed by Chaucer to his "Doctour of Phisike"—

> "He knew the cause of every maladye,
> Were it of hot or cold, or moiste or drye,
> And when engendred, and of what humour,
> He was a verrey parfit practisour."

Our pathologists, epidemiologists, and bacteriologists, searching out the beginnings of life and origins of disease, must read these words with envy deep-seated in their hearts. But possibly they, unlike the "verrey parfit practisour," are not "grounded in Astronomye." And we in the humbler walks of medical life may wonder how "he kept his pacient wonderfully well." Possibly it was because "anon he gave the sike man his boote."

But we must glide over the intervening centuries, with their intermingling of medicine and magic, their spells, charms, and incantations, and come down to the more prosaic times in which we live. Of late years the general practitioner has been greatly in the eye of the public. Around him many debates and discussions have centred. In the past his history has been one of constant struggle against prejudice without and instability within. Too often has he ploughed his lonely furrow and toiled in more or less obscure seclusion, whilst the limelight has been directed upon his more fortunate consultant brother. But events of the last ten or twelve years have dragged him from his rôle of the quiet and unostentatious worker and have subjected him to the criticism of all sorts and conditions of men—both inside and outside his own profession.

He has been the subject of ardent debates amongst laymen, of tender solicitude upon the part of prominent officials of friendly societies, of anxious concern to his fellows, and, of course, of the disinterested attentions of very superior officials at Whitehall. He is belauded and criticized by turns; condemned, exhorted, and legislated for. Should he be associated with any public service, regulations are showered upon him, and he goes in peril of being bound hand and foot in red tape. By training and occupation the general practitioner is the most individualistic of persons. His whole life is occupied in attaining and developing the personal touch. Whatever his scientific and professional accomplishments may be, he is in danger of failure, more or less complete, if he does not succeed in coming into personal and living contact with his patients.

From his cradle in the medical school he is taught to rely first and foremost upon his own judgement and skill, to be ready of resource, to adapt his methods to his surroundings, and to be prepared, if necessary, to meet all situations and deal with all sudden eventualities with promptitude, decision, and dispatch. He is trained to observe for himself, reason for himself, and act for himself, accepting grave and insistent responsibility in the interest of his patient suddenly confronted by any one of the dire crises which lurk unseen around the unsuspecting wayfarers upon the road of life. He is told many things about the human body and its vagaries, and how to deal more or less efficiently with its variations from health. He receives too little instruction in his relation to his patients, to the community, and to his fellow practitioners. Finally he is launched upon the world with the assurance upon a roll of parchment that he has been examined in this, that, and the other, and found to be a suitable person to practise the arts of medicine, surgery, and midwifery. What wonder, then, that, living his life in the public gaze of the little world in which he moves, he constantly lays himself open to misunderstanding, criticism, and even to malicious slander.

So it comes to pass that this intense individualist, too often self-centred in his work, is harassed by advice as to how to make more of his life and opportunities. By some he is implored to save his soul alive and deliver himself from the pressure of his environment and his own native inertia by becoming a trade unionist. By others he is urged to communal activities; or, again, he is forced into a more or less questionable position as a grade of civil servant. Even his own familiar friend, a member of his own profession, has lifted up his heel against him.* By this candid critic, writing in a pseudo-philosophical strain, the general practitioner is assured that his position in society and in the regard of his fellow men is threatened, even if not doomed to degradation. He is told that he is regarded by the working classes, for whom his labours have ever been freely and cheerfully performed, as being the most mercenary of craftsmen—a tradesman in the worst sense of the term. This critic generously admits that, whilst desirous of making as much money as possible, the great bulk of general practitioners are truly willing to give their best in the interests of their patients; but he avers that there be many, and too many, in the ranks who can only be described as "the cad in medicine"—to whom the oath of Hippocrates is a vanished memory—whose only object is to get the most and give the least, and play the parasite on their fellow men. If this be truly the considered opinion of the East End of London we tremble to contemplate the position which we must occupy in the regard of the hard headed sons of the North. But we resent and repudiate such a view.

As a side-light upon the mercenary character of the general practitioner one may cite the recent action of the Panel Committee of Sheffield—practitioners in our own Branch area—in giving £1,000 to the Sheffield University, "to promote the policy of bringing physiology into closer relation with the practice and teaching of clinical medicine." This was a purely voluntary effort, the means being found by the judicious use of a voluntary panel levy. Even in discussing the National Insurance Bill Mr. Lloyd George made a great point of the fact that it would reduce, if not abolish, what he gracefully referred to as "wrangling in the sick-room" as to fees and emoluments. I venture to think that there have been far more wrangling and disputations over his annoying certificates and the situations created by his multitudinous regulations than ever took place between the ill-paid practitioner and his non-paying patients.

But to turn for a moment to the other side of the picture. The general practitioner has been belauded and encouraged by other, and, as we hope, more generous and truthful observers. They tell him that the future glory of the profession is his to realize; that he is the basis upon which is to be built the magnificent edifice of a truly National Medical Service which is to banish pain, disease and suffering and to usher in a glorious aeon of virile centenarians. He is expected to be the embodiment of knowledge, wisdom, understanding, insight, tact, skill, courage, and numberless other virtues, accomplishments and attributes. Like Caesar's wife he must be above suspicion—but may not be trusted to have a stock of panel dressings lest he divert them to his own use. Like St. Paul he must be all things to all men, but, unlike the apostle, he may not speak his mind too freely without fear or favour.

Yet the general practitioner is more than an individualist—he is also, in his highest moments, an idealist. Confronted with the many problems of disease and abnormality, he is ever reaching forward to the time when things now obscure shall be made plain, and when we shall no longer see through a glass darkly, but, as Kipling sings of the true artist—

> Each for the joy of the working
> And each in his separate star,
> Shall draw the thing as he sees it
> For the God of things as They Are!

We admit, as general practitioners, many delinquencies, and we acknowledge many shortcomings. We grant that, in the rush of work, our clinical notes are apt to be fragmentary and lacking in cohesion; that the beginnings of disease, which come so frequently under our notice, are not recorded in such a way as to form reliable data for the establishment of broad general principles, or the compilation of brilliant monographs; that these same early symptoms and apparently unimportant signs appear as a mass of inco-ordinated and uncorrelated details. But we have great hopes for the future, and believe that, out of the chaos of multitudinous minor symptoms, much useful and concrete information may emerge; and that the foundations of medical knowledge may therefore be broadened and deepened, to the strengthening and establishing

* Presidential address delivered before the annual meeting of the Yorkshire Branch of the British Medical Association, June, 1921.

* *Lancet*, February 26th, 1921.

of the great temple of science, in the building of which we are labourers ardent, if unworthy and obscure. We may not all equal the achievements of Sir James Mackenzie in his wonderful clinical work, carefully carried out during the pursuit of a busy general practice, but his example is a stimulus to us and one which each may emulate and follow, even if it be afar off. The system of clinical research established by him at St. Andrews will have far-reaching effects and is capable of great development in many centres in the country. It is a great idea, and it would be well if every teaching centre should gather around it the men of its own area in general practice, and bind them into some similar band of workers to forward the cause of medical science. Surely there must be such men within easy reach of every school of medicine who could give a course of lectures or demonstrations, chiefly of a clinical nature, to those who, at present, are apt to see disease only when well established and presenting the features well known and described in textbooks, and systematic lectures. Young practitioners would thereby be saved many of the rude shocks which meet them upon commencing private work, when they find how obstinately disease declines to present itself in textbook shape and how difficult diagnosis can be before the characteristic symptoms of hospital cases have fully developed. They would learn that every stomach-ache is not appendicitis, whilst recognizing that this fell disease must be ever in their mind. How many cases of very early pneumonia are seen by the hospital student?

By the formation of such clinical research associations amongst general practitioners a greater zest would be given to our domiciliary work. The feeling of comradeship engendered, together with the diminution of the sense of aloofness, too often prominent in our lives, would make for progress and advancement. Rare traits of character and ability would be brought to light in hitherto unsuspected quarters and mutual respect would be cultivated, which is not born of private antagonism under present conditions of life. Such work and association in research would better equip the general practitioner for taking his proper place in any hospital appointments which may open under the Dawson or some similar scheme for a real national, but not bureaucratic, system of medical service. Further, it would tend to the diminution of empiricism and increase the scope of rational treatment. Empiricism, very fortunately, has been a steadily declining factor in the practice of medicine. Ever since men ceased to draw all their ideas from the writings of dead philosophers, the ancient fathers of medicine, and began to observe, inquire, and infer for themselves, rational treatment has progressed by leaps and bounds. Anatomy, physiology, bacteriology, pathology, chemistry, and physical science have all added their quota to the building up of a science daily becoming more exact. And many empirical ideas have been found to have their roots deeply embedded in the truth and have been revivified and established firmly as medical facts.

The early Victorian and pre-Victorian novelists were not a little unkind—perhaps with some justice—to the medical men of their day, describing them alternately as empty-headed pomposities or fussy ignoramuses, bound hand and foot to bleeding, leeching, and sweating, and given to the use of high-sounding phrases of unmeaning dog Latin—as, for example, Fielding's Dr. Barnabas. But gradually there came a great change, and out of such unpromising material as the Bob Sawyers and Ben Allens of a past generation there was evolved a race of sturdy, independent practitioners. The family doctor arose who was not only medical adviser, but in many cases the guide, philosopher, and friend, to whose kindly judgement and advice manifold domestic and other difficulties were submitted. Mr. T. Pridgin Teale still feels that the great need is the making of good family doctors. "Nowadays," he says, "so many young fellows wish to go into specialities. To be a good family doctor is about the finest medical position a man can have. I have come across some splendid examples of them, men who can be the very greatest comfort to a family in distress. The work calls for him to be a gentleman in the truest sense of the word, and some of the finest examples have been country medical men." We may remember, in passing, that the establishment of the medical school at Leeds, with all its glorious traditions, especially in surgery, was the work of general practitioners in the old apprentice days. For many years all the staff were in general practice in addition to their consulting work. We all deplore the threatened passing of the genial and true-hearted family practitioner, who seems doomed to vanish in the flood of superficial knowledge which is overflowing the country. His personal and family influence have been undermined to the point of threatened extinction by the increased activities of the State in communal medicine.

The great tendency to convert the doctor into a civil servant, the disintegrating effect of the National Insurance Act, and the openly expressed desires of many, both within and without the profession, for a whole-time medical service, have all conspired against the confidential position of the general practitioner. The wrangle about money—hitherto confined, when existent, to the privacy of the house—has been transferred to the senate, the conference chamber, and the columns of the daily press; and the commercialism, if any, exhibited by the profession has been thrust upon us by the politicians and by men who reckon all things in terms of pounds, shillings, and pence, and reck little of conditions of life and the true magnitude of service rendered. During the controversy upon the Insurance Act some of us in Bradford met in debate certain political supporters of the Act. One of them exclaimed in horror: "Why, some of you will be getting £1,000 a year!" Appalling thought! Could any professional man possibly be worth it? It is true that during the last thirty or forty years medical education has immeasurably advanced; we are all expected to know something of many special subjects, and specialisms and specialists have multiplied greatly. More than ever medicine ranks as the profession for which the preparation, even for general practitioners, is longer, more arduous, and more exacting than in any other. When we consider the many and varied examinations, the long lists of subjects, general and special, of medical and surgical knowledge which have to be faced by the present-day student we cannot fail to see that the term "learned profession" can be no empty-sounding title to those who would secure a place within its ranks. Surely the labourer is worthy of his hire!

As days and years pass, we who have borne to some extent the burden and the heat of the day perchance find ourselves wallowing in the wake of the ship of medical progress. With difficulty do we keep our little craft in the right track, and we struggle on in our attempt to keep abreast of ever-increasing knowledge. At the same time we remember many ideas, theories, and methods of practice which have come and gone. They have been greatly boomed, indiscreetly exploited, and hailed as the last word in their particular sphere of thought and action. How many such have sunk into oblivion and are now remembered only with the indulgent smile of presumably greater knowledge. But some, such as the great work of Lister, have laid the foundation for further progress and for the erection of a more glorious edifice of practice and achievement.

Many of us remember the time when no abdominal case was nursed in the general ward, when the patient must not be carried along the corridor to the theatre, but the operation had to be performed in a special ward and the patient lifted straight into bed in the same room; when the unlucky house-surgeon had to go up every four hours to drain the fluid out of Douglas's pouch and turn the Bantock's tube. The whole performance was conducted under the hissing Lister's carbolic spray, lest any stray germ should crawl in and set up trouble. At that day the spray was in constant foggy evidence at all operations, and anxious dressers rushed from ward to ward bearing the steaming apparatus for an antiseptic dressing. But, to quote once more the words of Mr. Pridgin Teale, "we in Leeds worked right through the carbolic acid period and went on and on. When Sir Berkeley Moynihan became surgeon he took up with vigour the complete Lister teaching, and we passed from the antiseptic to the aseptic period." These events were taking place at the time when Erichsen, in the 1887 edition of his monumental work on the *Science and Art of Surgery*, was saying that an art could only be carried to a certain definite point of excellence—could not be perfected beyond certain attainable limits. That in the art of surgery we had nearly reached these final limits there can be little question. In the scientific branch of surgery we were but as yet on the threshold. In 1921 Mr. Teale says that the modern medical man is terribly scientific, and Sir Berkeley Moynihan says, "To-day the view prevails that surgery has reached her destiny and is almost a finished art." He continues, "We can look on it now as just the key which has been made to unlock a great many closed doors. It is only just beginning its true function." How similar the statements with nearly forty years' experience between them!

From general considerations as to what manner of men we practitioners be, we pass now to a few points in our relation to the community and to the State. And first I would desire to note one point in our duty

to ourselves. Too often we hear it said of one untimely cut off, "Poor fellow, he died before he could save anything for his family," and our charitable institutions have to step in and good-heartedly do what they can to help. Much better would it be if every newly qualified man would at once insure his life to his fullest ability, increasing such provision as his financial position improves. How much misery would be avoided and how many rough places be made plain! I would earnestly commend this to the attention of our younger colleagues.

Then, too, there are our duties to our fellow practitioners. We should cultivate the spirit of mutual helpfulness and curb the feeling of antagonism and competition. Competition there must be; but this view need not exclude friendly relations. The meeting together in scientific or social gatherings tends to teach us more of one another and to show us that our associates in practice are not such bad fellows after all. The friendly help tendered in times of sickness is a bond of unity not likely to be broken, and in this matter I tender my grateful thanks for help in time of need. The general public have a great idea of what they call medical etiquette. I have yet to learn that so-called medical etiquette is anything more than the good old rule of doing unto others as you would that they should do unto you. A short time ago I was assured by a Church dignitary that under our "rules" a man could not even change his doctor. The reply was obvious. In spite of all our weaknesses and the strictures of captious critics, the spirit of the oath of Hippocrates rules our professional life and regulates our relations to each other and to our patients.

In this our own Association we are banded together for the extension of knowledge and the interchange of experience, as well as for the promotion of the honour and dignity of the profession. We are united by the moral laws of community of interest and of purpose, of endeavour, and of aspirations. Our relationship to the community in general and to the State has undergone great changes during the last twenty or thirty years. The well-known altruism of the profession has been exploited by the State, by clubs, by pseudo-philanthropists, and the general public. To such an extent has this gone that services, cheerfully rendered to necessity, have been demanded as a right, and any attempt to place such services upon a sound and reasonable basis has been resented as something bordering upon extortion and commercialism. The low fees of contract practice instituted in a kindly spirit for the benefit of low wages and large families were barefacedly quoted by an eloquent Chancellor as the basis of pay for his distribution of the rare and refreshing fruit of his Insurance Act. Step by step the municipality and the State have invaded the domain of the private practitioner. Not content with the general supervision and regulation of the health and conditions of life of the people, they have filched from us duties and privileges heretofore regarded as our own: they have come between us and our patients, and have laid upon us other duties and responsibilities undreamed of by our predecessors. The unrequited issue of the ordinary death certificate, open to all sorts of curious eyes, the notification of infectious diseases in an everlengthening chain—now at least twenty in number—that of industrial diseases, of births of infants, the proposed compulsory notification of venereal disease, together with the filing of records, the secrecy of which is not above suspicion—all these things, necessary as some may be, bring us into daily contact, if not conflict, with the general public, and undermine our position as the confidential friends and advisers of our patients. Now one reads of a proposal that notification of tuberculosis should follow a patient from M.O.H. to M.O.H. wherever the victim moves, thus justifying the complaint and criticism of one of my patients that he would become a marked man—at his home, his work, and wherever he removed.

How has this situation arisen? It is the natural and logical outcome of the altruistic desire of our profession for the betterment of the nation. In season and out of season we have preached care for the health of the community, regulated conditions of industrial life, demolition of slum areas, better housing, pure water, pure milk, and healthy surroundings. But the local authorities in particular, forgetting the origin of their knowledge and the inspiration of their enthusiasm, despise and repudiate the criticism of the profession upon their methods, uttering the parrot cry of "self-interest" and accusing us of having respect to our own pockets rather than a desire for the welfare and health of the body corporate. They thrust upon us and upon the long-suffering ratepayer grandiose schemes of communal medicine, indifferent alike to the cost of their ventures and the truest interest of all concerned. There is a feverish haste to be in the forefront of movement—which they call "progress"—too often forgetting their position as guardians and executors of preventive medicine and unnecessarily invading the domain of curative medicine. They are apt to establish large coteries of *soi-disant* specialists, of recent qualification and immature growth, to the exclusion of men who live among the people, whose lives and interests are bound up with those of the people whom they serve. There must be some form of communal medicine, but in it the general practitioner should be duly and effectively recognized. It is quite true that, as the Dawson report says,

> "Preventive and curative medicine cannot be separated on any sound principle, but they need not be too closely identified, but rather they should be brought together in close co-ordination. They must likewise be brought within the sphere of the general practitioner, whose duties should embrace the work of communal as well as of individual medicine. It appears that the present trend of the public health service towards the inclusion of certain special branches of curative work is tending to deprive both the medical student and the practitioner of the experience they need in these directions."

There are many things in which really expert advice is necessary, as in housing, drainage, food inspection, water supply, control of epidemic disease, and so on; but as general practitioners we object to the wholesale creation of clinics, whether of children, schools, infants, or antenatal, with many others staffed by newly-qualified practitioners fresh from the school and hospital, who have little, if any, experience of the great world of medicine which they have but just entered, who possess but dim ideas of the work and difficulties of the general practitioner, and are ignorant of the daily life of those whom they are called upon to treat. We think that in most of these cases the services of the general practitioner should be sought and used to the uttermost. Administrative officers there must always be, but of purely clinical officers, except of highly specialized character, there need be but few. Much has been said and written of the need for the knowledge of the beginnings of disease, and who but the general practitioner really sees disease in its earliest stages and in its protean aspects before its real character has been overlaid and masked by complications and accessory conditions? But the ordinary medical attendant must see to it that he leave no stone unturned so to keep himself abreast of the new methods of treatment and new conceptions of disease that he is ready and willing to step in and undertake the treatment and prevention of disease as opportunities arise. My lamented and revered teacher, Mr. A. F. McGill, would say to any obtrusive student, "Ah! Mr. Blank, knowledge comes but wisdom lingers." Let us hope that, with all the avenues of knowledge open to our rising generation, wisdom may follow close upon the heels of knowledge. Thus shall we find the general practitioner taking a greater and nobler share in the development of the Art and Science of Medicine in all its varied branches, and more firmly establishing himself as an integral and essential part of the whole fabric.

THE WAR WORK OF THE RED CROSS.

BEFORE the war it was recognized that the Red Cross societies would be of value during a campaign in affording to the Army Medical Service the organized provision of supplementary aid. If, during the great war, this had been all that the British societies accomplished it would have been work well worth doing, and these bodies would fully have earned the gratitude of their country. It is common knowledge, however, that this was by no means the whole extent of the work of the Red Cross societies. Yet, until the appearance recently of the general report*—a stout volume of over 800 pages—of the Joint Committees of the British Red Cross Society and the Order of St. John of Jerusalem in England, few can have realized how great were the war labours of these societies. Their services were such that they were able from the beginning to inspire the military authorities with confidence, and cordial relations were established between the Red Cross, the R.A.M.C., and the R.A.S.C., without which the success of their work would have been impossible.

Co-operation with the Army Medical Service.

In regard to the functions of Red Cross organizations in time of war it is the duty of the Government to provide for the assembling of wounded from the field of battle,

* Reports by the Joint War Committee and the Joint War Finance Committee of the British Red Cross Society and the Order of St John of Jerusalem in England, 1914-1919. London: H.M. Stationery Office. 1921. (Pp. 823, illustrated. 12s. 6d. net).

their transfer to hospital, and their treatment, doing all that is necessary to enable them to return to duty or civil life as soon as possible. In a great war the Army Medical Service must draw largely on the civil population for additional doctors, nurses, and for ambulance men, etc.; moreover, it requires very extensive extra hospital accommodation. Thus, the Army Medical Service finds itself on short notice obliged to organize on a scale which makes efficient assistance offered to it from outside very welcome. The Red Cross provides such assistance. In the late war auxiliary hospitals, equipped and supplied by Red Cross personnel, enabled large numbers of officers and men to be treated in comparative comfort, if only by the relief afforded to congested army hospitals. The quick supply of additional army stores was frequently of assistance to the Army Medical Service, and many army surgeons, owing to the extra stores being available at the right moment, were able to work with better advantage to the patients than would have been the case had they been trammelled by the procedure which a Government department must necessarily follow in dealing with stores of all kinds. The Red Cross, in addition to assistance rendered in the field, in hospitals, convalescent homes, and in connexion with the after-care of disabled men, has proved of great value in succouring prisoners of war in enemy countries. The report quotes the remarks of Sir George Makins to the effect that the work of the Joint Committee proved afresh the essential need of a voluntary organization such as the Red Cross working side by side and in close collaboration with the medical service of the army.

Red Cross Achievements.

The first great opportunity of the Red Cross came with the retreat of the army to the lines of the Marne and the Aisne. The general hospitals and equipment were scattered, and it became necessary to establish service units with equipment hastily assembled in the many towns on the long line of communication, and at once the accumulated stores of the Society were called upon. The next great opportunity came in aiding the transport of the wounded. The British army was already, in August, 1914, in possession of several well-equipped hospital trains in England, but they were not gauged to work on French railways. The lack of modern railway facilities at the commencement of the war led to much suffering, but improvements were rapidly made, and later the Red Cross Society contributed four completely equipped trains to add to those supplied by the army. A still greater service was rendered by the Red Cross in providing a large number of motor cars and motor ambulances. The special credit appropriately belonging to the Red Cross, says Sir George Makins, lay in the energy with which it pushed the use of motor ambulances and the splendid manner in which the ambulance drivers performed their strenuous duties. The conditions of the campaign in France permitted the Red Cross Society to undertake the duties of providing hostels and means of transport for the friends and relations of sick and wounded men. In speaking of the hostels, a class of workers for the Red Cross who have, perhaps, received less credit than they deserve, ought to be mentioned. We refer to the devoted ladies who undertook the duties of housekeepers, parlour-maids, housemaids, cooks, and of wardmaids in voluntary hospitals, duties devoid of any of the excitement or interest of purely military work.

Scientific Work.

In one direction the Red Cross did particularly useful work that had not before come into its ambit: it devoted part of its resources to scientific purposes and to the provision of supplementary accommodation for treatment by electrical and orthopaedic methods such as have never been at the command of an army in the field before. Great help also was given to the establishment and equipment of units for the special treatment of injuries to the jaws at Boulogne and Étaples, which did much for the advance of surgical treatment, and at Étaples and Boulogne small units, officered by the Army Medical Service, were built and equipped in order to facilitate the special lines of treatment, such as the different methods of wound treatment, then being carried out.

Sir Anthony Bowlby points out that the work of the Red Cross was nowhere more appreciated than in the casualty clearing stations and the field ambulances, which, though well supplied by the army, derived much benefit from the supplementary stores of the Red Cross. During the whole war an apparently endless supply of dressings and bandages arrived in a continuous stream, and requisitions by individual surgeons for splints of some special variety were always complied with. At a later stage of the war shock was treated by the intravenous infusion of a solution of gum arabic, and this was prepared and supplied in special sterilized bottles through the Red Cross. Expansion of the surgical work at the front was assisted by the work of the Red Cross; for instance, it equipped operating theatres with linoleum for the floors, thus diminishing the risks of sepsis associated with bare boards, which are difficult in such circumstances to keep clean.

The total number of medical officers sent abroad by the Joint Committee was not more than a few hundreds, but the value of their work during the time of pressure was officially acknowledged. Eventually, at the suggestion of the military authorities, the majority of the Red Cross medical officers applied for and were granted temporary commissions in the R.A.M.C. In regard to the auxiliary home hospitals, however, medical attendance was provided locally throughout the war, and the report states that the public will probably never fully appreciate the amount of unostentatious voluntary work given by the medical profession in this way at a time when their ordinary duties had enormously increased, owing to the absence on active service of so many of their colleagues.

Finance and Organization.

At the time of the Armistice the total staff of the Red Cross at home and abroad was 9,234; in addition there were 126,000 V.A.D. members, of whom 90,000 were women. The entire cost of administration was less than 8¾d. in the £ on the income, a fact largely due to economical management and the honorary character of the principal workers' services.

The accounts show that the public subscribed £16,500,000 in cash, and gave the equivalent of over £1,000,000 in stores. These gifts represent by far the largest voluntary effort ever made in this country. More than half the cash receipts were derived from the "Our Day" collections at home and in the Dominions. In addition, the farmers sent £1,000,000, the miners and mine owners £500,000, and church collections, sales at Christie's, including the famous pearl necklaces, and other successful appeals, together with individual subscriptions ranging from threepence to £25 000, made up the total.

The expenditure included over £5,000,000 for hospitals and stores, apart from local support to some 3,000 auxiliary home hospitals, and over £2,000,000 for the transport of 10,000,000 sick and wounded cases. Parcels for prisoners of war cost £5,000,000, and 3,000,000 books and thirty-six tons of weekly papers were given to the military hospitals. Grants to post-war schemes for after-care, etc., account for £2,700,000, and the surplus on June 30th, 1920, was £1,826,680.

The Joint War Committee.

The Red Cross effort was directed by the Joint War Committee, formed in October, 1914; it consisted of twenty-four members, twelve appointed by the British Red Cross Society, and twelve by the Order of St. John, and it was provided that the chairman and vice-chairman could not both be representatives of the same Corporation. The chairman of the Joint War Committee throughout its existence was the Hon. Sir Arthur Stanley, chairman of the Executive Committee of the British Red Cross Society, and the preparation of the general report, which is signed by Sir Arthur Stanley and Mr. Evelyn Cecil, M.P., is the work of many hands working for over two years, under the direction of Mr. J. Danvers Power, who has carried out in excellent fashion a complicated and laborious task.

This document performs the double office of a report to the subscribers of the funds and a record of Red Cross operations, which should provide a valuable reference work to all Red Cross organizers. It is well illustrated by many photographs and maps, including photographs of the interiors of bacteriological laboratory, dental surgery, and soup kitchen cars, of the Red Cross motor launches used in Mesopotamia, and of the uniforms worn by members of the different organizations. Interesting details are given of the methods by which the funds

were raised, while there are some pointed notes on the publications and entertainments during the war which were advertised as "in aid of the Red Cross." The notes on the delicate question of decorations and honours are likewise interesting, for the advice on which recommendations were based was obtained from county directors, whose standards varied and who supplied information widely differing in quality.

The contents of the report are not only of high importance to the medical profession, but as the work of the auxiliary home hospitals, convalescent homes, work parties and similar war organizations is adequately dealt with, in addition to the subjects of more strictly medical and technical interest, the volume must prove intensely interesting to all of the many thousands of people who throughout the empire took part in the wonderful work of the Red Cross.

England and Wales.

DR. DAVID HEPBURN, C.M.G., Professor of Anatomy and Dean of the Medical Faculty, University College, Cardiff, has been appointed Dean of the Faculty of Medicine in the University of Wales.

BIRMINGHAM SPECIAL SCHOOLS AFTER-CARE COMMITTEE.

The Special Schools After-care Committee of the City of Birmingham Education Committee has the duty of keeping a record of the subsequent history of former pupils of the special schools for the mentally defective. The total number of cases included in its records has increased from 2,282 in the year 1919 to 2,504 during the past year, males numbering 1,503 and females 1,001. These figures indicate very clearly the ratio of three boys to two girls which is frequently found in the various special schools for the mentally defective. Of the 2,504 cases in last year's records, 969 are doing remunerative work, 913 of these earning wages which average 30s. 10d. per week, while 56 are soldiers. The general depression in industrial and trade conditions has naturally had an effect upon the mentally defective cases in employment, and, while the number of men and youths under review this year has increased from 1,380 to 1,503, the number in employment has only risen from 630 to 655; the number of women and girls in employment has actually decreased from 320 to 314, although the total number of cases reported on has grown from 902 to 1,001. During the war, and for some time afterwards, no difficulty was experienced in procuring situations for such mentally defective persons as were capable of employment, but under the present conditions of industry considerable difficulty arises. The earnings of those, however, who have remained in employment show the general upward tendency which wages had during 1920, and three men are each reported as able to earn £5 per week, while two others in business on their own account are reported to be making comfortable livings. The percentage of cases in institutions again decreased last year, and the Committee says it finds that institutional accommodation for the mentally defective is still deplorably inadequate throughout the country as a whole.

ANTITUBERCULOSIS WORK IN BRISTOL.

Sir William Treloar, who founded the hospital for surgical tuberculosis at Alton in Hampshire, has accepted the invitation of the Bristol Health Committee to open Frenchay Park Sanatorium on October 5th. Bristol is attempting something akin to the Alton work at Frenchay, where children in need of surgical treatment for tuberculosis will be received.

The Bristol Health Committee will soon have ready temporary accommodation for 52 more cases of consumption at the City Fever Hospital and Sanatorium at Ham Green, but a second assistant medical officer will be necessary, and the committee proposed that one be appointed at a salary of £300, with board and house room. Ham Green, when these beds are ready, will have 136 sanatorium beds and 200 fever beds.

Scotland.

TUBERCULOSIS AND EMIGRATION TO AUSTRALIA.

THE Scottish Board of Health has been in communication with the High Commissioner for the Commonwealth of Australia with reference to the conditions under which emigrants from the United Kingdom who have suffered from tuberculosis will be admitted into the Commonwealth, and has circularized local authorities in Scotland with reference to the reply of the Commonwealth authorities. The Board recommends that local authorities should allow the co-operation of their medical officers in the manner indicated below. While the Australian Government desires to exclude immigrants who are suffering from active tuberculosis, it is willing, subject to certain conditions, to admit persons in whom the disease has been arrested, if they have received a period of treatment in a sanatorium and have thus been educated as to the protection necessary to preserve their own health and to protect that of others, and if there is an unequivocal history of freedom from symptoms of the disease during the immediately preceding twelve months. The conditions of admission include certification by a medical man who is an expert in tuberculosis, and it was suggested to the Board of Health that the services of tuberculosis officers employed by the local authorities should be made available for the purpose. The procedure suggested is that the medical referees responsible for the examination of all intending emigrants to Australia shall report to the chief medical officer for the Commonwealth in London all cases in which traces of tuberculosis are discovered or suspected; the chief medical officer will refer such cases to the medical officer of health of the district in which the person resides, with a request that the case be examined and a report furnished by the tuberculosis officer; the Commonwealth Government will pay to the local authority a fee of one guinea in respect of every such examination. Those persons in respect of whom a satisfactory report is furnished by a tuberculosis officer will be admitted into Australia subject to certain conditions: that the formal consent of the Commonwealth Minister for Home and Territories is obtained; that the disease does not become active again during the voyage; that the intending immigrants pass the ordinary examination by the quarantine medical officer at the port of disembarkation; and that they report themselves for examination at the end of each twelve months during the first three years in Australia; in the event of the disease having become active again during that period they will be liable to deportation at their own expense.

METEOROLOGY AND MALARIA IN SCOTLAND.

At the recent meeting of the Royal Meteorological Society held in the Natural Philosophy Department of Edinburgh University, under the presidency of Mr. R. H. Hooker, M.A., an interesting address on "Meteorology in medicine, with special reference to the occurrence of malaria in Scotland," was given by Dr. Angus Macdonald. Developing a theme on which he has previously written, he said that the fundamental meteorological factor influencing biological reactions was temperature. This influence was universal in its application to organic life and had a specific implication in the production of disease. As an illustration of the effect of temperature conditions upon the prevalence of disease Dr. Macdonald instanced the history of the occurrence of malaria in Scotland. The evidence of medical documents of the early part of the eighteenth century suggested that malaria was at one time indigenous in Scotland. Thus, making due allowance for faulty diagnosis of "ague," the records pointed to the presence of malaria in that country two hundred years ago. But the evidence was very shaky in support of the view that malaria had lingered on from year to year. All the recorded outbreaks coincided with an abnormally high temperature during several months in consecutive years. Dr. Macdonald concluded that malaria could only become endemic again in Scotland if two rare conditions were present simultaneously—the importation of the disease in large volume from abroad and a prolonged mean temperature of 60° F.

India.

THE PUBLIC HEALTH COMMISSIONER AT SIMLA.

In future the Sanitary Commissioner with the Government of India will be known as the Public Health Commissioner. In the provinces the departments hitherto presided over by Sanitary Commissioners will be known as Departments of Public Health. The Sanitary Commissioners with the various Governments will in future be known as Directors of Public Health. The Deputy Sanitary Commissioner with the Government of India will be known as the Director of Medical Research.

THE COUNTESS OF DUFFERIN'S FUND.

The thirty-sixth annual report of the National Association for Supplying Female Medical Aid to the Women of India deals with the year 1920; it gives evidence of continued development of the praiseworthy efforts initiated by the Countess of Dufferin to promote the physical welfare of the women and children of India. Successive vicereines, conspicuously Ladies Elgin, Hardinge and Chelmsford, aided and encouraged by Indian governments, officials, nobles and gentlemen, have carried on the good work, and the association has now attained the position of a national institution, the objects of the fund, all tending towards the realization of a worthy ideal, are manifold. In addition to affording medical aid to women through the agency of medically qualified women in hospitals and homes, extensive arrangements have been made for training midwives and nurses for service in hospitals and for private practice. Scholarships are also granted by the imperial and provincial governments, by the central council, by the United Kingdom branch, by Indian branches, and by private wellwishers, to enable selected women to study at the Calcutta Medical College, the Grant Medical College, Bombay, the Lady Hardinge College, Delhi, and the Campbell Medical School, Calcutta; further, officers of the association are helped to take advantage of arrangements for post-graduate instruction. The report shows that there are now in India 144 women's hospitals staffed entirely by women, including 30 which have been opened in native states, and several affiliated mission hospitals. The detailed reports of these hospitals indicate good and growing work and increasing popularity and usefulness. Women resort to them as indoor and outdoor patients, not only for common ailments, but also for special feminine complaints and for help in labour, normal and abnormal. It has been recognized that venereal diseases are in India a serious cause of suffering among women, and arrangements have been made for imparting to members of the women's medical service instruction regarding the nature, recognition, prevention, and treatment of these maladies. Two courses, attended by twenty-one women, were conducted at Deolali by Lieut.-Colonel Frost, R.A.M.C. The subject of hygiene has also come into prominence. The Maternal and Child Welfare Exhibition, which was held at Delhi, and of which a brief description was given in the BRITISH MEDICAL JOURNAL (May 1st, 1920, p. 618), stimulated interest in domestic and village sanitation, and gave origin to Lady Hardinge's All India League for Maternity and Child Welfare. Special sanitary instruction is given in the Delhi Health Training School. The finances of the association are on a sound basis, and it has been found possible to increase the pay of its officers. Their status has also been raised. Altogether the undertakings of the association fulfil amply and increasingly a most laudable philanthropic purpose among a class of Indian subjects difficult of access; but they also accomplish a political benefit. Women in India govern their homes and children, and the genuine concern and ardent service for their welfare manifested and exercised by the association cannot but establish a bond of mutual regard between rulers and ruled.

SUBASSISTANT SURGEONS.

From a report in the *Pioneer* of a conference in Calcutta of the Bengal Branches of the All-India Subassistant Surgeons' Association, it appears that these officers are very dissatisfied with their pay and prospects. Objection is taken also to the new system of requiring a bond to be executed before a candidate can enter the Government service. The scale of pay, always low, is now, in view of the economic changes, asserted to be unworthy of the acceptance of any self-respecting body of men. It is urged that in considering the matter the Government should give attention to the needs of the military assistant surgeons as well as to the subassistant surgeons.

MEDICO-LEGAL WORK IN THE PUNJAB.

The annual report of the chemical examiner to the Government of the Punjab for 1920 shows that the number of detected cases of poisoning was smaller than in the previous year; they numbered 279, and the chief agent employed was opium; next in frequency came arsenic. There is evidence that the chloral habit is replacing or supplementing the cocaine habit. A number of blood-stained articles were referred to the Imperial serologist, Calcutta, for examination. The chemical examiner also made examinations of a number of alleged cases of poisoning in cattle; the poison most often used was arsenic.

Correspondence.

DIAGNOSIS AND TREATMENT.

SIR,—In the review of Sir Thomas Horder's *Medical Notes*, in the JOURNAL of September 10th, the following words of the author are quoted with evident approval: "It has been said of medicine that the most important thing is diagnosis, the next most important thing is diagnosis, and the third most important thing is diagnosis."

That, theoretically considered, this may be correct I am not disposed to dispute, but it appears to me that insistence on this point of view, so general on the medical side of teaching hospitals, is answerable for the somewhat unsatisfactory state of medical practice, associated in the minds of the public with a not altogether unhealthy scepticism of the benefits resulting from consulting the medical profession—a scepticism shown in a readiness to seek the services of unqualified practitioners.

In my humble opinion what the community needs are increased facilities for treatment. Diagnosis must not be neglected, and when Sir James Mackenzie's school has taught us to evaluate symptoms we may indulge in prognosis; but treatment must necessarily in many cases precede diagnosis, which frequently can, in our present state of knowledge, be only tentative. Treatment may, by allaying complicating symptoms, enable us ultimately to arrive at a correct diagnosis. Over-insistence on the importance of diagnosis suggests the idea that all treatment must be specific, whereas the truth probably is that even Nature, whom we can only assist, has a general plan of reaction to groups of external agents, and supplements these general reactions with specific responses.

Greater attention to and further facilities for general treatment, including "the therapeutical gymnastics of the Hippocratean schools," is a necessity of the times; too long have we lain under the shadow of such physicians as Skoda of Vienna, who "openly held that their work was diagnosis only, and treatment practically impossible."—I am, etc.,

London, W., Sept. 12th. HAROLD H. SANGUINETTI.

TREATMENT OF ACUTE TOXAEMIA.

SIR,—I have made trial, in some 70 cases of epidemic influenza, influenzal pneumonia, and ordinary pneumonia, of Sir Archdall Reid's powder of aspirin, phenacetin, and Dover's powder (BRITISH MEDICAL JOURNAL, June 4th, 1921, p. 835). In mild and moderate cases it certainly relieved the dominant symptoms, but I had in 28 cases to supplement it, or, rather, replace it. In these cases, while most of the discomfort and pain vanished, the temperature failed to come down. I used then a somewhat similar powder, which I have employed with every satisfaction for twenty-five years in all sorts of febrile and toxaemic states. It produces more profuse sweating than the aspirin combination, and seems more effective in sweeping out toxins. It consists of 5 grains each of phenazone, Dover's powder, and potassium bicarbonate. I have had the greatest satisfaction with this powder in malaria, especially attended by vomiting, but in this disease phenazone should be replaced by phenacetin. For some reason or other this is the best weapon with which to attack acute malaria; quinine can be exhibited

a little later. If a trial is made of these combinations on a proper basis and scale, I should very much like to hear what others can effect with my powder also.—I am, etc.,

JOHN A. GRAHAM, M.B.

Bethulie, O.F.S., South Africa, Aug. 27th.

HAEMORRHAGE FROM THE TONSIL.

SIR,—I have been greatly interested in this discussion, having anaesthetized for many thousands of tonsillectomies. I have observed that haemorrhage of a severe character is far more often associated with the use of the guillotine, and that it is most rare when the operation is carried out by dissection, owing, I suppose, to the tearing and twisting of the vessels with consequent clotting. Although ether is undoubtedly safe, there is, in spite of the great use of atropine, more haemorrhage than with chloroform. Some surgeons prefer the head low, and in this position, although the blood conveniently pools in the post-nasal space, there is more congestion (and bleeding) than when the head is level with the trunk. With a skilled assistant to swab, it is, as a rule, easy to keep pace with the surgeon. In my experience, most cases of severe haemorrhage have been in men with high blood pressure and fibrous tonsils who have been great smokers—notably soldiers during the war. Stitching the pillars has almost invariably stopped the haemorrhage, especially with a small plug of gauze placed in the tonsil bed.—I am, etc.,

GRAHAM SCOTT,
Late Anaesthetist, 4th London General, Great Ormond Street Children's, and Dreadnought and Central London Throat Hospitals.

Herne Hill, Sept. 17th.

CAPILLARY PRESSURE.

SIR,—Dr. Hill (September 10th, p. 417) tells us that he has "never failed to realize the obvious fact that there must be a greater pressure inside than outside the capillaries in order to maintain patency." My first letter (June 11th, p. 873) called attention to Dr. Hill's having taken no account of this obvious fact in his lecture, paragraph 2, last sentence. For the sake of brevity I did not call attention to his ignoring this obvious fact in paragraph 5 of his lecture, where he spoke of the pressure of the aqueous balancing the capillary pressure in the iris. And when Dr. McQueen (June 25th, p. 955) imagined he had proved that the pressure in capillaries was less than the pressure outside them by a manometric pressure of 10 mm. Hg, there was no protest from Dr. Hill that such a result must be wrong as being contrary to the same obvious fact.

However, Dr. Hill and I are now agreed that there must be greater pressure inside than outside the capillaries. But Dr. Hill says he maintains that the difference between the two pressures is very small, and in support of this contention he recapitulates some of the matter which appeared in his lecture, partly irrelevant, and the rest inconclusive, as I shall now show.

1. The fact that the pressure in the cerebro-spinal fluid is found to be about the same as that in the torcular Herophili gives no indication of the amount by which the pressure in the capillaries of the brain exceeds either of them.

2. The fact that the pressure of the brain against the skull is circulatory in origin, and is increased when the pressure in the cerebral blood vessels increases, is no proof that these two pressures are equal, or nearly so. If Dr. Hill will attach a small toy balloon to the tube through which he inflates his Roy and Graham Brown apparatus, so that the toy balloon lies inside the chamber, and connect the said tube with a separate manometer from that which records the pressure in the chamber outside the balloon, then close the chamber by tying on its covering membrane, and inflate the balloon, he will find that when the wall of the balloon is taut the pressure in the balloon is greater than that in the chamber outside it, though the latter is derived from it and increases with it. The smaller the balloon in comparison with the chamber, the more remarkable will the difference of pressure be.

3. The argument from the experiment of the cut finger inserted into a tube connected with a manometer is misleading. Every surgeon knows that when blood vessels are severed they both retract and contract. Owing to the contraction there is greater resistance to the flow of blood through them, so that the blood emerging is probably at a lower pressure than there was at the same point before severance. Owing to free anastomosis, when the flow of blood in one direction is impeded it can get away by other channels, thus avoiding much piling up of pressure.

4. I have already (June 11th, p. 873) explained the fallacies of Dr. Hill's method of "measuring" the capillary blood pressure with the Roy and Graham Brown apparatus.

5. Dr. Hill says:

> "The Roy and Graham Brown method has shown me that when the heart is stopped it takes the least pressure (1 to 2 mm. Hg) to drive the corpuscles along the capillary vessels as quickly as they move in the natural conditions of the circulation."

The corresponding statement in Dr. Hill's lecture was:

> "When the web of the excised leg is compressed in the Roy and Brown apparatus, a momentary pressure of 2 mm. Hg will cause the corpuscles to rush along the capillaries and venules no less rapidly than in the normal flow."

Before giving an opinion on the argument from this observation I should like to know:

(*a*) What was the pressure in the Roy and Brown chamber to which the additional pressure of 2 mm Hg was added?

(*b*) Was the additional pressure of 2 mm. Hg added by pumping more air into the chamber or by compressing the dome with the glass?

(*c*) Is the flow seen at the centre of the flattened portion of the dome, or only near the junction of the flattened and curved portions?

(*d*) It might also be of importance to know the magnifying power of the microscope used.

As I indicated in my first letter (June 11th, p. 873), I made no reference to several of the above points, because reference to them all would have made my letter too long. My object in writing was simply to point out that Dr. Hill was giving us as proofs of his statements things that were not proofs at all.

Another instance of this which I have not previously discussed is to be found in paragraph 5 of his lecture, where he said:

> "That the pressure of the aqueous balances the capillary pressure in the iris is shown by the fact that on letting this fluid escape the iris bulges forward and may touch the cornea, and on compressing the abdomen the vessels burst and the blood comes into the anterior chamber. No such bulging or haemorrhage can be brought about by squeezing the belly when the eye is intact."

The irrelevancy of this argument is transparent. The pressure in the capillaries of the iris presses the posterior part of their walls backwards as much as it presses the anterior part forwards, and has nothing to do with the movement of the iris forward when the aqueous is let out. That the walls of the capillaries of the iris can stand the additional strain put upon them by compression of the abdomen when they have outside them the support of the aqueous in an intact eye, and cannot do so when deprived of that support, is no proof that the pressure in them is the same as that of the aqueous.

But Dr. Hill has me on the horns of a dilemma when he says (September 10th, p. 417):

> "There is, of course, a difference of tension between the inner and outer surface of a capillary, but this is so small as to be negligible. Let Dr. Gillespie get out of his armchair and proceed by experiment to prove the opposite which he so dogmatically asserts."

If I take the first portion of this statement as it stands, and point out that it is nonsense, and that I have not asserted the contrary, I may be told that I am quibbling, as Dr. Hill meant something else which ought to have been plain to me; whereas if I attempt to amend it I may be accused of ascribing to Dr. Hill a statement he has never made. I had therefore better leave it. Dr. Hill's amendment of Dr. McQueen's nonsensical sentence fails to make a sensible statement out of it.—I am, etc.,

Knock, Belfast, Sept. 12th. JOHN R. GILLESPIE.

SIR,—Those of your readers who are acquainted with Professor Leonard Hill's work and have at the same time followed this correspondence are cognizant of the fact—to give only one, though glaring, example of Dr. Gillespie's misrepresentations—that Professor Hill has never taken "the pressure of the brain against the skull as a measure of the pressure in the arterioles," yet Dr. Gillespie has stated this more than once. I submit, therefore, that the charge of misrepresentation is more than justified.

Dr. Gillespie assumes that in the eye the pressure in Schlemm's canal is less than that in the anterior chamber, which if it were only a matter of faith and belief would not be worth controverting; but when he dogmatically asserts, in proof of his assumption, that the only veins into which there is a flow from Schlemm's canal are the anterior ciliary veins which lie *outside* the sclera, I beg again to disagree with him. The anterior ciliary veins arise from the ciliary body and send afferent branches to Schlemm's canal *before* they have pierced the sclera, as well as in their passage through the sclera. Schlemm's canal is a venous sinus, and its anatomical connexions are such as absolutely contradict Dr. Gillespie's statement that there are "veins and veins in the eye," veins with comparatively high pressure to maintain their patency against intra-ocular pressure, and veins, such as Schlemm's canal, with a low pressure so that aqueous can filter out.

In conclusion, I submit that I am more qualified to express an opinion on this point than Dr. Gillespie is, as I happen to have worked out the venous connexions of Schlemm's canal in the mammalia from marsupials to man. All my findings in the eye are in absolute agreement with what Professor Hill has himself described as existing in the brain, though not with what Dr. Gillespie has attributed to him; hence my intrusion into this controversy.—I am, etc.,

Nottingham, Sept. 17th. THOMSON HENDERSON.

TREATMENT OF CONGENITAL CLEFT PALATE: *A Correction.*

SIR,—In the BRITISH MEDICAL JOURNAL of March 5th, 1921, an article appeared entitled "A new principle in the surgical treatment of 'congenital cleft palate' and its mechanical counterpart," written by myself and Mr. Kelsey Fry.

A statement in the article gave the impression that Dr. Truman Brophy of Chicago was not entirely satisfied with the results of the cleft palate operations according to his method, and that, when I had the pleasure of meeting him in America, he had advised me to use a "tube pedicle" to fill up the palate.

This is entirely contrary to his views, as he and a very large school of American surgeons are well satisfied with their palate results done according to the Brophy method. Dr. Brophy merely suggested that the tube pedicle might be of use in those cases in which there had been great loss of tissue, and in which no repair by approximation of the maxillae could be attempted.

I much regret that Dr. Brophy and his many world-wide adherents should have been annoyed by this unintentional misleading statement.—I am, etc.,

London, Sept. 20th. H. D. GILLIES.

MENINGEAL ANTHRAX.

SIR,—I was interested in the note in the BRITISH MEDICAL JOURNAL of September 17th, from Dr. Pasha of Constantinople, describing a case of anthrax in the nasal cavity. The following case is, I think, even more extraordinary.

A patient was admitted to hospital at Basra in June, 1919, with a temperature of 104°, and regarded as a severe case of malaria. Repeated blood examinations for malarial infection were negative, but there was a daily rise of temperature with attendant rigors. Cerebral symptoms predominated, slight convulsions, occasional coma, and before death unequal pupils and slight incontinence. The patient died on the third day after admission. In spite of the repeated negative blood examinations the case was still regarded by all who saw the patient as one of malaria.

Post mortem there was nothing to note externally. Only the brain and spleen were examined. On opening the skull I found an intense engorgement of the superficial veins and sinuses. The cerebro-spinal fluid was not under pressure. The dura mater was a little thickened. The cortical surface of the brain presented a remarkable appearance. There was a wide extravasation of blood over the whole surface, practically a complete membrane of blood clot one-eighth of an inch in thickness lying between the dura and pia mater. There was a little blood-stained fluid in the ventricles, but the foramina were patent. On section nothing abnormal was found, the brain tissue being intact.

The spleen was normal in size, weight, colour and consistency. Cultures and direct films were made from the spleen and from the ventricles and cortical surface of the brain. After twenty-four hours a pure culture of *B. anthracis* was obtained from the brain inoculations. No growth was obtained from the spleen pulp. Confirmation of the nature of the infection was obtained from the Central Laboratory. There was no apparent primary lesion, as one might have expected, in the nasal mucous membrane. I learned that the patient had been working at the riverside docks where there was an occasional case of malignant pustule.—I am, etc.,

G. F. MITCHELL, M.D.,
Late Pathologist, 15th British General Hospital, Russia.

London, Sept. 15th.

A SIGN IN ENCEPHALITIS LETHARGICA.

SIR,—It has been my lot to see a number of cases of encephalitis lethargica during the past eighteen months, and in addition a number of suspected cases which were afterwards diagnosed otherwise. I have taken a particular interest in the ocular signs as observed by myself and in those recorded by others in literature on the disease.

My cases have all been of the severe type, usually admitted to hospital and attended by the usual mortality; in these cases I have found that a curious condition of the pupil exists, and that by manipulation of light falling on the pupil one is able to produce eccentric pupils in the eyes.

The eyelids of one eye are kept open with the finger and thumb of the left hand, and a shadow cast by the index finger of the right hand on a portion of the iris; this part of the iris contracts sluggishly, almost reminding one of a viscous liquid, with the result that one gets an irregular pupil, due to the different widths of the iris, and by varying the length of time the shadow falls on a part of the iris curious results can be induced, such as a pear-shaped pupil. The action of the iris is easily perceptible, the pupil taking about fifteen seconds to regain its regular shape, and is quite easily elicited with the aid of light from a near-by window. Moving the shadow about has the effect of making the iris appear to be making an effort to follow the shadow, but it moves too slowly, resulting in a very uneven pupil. The result can be obtained in either eye independently.

I have now obtained the sign in several cases where the disease has been definitely diagnosed and have not elicited it in epidemic cerebro-spinal meningitis. I record my observations in the hope that others who have the opportunity will test the sign and its value as a point in the diagnosis or differential diagnosis of encephalitis lethargica. The disappearance of the sign appears to be of favourable import, and the sign appears most easily elicited during the drowsy stage.—I am, etc.,

EUSTACE THORP, O.B.E., L.R.C.S., D.P.H.,
Assistant M.O.H. Sunderland; M.O. Borough Infectious Diseases Hospital.

Sunderland, Sept. 16th.

HERPES AND VARICELLA.

SIR,—In regard to the various evidence for (and against) a connexion between herpes and varicella, it is interesting to point out that the statistics of disease on Christmas Island, Straits Settlements, for a period of twenty years or more show that while herpes zoster has been comparatively common varicella has been unknown. The population of the island has varied between 500 and 1,500, and includes Europeans, Indians, Malays, and Chinese, both sexes, adults and children, adult males preponderating. Christmas Island lies more or less off the beaten track. It may be presumed that the micro-organism of varicella differs in degree, at least from that of herpes, and that the former has not yet been introduced, although it occurs with ordinary frequency on the mainland. It may be added that the island had never been inhabited by man prior to annexation in 1888; and the company which leases it commenced operations twenty-five years ago.—I am, etc.,

Christmas Island, Aug. 14th. S. J. CANTOR, M.B., Ch.B.

THE *Folha Medica* announces the organization of the Sociedade de Obstetricia e Gynecologia do Brazil, with Rio de Janeiro as its headquarters, and the *Revista de Gynecologia*, now in its fifteenth year, as its official organ. Professor E. Magalhaes has been elected president.

The Services.

R.A.M.C. ROLL OF HONOUR.

PART 79 of the official list of *Soldiers Died in the Great War, 1914-19*, contains the full names and regimental numbers of the 5,537 non-commissioned officers and privates of the Royal Army Medical Corps who lost their lives. Each entry gives also the places of birth and enlistment, and an indication of the mode and date of death, and the countries in which the soldier served during the war. These rolls have been compiled from information furnished to Officers-in-Charge of Records through the Official Casualty Lists. The price of Part 79 is 5s.

The list of officers of the R.A.M.C. was included in the volume published early this year which contained the names of officers in all branches of the army who died during the war. The total number of names of officers of the R.A.M.C. in the Roll of Honour is 709. The Officers' Roll, comprising over 40,000 names in all, may be purchased from H.M. Stationery Office through any bookseller, price 7s. 6d.

HONOURS.

K.B.E.

IN the list of appointments to the Military Division of the Order of the British Empire for valuable services rendered in connexion with military operations in Mesopotamia published in our last issue (p. 466) the name of Major-General OLIVER R. A. JULIAN, C.B., C.M.G., C.B.E., who has been created a Knight Commander of the Order, was accidentally omitted. General Julian was also included in the list of officers mentioned by the Commander-in-Chief, Mesopotamia Expeditionary Force, for distinguished and gallant service and devotion to duty and recommended as deserving of special recognition.

The President of the Czecho-Slovak Republic has conferred the Croix de Guerre upon Surgeon Commander Charles J. E. Cock, R.N., in recognition of services rendered during the war.

Universities and Colleges.

UNIVERSITY OF LONDON.

KING'S COLLEGE.

A SPECIAL course of eight lectures on the histology of the nervous system will be given during the Michaelmas term by Dr. C. Da Fano, in the Physiology Lecture Theatre of King's College (University of London), Strand, W.C. The lectures will be accompanied by demonstrations of specimens, and will be held on Wednesdays, at 4.30 p.m., beginning Wednesday, October 12th. The course is free to all students of London colleges and to medical men and others on presentation of their visiting cards. The course has been recognized by the University of London as one of the special courses for the B.Sc. Honours Degree.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

THE following awards of medical entrance scholarships and exhibitions have been made on the results of the examination held in June, 1921:

University College.—Bucknill Scholarship: A. S. Wesson. Additional Bucknill Scholarship: M. Barer. Medical Exhibition: Violet H. Comber.

Westminster Hospital Medical School.—Natural Science Scholarship: G. V. H. Norman.

London (Royal Free Hospital) School of Medicine for Women.—St. Dunstan's Medical Exhibition: Muriel F. Pratt. Mrs. George M. Smith Scholarship: Winifred A. Ladds. Isabel Thorne Scholarship: Evelyn M. Pakeman. Mabel Sharman Crawford Scholarship: Grace Nicolle.

London Hospital Medical College.—Price Scholarship in Science: F. W. Ta'Bois. Science Scholarship: H. Evans.

Medical News.

THE opening meeting of the fortieth session of the West London Medico-Chirurgical Society will take place at the West London Hospital on Friday, October 7th, at 8.30 p.m., when Sir G. Lenthal Cheatle, K.C.B., C.V.O., F.R.C.S., will give his presidential address, "A study of breast cancer in relation to the cancer problem."

THE St. Thomas's Hospital old students' dinner will take place at the Wharncliffe Rooms, Hotel Great Central, Marylebone Road, N.W., on Friday, October 28th, at 7 for 7.30 p.m. The chair will be taken by Dr. H. W. G. Mackenzie. The price of the dinner is 17s. 6d., to be paid at the Wharncliffe Rooms.

A COURSE of lectures and discussions on problems of public health in relation to industrial hygiene will be held at the Royal Institute of Public Health (37, Russell Square, London, W.C.1), on Wednesdays, from October 19th to December 7th, at 4 p.m. The lecturers include Sir Thomas Oliver, Professor Louise McIlroy, Professor S. Lyle Cummins, Professor Edgar L. Collis, Sir Kenneth Goadby, and Dr. H. M. Vernon. The lectures are free. Further particulars may be obtained from the secretary.

THE Past and Present Students' Dinner of St. Mary's Hospital will be held at the Connaught Rooms, Great Queen Street, at 7 for 7.30 p.m. on Monday, October 3rd. Dr. E. G. Graham Little, Physician to the Skin Department, will preside. Applications for tickets (price 12s. 6d. exclusive of wine) should be addressed to the honorary secretary, Dr. A. Hope Gosse, 15, Queen Anne Street, W.1.

THE opening of the Winter Session of the London (Royal Free Hospital) School of Medicine for Women, University of London, will be held at Hunter Street, Brunswick Square, W.C.1, on Monday, October 3rd, at 3 p.m. The introductory address will be given by Dr. Louisa Martindale on "The woman doctor and her future."

THE annual meeting of the Medical Sickness Annuity and Life Assurance Society Limited will be held at the offices of the Society, Lincoln House, 300, High Holborn, W.C.1, on Monday, September 26th, at 3.30 p.m., when the first report of the society since its conversion into a mutual company will be presented.

A SPECIAL course of systematic lectures and clinical demonstrations will be given at the National Hospital for Diseases of the Heart, Westmoreland Street, W.1, on Mondays, from October 10th to December 12th. Further particulars can be obtained on application to the secretary of the hospital.

THE Sultan of Egypt has conferred the Order of the Nile (second class) upon Mr. Owen Richards, C.M.G., D.S.O., Director of the School of Medicine, Cairo, in recognition of valuable services rendered.

DR. J. A. PESNO Y BASTIONY, Director of the *Revista de Medicina y Cirugia* of Havana, has been commissioned by the Government of Cuba to visit the medical centres of Europe to study recent progress in methods of teaching anatomy and operative surgery.

DR. N. H. BOLTON, medical officer of the Shanghai-Nanking Railway, has been decorated by the President of the Republic of China with the Order of the Excellent Crop (sixth class) in recognition of valuable services rendered.

PROFESSOR O. NÄGELI has succeeded Professor Eichhorst in the chair of clinical medicine at Zürich.

ACCORDING to statements published in Lima, Peru, attributed to Dr. Henry Hanson, who is in charge of the sanitation campaign directed against yellow fever by the Peruvian Government and the Rockefeller Foundation, nearly 1,000 deaths from yellow fever have occurred during the past nine months in the department of Lambayeque and La Libertad. The Rockefeller Foundation contributed 20,000 dollars to fight the epidemic, which is now reported to be decreasing.

DR. F. D. BENNETT has had conferred upon him by the President of the French Republic the distinction of Chevalier of the Legion of Honour in recognition of his services to the French Red Cross.

ACCORDING to the *Journal of the American Medical Association*, the Rockefeller Foundation has contributed more than 3,000,000 dols. for new buildings and endowments for the medical school of the University of Belgium. The laboratories and classrooms of the medical school are to be rebuilt and redeveloped close to the municipal hospital of St. Pierre. This hospital is also to be rebuilt and reorganized, and will contain 350 beds, as well as a well equipped out-patient department, laboratories, and accommodation for teaching and research in connexion with the University of Brussels. In addition, as already announced, a nurses' training school is to be established, as part of the general plan, in memory of Edith Cavell and Madame Depage.

DR. ETTORE MARCHIAVA, well known for his researches on malaria, has been nominated an Emeritus Professor at Rome.

THE American Public Health Association announces that its semi-centennial celebrations will be held in New York City from November 8th to 18th. Among the features of the celebrations will be the scientific sessions to be held from November 14th to 18th, including the laboratory, vital statistics, public health administration, sanitary engineering, industrial hygiene, and food and drugs sections. From November 8th, during the week preceding the convention proper, there will be organized demonstrations of the different forms of public health activity in New York. A banquet will take place at which Dr. Stephen Smith, the founder and first president of the Association, who is now in his 99th year, will be entertained. A historical jubilee volume, entitled *Fifty Years of Public Health*, will also be published about October 1st. Further particulars may be had from the secretary at 370, Seventh Avenue, New York City, U.S.A.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediscera, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

PERSISTENT HEART BEAT AFTER CESSATION OF BREATHING.

DR. A. H. RABAGLIATI (Durban) writes: In answer to Dr. D. S. Clarke's query (July 2nd, p. 30) as to continuation of heart beat after death, the following personal experience may be interesting:

In 1909, in the Ingham district, North Queensland, Australia, I was called in to see a woman, aged about 40, who was dying from sprue. She was pregnant nearly full time. Death took place next day. I was present when she died, but her pulse continued beating. Except for the heart beat all other signs of death were usual, and there was no doubt about the actual moment that death took place. Twelve hours later her pulse was still plainly perceptible and a faint heart movement could be heard with stethoscope but not felt. A colleague kindly came in twelve hours after her death at my request to verify the phenomena. He also could easily feel the pulse and hear the heart. The pulse continued for twenty-one hours after death. I have no explanation to offer; my colleague explained it by saying the heart was continuing to beat just as a frog's heart does even after removal from the body. The patient had been ill for many weeks, I believe months, with sprue, which was common there. She was intensely anaemic, which made the continuance of the heart beat to me the more extraordinary. I only saw her for the first time the day before her death. I have never seen the same condition before or since.

INCOME TAX.

"X. Y. Z." has received a cheque in payment of fees to which an "addition" is made as a present. Is the addition liable to income tax?

*** The principle laid down in connexion with gifts—Easter offerings, in the case of Cooper *v.* Blakiston—is that they are liable to taxation if they are given in regard of services rendered to the giver rather than of the private circumstances of the recipient and the personal relations subsisting between the two. Perhaps "X. Y. Z." can apply this principle to his own case; the fact that the "addition" was made to the payment of the fees charged is, of course, one point in favour of regarding it as a gift.

"R. C." has omitted to send his name and address.

LETTERS, NOTES, ETC.

"SURGICAL REMOVAL OF THE TONSILS": A CORRECTION.

FIGURE 2, on page 438, and Figure 3, on page 439, illustrating Dr. Irwin Moore's paper on surgical removal of the tonsils, which appeared in last week's issue, were inadvertently printed upside down.

DRUGS FOR STARVING RUSSIA.

THE Friends' Relief Committee, which is doing good work in the campaign against famine in Russia, has received an appeal from its unit in Russia for drugs to combat disease in the overcrowded famine area. We are asked to state that atropine sulphate, quinine hydrochloride, caffeine, iodine, calcium iodate, potassium iodide, pilocarpine hydrochloride, and ipecacuanha root are urgently required. Gifts in money or in kind should be sent to the Honorary Secretary, Friends' Relief Committee, 27, Chancery Lane, W.C.2.

THE SUPPLY OF DIPHTHERIA ANTITOXIN.

"B. L. S." writes: It seems useless for teachers and authorities like Dr. Thomson to instil into students the need for immediate use of antitoxin on the diagnosis or justified suspicion of a case of diphtheria, if we as practitioners are to be hindered from carrying out such treatment by laymen on urban district councils. I am practising in a home county town not thirty-five miles from London, and some time ago had a suspicious case of diphtheria in a house in the poor industrial part of the town. I gave antitoxin, which the M.O.H. authorized me to purchase, and sent the bill into the council, who after discussion refused to pay, and informed me that I must collect the money from the patient. The same week they refused to pay for antitoxin given by another practitioner in a similar case. I maintain that I give antitoxin for two reasons—(1) the benefit of the community, and (2) the benefit of the patient. If the local authority will not provide antitoxin, if I fail to collect the cost from the patient, I pay out of my own pocket for treatment benefiting the community. If this state of affairs is allowed to exist my dosage will have to depend on the length of the patient's purse or my own at the time. The suitability of patients for the free supply of antitoxin must be left to us as practitioners who enter the homes and know the circumstances, and not to gentlemen who discuss local affairs on two or three evenings a month. I have placed the case before the Ministry of Health, and the Ministry wrote to the council; on the receipt of their reply "that the case was one in which the council did not consider they should be called upon to provide antitoxin," the Ministry informed me that it could do no more. I have carried on practices in various parts of the country, and this, I am glad to say, is the first town where I have ever had any trouble in regard to antitoxin. It is almost useless for progressive boroughs like Wimbledon to take proper steps in the prevention of diphtheria if this state of affairs exists in country districts from where, perhaps, their milk supply is drawn.

ADJUNCTS FOR MOTORISTS.

MANY minor accessories useful to motorists are supplied by Messrs. Brown Bros. of Great Eastern Street, E.C.2. Amongst these are Peldo, and Jackson's Motor Car Polish. Peldo is a cream supplied in collapsible tubes. An inch or two of the cream is squeezed out and rubbed well into the hands before undertaking any adjustments of the car of a dirty or greasy nature. The solvent quickly evaporates so that the presence of the cream is not seen and is hardly felt. When the work is finished washing with ordinary soap and water removes practically all traces of dirt, and at the same time the skin is not roughened or hardened. Jackson's Motor Car Polish is useful for polishing and preserving the paint and the leather upholstery of cars. The post-war painting of mass production cars is often decidedly sketchy; rubbing and polishing with this polish will render the paintwork of such a car more presentable, when the bloom of its youth has gone. Applied to leather it makes the surface clean and soft, and is stated to preserve the condition of the leather.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.

"AN OLD MEMBER" writes: "The papers just received with the announcement of the first annual general meeting of the Medical Sickness and Accident Society since it was transposed into a mutual company may or may not strike the attention of the subscribers. Having perused them myself, I think that all members should certainly do so, and then they will probably decide to visit 300, High Holborn, W.C., on Monday, September 26th, at 4 p.m. Then they will have an opportunity (before it is too late) to state their views on some very important proposals."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, 32, 33, 34, and 35 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30, 31, and 32.

THE appointment of certifying factory surgeon at Newton Stewart (Wigtown) is vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE RESTORATION OF THE NORMAL CARDIAC MECHANISM IN CASES OF AURICULAR FIBRILLATION BY MEANS OF QUINIDINE SULPHATE.

BY

ALAN N. DRURY AND C. C. ILIESCU,*

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

For many years quinine has been used in conjunction with other drugs for its supposed beneficial action in cardiac cases; but it was not until 1914 that Wenckebach [4] brought forward evidence of a definite action in its power to terminate paroxysms of auricular fibrillation by restoring the normal rhythm. Prompted by this work Frey [5] used various alkaloids of the quinine group separately on cases of chronic fibrillation and found that quinine, and especially the alkaloid quinidine, was effective in restoring normal rhythm. This remarkable work of Frey's has been amplified by many other Continental workers, and by Levy [8] in America, and the number of cases so treated is now well over 100. The return of the normal cardiac mechanism has not been found to be invariable by any workers, the percentages of successful cases varying up to 66 per cent. in the most successful series, the average varying round 50 per cent. of the cases treated. According to past records the duration of the normal rhythm has varied from a few days up to many months.

The cases herein reported, thirteen in number, all army pensioners, have been under continuous observation for varying periods of time. The known duration of the auricular fibrillation is stated from the dates at which they first came under observation, and from which time, the fibrillation is known to have been a constant condition, and has been treated by digitalis or strophanthus therapy.† The supposed duration is based upon the patients' statements of their symptoms.

The method of treatment adopted has been, in the main, that used by previous workers, although certain variations of dosage have been tried, for reasons which will be stated later. The cases, after being cleared of digitalis or strophanthus, have all received one or two preliminary doses of 0.2 gram of quinidine sulphate by the mouth for the purpose of excluding the presence of quinidine intolerance; after which the quinidine sulphate treatment, given in gelatine capsules by the mouth, has been commenced.

The cases have been recorded electrocardiographically both before and during the quinidine treatment. The method of leading direct from the chest was adopted, as it has been shown that this method gives a much more accurate representation of the auricular movement than do limb leads.[1] The records have been taken every two hours—at 10 a.m., 12 noon, 2 p.m., 4 p.m., and 6 p.m. By this method a record of the auricular oscillations and ventricular movement is obtained and the rates of these are counted.‡

Unsuccessful Cases.

Case I.

A. H., aged 38. No signs of congestion. Heart slightly enlarged. Developed mitral stenosis. Etiology indeterminate. History of frequent attacks of tonsillitis. Probable onset three and a half years ago. Known duration, 5 months.

Quinidine sulphate. Total dosage, 7.8 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day ... 10 a.m., 12 noon, 4 p.m.—0.4 gram.
Third day ... 4 a.m., 8 a.m., 12 noon—0.4 gram; 4 p.m.—0.6 gram.
Fourth day ... 4 a.m., 8 a.m.—0.4 gram; 12 noon, 4 p.m.—0.6 gram.
Fifth day ... 4 a.m., 8 a.m., 12 noon, 4 p.m.—0.4 gram.

The auricular rate per minute fell from 400 progressively till the end of third day, when it reached 235; on fourth and fifth day there was a slight rise, remaining around 275. Ventricular rate per minute rose from 80 to 126 at end of first day, after which it was variable, being generally about 80. Eighteen hours after drug stopped both at original level. Patient complained frequently of short attacks of palpitation.

After seven days, during which the patient received no treatment, quinidine sulphate again given. Total dosage, 2.1 grams, given as follows:

First day ... 9 a.m., 10 a.m., 11 a.m., 12 noon, 1 p.m., 2 p.m., 3 p.m.—0.3 gram.

Auricular rate per minute fell from 425 to 240. Ventricular rate per minute rose from 75 to 118. Sixteen hours after quinidine stopped, both auricular and ventricular rates at original levels. Patient complained of severe headache towards the end of treatment.

Case II.

T. F. B., aged 28. No signs of congestion. Heart definitely enlarged, but not greatly. Mitral stenosis. Etiology indeterminate. Probable onset of fibrillation five years ago. Known duration eight months.

Quinidine sulphate. Total dosage 11.8 grams, given as follows:

First day ... 10 a.m., 1 p.m., 4 p.m.—0.4 gram.
Second day ... 8 a.m., 12 noon, 4 p.m., 12 midnight—0.4 gm.
Third day ... 8 a.m., 12 noon, 4 p.m., 12 midnight—0.4 gm.
Fourth day ... 4 a.m., 8 a.m., 12 noon, 4 p.m., 8 p.m., 12 midnight—0.4 gram.
Fifth day ... 4 a.m , 8 a.m.—0.4 gram ; 12 noon, 4 p.m.—0.6 gram ; 8 p.m., 12 midnight—0.4 gram.
Sixth day ... 4 a.m., 0.4 gram. ; 8 a.m., 12 noon, 4 p.m.—0.6 gram.

Auricular rate per minute fell from 575 to 350 on the first day, remaining at that level on the second and third with tendency to rise; on the sixth day it had fallen to 325. Ventricular rate per minute rose on the first day from 85 to 120, remained around 90 for three days, and fell on the fifth and sixth to 80; sixteen hours after withdrawal of quinidine both auricular and ventricular rates at original levels.

Patient had no symptoms during treatment. After thirty-six hours with no treatment, quinidine sulphate again given. Total dosage 2.1 grams given as follows:

First day ... 9 a.m., 10 a.m., 11 a.m., 12 noon, 1 p.m., 2 p.m., 3 p.m.—0.3 gram.

Auricular rate per minute fell from 550 to 375. Ventricular rate per minute rose from 75 to 130. Sixteen hours later both at original levels. Patient complained of headache towards end of treatment.

Case III.

J. M., aged 24. No signs of congestion. Heart considerably enlarged. Developed mitral stenosis. Etiology indeterminate. Probable onset five years ago. Known duration twelve months. Quinidine sulphate. Total dosage 8.2 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day ... 10 a.m., 12 noon, 4 p.m., 10 p.m.—0.4 gram.
Third day ... 8 a.m., 12 noon, 4 p.m., 10 p.m.—0.4 gram.
Fourth day ... 8 a.m., 0.4 gram ; 12 noon, 4 p.m.—0.6 gram.; 10 p.m., 0.4 gram.
Fifth day ... 8 a.m., 0.6 gram ; 10 a.m., 12 noon, 2 p.m.—0.4 gram.

Auricular rate per minute fell from 400 to 260 on the first day. On the second fell from 350 to 265, and progressively on the third, fourth, and fifth, when it was 180. The ventricular rate per minute rose from 70 to 110 on the first day, returning to 72 at beginning of the second day, rising to 115, remaining around 100 for remainder of treatment. Sixteen hours after treatment stopped, both rates at original levels. Patient had no symptoms except occasional short attacks of palpitation. After seven days, during which the patient had no treatment, quinidine sulphate was again given—9.8 grams. First five days' dosage as above; on sixth day, 4 a.m., 8 a.m., 0.4 gram; 11 a.m., 0.8 gram. (Coincident with this the patient was given liq. atropinae, 0.2 per cent. solution, 10 minims per diem.) The auricular rate and ventricular rate were very similar in degree and distribution to first quinidine treatment, but auricular rate did not fall below 200. Twenty-four hours after treatment, both at original levels. Patient complained of dryness of the mouth, but otherwise had no symptoms.

Case IV.

T. G., aged 46. No signs of congestion. Heart slightly enlarged. Systolic murmur at apex, no diastolic heard. Etiology indeterminate. Probable onset four and a half years ago. Known duration fifteen months. Quinidine sulphate. Total dosage 1.6 grams.

First day ... 8 a.m., 0.4 gram; 10 a.m., 0.2 gram; 12 noon, 0.4 gram; 2 p.m., 0.2 gram; 4 p.m., 0.4 gram.

Auricular rate per minute fell from 425 to 330 at 6 p.m. Ventricular rate per minute rose from 80 to 120 at 6 p.m. At 6.15 p.m. had a syncopal and epileptiform attack, ventricular rate after recovery being very slow and rising gradually. Attack preceded by feeling of sickness and accompanied by diarrhoea. Auricular rate after attack 268, ventricular rate 56. Patient gave a history of similar attacks previously. Twenty-four hours later both rates at original levels.

Case V.

F. M., aged 22 years. No signs of congestion. Heart definitely but not consderably enlarged. Mitral stenosis. Etiology

* Working on behalf of the Medical Research Council.

† One exception, Case VI, owing to whose usual low ventricular rate treatment was not indicated.

‡ The auricular rates are the average of a series of oscillation counts, and the ventricular rates an average of counts on the same records.

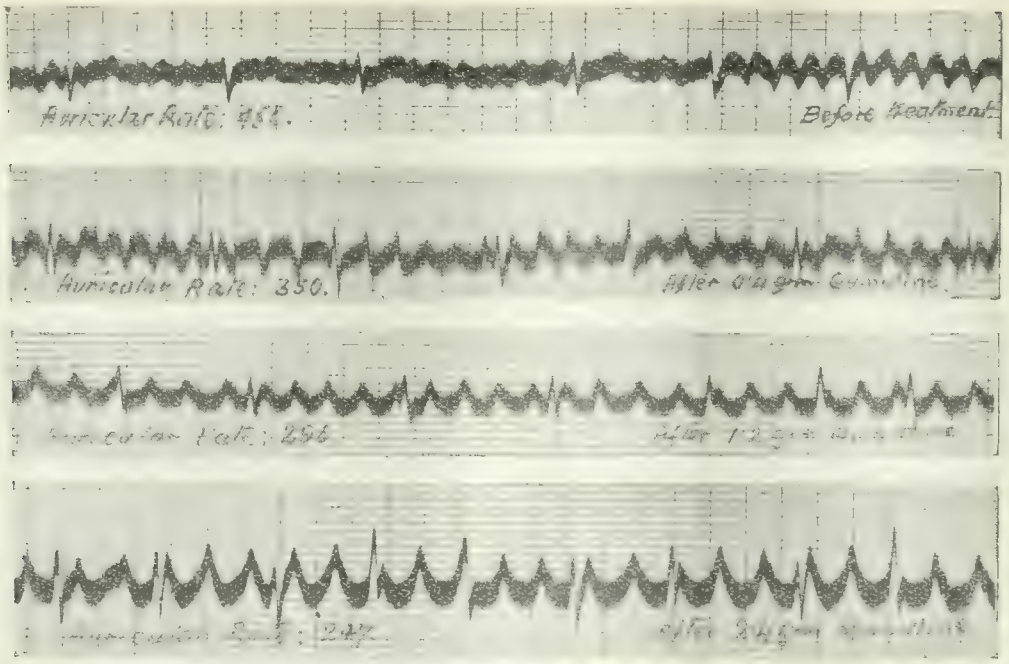


FIG. 1.—Direct chest lead records (sternal lead) from Case III. Showing retardation of auricular rate, with accompanying change in character of the records.

indeterminate. Probable onset indeterminate. Known duration ten months.

Quinidine sulphate. Total dosage 3.6 grams, given as follows:

First day .. 8 a.m., 4 p.m.—0.4 gram.
Second day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Third day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Fourth day .. 8 a.m. 0.4 gram.

Auricular rate per minute fell on first day from 475 to 400, rising to 420 at the beginning of the second, and falling progressively to 300 at the end of the third day. At 8.45 on the fourth day pure flutter at 220 appeared, falling at 12 noon to 200, and rising quickly again to 220; during the day it rose to 260, and remained about that rate; pure flutter continuing. Ventricular rate rose very little from 80 the first three days; on the fourth day, when pure flutter appeared, the ventricle responded 2:1 at 110; when auricular rate fell to 200, ventricle responded 1:1, for about one hour at 200, but as the auricular rate rose 2:1 response returned; during the next twenty-four hours patient had several short periods of 1:1 response, when digitalis therapy was commenced, and fibrillation returned after three days of this treatment.

CASE VI.

H. H., aged 39 years. No signs of congestion. Heart, moderate enlargement. Mitral stenosis. Etiology, acute rheumatism. Probable onset three and a half years ago. Known duration seventeen months.

Quinidine sulphate. Total dosage 4.4 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Third day ... 8 a.m., 4 p.m.—0.4 gram; 12 noon—0.2 gram.
Fourth day... 8 a.m., 4 p.m.—0.4 gram; 12 noon—0.2 gram.

Auricular rate per minute fell on first day from 450 to 275, and remained at that level till the third day, when slight rise, followed by a fall to 275, produced on this and succeeding days by interposition of smaller doses at 12 noon. Ventricular rate per minute rose on the first day from 52 to 78, varied between 78 and 60 on succeeding days. Twenty-four hours after drug stopped, both at original rate.

CASE VII.

R. L., aged 40 years. No signs of congestion. Heart slightly enlarged. Valves nil. Etiology indeterminate. Probable onset four and a half years ago. Known duration fifteen months.

Quinidine sulphate. Total dosage 15.2 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day ... 8 a.m., 12 noon, 4 p.m., 10 p.m.—0.4 gram.
Third day ... 8 a.m., 12 noon, 4 p.m., 8 p.m.—0.4 gram.
Fourth day ... 8 a.m., 12 noon, 4 p.m., 8 p.m., 12 midnight—0.4 gram.
Fifth day ... 4 a.m., 8 a.m., 12 noon, 4 p.m., 10 p.m.—0.4 gram.
Sixth day ... 8 a.m., 4 p.m., 10 p.m.—0.4 gram.
Seventh day ... 8 a.m., 4 p.m., 10 p.m.—0.4 gram.
Eighth day ... 4 a.m., 8 a.m., 4 p.m.—0.4 gram,
Ninth day .. 8 a.m.—0.4 gram; 12 noon, 4 p.m.—0.2 gm.
Tenth day .. 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Eleventh day... 8 a.m., 12 noon, 4 p.m.—0.4 gram.

Auricular rate per minute fell slowly but progressively, from 450 to 250 on the fourth day, after this the rate remained around 270 till the seventh day, when it rose to 350, and remained at that level till the ninth day when it again progressively fell to 260 on the eleventh day. Ventricular rate per minute rose slowly but progressively from 70 to 110 on the third day, remaining around 90, with several short periods of high rate about 120, till the eleventh day. Twenty-four hours later both at original level. Patient complained of several short attacks of palpitation.

Successful Cases.

CASE VIII.

W. C. S., aged 46. No signs of congestion. Heart slightly enlarged. Valves, no murmurs heard. Etiology indeterminate. Wassermann positive. Liver enlarged and hard. Probable onset four years ago. Known duration nine months.

Quinidine sulphate. Total dosage 2 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day... 8 a.m., 12 noon—0.4 gram; 2 p.m., normal rhythm.

Auricular rate per minute fell from 476 to 340 on first day, remaining at that level till two hours before normal rhythm appeared. Ventricular rates per minute rose from 70 to 100 on the first day, remaining about 80 on the second day till normal rhythm appeared at 67 per minute. The patient complained of no symptoms during treatment.

CASE IX.

F. J., aged 50. No signs of congestion. Heart definitely but not considerably enlarged. Valves nil. Etiology indeterminate. Wassermann negative. Probable onset, five years ago. Known duration seven months. Quinidine sulphate. Total dosage 4 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day... 10 a.m., 12 noon, 4 p.m., 8 p.m.—0.4 gram.
Third day ... 4 a.m., 8 a.m., 12 noon.—0.4 gram; 2 p.m., normal rhythm.

Auricular rate per minute fell progressively from 400 to 300, two hours before normal rhythm appeared. Ventricular rate per minute rose from 120 to 135 on the first day, keeping around 120 till normal rhythm appeared at 69 per minute. The patient complained of no symptoms during treatment.

CASE X.

E. N., aged 31. No signs of congestion. Heart not enlarged. Valves nil. Etiology indeterminate (brothers acute rheumatism). Probable onset four years ago. Known duration thirteen months.

Quinidine sulphate. Total dosage 6.6 grams, given as follows:

First day ... 8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day... 10 a.m., 12 noon, 4 p.m., 8 p.m., 12 midnight—0.4 gram.
Third day ... 4 a.m., 8 a.m., 12 noon, 4 p.m., 8 p.m., 12 midnight—0.4 gram.
Fourth day... 4 a.m., 0.4 gram; 8 a.m., 0.6 gram; 11.30, normal rhythm.

Auricular rate per minute fell from 540 to 450 on the first day, rising to 525 at beginning of the second and falling to 440 and

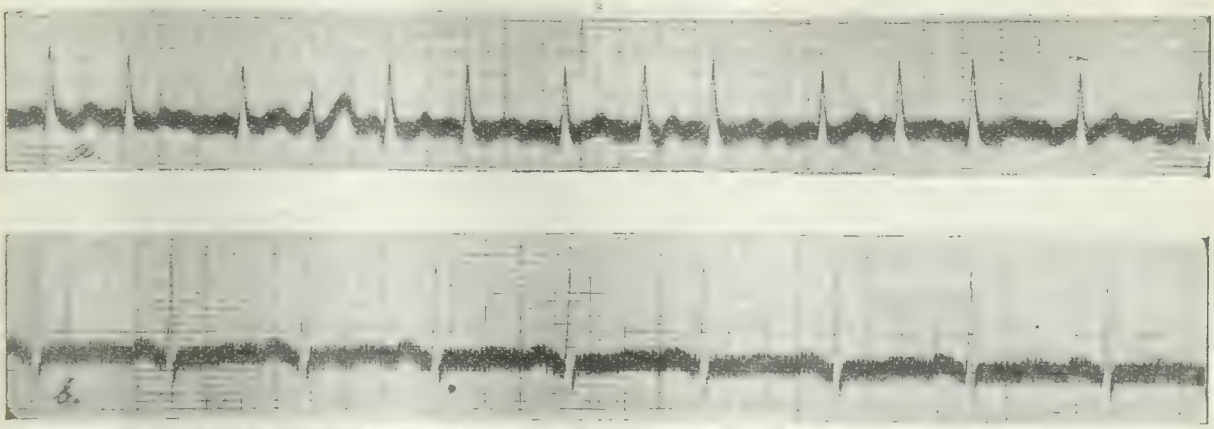


Fig. 2.—Limb lead (lead III record) of Case XII. (*a*) Before treatment. (*b*) After appearance of normal rhythm.

progressively falling to 350 one hour before normal rhythm appeared. Ventricular rate per minute showed slight rise on the first day from 80 to 100, falling to original level at beginning of the second and rising again and maintaining itself around 90 till normal rhythm appeared at 65 per minute. The patient had no symptoms during treatment.

CASE XI.

H. A., aged 27. No signs of congestion. Heart considerably enlarged. Developed mitral stenosis. Etiology, chorea. Probable onset unknown. Known duration fifteen months.

Quinidine sulphate. Total dosage 4.4 grams, given as follows:

First day ...	8 a.m., 12 noon, 4 p.m.—0.4 gram.
Second day...	8 a.m., 12 noon, 4 p.m.—0.4 gram.
Third day ...	8 a.m., 12 noon, 4 p.m.—0.4 gram; 10 p.m.—0.4 gram.
Fourth day...	8 a.m.—0.4 gram.; 10 a.m., normal rhythm.

Auricular rate per minute fell progressively from 420 to 280 at the end of the second day, showed tendency to rise on the third, and at the end was 350. Sixteen hours later normal rhythm. Ventricular rate per minute rose from 70 to 115 on first day, maintaining itself around 90 till normal rhythm appeared at 70 per minute. Patient had no symptoms during treatment.

CASE XII.

W. W., aged 25. No signs of congestion. Heart considerably enlarged. Developed mitral stenosis. Slight aortic regurgitation. Etiology indeterminate; frequent attacks of tonsillitis. Probable onset two months ago. Known duration four weeks.

Quinidine sulphate. Total dosage 2.8 grams.

First day ...	10 a.m., 1 p.m., 4.30 p.m.—0.4 gram.
Second day...	8 a.m., 12 noon, 4 p.m.—0.4 gram.
Third day ...	8 a.m.—0.4 gram.; 10 a.m., normal rhythm.

Auricular rate per minute fell from 425 to 250 at the end of the second day. Sixteen hours later normal rhythm. Ventricular rate per minute rose from 70 to 105 on the first day, maintaining itself around 90 till normal rhythm appeared at 70 per minute.

CASE XIII.

A. J. P., aged 43. No signs of congestion. Heart moderately enlarged. Valves, mitral stenosis. Etiology indeterminate. Probable onset five years ago. Known duration, twenty months.

Quinidine sulphate. Total dosage 0.8 gram, given as follows:

First day ...	8 a.m., 12 noon 0.4 gram; 4 p.m., normal rhythm.

Auricular rate per minute fell from 450 to 275. Two hours later normal rhythm. Ventricular rate per minute rose from 60 to 85, when normal rhythm appeared at 60 per minute.

The cardiac signs and general symptomatology of the patient before and after successful treatment, and also the duration of the normal rhythm, will be dealt with at a later date.

As can be seen from the foregoing results, the first reaction of the auricular rate is similar in all patients, whether the normal mechanism is finally restored or not; the auricular rate is retarded. Commencing from the figure around the average rate of 450 per minute, the auricular rate falls and has reached a rate of 200 per minute in some of the cases studied; and as the rate falls the character of the records changes. The periods of no oscillation which are found in the direct chest lead records of cases prior to treatment become less frequent, to the point of disappearance, and the oscillations become more regular, both in time and form, and at the low rates the maximum variation between the longest and shortest cycles is about 0.05 second.

The records change from those of fibrillation, passing imperceptibly into those of impure flutter, the impurity of which becomes less and less, but not as a rule attaining the purity of auricular flutter as this is usually seen clinically. A series of such curves taken from Case XII (Fig. 1) illustrates this point. In unsuccessful cases when the drug is withdrawn the impure flutter passing again gradually into fibrillation is shown. Only exceptionally is auricular flutter developed in its pure form (see Case V), and in this case the flutter did not pass again into impure flutter, but continued to flutter after the drug was stopped. The curves of the calculated rates are not smooth during the period of treatment, and there are indications that about two hours after the giving of a dose of the drug the maximum effect is obtained, and thenceforward the auricular rate shows a slight rise. The factor becomes of importance in some cases, as, owing to the lapse of time between the last dose of one day and the first dose of the next, there appears to be opportunity for the auricular effect to vanish, and the condition may be on the second day comparable to that prior to treatment. Through and through, however, the doses suggested by previous workers—that is, 0.4 gram three times a day—are sufficient to ensure a progressive retardation of auricular rate for the first few days, during which time the majority of successfully treated cases have re-established the normal mechanism. The alteration in method of dosage mentioned above has been adopted in some cases in order to maintain a progressive retardation of auricular rate, but such retardation, though continued, does not necessarily ensure the restoration of the normal rhythm in cases which do not respond to treatment in the first few days. It has not been considered advisable to attempt to drive the auricular rate below 200 per minute. There appears to be a definite relation between the auricular rate and the ventricular rate, for as the former falls the latter rises, and vice versa; and although it appears in the later stages of treatment that this relationship is disturbed by the presence of other factors, it has been considered advisable to keep to this limit to avoid the appearance of a 1 : 1 response of the ventricle and its consequent high rate of beating. That the retardation of the auricle is produced by quinidine sulphate is well shown by the fact that upon withdrawing it in cases where the auricular rate has been retarded, the rate mounts, and in twelve to eighteen hours has reached the level prior to treatment. The ventricular rates, similarly ascertained, show certain features in all cases; during the first day the ventricular rate rises, for example, from 70 often up to 120 or more; after this considerable variation is seen, the rate ranging from the last figures to figures which, though lower, are for the most part in excess of that prior to treatment. Upon withdrawing the quinidine sulphate, the ventricular rate falls to its original level.

Thirteen cases of auricular fibrillation have been treated with quinidine sulphate, and in six cases the normal rhythm has been re-established, while in the remaining seven cases, although similar changes have been produced in the retardation of the auricular rate the movement persisted without break, and the rate returned, upon withdrawal of the drug, to its original level.

The percentage success obtained is of the same order as that obtained by several other workers, and the successful and unsuccessful cases, as previous workers have shown,

do not fall into any special clinical group, either with regard to etiology, cardiac enlargement, valvular involvement, or duration of the malady. Both successful and unsuccessful cases form heterogeneous groups.

The drug, quinidine sulphate, has a very remarkable action upon the auricle, and this action is of a potent nature. For this reason alone the method of direct leads from the chest is of importance, for it gives a record of the effect of the drug upon the auricle itself; the effect on the auricle will vary considerably owing to the factors of absorption, individual tolerance, etc., and the direct leads enable the drug to be controlled.

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THE MANNER IN WHICH QUINIDINE SULPHATE ACTS IN AURICULAR FIBRILLATION.*

BY
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The action of quinidine sulphate upon the fibrillating auricle, an action but recently discovered, is perhaps one of the most remarkable and dramatic which is now known to therapeutics. The essential feature of the reaction is an invariable and conspicuous reduction of the rate at which the auricle beats; in patients in whom treatment is successful this progressive slowing of the auricular action is abruptly disturbed, the disordered action ceases, and the normal action is at once resumed.

To understand how these changes are brought about is of obvious importance; but this problem cannot be solved unless we are able first to understand the mechanism of fibrillation itself. Several views of the reaction of the fibrillating auricle to quinidine have been published, but as these all assume that fibrillation of the auricle is caused by rapid impulses, arising at one or more irritable centres in the muscle of the auricle, and to which the auricle responds in a confused manner, the explanations founded upon such an assumption remain inadequate. These theories of auricular fibrillation, until recently widely held, have undergone extensive revision, and are now scarcely acceptable.

Recently a series of papers[2] has been published from this laboratory, in which it has been shown that in auricular fibrillation a circus movement exists in the auricle; that a single wave is propagated and revolves perpetually upon a re-entrant path. The circus movement is repeated in the average 450 times a minute, and it is this circulating wave which, in its revolution, alone controls the beating of the auricle. The auricle is no longer controlled by discrete impulses arising at a single point on the auricular muscle, each impulse originating a corresponding discrete wave of contraction in the auricle which dies away and is renewed, but by a never-ending wave which passes over and over again through the same muscular channels. To understand the action of quinidine it is necessary to understand the factors which control this circus movement. They have been stated previously, and are: (*a*) the length of the path followed; (*b*) the duration of the refractory period at any given point; and (*c*) the speed at which the wave is conducted.

Circus movement in the auricle is only possible (1) if a circular path of sufficient length is available; (2) if the refractory period is sufficiently short; and (3) if the speed at which the wave moves through the muscle is sufficiently slow. Otherwise the crest of the advancing wave in re-entering muscle through which it has already passed will discover this muscle to be still refractory and will be unable to proceed. The wave in travelling leaves muscle behind it which is for some time incapable of response; time must elapse to permit recovery before the new or re-entrant wave can again pass. Quick recovery (a short refractory period) clearly favours re-entry; so does a long path, and so does a slow rate of travel, for the two last conditions both delay the arrival of the re-entrant wave.

Now experiment has shown us that in auricular fibrillation the gap between the crest of the advancing wave and its wake is very small; on the circular path, the wave is always advancing through muscle which has but just recovered its excitability; the presence of some gap is all-essential, upon its existence the continued movement absolutely depends. It has been stated that if we could find a remedy which would close this gap, either in flutter or in fibrillation, the circus movements to which these abnormal movements of the auricle depend, would at once cease. The first of such remedies has been discovered in quinidine.

Hoffmann[1] in observing the effects of quinidine experimentally found that it reduces the excitability of the auricular muscle; that is true, but it was not made clear by his experiments how this reduction happens, neither is a reduced excitability in itself a sufficient explanation of the remarkable effects of quinidine on the fibrillating auricle. In recent experiments, a full report of which will be published elsewhere, we have found that the most striking action of quinidine upon the auricle is a lengthening of the refractory period; the lengthening which occurs, when doses comparable to those used clinically are employed, amounts to 50 per cent. or more. The reason why quinidine brings fibrillation of the auricle to an end seems to us therefore not to be in doubt. It prolongs the refractory period of the auricle and delays the recovery of the tissue, thus rendering the gap between the crest and the wake of the circulating wave shorter and eventually abolishing it altogether; when the last event happens the abnormal action of the auricle ceases and the normal impulses are thus enabled once again to resume control.

Though we do not doubt that this is the explanation of the successful treatment, the problem is not quite so simple as it may at first seem; for quinidine has not only this action upon the refractory period, it has further actions. The most important of them from our present standpoint is an effect on the rate of conduction; it slows conduction in the auricle. Now slowing of conduction favours re-entry; it prolongs the gap. Thus quinidine exerts two effects which, so far as circus movement is concerned, are opposed to each other; on the one hand, by prolonging the refractory period it tends to shorten the gap; on the other hand, by slowing conduction it tends to lengthen the gap. It is only in those cases where the first effect predominates over the second that the gap will close and the circus movement will terminate. In patients suffering from chronic auricular fibrillation the first effect appears to predominate in approximately 50 per cent. of the cases, for in this percentage auricular fibrillation is abolished; in those patients (the remaining 50 per cent.) in whom this desired end-result is not obtained, it would seem as if the second effect predominates, or that the opposed effects are exerted equally. It is to be noted that in patients in whom fibrillation is not abolished there is nevertheless slowing and usually very profound slowing of the auricle, the rate falling from its original rate of 400, 500, or 600 per minute to 300, 250, or even 200 per minute; such slowing would be the anticipated effect of depressed conduction in the auricle, and it is probable that it is to be ascribed to this cause, in the main, at all events.*

The theory of fibrillation which we support—namely, its dependence upon circus movement—is one which, in the light of our recent experiments upon quinidine, is fully competent to explain the remarkable action of this drug upon the disorderly action of the auricle under consideration. We publish this note at the present time to draw attention to our view of the manner in which quinidine acts, believing that treatment by means of quinidine, which is now engaging the attention of many workers, is best controlled when its action is interpreted in the way which we suggest, and that further progress in this method of treatment, already highly successful, promises to come

* Being a preliminary account of work undertaken for the Medical Research Council.

* Another factor, namely, lengthening of the path, the wave seeking a new and longer path of re-entry as it finds the old one closed—possibly contributes; but we do not at present regard it as the main factor. It is also to be noted that quinidine very probably affects what we have termed the partial refractory period, and some evidence in this direction has been obtained. But these factors, at present regarded as minor ones, are as yet unripe for discussion.

from a consideration of those factors which we here discuss. At the same time it may be wise to utter a word of warning against the indiscriminate and uncontrolled use of this powerful remedy. It is a remedy of which we still have much too little knowledge; it is one which, unless it is strictly controlled by frequent records of the auricular and ventricular action, is not without serious risk. The time will no doubt come when its use in general practice may be advocated; but it has not yet come.

A phenomenon which not uncommonly disturbs treatment is a rise of ventricular rate; this rise of ventricular rate is almost invariable as the heart comes under the influence of quinidine. Experimental work goes to show that this rise may be due to two causes, acting probably together. A fall of auricular rate is itself sufficient to produce a lesser grade of block and a resulting rise of ventricular rate. But we find that quinidine has a paralysing action on the vagi, an action not altogether unlike, though less powerful than that of atropine; by reducing vagal tone the drug will increase the power of the junctional tissues to conduct, and lift the ventricular rate, as does atropine. Opposed to these actions is a direct action of the drug upon the junctional tissues; this has been shown by several workers,[3 4] and we can fully confirm it. This opposed action probably moderates in some measure the rise of ventricular rate which occurs during the clinical use of quinidine in cases of auricular fibrillation.

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ENLARGEMENT OF A SPLENCULUS TO THE SIZE OF A NORMAL SPLEEN

AFTER REMOVAL OF A RUPTURED SPLEEN TEN YEARS PREVIOUSLY.

BY

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AND

G. D. FREER, M.B., D.P.H.

On May 24th, 1910, Mr. R., aged 21, while playing football in Kuala Lumpur, Federated Malay States, collided with another player, and in doing so received a violent blow over the splenic region. He felt somewhat faint, but continued playing for about twenty minutes. He then began to feel much worse, complaining of pain in the abdomen, particularly in the left upper area. Faintness increased and he vomited once. The accident occurred about 6 p.m., and he was admitted to the European Hospital at 8 p.m. On admission, he was very pale but without an anxious expression; pupils widely dilated; pulse very weak and thready, 95 per minute. On examination of the abdomen there was dullness over the splenic region and for about a handbreadth below the left costal margin and in the left loin. Tenderness was observed over the epigastric and splenic regions. Liver dullness present. At 10 p.m. the patient was somewhat restless. The dullness over the spleen and liver had given way to a tympanitic note. The pulse was still feeble, and had increased to 100 per minute. He was then operated on by Dr. G. D. Freer, with the assistance of Dr. John Gray.

The abdomen was opened in the middle line over the epigastrium. The peritoneal cavity was found to contain blood, and on the spleen being examined it was seen that it was torn on the inner side in the region of the hilum. The incision was enlarged, and a transverse cut made towards the left, dividing the left rectus muscle. The whole spleen was then removed after the pedicle had been secured with a double ligature, a number of forceps having been applied for safety before the pedicle was severed.

That the actual spleen was removed is proved by the following evidence. It was weighed by Dr. J. P. Masters and found to be 13 oz., a normal spleen weighing in the adult about 7 oz. The patient had apparently contracted malaria previously to the accident, and the enlargement of his spleen may have contributed to the ease with which it was ruptured. Dr. John Gray, who helped at the operation, says in a letter to one of us (W. McA. E.), "the spleen was completely removed." Miss A. McBride, who was sister in the theatre at the time of the operation, writes: "I saw the operation . . . the spleen was removed," and Miss H. M. Shaw, a nurse who was assisting in the theatre, writes: "I was busy during the operation with keeping a supply of hot water and saline ready, so I cannot say that I actually saw the spleen removed, but I heard the remarks made when it was out, and I went to the laboratory the next day and saw it."

The patient made a somewhat complicated recovery, having what was thought to be mild malaria, and some trouble at the base of the left lung. He was discharged from hospital on July 5th, 1910. On that date an examination of the blood showed—red cells, 4,800,000; haemoglobin, 75 per cent.; leucocytes 9,000, with polymorphonuclears 51 per cent., lymphocytes 8 per cent., large mononuclear 31 per cent., and eosinophiles 10 per cent. It was stated by Dr. A. T. Stanton, of the Institute for Medical Research, Kuala Lumpur, who made the examination, that the somewhat low colour index, slight leucocytosis, with relative increase of large mononuclear forms (? a souvenir of malaria) and of eosinophiles, are the only features worthy of remark.

A further blood examination was made by Dr. Stanton on August 10th, 1910, five weeks later, and the red cells numbered 5,600,000; haemoglobin, 90 per cent.; leucocytes 7,000, with polymorphonuclears 44 per cent., lymphocytes 26 per cent., large mononuclear 15 per cent., and eosinophiles 15 per cent.

On full recovery the patient was able to carry out his duties in the Malay States without any untoward symptoms, and states that he was assured that he would not suffer again from malaria as he was minus his spleen! He continued in good health for eight years, after which he began to have some attacks of weariness, and was found to have an evening temperature. It was considered by his medical advisers that this might be due to some obscure form of tubercle.

Early in 1920 his general condition was in no way improved, and he was losing weight. With this the ventral hernia, which had been gradually developing at the site where the left rectus had been cut through, became much increased in size, and caused considerable inconvenience. It was decided that he should come to England for advice. He came via the Cape of Good Hope, and on arrival, after a journey of four months, was considerably improved, having lost his temperature and gained flesh.

He was sent to one of us (W. McA. E.) by Dr. Marcus Johnson with a view to the cure of his traumatic hernia. On examination it was found that in general health he appeared well, was not anaemic, and had no temperature. There was a wide gap in the upper third of the left rectus, and on coughing a marked protuberance of abdominal contents took place. It was decided to attempt a cure by operation.

On September 4th, 1920, ether was administered by Dr. C. F. Hadfield, Mr. W. Girling Ball acting as Mr. Eccles's assistant, the matron of the nursing home and the theatre sister also being present. On opening the abdomen some adhesions of omentum were found and separated. Then, to the astonishment of all present—and each one of five persons confirms the fact—a well-formed, normal-looking spleen was seen in the usual position.

Knowing the previous history, the organ now found was fully examined. It was taken in the hand of Mr. Eccles, drawn forward, found to have a definite pedicle in which could be felt pulsating vessels. The shape, size, notch, colour, and consistency all appeared to be that of a normal spleen. Each person present was requested to look well at the organ, and all agreed that it appeared to them to be a normal spleen. The left kidney region was then examined and a normal left kidney palpated. A radical reparative operation was performed upon the gap in the left rectus and the abdomen closed. The patient made an uninterrupted recovery, the hernia remaining cured up to the time of this record.

That a splenculus may enlarge, after the removal of an ordinary spleen, is well known, but the rarity with which such an enlarged organ is actually seen during life makes it desirable to place this case on record.

THE next French Congress of Psychiatry will commemorate the tercentenary of François Bayle, born in 1622.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Professor R. P. RANKEN LYLE, M.D., President.

DISCUSSION ON CAESAREAN SECTION.

OPENING PAPERS.

INDICATIONS FOR CAESAREAN SECTION.

BY

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WITH the exception of the toxaemias of pregnancy there is at the present moment no problem in obstetrics more interesting than Caesarean section.

In order to secure as much advantage as possible from this discussion, Dr. Eardley Holland and I asked the leading hospitals in the country to give us their returns for Caesarean section during the last ten years. We desire to thank all those who have been good enough to collect the figures, which we hope to publish in detail at a later date. As the returns were only received a week or ten days ago in many instances, it has not been possible to make full use of them on the present occasion; we are able, however, to present some very interesting figures.

Dr. Eardley Holland and I have decided that in to-day's discussion he will consider particularly the technique of the operation, and I will refer more especially to the indications.

The modern operation of Caesarean section dates back to the eighties of last century. Then it was that Sänger introduced stitching of the uterine wound which brought the operation within the scope of practical obstetrics; previously the uterus had been left unstitched, and only very occasional successes were recorded. In this country the name of Murdoch Cameron deserves special mention, for shortly after Sänger's early successes he also recorded a number of cases with equally satisfactory results. It is but fitting, therefore, that in discussing Caesarean section to-day we should recognize their great services to ostetrics.

At the time when Sänger and Murdoch Cameron began their work on Caesarean section practically the only accepted indication for the operation was contracted pelvis; moreover, the degree of pelvic deformity was placed much lower than it is to-day. With ever-improving results the lower limit has gradually been raised, until at the present moment the border line between vaginal delivery and Caesarean section may be placed at 3¼ in. (8.1 cm.). Another complication which was accepted early as an indication for the operation was the presence of tumours of the uterus or ovary obstructing the parturient canal, for gradually, as hysterectomy and ovariotomy became perfected, the obstetric surgeon came to appreciate the possibility of employing Caesarean section when such tumours caused dystocia.

These two conditions, where a distinct obstruction was present, were fairly obvious indications. Very different was the suggestion made by Lawson Tait, as far back as 1898, that placenta praevia should be dealt with by Caesarean section. It is no exaggeration to say that his paper came as a veritable bombshell, for it must be remembered that obstetrics was, at that time, more a branch of medicine than of surgery, and was controlled largely by the physicians.

Early in this century another indication was advanced—namely, severe eclampsia during the later weeks of pregnancy; in recent years the operation has been further extended to some of the other manifestations of toxaemia of pregnancy.

Other indications have been suggested from time to time, such as accidental haemorrhage, impacted transverse presentations, alterations in the axis of the canal from ventrofixation, extreme rigidity of the canal, and narrowness of the vagina. Indeed, there is hardly one of the graver complications of parturition which has not been mentioned as a suitable indication, under special circumstances, for Caesarean section.

The scope of any surgical procedure or operation will always extend as the technique is improved and the mortality and morbidity reduced, and it is for us obstetric surgeons so to perfect the technique of Caesarean section that we can extend its scope. Therefore I take it that the remarks of Dr. Eardley Holland on technique are more important than mine on indications.

Before discussing the various indications for this operation, I feel it necessary to utter a word of caution regarding the danger of extending it unduly and rashly. In certain conditions, such as pelvic deformity and fibromyomata obstructing the parturient canal, there is no doubt that Caesarean section is indicated; in the others, however, it is not absolutely indicated, and in dealing with them discretion must be exercised, and the cases selected with discrimination. This is the great fascination of obstetric practice—the selection of the most suitable treatment. It calls for resource and judgement.

The weakness in Caesarean section at the present time is that it leaves behind a uterus permanently injured and liable to rupture should another pregnancy occur. Dr. Eardley Holland will give details regarding this danger and how it is to be avoided. Until we can secure an absolutely sound uterine cicatrix the operation of Caesarean section cannot be extended as far as many of us desire. Take, for example, the position of Caesarean section as regards grave toxaemia, such as eclampsia. In many cases the patient is a young primigravida. At the present moment we must either sterilize this young patient—a most unfortunate procedure, for she may lose her child—or leave her unsterilized and subject to the risk of rupture at a subsequent pregnancy or parturition. Could we say that the uterine wound after Caesarean section is so sound that the possibility of rupture may practically be excluded, then we could confidently employ the operation in many cases which to-day are dealt with by the older accepted methods. But we cannot do this. It is no use shutting our eyes to the fact that Caesarean section, performed in the manner generally favoured, leaves the uterine wall very decidedly weakened. Personally, I believe there is a solution, but this subject is outside my brief in to-day's discussion.

When Dr. Eardley Holland and I introduced the subject of Caesarean section at a discussion in London in May, 1920, I said:

> "I feel I am voicing the opinion of all enlightened obstetricians, in this and other countries, when I say that our desire is to perform the conservative operation and not sterilize the patient. We feel that sterilization of the patient after Caesarean section, unless there is some definite disease of uterus, heart, lungs, etc., or mental weakness, is a crude procedure and only justifiable if it is proved beyond doubt that it is not possible to secure a sound uterine cicatrix. If such a decision is forced upon us it will be most unfortunate, for it will undoubtedly compel us to limit the scope of Caesarean section, and preclude us from extending the operation to many obstetrical complications which we feel could be more suitably dealt with by Caesarean section than by the ordinary methods at present employed."

My duty to-day is to discuss indications, but before entering into details I would ask those who have been engaged in obstetric practice for many years to call to mind the cases in which they have experienced great difficulty in delivering the child. I am certain that, in common with myself, they can recollect cases in which the results to mother and child would have been infinitely better if, instead of delivering the child with difficulty by the vagina, they had boldly selected the operation of Caesarean section. Many here, for example, can recall, as I can, elderly primigravidae, sometimes even young primigravidae, with relatively rigid and narrow vaginae, in whom the cervix dilated slowly and the presentation was often an occipito-posterior, and where, finally, delivery was effected with great difficulty and considerable injury to both mother and child, possibly even with death of mother or child, or both. We can recall also cases of very large children and slightly underdeveloped pelves, of placenta

praevia in primigravidae, and many other grave complications.

It is all a question of the relative danger between the purely surgical procedure of Caesarean section and the older method of force, either at the end of the forceps, or trunk and after-coming head, if the child is delivered breech first.

One often hears the argument advanced that, as obstetric practice is largely carried out in private houses, the scope of Caesarean section cannot be extended. The longer I practise obstetrics the more convinced do I become that all deliveries should be carried out in hospitals or nursing homes. At the present moment maternal mortality and morbidity is practically the same as it was thirty or forty years ago. How can it be otherwise? In no private house can any obstetrical operation be carried out as satisfactorily as in a hospital or nursing home where there are plenty of assistants and all the surgical appliances necessary for the carrying out of any surgical procedure. Victor Bonney gave recently a graphic and amusing description of ordinary domestic obstetric practice, and pointed out the futility of hoping that satisfactory progress could be made in lessening maternal mortality as long as conditions remain as they are. Some may say that it is impossible to furnish hospital accommodation for such a large number of patients. Personally, I am convinced that the time will come when very few women indeed, and practically no primigravidae, will be treated in their own homes. The sooner this comes the better.

Some assert that the younger school of obstetricians are too surgically inclined in their methods, but it is impossible to make the practice of obstetrics too surgical. In the management of a normal labour the first essential is surgical cleanliness. There is, of course, the danger that surgical procedures for the delivery of the foetus may be unwisely chosen and sometimes unnecessarily employed. I have already referred to this. But what would be the position of obstetric practice to-day if the advice of the over-cautious physician-obstetrician had been followed in the past?

Indications.

Contracted Pelvis.

Speaking generally, unless the child is very small Caesarean section should be chosen if the conjugata vera is 3¼ in. (8.1 cm.) or under. I do not imply that it is never necessary at 3½ in. (8.7 cm.), for even above that figure it may occasionally be indicated; nor do I mean that some other operation should not occasionally be substituted for it even at 3 in. (7.5 cm.). All I wish to imply is that when the conjugata vera is 3½ to 3¼ in. one must estimate very carefully the relative size of the head and the pelvis. Any other procedure than Caesarean section should only be employed if the overlapping is slight and a certain degree of fixation of the head in the brim of the pelvis can be secured by pushing the head into the pelvic brim.

The method I employ for estimating the size of the head and the pelvis was described by me several years ago. By using the thumb I find I can estimate with accuracy the relative size of the head and the pelvis, and can predict whether the child can be brought safely through the pelvis or not.

At different times, and more especially ten or fifteen years ago, the relative merits of Caesarean section and pubiotomy were frequently discussed. As far as I can judge the consensus of opinion is now in agreement with my personal experience that pubiotomy is relatively seldom a suitable treatment for contractions at the pelvic brim, because the gain in the conjugate is so slight for each inch of separation at the pubis. I shall point out in a moment, however, that it is particularly suitable for certain varieties of contraction at the outlet. The cases of contraction at the brim suitable for pubiotomy are those in which the accoucheur has carefully estimated the relative size of the head and the pelvis, has erroneously come to the conclusion that spontaneous delivery will occur, has made one or two attempts with forceps (employing moderate traction), and has failed to deliver. If pubiotomy is employed in such circumstances it gives excellent results.

For contractions at the outlet, however, as already mentioned, pubiotomy is specially suitable, because every inch of separation of the pubic bones gives a corresponding increase between the tuberosities of the ischia. Pronounced degrees of kyphotic or masculine pelvis, where the head is arrested at the outlet, are the most striking examples.

Induction of labour does not come into competition with Caesarean section, for very rarely are the results from induction satisfactory if the conjugata vera is under 3¼ in. Induction of labour is indicated in the particular case where at a previous parturition the accoucheur has experienced difficulty in extracting the child with forceps and feels that a slightly smaller child could be easily delivered; he therefore chooses induction of labour on the next occasion.

It may be taken as a general rule that Caesarean section should always be performed if the child is alive, and craniotomy if the child is dead; but there are exceptions to both these rules. For example, in extreme degrees of pelvic deformity it may be impossible to deliver by craniotomy, even although the child is dead, while in certain cases when the child is living and when numerous examinations have been made, it is not so certain that Caesarean section should be selected.

Obstetricians have not come to a definite finding as to the employment of Caesarean section in so-called septic and suspect cases. Dr. Eardley Holland will have something to say on this matter, but it is necessary that I too should make reference to it. Some years ago, in nine consecutive infected cases (not simply "suspects"), I took cultures from the cervix prior to the operation. In all I found numerous pyogenic organisms in mixed and in pure culture, and in seven of the cases found streptococci. I had one death from septicaemia in these cases, a mortality of 11 per cent., which is a fairly satisfactory result. I believe this result could be improved by a still more thorough disinfection of the vagina and cervix prior to operation. I, however, employed a procedure which I believe Edge and I thought of simultaneously. The placenta was not removed through the uterine wound, but left to become detached and expelled through the vagina. So far as I can judge, at the present time this procedure and very thorough disinfection of vagina and cervix are the only means by which one can lessen the risks of infection in cases of this nature. If the placenta and membranes are dragged up through the uterine wound, which is the ordinary procedure, the raw uterine surface is streaked over with the ragged ends of the membranes, and infection of the uterine cavity is almost certain to occur.

The statistics for this indication will be given later by Dr. Eardley Holland.

Tumours.

The tumours which most commonly obstruct parturition are fibromyomata and ovarian cystomata. Occasionally rarer forms, such as lymphadenomata, enchondromata, and osteomata, may be encountered.

Fibromyomata.—It is unnecessary to discuss this condition in any detail, for it is generally agreed that if a fibroid tumour obstructs the passage of the child from the uterus the only procedure is Caesarean section. On no account should the child be dragged past the tumour. The only point requiring mention is the fact that in a number of cases in which obstruction seems likely to occur the tumour is dragged up in the early stages of labour. I have observed this on several occasions. In connexion with this indication our tables give summaries of eighty-eight cases, with a maternal mortality of 8 per cent. and a foetal mortality of 19 per cent. The high foetal mortality is interesting, and is accounted for by the fact that in a considerable number of cases the children were premature, and in many the tumours interfered with the growth and development of the foetus. Glancing over the records, I am inclined to think that a few of the cases might have been dealt with by myomectomy and vaginal extraction of the child.

Ovarian Cystomata.—Caesarean section is rarely necessary in ovarian tumours complicating labour. The treatment should be to remove the tumour and allow the child to be delivered by the natural passage. The ovarian tumour can generally be raised out of the pelvis and removed if the patient is placed in the Trendelenburg position and an assistant pushes it up from the vagina, should it be impacted in the pelvis. In very exceptional

cases, in which the tumour cannot be removed, then obviously the course is Caesarean section. We are a little surprised, therefore, at the large number of Caesarean sections performed for ovarian tumours, for in our tables there are thirty-nine cases of Caesarean operation for this complication, with a maternal mortality of 10 per cent. and a foetal mortality of 8.6 per cent.

Other Tumours.—In addition to these commoner tumours, there are 2 cases of broad ligament cysts, 4 of malignant ovarian tumours, 1 of tumour of the bladder, 10 tumours of the pelvis, 9 tumours of the pelvic colon and rectum, and, lastly, 25 cases of carcinoma of the cervix. It is impossible to go into details regarding these tumours, but, taking them altogether, there is a maternal mortality of 17.6 per cent., and a foetal mortality of 33 per cent. The deaths in this group practically all occurred with carcinoma and malignant ovarian tumours.

Eclampsia.

Taking our tables, we have 236 cases in which Caesarean section was performed for eclampsia, with 71 maternal deaths, which gives a maternal mortality of 30 per cent. There is no doubt that the mortality would be lower if the operation were performed earlier. Our great difficulty here is in selecting the cases suitable for this very radical procedure, for everyone who has been engaged in obstetric practice for any length of time must have encountered many most unpromising cases which recovered by ordinary medical and obstetrical procedures. Personally, I think that we should not encourage the very extensive employment of the operation for this condition, although I am quite convinced Caesarean section is advisable in a few instances, but rather concentrate on preventive treatment, for, in common with many other obstetricians, I have rarely seen a case of severe eclampsia in a woman who has been carefully attended and treated during her pregnancy. Again, this disease affects more especially primigravidae—for example, our figures show 79 per cent. of primigravidae. There is, further, this important point, that in a considerable number of cases the child is seriously affected. It is not as good a life as the child in contracted pelvis or placenta praevia. This is well borne out by our figures, which show a foetal mortality of 44 per cent. Unfortunately, from the records it is impossible to state how many children were premature, but undoubtedly this is an important factor, and accounts for the high death rate, although many undoubtedly succumbed to the same poison that so seriously affected the mother. The cases suitable for Caesarean section are those in which the pregnancy is well advanced but in which there is no dilatation of cervix or attempt at labour, and where, after six hours, there is no improvement from blood-letting, intravenous saline infusion, and morphine. Where the seizures occur earlier in pregnancy than the thirty-second or thirty-third week vaginal Caesarean section is preferable.

Placenta Praevia.

The gradual acceptance of Caesarean section as a method of treatment for certain cases of placenta praevia is particularly interesting to those of us who have been engaged in obstetric practice for a considerable number of years. As already mentioned, the operation was recommended by Lawson Tait in 1898, and I can remember perfectly well how obstetricians ridiculed his suggestion.

The great argument in favour of Caesarean section in placenta praevia is that, theoretically, the maternal mortality in uncomplicated cases should not be higher than 3 to 4 per cent., and the foetal mortality 2 to 4 per cent. Our tables show in 131 collected cases 13 maternal deaths, a mortality of 10 per cent., and a foetal mortality of 15 per cent. Placenta praevia treated by the ordinary methods of plugging, version, rupture of the membranes, etc., gives a maternal mortality of about 4 to 10 per cent., and a foetal mortality of about 40 to 50 per cent. It appears to me, therefore, that this particular complication is peculiarly suitable for Caesarean section, and it may come to be the general method of treatment in all cases of the central or marginal varieties. I think we can put aside the lateral variety, for by rupture of the membranes and a slight separation of the lower pole of the placenta both the maternal and foetal mortality should be very low indeed. At the present time I am quite convinced that Caesarean section should always be selected in the case of a primigravida with a central placenta praevia, for the plugging, manual manipulations, version, delivery of the shoulders and head, are associated with much greater danger to the mother and infinitely greater danger to the child than the more surgical procedure of Caesarean section. Personally I have employed it on six occasions, and all the mothers and children were saved.

We have not been able to analyse the figures very completely, but we are convinced that many of the maternal and foetal fatalities could have been prevented if the operation had been performed earlier. In this particular condition it is of vital importance to operate early if we are to admit Caesarean section as an accepted treatment.

Accidental Haemorrhage.

Naturally, in discussing Caesarean section for accidental haemorrhage, I only refer to the graver examples of this complication. The first point to keep clearly in mind is that accidental haemorrhage is on a different footing to placenta praevia. In accidental haemorrhage the child need not be considered; it can practically never be saved. Consequently, we cannot advocate the employment of Caesarean section for this complication in the interests of the child. It seems to me that we should try to find a more conservative method of treatment by which we can secure as good, or nearly as good, results. At a recent meeting in London, when the subject of ante-partum haemorrhage was discussed, some very interesting remarks were made by different speakers, and more particularly by Gordon Ley, who pointed out the good results which he had recently secured, and which I understand continue, from keeping the patient quiet, wrapping her in hot blankets, giving her morphine, if necessary, to quieten down the circulation, and administering 1 c.cm. of pituitary extract as soon as labour pains started. There must, however, remain—and Ley admits this—a certain number of cases which do not respond to this treatment, and Caesarean section is the only course open; but it is satisfactory to think that possibly the examples of this complication requiring Caesarean section are relatively few. Into the question of the conservative operation or hysterectomy for accidental haemorrhage, where abdominal section is necessary, I cannot enter, for that raises the whole subject of the treatment of accidental haemorrhage. The point I want to emphasize is that it is necessary in relatively few cases, and differs from placenta praevia, in which Caesarean section seems to be indicated in a fair number of cases. Our tables show 20 per cent. mortality for the concealed variety.

Ventrofixed Uterus.

Most obstetric surgeons have encountered cases of this nature in which it is necessary to perform Caesarean section. Our tables show fourteen cases with no maternal but two foetal deaths. The matter calls for no discussion. The practical point is that it is inadvisable to perform ventrofixation in relatively young women. I have on one occasion after opening the abdomen separated the uterus from its adhesions and allowed the parturition to continue by the natural passage. By this procedure it may be possible in some cases to avoid the necessity of Caesarean section.

Interposition Operation.

This most valuable operation for cystocele should not be performed until after the menopause, as it invariably results in extreme dystocia. In our figures there are three cases in which Caesarean section was necessary. All the mothers recovered, and all children were born alive.

Prolapse of the Cord.

We venture to think that few obstetricians of experience would advocate Caesarean section for this condition. Although the foetal mortality from this complication is considerable there are means of replacing the cord, even when the cervix is comparatively little dilated. Still, I would have no hesitation in performing the operation, although I have never done so, if the patient were an elderly primigravida and the cervix were rigid. The best repositor is a large roll of gauze. Our tables show 4 cases of prolapse of cord. All mothers recovered, but 3 of the children died—a foetal mortality of 75 per cent.

Impacted Shoulder Presentation.

Personally I have never employed the operation for this complication. It appears to me that it must be very seldom necessary or advisable. The slighter cases can be dealt with by deep anaesthesia and version, while the graver examples are better treated by decapitation, for by the time the labour has reached this stage the child's condition is generally far from satisfactory. It is possible, however, that occasionally a suitable case might arise where, owing to the excessively strong uterine contractions, impaction occurred relatively early. Our lists give 4 cases under this heading, with 2 maternal and 2 foetal deaths—50 per cent. for both mother and child.

Abnormal Conditions in Child.

Our tables show 11 cases where Caesarean section was performed for large size of the child, 4 for large head, 2 for occipito posterior position, 2 for brow presentation, and 3 for impacted breech presentation—in all 22 cases, with no maternal mortality and a foetal mortality of 2—that is, 9 per cent. As far as these conditions are concerned, I feel certain that the majority of obstetricians would admit them as justifiable indications under special circumstances. The great difficulty with them is the determining beforehand the degree of dystocia likely to be encountered. In most cases, therefore, it is advisable to allow the labour to progress some way before deciding on such a radical procedure as Caesarean section. In some of the foetal conditions for which Caesarean section was performed the choice seems hardly justifiable—for example, hydrocephalus (4 cases), hydramnios (4 cases). Again, few of us would be prepared to accept foetal distress as an indication, unless there was some other complication.

Retraction and Contraction Rings.

Annular contractions of the uterus, in the neighbourhood of the upper or lower region of the "lower uterine segment" respectively, have received considerable attention in recent years. We are all familiar with contraction of the upper region of the lower segment—"Bandl's ring" or "retraction ring"—as an indication of impending uterine rupture. But in recent years we have been able to go further, for a number of writers have drawn attention to the fact that this ring may actually act as a barrier to the passage of the child out of the uterus—as, for example, in impacted breech presentation with extended legs. There have even been a few cases where the passage of the head has been arrested by the ring grasping the child's neck and preventing descent of the shoulders. Further, there have been a few cases reported where a distinct annular ring has formed at the lower region of the lower uterine segment, to which some writers have given the name "contraction ring." There are a number of cases on record where this ring has actually prevented the descent of the forecoming head. Probably more cases of this nature will be treated by Caesarean section in the future.

Rigidity of Cervix and Vagina.

I have placed this last in the list of indications, for, although we encounter a few cases in which Caesarean section is indicated—for example, old cicatrices seriously obstructing the passage—there are few who advocate the employment of such radical measures as Caesarean section for rigidity of the cervix, even when it is extreme. Personally, I wonder if we are wise in adopting this attitude. I have seen, and practically all here must have encountered, primigravidæ where the parturitions were prolonged, sometimes for days, the vagina and perineum were extensively lacerated, the child bruised or dead, and the puerperium febrile, in whom if Caesarean section had been selected the results would have been infinitely better. Unfortunately, it is very difficult to predict the course of labour in a primigravida. In cases of this kind Caesarean section must be delayed until we can determine what the course of the labour is likely to be. Having determined that it is to be very prolonged and likely to be associated with considerable injury to mother and child, I personally feel convinced that it would be better to transfer such a patient to a nursing home or hospital and have her operated upon by Caesarean section. It is in this and in many other complications that the advantage of having all primigravidae in a nursing home or hospital is so apparent. There the patient, with vulva prepared as if for a surgical operation, with all appliances to hand, can be treated as is deemed best, and at any time Caesarean section can be performed with every confidence of success.

Grave Diseases Threatening the Life of the Mother.

Under this heading our tables show 42 cases of cardiac disease, with a maternal and foetal mortality of 20 per cent.; advanced pulmonary tuberculosis, two cases with no deaths; intestinal obstruction, four cases with two maternal deaths; and single cases of each of the following: diabetic coma, septicaemia, and chorea, all fatal.

I fear that in these remarks upon the indications for Caesarean section I have been unable in many instances to lay down definite rules for your guidance. There are few problems in obstetric practice which have a single solution; in most instances there are alternatives, and the wise obstetrician is he who is not prejudiced in favour of a special procedure, but selects the particular treatment after weighing the whole matter and drawing from his past personal experience. Further, he should decide his line of action early; vacillation in obstetric practice is fatal.

Our art is ever progressing. At no period of its history has it been so virile as to-day. I am quite convinced that twenty years hence, when the youngest here has become a senior, the accepted indications for Caesarean section will be extended even beyond the limits suggested in this paper.

METHODS OF PERFORMING CAESAREAN SECTION.

BY

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THE objects of improving the technique of an operation are to reduce its mortality and morbidity, and thereby to extend the indications for its legitimate performance. The operation of Caesarean section has been standardized for the past forty years; in fact, the operation as almost universally performed nowadays is called the "classical" operation.

THE "CLASSICAL" OPERATION.

The technique of the classical operation was perfected nearly forty years ago; it was in 1882 that the tentative efforts of certain obstetric surgeons culminated in the publication of Sänger's important paper on the technique of suturing the uterine incision. Prior to this the uterine incision was not sutured unless to control unusual haemorrhage, for the surgeons of those days were fearful of leaving suture material in the peritoneal cavity. Sänger's method, with unimportant modifications, is that used by the vast majority of modern obstetric surgeons.

The classical operation has well stood the test of time, and deservedly, for it is extremely simple, and, with the general march forward of surgical technique, its mortality has been reduced to such an extent that it has become a very safe operation. In consequence no operation has in modern times had its list of indications so widely, and as some consider so recklessly, extended as Caesarean section.

Mortality.

I will first deal with the mortality of the classical operation: the safer an operation is, the more often is it performed and the greater is its list of indications. Striking testimony of this is got by comparing old with modern figures. For the old figures I have relied on the second edition of Spiegelberg's textbook, published in the year that suture of the uterus was becoming common practice. His estimate of the mortality of the operation at the date he wrote (1882) was at least 50 per cent. With this huge mortality, the indications for the operation were correspondingly small. In fact, there was only one indication: when delivery by the natural passages was impossible—as from absolute pelvic contraction, obstructing pelvic tumours, or carcinoma of the cervix. As regards the conditional indication for performing the operation in degrees of pelvic contraction other than the absolute (that is, in pelves with a conjugata vera above 2¾ in.), Spiegelberg writes: "The question in actual practice amounts to this: Are we to sacrifice the mother for the sake of the

child?" and again, "The *conditional* indication can alone be legitimate if he (the accoucheur) feels convinced that the mother is willing to sacrifice her life for the sake of her child."

How different are the modern figures and the modern indications. For these we turn to what we all consider a great landmark in the history of Caesarean section—Dr. Amand Routh's well-known investigation "On Caesarean section in the United Kingdom," published in the *Journal of Obstetrics and Gynaecology of the British Empire* for January, 1911, which gave the results of Caesarean sections performed in the United Kingdom down to 1910. Here we see an amazing reduction in the mortality, accompanied naturally by a corresponding extension in the indications for the operation. The reduced mortality was not due to a radical change in the technique of the operation, for that had remained much the same, but to two factors of vital importance, the relative value of which is hard to estimate—namely, the general improvement in aseptic surgical technique and the fact that patients were operated on before or soon after labour had started, or in the early stages of obstetrical complications—not, as in the old days, only as a last resort when already in a dangerous state. The figures got by Amand Routh for cases of contracted pelvis operated on between 1891 and 1910 were as follows:

Condition.	Cases.		Maternal Death.		Percentage.	
1. Not in labour	245	469	9	14	3.6	2.9
2. In labour, membranes intact ...	224		5		2.2	
3. In labour, membranes ruptured...	166	230	18	40	10.8	17.3
4. Frequent examinations or attempts at delivery	64		22		34.3	

The standard mortality of the operation *per se* is got by taking clean cases of contracted pelvis—that is, women not in labour, or in the early period of labour when no vaginal examinations have been made.

As for the indications, in great contrast to the one and only indication of forty years ago, in Amand Routh's paper they make a formidable list of seventeen; and still an ever-growing list, containing all sorts of fancy and flimsy indications, such as breech presentation in primigravidae, delayed first stage of labour, mild cases of toxaemic albuminuria, and so on.

I now come to the figures obtained by the collective investigation initiated by Professor Munro Kerr and myself. We felt that during recent years the problem of Caesarean section had undergone considerable changes, and that accurate information was badly wanted in several directions; we therefore invited the obstetric surgeons at all the large centres in Great Britain and Ireland to send us, on tables provided for the purpose, their hospital figures for Caesarean sections performed from the years 1911 to 1920 inclusive. Their response to our proposal has been unanimous, with the result that we are now in possession of the results of about 4,000 recent Caesarean sections performed for various indications. Time has not allowed us to make a full analysis of these figures, but we are able to give certain results of great interest. The total number of cases in which the operation was performed for pelvic contraction is 3,374. These have not all been reported in sufficient detail to enable them to be placed in precise categories, but the following groups of cases stand out:

Condition.	Total Cases.	Maternal Deaths.	Percentage.
A. Not in labour	1,202	19	1.6
B. Early in labour	389	7	1.8
C. Late in labour	224	24	10.7
D. After induction of labour	35	5	14
E. After attempts at forceps delivery...	103	28	27

The cases in the above table number 1,953. Classes A, D, and E naturally gave no trouble in their selection. Class B comprises cases very early in labour, and their selection from the tables rested on such attributes as the following: "early in labour," "at onset of labour," "labour commenced," "in labour for two hours" (I have included no case where labour had lasted for more than six hours), "labour began in hospital," "membranes intact, os two shillings," "operation of election during first stage," "some pains," and so on. Class C comprises cases very late in labour, cases at the other end of the scale to Class B; their selection depended on such notes as "membranes ruptured many hours," "prolonged labour before operation," "Bandl's ring present," "tonic contraction of uterus," "long (days or many hours) in labour, membranes ruptured," "labour advanced, and cord prolapsed," "several hours in labour, several examinations and manipulations," and so on.

The remaining 1,421 were cases in labour which either did not fulfil the requirements of Classes B and C, or in which the details given were not sufficient to enable them to be classified. The total number of maternal deaths is 134; of these, 80 are accounted for in the above table; the remaining 54 occurred amongst the 1,542 unclassified cases.

The cause of maternal death is an important consideration, and was stated in 124 cases to be as follows: general peritonitis 50, septicaemia 27, pneumonia 15, pulmonary embolism 9, cardiac failure 9, haemorrhage 8, intestinal obstruction 5, acute paralytic ileus 1. It is clear that sepsis is paramount as the cause of death. In Class C 11.7 per cent., and in Class E 28 per cent., of the foetuses were delivered dead—what one would expect after the application of forceps; two *post-mortem* examinations I have made in such foetuses revealed cerebral haemorrhage and tearing of the tentorium cerebelli. The important points brought out in this analysis are: (1) The mortality of the operation *per se* (that is, in Classes A and B) has fallen in a gratifying manner; in fact, it is only about half what it was amongst the cases collected by Dr. Amand Routh. (2) The mortality from sepsis for cases long in labour or after attempts at delivery remains almost as high as ever; in fact, the 27 per cent. mortality after forceps is a serious warning. (3) In the latter classes of case, when the operation is nearly always undertaken for the sake of the child, it is well to bear in mind that the foetal mortality is high. The heart of a foetus with cerebral haemorrhage will continue to beat so long as it is still in the uterus, and, indeed, for some minutes after delivery; it is the respiration that is paralysed.

The Defects of the Classical Operation.

Satisfactory as the classical operation has been and still is, there are certain disadvantages both in theory and in practice, and these have been coming much to the front lately. In fact, the present is a disconcerting period of unrest about Caesarean section.

The defects of the classical operation as met with in practice are the following:

1. The risk of sepsis in infected or suspected cases. The classical operation is not safe in cases where infection is suspected or present—that is, where labour is advanced and the membranes are ruptured, and where there have been many vaginal examinations or perhaps attempts to deliver by forceps.

2. The risk of rupture of the scar in subsequent pregnancy or labour. Quite apart from rupture of the scar, which is comparatively rare, the proportion of thin and defective scars which is found at subsequent operations is very high. Rupture of the scar was considered very fully last year; I found that the frequency of rupture in subsequent pregnancy or labour was 4 per cent., and that the proportion of ruptured scars to successful deliveries by the natural passages, in the series of cases I investigated, was 1 to 4.[1]

3. The risk, a rare one I admit, of intestinal complications during convalescence, an example of which was the case of intestinal obstruction due to the adhesion of intestine to the uterine scar, reported by Clifford White at the recent congress at Birmingham.

4. Adhesions between the uterine scar and intestine, omentum, or abdominal wall; these make sometimes a formidable difficulty in repeated operations.

Theoretically, there are certain very definite factors which militate against the healing of the uterine incision in classical Caesarean section, and favour adhesions to surrounding structures. These were admirably dealt with by Munro Kerr at the discussion at the Royal Society

of Medicine last year. They fall under three headings: (1) The structure of the uterine wall, through which the incision is made. (2) The position of the incision in the uterus, lying as it does in the general peritoneal cavity, and covered with intestines or omentum. (3) The liability of infection of the uterine wound; this is not only in possibly infected or "suspect" cases, but in clean cases also there is always a theoretical risk owing to the proximity of the uterine wound to a contaminated area—that is, the vulvo-vaginal tract.

The structure of the uterine wall through which the incision is made is a most serious disadvantage to perfect healing. It is made through a very thick layer of powerfully acting muscle. The contraction of this powerful muscle may interfere both with the accurate coaptation of the edges during suture and with subsequent healing.

Everyone knows how, during the stage of closure of the wound, the incision tends to gape transversely, and the edges are drawn apart when the uterus contracts. If the contractions are very powerful, small gaps, which become occupied by blood clot, inevitably occur between the sutures; or the sutures have to be tied so tightly that there is a risk of them cutting through the tissues. During the process of healing the essential condition for the healing of divided muscle is conspicuously absent—the wound is never at rest, for the uterine contractions are always trying to drag apart its edges. Many cases have been described in which it had been necessary to reopen the abdomen for haemorrhage, or which had come early into the *post-mortem* room, where the uterine wound was found widely open owing to the sutures having cut out or, in the case of catgut, to their having become untied.

Should infection of the uterine wound occur, accompanied by the formation of granulation tissue and sloughing of the edges of the incision, healing is delayed, and an imperfect and thin scar is bound to result, owing to the retraction of the muscular edges. These imperfect scars are found of all degrees—from moderately thin scars, consisting chiefly of fibrous tissue, to extremely thin ones composed merely of peritoneum outside and endometrium or decidua inside, with a little intervening fibrous tissue. The liability of such thin scars to rupture in subsequent pregnancy or labour is very great.

In the case of even mild infection the position of the incision makes adhesions between the scar and omentum, intestines or abdominal wall almost inevitable. Every obstetric surgeon has met with examples of this. Extreme examples are the cases of death from intestinal obstruction in the present series of collected cases, Clifford White's case, already referred to, and one of the five cases of ruptured scar I reported last year.

Some Points in the Technique.

It is easy enough to perform a classical Caesarean section, but the greatest care must be taken to suture properly the uterine wound. This is the step in the operation which is apt to be done imperfectly. There must be no hurry; every suture must be inserted and tied deliberately.

Suture Methods.—So long as the thick edges of the uterine incision are brought completely into apposition, and are kept in apposition during healing throughout their whole extent, it does not matter much what method is employed. The best method is, in my opinion, the usual one of passing interrupted sutures through the whole thickness of the uterine wall, except the decidua. An essential point is that the sutures should start well outside the edges of the incision, so as to include a good thickness of uterine wall. If the sutures are passed too closely outside the edges, when they are tied the edges tend to buckle and the line of the sutured wound is thinner than the natural thickness of the uterine wall. For this reason a well-curved needle is best, and the path of the needle should take such a direction as to include a wide bite of muscle. Any method of single interrupted suture which fails to take a wide bite is not good. For example, I do not consider the method of passing the needle just beneath the peritoneal edge is to be recommended. It is true that by this means a much more accurate closure of the peritoneal edge can be obtained, but this advantage is outweighed by the disadvantage of a thin bite.

Closure of the Uterine Peritoneum.—This is of great importance in preventing the leakage of sepsis from the interior of the uterus to the peritoneal cavity. If the usual method of interrupted through-and-through sutures which start wide of the peritoneal edge is employed, the covering of this layer by a superimposed Lembert peritoneal layer is often difficult to make perfect, especially if the uterus is contracting strongly and is well retracted. To overcome this difficulty I have adopted the following plan. I first incise the peritoneum only, throughout the length of the proposed incision. I then reflect the peritoneum for half an inch all round; this is surprisingly easy. The muscle is then incised in the usual way throughout the length of the bared area. In suturing the wound the muscular wall is sutured first; the reflection of the peritoneum allows of the needle being inserted well outside the edge of the muscle, so as to take a wide bite. After this layer is tied the reflected peritoneal edges can be accurately united, first by a running suture, and over that by a Lembert suture.

Wait for Retraction.—Another point I consider of importance is to wait for complete retraction before inserting the sutures; if the wound is sutured before retraction is complete and the muscular walls are thin, the result is bound to be a scar thinner than the rest of the uterine wall, for the sutures fail to include layers of muscle fibres which during complete retraction would have slid inwards and become rearranged, adding to the thickness of the sides of the incision.

The Suture Material.—As the result of my inquiry last year, as well as for theoretical reasons, I consider that silkworm gut is the best suture material, silk the next best, and catgut most unsuitable.

Most operators have their own pet method of suturing the incision, as well as other modifications in technique, but in spite of all, the classical operation remains, except for unimportant modifications, essentially what it was forty years ago.

The Lower Segment or Cervical Operation.

In spite of the great merits of the classical operation, many surgeons are not entirely satisfied with it, and have devised other methods of abdominal delivery which will avoid the defects I have already mentioned as inherent to the classical. These new operations can all be grouped together under the designation of "cervical" or "lower segment" Caesarean section. As long ago as the beginning of last century an operation was devised for opening the lower uterine segment extraperitoneally through an incision above Poupart's ligament; it was revived by the American surgeon Gaillard Thomas in 1870 under the name of gastro-elytrotomy, as an alternative to the ordinary route, in order to avoid the dangers of septic peritonitis. But the operative mortality was as high or higher, and it quickly dropped out when antiseptics and Sänger's method of suture came in and brought such good results.

But the lower segment operation with a greatly improved technique has lately been revived, and its chief exponent in this country is Munro Kerr. The many methods of performing the operation can be divided into extraperitoneal and transperitoneal. These I shall not discuss, but shall confine myself to the description of the simple transperitoneal operation.

The patient is placed in the Trendelenburg position and the abdomen is opened from the symphysis to near the umbilicus. The utero-vesical peritoneum is picked up and incised, and the bladder is dissected off the uterine wall, exposing the lower uterine segment. This reflection of the bladder is extremely easy, more especially in cases where the patient has been for some time in labour, and the bladder has followed the retracting uterus upwards; there should be no haemorrhage unless the bladder is dissected down too low. The lower uterine segment is then incised. Personally, I prefer a longitudinal incision, but Munro Kerr makes it transversely; perhaps their respective merits will come out in the discussion. The foetus and placenta are extracted and the uterine incision sutured; the muscle may be united either by a continuous or by an interrupted layer; over this another layer is used to close over the thick utero-vesical cellular tissue or fascia. The edges of the divided utero-vesical peritoneum are then united with a carefully placed continuous peritoneal layer.

Its Advantages.

I have employed this operation so far only nine times, and have been extremely pleased with it. Its advantages over the Classical are, I consider, the following:

1. The wound lies in a quiet part of the uterus, and is at rest during healing. There is no tendency for the edges of the wound to be drawn apart, or for gaps to be formed between the sutures. For these reasons healing occurs under more favourable circumstances than in the classical operation.

2. The uterine incision is made through a less vascular area, and bleeding from the edges is extremely slight.

3. The edges of the wound are thin; suture is therefore easier and quicker.

4. The position of the wound is such that adhesions to the intestines, omentum, or abdominal wall cannot occur; there is only a short line of peritoneal sutures at the bottom of the utero-vesical pouch.

5. The uterine wound is covered with a thick layer of fascia and by the bladder, and perfect closure of the peritoneum can be made. For these reasons there is less likelihood of infection of the peritoneal cavity; for it is generally conceded that the source of peritoneal infection is not so much due to contamination by liquor amnii or other uterine contents during the operation as to the subsequent passage of infection from the uterine cavity between the edges of the incision. Should peritoneal infection occur, the lower abdomen is more resistant than the upper.

6. The operation causes less disturbance of the abdominal contents; the intestines are never seen.

7. The scar is in a safer area for subsequent pregnancy and labour, for the lower uterine segment stretches late in labour. The stretching to which the scar is subjected is purely passive, for there is no powerful active drag upon each side of the scar, as there is in the scar of the classical operation.

8. As regards the performance of the operation, it is just as easy to a practised surgeon as the classical; true, there is more "operating" in it—it is not done, as it were, by two strokes of the knife, as is the Classical. The more advanced the patient is in labour, the easier will the operation be and the lower will the incision lie in the lower segment and cervix; in fact, in cases of excessive retraction of the uterus, the incision will lie partly in the upper end of the vagina.

9. So far only one case of ruptured scar has been reported, and this is not a fair case, as the upper end of the incision had to be extended upwards on to the body of the uterus. At the same time it must be remembered that very few lower segment operations have been done compared to the many thousand by the classical method.

Choice of Method of Caesarean Section.

It is obvious that a great deal more experience and careful recording are necessary before a sound opinion can be come to about the relative merits of the classical and lower segment operations. Personally, my future practice will be to employ the transperitoneal lower segment operation for all cases, except where the lower segment is hard to get at, as in cases of shortness of the abdominal cavity accompanying diminutive stature or kyphosis (where the presenting part of the foetus is jammed down against the pelvic brim) and in fibroids. I have had no experience of the operation in cases of placenta praevia. A more moderate view would be to use the operation only in cases where patients have been long in labour, when the operation is easier, and when infection of the uterine wound is to be feared.

Reference.

1 *Proc. Roy. Soc. Med.*, 1922, vol. xv (Sect. of Obstet. and Gyn.), pp. 22-124.

DISCUSSION.

Dr. W. Robinson (Sunderland) congratulated the readers of the two papers on their excellent summaries of the indications for, and of the technique of, Caesarean section. He was glad that the operation had not been recommended for nearly every variety of difficult labour, as the tendency now was, because it was so easy of performance and so dramatic in character. It was easy for the woman as well as the surgeon. One patient had said to him some days after an operation, "They all ought to come that way, doctor." He thought, too, that all first labours at least, and all in which complications were expected, should take place in homes or hospitals, so that the woman and child might have the benefit of asepsis and of surgery if required. For placenta praevia (central and marginal) the operation should be done in preference to turning—so fatal to many children. His experience made him opposed to the operation for eclampsia, or at least doubtful of its utility. The collection of the statistics up to date was a most valuable piece of work. That the operative mortality, in clean cases, by various surgeons should be as low as 1.4 per cent. was another triumph of modern aseptic surgery, but it must be taught emphatically that the safety of the procedure for patients actually in labour lay in operation before the membranes had ruptured, as certainly as did operation for acute appendicitis immediately after its onset. Delay spelt danger. He hoped that the low transverse extraperitoneal incision recommended to be used in all cases to prevent the occurrence of a subsequent weak scar, and the possibility of rupture in a future pregnancy, might occasionally prevent the fatal peritonitis which took place in some of those operated upon after the membranes had ruptured and frequent examinations or attempts at delivery had been made.

Lady Barrett (London) was very glad of the opportunity of congratulating Professor Munro Kerr and Dr. Eardley Holland on their extremely useful papers. What they had been able to give in the short time at their disposal only hinted at the vast amount of work they had done in preparing the statistics of all cases of Caesarean section since 1910. On the usefulness and safety of Caesarean section for cases of contracted pelvis all were agreed, and she would refer briefly to one or two of the other indications that had been discussed. Caesarean section in cases complicated by fibroids showed a surprisingly high mortality. She suggested that in cases complicated by fibroids, in which quite clearly the fibroid would cause obstruction to labour, the safer treatment would have been to remove the fibroid by myomectomy during the pregnancy, thus allowing a natural labour to take place at term. In Caesarean section for eclampsia, where the results also showed a very high mortality, it was not so easy, as was sometimes suggested, to distinguish the cases which were especially dangerous. Some cases in which Caesarean section was performed very shortly after the advent of albuminuria, and possibly with no other symptoms, might develop post-partum eclampsia and die, while advanced cases with almost total suppression of urine might have uneventful recoveries. She believed the mortality of Caesarean section for placenta praevia in primigravidae would be very much lowered by a united opinion that it was the right treatment; the mortality, she thought, was high just because doubt existed and so many of the cases were subjected to other attempts at delivery or to frequent examinations before the operation was performed. She heartily agreed with Professor Munro Kerr that accidental haemorrhage occupied a different position. If the abdomen was opened in accidental haemorrhage it was to perform hysterectomy instead of or after Caesarean section. The mortality of Caesarean section followed by hysterectomy in these cases was so high that she thought it should be rejected; hysterectomy alone should only be undertaken in extreme cases, because not only did the mother lose the present child but was deprived of the possibility of having others. Lastly, she would like to emphasize the usefulness of Caesarean section in cases of extreme heart failure, because delivery by that method subjected the patient to less effort and less shock than any other. She believed that a general anaesthetic for this purpose, such as open ether with oxygen, was more desirable than spinal anaesthesia. With regard to method, she confessed to having used the classical operation only, probably because she saw such bad results following the low incision in Vienna. Certainly morbidity had been high there in association with all methods, but it seemed to her particularly high in cases of the low incision. She rather doubted whether the drag on the wound in the more muscular part of the uterus was as great as Dr. Eardley Holland had suggested; if it were, it was difficult to imagine how, in the days preceding suture, any cases at all healed.

Professor WALTER SWAYNE (Bristol) drew attention to the fact that the class of cases with the highest mortality rate consisted of those in which attempts had been made to deliver in spite of an unrecognized obstruction. A large number of such cases could be avoided by more careful supervision and examination during pregnancy; although this would not prevent some cases coming into the category, there was no doubt that the number could be and ought to be diminished. He thought that for complications other than disproportion there was a tendency to make use of Caesarean section as a means of treatment without a clear idea as to the objects to be attained. Its indiscriminate application in such cases was to be deprecated and definite limitations should be laid down. He suggested that such an investigation as that carried out by Drs. Munro Kerr and Eardley Holland should be carried out at much more frequent intervals, say every two years, in order that all the workers in this field might have an opportunity of comparing their work and revising their methods. One great advantage of such an investigation as the present lay in the comparison of the conditions obtaining in different localities for which it gave opportunity. In the West of England, for example, contracted pelvis was relatively uncommon, while the other complications of labour were, in some instances, above the average. These local differences were important, since they had a direct bearing on the relation between the number of emergency and elective operations and produced differences in immediate indications and technique.

Mr. R. J. JOHNSTONE (Belfast) thanked the openers for the important work they had done in collecting the statistics of Caesarean sections, and joined in the hope that this work would be continued, say, for the next five years. He was himself a convinced supporter of the operation, and thought that the indications for it might be reasonably extended to many cases in which the life of the child was exposed to more than ordinary risk by the ordinary methods of delivery, as, for instance, in prolonged gestation, or in breech presentation in a primigravida with an abnormally large child. Such an attitude would be, of course, indefensible were it not clearly shown, as it had been, that in uninfected cases the risk to the mother was very small. He differed from Dr. Eardley Holland's view of the physiological activity of the uterus after parturition, and regarded it as being in a condition of mild tonus, rather than in active contraction. He thought the fears expressed as to the probability of obtaining a sound scar in the upper part of the uterus were exaggerated. He always used catgut for the suture, and put in three tiers of continuous suture. In over eighty operations he had had one case of rupture of the uterus.

Mr. GORDON LEY (London) congratulated Drs. Munro Kerr and Eardley Holland on their excellent and most valuable contribution. He was glad that Dr. Munro Kerr had emphasized the possibility of extending Caesarean section to those cases of prolonged labour with early rupture of membranes, one of the most troublesome complications in midwifery, particularly met with in elderly primigravidae. With regard to the action of the uterine muscle in inhibiting healing of the uterine incision, he could not agree with Mr. Johnstone. Surely, he said, the uterine contractions during the puerperium were similar in nature to those during labour—that is, they tended to make the site of union gape, as was seen at operation, and thus to inhibit healing. In two cases of laparotomy for spontaneous rupture of the uterus he had found the uterus partially inverted through the tear in the anterior wall. This emphasized the drawing apart action which was noted at operation.

Mr. BECKWITH WHITEHOUSE (Birmingham) said that the change of opinion during the past ten years with regard to resort to Caesarean section in the treatment of placenta praevia was extremely interesting. About ten years ago, at a discussion at the Royal Society of Medicine upon this subject, Dr. Henry Jellett had, he believed, made the statement that, "although he did not think the Caesarean operation wrong for placenta praevia, he could not see the necessity for it." This was the view expressed by the majority of speakers at that discussion. To-day the position was reversed, and Caesarean section was being advocated as the ideal treatment for central and lateral cases. Personally, he was in complete agreement with this view. The tendency had been, and by many practitioners still was, to regard placenta praevia as an obstetric complication which could be dealt with quite satisfactorily by version. If the mother was saved all was well, and the loss of the child was not considered. As a matter of fact, version in placenta praevia was not an operation free from danger to the mother, quite apart from the terrible foetal mortality. In statistics covering ten years at the Maternity Hospital, Birmingham, the maternal mortality in cases of version for placenta praevia amounted to over 4 per cent., whilst the foetal mortality reached the appalling figure of over 70 per cent. Institutional figures, in estimating the value of any method of treatment, were always the most reliable, since the personal factor was eliminated. There was little doubt that in placenta praevia a real difficulty was to define when Caesarean section should be done and when it should not be done. Were all cases to be treated by operation, and, if not, what was to be the guiding line? Mr. Whitehouse's own practice was to perform Caesarean section in all cases of central and lateral placenta praevia at or after the eighth month of pregnancy. The initial haemorrhage was the important symptom which should lead to examination and diagnosis and to immediate treatment. Personally, he would like it to go forth from the Section that placenta praevia was an obstetric complication which could only be dealt with satisfactorily in a hospital or nursing home, and one in which Caesarean section was very likely to be required. Version was not to be regarded as being an operation free from risk to the mother, and statistics did not place it on as favourable a basis as modern Caesarean section. He had performed the lower segment operation upon two occasions, according to the method advocated by Dr. Munro Kerr in 1920 at the Royal Society of Medicine. Each time, however, he had experienced some difficulty. At the first operation there was much troublesome venous haemorrhage from vessels in the lower uterine segment. On the second occasion considerable difficulty occurred in extracting the child. Apart from this criticism, the operation appeared to be based upon sound principles, and possibly these initial difficulties would disappear with further experience of the method.

Dr. J. WEBSTER BRIDE (Manchester) said that in response to Dr. Eardley Holland's request he had investigated the cases of Caesarean section performed in St. Mary's Hospital, Manchester, during the years 1911–1920 inclusive. The total number of cases in this period was 648, a very large number for one centre. The conditions which necessitated Caesarean section in these 648 cases, with the number of deaths and mortality rate, may be tabulated as follows:

	Cases.	Deaths.	Per cent.
Contracted pelvis	557	23	4.1
Eclampsia	15	10	66.6
Ante-partum haemorrhage ...	25	7	28.0
Other indications	51	10	19.6

There were 50 deaths in the 648 cases—a total mortality of 7.7 per cent. for the ten years.

In the groups "eclampsia," "ante-partum haemorrhage," and "other indications" the mortality was high, the cases being of a serious nature, often *in extremis* at the time of operation. Of the 23 deaths in the contracted pelvis group, 12 (that is, over 50 per cent.) were ascribed to general peritonitis. All except 3 of these 12 had been repeatedly examined before admission, the membranes were ruptured in all, and in 4 cases forceps had been applied at home. Of the 3 not treated at home by manipulations, 1 had albuminuria, 1 had chronic bronchitis and the abdominal wound had to be resutured, and 1 had no assignable cause for infection. Of the remaining 11 cases, 3 died of pneumonia, 2 of intestinal obstruction, 2 of embolism, 1 of chronic bronchitis and cardiac failure (no pyrexia), 1 of haemorrhage and shock (forceps before admission, moribund on admission), 1 of mitral stenosis (*post mortem*, warty vegetations on mitral valve), and 1 of exhaustion (forceps before admission). The mortality, then, from general peritonitis in cases of contracted pelvis in Manchester was 2.1 per cent.; all the 12 cases had been subjected to repeated vaginal examinations, or attempts at instrumental delivery had been made before admission, or there had been some defined cause for their infection, except in one case, in which there was no note of any such

interference or cause, though it was suspected that there had been such interference (at the time the note-taking was poor owing to the war). The conclusions to be drawn from the Manchester experience were:

1. That Caesarean section was performed with very little risk to the mother, save when, as Amand Routh emphasized, she had been subjected to frequent examinations, or attempts at delivery had been made.
2. Caesarean section in eclampsia had been most disappointing, only five cases recovering; but it had been probably done too late.
3. In ante-partum haemorrhage it was good, especially in cases of central placenta praevia in primigravidae, when the foetus was viable.
4. In tumours obstructing delivery it was often essential, and the results on the whole were good.

The number of Caesarean sections performed for contracted pelvis in Manchester was strikingly large. Through the courtesy of Dr. Ashby of the Manchester Children's Hospital, he was able to state that the number of cases of rickets seen at the out-patient clinic was fully 10 per cent. of the total cases—that is, 2,000 boys and girls; of these probably half were girls—that is 1,000 a year. This helped to explain the frequency with which Caesarean section for contracted pelvis was performed in Manchester.

The President, Dr. Ranken Lyle, said: I desire on behalf of the Section to offer to Dr. Munro Kerr and Dr. Eardley Holland a most cordial vote of thanks for their extremely interesting and very learned papers. The writing and compilation of these papers must have entailed much hard work and thought, and we all most cordially congratulate both writers. When the committee selected this subject for discussion it had in mind two most important considerations: First, that there were no definite rules or indications laid down for the performance of Caesarean section, and consequently in many cases it was not performed when it might have been of great advantage, and in some cases it was performed when the indication for it was not very definite; and secondly, that owing to the rapidly improving results obtained, the operation was justifying its extension to many cases where hitherto the indications for it were not considered sufficient. The committee thought that by choosing this subject for discussion the Section would be able to lay down more or less definite indications which would act as an authoritative guide to all operators in the selection of cases for operation.

Dr. Munro Kerr, in his most able paper, has, I think, completely fulfilled the wishes of your committee. He has given a large number of indications, and has indicated in what cases he considers the operation should be performed and in what cases the operation is of doubtful propriety. I entirely agree with him in everything he has laid down, with one exception, and that is in cases of contracted pelvis. I consider that a true conjugate of 3½ in. should be a definite indication for Caesarean section at term rather than 3¼ in. He has shown that Caesarean section in eclampsia, although frequently performed, is not desirable on account of the very heavy mortality, and has also stated that more attention should be given to prophylaxis and medical treatment. With this I most cordially agree. There is only one other point I should like to criticize in his paper. He says that in those cases where one might anticipate a rupture of the uterus on a subsequent occasion the patient should be sterilized. I am not of this opinion. I am a strong supporter of conservative Caesarean section, and I do not think that any form of prospective trouble should be an indication for sterilization. In 1910 very few teachers in this country believed in absolute conservative Caesarean section. At the present time I think that nearly half the teachers in this country advocate it, and I believe that before many years it will be the unanimous opinion of the profession that conservative Caesarean section should be adopted in all cases.

Dr. Eardley Holland has taken an infinity of trouble in collecting and tabulating 5,000 cases of Caesarean section performed in this country during the last ten years. The results which he has shown in definite percentages are a most valuable guide to everyone as to the nature of the cases in which the operation is highly desirable, and of those in which the operation is of doubtful propriety.

The high mortality in the third and fourth classes—namely, patients very long in labour, patients after forceps, etc.—is, I have no doubt, going to be reduced very considerably in two ways: First, by the ever-increasing number of patients who are seeking institutional treatment, where the necessity for the operation will be either anticipated or discovered at a much earlier period; and secondly, by the extension of pre-maternity work all over the country.

I am deeply impressed by the importance and value not only of these papers but of the subsequent discussion thereon, and have no hesitation in stating that they mark a great advance in our knowledge of the indications for the performance of this operation. I again most heartily thank and congratulate Dr. Munro Kerr and Dr. Eardley Holland on their most valuable contribution to obstetrics.

THE TREATMENT OF ADVANCED CARCINOMA OF THE CERVIX OF THE UTERUS BY RADIUM.

BY

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This paper deals with the treatment of advanced uterine carcinoma by radium, and I will not discuss the treatment of early carcinoma of the cervix of the uterus. Until within the last two years all cases which I have treated have been beyond operation, consequently any figures that I may give cannot fairly be compared with statistics showing the success or otherwise of Wertheim's hysterectomy. Every single case of apparently hopeless malignant disease saved or rendered operable by radium is a subject of rejoicing and hope, and much solid satisfaction can be obtained by contemplating the large number whose symptoms are made negligible for months or even years. Radium has not, so far, solved the problem of dealing effectually with the secondary deposits, although recent research shows possibilities in that direction, but of its great value in the treatment of carcinoma of the cervix of the uterus there is no doubt.

In the early days of radium treatment Wickham and those associated with him first treated cancer of the cervix by placing, for varying times, heavily screened radium applicators against the growth. They reported considerable success, but later the insertion of a strong radium tube into the cervical canal proved more beneficial. Still more recently the practice of burying a number of radium or radium emanation tubes in the cervical growth and those tissues round about it, which are actually invaded or liable to be so, has improved results still further.

At the present time I adopt one of two methods, and even after more than a year of comparison have not been able to make up my mind which is the better. There is no necessity for the heavy metal screening which has been employed by radiologists, but still the choice lies between a screened and an unscreened method of treatment. In no case need a screen thicker than 1 mm. of silver be employed, unless the huge doses (not available to most of us) used at Baltimore can be considered.

In the screened method at Manchester about seven tubes are inserted under an anaesthetic. A large one of about 50 millicuries of emanation (that is, 50 mg. of radium element) screened by 1 mm. of silver is introduced well up the cervical canal. Six other smaller tubes screened by 0.3 mm. of brass (previously platinum) are pushed into or about the cervical growth, care being taken to introduce two or three into the broad ligaments. The strength of each of these smaller tubes is about 15 millicuries. If consistently good results are to be obtained, a dose of never less than 120 millicuries for twenty-four hours must be given.

In employing the unscreened method I still use the large central tube mentioned above, but insert in the surrounding tissues small unscreened capillary glass tubes, each containing radium emanation of a strength of 2 to 5 and even occasionally 7 millicuries. They are inserted to the number of two to eight by means of an exploring syringe needle and stilette. No effort is made to withdraw the small tubes, but the large one is removed after twenty-four hours.

So far I think I may say that with practice and strict cleanliness there is no immediate danger in either method. In each case the vagina is packed with gauze after the insertion in order to maintain the tubes in position. Occasionally this packing produces retention of urine, and catheterization is necessary.

Douching should be performed daily after the operation—first and most important, to keep as clean as possible the reacting growth; and secondly, though not now so important since tubes have been buried and not merely placed in the vagina, to prevent the formation of vaginal adhesions.

There still appears to be considerable possible variation in the quantity of radium employed, its time of application, and the screening used—so much so that reports of successful cases, now coming from all over the world, often make one pause and think.

Cases for Treatment and Prospects.

In the treatment of inoperable malignant disease there is, of course, not a great deal of choice in the cases. The vast majority of those who come as hospital cases for examination with a view to radium treatment are put down for radium. But even for radium a few cases are worse than hopeless; they come with large secondary masses in the liver and abdomen; paralysed legs from deposits in the spine and the pressure of glands; while, locally, the large cloacal fistulous openings sometimes seen only remind one that all the troubles of patients dying from malignant disease should not be put down to radium. Such extremely advanced cases should be left alone, but they do not form more than 5 per cent. of those seen.

When cases are not so bad the outlook is not good. (1) When the growth is very large and hard. With adequate treatment it tends to slough, with inadequate treatment nothing happens to the patient's advantage. Large fungating growths do not matter—curettage may spare somewhat the small quantities of radium at our disposal, but I have not otherwise found it necessary. (2) Cases with very extensive infiltration of the vaginal wall rarely give a good result, even from the point of view of palliation. (3) I have yet to be convinced that the exact histology of the carcinoma is much help in the prognosis of cases, but of course those tumours which form metastases rapidly give the worst results, and it is probably for that reason that the outlook in women under 40 is bad whatever the stage of the disease, while the prognosis improves as the menopause is approached or passed.

For the best results cases just beyond operability, as might be expected, are the best, but the presence of some slight mobility of the uterus, a good blood supply to the tumour, and the slow formation of secondary growths, are all factors of good omen.

The more firmly the growth is adherent to the bladder and the greater the infiltration of the bladder wall and urethra, the more chance is there of a fistula resulting from the treatment; but the percentage is low (in fact, very little above that of untreated cases), and adhesion to the bladder by no means renders the case hopeless. I find that a recto-vaginal fistula is quite uncommon.

In estimating the immediate results of radium treatment, with an eye to the future progress of a case, a very high standard must be set. The patient in a so-called "symptomatic cure" should profess to feel perfectly well and to be absolutely free from pain or discharge. Examination should show the uterus to be quite mobile, while the cervix should be small, smooth, and any scar tissue soft and supple. Vague pain in the abdomen, back, or limbs, slight induration in the vault of the vagina, enlargement and hardness of the cervix, are all factors which promise recurrence.

It is interesting, however, to note that sometimes recurrence may not be manifest until so long a period as two years has elapsed.

Pathological Notes.

During the last two or three years, owing to the interest and help of the Manchester gynaecologists, I have been able to obtain microscopical examinations of a number of cases of carcinoma of the cervix which have been treated first by radium, the uterus being removed six to twelve weeks later. It is interesting to note that in most of the cases the growth in the cervix has completely disappeared and been replaced by the characteristic dense radiation connective tissue. Occasionally a few degenerate malignant cells are seen. One of my cases, who was killed in an accident six months after treatment, showed no sign at all of growth at the *post-mortem* examination. From this it would seem that, at least locally, radium can be and often is effective in its destruction of a cancer.

Statistics.

I propose to deal only with some figures from my own cases. All the cases dealt with in detail here were inoperable, and presumably surgical interference would have been useless. For further figures on the subject as a whole I must refer you to Dr. Janeway's valuable paper published in *Surgery, Gynecology, and Obstetrics*, September, 1919.

In 1915 I found that 10 per cent. of my cases of cancer of the cervix of the uterus showed no sign of disease at the end of the year. This figure has gradually improved with better technique, and, in spite of increasing number, has risen to nearly 30 per cent.

I have analysed in more detail the 100 cases I treated between April, 1916, and July, 1918. I have not gone earlier because I was then only using a single tube, but in 1916 I began increasing the dosage and the number of tubes employed. The figures, therefore, are taken as far back as possible in the early stages of more adequate dosage. The cases were treated between three and five years ago. Prior to that period I have been able to trace two cases which have been alive and well for over five years.

The hundred cases are divided as follows, and those who have tried to trace patients in numbers will bear with me in the deficiencies of the list:

6 are definitely well to-day and have been well from three to four and a half years (1 three, 2 three and a half, 1 four, and 2 four and a half years).
5 were well twelve months after treatment, but I have failed to trace them since.
7 were well three to six months after treatment, but have not since returned.
6 were rendered operable and operation performed.
32 were made quite comfortable and able to work from six months to two years. Some of these have died subsequently.
26 were not improved or died quickly.
16 cases I could get no information about at al
2 were given prophylactic irradiation.

This gives 6 per cent. who have definitely lived up to the present time and been well for a period of three to four and a half years. During the period analysed the number of cases traced to be apparently well at the end of the year was about 15 per cent. It is now nearly 30 per cent., so it seems at least probable that 12 per cent. of the inoperable cases of carcinoma of the cervix treated by radium at the present time will be alive and well in three to four and a half years' time. When to this 12 per cent. are added those cases which become operable and those which remain well for a considerable time and disappear, the record is, considering the present state of the therapeutics of cancer, a hopeful one.

But, apart from all the above facts, the radium treatment of cancer of the cervix is well worth while for its wonderful powers of palliation alone.

DISCUSSION.

Dr. W. ROBINSON (Sunderland) thought that if 12 per cent. of Dr. Burrows's patients with cancer of the cervix were alive and well three to four years after his treatment, much better results might be obtained if the same treatment were to be applied to early cases. He was not satisfied with the results of the radical cure of cancer of the cervix by panhysterectomy with removal of the pelvic glands. The operative mortality was still excessive, even in the most skilled hands, and serious complications (urinary fistula, etc.) frequently followed the operation. In the hands of some surgeons the pelvic tissues and glands were not removed *en masse* nor as completely as they should be, owing to the difficulty of the operation. As in only 30 per cent. of those dying from the disease were the lymphatic glands infected with cancer—the disease spreading generally by continuity of tissue and not by permeation—it was reasonable to expect eradication or

destruction of the disease by a less extensive procedure, if the cases could be operated upon in an early stage; he had, in fact, several such patients, alive and well, from whom he had removed a cancerous uterus many years ago by the vaginal method. Byrne's treatment by the actual cautery had been at least as successful as the knife, and his operative mortality was *nil*. Cancer cells were more easily destroyed by heat than normal cells, hence they were killed at a greater depth than the surface of the tissues to which the cautery had been applied. Byrne's figures gave hope of better results (less risk than by extensive dissection) by local treatment, by radium, etc., whose penetrating effects were greater than heat. One difficulty might be so to apply the needle-like containers as to make sure of destroying any deeper affected parts which were hidden from view.

Dr. H. E Gamlen (Newcastle) found Dr. Burrows's paper very thorough, interesting, and instructive. As malignant disease of the uterus generally ended in death, it was his opinion that the only way to combat it was to discard most limitations and make a bold bid for its eradication by means of huge doses of radium. For many years he had been acquiring experience in the use of radium, but only within the last eighteen months had been possessed of a sufficiently large quantity to be of use in treating malignant diseases seriously. He was now working with 300 mg. of radium bromide or its equivalent. Most of his work in the treatment of malignant diseases of the uterus had been done under the supervision of an eminent gynaecologist, and a certain amount of success had been recorded. In some cases it was surprising how large growths of the os and cervix melted away after a few days' intensive treatment. Further success was obtained by the introduction of large doses of radium into the body of the uterus. Some of these cases for the time being appeared to be clinical cures, as no traces of the growth had been found. Quite recently some very fine radium needles had been acquired, and by their introduction into growths and surrounding tissues he felt optimistic of obtaining still better results.

Mr. W. Ernest Miles (London) said that at the Cancer Hospital he had many opportunities of observing the treatment of inoperable cancer of the cervix by radium, and had yet to see the case that had been cured by that means. Dr. Burrows said that the most favourable cases for radium treatment were those that were just inoperable. He would like to ask how that point was determined. In his experience it was often extremely difficult in borderland cases to say whether an operation was possible or not unless abdominal exploration had been carried out. It often happened that a growth, though apparently in an early phase and freely movable, was found, on opening the abdomen, to have given rise to widespread glandular and peritoneal involvement rendering operative interference impossible. Conversely, many growths, though seemingly fixed, were found, on intra-abdominal inspection, to be amenable to panhysterectomy. On several occasions he had been able to carry out a radical operation in apparently inoperable cases, and as a consequence the patients were alive and well to-day. It would seem, therefore, to be a pity to subject such borderland cases to radium treatment without having previously determined their inoperability by abdominal section. His experience of radium treatment had been that whereas in some instances a certain amount of regression might take place in the primary growth, the metastatic deposits were so stimulated to activity that rapid and widespread dissemination occurred.

Mr. Cecil Rowntree (London) said that the results described by Dr. Burrows were very striking, and compared most favourably with those of panhysterectomy; indeed, they almost approached those claimed by Erlangen himself. It was evident that his methods must be very different from those employed at the Cancer Hospital, for, in spite of the fact that they had, for a long time past, had quite a large supply of radium at their disposal, yet the results obtained had been bitterly disappointing; his experience, and that of his colleagues also, had shown that although temporary improvement sometimes occurred, yet this improvement was never maintained, and that in carcinoma of the cervix, as in all other forms of carcinoma with the exception of rodent ulcer, recrudescence of the disease invariably showed itself.

Mr. Beckwith Whitehouse (Birmingham) asked Dr. Burrows if he had had any immediate ill effects from the use of radium in large doses when applied to the cervix. In the experience of some, enteritis and colitis were not uncommon sequelae, and at least one fatal case had been recorded in a Continental medical journal.

Dr. Ranken Lyle, after thanking Dr. Arthur Burrows for his valuable paper, said that his own experience of the treatment of such cases by radium was very small. In association with Dr. Gamlen he had used it in about ten or twelve cases; in some the disease rapidly disappeared as if by a charm, but unfortunately returned in all except one case, which so far appeared to be still quite free from the disease. The results that Dr. Burrows had obtained from the use of radium were exceptionally good and most encouraging; those who had not so far obtained better results from this treatment should not be disheartened, because every inoperable case cured by radium was a positive triumph, and it was quite possible that before long the results from this treatment would improve as experience in its use grew.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

BRONCHOPNEUMONIA WITH PYAEMIC SKIN MANIFESTATIONS RESEMBLING SMALL-POX.

A boy, aged 8 months, was admitted to the Royal Hospital for Sick Children, Glasgow, on February 21st, 1921, with a history of having been unwell for seven weeks with "bronchitis." During the last fourteen days the cough had become more severe, and vomiting and fever were present. On admission the patient was much distressed, with an anxious expression, a pallid face, and his lips and fingers cyanosed. The temperature was 101.4° F., the pulse rate 156, and respirations 36 per minute. The skin showed a diffuse purpuric rash over trunk and legs. The lungs showed signs of consolidation at both apices and at the right base posteriorly. A skiagraph of the chest revealed a well-marked shadow over the lower part of the right lower lobe. The heart, abdomen, and throat appeared to be unaffected, all nervous reflexes were brisk, the von Pirquet test was negative, and, as regards the urine, no albumin was present and microscopic examination was negative. The blood examination revealed haemoglobin 90 per cent., red corpuscles 4,000,000, white corpuscles 50,200. Stained films revealed the leucocytosis to be one of mature polymorphs.

The child continued to be extremely ill, the general picture suggesting a septicaemia or perhaps an acute pyelitis rather than a pneumonia, although consolidation extended to the left base. Two days after admission a large patch of discoloration with a vesicle an inch long by half an inch wide appeared on the right foot. On March 7th (fourteen days after admission) a fairly profuse eruption appeared which closely resembled that of small-pox. The eruption was first noticed on the trunk, where, as well as on the inner aspects of the thighs, it was very profuse, whilst there were only some half a dozen spots scattered over the cheeks, and both upper extremities were entirely clear except for a few spots over the deltoid area. The eruption, which at first consisted of papules, then passed on to a vesicular, and in fact to a bullous, condition. Each vesicle, however, appeared to be unilocular.

Blood was taken from the longitudinal sinus and culture revealed abundant diplococci of pneumococcus type, some occurring as short chains. The urine was frequently examined for pus during the illness but none was found until the day before death, when a few pus cells were detected in a fresh drop of urine. Marked conjunctivitis developed towards the end of the illness, stained films revealing xerosis bacilli and also abundant Gram-positive cocci. The temperature remained between 99° and 100.2° F. until four days before death, when it rose to 102.4° F., and on the last day it was 103° F. The pulse varied from 120 to 160 per minute, and the respiration rate

from 30 to 50. Death occurred five days after the eruption appeared, the only change in the skin lesions being that many of the vesicles became definitely pustular in character.

Post mortem Examination.

Lungs: Widely diffused septic foci and bronchiectasis throughout both lungs, but especially well marked in the right middle and in both lower lobes posteriorly. At the right base there was early abscess formation. *Kidneys:* Minute hæmorrhages throughout, the appearance suggesting commencing foci of suppuration. *Liver:* Showed fatty degeneration. *Heart and Spleen:* Negative. *Skin:* Microscopical examination of the skin showed that in the immediate vicinity of the pustule there was intense capillary injection with abundant polymorphonuclear exudation. The whole thickness of the skin was infiltrated with polymorphs and there was also a considerable collection of oedematous fluid. The actual pustule was enclosed by the stretched keratinous layer and its contents were composed of pus, necrotic epithelial cells, and serous fluid. The lesion appeared to have taken origin immediately beneath the corium and to have spread through the thickness of the skin, and also to some extent laterally on the surface of the prickle cell layer but beneath the keratinous layer. Occasional small abscesses were seen in the subcutaneous tissues.

The picture, therefore, was one of septic bronchopneumonia with pyaemia, but the superficial resemblance of the skin lesions to those of small-pox was very marked and caused grave doubt for some time in the minds of those in charge, especially in view of the prevalence of small-pox in Glasgow at the time, but the following points enabled this disease to be eliminated.

(a) Distribution of the Rash: (1) This appeared first on the trunk, and, except for some half-dozen papules scattered over the chest, the face was exempt and there was no lesion on the forehead. (2) Both upper extremities were almost free from rash. It has been pointed out that if a well-marked rash is present and one entire extremity or one large surface of the body is free from the rash the condition is very unlikely to be small-pox. (3) On the lower extremities the rash was much more profuse on the proximal than on the distal parts.

(b) Character of the Vesicles: These were unilocular, and although in many became pustular they were uniform in size and in the degree of pustule formation.

(c) General Appearance of the Skin: Meanwhile the skin was dull and atrophic, in contradistinction to the vivid appearance in small-pox with the marked inflammatory areolae around each vesicle.

I desire to thank Dr. Leonard Findlay for permission to publish the case. I am also indebted to Dr. Haswell Wilson for details of the *post-mortem* examination and pathological findings.

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SODIUM BIBORATE IN EPILEPSY: THE RESULTS OF TWELVE MONTHS' TREATMENT.

IN THE BRITISH MEDICAL JOURNAL of October 9th, 1920, I published an article on sodium biborate in the treatment of epilepsy in an asylum. That paper recorded the combined treatment with potassium bromide and borax for a short period only—for four months in two wards of the asylum, and for six weeks only in two others, with the exception of one case (J. D.), in which the treatment was commenced in December, 1919. The following notes give the results in those patients who have had the treatment for a year and the number of whose fits for the twelve months prior to treatment is definitely known. I append below notes on the treatment of patients in four different wards in this asylum, and, although excellent results could be quoted from the remainder of the patients, I consider that the following notes are sufficient to show the value of this treatment. The only adjunct to treatment by potassium bromide and borax was a laxative given at bedtime.

Ward I.

The epileptic patients in this ward are all chronic cases, and their ages range between 39 and 50. All have been in the institution for years, and all were formerly on bromide alone. They were usually in a stuporous condition, and always more so after a bout of fits. In most of the cases it is difficult to obtain a proper history before admission, but in four patients in this ward there is a definite history of epilepsy—for thirty years in one case, for twenty-seven years in another, for twenty-two years in a third, and for twenty-one years in the fourth. All, except one who had *petit mal*, suffered from major epilepsy. The record in the ward is that there were in the year before treatment 1,086 fits, while during the year of treatment the number has been 222, an average reduction of fully 79 per cent. In regard to the case of *petit mal* the result is very striking; this patient has been epileptic for twenty-seven years, and is now 50 years of age. During the twelve months before treatment he had 404 fits; his number for the past year is 18, a reduction of fully 95 per cent.

Ward II.

The patients in this ward have been in the institution for from four to six years. They are between the ages of 25 and 45, but their epilepsy is of long duration, one case being epileptic from the age of 3½ years, according to the history given by his mother. The number of fits in this ward prior to treatment was 203. This has been reduced to 47, a reduction of fully 76 per cent.

Ward III.

The record here, although good, would no doubt have been much better had it not been that in this ward, by way of experiment, the treatment was discontinued at times in a few of the most typical epileptics; at intervals the dosage was altered, and at other times borax alone, and bromide alone, were administered. Despite these facts, the record is that the fits have been reduced in number from 534 to 247, or fully 53 per cent. One patient of the demented type, a man 55 years old, is worthy of comment. His intelligence was extremely poor, he was resistive, with marked irritability, and, in fact, everything had to be done for him. His record of fits has diminished from 127 to 67, and he is now to be found invariably in good humour, does nearly everything for himself, while his power of observation is remarkable as compared with his former state.

Ward IV.

The results in this ward are very satisfactory, the average reduction in the fits being fully 72 per cent., the total being reduced from 294 to 80. The ages of the patients here range between 35 and 71; the one patient of the latter age has not had an attack since he commenced treatment on July 20th, 1920, although in the previous year he had 42 fits of severe type.

In conclusion, besides the marked mental changes, the reduction in fits, and the great diminution in accidents and the amount of sedative which was previously required, the following points are worthy of notice: Periodical, violent, explosive outbursts have disappeared, and no longer does a stuporous condition follow the fits. There has not been a single case of status epilepticus in this institution during the past twelve months.

Hartwood, Lanarkshire. JOHN MCCARTNEY, L.R.C.P. and S.E.

CHOLECYSTOSTOMY AND CHOLEDOCHOTOMY FOLLOWED BY CHOLECYSTECTOMY TEN YEARS LATER.

THE following notes concern a patient, a married woman, who was aged 47 at the time of the first operation, upon whom I performed cholecystostomy and choledochotomy in 1910, and ten years later had to perform cholecystectomy. Her family history was unimportant, and her medical history was quite good, except that she had an operation for haemorrhoids in 1902. In 1884 she married her first husband, who died in 1910, and to whom she had three children. She first began to have biliary trouble in South Africa in 1905, and from that time onwards to October, 1910, she had repeated attacks of biliary colic, which were becoming a burden to her and affecting her general health.

I performed the first operation on October 11th, 1910, in the North Lonsdale Hospital, Barrow-in-Furness. The abdomen was opened, adhesions were found about the gall bladder area, and the gall bladder was adherent to the duodenum. The adhesions were separated, giving a better view of the parts. Then the gall bladder was opened, and 26 stones removed. On examination the common duct was found to be filled with gall stones, and the common duct was also opened, from it and the hepatic ducts 51 gall stones of varying size being removed. Three drains were left, one in the gall bladder, one in the common duct, and a cigarette drain in the kidney pouch. She left the North Lonsdale Hospital on November 8th, 1910.

From the date of leaving hospital after her first operation up to 1920 the patient enjoyed excellent health, while in the meantime her first husband died, and she married again in 1914. Early in 1920 she began to have pains in the gall bladder region, which became gradually worse and more frequent. She again asked for something to be done, as the attacks were beginning to make life miserable for a second time.

She was for the second operation again admitted into the North Lonsdale Hospital, and operated upon on August 23rd, 1920. The parts were somewhat obscure from the adhesions following the previous condition and first operation, but the gall bladder was exposed and opened; a large stone three-quarters of an inch long, triangular in shape, with the apex embedded in the cystic duct, was found, fixed and surrounded by adhesions, and obviously the gall bladder had ceased to be of use. The whole organ with stone *in situ* was therefore excised, the cystic duct ligatured and buried under the peritoneal cover of the liver,

which was sutured over the bed of the gall bladder. No drain was left in the abdomen. The abdominal stitches were removed on September 2nd, 1920, and the patient left the hospital on September 18th. Since leaving the hospital she has been perfectly well.

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Reviews.

GENERAL PATHOLOGY.

The appearance of Professor Oertel's *General Pathology: an Introduction to the Study of Medicine*[1] recalls a similar work by his distinguished predecessor in the chair of pathology at McGill University, Montreal, Dr. J. G. Adami, now Vice-Chancellor of Liverpool University, especially as the present incumbent is contemplating a second volume on the diseases of special organs and systems. His objects in this volume are, in the first place, to divest the study of pathology of all metaphysical and teleological conceptions of use, harm, defence and vital forces, and to show that pathological processes are physical and chemical cellular alterations and disturbed cell relations which follow ordinary biological laws, and, at least in the majority of cases, have a definite anatomico-histological expression. The author lays special stress on these structural changes, as they provide visual conceptions which furnish the most satisfactory understanding of cell functions, and insists that pathological anatomy remains the pillar of pathological science. The author's second aim has been to trace the historical development of our present ideas and, by showing the influence of one step of thought upon the succeeding, to cultivate a critical judgement for future use.

In a philosophical preface, after briefly sketching the history of pathology until Virchow's influence had transformed the subject, the author comes to the conclusion that it is impossible to give an exact and all-embracing definition, as distinct from a description, of health and disease. The first part of the book deals with etiology, and under the heading of external factors descriptions are given of the various pathogenic bacteria and protozoa. In a chapter on immunity it is pointed out that Ehrlich's ideas, being purely chemical, can no longer be maintained in their entirety, because the processes of immunity are now recognized as largely physical, colloidal, and electrical reactions. A summary is given of the physical and chemical factors of disease, such as heat and cold, air pressure, *x* rays, and poisons. The internal factors—namely, disposition and idiosyncrasy and heredity—are then considered; the belief in the transmission of acquired characters is rejected on the ground that no conclusive evidence has as yet been furnished to show that in the metazoa environment does anything but shape and develop latent qualities.

The second part of the volume deals with pathological processes—namely, the morphological changes and the pathogenesis; it contains five chapters, the last of which is on general somatic death. The chapter on pathological changes in local cell relations describes inflammation, the infective granulomas, and tumours; inflammation receives a carefully discussed definition as an expression of the sum-total of all those genetically related degenerative, exudative, and productive processes that are excited by irritants, some of these processes being individually destructive, others helpful. The specific etiology of Hodgkin's disease (lymphadenoma) is regarded as doubtful, on the ground that many attenuated infections may produce similar pictures. Hypernephroma is placed under the heading of special tumours of epithelial glandular tissue in company with chorio-epithelioma, and is thus separated from mesothelioma—a term which is restricted to neoplasms arising from the endothelium of the serous membranes; this is a change from the original previous significance of the term mesothelioma, which also included tumours of the adrenal cortex, ovary, and testes.

The concluding words of this clearly and succinctly written work, which thoroughly deserves success, may be quoted: "The cultivation of pathological anatomy and histology is to-day, as it was in the days of Morgagni, Bichat, Bright, and Virchow, the essential foundation for the science and practice of medicine."

[1] *General Pathology: an Introduction to the Study of Medicine.* By Horst Oertel, Strathcona Professor of Pathology, McGill University. New York: Paul B. Hoeber. (Demy 8vo, pp. 357 + xxi; 12 charts. $5 dols.)

GUY'S HOSPITAL REPORTS.

The third instalment of this year's quarterly issue of the *Guy's Hospital Reports*[2] contains nine articles, four being on the alimentary canal, and thus showing the inspiration of the successful editor, Dr. A. F. Hurst, who indeed is joint author of two of these four papers. In collaboration with Mr. R. P. Rowlands he contributes a very complete account of jejunal and gastro-jejunal ulcers; jejunal are twice as common as gastro-jejunal ulcers, which may contract or even obliterate the stoma, and hardly ever occur in association with gastric carcinoma. Ulcers are more frequent after gastro-jejunostomy for duodenal ulcer, in which hyperchlorhydria is constant, than after operation for gastric ulcer, in which hyperchlorhydria is rare, though hypersecretion occurs if the pylorus is involved. The presence of free hydrochloric acid is not enough to cause these ulcers, the additional factor being some infective focus—for example in the mouth, or even a suture. These ulcers are usually chronic, but they may be acute and even perforate in a fortnight. The prophylaxis and treatment of a fistula—especially of a gastro-jejuno-colic fistula—are clearly described. The editor's other contribution, with Professor T. B. Johnston, on left-sided colon due to non-rotation of the gut, is illustrated by figures explaining the mechanism of this rare abnormality. Drs. T. Izod Bennett and J. A. Ryle supply an elaborate study of normal gastric secretion based on investigation of a hundred healthy medical students by means of the fractional method of gastric analysis.

A detailed report is given by Dr. E. P. Poulton of a case of sino-auricular heart-block following pneumonia, and accompanied by a permanent rise of 125 mm. Hg in the systolic blood pressure within two years. Consideration of the bearings of this case on the genesis of the heart beat suggests that the auriculo-ventricular node normally initiates the ventricular beat, and is excited by an extrinsic current from the sino-auricular node, which arrives in front of the auricular excitation wave.

Mr. E. G. Slesinger, surgeon-in-charge of the fracture department, writes fully on a consecutive series of 458 cases of fracture of the upper limb treated as out-patients; and Mr. Philip Turner, in a note on the measurement of shortening after fractures of the lower extremity, points out the importance of the head of the fibula as a bony landmark, and shows how shortening due to a fracture of the shaft of the femur can be accurately estimated, and how inaccuracies due to a different position of the hip-joint on the sound and injured sides can be eliminated by measuring the distance between this point below and the top of the great trochanter above. In a paper on acholuric jaundice Dr. Campbell records cases of inherited and acquired chronic haemolytic jaundice, and then gives the history of a family with 9 cases and 30 normal individuals. Among the families collected from literature he found 53 cases out of 163 persons, almost equally divided between the sexes. It is difficult to understand the inheritance on Mendelian lines; in some families there is a tendency for the condition to die out in the fourth generation, which would negative the view that it is a real hereditary abnormality, and suggests the possibility of an attenuated infection, though the existing evidence is against such an explanation. This interesting number of the *Reports* also contains short papers by Mr. P. Briggs on hour-glass constriction of the stomach by the splenic flexure of the colon distended by gas, and by Mr. N. E. Kendall on some results of intranasal operation for antral suppuration.

[2] *Guy's Hospital Reports.* Edited by A. F. Hurst, M.D. Vol. lxxi (Vol. i, Fourth Series), No. 3, July, 1921. London: Henry Frowde, and Hodder and Stoughton. (Pp. 253–375; 52 figures. Price, single numbers, 12s. 6d.; subscription for volume of four numbers, £2 2s. post free.)

A PRACTITIONER'S REFERENCE BOOK.

The subtitle of *Lippincott's Quick Reference Book for Medicine and Surgery*,[3] by Dr. George Rehberger, of the Johns Hopkins University, is "a clinical diagnostic and

[3] *Lippincott's Quick Reference Book for Medicine and Surgery.* By George E. Rehberger, A.B., M.D. Philadelphia and London: J. B. Lippincott Company. 1921. (Sup. roy. 8vo, 151 figures; 30 plates. 63s. net.)

therapeutic digest of general medicine, surgery, and the specialities, culled extensively and intensively from modern literature, and systematized." It is a bold and comprehensive as well as a lengthy claim, but on the whole, after looking up a number of subjects and studying the way in which they are handled, we are not disposed to consider it unjustified. The amount of information supplied as to diagnosis, causation, prognosis, and treatment has usually been found very satisfying. In respect of the general contents, the whole field of medicine and surgery is divided into eleven parts (not including a pharmacological index and section on weights and measures), separated from one another by marginal thumb-notches, and in each of these parts the subjects considered are arranged alphabetically. Cross-references are numerous, but despite this fact we have not invariably dropped quickly on to the article dealing with the disease entity we had in mind, and on this account rather regret the absence of a general index. We have no doubt, however, that with longer experience of the book this relative difficulty would largely disappear, and that the practitioner using it would agree that the compiler has attained his object. This has been to accomplish a critical sifting of modern literature, to select what is useful and needful in bedside therapeutics, and rearrange this mass of knowledge for purposes of quick reference and individual completeness of treatment of each subject, thus making it immediately available for practical needs. Dr. Rehberger claims nothing in the work as his own, except its plan, the selective judgement employed, and the labour involved. It is a compilation, in fact, of modern medical teaching—coloured, perhaps, by being written from the standpoint of a man who at one time in his life was an isolated country doctor and feels that he knows the needs of those liable to be confronted with disease in all its manifestations, and consequently in need of complete knowledge. As he truly points out, a practitioner who consults a single authority is not seldom disappointed by the lack of certain information which he deems of importance, and which he may, on further search, succeed in finding in another work. Sometimes, indeed, he would like to consult many authorities, but has not the means or the time at his disposal; this book aims at doing for him what he would like to do for himself had he the necessary facilities. The volume contains a large number of engravings and some thirty coloured plates.

METHODS OF EXAMINATION IN INSANITY.

Dr. André Barbé has managed to compress a large amount of useful information into his unpretentious little volume, *Examen des Aliénés*.[4] He has made an exhaustive summary of the literature relating to objective and biological researches in the sphere of mental medicine in order that we may be in a position to estimate the extent of our actual knowledge in respect to this aspect of insanity. He stresses the view that intellectual functions are not independent of the bodily functions of the organism, but, on the contrary, are closely related to and dependent upon them. During the last few years laboratory methods have made such progress that they have rendered it possible to trace mental disorders to their true origin, and to demonstrate the relation between mental states and the conditions of the physical organization. In successive chapters the author gives a summary of the newer clinical and biological methods of investigation as applied to the nervous system, the cerebro-spinal fluid, the circulatory apparatus, the blood, the urinary system, the respiratory and digestive apparatus, the osseous system, the glands and internal secretions, intoxications and infections. All these sections include full references to the French and foreign literature of the subjects with which they are concerned. The author is of the opinion that the clinical study of mental disorder must remain stationary in the absence of definite facts to establish, or even attempt to establish, a classification, and he feels that, at present, psychiatry is in an almost anarchical state as a result of a want of understanding of the meaning, significance, or limits of the terms which it employs. Such a state of affairs, he believes, is most likely to be remedied by strictly objective laboratory studies.

[4] *Examen des Aliénés. Nouvelles Méthodes Biologiques et Cliniques* Par André Barbé, Médecin Aliéniste des Hôpitaux de Paris. Preface by Dr. Seglas, Médecin de la Salpêtrière. Paris: Masson et Cie. 1921. (Demy 8vo, pp. xiv + 178. Fr. 8.)

The well-known psychiatrist of the Salpêtrière, Dr. J. Séglas, provides an introduction to this volume. In a few pages he writes many words of wisdom, and he especially emphasizes the view that the student who launches himself into psychiatry must not too quickly narrow his horizon, but must bear in mind that if later he becomes administrator, psychologist, or expert, it will always be necessary that he should show himself a physician in the most general sense of the word; for psychiatry is, perhaps, of all the specialities the least specialized.

CHEMICAL ANALYSIS OF THE BLOOD.

Dr. Victor C. Myers has provided in his *Practical Chemical Analysis of the Blood*[5] a valuable addition to the laboratory bookshelf. As he says, it is to America that we owe many of the simpler tests and methods of bio-chemistry. The time has not yet come for any exhaustive treatise on chemical blood analysis, and the author confines his seven chapters to non-protein nitrogen and urea nitrogen, uric acid, creatinin, blood sugar, carbon dioxide combining power, cholesterol, and the chlorides. Within these limits and within the further limit of 120 pages a very great deal of useful information is concisely arranged. Since this branch of chemistry is young, the author does well to lay stress on normal variations and on the circumstances which make each test desirable. He writes as for readers who require the clearest and most orderly descriptions, and concludes his book with a very useful appendix, which contains, amongst other matter, directions for the preparation of standard solutions and reagents.

In the very nature of things a book of this sort must need frequent revision, and we hope that in subsequent numbers the writer may see his way frankly to include in his title chemical analysis of the urine. This important subject can hardly be divorced from chemical analysis of the blood, as almost every page bears witness.

CHEMISTRY OF PHARMACEUTICAL PREPARATIONS.

Organic Medicinal Chemicals,[6] by M. Barrowcliff and Francis H. Carr, is one of a series each member of which is to deal with a special branch of industrial chemistry. The editor, Dr. S. Rideal, states in a general preface that an attempt will be made to appeal to "the very large class of readers already possessing good textbooks, of which there are quite sufficient." In the volume before us that aim has been very well achieved, for it presents a survey of manufacturing processes in comprehensive form, affording the reader a better grasp of the principles sought than he could otherwise obtain without repeating the authors' labours. It is written more expressly for the use of those interested in the manufacture of medicinal products, and is composed in the style of a manufacturer's pharmacopoeia; the articles are arranged, however, not in alphabetical order, but are grouped in sections of which the headings denote the therapeutic purposes of the preparations; this plan will help the student of chemical constitution in its relation to physiological action. Though the book deals chiefly with methods of preparation, fairly complete descriptions are given also of the chemical properties and physiological activities of the substances. The incidence of impurities receives full attention, and methods for their recognition are described. The authors' preface to the volume acknowledges a want of completeness in some descriptions of processes, due chiefly to the insufficiency of published accounts. Such a lack of completeness was from the first inevitable, and must in the nature of the case be a constant defect in a work of this kind, unless, indeed, enterprise in this branch of manufacture is to stand still; but that view being recognized, it may be said at once that the work is throughout full of practical and advantageous information. Abundant references to original publications are given. There are phrases in the text untrammelled by the rules of syntax; one reads, for instance, on page 42, "The

[5] *Practical Chemical Analysis of Blood*. By Victor C. Myers. London: Henry Kimpton. 1921. (Roy. 8vo, pp. 121; 13 figures. 16s. net.)

[6] *Organic Medicinal Chemicals (Synthetic and Natural)*. By M. Barrowcliff, M.B.E., F.I.C., and F. H. Carr, C.B.E., F.I.C. London: Baillière, Tindall and Cox. 1921. (Demy 8vo, pp. 347; 25 figures. 15s. net.)

components are reacted at as low a temperature as possible . . ."; but the matter itself is manifestly the work of men who understand the science and technology of the subject. The work is to be regarded as a pioneer in this sphere; it will no doubt fulfil a useful purpose and in future editions come to occupy a position of authority.

A serviceable and authoritative treatise on the analysis of drugs and medicines has long been wanted. It is a field of chemistry in which the personal factor of the analyst has ever been large in comparison with that obtaining in other branches of laboratory work. It was hoped that Mr. Fuller's book, *The Chemistry and Analysis of Drugs and Medicines*,[7] would contain matter that would reduce the personal element of success in practice, but this hope has been disappointed. It collates the methods given by pharmacopoeias, and in particular by the United States pharmacopoeia, for the quantitative determination of the active constituents of drugs and also methods applicable to unofficial substances. It contains descriptions of the properties and reactions of alkaloids, glucosides, and other chemical substances, including synthetic medicinal products, and has a section dealing with inorganic substances; attention is paid also to means of recognition and separation of the constituents of certain classes of compounded remedies. The matter is voluminous rather than well selected, and the arrangement is somewhat indefinite. Under aconite (p. 26), aconitine is erroneously described as ethyl-benzoyl aconin, and in the section dealing with alkaloids (p. 266) rightly as acetyl-benzoylaconin. Under acetic acid we read, "Acetic acid is the bane of the analyst in determining alcohol in drug mixtures. The writer has found it consistently in almost every alcoholic distillate . . ."; and under ethyl alcohol (p. 539), "The writer in checking over the work of other men has more than once saved an over-zealous chemist the chagrin of having to refute his analysis in contest when he had erroneously reported a definite percentage of methyl alcohol without making a qualitative test." Solicitude of this kind for the reader's inexperience runs throughout the book, but only rarely appears opportune. The book will be appreciated for the abundance of its contents. Few articles of materia medica or medicinal usage have escaped descriptive notice or reference within its pages; even chewing-gum receives more than 1,000 words. The analyst engaged in the examination of medicinal articles will find not only matter which he would otherwise have had to seek through scattered sources, but also details of the results of special research, as examples of which may be mentioned the work from English laboratories of Garsed on the coca alkaloids, and Farr and Wright on colchicine.

NOTES ON BOOKS.

Some three years ago we drew favourable attention to the monograph on the conduction of nervous impulses, produced by Dr. E. D. Adrian from the material left at his death by the physiologist Keith Lucas. A French edition of this work has now been published.[8] It contains all the original diagrams, and the translator, M. Georges Matisse, has also, we observe, contrived to adhere to the phrasing of the original text with remarkable fidelity. The translation, in fact, is usually so close that any possessor of the original might use the two as a textbook on how to write on a scientific subject in either language.

It is to be concluded from Professor Freud's introduction to *The Psychology of Day-Dreams*[9] that its author, Dr. J. Varendonck, has filled a gap in the literature of psycho-analysis. The contents are described by the latter as a contribution to the study of the mechanism of thinking, and in effect they appear to be an attempt to trace the source, connexion, and course of the ideas that floated through the writer's mind at various half-awake half-asleep periods during his service as an interpreter in the British army in the late war; and to apply the conclusions to thought at large. The general phraseology is unusually clear, and although the writer is a Belgian the English is excellent.

Professors Edward Davis and Beaman Douglass, of the New York Post-Graduate Medical School and Hospital, have published a second edition of *Eye, Ear, Nose, and Throat Nursing*,[10] which first appeared some fifteen years ago. Beyond revision the principal alteration appears to be the introduction of a chapter dealing with vaccine and serum treatment. The book takes a broad view of the duties of a nurse in connexion with diseases and injuries of the organs in question, and the authors do everything they can to secure that she shall understand not only what she must do, but also why it should be done. The precise effect, for instance, of the various medicaments used is explained, and the motives which lead the specialist to prescribe sometimes one, sometimes another, are set forth. The writing throughout is clear, and no nurse who had carefully studied the volume could fail to take an intelligent and even critical interest in her cases. The book, in short, is one of the best on a nursing subject with which we are acquainted. It contains, also, so many illuminating observations on the treatment and progress of cases coming within the scope of the title, as to make it likely to serve as a useful reference book for any practitioner who does not habitually have to deal with them.

In *Bandages and Bandaging for Nurses*,[11] Miss Cordelia Cowan, President of the State Board of Nurse Examiners in Colorado, and also nursing superintendent of a hospital, gives a succinct and clear account of the art. The brevity of the instruction is rendered possible partly by the omission of anything in the nature of *obiter dicta* and by the use of short numbered sentences, and partly by taking full advantage of the facilities offered by modern photography. There are, in fact, about four excellent pictures for every five pages of mixed text and illustration.

MEDICAL SICKNESS ANNUITY AND LIFE ASSURANCE SOCIETY.

The annual meeting of the Medical Sickness Annuity and Life Assurance Society, Limited, was held at the offices of the society, Lincoln House, 300, High Holborn, W.C., on September 26th, under the chairmanship of Dr. F. J. Allan, when the first annual report of the society since its conversion into a mutual company was presented.

The report, which covered the period from May, 1920, to June, 1921, showed that 302 new policies had been issued and that sickness claims amounting to £20,007 had been paid. The total premium of the sickness and accident fund amounted to £41,066, and at the close of the period the fund had a balance of £218,074. In the life assurance fund 90 policies had been issued assuring £59,000 gross, and the total amount of the fund was £34,754. The total premium income of the society amounted to £47,431, while the expenses of administration was 11.2 per cent. of the premium income. The rate of interest earned was £5 3s. per cent. gross and £3 19s. 6d. per cent. after deduction of tax. After allowing for a further £5,000 to be transferred to the investment reserve to meet the continued depreciation of trustee securities there was an increase of £21,673 in the two funds, which now amounted to £312,828.

Chairman's Address.

The Chairman in his address congratulated the members on the success which had attended the conversion of the society into a limited liability company, under which it was able to do larger business. At present they were doing more business in a week than in a month under the old régime, and with a view to further expansion the meeting would be asked to sanction application being made to the High Courts for increased powers.

In the sickness fund the new annual premiums were nearly three times the average amounts of previous years; the claims made for sickness and accident were well within the expectation, and averaged £6 per member, which was about the same as in the previous year. The cost of administration of the fund had slightly risen, being now 12 per cent. of the premium income, but it compared favourably with other companies who were spending double or even treble that amount in administration of the same class of business. The life insurance department showed gratifying signs of expansion. The new system, which he believed the society was the first to introduce, of premiums not being loaded for profits, but policy holders being entitled to them, had proved

[7] *The Chemistry and Analysis of Drugs and Medicines.* By H. C. Fuller, B.S. New York: J. Wiley and Sons, Inc. London: Chapman and Hall, Ltd. 1920. (Med. 8vo, pp. 1081. 50s. net.)

[8] *La Conduction de l'Influx Nerveux.* Par Keith Lucas; publié par E. D. Adrian. Traduit de l'Anglais par Georges Matisse. Paris: Gauthier-Villars et Cie. 1920. (Demy 8vo, pp. 123; 22 figures. Fr. 5.50.)

[9] *The Psychology of Day-Dreams.* By Dr J. Varendonck; with an introduction by Professor Dr S. Freud. London: Allen and Unwin, Ltd. 1921. (Med. 8vo, pp. 367. 18s. net.)

[10] *Eye, Ear, Nose, and Throat Nursing.* By A. Edward Davis, A.M., M.D., and Beaman Douglass, M.D. Second revised edition. Philadelphia: F. A. Davis Company. 1920. (Post 8vo, pp. 361; 32 figures. 2.50 dols. net.)

[11] *Bandages and Bandaging for Nurses.* By M. Cordelia Cowan. Philadelphia and London: W. B. Saunders Co. 1920. (Demy 8vo, pp. 177; 139 figures. 10s. 6d. net.)

attractive. The expense of administration in this branch was only 5.84 per cent. of premium. This small cost was largely accounted for by the fact that no agents were employed to whom commission had to be paid. The amount of new business far exceeded anything the society had previously done. As the result of not paying commission agents the assured received a direct bonus on every premium paid for sickness and accident equivalent to 15 to 20 per cent., and for life assurance 2½ to 5 per cent., which amount would have had to be added to the premiums if agents had been employed.

The increase of work since the conversion of the society had necessitated the directors meeting every week instead of monthly, to deal with the various problems that arose; it had also necessitated an increase in the staff, to whom the society were indebted for the admirable way in which it had carried on the work. He regretted to report that ill health prevented Mr. Edred M. Corner from continuing to serve on the board. The expenditure of the society slightly exceeded that of 1919; this was partly accounted for by the higher price of everything, for expenses consequent on conversion, the payment of directors' fees, and, on account of the amount of new business, the greater number of fees paid to the medical men who examined proposals for assurance.

The values of trustee securities had shown further depreciation, necessitating an increase in the investment reserve, which now stands at £25,000. The directors had thought it desirable to make special provision for endowment assurances the number of which were increasing—by investing in stocks redeemable at fixed dates. This had the double advantage that the money to meet such claims was readily available while the value of the stock improved as the time for redemption drew nearer. The society's policies for sickness contained no harsh restrictions and covered all accidents and sickness. Though permanent incapacity was not large, he called attention to the fact that 1 per cent. of their members were receiving regular weekly allowances on that account, and not infrequently the sum received from the society was the only source of income.

The Chairman concluded his remarks by moving that the report of the directors and the statement of accounts be received. The motion was seconded by Dr. W. K. Sibley, and, after the Chairman had replied to various questions, was carried.

Dr. Harvey Hilliard was re-elected a director, and Dr. Charles Buttar was elected to fill the vacancy on the board of directors caused by the resignation of Mr. Edred M. Corner.

Messrs. Harber, Sturges, and Fraser were reappointed auditors.

This concluded the proceedings of the annual general meeting, which was followed by extraordinary general meetings, when it was agreed to apply to the High Courts for permission to extend the scope of the society's work, and also to alter the present article of association governing the directors' fees. These matters were carried by the requisite majority, and will come up for confirmation at a second extraordinary meeting on October 17th.

HYPERNEPHROMA OF THE OVARY.

The tumours of the kidney and ovary, to which the unhappy term hypernephromata is applied, and their relation, if any, to the adrenals, present a pathological puzzle of no little interest and complexity. The interest lies partly in the fact that true primary growths of the adrenal gland are attended by certain sex changes—namely, precocious growth and hirsuties of the male type, often by obesity, and often by hypertrophy of the external genitals, particularly of the clitoris. To this condition Professor Glynn of Liverpool has applied the term "suprarenal virilism."

Grawitz in 1883 put forward the suggestion that certain tumours of this order found in the kidney arise from adrenal rests, and the theory was extended to tumours of similar structure which occur occasionally in the ovaries. Grawitz's theory of the origin of the renal tumours has been criticized by, amongst others, Stoerk, Zehbe, and Wilson and Willis, as well as by Glynn, who have sought to demonstrate that the so-called hypernephromata of the kidney rarely, if ever, arise from adrenal rests. In a recent elaborate paper[1] Professor Glynn carries the controversy a stage further, maintaining that the so-called ovarian hypernephromas have never been proved to exist, and that on embryological grounds their existence is, if not inconceivable, extremely improbable.

In the British Medical Journal for October 18th, 1919 (p. 495), Dr. Knyvett Gordon described two cases of ovarian hypernephroma. Shortly afterwards (November 8th, 1919 (p. 616), his diagnosis was challenged by Dr. Leith Murray, and finally, on January 24th, 1920 (p. 133), was published a histological report by Professor Turnbull on the two cases, and another to which Dr. Gordon had alluded; the decision was that the supposed hypernephromata were really tumours of the lutein body, and Dr. Gordon admitted that his original diagnosis was wrong. Professor Glynn gives three reasons for doubting whether any true case of ovarian hypernephroma has ever been described. His first reason is embryological, and rests upon the fact that there is no established instance of adrenal rests having been found in the ovary, though they are known to occur in the broad ligament. The difficulty obviously is to distinguish adrenal rests from lutein tissue; the resemblance, both to the naked eye and microscopically, is close. The ovaries are seldom carefully examined at necropsies on adults; and even if structures resembling adrenal rests were found, they would, without further investigation, not unnaturally be put down as lutein tissue. We know of no large series of foetal ovaries that have been examined for adrenal rests. The foetal ovary is an extremely small structure, and such an examination, to be thorough, would not be free from difficulty; even if yellow bodies were found, they would not necessarily be adrenal rests, as mature Graafian follicles and corpora lutea have been seen even in the ovaries of newly-born infants. In Jessup's case, quoted by Glynn, tissue resembling adrenal cortex (zona glomerulosa and fasciculata), with a rich capillary network dividing the cells into rows or cords, was found in the ovary of a newborn infant; probably this was an example of a real adrenal rest, rather than of a corpus luteum; a rich capillary network, and the arrangement in narrow columns, are much more characteristic of adrenal cortex than of normal corpus luteum, and there is no suggestion that the latter was in any way abnormal. On the whole we are inclined to think that the argument, from embryological grounds, has not been established with absolute certainty.

Professor Glynn's second reason is histological; the large ovarian "hypernephromas," he says, are unlike the large primary growths of the cortex of the adrenal gland itself, but are like the large lutein tumours both clinically and histologically. He has collected eight cases of so-called ovarian hypernephroma, and has found that the published descriptions show little if any difference macroscopically between them and primary growths of the adrenal cortex. In both there was a marked tendency to haemorrhage and necrosis, but in the adrenal group there was no cyst formation. There is a very close resemblance microscopically between the normal corpus luteum and the adrenal cortex; it will therefore readily be understood that in malignant growths arising in these tissues, and with more or less well marked anaplastic tendencies, the task of distinguishing between them will be extremely difficult.

Of the eight cases of ovarian hypernephroma cited by Glynn, two (Scudder's and Rosthorn's), in which the growths occurred in both ovaries, may be at once rejected. There was probably a primary focus elsewhere than in the ovary, the existence of which was overlooked. In a third case (Sauti's) the left kidney contained an encapsuled white yellow growth as big as a fist, and was, as Glynn points out, undoubtedly an ordinary renal hypernephroma producing a metastasis in the ovary. There remain the cases of Peham, Peham and Paultauf, Sternberg, Gaudier, and Vonviller. In the photograph reproduced to illustrate Peham's case the cells are strongly suggestive of corpus luteum both in their general appearance and in their arrangement. They were occasionally arranged, however, to form gland-like lumina, and it may be suggested that lumina are more likely to be found in tumours arising from the adrenal than in luteomata. Several observers, Grawitz and Marchand amongst others, have maintained that lumina may be present in suprarenal tumours; Kölliker, Stilling, and Eberth have described lumina in the normal human adrenal, while in the adrenal of the horse and cow, lumina appear to be constant. There would seem, therefore, to be insufficient ground for asserting that tumours showing the presence of lumina are on that account not of adrenal origin, and there is no

[1] A Comparison between Ovarian "Hypernephroma" and Luteoma and Suprarenal Hypernephroma, with comments on Suprarenal Virilism. *Journ. Obst. and Gyn. Brit. Emp.* Spring, 1921.

obvious reason why such structures should appear in lutein tumours. It must be admitted, however, that in Peham's case the appearance of the cells and their arrangement suggest origin from a corpus luteum rather than an adrenal rest. In the case of Peham and Paultauf the crenated borders of the nodules and the presence of cysts are quite characteristic of luteomata. In Sternberg's case the tumours were cystic, though the cysts were said to be degenerative, and occasional gland-like structures were seen. This case may possibly be a hypernephroma, but there is no clinical history and its nature is by no means proven. In Vonviller's case the microscopic appearances closely resembled those of hypernephroma. Gland-like structures were absent, and the one cyst was degenerative. The most important case is perhaps Gaudier's, in which a girl aged 4, whose breasts and external genitals were those of an adult, had for three months suffered from menorrhagia and metrorrhagia, and simultaneously an abdominal swelling appeared. The left ovary was removed for a pedunculated tumour the size of a very large orange. Macroscopically it was yellow and surrounded by a fibrous capsule which sent vascular trabeculae into its substance. The tumour cells were polyhedral and contained fat. After considerable difficulty it was decided that it was "very probably a hypernephroma and not a lutein tumour, partly because the characteristic buds of vascular connective tissue dividing the polyhedral cells into large compartments were absent; instead, the compartments were slender and like those of the adrenal cortex; and because very occasionally the cells were arranged in hollow epithelial columns."

Glynn brings forward strong arguments in favour of this being a luteal tumour, the chief being the absence of what he has named "suprarenal virilism." Apart from this the histological descriptions are strongly suggestive of a suprarenal origin.

In 4 of the 8 cases, therefore, the diagnosis of hypernephroma does not seem to have been absolutely excluded either on embryological or on histological grounds. In respect to his third argument—namely, the clinical one—Professor Glynn would seem to be on safer ground. His position is briefly this: All true primary growths of the adrenal gland are attended by the changes to which he has given the name "suprarenal virilism," and he asserts that in no case of ovarian hypernephroma did the characteristic abnormalities appear. Bulloch and Sequeira in 1905 pointed out that in children in whom precocious development of hair on the face and genitals, with premature development of the genital organs and accessory genital glands, occurred either carcinomata (hypernephroma) or hypertrophy of the renal capsules was found, and that primary blastomata of the suprarenal glands unassociated with precocity were usually lymphosarcomata. Guthrie and d'Este Emery concluded that the cause of the precocious development was probably increased internal secretion from the adrenal cortex, though this was contrary to the usual rule that tumour formation is in general associated with diminution of function of the cells concerned.

In girls and boys suprarenal virilism seems invariably to accompany adrenal hypernephroma. In women before the menopause they appear, according to Glynn, in at least half the cases, while in women after the menopause and in adult males no striking changes occur.

The absence of suprarenal virilism with ovarian hypernephroma would thus seem at first sight to be decisive evidence against the origin of such tumours from adrenal rests. It is, however, a fact that no such changes have ever been recorded as occurring in Grawitz tumours. This is a difficulty that Glynn frankly recognizes, and meets with the contention first advanced by him in 1912, that the so-called renal hypernephromas are really not of that nature and do not originate in adrenal rests in the kidney; no actual case of adrenal rest in the kidney has, he concludes, ever been met with. If this be true, the absence of suprarenal virilism with their renal tumours is, as Glynn says, really a "most striking corroboration of the clinical argument." It is of importance therefore to examine the arguments for and against the Grawitz theory.

The adrenal cortex is developed from the mesothelium of the Wolffian ridge, which also gives rise to the ovary and testis. The renal cortex is derived from the renal blastema, which lies some distance below the adrenal, and is separated from it by the Wolffian body. Though the position of the early adrenal is not at first favourable to the inclusion of its tissue in the kidney, yet after the second month it is closely applied to the kidney and surrounds a large part of the renal body. Inclusions in the kidney may therefore reasonably be assumed to result. Robert Meyer, a careful observer, describes the occurrence of diffuse adrenal tissue within it encapsulation in the kidney, while total subcapsular location of both adrenals has been observed by Klebs, Grawitz, Willis, and Ulrich. Fusion of adrenal in the renal capsule, and intralobular inclusion of rests surrounded by renal parenchyma are described by Grawitz and Ulrich. Glynn, on the other hand, has examined over 1,500 kidneys in the *post-mortem* room, and "remembers meeting with nodules resembling adrenal rests only in two instances." Both were found on microscopic examination to be papillary cyst adenomata. It seems probable, however, that such rests, if not specifically looked for by means of multiple sections of the kidney, might be easily overlooked in an ordinary *post-mortem* room examination, especially as rests may occur in the capsule and hence be stripped off with it. Ewing, after a careful examination of all the evidence, comes to the conclusion that the presence of adrenal rests in the kidney has been fully attested; that they occur with moderate frequency, though less frequently than Grawitz and his followers have supposed; and that the opponents of the Grawitz theory have gone too far in practically eliminating the adrenal rest as a source of renal tumours.

If, then, such rests occur adrenal tumours may arise from them, and the difficulty is to explain why such tumours do not give rise to signs of suprarenal virilism. Clearly it is here that the battle must be fought for the existence or non-existence of ovarian hypernephromas. If renal hypernephromas exist in young children and in women before the menopause without giving rise to sex changes, then there is no reason why the absence of such changes should exclude ovarian hypernephromas, and the main argument against the existence of the latter falls to the ground. Three possibilities suggest themselves to explain the absence of sex changes in renal hypernephroma:

1. That no case of this has ever been met with in children or in women before the menopause.
2. That the sex changes in adrenal hypernephroma are due, not to hypersecretion from the newly-formed tumour tissue, but to *hypo*secretion from destruction of the adrenal by the new growth.
3. That the adrenal cortex has only indirectly to do with sexual development by a reflex influence upon some other endocrine gland—for example, pituitary, pineal, ovary or testicle.

With regard to the first, if adrenal rests occur in the kidney, it seems extremely unlikely that no tumour derived from them has ever occurred in children or in women during sexual life, and yet no case of suprarenal virilism in such has been reported in the literature. With regard to the second suggestion, Weisel has reported a case of a girl of 18 in whom hypoplasia of the adrenals was associated with delayed development of sex characters, while Karakascheff refers to two cases—one in an adult female, the other in an adult male—in which atrophy of the adrenals was associated with a like condition of the genital organs. Hutchison has described a case of hemihypertrophy in a child, aged 4 months, associated with enormous hypertrophy and hyperplasia of the suprarenal body on the same side. Bulloch and Sequeira have pointed out that simple hypertrophy of the suprarenal is associated with pseudo-hermaphroditism; and finally it has been shown that in the anencephalic foetus, when the suprarenal glands are defective or absent, there is also hypoplasia of the ovaries, though this may be due to the accompanying hypopituitarism or apituitarism. It is probable, therefore, that it is a hypersecretion that is responsible directly or indirectly for the sex changes.

The third suggestion—namely, that the secretion of the cortex of the adrenal is only indirectly responsible for the changes—would account very well for their absence in all tumours derived from adrenal rests, whether in kidney, ovary, or elsewhere. The intimate connexion between the cortex of the gland and the chromaffin cells of the medulla, derived from the sympathetic, lends some support to this theory that the cortical secretion may act only by reflexly stimulating the secretion of other organs, possibly by regulating their blood supply.

In conclusion it may be said that Professor Glynn, by the present elaborate and painstaking paper, as well as by his former writings, has advanced very considerably our knowledge of such tumours as those under discussion. Our opinion is that while the existence of ovarian hypernephromata has not been so far proved, yet it has not been shown that such tumours have never occurred. There is room for much further research, both clinical and pathological, on this subject, with careful observation and investigation especially of possible ovarian and of renal hypernephromata occurring in young children. It is of the greatest importance to determine whether renal or extrarenal tumours of this nature really occur in the latter, and if so, whether they are associated with signs of suprarenal virilism.

British Medical Journal.

SATURDAY, OCTOBER 1st, 1921.

AURICULAR FIBRILLATION.

A very common cause of cardiac failure is auricular fibrillation, and in spite of the fact that this condition is now well described in the literature, there are still many medical men who fail to recognize its presence. This is of all the more importance since satisfactory treatment of cardiac failure often depends upon clear recognition of this common form of arrhythmia. In most instances a careful clinical examination, irrespective of special instruments of precision, is sufficient to justify a positive diagnosis.

It is well to remember that fibrillation is not necessarily associated with any particular form of cardiac lesion or with any age period. It sometimes occurs owing to sudden physical effort in those whose hearts are apparently sound. More usually, however, it is associated with valvular disease, rheumatic in origin, or with arterio-cardio-sclerosis. The important thing to recognize is that in essence it is a disorderly action, which may be superimposed on any heart affection, and is in itself a grave handicap.

It is in patients with auricular fibrillation that digitalis produces its most dramatic results. By the exhibition of this drug the rapid disorderly action of the heart is modified and the ventricle is compelled to beat at a more leisurely rate, with corresponding improvement in the condition of the patient. Unfortunately, however—except in rare instances—fibrillation of the auricle, when once firmly established, persists, and the object of the investigations which have been carried out in recent years has been to find some method of terminating this abnormal rhythm. These efforts are at last proving successful. In 1914 Wenckebach published evidence indicating that quinine possessed the power of terminating paroxysms of fibrillation, and since then much work has been carried out in order to determine the nature of this action and the salt of quinine which gave the best results.

We publish this week from the medical school of University College, London, two papers on this question which are of exceptional interest and value. As Sir Thomas Lewis and his co-workers say: "The action of quinidine sulphate upon the fibrillating auricle is perhaps one of the most remarkable and dramatic which is now known to therapeutics"; for by the action of this drug fibrillation is terminated and the normal action restored. The great significance of such a statement is obvious. In these two papers details are given of the treatment of 13 patients suffering from fibrillation, and in 6 of these the normal rhythm was restored. This is in keeping with the work of other observers—50 per cent. being the usual percentage of successes.

In the Oliver-Sharpey Lectures of this year Sir Thomas Lewis demonstrated that in fibrillation of the auricle there existed a "circus movement" of the auricular muscle. By the term "circus movement" was meant the passage of a wave of contraction which spreads through a ring of muscle fibre—as, for example, round the ring of muscle surrounding one of the orifices of the auricle—the rate of this contraction in auricular fibrillation being approximately 450 to the minute. For a continuation of this circus movement it is obviously essential that the advancing wave of contraction should find immediately in front of it muscle fibre capable of responding to stimulation. The muscle fibre in front of the advancing wave must not be in a state of refractoriness.

It was pointed out in these lectures that any drug which by its action increased the refractory period of the auricular muscle would tend to close the gap between the oncoming wave of contraction and the fibre still refractory; as Sir Thomas Lewis observed, it is essential to find some drug that acts in this way in order to bring the fibrillation to an abrupt conclusion. Quinidine sulphate proves to be a drug which possesses this power. It tends to close the gap and thus terminate the circus movement, and enables the normal pacemaker to resume its dominance. It is difficult to over-emphasize the practical importance of this discovery. The suggestion made by Sir Thomas Lewis and his co-workers as to the reason why the drug fails in something like half the cases will be read with interest; their warning as to the care with which, in the present state of knowledge, it should be used would appear to be timely.

FORMS OF VIRILISM.

The word virilism, briefly defined in the New Oxford Dictionary as a form of hermaphroditism, and with but one quotation attached—"they can be referred to infantilism and virilism" from *Natural Science* in 1896—has only recently been introduced into clinical medicine, apparently by Gallais in 1914 to describe the somatic conditions associated with hypernephromas arising from the adrenal cortex; his phrase suprarenal virilism has quite recently been adopted by Professor E. Glynn,[1] and may, perhaps, supersede the older but little used designation "masculinism." A full account of Professor Glynn's paper is given at p. 531, but further reference to it is justified by the interest of the subject.

The association between cortical hypernephromas and precocious development of the genitals and hirsuties was first convincingly established by Professor W. Bulloch and Dr. J. H. Sequeira[2] in 1905; in the following year Drs. L. Guthrie and Emery[3] insisted that precocious obesity is another feature of this syndrome, which, they stated, is not pathognomonic of cortical hypernephromas, but may accompany tumours of other endocrine glands, or even occur without any such gross change; they also stated that premature hirsuties may appear without any other signs of sexual maturity. Achard and Thiers,[4] in an interesting communication on hairy virilism and its association with sugar intolerance—"the diabetes of bearded women"—give a very comprehensive meaning to "virilism," using it as a term which, like "masculinism," can be applied to the collection of sexual characters that gives to the female the morphological and functional attributes of the male. Thus, in a well marked example, such as is seen with cortical hypernephroma, hirsuties with the distribution characteristic of the male, hypertrophy of the clitoris, atrophy of the mammae, a manly voice, and obesity or (in boys) muscular development, are present. But there is much variation in the degree of these manifestations. It is obviously influenced by the age at onset; thus, when the change commences in foetal

[1] E. Glynn, *Journ. Obst. and Gyn. Brit. Emp.*, Manchester, 1921, N.S., xxvii, 23-68.
[2] W. Bulloch and J. H. Sequeira, *Trans. Path. Soc.*, London, 1905, lvi, 189-202.
[3] L. Guthrie and d'Este Emery, *Trans. Clin. Soc.*, London, 1907, xl, 175-202.
[4] C. Achard et J. Thiers, *Bull. Acad. de Méd.*, Paris, 1921, 3e Sér., lxxxvi, 51-56.

life and both adrenals show hyperplasia, there is feminine hermaphroditism, the internal genital organs being female and the external approaching those of the male; whereas when a cortical hypernephroma starts after birth and is unilateral the manifestations are less pronounced. Professor Glynn has collected seventeen cases, verified by necropsy, in girls showing precocious growth, hirsuties usually of the male type, often obesity and hypertrophied clitoris, between the ages of 1 and 11 years, most being between the ages of 3 and 7. Professor Glynn also refers to four cases in boys with corresponding changes, except that in some there was remarkable muscular development (Parkes Weber's infant Hercules type); when the onset occurs after puberty the main features are amenorrhoea, sexual disorders, hirsuties and obesity. Professor Glynn quotes Dr. Gordon Holmes's remarkable case of a girl, formerly normal, who developed suprarenal virilism at the age of 20, and at 24, after removal of a hypernephroma, again became normal. After the menopause, hypertrichosis and obesity are the results.

Although suprarenal virilism is the best recognized form, it is by no means the only one, and it is possible that the mechanism by which cortical hypernephromas produce these striking changes is indirect; it may be that adrenal over-activity influences the genital glands, particularly their interstitial cells, thus leading to the somatic alterations. Disturbance of the balance between the various endocrine glands must therefore be taken into account in considering the etiology of virilism. A few cases of virilism have been reported in association with pineal tumours (nearly all in boys between the ages of 4 and 8 years), and here the contrast to Frölich's adipose-genital syndrome due to hypopituitarism will be obvious, just as virilism as a whole forms a contrast to feminism and infantilism. In very rare instances virilism has been described with ovarian cysts (Apert 4 cases) and solid tumours (Pozzi 4 cases), but Professor Glynn points out that investigation of the adrenals in these exceptional cases appears to have been neglected. His contention that virilism is not associated with lutein tumours of the ovaries or with the so-called "ovarian hypernephromas," which he considers are large lutein tumours, is instructive, because it might have been expected that, as the suprarenal cortex and the ovary are embryologically so closely related, their hormonic effects might also be much alike.

"Partial virilism" is the term applied by Achard and Thiers to bearded and moustached women who may be otherwise feminine, as is mentioned in Mr. Hastings Gilford's storehouse of information on *The Disorders of Post-natal Growth and Development* (1911); in such cases there is a dermal, and not a combined dermal and sexual, abnormality; the fronto-parietal thinning of the hair, so familiar in men, and obesity may also be found. Partial hairy virilism, indeed, passes gradually into the simple hypertrichosis so common after the menopause; and in later life some hyperplasia of the adrenal cortex is so comparatively frequent, especially in association with arterio-sclerosis, that its significance in partial hairy virilism is doubtful; the etiology of these cases is open to discussion, and an appeal to some pluriglandular disturbance is natural. Achard and Thiers describe a group of eight cases of women with partial hairy virilism and sugar intolerance in varying degrees. Their own case was a masculine-looking woman who had to shave from the age of 10 years; she had had one child, and menstruated until she was 60. At the age of 69 years she was found to have intermittent glycosuria and a systolic blood pressure of 220 mm. mercury. The necropsy showed uterine fibroids, large adrenals with hyperplasia, chronic thyroiditis with excess of colloid, slight portal cirrhosis of the liver, and pericanalicular fibrosis of the pancreas. The hirsuties and glycosuria were regarded as manifestations of a pluriglandular syndrome. Although some instances of hereditary hirsuties are quoted in the course of their paper, the authors insist that hirsuties is not a normal but a morbid process, and that the view of Brandt and Hofbauer, to the effect that it is a phenomenon of normal evolution and that bearded women are the pioneers of a future when women will be in all respects the equals of men, is fanciful.

CARBON MONOXIDE IN LIGHTING GAS.

OUR article of September 10th on the report of the Departmental Committee on Carbon Monoxide in Lighting Gas has evoked somewhat excited comments from a periodical devoted to the interests of the coal-gas industry. These comments are doubtless representative of ideas which are widely prevalent among gas engineers, and this convinces us of the desirability of making known what have been the actual consequences of a large increase in the percentage of carbon monoxide in lighting gas.

The Water-Gas Committee which reported in 1898 was appointed in consequence of the alarm produced by the casualties which followed the distribution of undiluted carburetted water-gas in one of the suburbs of Liverpool during a year or more. Since then the experiment has never been repeated in this country. As may be seen from the official returns of the Board of Trade, gas engineers have kept within the limits suggested by the Committee, so that no legal restrictions have been needed. But for the surprising, and in our opinion misleading, character of the new Committee's report there would be no reason to re-open the old discussion.

The conclusions of the 1898 Committee were based largely on the number of fatal cases of poisoning which had followed the unrestricted distribution of carburetted water-gas in the United States. Even from the very meagre information contained in the new Committee's report it appears that the number of casualties in the United States is as great as, or greater than, it was twenty years ago. So far from the conclusions of the old Committee being obsolete in view of more recent experience, as the *Gas Journal* has the hardihood to assert, more recent experience has borne out in every respect the conclusions of the old Committee. With the quite moderate increase in the carbon monoxide in lighting gas during recent years there has been a very marked increase in the cases of poisoning.

Shortly before the war the casualties due to poisoning by lighting gas in America were traced by Professor W. T. Sedgwick, Director of the Sanitary Research Laboratory of the Massachusetts Institute of Technology. He showed in the clearest manner, from the official statistics of over twenty years, that the enormous increase in the death rate from gas poisoning was due, not to the increasing use of gas itself, but almost entirely to the increasing use of carburetted water-gas. For the States of Massachusetts and Rhode Island, where official statistics were available, the death rate from gas poisoning had become almost equal to that from measles or scarlet fever. In Rhode Island it had risen to 7 per 100,000 of the population.

To those who imagine that further experience has shown that the opposition on the part of the medical profession to unlimited increase in the percentage of carbon monoxide in lighting gas is not justified by experience, we commend a perusal of Professor Sedgwick's article, which appeared in Volume viii of the *Journal of Infectious Diseases*.

THE HEALTH WORK OF THE LEAGUE OF NATIONS.

As has been reported in our columns from time to time, and as was fully explained by Dr. G. Buchanan in the address on international organization and public health, published on March 5th last (p. 331), the Assembly of the League of Nations decided last December to set up an International Health Organization to advise it on matters affecting health, to bring administrative health authorities in different countries into closer relation with each other, to organize the rapid interchange of official information, and to facilitate the institution or revision of international agreements for administrative action in matters of health. It was arranged that the organization should co-operate with the International Labour Organization in matters affecting the protection of the worker against sickness, disease and injury, and also that it should co-operate with international Red Cross Societies and other voluntary organizations under Article 25 of the Covenant. The League of Nations was not able to proceed with the scheme exactly on the lines adopted last December, chiefly by reason of the objections of the United States, but it is endeavouring as an interim measure to get the same results by a somewhat different machinery. Meetings have been held recently in Geneva, and on September 23rd the Assembly adopted a series of resolutions to govern the provisional health committee until such time as it can be placed on an officially permanent basis. The full text is practically identical with that given by Dr. Buchanan in the address referred to, and comprises all the objects mentioned above. It has been decided that the secretariat of the Health Organization of the League shall be appointed by the Secretary-General, that it shall be responsible to him, and shall be placed under the Medical Director; Dr. L. Rajchman has recently been appointed to this office. The Assembly of the League retains the power of regulating the constitution of important standing committees of the League, and, in view of the increasing importance of questions of health which more especially concern women, has invited the council to take into consideration the question of strengthening the committee by including a medical woman experienced in public health matters. The Epidemic Commission of the League of Nations already established forms one section of the health organization; it has already achieved results of great value in preventing the spread of typhus fever and other epidemic diseases from Russia to Western Europe. All the information available regarding the epidemic situation in Russia at the present time shows that it is very necessary fully to maintain measures already in force and to extend them to border states other than Poland. The grave risk of the spread of cholera from the parts of Russia now affected by famine is recognized, and it is proposed that representatives of the Commission should pay a short visit to Russia in order to obtain all the first-hand information and evidence that it is possible to secure. It has been decided to organize at once a general service of epidemiological intelligence and public health statistics and to consider the best way of disseminating such information. In a recent article on dangerous drugs and the Opium Convention it was mentioned that at a meeting of the Council of the League in June it had been decided to ascertain approximately what are the amounts of opium, morphine, cocaine, and other drugs enumerated in the Convention, required for legitimate purposes in various countries; the provisional Health Committee has appointed a special subcommittee to make such inquiries with regard to medicinal opium, morphine, and cocaine. It will be seen that the duties which the International Health Committee has so far undertaken all fall well within the scope of such an organization, and could, indeed, only be carried out by an international body enjoying diplomatic recognition. Dr. Buchanan, in his address, deprecated any suggestion that the League of Nations should make any revolutionary change in public health methods or attempt to replace the ordinary international medical conferences and congresses, or become a great centre for research. We agree with him that its real function is much more limited and special—namely, to promote international agreements and understandings between countries in respect of cases where something like official standards are necessary. The Office International d'Hygiène Publique in Paris has during the last ten or twelve years attempted to attain these ends with some success, but the work will be carried on with greater authority by the new organization, which will have the aid and prestige of the League and its financial support. The latter is at present limited to 400,000 gold francs—that is to say, about £20,000 as a maximum for the year. The arrangements which we have here outlined were unanimously adopted by the Assembly of the League on September 23rd, and the new (provisional) Health Committee was instructed to carry out the programme with the help of the Medical Director as completely as possible. The result of the practical working of the new organization will be watched with interest, but there seems good ground to hope that the International Health Organization of the League will become an important body working within the sphere now assigned to it.

RELATION BETWEEN MEDICAL AND VETERINARY SCIENCE.

It appears as if the voice of Sir Clifford Allbutt crying in the wilderness for over thirty years the cause of comparative medicine had at last fallen upon ears not wholly unreceptive, for at the recent quarterly meeting of the Mid-West and South Wales Veterinary Medical Association at Bridgwater discussion ranged chiefly around this fascinating subject. Dr. W. G. Savage, who opened a discussion on bacterial food poisons, said that the tendency of the medical and veterinary professions to do their work in water-tight compartments was a source of weakness. He illustrated his contention by a short account of bacterial food poisoning in man so far as it concerned diseases in animals, and showed that they were still for the most part in the stage of hypothesis as regards the exact channels of infection. He had arranged to undertake a comprehensive investigation for the Medical Research Council, and asked for the co-operation of the veterinary profession in that research. Sir Layton Blenkinsop said that Dr. Savage's request was the manifestation of a spirit for which the veterinary profession had long been waiting, and he considered that closer co-operation between the veterinary and medical professions might help to elucidate many of the cases which now appeared obscure. Professor Hobday remarked that examples of well worked out systems whereby medical men and veterinary surgeons worked side by side in the laboratories and in the field were to be found on the Continent. After a discussion, which was animated and interesting, a resolution was unanimously adopted declaring that the time had arrived when practical means should be sought to ensure a closer co-operation of the two professions in matters of common importance. In a letter from Sir Clifford Allbutt which the President, Mr. W. M. Scott, F.R.C.V.S., read to the meeting, it was pointed out that it was impossible to fuse

veterinary with medical practice. Each had to have its own portal and examinations and qualifications, but, scientifically, provision should be made for a comparative study of disease in all life. What Sir Clifford hoped to see established in Cambridge, as he stated at the Annual Meeting of the British Medical Association in 1920, was not a clinical school of veterinary medicine, but a school of research in animal and plant pathology, in addition to the provision of education in the preliminary sciences which served both professions alike. The vast possibilities that lie in the undiscovered country of comparative medicine make this an ideal worth working for and worth living for.

VITAMINS IN SUN-DRIED VEGETABLES.

The current number of the *Biochemical Journal* contains a paper by J. A. Shorten and C. B. Ray, from the Physiological Laboratory of the Calcutta Medical College, on the antiscorbutic and antiberi-beri properties of certain dried vegetables.[1] The work was in continuation of an investigation undertaken at the request of Sir Leonard Rogers. The feeding experiments were made with sun-dried carrots, brinjal (egg-plant fruit), spinach, cabbage, tomatoes, potatoes, turnips, and turnip-tops, from 3 to 6 months old, and with mixed factory-dried vegetables of uncertain age. The sun-dried vegetables were prepared at the Government Fruit Experiment Station, Quetta; the mixed products came from Australia. For determining the antiscorbutic properties guinea-pigs were used; for the antineuritic properties, common fowls. The authors found that sun-dried tomatoes, potatoes, and cabbages retain to a considerable extent the antiscorbutic properties of the fresh vegetable; that sun-dried carrots, brinjal, spinach, turnips, and turnip-tops, have little or no antiscorbutic properties; and that most factory-dried vegetables are wholly devoid of such properties. Further, since cooking before consumption diminishes any antiscorbutic vitamin which may be present, these dried products should, when possible, be given in the form of salads. There was no evidence of neuritis in the fowls fed on sun-dried vegetables. In each set of experiments the animals were given, in addition to the ration of dried vegetable, an appropriate basal diet. Thus the scurvy-producing basal diet of the guinea-pigs consisted of crushed oats, bran and hay, with autoclaved whole milk and unrestricted water; the neuritis-producing basal diet of the birds was Rangoon polished rice with unrestricted water.

THE ANTIMALARIAL CAMPAIGN IN ITALY.

In a recently issued report[2] Grassi and Sella describe a highly successful attack on malaria as it existed in Fiumicino, a small district near Rome containing about 700 people. Whilst much of the report is so technical that it will only appeal to the specialist, there is a good deal that is of general interest. In the first part Grassi describes the course of the malarial infection as it occurred in Fiumicino, and dwells on the epidemiology and polymorphism of the malarial parasite. More than once he insists on the necessity for careful scientific work in dealing with the disease; just as much strict attention to detail is necessary as is required in a laboratory experiment, and the failure to stamp out an epidemic is often due to this want of scientific detail. The interesting condition of anophelism without malaria, he thinks, may be partly explained by the precarious vitality of the anopheles, especially during the hot months; this also may help to explain the limited character of epidemics brought by returned soldiers. Some experiments by Sella on the ovification also point in the same direction. As to polymorphism, the authors are inclined to accept this, rather than different species for the different types of malaria, thus in a certain sense going back to Laveran's ideas, but from a different standpoint. In all attempts at stamping out malaria one must take it as an axiom that the disease is only spread by means of the anopheles, which are infected only by biting malarial men, so that the main things to concentrate on are the destruction of the insect in all its stages and the curing of the man. In the second part of this report Sella deals largely with the practical methods employed at Fiumicino. After trying many larvicides he found that petrolization is the most effective and economical, cyanide coming in second; destruction by fishes cannot be relied on. In the case of the winged insect, smoke bombs, hydrocyanic fumes, liquid sprays, traps, hand capture, were all effective, and several photographs of the apparatus used are given; irrigation and drainage schemes are not sufficient alone; deforestation seemed of small value. A full and detailed account is given of *Anopheles claviger* and various biological problems in relation to it are discussed; its hibernation, deposition of ova, movements of the winged insect, distances at which it can act, points of difference between it and the Culex, etc. A bibliography of about 100 references is appended. The report as a whole demonstrates very clearly the careful scientific work that was done, and explains why the success was so marked.

ICE CREAM AND THE PUBLIC HEALTH.

Ice cream is much more popular in the United States than in this country, and the prohibition of alcoholic drinks is likely to increase its consumption. In New Jersey alone, according to the annual report of the State Department of Health for 1920,[3] the quantity of ice cream made in 1919 exceeded six million gallons, and this was 2,287,000 more than in the previous year. As the milk required for this output in 1919 was more than eight million gallons, the importance of proper sanitary control in the production of ice cream is obvious. The investigation of the conditions under which ice cream was manufactured and sold in New Jersey began in December, 1918. There were in this State 475 ice cream factories at work at the end of the year 1919, and each of these establishments was inspected at least once and usually several times for the purpose of seeing that the orders of the Health Department regarding faulty methods or inadequate equipment were complied with. A number of applicants for new places were rejected because there was too much risk involved in exposing the milk products to the air and dirt entering these places from the street through cellar doors and windows. About half the factories were below ground, but only those basements which were large and properly ventilated were approved for use by the Department. One of the defects found in the management of many of these factories was in the cleansing methods employed, and systems of running hot water have now been insisted upon. The milk products handled by the ice-cream manufacturers appear, says the report, to be of good quality, and in most cases they are properly looked after during manufacture. For some time past the Health Department has tried to persuade manufacturers to use nothing but pasteurized materials, and, while in 1918 only 37 showed a knowledge of that term, during the next year 195 of them employed pasteurized milk products. The most popular formula used in New Jersey for ice cream is a mixture of about equal parts of 20 per cent. cream, whole milk, and condensed skimmed milk, about 14 per cent. sugar, and one half per cent. gelatine. The quantities of these ingredients vary according to the ideas of the manufacturers. A few dealers purchased a mixture already prepared for freezing by the milk dealers from whom they obtained their supplies; this, so far as could be ascertained, was composed of milk, condensed milk, and sugar. Since there is no legal standard in New Jersey for ice cream other than that the ingredients should be pure and whole-

[1] *Biochemical Journal*, 1921, vol. xv, No. 2.

[2] Secondo Relazione della Lotta Antimalaria a Fiumicino, diretta dal Professore B. Grassi. Rome, 1920.

[3] *Forty-third Annual Report of the Department of Health of the State of New Jersey, 1920.* Report of G. W. McGuire, Special Agent in Charge of Ice Cream Factory Inspection.

some, there is a danger that foreign substances, especially fats, may be used by some manufacturers for the purpose of cheapening the product, and it is considered by the health authorities that the time has arrived for the enactment of a State law defining ice cream. A bill was introduced in the Legislature at its last session, which, however, as it stood permitted the use of fats, other than butter fats, in ice cream. It was pointed out to the introducer of the measure that butter fat contained substances necessary to the growth of the human body which were almost wholly absent in the case of many other commercial fats, so that the substitution of other fats for butter fats would have a distinctly injurious effect upon the nutritious properties of ice cream. The bill was finally withdrawn, and it was proposed to hold a conference of health officials with representative ice cream makers to consider the subject. It is to be hoped that the health officials have managed to persuade the manufacturers that what is best for the health of the community may also be best for themselves in the long run.

SIR ERNEST CASSEL'S GIFTS

In addition to a number of large gifts to King Edward's Hospital Fund for London, and during the war to the British Red Cross and Order of St. John, the late Sir Ernest Cassel will long be remembered by the medical profession for the large share he took in the establishment of the London Radium Institute, and his munificence in founding and endowing the King Edward VII Sanatorium for Tuberculosis at Midhurst, and the Hospital for Functional Nervous Disorders lately opened at Penshurst. The former institution had its origin in the wish of King Edward to establish an institution in England on the lines of that at Falkenstein, which His Majesty had visited and admired. The sum of £200,000, which Sir Ernest placed at the disposal of the King for any philanthropic purpose, made possible the realization of that wish, and the opening ceremony took place in June, 1906. This year he gave £225,000 to found and endow the Cassel Hospital at Swaylands, Penshurst, which is primarily intended for members of the educated classes unable to meet the heavy expenses of care and treatment in a nursing home. The Papworth Industrial Colony for Consumptives, visited by many members of the British Medical Association during the Annual Meeting at Cambridge, was also founded by Sir Ernest Cassel as a complementary institution to that at Midhurst.

MEDICINE IN BAGHDAD.

There appears to be a very living interest in medical affairs in Baghdad, fostered by the exertions of the Baghdad Medical Society founded in August, 1920. It has recently published its annual report, from which it appears that it has had a busy year. It has a membership at present of fifty, of whom twenty-three are British, while the attendance on several occasions has been so good that every local member was present. Most of the meetings held during the past year were clinical, but some were occupied with the discussion of important local matters relating to public health and to medico-political affairs. In regard to the campaign against venereal diseases and the control of prostitutes in Baghdad, the society made some public-spirited recommendations which cannot have failed to exert a considerable influence with the authorities. The question of medical practice by unqualified persons in Baghdad was also considered fully at two meetings of the society, with the result that it was recommended that no persons—with the exception of two well known and experienced practitioners of recognized standing—should be allowed to practise in Irak who did not hold the diploma of a recognized medical school, and that the existing hakims, dressers, and herbalists should be registered and their work restricted and supervised. The question of medical education in Irak also came under consideration and was discussed at two meetings of the society. It was considered that the provision of medical education on the spot was an urgent public health necessity, and that the best means of meeting this end was to found a medical college at Baghdad. Adequate hospitals exist for the teaching required, but buildings for a medical school are necessary, and the society urged the Government to consider this matter as one of the most essential branches of education necessary for the development and prosperity of the country. As high officials in the medical services seem to be represented in the membership of the society, together with British and Mohammedan medical practitioners, these recommendations may be accepted as the considered opinions of the medical profession in Mesopotamia, and it is to be hoped that the Government will realize the importance of the questions raised and the value of the representations which have been made to it. Since the date of publication of this annual report we learn that the Baghdad Medical Society has converted itself into the Baghdad Division of the Mesopotamia Branch of the British Medical Association, and there is every prospect that the society will be even more successful and prosperous in the future.

"MEDICAL REGISTER": CHANGE OF ADDRESS.

On several occasions we have drawn the attention of medical practitioners to the necessity in their own interests of informing the General Medical Council of any change of permanent address. Failure to do this may lead to erasure of the name from the *Medical Register*, and the practitioner will be put to the trouble of getting it restored and be required to pay a fee of £1. The trouble and expense of so doing may easily be avoided by prompt notification to the Registrar. More than a year ago we published at the request of the Council a list of practitioners who could not be traced. We now print in this week's Supplement (p. 128) the names of those medical men and women who have not responded to the inquiries recently made by the Registrar. Any of those who find their names in this list should immediately communicate with the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1. Information from friends of deceased persons or others will also be welcomed. The publication of these lists at the request of the Council is a special measure only decided upon in view of the exceptional circumstances arising out of war conditions, and the subsequent redistribution of many members of the medical profession.

We regret to announce the death of Dr. Albert S. F. Leyton, of Cambridge, late Professor of Pathology in the University of Leeds. We hope to publish an obituary notice in an early issue.

The Supplement this week contains a communication from the Secretary of the Ministry of Health indicating the Minister's intention to reduce the insurance capitation fee at the end of this year. An address on the question whether the medical profession wishes the National Health Insurance system to continue, given by Dr. Cox to the Birmingham Branch of the Association on September 30th, will be published in our next issue. The Annual Report to be presented by the Insurance Acts Committee to the Panel Conference on October 20th is printed in this week's Supplement.

Mr. C. J. Bond, C.M.G., F.R.C.S., and Professor William Bulloch, M.D., LL.D., F.R.S., have retired from the Medical Research Council in accordance with the provisions for rotation made in the Royal Charter under which the Council is incorporated. The Committee of Privy Council for Medical Research, after statutory consultation with the Medical Research Council and with the President of the Royal Society, has appointed Sir Frederick W. Andrewes, M.D., F.R.S., and Sir Cuthbert Wallace, K.C.M.G., C.B., F.R.C.S., to fill the vacancies so caused. The new appointments date from October 1st, 1921.

Correspondence.

TREATMENT OF EMPYEMA.

Sir,—I have been much interested in the discussion at the recent meeting of the British Medical Association on the treatment of pleural empyema, and take this opportunity of bringing to your notice a method that I have carried out for several years with, I think, considerable benefit to my patients.

The points I aim at are: (1) Complete evacuation of the pus and fibrinous masses; (2) avoidance of a sucking wound; (3) adequate drainage; (4) early re-expansion of the collapsed lung.

After a fairly wide thoracotomy, 3 in. or more of the rib at the most dependent point of the empyema being removed, the abscess is evacuated, all fibrinous masses and débris being removed by the fingers and forceps. A large rubber tube is then introduced just within the pleural cavity, and the muscles and pleura stitched firmly around it. The skin incision is closed and the tube retained in position by two silkworm gut sutures, transfixing it and both the skin and deeper tissues. The tube is then clamped and the patient returned to bed.

On recovering from the anaesthetic the patient is propped up, and an additional rubber tube filled with boric acid solution connected to the drain by means of a glass tube. The second tube having been looped to form a trap, is led into a receptacle containing boric acid solution at the bedside.

The practice of blowing fluid from one bottle to another is carried out from the second day, or when the patient is well enough, in order to facilitate expansion of the damaged lung. The patient is also kept outside in the open air all day.

As soon as the discharge becomes serous in character, usually about the sixth or seventh day, the tubes are removed, and a piece of thin rubber or gutta-percha tissue fixed over the wound. This prevents air entering the wound should a cavity still persist, while allowing drainage to continue.

In all my cases the wound was soundly healed in twenty-one to twenty-eight days. An additional advantage is the practical absence of dressings during the first week.

Although my results have been very satisfactory, I realize that the number of my cases (ten) is small; that all the cases were operated on early, and that with one exception were due to a pneumococcal infection. Whether this method will continue to give equally successful results in the future I will be interested to see. —I am, etc.,

Geo. McMullan, M.D., F.R.C.S.E.

Wallingford, Sept. 20th.

HAEMORRHAGE IN TONSIL OPERATIONS.

Sir,—In the interesting articles in your issue of September 17th stress is laid upon treating haemorrhage after tonsil operations on recognized surgical principles. Yet your contributors ignore one of the oldest canons of surgical practice. Haemorrhage in tonsillectomy is overwhelmingly venous. Doubtless arterial twigs are severed, but the bright arterial blood is buried in the stream from the veins, whilst the dark flood which pours out when the dependent head hangs over the table for the ablation of adenoids demonstrates the venous character of the bleeding. Though every ambulance neophyte knows that venous bleeding can be controlled by raising the bleeding point, your contributors insist that after tonsillectomy the patient should be laid flat.

During more than forty years' practice I have removed some thousands of tonsils in private as well as hospital practice, and neither in adults nor children have I had to adopt any of the special measures described in such detail by your contributors, and have never administered calcium salts or any other preliminary haemostatic. As soon after the operation as the patient responds to pinching of the skin I put him or her reclining against the sloping end of a couch with the head high. This empties the veins of the neck and depletes the cut veins. To empty veins is to lessen tension in adjacent arteries, which are able to contract, whilst the slowing of the blood current allows the safety clot to form and seal their ends.

It may be asked, Is there no danger of syncope in searing up a semi-conscious patient? In theory there may be, in practice there is none. For in a short time the cut area just oozes, and the only sign of bleeding is the expectoration of blood-stained mucus. To keep the patient flat, with the head level with the body, is to keep the field of operation engorged with blood and favour haemorrhage, which, as it continues, excites coughing, with the dislodgement of clots and the reopening of vessels.

I always use Mathieu's French guillotine, with which and a pair of vulsella the tonsils can be removed as thoroughly as with Mackenzie's guillotine. I have given the anaesthetic some hundreds of times for operators who use Mackenzie's instrument, and have more than once seen life endangered by after-haemorrhage, as well as an unduly large proportion of cases where the continuance or recrudescence of haemorrhage caused anxiety. I ought to add that in all these cases the patients had lain flat. This experience has led me to conclude that after the use of Mathieu's model, with a blade neither sharp nor blunt, the risk of after-haemorrhage is less than when the Mackenzie instrument is used.—I am, etc.,

Penrhyn, North Wales, Sept. 22nd. Norman Porritt.

OPERATION FOR APPENDICITIS.

Sir,—The paper on the best method of operative approach in cases of acute appendicitis, and the subsequent discussion, reported in the Journal of September 10th, reveals a curious disregard for a point which I consider to be second only in importance to removal of the appendix.

In Sir Hamilton Ballance's paper, and in the discussion, are frequent references to drainage and drainage tubes. In some cases it is evident these are intended to protrude into the abdomen; nowhere is it urged that the abdominal cavity should be closed. Yet the manner of closing the abdomen is, I think, of far more concern than the method of opening it.

If the appendix is removed, and any collections of pus carefully wiped away, it is only on rare occasions that the peritoneum may not be completely sutured. It is not the peritoneal cavity that suppurates after operation, but the infected wound of the abdominal wall, and the less injury done to the tissues in making that wound so much the less suppuration will there be. This should be our chief guide in selecting the best method of operative approach in cases of acute appendicitis.

No one who has experienced the freedom from post-operative complications of cases treated without intra-abdominal drainage would willingly return to this crude device. Until one can secure the parietal wound against infection it must be drained, preferably by a strip of thin rubber, but always our aim should be to reduce that infection to a minimum.—I am, etc.,

Hull, Sept. 20th. Harold Upcott.

RHEUMATISM AND BACON.

Sir,—One of the commonest complaints is muscular rheumatism in one or other of its protean forms, "lumbago," "myalgia," "neuritis," or other variety of pain situated in the musculo-ligamentous tissues; the attacks vary considerably in their intensity, frequency, and duration in different individuals, and in the same patient at different times.

There is a growing tendency to associate rheumatism of every variety, acute as well as chronic, with a carious condition of the teeth, and especially so if the caries is associated with pyorrhoea alveolaris: it is thought that the dental disease is one and perhaps the only etiological factor in the rheumatic condition. Certain it is that the two conditions—rheumatism and pyorrhoea—are frequently present in the same patient; so frequently, in fact, that one seems justified in regarding the rheumatism not only as a sequela, but an actual result of the pyorrhoea in certain cases. But pyorrhoea is certainly not invariably followed by rheumatism, for I have observed extensive disease of the teeth and gums in patients who have never complained of rheumatism.

For the last sixteen or seventeen years I have paid rather special attention to the diet of my rheumatic patients, and have been impressed by the fact that there is one article of food of which they all partake, and which I have been compelled to regard as more or less directly associated with their attacks of rheumatism. The article to which I refer is bacon. I have come to the following conclusions:

1. Bacon excites an attack of rheumatism, even if it does not actually cause it.
2. Sodium salicylate frequently fails to give relief whilst bacon is included in the patient's diet.
3. By omitting bacon a more rapid recovery takes place.
4. Rheumatic patients remain practically free from their pains if bacon is discontinued.
5. Therefore bacon is unsuitable for rheumatic people; in fact, it may be called a poison to rheumatic people.

During the time referred to above I have attended hundreds of cases of muscular rheumatism, and in every case the patient was a bacon eater. One patient had rheumatism of the muscular and nervous type for years, and derived no relief from the advice and prescriptions of several eminent physicians, but was free from pain within a few days of cutting bacon out of his diet. So intimate is the connexion between bacon and rheumatism that when a patient comes to me complaining of this malady, I no longer ask "Do you eat bacon for breakfast?" I say to him, "You must leave off your breakfast bacon," or "You must not eat bacon."

Bacon is an exceedingly common and popular article of diet, and perhaps the majority of people eat it. Still, there are many who never touch either bacon or ham or other salted meat, and careful inquiry will show that these people seldom if ever complain of rheumatic pains.

I do not know why bacon should have the effect referred to: it is probably not due to the salt it contains, for many non-rheumatic people take salt very freely. It is more likely due to some change in the protein or other organic constituents caused by the curing. Bacon is certainly not a natural food, however much it may appeal to the palate.

It must not be inferred from the foregoing remarks that I mean to imply that all bacon-eaters suffer from rheumatism, for such statement would be incorrect. There are people who eat bacon and are also free from rheumatism. The thesis I advance, and to which I hope the attention of other observers will be directed with a view to confirmation or otherwise, is:

1. Some people eat bacon as a regular article of diet without developing rheumatism in any form.
2. Rheumatic people (muscular type) are always bacon eaters, and for them bacon may be described as a poison.
3. Such sufferers must leave off their bacon if they are to be permanently relieved of their pains.
4. Medicinal treatment must be associated with suitable dietetic treatment.

My text which I conclude with is: People who suffer from rheumatic pains should never eat bacon.—I am, etc.,

Wrexham. H. Drinkwater, M.D.

*** The possibility of the existence of some relation between bacon and arthritis did not escape the attention of Montaigne. He wrote (Florio's translation: Dent's edition, Book I, chapter iv): "A gentleman of ours exceedingly subject to the gowt, being instantly solicited by his Physitions, to leave all manner of salt meats, was wont to answer pleasantly, that when the fits or pangs of the disease tooke him, hee would have some body to quarell with; and that crying and cursing, now against *Bolonie*-sausege, and sometimes by railing against salt neats-tongues, and gammons of bakon, he found some ease."

THE "ACUTE ABDOMEN."

Sir,—Whilst thanking your reviewer for his fair—nay, his generous—review of my book, *The Early Diagnosis of the Acute Abdomen*, will you allow me to defend the title against the charge of being "slangy"? The term "acute abdomen" was chosen with forethought, and, though no purist, I would not willingly let judgement on the charge go by default.

Slang is rather difficult to define, but is commonly regarded as any phrase or words needlessly vulgar or inelegant. Slang terms of one period are frequently acceptable terms of a later time. During the transition it must frequently happen that opinions differ as to the correctness of any such expression. I consider "acute abdomen" to be in the transition period, and I advisedly use it to designate what I consider no other short title expresses.

The "acute abdomen" is generally understood amongst the profession to signify that abdominal condition which arises suddenly as the result of disease or injury, and needs, or appears to need, surgical interference. Some might suggest "acute abdominal disease" or "acute abdominal crisis" as alternatives. Against the former it may be urged that it includes many diseases not usually classed in the recognized category of the acute abdomen—for example, acute dysentery, cholera, uncomplicated acute nephritis, acute yellow atrophy of the liver, acute Addison's disease. The term "acute abdominal crisis" would fit the case better, but to a certain extent it is open to the same objection as that given against "acute abdominal disease," it is certainly not in very common use, and the term "crisis" has, in relation to the abdomen, been rather restricted to the manifestations of tabes dorsalis.

The term "acute abdomen" is more definitive and certainly no more inelegant than many terms allowed currency by all members of the profession, for example, locomotor ataxy. Some years ago Mr. Battle boldly made a bid for its adoption by the profession when he included it in the title of one of his books. But it is difficult to get the hierarchy of the profession to countenance new terminology. Since then the term has continued to be sanctioned by use and utility; but for its attainment of a recognized place in the official currency of the language it is essential that the medical journals of light and leading must bless it, adopt it, and pass it into that currency.—I am, etc.,

London, W., Sept. 25th. Zachary Cope.

PIGMENTATION AND LESIONS OF THE SUPRARENAL GLAND.

Sir,—I would like to make use of the hospitality of your columns to inquire whether there is any known relation between lesions of the suprarenal gland and the appearance of melanoblast cells in the haemolymph glands? In certain inoculation experiments recently carried out with various preparations of suprarenal extracts, such cells were found constantly when using extracts that contained adrenaline, and in no other cases: the cells were distributed *via* the lymph channels. Is it possible that the pathological appearance of such cells in pigmented tumours is in any way connected with hyperactivity of the suprarenals? I should be most grateful for information bearing on this point, or for any, references that I could look up.—I am, etc.,

London (R.F.H.) School of Medicine for Women, W.C.1, September 24th. Evelyn E. Hewer, M.Sc.

VON PIRQUET'S TEST.

Sir,—In the Journal of September 17th, 1921 (p. 463) Dr. T. Gerald Garry, M.B.E. (Cairo), writes:

"In the account of the International Tuberculosis Conference, appearing in the Journal, Dr. Wilkinson is reported as having said the von Pirquet test is unreliable, while Sir Humphry Rolleston counselled as not Utopian a periodic census of all persons, classifying them by means of von Pirquet's test and segregating them accordingly, either temporarily or permanently."

I meant what I said, and my statement is easily capable of proof. Sir Humphry Rolleston could not have meant what he said; and that also is easy to prove. He may have been joking; certainly he was dreaming. He can have made no observations to justify such an expression of opinion.—I am, etc.,

W. Camac Wilkinson, M.D. Lond., F.R.C.P.

London, W., Sept. 24th.

THE FORMOL-GEL REACTION IN SYPHILIS.

Sir,—May I be allowed to put a further nail in the coffin of this ridiculous test?

Prior to my recent holiday, with the assistance of my Senior Laboratory Assistant (Mr. F. R. Chopping) I tested a series of some 25 bloods, comparing the results with the Wassermann test (performed by Method IV of the Medical Research Council). My findings were much the same as those of Mr. Murray Stuart (British Medical Journal, August 13th) and Professor Beattie and Dr. F. C. Lewis (September 10th).

In addition, thinking that the English formalin might have some different reaction to the Continental formalin, we did another series, using some pre-war German formalin (Schering). The results were just as useless as in the first series, and not only this: we came to the conclusion that the same serum would give a different degree of viscosity on different days of testing it.—I am, etc.,

John A. Braxton Hicks, M.D., D.P.H., M.R.C.P., Pathologist, Westminster Hospital.

London, Sept. 20th.

EXPERIMENTAL RICKETS.

Sir,—In your editorial article on experimental rickets in the Journal of September 17th there is surely an error. You mention that the substitution of 0.4 per cent. secondary *calcium* phosphate (K_2HPO_4) for 1/7 part calcium lactate prevented rickets on diet deficient in vitamin A. Should calcium read potassium, or K read Ca?

The matter is of interest to one from reading Dr. Porter's paper in the *Medical Record* of September 18th, 1920, on acidosis. The writer points out that a demineralization of the bones and teeth takes place when there is a shortage in the formation within the body of the disodic mono hydrogen phosphate (Na_2HPO_4), and shows how this shortage may be brought about. If in your editorial calcium is a misprint for potassium, the work of Sherman and Pappenheim would seem to support the view suggested by Porter, and may very possibly bear some relation not only to the etiology of rickets, but to that of dental caries also.—I am, etc.,

F. W. BRODERICK, M.R.C.S., L.R.C.P., L.D.S.

Bournemouth, Sept. 19th.

*** Dr. Broderick is right: calcium was written in error for potassium. We are obliged to him for his correction.

Obituary.

JOHN WARD COUSINS, M.D.LOND., F.R.C.S.ENG.,

Consulting Surgeon, Royal Portsmouth Hospital; late President of the British Medical Association.

WE regret to announce that Dr. J. Ward Cousins, a former President of the British Medical Association, died on September 21st at his house in Southsea, at the advanced age of 87.

John Ward Cousins was a son of the Rev. Thomas Cousins of Portsmouth. He studied medicine at St. Thomas's Hospital, where he won the Cheselden Medal in 1856, the year in which he obtained the M.R.C.S. diploma and the licence of the Society of Apothecaries He graduated M.B. of the University of London in 1858, and proceeded M.D. in the following year. In 1860 he became a Fellow by examination of the Royal College of Surgeons of England. After holding resident appointments at St. Thomas's and at the Victoria Park Hospital, he returned to Portsmouth and soon devoted himself entirely to surgery. In 1860 he was appointed assistant surgeon to the Royal Portsmouth Hospital, and remained on the active staff for nearly half a century, retiring in 1908, when he was elected a consulting surgeon and also a vice-president. He was one of the founders of the Portsmouth and South Hants Eye and Ear Infirmary and specialized in ophthalmic surgery, in addition to practising as a general surgeon. Dr. Ward Cousins had great mechanical skill and inventiveness, and devised many inventions and improvements in surgical instruments. In recognition of this side of his work he was awarded a prize medal by the British Medical Association in 1884 and a gold medal at the International Inventions Exhibition. He was a member of the Council of the Royal College of Surgeons of England from 1895 to 1899, and represented the College on the Central Midwives Board.

Throughout his long professional life Dr. Ward Cousins was a most staunch and active supporter of the British Medical Association. He was honorary secretary of the Portsmouth Division for many years, and later president of the Division and of the Southern Branch. In the early eighties he was a member of the old Committee of Council, and from 1893 to 1895 president of the Central Council of the Association. On the occasion of the Annual Meeting in Portsmouth in 1899 he was President of the Association; a great measure of the success of that meeting was due to his unfailing tact and courtesy as well as to his generous hospitality. From 1900 to 1902 he was a member of the Constitution Committee of the Association, and he served on many other committees.

Dr. Ward Cousins married twice, and leaves a widow and one daughter.

Mr. CHARLES P. CHILDE, F.R.C.S., writes: I have been on terms of intimate acquaintance and friendship with the late John Ward Cousins, always known in Portsmouth as Dr. Ward Cousins, for over thirty years. At the advanced age of 87 he was laid to his last rest on September 24th amid the respect and sorrow of a large number of old colleagues and friends in the medical profession of Portsmouth, though he had outlived many of his contemporaries, and was scarcely known to the younger generation of practitioners. When I commenced practice here he was at the zenith of his powers, and to these he gave the fullest scope. It was a time when surgery was not so highly specialized as it is at the present day. In addition to being senior surgeon to the Royal Portsmouth Hospital, he was senior surgeon to the Eye and Ear Infirmary and to the Medical and Surgical Home for Women. In fact he was mainly instrumental in founding the Portsmouth and South Hants Eye and Ear Infirmary, which has risen from its small beginnings to be the splendid institution it now is. Amongst his colleagues at the various institutions he served he was most popular, and his advice and help were freely sought and as freely given. He was a member of the staff of the Royal Portsmouth Hospital for forty-eight years, and for many of these years he was the outstanding figure and the very backbone of that institution. If I were asked to state Dr. Ward Cousins's outstanding characteristic as a surgeon I should say it was his thoroughness—no time was too long, no trouble too great for him to spend over any case, no care too exacting in the performance of any operation. The number of hours he devoted to his hospital work was prodigious. In addition, he took an absorbing interest in the administration of the hospitals he was serving and in their welfare generally, and was a most regular and valued member of their committees. His heart was in his work, and his profession was his hobby. He made his annual holiday invariably coincide with the annual meetings of the British Medical Association, at which he was a regular attendant and a very familiar figure until quite recent years. He had an original mind, and was always interesting to listen to on any subject connected with the practice of surgery, or on any other subject for the matter of that, and his originality found an additional outlet in the many surgical instruments he invented or modified. He took part, too, in the civil life of Portsmouth, and was for many years an active magistrate. It will be seen that he had a very full life as well as a very long one, and he lived every day of it in the best way of all—devotion to duty. To come to his lighter and more human characteristics: he was of a most cheery and genial disposition, being full of good temper and of humour; he was never ruffled or put out, or, at least, he never showed it. I believe no figure has appeared in Portsmouth so much admired for his devotion to work or so generally popular amongst the medical profession as John Ward Cousins. *Requiescat in pace.*

Mr. HENRY RUNDLE, F.R.C.S., writes: By the death of John Ward Cousins Portsmouth has lost a familiar figure, and one who was for many years its most widely known surgeon. He had reached the late evening of a long working day, lived a full life, had done his work, and done it well. A strong and vigorous personality, he was remarkable alike in his character and abilities. A most notable trait was his intense and maintained energy. Such was the enthusiasm which he threw into his work that he invariably succeeded in anything which he undertook. The Royal Portsmouth Hospital was an overshadowing influence, and filled a large place in his life. His work there will stand as his chief memorial. An able surgeon, his professional work was thorough and abreast of the times. He was always eager to hear of anything new in the field of surgery. He had a great capacity for taking pains, and his successful results were largely due to attention to details and to the constant personal care bestowed upon every case. He never spared himself, and counted no hours too many for his hospital duties. He took the greatest interest in the many changes and developments of the institution, and in the movement which led to the building of new wards. His relations with the staff were most cordial, and were influenced by a desire to foster a spirit of sympathy and *esprit de corps*, which knits hospital life together and prevents friction. He took a great interest in the younger members of the profession, and gave them much encouragement in their future career, for which many owe a debt of gratitude to him. He did not write much; his occasional contributions to the medical journals or to societies were pointed and practical. His connexion with the British Medical Association in various offices extended over many years. He was President of the Portsmouth Meeting held in 1899; many will remember the address which he delivered then without a note and without a falter, reeling off facts and dates with great facility. His cheery social qualities and generous hospitality contributed much to the success of the meeting. He took part in many and varied

works outside his profession. Fond of reading and study, he was the honorary secretary of a local literary and scientific society, of which he was the mainstay. Broad-minded to a degree, his charity led him to think the best of all men and made him most tolerant of the opinions of those who differed from him. Dr. Cousins leaves behind him the inspiration of a beneficent life well spent in doing good to his fellows, and to many the remembrance, which will long be treasured, of one of the kindliest of men and the truest of friends.

"C. H. W. P." writes: The death of my old friend Dr. Ward Cousins brings to my mind the memory of the debt the British Medical Association owes him for establishing the old Southern Counties Branch some fifty years ago. At that time there were only a few individual members scattered about the district, and the JOURNAL was the only means of intercommunication. Dr. Cousins had much to contend against, and it was only by constant, untiring work and personal tact and influence that he was able to overcome the general apathy and start the new Branch, comprising all Dorset and a large portion of Hants, Wilts, and the Isle of Wight. He realized that so large an area could not be worked from Portsmouth alone, and travelled all round, forming the country into districts and appointing District Secretaries as follows: South and West Dorset, Dr. Lush (Weymouth); Southampton, Dr. Trend; Salisbury, Dr. Manning; Winchester, Dr. Langdon; Bournemouth, Dr. Nunn; East and North Dorset, myself; and Isle of Wight, Dr. Groves. Portsmouth remained under his own charge, and he was also General Branch Secretary. Each district held two or more meetings a year; an annual Branch meeting was held in the districts in regular order, and at it the various officers were appointed. The number of members increased rapidly; the meetings were well attended; papers were read and cases of interest shown, and the proceedings always wound up with a dinner and pleasant reunion and renewal of old friendships and formation of new ones. Cousins was always present at the Branch meetings and added greatly to the success by his genial company. I am the last survivor of the original District Secretaries, and I do not know any one remaining of those who founded the Branch.

C. P. COOMBS, M.D.Lond., J.P.,

Castle Cary, Somerset.

By the death of Dr. C. P. Coombs, on September 13th, the medical profession in the West of England loses a striking personality. He was born at Frome in 1842; he went to school in the same town, where at 14 he was apprenticed to his uncle, Dr. Joshua Parsons. Shortly after he went to the new medical school at St. Mary's Hospital, where he did very well, passing his first M.B. with honours in several subjects, and being appointed successively an assistant demonstrator of anatomy and house-surgeon. Under the influence of Gibson and Broadbent he became an enthusiastic student of medicine, and might have aspired to a position on the honorary staff but for the circumstances which made it necessary for him to join his uncle in practice; at this time (1865) he went to Beckington, near Frome, to take charge of a branch of the practice. In 1866 he married Mary Leslie, daughter of Mr. William Franklin of Coventry. In the following year he bought a small practice at Castle Cary, Somerset, where he worked till 1911, retiring then after a seven-years' partnership with Dr. David Price, who succeeded him. During these years he held various appointments, including those of medical officer to the Poor Law in the Wincanton and Shepton Mallet Districts.

He was for many years a member of the British Medical Association and a constant attendant at the meetings of the Bath and Bristol Branch, of which he was president in 1895–6. His presidential address on "Galvanism in the treatment of neuritis" he afterwards expanded and published in the form of a small book, thus following up an article on electro-therapeutics which he had contributed to Tanner's *Practice of Medicine* in the seventh edition, issued in 1875 by Sir W. H. Broadbent. He wrote a number of papers for the medical journals, and also contributed articles to *Chambers's Journal* and other lay periodicals. His interests had always been very wide and varied; wood-carving, painting, gardening, music, and archaeology all claimed his attention and furnished his busy mind with occupation. In 1911 he became a justice of the peace, and also chairman of the School Managers of Castle Cary. These and kindred interests went far to fill the gap left by the cessation of practice, and until his health began to fail in 1920 he pursued his public duties with the same energy that had characterized his professional work. He was a tall, handsome, ruddy man, with an expression of kindliness that corresponded exactly to his character. Both professionally and as a private citizen the motive force of his life was service. To everyone who knew him he was the perfect presentation of that great gentleman—the English country doctor. After a period of impaired health his life was ended by a brief and painless illness, in his 80th year. He is survived by his wife, three daughters (the eldest daughter died of cholera in 1914, in the service of the Baptist Zenana Missionary Society in India), and one son, a member of the medical profession.

GEORGE HUNTER, M.D., F.R.C.S., F.R.C.P.Edin.,

[Formerly of Linlithgow.

Although Dr. George Hunter, whose death at the age of 79 occurred on September 20th, had retired from active practice a good many years ago, he took a real interest in all medical matters in Edinburgh. He was born at Newfield in Dumfriesshire in 1842, was educated at Hutton Hall School in the same county and at the University of Edinburgh; he graduated as M.B. and C.M. with honours in 1867, and M.D. in 1869; he became F.R.C.S.Edin. in the following year and a Fellow of the sister College of Physicians in 1891. After some minor appointments he went, in 1869, to Linlithgow as assistant to a well-known country practitioner, the late Dr. George Dallas Baird. His keen love and devotion for his professional work, and his kindly interest in all his patients—rich and poor, without distinction, received the same careful attention—soon won for him a unique place in the county. When ill health compelled Dr. Baird to retire Dr. Hunter succeeded to the practice, which, in his able and active hands, was rapidly and widely extended. But twenty years of unremitting toil in a large country practice told on his hardy constitution, and he was compelled to retire for a time from active work.

In 1890 he removed to Edinburgh, where he resumed his student days, attending classes in physiology and pathology, and, though verging on 50, he was not above acting as demonstrator in the practical classes connected with these subjects. His true sphere, however, was at the bedside, and he soon acquired a large and influential city practice. He was highly respected by his colleagues and by the profession in Edinburgh, by whom he was known as one of the country doctors who kept abreast of all the latest advances in medical science. In the days when knowledge of the specialities was less general than now, Dr. Hunter was in advance of the times in demanding from the young men who came to him as assistants a good working acquaintance with diseases of the eye, the ear, and the throat.

Dr. Hunter became a Fellow of the Edinburgh Obstetrical Society in 1881, and acted for a time on the council of that body. He had held the office of President of the Scottish Microscopical Society, to the *Transactions* of which he communicated articles on the development of the liver and on its comparative histology. He also wrote an article in 1876 on "Puerperal fever and septicaemia, their relations and probable identity," for the *Edinburgh Medical Journal*, and another on "The place of specialism in general practice" for the same journal in 1885. Dr. Hunter was a J.P. for West Lothian. He had been examiner in physiology and public health in the Royal College of Surgeons, and for a time acted as Director of the Royal Hospital for Sick Children. When the war came he, though over 70 years of age, felt it his duty to act on the medical boards connected with recruiting and pensions, which work he did with his usual enthusiasm and conscientiousness. The strain, however, was too great, and he was compelled to relinquish active work and take life more leisurely, much to the regret of a large number of colleagues and patients. For the last three years his health had been gradually failing. He died at his house in Edinburgh, and the funeral was from St. George's Church, Charlotte Square, of which he was an elder.

H. C. MAJOR, M.D.,

Consulting Physician, Bradford Royal Infirmary.

WE regret to announce the death of Dr. Herbert Coddington Major, which occurred at Oxford after a short illness on September 13th. Born in Jersey, Dr. Major was educated at Victoria College there, and afterwards at Edinburgh University, where he graduated M.B., C.M. in 1871, and M.D. in 1875, receiving a gold medal for his thesis on "Histology of the brain in apes." After graduation he was appointed, in 1876, to the West Riding Asylum, Wakefield, and on the retirement of Dr. (now Sir James) Crichton-Browne he became medical superintendent, a position which he held until 1884; he was also appointed lecturer on mental diseases to the then Leeds School of Medicine (now Leeds University). After retiring from this post, Dr. Major became a consulting physician in Bradford, being elected an honorary physician to the Bradford Infirmary and to the Bradford Fever Hospital. He was at one time President of the Bradford Medico-Chirurgical Society, and in 1898 he was elected an honorary consulting physician to the Bradford Infirmary. Two years later he retired from active practice and went to reside at Bedford, where he accepted the post of honorary pathologist to the Bedford County Hospital, and where he was also, for two years, president of the Bedford Medical Society. He left Bedford in 1907 for his native Jersey, and lived there in retirement until this summer, when he removed to Oxford.

Since 1872 Dr. Major had been an active member of the British Medical Association, and he held office as president of the Yorkshire Branch in 1901, chairman of the Bedfordshire Division for two years, chairman of the Jersey Division for two years, and president of the Channel Islands Branch in 1919. He was the author of many contributions to medical literature, chiefly on histological subjects. He was a physician of the most charming disposition, of such a kindly nature that it is impossible to imagine that he ever made an enemy. He made his home, as has been noted, in several widely separated parts of the country, but wherever he went his colleagues realized his worth and insisted on placing him in positions where his abilities could be of the greatest use to his profession and to the community. Dr. Major is survived by his widow, but he had no family.

Dr. S. J. Ross (Bedford) writes: As a colleague Dr. Major's habitual courtesy, kindness, and sincerity endeared him to all. His pathological work was very thorough, and his microscopical sections would do credit to any one possessing the most elaborate apparatus, while his interpretation of pathological findings was also sound. His interest in the science of medicine never flagged; widely read, a truly cultured and unassuming colleague, Dr. Major's death is a loss not only to the medical profession but to all with whom he came in contact.

WE regret to announce the death at Sheffield, after a long illness, of Dr. THOMAS BERNARD STEDMAN. Dr. Stedman received his medical education at University College Hospital, where he was medallist in medicine and midwifery, and he graduated M.B.Lond. (with honours) in 1893, obtaining the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond. in the same year; in 1895 he graduated M.D.Lond. Subsequently he took the diploma in Public Health of Cambridge, and he studied for the Bar at the Middle Temple and was duly called. For two years he was house-surgeon at Sheffield Royal Hospital, and for a time he assisted his father in general practice at Leighton Buzzard, while later he was deputy coroner for North-East London. During the war he held a commission in the R.A.M.C., and afterwards was attracted again to Sheffield, where he practised until his last illness. He acted also as honorary demonstrator in toxicology at the University of Leeds. Dr. Stedman had a very keen sense of public duty, and his only recreation was his work. To a large circle of patients he was a true friend as well as a physician, and he worked devotedly among the poor. He is survived by his widow and one daughter.

DR. ERNEST DUPRÉ, professor of mental diseases in the Paris Faculty of Medicine and a well known writer on psychiatry, died recently. Scientific nomenclature is indebted to him for numerous neologisms, of which the best known are "meningism" and "mythomania."

The Services.

MINISTRY OF PENSIONS: INFORMATION FOR OFFICERS, WIDOWS, AND OTHERS.

IN accordance with the advice of the Departmental Committee, whose report on the administration of the Ministry of Pensions was recently published, the Minister of Pensions has taken steps to make more widely known the benefits available to disabled officers and nurses and the relatives of those deceased. With this object a new series of leaflets (officially described as "M.P.O. Leaflets") is being issued, dealing with the following matters:

1. General information for disabled officers.
2. Provision for disabled nurses.
3. Medical treatment of disabled officers and nurses.
4. Supply, renewal, and repair of surgical and artificial appliances (other than artificial limbs).
5. Alternative retired pay.
6. Pensions and allowances to widows and other relatives of deceased officers.
7. Supply of artificial limbs (in preparation).
8. Special Grants Committee's arrangements for officers and nurses and their dependants.

Copies of No. 1 can be obtained by those interested on application to the Secretary, Officers' Branch, Ministry of Pensions, Cromwell House Annexe, Millbank, S.W.1, or from Officers' Friends in the Regions, or from any Local War Pensions Committee. The other leaflets, dealing with special aspects, can be obtained on application to the following: for Nos. 2, 5, and 6 to the Officers' Branch (as above); for Nos. 3, 4, and (later) 7, to the Commissioner of Medical Services at any of the regional offices of the Ministry—namely, Burton Court, Chelsea, London, S.W.3; Edinburgh, Newcastle on-Tyne, Manchester, Leeds, Cardiff, Birmingham, Nottingham, Bristol, Belfast, or Dublin; and for No. 8 to the Special Grants Committee (Officers), Thorney House, Smith Square, London, S.W.1.

WALTER BUCHANAN SCHOLARSHIP AT EPSOM COLLEGE.

THE Council will shortly award a Sir Walter Buchanan Scholarship at Epsom College, the value of which is about £33 a year. The rule fixed by the founders of the scholarship is as follows:

"The Sir Walter Buchanan Scholarship is primarily intended for the sons of deceased or prematurely invalided officers of the Indian Medical Service, or, failing any such candidates, for the sons of legally qualified medical men of pure British parentage in necessitous circumstances who have practised medicine for at least five years in India."

Applications should be sent to the Secretary, Mr. J. B. Lamb, 49, Bedford Square, W.C.1.

Universities and Colleges.

UNIVERSITY OF LONDON.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

THE following entrance scholarships have been awarded for the sessions 1921–22:

University Scholarships of £40 each in Science: N. F. Adeney, W. R. H. Pooley. *University Exhibition of £30 each*: G. B. Woodd Walker. *Entrance Scholarships in Natural Science, £40*: B. W. Gladstone; A. M. Odess. *Palmer Scholarship, £30*: E. I. Puddy. *Epsom College Scholarship* (by nomination): G. E. G. Pearce.

AT the Dorset County Hospital, Dorchester, on September 21st, there were opened the new pathological department and *x* ray and electrical rooms. Lord Ellenborough, chairman of the hospital committee, presided, and Mr. James Sherren, C.B.E., surgeon to the London Hospital—himself a Dorset man—gave an interesting address on "The value of pathological and *x*-ray examinations in abdominal surgery." He pointed out that by the institution of the new departments—which might seem only a side-show to the general public, but to the medical staff were the very centre of the hospital's being—the Dorset County Hospital was placing itself in the position of being able to make the fullest use of modern medical knowledge. He himself was particularly interested in abdominal surgery, and with that aspect of medicine he dealt in his address, but the new departments would be of at least as great value in all the other different branches of medicine. Mr. Sherren's address was not only interesting to his medical colleagues, but had the effect of stimulating the interest of the members of the lay public who attended the function. After his address the new departments were opened for inspection by the assembly.

Medical News.

Sir Harold Stiles, Regius professor of clinical surgery in the University of Edinburgh, will deliver the fellowship address at the Convocation of the American College of Surgeons, Philadelphia, on October 28th. He sailed for New York on September 24th.

The autumn session at the Post-Graduate College, West London Hospital, Hammersmith, will open on Monday, October 10th.

The London Medical Exhibition will be held at the Central Hall, Westminster, from Monday, October 3rd, till Friday, October 7th, from noon to 6.30 p.m.

The foundation stone of Queen Mary's Maternity Home at Upper Heath, Hampstead, will be laid by Her Majesty the Queen on Wednesday, October 12th, at 3 p.m.

The centenary of the foundation of the National University of Buenos Aires was celebrated on August 11th.

Dr. Evan Powell, on the occasion of his retirement from the office of medical superintendent of the City Asylum, Mapperley Hill, Nottingham, after forty-one years' service, has received a presentation from the Asylum Committee.

Lieut.-Colonel Sir David Prain, C.M.G., C.I.E., F.R.S., will deliver the inaugural address before the Pharmaceutical Society of Great Britain at the opening of the eightieth session of the School of Pharmacy on Wednesday, October 5th, at 3 p.m., when he will also present the Pereira medal.

The negotiations for the absorption of the Royal Chest Hospital by the Great Northern Central Hospital, Holloway, having been completed and formal agreements entered into, the Committee of the latter institution are, by an order of the Charity Commissioners, responsible for the management of the Royal Chest Hospital as from September 6th, 1921.

A discussion on plumbing and sanitation on board ship will be held by the Royal Sanitary Institute, at 90, Buckingham Palace Road, S.W.1, on Wednesday, October 12th. The chair will be taken at 4 p.m. by Sir Henry Tanner, C.B.

At the meeting of the Medical Officers of Schools Association, to be held at 11, Chandos Street, Cavendish Square, W.1, on Friday, October 21st, at 4.45 p.m., a discussion on games for girls will be opened by Dr. Alice E. Sanderson Clow, medical inspector, Cheltenham Ladies' College, and Miss M. Stansfeld, principal, Bedford Physical Training College.

At the Italian Congress for the Protection of Infancy, to be held in Rome on October 20th to 22nd, the following subjects will be discussed: (1) Pre-natal prophylaxis, by Dr. Artom of Rome; (2) antituberculosis prophylaxis in infancy, by Professor Caronia of Naples; (3) gastro-intestinal prophylaxis in infancy, by Professors Gutierrez and Albertini of Milan.

By arrangement with the Government Disposal Board the Joint Council of the Order of St. John and British Red Cross Society are conducting by private treaty a sale of medical and surgical stores and equipment. All articles have marked prices and can be inspected in London. The sale closes on October 31st, after which date other arrangements will be made for disposal of the goods remaining in store. Catalogues and permits to view may be had from the Director of Hospital Services, 19, Berkeley Street, London, W.1. An advertisement on the subject appears in the Journal of this week (page 9).

It is reported that a company called the Imperial and Foreign Corporation of London has entered into an agreement with the Czecho-Slovakian Government to supply the capital necessary for the working of the famous Joachimsthal mines, near Carlsbad; the Corporation is to have half the radium salt annually produced, which, it is estimated, averages four grams. Professor Soddy of Oxford arrived in London with two grams for the Corporation on September 25th. It is stated that the radium salt will be rented and the emanation sold for therapeutic purposes.

Dr. A. H. Macklin, O.B.E., M.C., is surgeon to the Antarctic Expedition which left the Thames on September 17th in the *Quest*. He accompanied Sir Ernest Shackleton on his last South Polar Expedition in 1914, and served afterwards in the R.A.M.C., attaining the rank of Major. He studied medicine at Manchester, graduating M.B., Ch.B.Vict. in 1912. He is the son of Dr. T. T. Macklin, now of Lancaster.

On the occasion of his leaving Bottesford (Lincolnshire) for Rotherham Dr. T. T. Kelly was presented, on September 9th, with a silver tea service and other gifts in appreciation of his services by the inhabitants of Bottesford and the surrounding villages.

A vacation course on medical radiology will be held from October 9th to 23rd, at the Hospital St. Antoine, Paris, under the direction of Dr. A. Béclère. The fee is 150 francs; further information may be had from the director of the laboratory, Dr. Solomon.

The fifth annual meeting of the National Society for the Promotion of Occupational Therapy (U.S.A.) will be held from October 20th to 22nd, in Baltimore, under the presidency of Dr. Herbert J. Hall.

Four cases of small-pox have been reported in Nottingham during the first three days of this week.

The general work of University College, London, will begin on October 5th. The lectures on the history of science will be resumed on Monday, October 10th, at 5 p.m., when Professor Elliot Smith will give the first of three lectures on the beginnings of science. Dr. A. Wolf will begin a series of lectures on the general history and development of science at 3 p.m. on October 12th; they will be continued on succeeding Wednesdays at the same hour. On October 14th Dr. J. C. Drummond will begin a course of eight public lectures on nutrition.

According to the *Journal of the American Medical Association*, a number of medical men from the United States have gone to Vienna for post-graduate study, and the old American Medical Association of Vienna has been revived.

The annual conference of the Chartered Society of Massage and Medical Gymnastics will be held in London on October 6th, 7th, and 8th. The programme includes lectures by Sir James Purves Stewart, Dr. Arthur F. Hurst, Sir Henry Gauvain, Dr. J. B. Mennell, and Dr. H. Crichton Miller. There will also be a number of demonstrations and a visit to the massage department of Guy's Hospital. Communications should be addressed to the Secretary of the Society, 157, Great Portland Street, W.1.

On September 17th Professor Tuffier of Paris delivered the inaugural address at the opening of the Medical College of the University of Peking on the subject of surgical septicaemias and their treatment; on the three following afternoons he held special surgical clinics.

A special course of instruction in venereal diseases for post-graduates and students will be held during October and November at the London Lock Hospitals (the female hospital and women's out-patient department is at 283, Harrow Road, W., and the male hospital and out-patient department at 91, Dean Street, W.). The course will consist of clinical instruction in diagnosis and treatment, which will be given daily at both hospitals, and of twenty-six special lectures. Applications for tickets should be made to the secretary at 283, Harrow Road, W.9. The fee for the complete course is four guineas; and the fee for one month's instruction in venereal pathology, including practical work, is three guineas, which can be commenced any time during the year. Post-graduates who are members of the Fellowship of Medicine will be admitted free to the lectures only.

The annual dinner of the Society of Medical Officers of Health will be held at the Café Royal, Regent Street, W., on Friday, October 21st, at 7.30 p.m. Amongst those who have already accepted invitations are the Minister of Health, the Attorney-General, the Bishop of London, Sir Norman Moore, P.R.C.P., Sir Anthony Bowlby, P.R.C.S., Sir George Newman, M.D., and Sir Philip Magnus, M.P. Ladies are invited, and early application for tickets (stating names of guests) should be made to the Executive Secretary at 1, Upper Montague Street, Russell Square, W.C.1. A remittance of 12s. 6d. for each ticket should be sent with applications before October 14th, after which date the charge will be 15s.

According to the *Japan Medical World*, the plague situation throughout Manchuria is improving, but in some places more quickly than in others. The International Plague Committee of Harbin, which consists of representatives of the railway, Chinese officials, various consuls, merchants, and medical men, and has been sitting weekly since December, 1920, has decided to hold fortnightly meetings in future. Plague is, however, still spreading in Vladivostok and the neighbouring villages because of the lack of proper precautionary measures. According to a Japanese medical expert recently sent there to make inspection, fifty new cases are being reported almost every day.

Cases of bubonic plague have been discovered in Queensland and the state has been proclaimed infected by the Federal Government; the first case appears to have occurred at Brisbane towards the end of July, and the fact, it is stated, was concealed. A case occurred at Townsville on September 22nd. Infected rats have been found at Brisbane, but only, according to the *Times* correspondent, eleven out of 3,000 killed. A later report, however, is to the effect that a steamer arriving at Sydney from Brisbane had eleven infected rats on board.

A school of radiography for the training of technical assistants has been instituted at King's College Hospital, London, under the direction of Dr. Robert Knox, honorary radiologist to the hospital. The school is open to both men and women, and carries out a course of instruction in radiography, radiotherapy, and electrotherapy for a period of one year preparatory to the examination of the Radiographers' Society. The course includes instruction in general elementary physics (sound, heat, light, etc.), electricity, with the construction of electrical apparatus, practical radiotherapy, treatment, methods of dosage, diathermy, high frequency, and radium; anatomy, with elementary morphology; and photographic chemistry, with practical and clinical photography. An applicant for admission to a course must have attained the age of 18 years, and no applicant can be accepted without an interview. The fee for the full course is thirty-five guineas, but applicants who have obtained a nursing certificate at King's College will be admitted at two-thirds of the fee. Inquiries should be addressed to the Radiographer, King's College Hospital, Denmark Hill, S.E.5, and marked "School of Radiography."

Letters, Notes, and Answers.

As, owing to printing difficulties, the Journal *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

Original articles and letters *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal.

The postal address of the British Medical Association and British Medical Journal is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the British Medical Journal, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London:* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

Income Tax.

"G. A. C." bought his partner's share in April, 1918. Since that date the assessments to income tax have been (1) on "G. A. C." on the basis of his cash receipts, including his share of the old partnership payments, and (2) on his former partner on the amount of his share of the old debts. Our correspondent asks if this is correct.

*** The person to be assessed is the one carrying on the practice, and "G. A. C.'s" partner appears to be under no obligation to pay tax on the old debts or any portion thereof. Tax is payable for the earnings of any particular financial year, and the cash receipts are brought into the computation—instead of the book debts—only because of the difficulty of recording and valuing professional debts. As from April, 1918, onwards "G. A. C." is chargeable for the whole of the profits of the practice, measured either in book debts properly valued or, as a matter of convenience, by the whole of the cash receipts.

"Complex" retired from a partnership on June 30th, 1920, and inquires as to the existence of any liability for payments received since.

*** Our correspondent was liable to tax on one-fourth only of his share of the assessment for 1920–21, because for three-quarters of that year he ceased to earn an "income." It is to be presumed that he has paid tax on the full income of the past, measured for convenience by the cash receipts of each year instead of by the value of the year's bookings. He cannot legally be assessed at all for 1921–22, because there is no source of "income" to be assessed. If "Complex" prefers to deal with the matter through an agent he cannot do better than consult a chartered accountant.

LETTERS, NOTES, ETC.

Meningocele in the Newborn.

Dr. T. F. Forster (Dalton-in-Furness) writes: On September 11th last I was called to attend a young woman, aged 24, in her first confinement. On examination I came across what at first seemed to be an extremely thick bag of membranes, but owing to the exceeding thickness this diagnosis was evidently incorrect. On further examination I found that this bag was adherent to the skull, the edges of the sutures of which could be easily detected. I came to the conclusion that I was dealing with a case of meningocele. On the bag coming to the vaginal orifice this diagnosis was confirmed by finding the hair on the scalp. The confinement was uneventful. When the child was born it had evidently been dead for some weeks. This somewhat rare condition should be kept in mind should similar cases be met with. The meningocele was protruding from the anterior fontanelle.

Medical Aspects of Golf.

"D.P.H." writes from St. Andrews to make two suggestions which, though not novel, cannot perhaps be too often repeated. The first is that the player who finds it difficult to keep his eye on the ball should have his refraction tested. The second is not to overtire or strain the muscles controlling the wrist and to look for any sign of inflammation about the wrist. In support of his opinion that the left wrist in particular should be watched, he quotes James Braid's opinion in his book (Spalding Series): "The whole grip must be firm and such as to ensure a complete command over the club in every respect; . . . in the upward swing of the club . . . the first movement must come from the wrists, and it is the left one which makes the initiative."

Enucleation of the Tonsils.

"Clinic" writes: Mr. Hovell says: "Remove 'diseased' tonsils only; do not remove 'merely enlarged' ones"! I inquire how to discriminate in children. Mr. Gilbert Chubb (July 23rd, p. 130) says such an inquiry shows a lack of appreciation of the gravity of local sepsis. The deduction is bewildering but not helpful. Mr. Chubb states that we should stop all haemorrhages at the time of operation. The point is, thousands of tonsillectomies are done yearly without any attempt being made to arrest the haemorrhage at all. It is expected to stop. When it does not, the fact is recognized by the child showing symptoms of loss of blood. The excuse for this method is held to be want of equipment and lack of beds. Local authorities will speedily produce both as soon as hospital throat surgeons cease to acquiesce collectively in a procedure they individually condemn.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 40, 41, 42, 43, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 38, 39, and 40.

The appointment of certifying factory surgeon at Bradford, West (York, West Riding), is vacant.

The Secretary of State for the Home Department proposes to appoint a second medical referee under the Workmen's Compensation Act, 1906, resident preferably in West Norfolk, for the Attleborough, Aylsham, Downham Market, East Dereham, Fakenham, Holt, King's Lynn, North Walsham, Norwich, Swaffham, The ford, and Wymondham County Courts, in Circuit No. 32. Applications to the Private Secretary, Home Office, by October 19th.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
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A British Medical Association Lecture

ON

SOME COMMON, BUT OFTEN UNRECOGNIZED, OBSTETRICAL DIFFICULTIES.*

BY

W. BLAIR BELL, B.S., M.D.Lond.,

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY IN THE UNIVERSITY OF LIVERPOOL; GYNAECOLOGICAL AND OBSTETRICAL SURGEON, ROYAL INFIRMARY, AND OBSTETRICAL SURGEON, LYING-IN HOSPITAL, LIVERPOOL.

When you kindly invited me to give you a lecture on some obstetrical subject of interest to the general practitioner, I felt at once that you had allowed me a wide choice, for obstetrical practice in this country is, as it should be, very largely in the hands of the family medical attendant. This being so, it follows, as I feel certain you will agree, that since so much is at stake—the lives of a mother and a member of the next generation—those who are responsible for a safe issue must be alert in the anticipation and diagnosis of complications in every aspect of this highly important and now scientific art.

The obstetrical difficulties to which I wish specially to call your attention are those which are common and recognizable, but which, owing to imperfect investigation of the patient are, unfortunately, often not discovered until too late, or are missed altogether.

Occipito-posterior Presentations.

While it is impossible to look upon uncomplicated occipito-posterior presentations as abnormal, the frequency with which they escape detection, and in consequence are wrongly treated, necessitates some mention of them in the group of cases I am discussing. Owing to the fact that this presentation, if left alone, almost invariably rotates into the occipito-anterior position, the frequency of the occipito-posterior position as a primary presentation has probably been much underestimated. Indeed, until we became acquainted with the frequency of it at Caesarean section, I doubt whether we were not inclined to consider the condition as more abnormal than it is.

In a general way it may be said that, if the placenta be on the posterior wall, in a large proportion of all cases the presentation will be the left occipito-anterior, whereas when the placenta is on the anterior wall the presentation is generally the right occipito-posterior. Hence, while there is little really abnormal about the position, difficulty and delay may occur during parturition, even though the other circumstances and conditions be normal. In a large majority of cases, as I have said, rotation from the right occipito-posterior to the right occipito-anterior presentation takes place during delivery and no interference is necessary. It is, however, most important that the practitioner should recognize the presentation before parturition, and prepare the patient and her friends for a somewhat longer labour than usual. The diagnosis is easily made by abdominal examination, unless the patient be very fat: the profusion of the foetal limbs, the absence of the dorsal prominence, and the position of the foetal heart are the most obvious and significant signs.

When labour is in progress and uterine contractions are frequent, abdominal examination is much less easy. In these circumstances the practitioner must have patience. If, after several hours in the second stage, the head has made little or no progression, a careful vaginal examination with the hand in a sterile glove should be made. It may be impossible accurately to identify the sutures owing to the overlapping of the cranial bones—I have felt the anterior fontanelle to be practically obliterated. In such a case the patient must be fully anaesthetized, and the hand of the surgeon passed into the vagina. If possible, the head is gently disengaged and pushed upwards, and an attempt is made to feel an ear, for the contour of the pinna enables an accurate diagnosis of the position of the head to be made. If there be no doubt that the presentation is persistent occipito-posterior, manual rotation of the head, with manual rotation of the child's body from above, must be practised and forceps applied to the head. I shall say nothing of the danger to the child and the mother of the practice of putting forceps on the high unrotated head and of dragging forth the child. This is only done, surely, in the wrong belief that the presentation is occipito-anterior, and that the patient merely "requires help." It is, on the other hand, perfectly sound treatment manually to rotate the foetal head when flexion is found to be deficient and the occiput shows a tendency to backward rotation, and then to deliver with forceps. There are, of course, cases in which the head is so firmly fixed in the pelvis in the persistent occipito-posterior position that it must be delivered either with forceps or possibly in some cases after craniotomy; but such a difficulty is most exceptional if the position have been recognized early and proper treatment applied.

Post-maturity.

When the foetus is not born after the expiration of forty weeks of intrauterine life serious difficulties may occur during parturition. There has been much discussion from time to time regarding the frequency or otherwise of post-maturity. Obvious difficulties exist in the way of statistical conclusions concerning the question, as it is rarely possible to ascertain from a patient the day of impregnation. The date of the last menstrual period, too, is only a general indication. Nevertheless, menstruation is so rarely associated with pregnancy that in a certain number of cases of post-maturity the catamenial history is of considerable assistance. I believe the best indication of the frequency of delayed parturition would be found in some formula—if one could be devised—which would take into account the weight of all children born, the calculated date of delivery and the actual date of parturition. From the practical point of view, the matter may be of so much importance that some method of deciding the question should be adopted. That protracted gestation is not infrequent I am convinced, and that the same patient shows a tendency to repeat the performance I have had irrefutable evidence. How often do we hear the lament, "Poor woman, she always has a very bad time; the children are so large."

But it is not only the size of post-mature children that leads to difficulty in delivery, it is also the fact that the foetal head is very much less plastic than normal. I have observed that the anterior fontanelle may be very small in these cases. There is both disproportion in size and delay in the process of cranial moulding.

If there be any suspicion that a patient is "over time," as we say, a close inquiry should be made. The history of the gestation must be carefully studied, and the size of the child, especially of the head—the hardness of which can often also be detected—should be estimated. At the end of ten complete calendar months from the date of the last menstrual period no doubt need exist as to what is happening, provided always the patient has menstruated with perfect regularity except when pregnant.

The treatment consists of the induction of labour. This is best carried out by the *intramuscular* injection of infundibulin every night and morning for three days, at the end of which time, if parturition have not supervened, a few bougies should, with the most scrupulous aseptic precautions, be inserted between the uterine wall and the membranes. Labour almost invariably follows these procedures within a short time.

Certain Pelvic Deformities.

When there is gross deformity of the pelvis, such as exists with a greatly flattened rachitic pelvis, with the oblique or the kyphotic pelvis, unmistakable indications of this are to be found in the appearance and mode of progression of the patient; consequently these pelvic lesions are rarely overlooked. But in such alterations as those seen with the non-rachitic flattened pelvis, with the slightly generally contracted and with the simple funnel-shaped pelvis—all of which are not uncommon abnormal entities, possibly due, as I shall indicate directly, to errors in development or growth—the state very often escapes detection. The predominance, too, of rachitic deformities in this country has overshadowed the conditions I have just mentioned.

* Delivered before the Bradford Division, May, 1921.

Non-rachitic Flat Pelvis.

This form of pelvic contraction is far more common than is generally believed, yet, especially in the less severe degrees, it is usually overlooked, and a difficult labour ensues. I do not think the reason is far to seek: shortening of the antero-posterior diameter the conjugate diameter—may be, and usually is, the only measurement that gives an indication of the deviation from the normal.

No doubt there are some men who agree to attend women in their first confinement without measuring the pelvis, although I hope not many; yet even the virtue of those who make this important routine examination is not perhaps sufficiently rewarded, for in the non-rachitic flat pelvis the distance between the anterior superior spines and that between the iliac crests may be normal, not only respectively but relatively, in association with moderate diminution of the conjugate diameter. Thus, there is a definite difference from the rachitic flat pelvis in which the distances between the spines and the crests tend to approximate. Often, then, in the presence of a simple flat pelvis it may be believed that the pelvic measurements are normal; yet, while this is so in regard to the transverse measurements both respectively and relatively, on careful internal mensuration the true conjugate may be found to measure about 9.5 cm. (3¾ inches), but never less than 9 cm. The external conjugate is generally below 19 cm., but this measurement is sometimes not relatively reliable. There is, however, another feature which often conveys an indication of the conjugate contraction—namely, an accessory promontory below the true sacral promontory, which is produced by an overgrowth in the process of ossification between the first and second sacral vertebrae. When, therefore, the practitioner, after making the external measurements, feels this and afterwards reaches without undue difficulty the true promontory, he is in a fair way towards an accurate diagnosis.

Generally Contracted Pelvis.

This condition, too, is quite frequently encountered, especially in the lesser degrees, apart from rickets. In a majority of cases the smallness of the pelvis is relative to the general growth of the skeleton; that is to say, the justominor pelvis occurs chiefly in undersized women in whom all the bones are light and small. In such circumstances a mistake is unlikely; a small pelvis should be suspected. I need hardly say that the child may be of normal size. It is, indeed, always the disproportion between the foetal head and the size of the pelvis that makes difficulty in cases of pelvic contraction. But it is not only undersized women in whom the generally contracted pelvis is seen, for it may occur in otherwise well-developed females, and it is in them that there is a great risk of the condition being unrecognized, unless the practitioner make a routine practice of measuring the pelvis of his pregnant patients. An indication of the generally contracted pelvis is at once obtained from the external measurements, all of which are reduced in size. The fact that the pelvis may be disproportionately small in relation to the rest of the skeletal development cannot be over-emphasized.

Funnel-shaped Pelvis.

This type of pelvis, which occurs as a developmental lesion apart from the association of it with other deformities, is one to which great importance has been attached by American writers, and about which careful descriptions have been given by Whitridge Williams and others. I do not think, however, that it has received adequate attention in this country. The essential feature is, as the name implies, contraction of the pelvic outlet, with, of course, narrowing of the pubic arch. The typical funnel-shaped pelvis in varying degrees is said to occur in about 6 per cent. of all cases in America. The deformity as an uncomplicated condition is not, I think, so common in Great Britain, but certainly it is not uncommon.

In the typical form the contraction, as I have stated, affects only the outlet—the measurements of the superior strait are normal, or practically so; but the transverse diameter between the tubera ischii may measure 8 cm. (3¼ inches) or less.

It is now generally believed that this error of conformation is due to what is known as high assimilation of the pelvis; that is to say, the last lumbar vertebra is incorporated into the body of the sacrum, making the conjoined bone so much the longer and leading in the process of growth to the deformity described.

When the lesion has not been recognized before labour, no suspicion of it may enter the mind of the practitioner until the foetal head is in the pelvis and fails to make progress in spite of strong uterine contractions.

From the practitioner's point of view, then, all these varieties of pelvic deformity, which, because they are unassociated with gross disease and because some of the measurements usually made may be normal, are of real importance. It is a sad reflection that so often they escape detection before labour commences. Unfortunately, too, there have been many cases in which repeated craniotomy has been performed without the true state being discovered. There is reason, also, to believe that very many of the difficult forceps deliveries are the result of one or other of the pelvic conditions described. It is essential, then, that the pelvis of every pregnant woman who has not previously had a full-term normal confinement should be carefully measured, and that the mensuration should take into account not only the inlet but also the outlet. Furthermore, it must never be forgotten that the course of labour and the appropriate treatment will be influenced by the size of the foetal head—the relative disproportion between this and the pelvic measurements.

I need not discuss in detail the treatment of these cases. You are all familiar with the various surgical procedures employed for delivery in cases of pelvic contraction. But I may, perhaps, be allowed to express the hope that to-day, when Caesarean section is so safe in skilled hands, this operation shall be considered in good time in preference to the induction of premature labour, which is rarely to the advantage of the child. If the contraction be not very marked, and is discovered only when labour has been in progress for some time, it is advisable to delay the use of forceps and to give the foetal head every opportunity of moulding. When safe delivery is impossible, even with the gentle use of forceps, craniotomy must usually be performed. However, in the typical funnel-shaped pelvis, while Caesarean section is indicated, if the lesion be recognized before parturition, if it be discovered during labour pubiotomy should be performed, as this procedure is then in the interests of the mother and the living child. If forceps extraction be attempted, the infant may be seriously injured, and complete larceration of the perineum is almost certain to occur owing to the fact that before the head can be delivered beneath the narrowed pubic arch it must be forced far backwards.

Primary Uterine Inertia.

Primary uterine inertia may be due to a variety of factors, but I do not wish to take up time by referring to such obvious causes as fibromyomata uteri, over-stretching of the muscle-fibres in multiple pregnancy, and the rest. We are made aware in such circumstances by the local condition that we may expect difficulty, even though it be not forthcoming. I want, rather, to discuss the commonest, and at the same time the least recognized, form of primary uterine inertia; I refer to that in which the normal pressor substances that stimulate uterine contractions in parturition are insufficient. Little is said of this abnormality in the textbooks, and therefore it is not surprising to find that, when present, it is often wrongly treated.

Uterine contractions at the onset of labour are usually feeble and infrequent. These feeble contractions are a natural safeguard in normal circumstances against undue force being employed before the course is, as it were, clear—before the second stage of labour has commenced. But it is not unusual to see cases in which, without appropriate treatment, labour probably would never reach the second stage.

If a woman once suffer with primary uterine inertia of this character she not infrequently suffers again in subsequent confinements. I have in my mind at the moment the case of a lady who suffered with primary uterine inertia in four confinements. In only one was she

delivered normally. You will be impressed with the seriousness of the condition when I tell you that the methods practised in three of her deliveries by skilled obstetricians consisted of craniotomy, induction, and, last of all, Caesarean section. In the one confinement in which I attended her I was able, fortunately, to deliver her by more natural means, having diagnosed the state of inertia when first she sought my advice in the last month of gestation.

I have just said that typical uncomplicated primary uterine inertia is due to the insufficiency of pressor substances in the blood. We do not know the biochemical mechanism that precipitates labour, but we do know that the rhythmical uterine contractions are stimulated by pressor bodies; consequently we should be able easily to discover the future possibility of primary uterine inertia before the onset of labour, and without difficulty to prevent this abnormal occurrence.

As a matter of fact this is possible, if the patient be examined during the last two or three weeks of gestation. Normally, at this period the uterus is very sensitive and the muscle contracts readily on simple stimulation, such as that produced by gentle kneading with the hand. If the uterus remain flaccid and tend to sag at the sides without proper central protuberance, there is every likelihood that, unless the condition be remedied, labour will be inert. Confirmation of the condition of primary inertia may be obtained by an estimation of the systolic blood pressure, which should be higher than normal during the last weeks of pregnancy. Usually the pressure at this time is equal to that of 140 mm. Hg. If then the blood pressure be found to register 110 mm. Hg or less, there is almost certainly some insufficiency of pressor substances, and this must be made good.

Normally, the amount of the ionized calcium in the blood tends to rise at the end of pregnancy, owing to the lessened demands of the foetus, and these salts greatly influence the tone of involuntary muscle fibres. It is necessary, therefore, in these cases to supply calcium in an absorbable form. Many persons do not assimilate calcium salts well, but I think pregnant women, on whom the calls in respect of this substance are great, are easily treated. Many years ago I had the preparation known as mistura calcii lactatis recentis—pure concentrated lactic acid (200 grains), precipitated calcium carbonate (75 grains), and chloroform water (ʒ viij)—prepared, and this is now widely and advantageously used. About two ounces of the mixture should be given every night. In addition to this, it is advisable to inject intramuscularly 0.5 c.cm. of infundibulin every night and morning for a fortnight before parturition is due. If proper ante-parturitional investigations be made and this treatment be adopted, I think that one of the commonest and greatest sources of trouble to the practitioner would be banished. I may add that I treated the lady, just mentioned as having suffered so much with primary uterine inertia and from drastic treatment, on the principles enunciated, and she brought forth a living child weighing nearly ten pounds after a labour of a very few hours' duration.

All that I have said to-day is commonplace knowledge. I have discussed a few examples out of many not uncommon local and general conditions in the case both of the child and the mother. But I do not think the facts I have mentioned always occupy an important place in the mind of the practitioner, as, indeed, they should; for I am inclined to think that in practically all cases of forceps delivery—whether rightly or wrongly performed, excepting those of immoral expediency—one of the conditions I have described is present. There are, of course, other factors, such as a rigid muscular floor, occasionally concerned, but these are of less importance. The chief lesson I wish to convey is that all are recognizable before labour commences, and that no one who has had a previous opportunity of examining his patient should be confronted unexpectedly with serious difficulty after labour has commenced. In such circumstances the wrong treatment may be applied—perhaps necessarily applied—with inevitable danger to the life of the child and the possibility of serious maternal laceration and infection, which demand such toll and produce so much physical incapacity in women of the present day.

EXPERIMENTAL RICKETS IN RATS.

BY

V. KORENCHEVSKY, M.D.

(From the Department of Experimental Pathology, Lister Institute.*)

Historical.

The earliest attempts to produce rickets experimentally in animals were by administering food deficient in calcium (E. Voit, Baginsky, Aron and Sebauer, Götting, Miva and Stoelzner, Dibbelt and others), or in phosphates (Heubner). The view that rickets is an infectious disease receives some support from the experiments of Morpurgo, who isolated a diplococcus from spontaneous outbreaks in rats, and found that rickets ensued after he injected cultures into the animals, provided the inoculations were made at a sufficiently early age. Confinement and limitation of muscular exercise as a possible etiological factor in rickets has been studied by Findlay, Paton, and Watson, and is considered of importance by them.

The dietetic theory has recently been revived by Mellanby, whose investigations indicate that those constituents of a diet which are particularly rich in fat-soluble vitamin A possess a profound importance in connexion with the occurrence of rickets in puppies. Mellanby's conclusion is to some extent supported by the experiments of McCollum, Simmons and Parsons, Shipley and Park; but the American observers, who made their observations upon rats, found that changes more closely resembling rickets occurred in these animals when their diet, in addition to being deficient in vitamin A, was also poor in calcium salts or phosphates. Hess and McCann and Pappenheimer, who also experimented on rats, found that a diet deficient in vitamin A did not produce rickets but lack of active osteogenesis.

Lastly, different abnormalities in the function of endocrine glands have been connected with the etiology of rickets (Erdheim, Stoelzner, and others), important experiments having been conducted on this question by Erdheim.

The theories deduced from all these investigations have numerous adherents and numerous opponents.

The Present Investigation.

My own experiments were started at the end of November, 1920—that is, before the works of the American authors were published. A complete description of all the chemical and histological observations, illustrated by microphotographs and accompanied by a complete critical review of the literature on the question, is being prepared for publication. In this preliminary communication I propose to give a brief account of my experiments, and to summarize the main conclusions which I arrive at.

The experiments were conducted on rats born at the Lister Institute from stocks that had been all the time under observation. With few exceptions the rats used for separate experiments belonged to one litter.

The basal diet possessed the following composition:

Purified casein	18 grams.
Starch	52 ,,
Fat	15 ,,
Marmite	5 ,,
Orange juice	5 c.cm.
Distilled water	50 ,,

This mixture contained about 0.041 per cent. Ca and 0.22 per cent. P. In the food mixture, intended to be rich in vitamin A, a mixture of 12.5 grams of butter *plus* 2.5 grams of cod-liver oil was used as fat. For food deficient in vitamin A cottonseed oil was used.

To this basal diet was added 5 grams of saline mixture. The one used for food rich in calcium had the following composition, as recommended by the American investigators:

(N 1) Sodium chloride	5.19 grams
Magnesium sulphate	15.4 ,,
Sodium acid phosphate	10.41 ,,
Potassium phosphate	28.62 ,,
Calcium phosphate	16.20 ,,
Calcium lactate	39.00 ,,
Ferric citrate	3.54 ,,

To the diets intended to be deficient in calcium a saline mixture of the following composition was used:

(N 2) Sodium chloride	5.19 grams
Magnesium sulphate	16.4 ,,
Sodium phosphate	27.91 ,,
Potassium phosphate	28.62 ,,
Ferric citrate	3.54 ,,
Sodium bicarbonate	21.2 ,,

* This research was supported by a grant from the Medical Research Council.

Ten to twenty grams of food mixture were supplied to each animal according to age. In the later stages of the experiments with deficient diet this amount was not always wholly consumed as the appetite of the animals diminished.

In the text following we shall denote the diets by the following letters:

N Normal mixture; N —Ca normal mixture deficient in calcium; —A diet deficient in vitamin A; —A —Ca diet deficient in vitamin A and calcium.

Altogether twenty-six families of rats, comprising 183 animals, were used for the experiments. Histological examination of the ribs, humerus, and radius was carried out in every case, and in 109 animals the calcium content of the bones of the leg was determined. For histological examination the bones were incompletely decalcified in Müller's fluid, or, in important cases, undecalcified bones were cut. In the first case haematoxylin-eosin staining was employed; in the second the material was treated with $AgNO_3$ and then stained with alum carmine and eosin.

The Significance of Confinement and Lack of Exercise.—Observations were made upon 28 rats which served as controls to the various series of experiments mentioned below. The animals lived two or three together in cages 30 cm. in diameter and 15 cm. high. I have never observed any indication of rickets, nor was there any variation of the calcium content of the bones outside the normal limits for animals of the same age.

The Significance of Certain Intestinal Bacteria.—In human rickets various disturbances of the digestive processes frequently occur, and it has been supposed (Vierordt and others) that these disturbances have some bearing on the etiology of the disease. In the rats kept on —A, —A —Ca, or N —Ca diets digestive disturbances, accompanied by more or less abundant diarrhoea, were frequently observed. In view of Morpurgo's experiments on the infective nature of rickets, it seemed possible that autointoxication with toxins produced by intestinal microbes might be of significance in the mechanism of origin of rickets. Up to the present time I have conducted only one experiment on 10 rats kept on diets N —Ca and —A —Ca. To the food mixture of 5 of these rats was added a meat culture of *B. sporogenes*, *B. bifermentans*, and *B. welchii*. Two of these rats received in addition, at intervals, 1 to 2 c.cm. of a live culture of *B. sporogenes* or *B. bifermentans* subcutaneously. These experiments, however, gave no indications regarding the influence of these intestinal microbes on the production of rickets.

Influence of a Diet Deficient in either Calcium, Vitamin A, or both, upon the Bones.

General Considerations.

Before passing to the results obtained from N —Ca, diet as well as from —A and —A —Ca, I shall discuss some theoretical considerations which led me to expect certain peculiarities in the rickets developed on the above diets. As is known, animals kept on the diets named cease to grow, and after a variable interval profound cachexia develops.

It is current opinion that in infantile rickets continuous growth and a sufficiently well nourished condition of the child are essential for the development of the typical rachitic changes in the skeleton (Heubner, Fischl, Stoelzner, Pfaundler, Schlossman, Schmorl, and others). Heubner and Fischl, for instance, declare that ill-nourished, slowly growing children never become rachitic; and, according to Schmorl, the characteristic pathologico-anatomical changes in the skeleton are always less developed in weak, ill-nourished children.

In the study of human rickets, attention has naturally been devoted more to the pathological changes in the bones than to the preceding disturbance of metabolism. Rachitis I regard as a disease existing in the child in a cryptic form before the changes in the skeleton evoked by it take place. I believe that the condition may be already present in children who are emaciated and do not grow, although obvious rachitic changes in the bones begin to develop only from the moment when the organism starts growing.

Looser's investigation on "rachitis tarda" in patients whose growth was retarded and nourishment frequently poor is an important contribution to the question of rickets viewed from the above standpoint.

This excellent investigation has shown that in such patients, as well as the usual manifestations of rickets, atrophy of the bones occurs. The occurrence of osteoporosis is, however, not infrequently referred to as an argument against the diagnosis of rickets (Schmorl). The amount of osteoid tissue and the development of subchondral spongiosa appeared to be small in the cases investigated histologically by Looser. The development of periosteal osteophytes was not always observed, and, when observed, was moderate in amount. On the other hand, Ziegler regards osteoporosis as frequently accompanying rickets.

Returning to my own experiments, and taking into consideration that animals kept on diets —A and —A —Ca were in most cases in a state of retarded or inhibited growth and of more or less profoundly disturbed nutrition, one would on *a priori* grounds expect rachitis, if it is developed, to appear more in the form described by Looser.

In the diagnosis of rickets in rats I have been guided by Erdheim's excellent work on spontaneous rickets in these animals.

Whether obvious bony deformities, bending, swelling of epiphyseal junctions, spontaneous fractures, etc., were present or not, I have considered the following conditions to be essential for the diagnosis of this disease:

1. Diminution of calcium content in bones.
2. Presence of osteoid tissue in amounts distinctly exceeding the normal.
3. Enlargement and disorganization of the zone of proliferating cartilage.
4. Absence or defect of deposition of lime salts in the zone of provisional calcification.
5. Presence of periosteal osteoid tissue.
6. Absence or marked deficiency of calcareous deposition in callus after spontaneous fractures of bones.

The presence of osteoporosis in the conditions named above, as observed in a certain number of our animals, does not prevent the diagnosis of rachitis.

Effect of Feeding on the Basal Diet but without Calcium in the Salt Mixture.

The amount of calcium in the basal ration was 0.04 per cent., so that, assuming the animals consumed the whole ration, the maximum amount of calcium ingested daily was approximately 8 mg. Two types of experiments were conducted upon 13 animals in all. In the first, consisting of 9 rats, the deficient diet commenced when they were about 30 to 50 grams in weight. The experimental animals remained behind the control ones in weight, but not to such a degree as on —A diet. The rats also manifested nervous excitability and shyness.

The changes in the skeleton agree in general with those described by previous authors, and are characterized by osteoporosis with narrow layers of osteoid tissue. The zone of proliferating cartilage is but slightly changed and nearly always well calcified. Osteoporosis observed in such cases finds explanation in the increased number of osteoclasts. Spontaneous fractures are very rarely observed. The amount of calcium in the dried bones, however, was about 43 per cent. below normal, and the amount of H_2O was 23 per cent. above normal. The picture that resulted cannot be defined as rickets.

The results were quite different when the young rats kept on N —Ca diet originated from a mother who herself had been kept on this diet during the lactation period. Hitherto I have conducted only one experiment on 4 young rats. These all showed the same changes. The bony deformities were pronounced, and to the naked eye closely resembled those of human rickets. The amount of calcium decreased on the average to 64 per cent. below the normal and the amount of H_2O rose to 44·55 per cent. above the normal—that is, the calcium in the skeleton was greatly diminished. Microscopically, the enlargement of the zone of proliferating cartilage was more obvious—in one case to the extent of 20-27 layers of hypertrophied cells. This zone either contained no calcium at all or it appeared in the form of separate patches or bands, usually near the perichondrium. The ingrowth of vessels into the cartilage, when observed, was not deep, and the line of the costo-chondral junction was not markedly altered, and bent towards the bone marrow.

The spongiosa consisted of numerous trabeculae which formed a network and were thin in some rats and thicker in others. The layers of osteoid tissue were of different thickness, thin ones predominating. The cortical bone was in a state of osteoporosis. The periosteum was in places hypertrophied. The osteoblasts were in many places well defined and numerous, sometimes being arranged in several rows. The number of osteoclasts was also very great. Similar pictures in pups have been described by Dibbelt, and by Schmorl.

When there is much new osseous formation one notices that calcification has occurred over considerable areas also to a different degree, notwithstanding the fact that the calcium content of the bones was 64 per cent. below normal. These facts produce the impression that the incomplete calcification of the bone is due to calcium starvation.

In human rickets in remission calcium is as easily deposited as normally in the osteoid tissue (Schmorl), but during the process of the disease this is prevented by some cause. This difference I consider to be *essential and of great importance.*

Effect of Feeding upon the Basal Diet with the Complete Salt Mixture in which the Butter and Cod-liver Oil were replaced by an Equivalent Amount of Cotton-seed Oil.

The amount of vitamin A in this diet must have been very small.

The experiments arrange themselves naturally into three groups. In the first, the diet commenced about the age of 30 to 50 days; in the second, the mother received the deficient diet during lactation; and in the third, the mother and the father were subjected to the same dietary deficiencies before conception. In both the latter groups the same deficient diet was fed to the offspring as soon as they were capable of feeding themselves. Twenty-three animals were placed on this diet at the age of 30 to 50 days. In most cachexia developed earlier or later, and the rats became very susceptible to casual infections.

The changes occurring in the skeleton of many such cachectic rats can be characterized briefly as osteoporosis with a lack of signs of active osteogenesis and frequently increased activity of osteoclasts. The calcium content of such bones is not greatly decreased, being about 14 per cent. less than normal.

In those rats in which growth occurred, and in which the bones were examined before cachexia ensued, less osteoporosis, more osteoid tissue, and a small increase of the proliferating cartilage, were observed, and sometimes defective deposition of calcium in the zone of provisional calcification. Corresponding to this appearance the calcium content of the bones was 21 per cent. below normal. In a few cases the appearance was suggestive of slight rickets.

In one experiment a rat, after giving birth to six young, was placed on −A diet during the whole period of lactation of the young rats. The young rats, after having been separated from the mother at the expiration of a month, remained on −A diet till the time when they were killed. The chemical composition of the bones of these rats showed further deterioration, the calcium being 36 to 44 per cent. below normal, and the water 17 to 50 per cent. above normal. In accordance with this low calcium content, numerous spontaneous fractures were observed in the ribs of the young rats. However, microscopical examination revealed the picture of osteoporosis typical for −A, and in four cases osteoid tissue was observed. The thickness of the osteoid was equal to, or even somewhat exceeded, that of the calcified bone in three cases.

As is known, it is a rule that rats kept on −A diet have no offspring, and therefore the males are usually left together with the females. As an exception, however, they do bear young. This was recently observed amongst my rats in one case and amongst the rats of Dr. Zilva at the Lister Institute in three cases. I availed myself of this material in order to determine whether the feeding of parents on −A diet during the periods of conception, pregnancy, and lactation has any deteriorating effect on the condition of the skeleton in their offspring. After separation from the mother the offspring continued to be kept on −A diet. Of these, numbering 18 altogether, I have examined up to the present 12, the offspring of three mothers; 12 were examined histologically, and the skeleton of 7 of these was examined chemically. The investigation was conducted sixty-four to seventy-nine days after birth. In 7 of these 12 rats great proliferation of the cartilage cells and growing-in of blood vessels, and a picture more or less suggestive of rickets, was observed, and in 2 cases the histology was typical of rickets. The average calcium content in the whole series was 25 per cent. below normal and the water 30 per cent. above normal.

To sum up: As the result of feeding the mother during lactation both on the N −Ca diet (4 rats) and on the −A diet (6 rats) the composition of the skeleton in the offspring deteriorated sharply, but changes closely resembling rickets were obtained in an appreciable number of cases only when feeding on −A diet had been started during conception and pregnancy. In other words, if these experiments were confirmed repeatedly on a large number of animals, they would point to the significance of the condition of the parents, especially the mother, in the origin of the profound changes in the skeleton, in certain particular cases on −A diet even amounting to typical rickets. The supposition frequently advanced regarding the importance of normal nutrition of the parents at the period of conception, and of the mother during pregnancy and lactation, find experimental confirmation in our investigations as well. From this point of view the commencement of rachitic changes in the child could be sought for, not only in the conditions of its own life but also in the state of health—that is, nutrition—of its mother, and maybe of its father as well.

Vitamin A is apparently closely related to the metabolism of calcium in the organism, and particularly in the bone. The experiments of Schabad, Mellanby, Shipley, Park, McCollum, Simmonds, and Parsons, and those related above, support this view. Its action may not inappropriately be compared with that of an amboceptor, provided the analogy be not pressed too far.

Effect of Feeding upon the Basal Diet and Salt Mixture from which both Calcium and Vitamin A have been largely Removed.

This was investigated upon 27 rats. With the exception of eight, the deficient dietary commenced when the animals were three weeks to one month old. In eight cases (two families) deficient diet was given to the mother during lactation also.

The results confirm those of McCollum and his collaborators upon this point. Combined deficiency in calcium and vitamin A in the food has, in my experience, proved the most certain method to produce rickets experimentally in rats.

Rats kept on this diet manifested deformities of the skeleton which are both macroscopically and microscopically typical of rickets, provided that feeding commenced at a sufficiently early age. The amount of calcium in the bones decreased to about 46 per cent. below normal, and the amount of water increased to about 32 to 46 per cent. above normal, whilst the majority presented all the pathologic manifestations of rickets in a pronounced form; in some rats, kept on −A −Ca diet, the amount of osteoid tissue, although abnormally increased, was comparatively small. In these cases osteoporosis was especially marked, and calcium was not infrequently deposited in the zone of provisional calcification.

In animals fed on the basal diet without the saline mixture the resulting changes did not differ from those produced by deprivation of calcium alone.

Effect of Exclusion of Phosphates from the Salt Mixture.

Deprivation from phosphates in conjunction with fat-soluble deficiency was found by Shipley and Park and McCollum and Simmonds to be followed by changes indistinguishable from those of rickets. In three experiments, comprising 14 rats kept upon N and −A diets respectively, I have removed the phosphates from the salt mixture, at the same time compensating for the loss of sodium and potassium and calcium. As compared with the corresponding control animals, no special changes were observed in the bones. This apparent discrepancy is no doubt attributable to difference in phosphorus content in the basal diets used.

Effect of Castration.

Forty-five rats were castrated, seven of which were deprived both of sexual glands and spleen. When subsequently placed upon the four diets (N, N −Ca, −A, and −A −Ca) no marked influence on the chemical and histological composition of the skeleton as compared with controls was observed. My experiments did not reveal that beneficial effect which is sometimes clinically observed in man in developed osteomalacia. In some of the castrated rats even greater changes were observed in the skeleton, as compared with the corresponding control animals—for example, on −A diet. Therefore one can only state that castration performed before subjecting the animals to the special diet *did not prevent the development of rachitic changes* in the skeleton.

Conclusions.

1. The results obtained by me agree in general with the results of the experiments of Mellanby, McCollum, Simmonds, Parsons, Shipley, and Park.

2. Confinement in small cages does not evoke rickets in rats.

3. The introduction of live cultures of *B. perfringens*, *B. sporogenes*, and *B. bifermentans* with the food, and

of *B. sporogenes* and *B. bifermentans* subcutaneously, produced no visible effect on the development of rickets in rats.

4. The deficiency of the diet in calcium alone can produce changes in the skeleton of rats which present some resemblances with rickets, especially when the young rats have originated from a mother kept on the same diet during lactation.

5. Usually deficiency of food in vitamin A produces in rats impoverishment of the bones in calcium, enrichment in water, and osteoporosis with deficient osteogenesis, and in some cases a picture resembling slight rickets. Changes in the skeleton more similar to rickets, and in some cases typical of rickets, were observed in young rats on —A diet, provided their parents had been fed on —A diet during conception, pregnancy, and lactation.

6. Vitamin A has a relation to the metabolism of calcium in the organism and particularly in the bones, and therefore to the development of rickets.

7. My few experiments on the feeding of parents on food deficient in vitamin A or calcium during conception, pregnancy, and lactation suggest that this may start disturbances of metabolism in the child which, if the deficient dietary be continued after birth, result in serious disorders of the skeleton.

8. The changes typical of rickets occur most readily and most frequently in rats kept on a diet deficient both in vitamin A and calcium.

9. Castration performed before the commencement of feeding has no marked influence on the chemical and histological changes in the skeleton of rats fed on a normal diet, on diets deficient in calcium or vitamin A, or deficient in both.

In conclusion, it is my pleasant duty to record my gratitude to the Medical Research Council for affording me a grant which has enabled me to carry out this investigation, and to the Lister Institute for the hospitality of its laboratories. I am also deeply grateful to Professor C. J. Martin for his continuous sympathy and support. To Dr. R. Robison I express my thanks for advice connected with the chemical investigations; to Miss E. Luce for assistance in operations; to Miss S. Rutherford for help in the work of feeding the animals.

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THE SITE OF OPERATION FOR EMPYEMA.

BY

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THE best method of treating empyemata has always been, and probably always will be, discussed from time to time in the medical press. As a surgeon attached to a general, a children's, and a consumption hospital, consulting surgeon to a second consumption hospital, as well as having seen over five years of war, perhaps I might be allowed to express my views. In the first place, there is a sharp distinction to be drawn between the cases seen as the result of warfare and those which develop as the result of disease. There is nothing in civil practice which can reproduce what was seen during the war. Even stabs or bullet wounds in civil life are treated so soon and so thoroughly that the sepsis we saw during the war is not seen in these cases. The methods of dealing, therefore, with war cases do, and should, differ from the methods we use in civil life, and anyone who draws on his war experience too largely will be apt to err if he applies his ideas to ordinary cases. I shall only deal here with ordinary cases. It has been my fortune twice in my life to see the condition known to our fathers as empyema necessitatis—that is to say, an empyema which had not been opened but which was bursting by itself. It was interesting to note that in both cases it was bursting between the second and third ribs in front. Both cases were in children.

In dealing with a large abscess cavity with only one movable wall—namely, the lung—it is obvious that the drainage must be so arranged as to allow the lung to come up to the other walls gradually and evenly, and so obliterate the cavity. Opening at "the most dependent attainable part of the cavity" is the best way to defeat this object. The lowest and the highest points will be those where the lung on expanding will first touch the chest wall, and when that happens drainage from these points must be embarrassed. The same thing applies when the opening is either too far back or too far forward. The opening should be opposite, roughly, the deepest part of the cavity, and at that place which will be closed last. Where this place is, is not always easy to say, especially in purely local collections. The diagrams perhaps illustrate my meaning best.

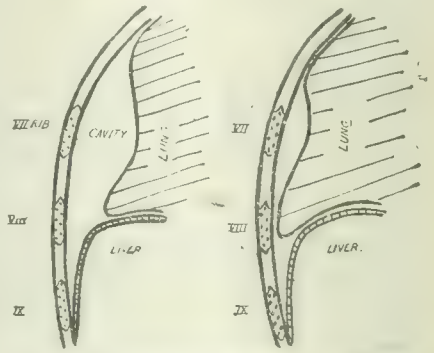


FIG. 1. Longitudinal sections of the chest, showing lower part of cavity obliterated by expanding lung.

One always teaches that the seventh rib, in front of the posterior axillary line, is the best rib to resect, but there should be no objection to coming forward to the mid-axillary, or even to the anterior axillary line, if the same level were maintained—that is to say, resecting the sixth, fifth, or even the fourth rib, as one came further and further forward.

It is the ninth rib we resect in cases of abscess or hydatid of the liver on the right side and subphrenic abscess on the left side. The ninth rib is wholly below the normal lung level in front of the posterior axillary line, and the eighth rib is below that level in front of the mid-axillary line. Only right up behind, near the erector spinae, would it be of any use resecting this rib, and then only in such a position that the expanding lung would soon render the opening useless. In spite of the authority lent to this teaching, the resection of the ninth rib for empyemata has had a very limited vogue.

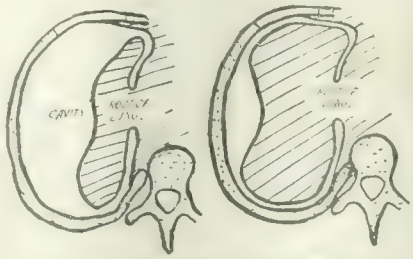


FIG. 2. Cross-sections of the chest, showing lower part of cavity obliterated by expanding lung.

In many cases the pouch of pleura between the chest wall and the diaphragm becomes obliterated below the lung level, and after resection of the ninth rib the diaphragm may be opened under the impression that it is the thickened pleura. I once saw Mr. Keetley do this, and the medical registrar, to whom he had not been very polite over the case, acidly remarked that he had wished the thoracic and not the peritoneal cavity explored.

Small operations for necrosed pieces of ribs will always be needed. The maintenance of big unhealed cavities inside the chest wall is due to certain very well known

causes. The commonest of these is bad drainage, where the lung itself has blocked the free outlet. The commonest condition found is a narrow passage into the cavity. It is these cases which, when allowed to continue too long, present for us the thickened pleura which calls for such severe methods as decortication.

In the majority, the vast majority, of such cases, which require a more or less extensive resection of ribs to allow the chest wall to fall in upon the stationary lung and so obliterate the cavity, the opening is situated too low down for good drainage. I can only now recall one, an old tuberculous case, which was as high as the sixth rib.

I am fully in accord with the three essentials laid down by Dr. Pearson, but would strongly advocate the superiority of the older method laid down by John Marshall, and brought again to our notice by Dr. Cameron Kidd, over the newer ninth rib route.

THE INTRAVENOUS INJECTION OF ANTIMONY TARTRATE IN JAPANESE BILHARZIA DISEASE.

BY

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I HAVE been awaiting for many months now the publication of accounts of the treatment of Japanese schistosomiasis by antimony tartrate. I have not seen any record in the British medical journals. It is possible that the remedy has been tried in Japan and that the account of the trial has been published in the local medical press and so has escaped my notice.

In 1919 I sent copies of two of my papers to various Japanese medical authorities notifying the success which I had obtained in the treatment of Egyptian bilharzia disease at Khartoum by antimony. The worms of Egyptian bilharzia disease and Japanese schistosomiasis are so similar anatomically and biologically, and the life-history of the Japanese bilharzia is so like that of *Schistosoma mansoni*, that one would expect that the remedy which has been found to be a specific cure in the one would have the same effect in the other disease.

I venture to think, therefore, that the following case which supports this hypothesis will be of interest to medical men, and I trust that Japanese and Chinese investigators after seeing this account will write and publish, in an English medical periodical, the conclusions, favourable or unfavourable, at which they have arrived in cases where they have applied the antimony treatment. It is in the last degree unlikely that antimony tartrate has not yet been tried in Japan and China by Japanese, Chinese, or by European medical men working in districts where bilharzia disease is prevalent.

T. A. R., a British engineer aged 50, was infected by *Schistosoma japonicum* during the years 1898-1901 whilst surveying in the "parties" in the Hunan Province of China. Although he felt weak and pulled down and had constant colicky pains in the bowels, the disease was not diagnosed till 1914, when the ova of *Schistosoma japonicum* were found in the faeces in a specimen which was being examined for *E. histolytica* (at Nairobi); ova of *Schistosoma japonicum* were again found in the faeces in 1916 by Dr. J. A. Thomson of Harrogate, and in October, 1920, by Dr. Cawston of Durban, when the diagnosis was confirmed by Dr. Murray.

Dr. Cawston, in October, 1920, gave him injections (intravenous) of antimony tartrate. Before treatment the blood was examined and gave a positive reaction with the complement deviation test—*Schistosoma haematobium*. The symptoms noticed before injection appear to have been constant colicky pains in the abdomen, the passage of blood and mucus with the stools, and attacks of diarrhoea; in fact, the symptoms of the chronic dysentery of schistosomiasis. He came under my notice on April 14th, 1921, six months after injections, when there was nothing to note on physical examination. All the organs were natural; there was no enlargement of the liver or abdomen. During the time he was under my observation, from about April 14th to June, 1921, the faeces were examined half a dozen times. They were formed, looked natural, and contained no blood or mucus; only on one occasion was an ovum found which was granular and dead. The bowels acted regularly once a day after breakfast, and there were no symptoms of intestinal bilharzia disease or any other disability, excepting that he complained of constipation and flatulence and defective digestion of starch. Whether these symptoms resulted from or were aggravated by the injections I am not prepared to say. There is evidence that they existed in some degree before he had the injections, and it is not impossible that his digestive troubles are due to the non-functioning of the liver, damaged by an abscess for which he had been operated on by Dr. Thomson some years ago, or alternatively by the invasion of the liver by the *Schistosoma japonicum*, whose habitat is that organ, which invasion may have permanently affected its function.

According to a written record which the patient showed me whilst he was under my care, Dr. F. G. Cawston at Durban on October 6th, 1920, commenced injections of potassium antimonium tartrate, beginning with a dose of ½ grain. Injections were given daily at first, later on every other day approximately. The maximum dose was 1½ grains, and the whole course extended over thirty-one days; the total amount injected was 21 grains. The ova are stated to have become granular in the same way as in the case of Egyptian bilharzia disease, and disappeared in the same way as *Schistosoma mansoni* ova disappear from the faeces during a course of antimony.

The same complement deviation reaction which had been carried out previous to injections and found positive, was found to be negative after the injections.

I publish this account because I have, with Mr. N. H. Johnson, watched the case for about three months, and we have examined the faeces six times.

There appears to be no doubt of its having been a case of Japanese schistosomiasis (Japanese bilharzia disease), contracted in the Hunan Province of China, which has been cured by the intravenous injection of antimony tartrate.

It will be interesting to learn what effect antimony compounds have on other trematode infections of the Far East—*Fasciolopsis buski*, *Clonorchis sinensis*, *Paragonimus westermanni*, and perchance of *Heterophyes heterophyes* of the Far East and of Egypt and other parts of Africa, and, lastly, on *Fasciola hepatica* (sheep rot), whether occurring erratically in man or as a parasite of herbivorous animals.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF DERMATOLOGY.

JOHN FARQUHAR CHRISTIE, M.A., M.B., President.

DISCUSSION ON THE ASSOCIATION OF SKIN TUBERCULOSIS WITH VISCERAL AND OTHER TUBERCULOUS MANIFESTATIONS.

OPENING PAPER

BY

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I MUST at the outset disclaim any special qualifications for the honour done me in asking me to introduce this subject, beyond an extensive clinical acquaintance for many years past with all forms of cutaneous tuberculosis, which is a painfully frequent feature of our hospital clinics in Manchester.

The question of the relationship of cutaneous to visceral and other forms of tuberculosis is very wide and highly speculative, but it is one of scientific and economic importance. Our discussion will be concentrated, I assume, on this practical point—How far is a subject of primary cutaneous tuberculosis liable to secondary visceral infection? We will first briefly review the other side of the picture—secondary infection of the skin from primary visceral disease, for here we are on surer ground, with a well-established sequence of events familiar to all clinical workers. The simplest form of skin tuberculosis in this class is seen in invasion of the cuticle by underlying disease of glands, bones, or joints, with the production of scrofulodermia or, at times, true lupus vulgaris. Here, of course, there is actual extension of disease by contiguity from one organ to another, in a manner analogous to malignant invasion. In the other forms of secondary skin

infection there is a gap between the original focus and the skin which is bridged by the tubercle bacillus. Instances of auto-inoculation of the skin in phthisical subjects are familiar to us all, where the sputum conveys the virus to a damaged cuticle, and where the result is generally a lesion of the type of verruca necrogenica. Then there is, very rarely, the formation of acute miliary tuberculosis of the skin in the neighbourhood of the mucous orifices, the infection being conveyed by discharges. Another well-known form of secondary skin infection is seen in cases of disseminated lupus after measles and other exanthems, where it is supposed that tubercle bacilli have been conveyed by the blood stream to the skin from a disturbed visceral focus.

Finally, there are the tuberculides. A full consideration of the tuberculides is beyond the scope of this paper, but we may note in passing that the toxic theory of their origin is being abandoned in favour of the bacillary theory. Cranston Low[1] is definite upon this point. He quotes several observers who have found tubercle bacilli in the lesions of lichen scrofulosorum, acnitis, and Bazin's disease, and it is known that at times inoculation tests in animals have given positive results. Moreover, "in very rare cases a tuberculide has developed into lupus vulgaris"—a fact which I can confirm from my own experience. Cranston Low considers the tuberculides are on a par with secondary syphilides. The bacilli do not develop lupus vulgaris because they are dead or dying, and tuberculides occur in cases where the patient is putting up a good fight against the infection and where there are sufficient antibodies in the system to ensure the destruction of bacilli in the skin. He considers that on the whole the tuberculides show the ordinary histological structures of tubercle, but on this point J. H. Stokes[2] and others disagree. On the other hand, Stokes confirms the presence of bacilli in the lesions, and explains the difference in histological features of the tuberculides as compared with lupus as being due to "different reactivity of different persons and even different tissues to the organism." In Stokes's paper we may note the remarkable fact that of 100 cases of tuberculous adenitis 10 had tuberculides.

Turning now to the question of secondary infection of the viscera from a primary tuberculous focus in the skin, we are at once on more difficult ground. Such cases, if and when they occur, cannot be capable of the same proof as those in the converse category. The evidence can only be statistical and presumptory. Visceral tuberculosis is common enough in humanity which is not affected with cutaneous tubercle, and there is plenty of *post-mortem* evidence of its frequency in cases where during life the disease had not been suspected—a fact which the late Dr. T. Harris of Manchester made prominent. One would *a priori* expect tuberculous skin patients to have by reason of their diathesis an increased susceptibility to visceral infection by the ordinary channels, though the actual converse has been argued and a degree of immunity claimed for them. The literature on the subject which I have been able to find—and I must thank the librarians of the British Medical Association and the Royal Society of Medicine for their very kind help in the matter—is somewhat scattered and fragmentary.

The most complete scientific investigation is perhaps that by H. Forchammer[3] on "Tuberculosis of the lungs as a cause of death in cases of lupus vulgaris." He quotes Jadassohn as saying: "Patients with chronic skin tuberculosis, especially lupus vulgaris, suffer remarkably often (in 30 per cent. of all cases) from lung tubercle, but other forms of visceral tubercle are infrequent." Jadassohn, moreover, states that where lupus and tuberculosis of the lungs are found in conjunction the rule is that the skin is the primary infection. This is in accordance with Lenglet,[4] who says: "The tuberculous do not become lupus cases, but often lupus cases become tuberculous." Forchammer again quotes Bardeleben, who wrote in 1871: "The bulk of healed lupus cases die before the age of 30 from phthisis," and regards this opinion as more valuable, inasmuch as Bardeleben in his day was unaware of the etiology of lupus. Besnier again quotes Lailler as saying that lupus cases, especially the rapidly growing and destructive forms, are very prone to phthisis; and Besnier[5] himself agrees that lupus patients, and indeed all people with localized tuberculosis, live in especial danger of general infection. Actually 21 per cent. of his cases of lupus died of consumption. Renouard subscribes to the same opinion. Demme (Berne, 1882) gives statistics from the Children's Hospital; out of a total of 1,566 cases of peripheral localization of tubercle (including 823 of bone and joint cases, 692 gland cases, and 51 of lupus), there were visceral lesions in 366, and of the 51 lupus cases no less than 40 per cent. developed visceral disease (9 in the lungs, 4 in the abdomen, and 9 in the meninges).

Eibe (Denmark, 1885) writes of a number of tuberculous children observed from 5 to 15 years after leaving hospital; 198 were cases of bone and joint disease, of whom 20 per cent. died; 115 were cases of tuberculous glands and scrofulodermia, of whom also 20 per cent. died; and 28 were cases of lupus, with a fatal issue in 40 per cent. Of these 28 lupus cases 7 were healed, 10 still had lupus, and 11 died—6 of the latter of lung tuberculosis. Forchammer points out that in these lists the skin cases lead to a much higher percentage of general infection than the others (bones, glands, etc.).

Forchammer himself bases his opinion on ten years' experience up to 1906 at the Light Institute in Copenhagen. He cites 1,190 cases of lupus. Of these 143 died up to 1908, 62 of non-tuberculous and 81 of tuberculous disease, the bulk of them being pulmonary phthisis. In all the fatal cases the lupus involved the face (skin and mucous membrane). There were actually 58 cases of lupus which died of pulmonary disease, and of these 50 developed during the treatment of the lupus. After a detailed account of all his cases, Forchammer concludes by emphasizing the relative frequency of acute tuberculosis of the lungs in the *early* stages of lupus, and says that laboratory experiments (Jadassohn) prove there is no qualitative difference between the virulence of skin and lung tuberculosis. But in almost his last sentence he does not deny the possibility of the coincidence of both diseases being due to a double infection—of the skin by a milder and of the lungs by a stronger strain of bacillus.

Leloir[6] says pulmonary tuberculosis occurs in 30 per cent. of all cases of lupus. Stelwagon[7] quotes Bender (*Deut. med. Woch.*, June 17th, 1886), who found out of 159 cases of lupus 62.3 per cent. showed present or past signs of general tuberculosis; and also Sachs (*Archiv*, 1886), who only found 15 out of 115 cases of lupus in whom no past or present or hereditary tuberculosis could be discovered. Stelwagon himself says that in most cases the health remains good and uninvolved. Sequeira[8] finds lupus often associated with other tuberculous affections, notably of the bones, glands, and joints, but says that phthisis is uncommon.

McLeod, in his latest work, remarks that cases are known of general tuberculosis originating from lupus. It is rare, however, in lupus for the virus to attack deeper parts—glands, joints, or periosteum—and where these are involved the lupus is generally secondary to an original focus beneath the skin. Later on he says that other tuberculous foci predispose to lupus, and that a considerable proportion of lupus patients suffer from phthisis or from local tuberculous stigmata in glands, joints, or bones.

J. E. Adler[9] writes in 1909: "Tuberculosis of the skin occurring in association with tuberculosis of internal organs is so rare," and describes a few cases he has seen at the skin department of the London Hospital. From 1901 to 1908 it appears that 660 cases of lupus were treated at the hospital by the Finsen light. Of these, 3 died of acute pulmonary tuberculosis, and the interesting fact is noted that the skin cleared towards the fatal issue, as has been the case in fatal skin disorders of other kinds that one has seen. Adler mentions also that in six years, 1900 to 1905, 831 cases of pulmonary tuberculosis were admitted to the London Hospital. There were signs of tuberculosis of the skin in only 2 of these. In one (fatal phthisis) there was a healed and scarred lupus on admission, and in the other active lupus but "doubtful phthisis."

Nathan Raw writes in the British Medical Journal in 1905 that of 3,500 cases of phthisis only one had lupus vulgaris. Dr. John Rennie, Tuberculosis Medical Officer, Sheffield, writes me: "Out of many thousands of cases of tuberculosis of the lung that have come under my notice I can only remember three cases who had fairly extensive lupus and died of lung disease with tubercle bacilli in their sputum. In each case the lung disease was of a fairly acute type."

Let us finally go back a generation or so and refer to Kaposi, who devotes a special chapter in Hebra's manual to the "influence of lupus on the constitution." Briefly

summarized, this famous observer's opinion is that in the majority of cases the individual's ordinary well-being is absolutely unaffected by lupus. "Very many of the patients are neither anaemic nor have any glandular enlargements, nor caries, nor necrosis, even though the lupus may have lasted for some years." On the other hand, he admits the occurrence of pulmonary phthisis in some widespread cases.

The family history in tuberculosis of the skin has some bearing on our subject. It is of significance as showing either a hereditary predisposition or the presence of another member of the family who may serve as the source of infection; or both factors may co-operate. Sequeira found that 40 per cent. of his hospital lupus cases furnished a family history of tuberculosis. I have myself found in hospital cases a tuberculous family history in 23 per cent. of all cases of lupus. Bender gives a hereditary predisposition in 33 per cent. of cases. As regards the incidence of tuberculosis of the skin compared with other forms of tuberculosis, Dr. Osborne, deputy M.O.H. for the Borough of Salford, has kindly furnished me with the following figures, which signify the notification of all forms of tuberculosis for the last five years:

Lungs	3,036
Glands	271
Bones	199
Abdomen	149
Skin	77
Other forms	123

It will be seen that the skin cases furnish about 2 per cent. of all cases. In the city of Manchester in 1913 the proportion of skin tuberculosis to other forms was about 3.5 per cent. (the figures are gathered from the annual report by Dr. Niven, M.O.H.).

There is, of course, the greatest difficulty in keeping in touch with the after-history of patients who attend a crowded clinic in a large town. The compulsory notification of all forms of tuberculosis, however, is a help in this direction, at least as regards those who remain in the locality. Dr. Sutherland, Tuberculosis Medical Officer for the City of Manchester, has been kind enough to give me details of cases which were notified from the Manchester and Salford Hospital for Skin Diseases, mostly in 1913–14, as tuberculosis of the skin. In 72 of these cases the after-history can be traced to the present time. Eight of the cases have been subsequently notified as suffering from other forms of tuberculosis (2 of glands, 4 lungs, 2 larynx). There have been 5 deaths, 3 of these being unquestionably due to visceral tuberculosis (pulmonary tuberculosis in 2, and phthisis and tuberculous meningitis in the third case). Of the other 2 deaths, in one the cause is unknown and the other died of "bronchitis and cardiac disease." Thus we find a series of lupus cases taken in the order of their notification about the year 1913 showing by 1921 visceral tuberculous disease in 11 per cent., with a fatal issue in about 4 or 5 per cent. I am aware that the cases examined are too few—a longer list should have been prepared—but for this the time allowed has been inadequate.

Dr. A. Stanley Griffith of Cambridge has during the past few years examined material excised from cases of lupus vulgaris sent from our hospital. He writes: "A large proportion in this series yielded bovine tubercle bacilli, but taking all my cases together the proportion is about 50 per cent. The great majority of the cultures from your cases were attenuated (this is usual with lupus cultures). Three of the bovine strains were increased in virulence to standard level by passage through animals." Two cases he cites as of special interest, inasmuch as when first investigated the strains isolated were fully virulent bovine tubercle bacilli, whereas specimens from the same cases four to five years later showed distinct attenuation.

Dr. Richard Marsden of Manchester has kindly examined a series of lupus cases taken at random from our hospital clinic, with the object of discovering signs of visceral tuberculosis. I give his report:

Dr. Marsden's Report.

Fifty cases of lupus vulgaris examined for signs of visceral tuberculosis. Of these:

One had active phthisis. In this case the lupus had succeeded the lung disease.

Two had the appearance of chronic phthisis, but cough was the only definite symptom, and there were no other signs of activity. No tubercle bacilli in sputum.

Two presented evidence of old and apparently arrested phthisis.

In the remaining 45 cases there were no physical signs distinctive of recent or old phthisis. Twenty-four of these were beyond suspicion, but in the remaining 21 their physical condition, build, and poor percussion resonance over the apices, allowed suspicion of tuberculous predisposition.

There was a family history of tubercle in 12 cases.

The discrepancy between the figures I have given you and those of Leloir and others will be noted at once. One would not for a moment doubt the accuracy of these statistics, but at least they are open to misinterpretation. Some of the Continental observers' alarming percentage of visceral tuberculosis comes as a shock to anyone dealing with cutaneous tuberculosis on a large scale in this country, and one can but doubt the deduction implied. My own experience tallies with Kaposi's, and I have long been impressed by the general hardiness and well-being in large numbers of lupus patients, many of whom one necessarily sees through a long period of years. I would offer a simple explanation of the alarmists' figures: their lupus patients developed pulmonary and other forms of visceral tuberculosis simply because, in the first place, they had the constitutional predisposition; and, secondly, because from their environment, hygienic conditions, diet, and so forth, they contracted visceral tuberculosis by the ordinary channels. In other words, the lupus itself was not causal. Had it been so, one would reasonably expect more uniformity in the relative proportion of lupus with visceral cases in all countries.

Presuming we have a case of lupus that is going to infect the system, what is the likeliest path of infection? Undoubtedly the lymphatic channels. Now, I have no doubt that such infection does occur, but relatively seldom. I have been struck by the absence of obvious gland enlargement in the drainage area covering tracts of *non-ulcerated* lupus in many cases, some of long standing. It is, of course, another story when ulceration occurs and staphylococci come into play. When one considers the high percentage of cases of facial lupus, very many of which are complicated with, or are indeed secondary to, intranasal or buccal-cavity lupus, it is really remarkable that more visceral cases do not occur, for here we have direct contact with the respiratory or alimentary tracts.

In conclusion I would say:

1. That whereas the causal relationship of primary visceral with secondary cutaneous tuberculosis is already established,

2. The contrary causal relationship is not yet definitely proved. That probably infection of the viscera from the skin does occasionally occur, but that the majority of cases of cutaneous tuberculosis in this respect remain "good lives."

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DISCUSSION.

Dr. W. KENNETH WILLS, O.B.E. (Bristol), said that the statistics at the Bristol General Hospital in 1908 showed that among 100 consecutive cases of lupus there were only 3 per cent. of visceral tuberculosis, while 2 per cent. of 100 persons taken at random were found to be suffering from phthisis. It had been suggested by Dr. Newman Neild of Bristol that lupus vulgaris in children was caused by infection of small abrasions by means of polluted handkerchiefs used by tuberculous patients who might have no family relationship to the child. One might expect that where there was a heavy incidence of tuberculosis among the population there would be also a heavy incidence of lupus vulgaris. But this should not be regarded as due to a lower resistance to tubercle in the patient himself, but to the constant atmosphere of external infections. By injudicious treatment the focal infection of lupus might be extended into visceral tuberculosis; he might mention one case which developed Addison's disease while being treated with tuberculin.

Dr. R. CRANSTON LOW (Edinburgh) said that he thought that the question of lupus and internal tuberculosis should

be looked at from an opposite point of view—namely, that one should consider, not how many cases of lupus subsequently developed internal tubercle, but the number of cases of internal tuberculosis who had lupus also. The general impression of the speaker was that many cases of lupus showed a very good condition of general health. On the other hand, the type of individual liable to internal tuberculosis was also liable to lupus, and one would expect the conditions often to be associated. But those cases in which the skin was primarily infected seemed to lead to a high degree of resistance and a consequent good opposition to general tubercle. It must be remembered that a high proportion of the population had tubercle in some form at some time, and it might be that in the lupus cases the other forms of tuberculosis were looked for and found, while if no lupus developed the cases were not examined for any internal lesion.

Dr. H. MacCormac, C.B.E. (London), said that one of the striking features of most cases of lupus was the distribution of the lesions in the neighbourhood of the orifices of the body—the nose, mouth, and anus. The whole question of the connexion of visceral and skin disease depended upon whether the infection was by the blood stream or by local inoculation. If by the former—and the disseminated type of lupus following measles suggested this—then in these cases of focus of primary visceral disease must be admitted.

Dr. S. E. Dore (London) said he would like to support Dr. Lancashire in his main contention as to the rarity of visceral tuberculosis in cases of ordinary lupus vulgaris. He (the speaker) had seen a few cases in which there was or had been slight lung trouble, but he had never seen a single case of advanced pulmonary tuberculosis synchronizing with lupus vulgaris. It was difficult to follow up the cases to their final termination, but lupus cases attended skin departments over long periods, and the only fatal cases the speaker knew of had unfortunately died of carcinoma, with or independently of *x*-ray treatment. The reason for this discrepancy was not easy to explain; there might be an auto-vaccination from the local lesion, or possibly lupus was due to a different strain of bacillus, or upon anatomical grounds; it was unlikely for lupus to infect visceral organs. Possibly in the cases in which it did occur it was due to scraping or other operative measures or to tuberculin injections leading to dissemination of the bacilli, and he would like to ask Dr. Lancashire if he had any evidence in favour of his hypothesis. For in some cases no doubt the skin and viscera were infected simultaneously. Probably the anatomical disposition of the disease had a good deal to do with its clinical manifestations and behaviour; the diffuse infiltration of scrofulodermia, spreading from a diseased gland, was in some ways different from the ordinary lupus patch; inoculation into the horny layers of the skin, often from bovine tuberculosis, produced anatomical tubercle or warty lupus; bacillary emboli spreading by means of the blood stream were probably the cause of the tuberculides, although in lupus following measles it was difficult to account for the multiple patches of lupus by local inoculation from without.

DISCUSSION ON CUTANEOUS SENSITIZATION AND FOCAL SEPSIS IN THE ETIOLOGY OF CERTAIN SKIN AFFECTIONS.

OPENING PAPER

BY

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PART I.—PROTEIN SENSITIZATION.

The basis of our knowledge of the subject of protein sensitization is the experimental work that has been carried out on hay fever. Apart from hay fever, we know now, chiefly as the result of Chandler Walker's[1] work, that a considerable percentage of patients with true asthma are sensitive to one or more proteins, either of animal, vegetable, or bacterial origin, the asthma being part of a general reaction in the individual towards the offending protein; successful treatment has resulted either by preventing the patient from exposure to the protein to which he is susceptible, or by giving injections of it in varying dilution whereby he is desensitized. It has long been noted that asthma is frequently associated with urticaria or eczema—indeed, Sir Andrew Clark[2] suggested that asthma was due to an urticarial swelling of the bronchial mucous membrane—and investigations have now been carried out in order to determine the sensibility of patients with urticaria and eczema towards various foreign proteins, principally those contained in food substances.

Thus Schloss[3] in 1915 reported his observations on forty-three cases of food-idiosyncrasy in children. He pointed out that the toxic disturbances due to food intolerance were urticaria and angeio-neurotic oedema, eczema, asthma, and bronchitis, gastro-intestinal symptoms—vomiting, pain, and diarrhoea—and eosinophilia. Proteins to which he discovered idiosyncrasies in his patients were those of milk, egg, beef, wheat, rice, and other cereals, various nuts, and horse-protein. As a rule susceptibility towards more than one protein was found in each case. He showed that positive cutaneous reactions were given towards the proteins of the toxic foods, and he noted—a fact I particularly wish to emphasize—that the cutaneous reactions, and also the toxic disturbances, might disappear for some time after food poisoning. Thus in four cases of allergy to egg the reaction disappeared for several weeks after illness due to ingestion of egg. The same phenomenon, of course, is seen in experiments on anaphylactic shock in animals, for, when an animal recovers from an intoxicating dose of protein, it becomes temporarily immune to further injections (anti-anaphylaxis); susceptibility is again, however, developed in from one to three months.

In two of Schloss's patients it was possible to carry out observations on the occurrence of anti-anaphylaxis:

> "Both patients reacted to the ingestion of egg by the development of general urticaria, which appeared within one to three hours. Following each attack the cutaneous reaction disappeared for from twenty-two to forty days, and during this period the ingestion of egg was without results. With the reappearance of the reaction egg again caused the usual symptoms. This observation was made a number of times on both patients. These results serve to explain how anaphylactic disturbances may be intermittent or cyclic, even though the food responsible was ingested continuously. They also indicate the necessity of making repeated tests in suspected cases."

At the same time, by giving a food substance to which there is an idiosyncrasy in gradually increasing quantities immunity may be established, and the cutaneous reaction will then disappear.

Since Schloss's work numerous important papers have been written upon this subject, although they do not appear to have obtained much recognition in this country. White,[4] in a preliminary report, stated that in eczematous infants fat and starch were usually present in excess in the faeces, and he also reported results of cutaneous tests, for which he used fat-free milk, egg albumen, salt-free butter, lactose, and oatmeal water. His observations at that time, however, were probably of little value, for he stated that the "maximum result observed has been a pink-red elevated papule, never a wheal or vesicle," and it is therefore probable that many reactions which he regarded as positive were not really so. MacBride and Schorer,[5] in a paper on "Erythematous and urticarial eruptions resulting from sensitization to certain foods," discuss the theory of anaphylaxis, and make the interesting observation that animal intestinal parasites are capable of rendering certain foods toxic—for example, eggs—and that destruction of the parasites may produce immunity to the food in question. Other important papers have been published by Blackfan,[6] Towle,[7] Highman and Michael,[8] Ramirez,[9] and Engman and Wander.[10] References to these will be made in the second part of my paper, especially to that by Engman and Wander.

Causes of Protein Sensitization.

Influence of Heredity.—There is no question that heredity is a very important factor in many cases of protein sensitization, and it is interesting to note that Czerny laid stress on the hereditary factor in the genesis of his exudative diathesis. Cooke and Vander Veer[11] obtained a family history of the disease in patients with hay fever in a considerable percentage of their cases, and Freeman[12] has published some striking charts showing how all the "toxic idiopathies," as he terms them, run in families: and there is no doubt that sensitized persons

transmit to their offspring, not necessarily their own specific susceptibility, but "an unusual capacity for developing bioplastic reactivities to any foreign protein." (Cooke and Vander Veer). In my own cases of asthma and anaphylactic eczema the family history has been in some instances very striking. Thus, in one family the father, whom I have not seen, is an asthmatic, the daughter has hay fever, and the boy came to me with eczema due to oats, and he also suffered from urticaria whenever he ate strawberries.

Influence of Gastro-intestinal Disease.—It is probable that acquired sensitization to food and bacterial proteins depends frequently on the state of the alimentary canal, and that incomplete digestion, or a catarrhal condition of the intestinal mucous membrane, may result in the absorption of proteins direct into the blood stream, thereby rendering them capable of acting as antigens. Barnathon[13] states that he was able to cure urticaria in a woman, whose attacks were produced by shellfish, when he gave her pepsin and hydrochloric acid for her achlorhydria.

The Nature of Protein Sensitization.

To sum up our present knowledge of protein sensitization, we may say that certain persons are peculiarly liable to develop toxic symptoms when exposed to the influence of certain food, animal, plant, or bacterial proteins, drugs, chemicals, etc.; that this tendency is very markedly hereditary, and that idiosyncrasy towards more than one substance is the rule. How far the morbid reactions—asthma, urticaria, and gastro-intestinal disturbances—which result from these idiosyncrasies are dependent on anaphylaxis, it is difficult to say. Freeman,[12] who prefers the name "toxic idiopathies," says that they "do not fall into line with the phenomena of anaphylaxy as demonstrated on a guinea-pig"; but this is certainly not invariably true, for, as Schloss has remarked, in cases of marked allergy to egg or milk, in which the patients' symptoms were comparable to anaphylactic shock in animals, it was possible passively to sensitize guinea-pigs to the proteins of these foods by a preliminary injection of the patient's blood or serum, and the transmission of passive anaphylaxis to guinea-pigs was also obtained by Bruck in cases of urticaria due to pork, and by Flandin and Tzanck in that due to mussels. Moreover, Widal has shown that in urticaria of alimentary origin the outbreak of the eruption is preceded by a *crise hémoclasique*, with fall of blood pressure and sudden leucopenia, exactly comparable to that observed in animals with anaphylactic shock.

It is difficult to explain susceptibility towards non-protein drugs, such as quinine, or towards external irritants, on the grounds of anaphylactic sensitization, and yet the accompanying phenomena are often so similar to those of true anaphylaxis towards protein substances as to suggest that they are closely related.

Cutaneous Tests for Protein Sensitization.

Without entering upon a lengthy discussion of the subject, I may say that, in my opinion, the cutaneous tests are of very great value, but too much must not be expected of them; a strong reaction is almost always an important aid to diagnosis and treatment; a doubtful reaction may be equally important, or of no practical significance at all. It must also be remembered that group reactions occur; thus a horse asthmatic will give a strong reaction to horse protein; and a positive, though smaller, reaction to other members of the horse family such as the zebra, onega, donkey, etc., and a person sensitive to oat will probably also give reactions to rice, barley, rye, but not necessarily to wheat. This grouping presumably depends on a kindred chemical composition.

Local Sensitization of the Skin.

A fact which I think is of considerable importance is that certain portions of the skin may become sensitive to external irritants, or to toxins absorbed from within, while other portions remain quite immune. Markley[14] has published a remarkable instance of a woman who suffered from an acute erythematous papular eruption, involving the face, neck, chest, and anterior surfaces of the forearms. Eventually this was shown to be due to the fact that she was in the habit of cleaning out a guinea-pig hutch and allowing the animal to run about over her shoulders. Absence from home always resulted in the rapid disappearance of the eruption, and removal of the guinea-pig was followed by permanent cure. Tests were made with guinea-pig hair applied to the skin for some hours. It was found that application of the hair to parts of the skin that had been involved in the original eruption produced an acute dermatitis, with vesication, which lasted for three days; whereas the skin, in places where no eruption had occurred, remained unaffected even after six hours' application of the hair. Control tests were made on another person, and with the hair of other animals, with negative result.

Numerous other examples of this acquired local susceptibility of the skin could be given, and, of course von Pirquet observed the phenomenon in his work with tuberculin, for he found that the skin of his left arm, which he habitually used for experiments, was sensitized to tuberculin in a dilution of 1 in 1,000, while that of his right arm was unaffected by a solution ten times as concentrated.

FOCAL SEPSIS.

We must now consider the question of focal sepsis in its relationship to dermatology. By focal sepsis we mean a chronic infection of some region of the body, the local resistance of the tissues being inadequate, so that bacteria are capable of active growth, and of producing, therefore, toxins which are absorbed into the system, and of themselves passing into the blood stream, whereby an actual bacteriaemia results. It is not clear as yet to what extent the toxic disturbances resulting from a focal infection depend on the direct action of bacterial toxins, and to what extent they are anaphylactic or allergic manifestations, the body having become sensitized to the protein of the pathogenic bacteria, but I do not propose to discuss this question.

By far the commonest primary foci of infection are the teeth, the tonsils, the nasopharynx and nasal sinuses, and possibly the intestines. It is, however, very difficult to estimate the extent to which infection from the intestines occurs, owing to the complexity and enormous variety of micro-organisms that abound in them. Freeman,[12] however, quotes a most interesting case, communicated by Dr. John Matthews, of severe asthma, in which no infection of the bronchi was found, but in whom a history of recurrent diarrhoea was obtained. Examination of the faeces showed infection with *B. pyocyaneus*, and administration of a vaccine of this organism cured both the asthma and the diarrhoea. There seems little doubt that the bowel may be a secondary focus for chronic *Streptococcus longus* infection, the primary foci being usually those above-mentioned, and in cases of intestinal stasis it is probable that toxaemia occurs not only from the products of excessive putrefaction and fermentation, but also from the *B. coli communis* and variants of the *B. coli* group. It must also be remembered that in persons in whom digestion and assimilation are incomplete, or who suffer from inflammatory conditions of the intestinal mucous membrane, protein substances, which are capable of acting as toxic antigens, may be absorbed direct into the blood stream and provoke anaphylactic reactions.

The importance of oral sepsis and chronic infection in the upper respiratory passages is twofold; not only may direct intoxication from them occur, but the constant swallowing of pus from such foci will set up gastritis, and the stomach, should its secretion of hydrochloric acid fail, as is often the case, will allow virulent living organisms to pass into the intestines, and invasion of the intestinal wall and mesenteric glands may result. Not only is a secondary infective focus thus created, but, in the presence of an abnormal bacterial flora, excessive fermentation and putrefaction of foodstuffs occur with the formation of highly toxic substances. For a discussion on this subject I would refer you to the writings of Bassler.

Apart from the foci already mentioned, other possible ones exist, such as the appendix, the gall bladder, the lungs, the ear, the kidneys and bladder, the posterior urethra, the prostate and seminal vesicles, and the female pelvic organs. One must not forget, too, that the skin itself may be a source of dangerous infection.

Unfortunately in many cases, although the primary sources of infection may be dealt with satisfactorily, they have existed so long that secondary foci, such as the intestines and lymphatic glands, have become established,

and treatment is then apt to be unsatisfactory; one sees, indeed, persons whose tissues seem saturated with infection beyond hope of repair.

PART II.

In this second part of my paper I propose to consider some of the diseases of the skin of whose association with focal infection or protein sensitization there is definite proof, and some in which such association is probable but has not yet been certainly demonstrated.

Erythema-Urticaria-Purpura Group.

The various conditions included in this group, like eczema, are not, of course, diseases of definite entity, but merely represent cutaneous reactions towards a great variety of toxic agents, which may affect the skin from within or without. They form a series of reactions of different intensity, and may all be present in the same person, and apparently be produced by the same toxic substance.

Certain forms of erythema, however, have sufficiently definite clinical characteristics to merit a descriptive epithet, although, as Osler pointed out,

> "They belong to one family and are characterized by the similarity of the conditions under which they occur, the frequency with which the lesions are substituted, the one for the other, in the same patient at different times, the tendency to recurrence, often through a long period of years, and lastly the identity of the visceral manifestations."

I shall here deal only with erythema multiforme and erythema nodosum.

Erythema Multiforme.

Although the individual lesions in this eruption vary considerably, the appearance of the more typical ones and their distribution are fairly characteristic, and diagnosis is usually easy. Most textbooks, in describing the etiology, state that the eruption may occur as a result of the ingestion of certain foods and drugs, and after the administration of antitoxic serums, or after vaccination. Personally I have never seen a really typical case associated either with the taking of food or drugs, or with the giving of serums. I believe that the classical type of the eruption, as described by Hebra, is rarely, if ever, due to the above causes, but is probably always of bacterial origin, the organism being in most cases a haemolytic streptococcus, as in purpura haemorrhagica. A tonsillitis of varying severity often precedes an outbreak of the eruption, and, although the association of erythema multiforme with that medley of infective symptoms we call "rheumatism" may have been exaggerated, it has been sufficiently common in my experience to make me insist on every case that I see in a child or young adult being taken into hospital, watched most carefully for signs of endocarditis, and examined and treated for foci of infection. One of the most widespread eruptions of erythema multiforme that I have seen occurred in a boy with chronic rheumatic heart disease within a few hours of tonsillectomy, and the fact that the eruption recurs periodically in certain persons suggests that, like asthma and some forms of urticaria and eczema, it is an anaphylactic phenomenon.

I have recently had the opportunity of observing a case of recurrent erythema iris over a period of several months.

> The patient is a young lady, and her first attack occurred some six years ago. The eruption is of the classical iris type, appears chiefly on the backs of the hands and wrists, and on the mucous membrane of the lips and tongue, and on the feet and ankles. At first the attacks occurred at intervals of about three months, but when she came to me in December, 1919, they were becoming more frequent. Her teeth are not obviously infected, but her tonsils, though small, are very scarred, chiefly as the result of an inadequate attempt to remove them in early life, and contain septic material. I discussed the advisability of enucleation of the tonsils with her, but she was anxious, if possible, to avoid this. I therefore asked Dr. Eyre to prepare a streptococcal vaccine from the septic material in the tonsillar crypts. This he did, and she was vaccinated over a period of ten months. During this time the attacks became less severe and less frequent, and finally ceased altogether, and she has remained well for about seven months since the vaccines were discontinued. Another attack, however, has recently occurred, and she has now consented to have the tonsils enucleated. The streptococcal vaccine used may have acted as a non-specific protein, but, if the enucleation of the tonsils leads to complete cessation of the attacks, I think we may fairly conclude that the erythema iris was due to infection from the tonsils.

The blood destruction, with resulting anaemia, that occurs during an attack of erythema multiforme probably depends on the haemolytic properties of the infecting streptococcus. One significant fact is that in six cases of erythema multiforme tested by Engman and Wander[10] the cutaneous reactions were all negative, but only food proteins, and not bacterial ones, were used.

Erythema Nodosum.

Much that has been said concerning erythema multiforme applies to this condition. Its association with rheumatic lesions, such as endocarditis and arthritis, is too common to be accidental, and there is no question that in children, at any rate, every case should be kept in bed and the heart carefully watched. It has been said that it does not tend to recur, but I have seen a child with rheumatic heart disease in two separate attacks, and there was a history of a third. The majority of cases are, I think, unquestionably due to streptococcal infection, and Finger, quoted by Abt,[15] found streptococci in the inflammatory lesions. Rosenow[16] claims to have isolated from the nodules a polymorphous diphtheroid closely resembling in some stages a streptococcus, and this he believes to be the causative organism. Stokes[17] considers that there are two groups of cases, (1) due to streptococcal infection, and (2) due to tuberculosis, and Landouzy describes a case in which he found a tubercle bacillus in a nodule, and was able to tuberculize a guinea-pig. One cannot help feeling that these cases associated with tuberculosis are possibly really examples of Bazin's erythema induratum.

> Levinsohn[18] has published a case of a lady who was subject to recurrent attacks of severe erythema nodosum over a period of many years. There was no evidence of tuberculosis, and the only focus of infection discovered was the teeth; treatment was undertaken with a stock vaccine containing 800 million streptococci and 400 million pneumococci to each cubic centimetre. A feature of the case was that at the sites of the vaccine injections swollen nodules of the erythema nodosum type appeared, and after a dose of 0.5 c.cm. the reaction was so intense that suppuration was suspected, and the lesions on the legs were much aggravated. Eventually with smaller doses complete recovery ensued. The patient had not previously been entirely free from the eruption during a period of four years. Although in this instance the original source of infection appeared to be the teeth, the portal of entry in most cases is probably the tonsils and nasopharynx, as in rheumatic fever.

Urticaria and Angeioneurotic Oedema.

Urticaria and angeioneurotic oedema—which, as Osler says, is but urticaria "writ large"—are the commonest cutaneous reactions in cases of protein sensitization, and in some instances, at any rate, the eruption is a true anaphylactic phenomenon. As an example, Schloss's classical case may be quoted:

> A boy, aged 8, was extremely sensitive to eggs. When ten days old he had had an attack of diarrhoea, for which he was given the white of an egg in barley water, and no untoward symptoms occurred. When fourteen months old he was again given egg, and he at once developed urticaria and oedema of his lips and tongue. The cutaneous reaction towards egg-white was strongly positive. It is probable that the egg-white given in infancy was undigested and partly absorbed into the blood unchanged, and thus sensitization occurred.

For a full discussion on food sensitization in urticaria and angeioneurotic oedema, with reports of cases and references to literature, I would refer you to papers by MacBride and Schorer,[5] and by Highman and Michael.[8] Apparently in none of the reported cases of chronic urticaria tested by them were bacterial proteins used, and, although perhaps most cases of chronically recurring urticaria are due to an idiosyncrasy towards one or more food proteins, there is, nevertheless, a very important group of cases, sometimes with angeioneurotic symptoms, in which the toxic agent is evidently bacterial. These cases are commoner in women than in men, and the eruption is usually associated with symptoms of hyperthyroidism—namely, fullness or actual enlargement of the thyroid, flushing and excessive sweating on the slightest exertion, tachycardia, and the tumultuous action of the heart that occurs in true Graves's disease. The urticaria is usually apt to appear at night-time, when there is frequently a slight rise of temperature, and can nearly always be provoked by undue exertion or excitement. The patients are often highly nervous and sometimes hysterical, and their urticaria, like the other symptoms, is often labelled a neurosis and left at that. But in most cases

their symptoms of hyperthyroidism, their nervous irritability, and their urticaria, would appear to be due to chronic infection, though their nervous system may be naturally unstable.

The following case of this type may be cited:

A lady came to me for a chronic urticarial eruption dating from an acute attack of tonsillitis eight months previously. Three months later she had had an attack of acute rheumatism following a sore throat, at which time her rash was so intense that the possibility of scarlet fever was considered. She remained in bed for six weeks, but the rash has persisted ever since, and she has also had almost constant evening pyrexia. She was for a time kept on a strict milk diet without any benefit. The history pointed to the tonsils being the source of infection, and no other focus was found. They have now been removed, and since her operation, not only has her general health improved, but her rash has become progressively slighter, although it is too early as yet to say whether vaccine treatment will be necessary to produce complete desensitization.

A word may be said concerning urticaria papulosa. It might be thought that this eruption would prove to be an anaphylactic reaction towards food proteins, but Engman and Wander[10] tested four cases, two of them several times, with negative results. The disease would appear to be most commonly associated with an excessive carbohydrate dietary, but its actual cause has yet to be determined.

Herpes Zoster, Herpes Catarrhalis, and Herpes Genitalis.

None of these varieties of herpes can be considered as specific diseases, but may be produced by more than one toxin, acting in the case of zoster on the posterior root ganglia and in the other two on the peripheral nerve-endings. All three varieties may apparently be caused by arsenic; in most cases they are probably due to infection. Herpes catarrhalis is, of course, a frequent symptom of the common cold, pneumonia, and cerebro-spinal meningitis, but may in certain people invariably result from the eating of a certain article of food, such as cheese; and Solomons[19] has recently described an interesting case in which it appeared to be a manifestation of vicarious menstruation.

With regard to zoster, a great deal has been written of late concerning its association with varicella, and it is probable that the same organism may be capable of producing both diseases. The work of Rosenow and Oftedale,[20] however, would suggest that in most cases herpes zoster is due to infection of the posterior root ganglia with a streptococcus of the *viridans* type, which obtains entrance usually through the tonsils or teeth. Their experiments on dogs are so well known that I need not recount them, but one case under my own observation gave striking proof to their contention.

An elderly lady was referred to me by a colleague on account of a severe right-sided supraorbital zoster. Ever since a fall two years previously she had suffered from intense neuralgia of the right side of the head, with cutaneous hyperaesthesia so severe that she could not lie in bed on that side. She had also had an attack of right-sided facial paralysis, and she suffered from subacute rheumatoid arthritis. It seemed probable to me that all her symptoms were due to some chronic focal infection. *X*-ray examination showed no abnormality of the skull bones, nor was there evidence of dental infection. On the other hand, her tonsils were extremely septic, it being possible to express foul liquid pus from both. Their enucleation was considered, but not carried out on account of her age. Mr. Zamora, however, applied as thorough local treatment as possible, and a swab was taken from them, which on culture gave a pure growth of a long-chained streptococcus. Immediately following this manipulation of the tonsils an acute attack of iritis occurred. A vaccine of the streptococcus was prepared and given, but with each dose *a recurrence of the supraorbital zoster took place*, and her joints became more painful. The patient, however, continued her injections, and after a time the neuralgia almost entirely disappeared, her rheumatic pains were relieved, and her facial palsy became much less obvious; moreover, her general state of health has greatly improved, and she has put on weight. Quite recently a further course of vaccine was given, and again each injection provoked a recurrence of the zoster. In this case it seems clear that the neuralgia, the facial paralysis, the herpes zoster, the rheumatism, and the acute attack of iritis, were all due to streptococcal infection from the tonsils.

Eczema.

The association of that type of reaction of the skin which we term eczema with protein-sensitization and focal infection is now definitely established, but I am unfortunately compelled to deal with this important question in the briefest possible manner. I shall consider first eczema due to external irritants, and then eczema of internal origin in infants and adults.

Eczema due to External Irritants.

There are, of course, some irritants which will produce acute eczematous dermatitis on practically every skin, but, on the other hand, we see that, as in the case of susceptibility to foreign proteins and drugs absorbed from within, some persons seem to have an inborn intolerance of certain substances applied externally, and in others such intolerance is evidently acquired. It is common knowledge that in certain trades a person may be exposed for years to an irritant without ill effect; then suddenly his resistance breaks down, and an acute dermatitis results; in many cases subsequent exposure to the irritant, even in small quantities and for a short time, will always cause a recurrence of the dermatitis, although in others tolerance is reacquired. These irritants may be either protein or non-protein substances. As an example of the former I may quote a case of "baker's eczema" now under my care.

His eruption, when present, is confined to the hands and forearms, the parts with which the flour comes into direct contact. The cutaneous reactions are strongly positive to wheat leucosin and globulin, but negative to gliadin and glutenin. He exhibits the phenomenon of local sensitiveness of his skin, since flour bandaged on his forearm, when he is free from the eruption, causes itching, and later an eczematous dermatitis, whereas when applied to his leg it is without effect.

A good example of eczema produced by non-protein substances is afforded by that due to a certain hair-dye containing paraphenylendiamine.

Fordyce[21] records a case of this kind in which the dermatitis lasted two months, during part of which time there was considerable pyrexia; a point of great interest in his case was that there was a leucocytosis of 30,000, with an eosinophilia of 30 per cent. Mook[22] has reported a case of dermatitis in a dentist due to apothesin; cutaneous tests to this substance and to procain were positive. Guy Lane[23] reports three cases of a similar nature, all in dentists, in which susceptibility to procain was acquired after some months' use of the drug; in all three patients positive cutaneous reactions were obtained.

As has been said, it is difficult to bring these cases of sensitiveness towards drugs and non-protein irritants into line with susceptibility towards proteins, since a true anaphylactic reaction is only supposed to be possible with protein bodies. It has been suggested that drugs, etc., combine with the body proteins, and that it is towards these compounds that susceptibility occurs; there is certainly evidence in favour of this view in the case of salvarsan. However this may be, the phenomena of idiosyncrasy towards drugs, chemicals, etc., and towards proteins are so similar that they may all be conveniently termed "anaphylactoid," and it should be particularly noted that positive cutaneous reactions can be obtained with both protein and non-protein substances.

Infantile Eczema.

In infants there are two main types of eczema, apart from that produced by external irritants, and it is the failure to recognize this fact that has made infantile eczema "the *bête noire* of all dermatologists," as Engman and Wander express it:

There is first the type that is so common in the out-patient department of hospitals in poor districts, and which corresponds to true seborrhoeic eczema in adults. It affects the scalp, the post-auricular regions, the face around the nose and mouth, the neck, and the flexures. Its onset is often sudden, and oozing takes place very rapidly, so that secondary infection occurs early, resulting in impetiginization. This condition, as with the impetiginized seborrhoeic eczema of adults, is often wrongly diagnosed as impetigo contagiosa, and surprise is expressed at the unsatisfactory results obtained when the orthodox treatment for that disease is adopted. This form of eczema is apparently associated with excessive carbohydrate feeding.

In the second variety of infantile eczema the clinical picture is quite different, and it is usually possible to distinguish between the two at a glance. It is this type which is probably always due to susceptibility towards one or more foreign proteins—usually, of course, those of food substances. These children, on the whole, conform to a definite type. They are, even in early infancy, emotional and *difficile*, but withal charming and abnormally intelligent. In later life they are apt to become asthmatic. As regards their skin, it will be found that it is often slightly, sometimes definitely, ichthyotic, and I am convinced that ichthyotics are not only abnormally susceptible to external irritants, but are also frequently subject to anaphylactic eczema and asthma.

Apart from its dryness, the skin of these children feels thickened and has a peculiar yellowish or bistre colour, and there is often hyperkeratosis around the pilosebaceous follicles. The eczema takes the form of diffuse scaly patches, which become thickened; they are situated on the forehead, the cheeks, the extensor surfaces of the limbs, the trunk, and sometimes in the flexures. Oozing does not readily occur, although it is often provoked by scratching, nor is secondary impetiginization nearly so common as in the first type. One very characteristic feature is that the eczematous patches may become quite pale and almost invisible in the course of a few hours, only to flare up when a paroxysm of itching or a fit of crying occurs. This is not the case in the first type, in which, too, the itching is not so intense. In both types the eczema is apt to be accompanied by nasopharyngeal and bronchial catarrh; but in the first the catarrh tends to be persistent, whereas in the second it waxes and wanes *pari passu* with the intensity of the eczema. It is this second type which corresponds to Czerny's description of the "exudative diathesis," although later observers, myself included, have confounded the two types. Probably most of the symptoms which Czerny described as characteristic of his exudative diathesis are manifestations of protein sensitization.

Engman and Wander[10] found that of the exudative type 78 per cent. responded positively to some protein sensitization; of the remainder probably some were wrongly included in the exudative group, or the protein to which they were susceptible was not discovered. In those cases in which control of the diet could be maintained brilliant results followed.

Although in children it is to food proteins that susceptibility is observed, in a few cases, as in asthma, the offending protein may be bacterial, and Whitfield[21] describes the case of a child, aged 3 years, who suffered from eczema and spasmodic cough. These were relieved by removal of septic tonsils and adenoids. It is possible that in this case the child was primarily susceptible to one or more food proteins, and became secondarily sensitive to the bacterial infection of its respiratory tract.

Eczema of Adults.

As might be expected, eczema in adults is far less likely to be due to food sensitization than is the case in children, since complete or partial tolerance to foods is usually gradually acquired as the child grows older.

Howard Fox and Fisher[25] conclude that only a small proportion of eczema in adults is due to this cause. They quote the case of a man with chronic eczema of the hands and wrists who gave a positive reaction to cabbage; abstention from cabbage and sauerkraut resulted in the disappearance of his eczema, which reappeared at once when the forbidden vegetable was again eaten. Ramirez[9] comes to the same conclusion—namely, that anaphylactic eczema, like asthma, is commoner under the age of 30. Engman and Wander[10] report some striking cases in this series, including one patient who was sensitive to oak pollen, and had suffered from erythematous eczema from this source for nine years; it began in April, lasted through the spring, and was accompanied by hay fever. Relief was obtained by desensitization.

There is no question that some cases of chronic eczema in adults are directly or indirectly due to focal infection, particularly oral sepsis, and Ehrmann used to lay stress on the association of eczema and chronic appendicitis. In my experience that type of eczema termed "nummular," which begins by multiple discoid patches situated most commonly on the backs of the hands, wrists, and forearms, and on the extensor surfaces of the thighs and legs, is a frequent concomitant of oral sepsis, and I have had several cases during the past few years which cleared up when this was dealt with, and in which other methods of treatment had proved only palliative.

Lupus Erythematosus.

This condition, which must, I think, be held to be very closely allied to erythema multiforme, is still regarded by many dermatologists as a tuberculide. During the past two years and a half I have collected a considerable number of cases of the disease, most of which I have been able to investigate thoroughly and to keep under observation. In none of them was there any evidence of active tuberculosis, and in only four was there reason to suspect former tuberculous infection sufficient to produce clinical manifestations, such as cervical adenitis and the so-called tuberculous stigmata. On the other hand, in every one of my cases one or more definite foci of infection were present; in some there was severe oral and tonsillar sepsis, in others the tonsils were badly infected without oral sepsis being present (although in most of these infected teeth had already been removed), and in others, in addition to these two foci, a *Streptococcus longus* was easily recoverable from the faeces. A striking and important feature of my series of cases has been the frequency with which the disease has been accompanied by definite arthritis, or by complaint on the part of the patients of attacks of "rheumatism" in the joints and muscles.

Two of my patients have severe rheumatoid arthritis of the type that is associated with chronic streptococcal focal infection, and Dr. N. Mutch, who makes a special study of this condition, has kindly given me notes of four cases that have come under his own observation, in which lupus erythematosus was present. In one, which I saw, a typical patch of lupus erythematosus developed while the patient was having streptococcal vaccine injections for his arthritis. In none of these is there the slightest indication of tuberculous infection.

As regards the treatment and prognosis of this disease, my observations go to show that what is true for rheumatoid arthritis is true for lupus erythematosus. That is to say, foci of sepsis must be sought for and dealt with, and afterwards cautious autogenous vaccine treatment carried out. In early cases removal of the primary foci of infection, with or without subsequent vaccination, has given most gratifying results. In patients in whom the disease has been present for several years the same success has not been obtained, probably because secondary foci, such as the intestines and lymphatic glands, exist, but even the most chronic and obstinate cases have shown steady improvement. I may quote one typical case.

The patient was an asylum nurse, and the eruption, which was of many years' standing, involved the nose and the greater part of both cheeks. She had severe oral sepsis, and her tonsils were large and contained pus. After removal of the teeth and tonsils, there was considerable immediate improvement. She has since been given autogenous streptococcal vaccine by Dr. Eyre, with the result that the greater part of the eruption has gradually disappeared, and in a few months she will probably be cured, although there will be considerable scarring. There is no evidence of tuberculous infection, and she has had no treatment except the removal of the teeth and tonsils, and subsequent vaccination.

Most dermatologists are agreed that lupus erythematosus and erythema multiforme are closely allied conditions. The latter is often associated with that transient form of arthritis which we call acute rheumatism, and, although liable to recurrence, neither the skin eruption nor the arthritis is followed by permanent fibrotic change. In lupus erythematosus, on the other hand, although the lesions may disappear entirely without leaving a trace the more chronic patches are followed by scarring, just as permanent deformity of the joints results from a chronic rheumatoid arthritis. In my opinion, lupus erythematosus bears the same relationship to rheumatoid arthritis that erythema multiforme bears to the acute rheumatism of children and young adults.

The more cases I see of lupus erythematosus the less do I believe in the view that it is a tuberculide; and I would remind you that Cranston Low and Rutherford[26] have published the results of a *post-mortem* examination on a fatal female case, in which absolutely no trace of tuberculosis could be found. There had been, however, severe oral sepsis, and a *Streptococcus longus* and Friedländer's bacillus were recovered also from her sputum.

Alopecia Areata.

The last condition I wish to deal with is alopecia areata. As I[27] have already stated elsewhere, I believe that in most cases focal infection is the causative factor. The evidence that I have collected during the past year in support of this view is very convincing, but I am willing to admit that there is more than one type of alopecia areata, and that the exciting cause is not always the same. Whitfield[28] and others have shown that eye-strain may be a factor in some cases, but I still hold that the great majority are due to infection, which in children is usually derived from the tonsils and nasopharynx. I would here like to deal with a very just criticism made by Dr. Dore when I[29] showed a case of alopecia areata before the Dermatological Section of the Royal Society of Medicine on January 20th, 1921. He said that, after reading my paper, he had made inquiries, and he found that alopecia areata had in some cases developed after the tonsils had been removed. Apart altogether from the possibility that some other focus, such as the teeth, may have been present, I would point out first that the removal of tonsils, which is usually considered a trivial operation, is really one that requires the greatest skill and care; in my opinion, anything short of complete enucleation is not only useless but actually harmful, and I am continually seeing both children and adults whose tonsils have been incompletely removed, with the result that they

are being poisoned with septic matter pent-up in buried crypts, the openings of which have been obliterated by the scar tissue formed after the operation. Moreover, removal of tonsils does not necessarily prevent further attacks of acute nasopharyngeal catarrh, and, should these occur, new patches of alopecia areata are likely to appear. For this reason, apart from the removal of septic tonsils and adenoids, I think it is important to correct any nasal deformity, such as a badly deflected septum, and to give vaccine treatment for some time after the operation.

Whereas infected tonsils and adenoids and chronic nasopharyngeal catarrh are, in my opinion, the most common causes of alopecia areata in children, in adults the mouth is, perhaps, more often the primary source of infection, and I have seen three cases associated with nasal sinus suppuration. Of course, with chronic oral sepsis the tonsils are very likely to become secondarily infected, and it is in some cases difficult to decide which is the more important source of infection; in any case, however, the mouth should be dealt with first.

Conclusion.

The subject with which I have attempted to deal is so large, and is connected with matter about which there is so much controversy, that I am afraid my review of it is not only incomplete, but singularly disjointed. We may, however, even with our present knowledge safely affirm that further study of individual peculiarities towards foreign proteins and bacteria is likely to solve some of the dermatological problems which remain, but in this kind of research the dermatologist cannot hope to succeed alone. By careful clinical observations on large numbers of cases he may formulate theories, based on deductions made from such observations, and he may direct a line of research which appears likely to solve the problems before him, but his theories must always be tested by those who are expert in laboratory knowledge and technique, and it is on the correlation of clinical data and laboratory findings that the future of dermatology, like the future of medicine, depends.

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CUTANEOUS SENSITIZATION.

BY

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This subject is so wide that it is difficult to know where to begin. I propose, in the first instance, to give you some of my personal experiences, and then, touch on a few points in the different diseases and anaphylaxis generally.

Dermatitis due to External Causes.

Assuming that dermatitis venenata was an anaphylactic phenomenon, I endeavoured to find out if it could be produced artificially. I used the leaf of the *Primula obconica*, with which you are all familiar. On the general principle that a sensitizing dose of antigen, followed by an interval of freedom from antigen, is likely to lead to sensitization, I scarified a small area on the back of the left forearm by scraping off the superficial layers of the epithelium till a slightly oozing surface was produced. Into that I rubbed the crushed leaf of *Primula obconica*, rubbing the juice well in. That was done in the evening, and the juice of the leaf allowed to dry on the skin and washed off next morning. The lesion formed a thin crust where it had been scraped, but there was no redness or reaction of any kind around it. This crust came off in about two weeks and the skin showed a very superficial scar. After an interval of three weeks the same area was again rubbed with the crushed leaf of *Primula obconica* and the juice allowed to dry on the skin. This was done at 8 p.m., and on going to bed at about 11 o'clock the area rubbed showed no change. On awakening next morning, however, the area rubbed was found to be red, oedematous and swollen, and very itchy. The central part showed numerous small vesicles where the juice of the leaf had been actually rubbed in, but the area of redness and oedema extended considerably beyond that. This dermatitis gradually increased in severity for forty-eight hours, the area extending considerably, till the greater part of the back of the forearm was affected. It remained more or less stationary for some days, but always itching at intervals, and if scratched or rubbed the acute lesions flared up again. At the end of a week or so it gradually subsided, became less red, then yellowish and scaly, and not till the end of the fourth week had all trace of the reaction disappeared. This experiment has since been repeated at intervals on different parts of the skin, and always with the same result, but on being repeated the reaction begins somewhat sooner and does not last quite so long as on the first occasion.

This experiment goes to show that dermatitis venenata can be produced artificially under certain circumstances. I could previously handle the primula or rub the crushed leaf into my skin with impunity. In order to see whether the result was accidental I repeated the same experiment on six other individuals, but in only one other, and that in my brother, did I succeed in causing sensitization. The other five were all negative, and failed to give any reaction to the primula. This result supports the view of Cooke and Vander Veer, referred to by Dr. Barber, with regard to the importance of heredity. In my own case there is definite evidence of a hereditary tendency. My mother suffered from a *Primula obconica* dermatitis of hands and face many years ago. At that time the condition was not recognized by the medical profession, and she was sent to Strathpeffer as a case of eczema. She returned some weeks later completely cured, and the physician in charge at Strathpeffer congratulated himself on the potency of the waters. She was not two days at home when the eruption recurred. The condition was eventually diagnosed by the gardener, who had seen an article in a gardening journal in which it stated that the primula inflamed some persons' skins. On his suggestion the primulas were removed from the house and conservatory, and the eruption rapidly disappeared. There is also a history of asthma on my mother's side, and one of my nieces has suffered from urticaria and a sister from seborrhoeic dermatitis. The other five individuals who did not sensitize to the primula had no history of asthma, eczema, or urticaria, so far as could be ascertained. Therefore, from the fact that my brother and I alone became sensitized, I think it is fair to assume that only certain individuals can be sensitized—those who belong to families in which eczema, asthma, and urticaria are known to occur.

The results of my experiments on myself do not agree with Dr. Barber's remarks on local sensitization. I originally produced the dermatitis on my left forearm, but on rubbing the right forearm later with the primula I obtained a similar dermatitis there too, but I think on the whole not quite so severe.

The question of these reactions being group reactions was next investigated. I rubbed my skin with the different kinds of primroses. The *Primula sinensis* gave an erythematous dermatitis lasting about a week. The common wild primrose (*P. vulgaris*) gave a very slight reaction lasting two to three days, and the coloured hybrid primroses gave an even less reaction. The common cowslip (*P. veris*) gave no reaction. Similarly the polyanthus and the auricula also gave negative results. From that it is seen that all the true primula family give a slight reaction, showing that they contain something in common. I also tested a lady patient who was sensitive to jonquils, and she gave a marked reaction when the jonquil leaf was rubbed on the skin, and a lesser reaction when the daffodil leaf was applied.

This sensitiveness to plants seems to be limited to the skin cells. I rubbed the leaf of the *P. obconica* on the inside of the lip and on the mucous membrane of the nose, but not the slightest reaction was produced. This agrees with the finding of Jadassohn in a case of dermatitis due to the application of iodoform. In that case, also, application of iodoform to the mucous surfaces produced no effect. Therefore in dermatitis venenata the skin cells alone are sensitized. In support of this, also, is the experiment made by Bloch, who grafted a piece of his own normal skin and a piece of skin from a patient sensitized to iodoform on to a granulating surface of a patient with a healing burn. After the grafts had taken he dusted the area with iodoform, and in a few hours the piece of skin from the man with iodoform idiosyncrasy reacted with erythema and vesication, whereas the piece of his own skin and the rest of the skin of the grafted man showed no reaction. That, I think, conclusively shows that the cells themselves are sensitized, and may remain so even though transplanted on to another individual. In testing cases of plant and external drug dermatitis it is best to rub the plant or drug over a fairly large area, as one gets a definite reaction in that way. I did a skin test with iodoform by the ordinary von Pirquet method on a case of iodoform dermatitis, and obtained a very doubtful reaction, whereas, in the same patient, when the iodoform was rubbed on the unbroken skin a very definite reaction resulted.

Skin tests to foods in cases of eczema, erythema multiforme, and urticaria are not quite so satisfactory in practice as they are in theory. One difficulty is where a doubtful reaction occurs; and, as any one who uses this test will soon learn, cases of eczema, etc., especially in children, often give positive reactions to more than one food, and yet when the food or foods are removed from the diet no improvement occurs in the skin, and also when the patient is given these foods the eruption is not made any worse. The difficulty is to know which food, if any, is to blame, and one may get reactions to several foods and the one which is to blame be omitted, as it is impossible to test a case to all possible foods. The mere fact that a patient with a skin eruption gives a skin test to some food shows that we are dealing with an individual who can be sensitized, and if that patient can be sensitized to one food, presumably he can also be sensitized to other substances. The period of desensitization of the skin which follows an attack of urticaria also explains why many cases do not give reactions and increases the difficulty of determining the food which is responsible. It is therefore most important that the tests should be repeated, if possible, some days or weeks after an attack. If eczema and urticaria are both anaphylactic phenomena—and all the evidence goes to show that chronic urticaria certainly is—why do some cases get eczema and others urticaria on taking a certain food? I think it can be explained if one considers that in urticaria one is dealing with a true anaphylaxis, and the poison which produces the reaction by acting on the vasomotor mechanism of the skin vessels produces the wheal, just as the lesion is produced in the lung in asthma. It is only part of a general phenomenon and the skin cell is not specially sensitized. Whereas in eczema, as in dermatitis venenata, if one assumes that the skin cells are also specially sensitized to the food, then the resulting reaction produces the various forms of dermatitis known as eczema.

Although I know Dr. Barber could not mention all the conditions suspected of being anaphylactic in nature, I am surprised that he did not mention Hebra's prurigo. Perhaps he includes it under his second variety of infantile eczema, but, above all conditions, prurigo suggests anaphylaxis. It begins as an urticaria papulosa, and persists with itching papules for years till the skin becomes indurated from scratching. It is practically always associated with asthmatic symptoms and shows a marked eosinophilia of the blood. I have tested two typical cases and in each got reactions to more than one food, but, as in eczema, withholding these from or adding them to the diet did not affect the eruption. It is possible that prurigo is due to some focal lesion in the bowel or elsewhere, or it may begin as an urticaria due to a food, and by scratching the patient may sensitize himself to his own tissues. Remarkable results have been obtained in dermatitis herpetiformis and other skin diseases by auto-serum-therapy—drawing off the patient's own blood, defibrinating, centrifuging it, and reinjecting the serum. Similarly in prurigo the patient might be sensitized to coagulated serum or blood from his own lesions, and every time he scratches he may produce a reaction.

Dermatitis herpetiformis is another disease associated with eosinophilia. One of the worst cases I have ever seen could provoke an attack by eating meat. He lived and worked as a stoker for over five years on milk and peasbrose, and after that time he gradually began taking meat with no ill effect. It has long been suspected that dermatitis herpetiformis and pemphigus are due to bowel absorption, and I think we are justified in including them under the group of eruptions due to focal absorption from the bowel, either of food or bacterial origin.

I have been very much interested in Dr. Barber's work on lupus erythematosus, and I am convinced he is on the right lines. From the case of generalized lupus erythematosus which I published in the *British Journal of Dermatology* a pure culture of *Streptococcus longus* was obtained from the heart's blood *post mortem*. With that streptococcus a vaccine was made and cases of lupus erythematosus treated with it. The results have been distinctly encouraging, one case in particular, with very resistant extensive disease of face and scalp, healing up rapidly after inoculation. I have never seen any local or focal reaction in lupus erythematosus from using this vaccine.

In conclusion, I should like to emphasize the importance of the subject of anaphylaxis. Our views are always changing as new progress is made. From investigations on typhoid fever it has been shown that even in acute diseases the patient passes through a hypersensitive stage before reaching immunity, and all the evidence goes to show that in chronic infections of all kinds the patient tends to remain in the hypersensitive condition and the disease persists indefinitely, as, for example, in lupus, psoriasis, etc. Much has been done, but we are only beginning to understand the complicated changes which take place when a patient becomes infected, and since the dermatologist can see exactly what is occurring on the skin, he is in a better position than the general physician to elucidate this problem.

[Dr. Cranston Low also showed a reaction produced on his own arm by rubbing with the crushed leaf of *Primula obconica*.]

DISCUSSION.

Dr. W. Kenneth Wills, O.B.E. (Bristol), said that to him the reports on protein sensitization and food idiosyncrasy seemed to lack clearness owing to the fact that the term "eczema" had never been clearly defined or explained. He wished to draw attention to the condition of follicular dermatitis associated with pityriasis of the scalp either in himself or in some one in his immediate entourage. He pointed out that at the start this condition presented a follicular plugging and later a perifollicular erythematous zone with itching. Eczematization followed secondarily to scratching. He said that this dermatitis was sometimes, but not always, inoculable, and that the inoculability was dependent for success upon at least two factors: (1) An infecting coccus, and (2) the secretion in the follicle containing an exuded protein body upon which the coccus could grow and produce a more toxic protein body which itself caused the inflammatory phenomena. He also mentioned another disease which he termed "tea and bread-and-butter" disease, which was seen in old people who with only a tooth or two left in one jaw were unable to masticate, and were unable to take more than the softest food. These poor people were reduced to taking only tea and bread-and-butter, and in these might be seen an erythema upon those parts of the body which were exposed to light—like pellagra but without nervous phenomena. These patients could be relieved by a more extended dietary. Here there was another factor besides the sensitization of the skin—namely, light. He also remarked that light was also an important factor in the determination of lupus erythematosus, and must be taken into consideration when attempting to explain this dermatosis by theories of sensitization to bacterial toxins.

Dr. Barber, in reply, said that in reference to Dr. Cranston Low's most interesting experiments, he had during the war made some investigations with "mustard

gas" that were not without interest. He produced a small superficial burn on his left forearm by short exposure to this substance, which healed completely in about a week without leaving any trace. A few weeks later (while doing further experiments) he burnt himself very badly in the right antecubital fossa, and the burn was followed by sloughing of the skin and intense lymphangitis with oedema; while the pain and inflammation were at their height a patch of erythema with vesicles appeared spontaneously exactly at the site of the original superficial burn that he had produced on the left forearm some weeks previously. There was no possibility of this being due to accidental exposure of this area to a further quantity of mustard gas, and he could only conclude that this patch of skin had become sensitized and reacted when absorption took place from the severe burn on the other arm. With regard to Dr. Kenneth Wills's remarks about the influence of light in the production of certain skin diseases, such as lupus erythematosus, he agreed that in this disease sunlight must be considered as a predisposing factor in some cases, and no doubt sometimes determined the localization of the lesions. He had had more than one case in which the patient dated the onset of the disease from exposure to strong sunlight; and Sequeira had stated that he had frequently seen the lesions aggravated by exposure to the Finsen light. As this subject was under discussion, he would like to ask members of the Section whether they had observed a certain group of cases in which, during adult life, the patient became sensitized to light and developed an eruption on the exposed parts, for instance, the face, ears, neck, and backs of the hands, and, in women, in the V-shaped area laid bare by the cut of the blouse; the eruption was a mixed one, and, though chiefly eczematous, consisted also of papules, small bullae, and in some instances of urticarial lesions. In all the patients he had collected with this condition there was marked excess of indican in the urine, and in most of them the reaction was intense. The patients had a peculiar earthy tint, and the lips were bluish in colour; so characteristic was their appearance that he could now distinguish the cases at a glance. He presumed that the condition was allied to hydroa aestivale, but it differed from it in that most of his patients acquired the sensitiveness to light during adult life, and the eruption was chiefly an eczematous one. The explanation that he offered was that some substance, probably derived from the decomposition of protein in the intestines, and possibly allied to sulphonal, was absorbed and sensitized the skin to light. He had never found haematoporphyrin in the urine of these patients. He had had very satisfactory results by reducing the protein intake to a minimum, giving liquid paraffin and full doses of hydrochloric acid internally, and applying a cream and powder containing quinine externally. He had satisfied himself that quinine applied in this way did very materially protect the skin from the effects of the sun's rays.

Dr. Cranston Low, in replying to Dr. Barber's question with regard to the influence of light on certain skin conditions such as lupus erythematosus, said that he had recently come across an article on buckwheat poisoning, or fagopyrismus, by H. L. Smith, in the *Archives of Internal Medicine* of 1909. In this Smith referred to the fact that if an animal were fed on buckwheat and then exposed to sunlight it developed an acute dermatitis on the white parts of the skin only, and if the animal were black and white, the black areas were not affected. Other disturbances, such as gastro-intestinal derangement and nervous symptoms, might be produced, and if severe the animal might die of them. It was also mentioned in this article that if haematoporphyrin were added to red blood cells and they were kept in the dark nothing happened, but that exposure to sunlight caused a lysis of the cells. The interesting point was that in buckwheat there was a substance which very closely resembled haematoporphyrin, and it was probable that when this substance circulated in the animal's blood it was acted upon by sunlight and turned into a toxic substance which dissolved the red cells and produced a local reaction. Now, haematoporphyrin was known to occur in the urine of cases of hydroa vacciniforme, and in all probability the skin lesions in that condition were due to this lytic action of the haematoporphyrin in the blood, and before this condition could occur the skin containing the blood capillaries must be exposed to the sun. He also referred to a case of acquired hydroa vacciniforme, and suggested that in that type of case substances might be present in wheat grown in this country which resemble the substances in buckwheat, or that wheat flour might also be mixed to some extent with buckwheat, and persons eating flour made from the mixture might develop a skin dermatitis on exposure to light.

DISCUSSION ON SKIN DISEASES IN PENSIONERS.

OPENING PAPER

BY

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It will be admitted that under ordinary favourable circumstances the diagnosis of diseases of the skin is not easy, and that our knowledge of the causal factors, except in conditions due to animal or vegetable parasites, is meagre. When the case to be considered is that of a naval or military pensioner these difficulties become doubled or trebled, for, in addition to determining the nature of the disease, the examiner has to answer such questions as—How far can the affection be attributed to war conditions; or if it existed prior to entering into the Service, has it been aggravated thereby, and, if so, whether the aggravation still exists or has ceased to be operative? While no set of rules can be formulated to furnish a comprehensive answer in every case, it is possible to frame a classification which, while admittedly defective, has at least the merit of being practical and capable of resolving the problem into a less complicated form. This classification comprises three groups, as follows: (1) Where the disease is definitely due to war service; (2) where it is open to question how far war service may have caused or aggravated the complaint; and (3) where the condition should not be attributed to war service.

Group I.—*Diseases definitely due to war service.*

In this group should be included conditions such as Oriental sore, scabies, infected tuberculosis of the skin, and ringworm. As all the diseases are parasitic their origin can clearly be determined. Upon the subject of scabies some further comment should be made. It would not be expected, but it is nevertheless a fact, that even at the present time pensioners present themselves with conditions labelled "scabies" which took origin during the war. Now although scabies, if improperly treated, may persist indefinitely—and some cases may be due to neglect of sterilization of bedding and clothing, thus permitting constant reinfection—those I have seen, with one possible exception, are to be explained in a different way. Some are instances of dermatitis due to prolonged application of sulphur; in other cases the original diagnosis had been inaccurate, the disease having been of a different nature—for example, dermatitis herpetiformis. These possible sources of error have therefore to be kept in mind.

Two other classes also properly belong to this group: the first where the disease has arisen or has become chronic owing to the impossibility of obtaining some special but recognized form of treatment; and the second where the remedial measures employed have resulted in disfigurement or injury. These classes will best be illustrated by the following examples:

Case 1.—A pensioner developed sycosis of the beard and moustache regions whilst serving in a remote part of the Empire. Some years previously he had suffered from a similar condition, which was cured at that time by *x*-ray depilation. When the second attack took place, owing to his situation, this treatment could not be obtained, and it was considered undesirable to send him home to obtain it. The disease progressed and became firmly established, and the prognosis is now bad. He is the subject of a disfiguring complaint which considerably interferes with his chance of obtaining employment in civil life. In this case it may properly be held that his present condition is directly the result of his service.

Case 2.—This case differs materially from the previous one. The pensioner, a middle-aged man, whilst serving in India developed a late specific eruption upon the scalp.

The condition was diagnosed as ringworm, and x rays were used with the object of depilating the hair and curing the disease. By some unfortunate mischance this caused not only permanent loss of most of the hair of the head, but also extensive scarring with telangiectases. Now, while it is evident that the original syphilitic infection, both from its nature and by reason of having been acquired many years before the war, did not qualify this man for a pension, it is equally evident that the incorrect diagnosis and treatment were responsible for his disfigurement and injury, and clearly gave him the right to a pension.

Group II.—*Where it is open to question how far war service may have caused or aggravated the condition for which a pension is claimed.*

While in the first group in the great majority of cases a definite answer can be given to the question, "Is the disease attributable to war service?" such is not the case in the group now under consideration, for it comprises conditions such as eczema, psoriasis, and lichen planus—that is, dermatoses the cause of which is unknown or imperfectly known, of which eczema forms the most important group.

When considering these forms of disease, the assessor is in a position of some difficulty; being uncertain of the cause, he cannot absolutely determine the relationship between war service and disease. He must nevertheless be prepared to answer two questions: first, if the condition arose during service, is it attributable; and, secondly, if it existed prior to this, how far has service aggravated it? It would seem just to decide when a man has developed one of these complaints for the first time during service that the disease should be held as attributable, and in the case of seborrhoeic eczema this is especially true. It will be remembered that this condition has a peculiar distribution, selecting by preference the hairy regions—the scalp, beard, moustache, pubis, and axillae—while not infrequently it is also found in the flexures. Strictly speaking, it is not a true eczema but an eczematization—that is to say, an eczema process grafted upon a pre-existing dermatosis. Seborrhoeic eczema was peculiarly prevalent among the troops in France, so much so that it would seem to be directly connected with the conditions of army life there. Different explanations have been put forward to account for this prevalence—for example, an acidosis or a vitamin deficiency. But whatever the explanation may be, the fact of its prevalence remains, and this is shown in such statistics as are available. Thus, out of 1,786 cases admitted into No. 25 General Hospital during April, 1917, seborrhoeic eczema accounted for 226 cases, scabies for 571 cases, and ecthyma for 624 cases. It ranks third after two recognized infections, and is far above the 55 cases of psoriasis and the 34 cases of true eczema admitted during the same period.

But eczemas, of whatever class, have a feature in common: they appear, disappear, and reappear, and once established there is a liability to subsequent attack. If we regard eczema as a disease due to external causes, this behaviour is difficult to explain. If, on the other hand, we look upon eczema merely as a symptom of some underlying dyscrasia—a view which is not unsupported by facts—then may we not conclude that the abnormal state, of which the eruption is only a part, has resulted from a condition attributable to service? Such a conception raises considerable difficulty because we have no means of judging of the presence or absence of this dyscrasia apart from the eruption. In taking into consideration the question whether aggravation has passed or not, this view becomes of especial importance, both in cases where eczema developed for the first time during service and where it had previously existed in civil life. Should it be held that after complete effacement of the eruption and a period of freedom, the disease has ceased and aggravation has passed? I think this view is not necessarily correct, and consideration of a different condition may serve to illustrate my meaning. In chronic bronchitis we know that the cough appears in winter and disappears in summer, and that this sequence of events recurs year after year. Here the symptom—the cough—only becomes manifest as the result of certain circumstances obtaining during the winter months, but the causal condition is nevertheless permanent, although the symptom is intermittent. No one, I think, in such a case would hold that aggravation has passed in summer because the cough has disappeared. Should we not regard eczema as an analogous state in which the objective condition—the eruption—only appears from time to time as the result of some external or other factor?

These views are admittedly controversial, and as such I present them. If completely accepted, the case of the pensioner might thereby be considerably weakened, for it could be held that the underlying cause existed prior to military service, and that the symptom—the eruption—only appeared in consequence of certain aggravating circumstances. This would amount to admitting speculation into the domain of fact, a process open to the most serious objection. The rule, therefore, of conceding that any first attack is attributable to service, and that skin disease known to have existed during civil life and reappearing in consequence of service has been aggravated by it, seems equitable and just.

Group III.—*Where the condition should not be attributed to war service.*

In this third group are included conditions such as acne vulgaris and self-inflicted eruptions. Many youths of from 18 to 20 years entered the army. At such an age-period acne commonly appears, and, as would be expected, did appear in a certain number of young soldiers. There is, however, not a vestige of evidence that the circumstances of military life contributed in any way to cause this affection. It would therefore seem that such persons are disentitled to any pension on account of this particular disease.

The self-inflicted eruptions are of two classes: First, those where some genuine condition exists which is aggravated purposely and knowingly by the person suffering from it. Thus an individual with, for example, a slight degree of eczema, may scratch or irritate it and so cause it to remain active or even spread. The detection of this procedure is peculiarly difficult. An expert seeing such a condition decides from his experience that cure should be effected by ordinary measures in a comparatively short time. If, therefore, there is in such a case a history of long-continued disease, he would be led to suspect that some manœuvre is being carried out with the intention of prolonging the duration of the complaint.

The diagnosis of the second class is sometimes obvious, at other times extremely difficult. Here an eruption is produced by acids, alkalis, or other similar substances, and this, when cleverly done, closely mimics disease. Nevertheless, the eruption is never quite true to type, and in producing it sharp angles or straight lines are often made, phenomena never found in genuine disease. To confirm the suspicion it may be necessary to admit the individual into hospital, where he can be kept under close observation. If this is done, some opportunity should be taken to search for any deleterious substance, as the discovery of this will assist in establishing the diagnosis. In this connexion it should be remembered that skin disease, even of long standing, may at times clear up without obvious reason, and the chance of this happening is considerably favoured by admission into hospital. Self-inflicted injuries of the skin are also occasionally met with in hysterical subjects. Such persons usually display other signs of a neurosis, and cannot be held entirely responsible for their acts. Therefore, although the medical practitioner may believe that fraud is being practised, only rarely will he be in possession of such evidence as is necessary to prove this belief completely.

DISCUSSION.

Dr. Cranston Low (Edinburgh) said that the question of skin diseases in pensioners was always a difficult one. If a man developed a skin disease such as psoriasis for the first time while on military service, nothing would convince him that it was not due to service, although a certain number of men would develop psoriasis in any case, and military service could not invariably be held responsible. He remembered one case in particular where a man was vaccinated on joining the army, and a fortnight later developed a spot of psoriasis on the vaccination area, whence the disease subsequently spread all over the limbs and body. In that case he considered that the disease was

due to service, as he probably would not have been re-vaccinated had he not joined the army. Each case must be considered on its own merits. Those cases which gave the most difficulty were those in which the men did not wish to get well. It was quite easy for these men to scratch the skin and keep the lesion going, or to fail to apply the treatment prescribed. The only way in which such cases could be dealt with and a correct opinion formed as to the man's right to a pension was to admit him to a pensions hospital, where he could be watched and suitable general and local treatment carried out.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF NARCOMANIA.

The old-fashioned method of treating the morphine habit by cutting off the drug and leaving the patient to fight it out by himself has rightly fallen into disuse. It was barbarous and had little to recommend it. Nevertheless, one occasionally comes across a patient who may be treated in this way with benefit to himself, as the following case shows:

Mr. and Mrs. F. came to me for treatment for heroin habit; they were both addicts, and had taken the drug for about five years. They used to inject each other in the back, and took about 25 grains daily, but Mr. F. informed me he never gave his wife as much as she thought, and probably she never had more than 8 or 10 grains, except when he was away and she gave herself the injection.

I treated them both on exactly similar lines, except that whereas it took three weeks to get Mr. F. off the drug, Mrs. F. never had a dose of heroin or morphine after she came under my care. I found that she remained fairly comfortable under the usual sedatives and hypnotics; consequently I did not give her any of the drug the first morning, and from then until the end of the treatment it was never necessary to give it.

Mrs. F. really suffered less than her husband, whose dose was gradually reduced. Her chief symptom was a feeling of extreme weakness and a certain amount of restlessness, but she never showed signs of collapse, as is usual when morphine is suddenly withdrawn.

It is sometimes possible to withdraw the drug at once in cases of short standing—a week or two—and I have treated several cases of chlorodyne habit by the immediate withdrawal of the drug without the patient suffering much, but this is the first long-established case of heroin or morphine habit that I have had in which immediate withdrawal was possible. It seems to suggest that it is worth while in some cases to try withholding the drug during the first twelve hours, and, if the patient remains comfortable, to continue to withhold it throughout the treatment.

Paignton. STANFORD PARK, M.B., Ch.B.

A CASE OF FIBROSIS OF THE LUNG.

Fibrosis of the lung is not very common, and the following well-marked case in a man, aged 50, may be of interest:

The patient had had influenza when in the army, and had spent three months in hospital. He complained now of shortness of breath, but he had no cough nor expectoration. His general condition and colour were good.

The right side of the chest was contracted in front and there was a compensatory lateral curvature. The percussion note was dull over the right upper and middle lobes in front, and was absolutely flat from the apex to the base behind, and in the axilla. There was marked increase of vocal fremitus, and also marked increase of vocal resonance. There was slight air entry at the right apex, but air entry was abolished over the rest of the lung. There were no adventitious sounds. The air entry and breath sounds (without adventitious accompaniments) were exaggerated in the left lung. The heart was dragged over somewhat to the right, and there was an aortic systolic murmur at the base. Tophi were present in the ears, and there was a history of gouty pains in the feet, accompanying a long history of beer drinking. The *x*-ray picture showed marked striation in the right lung, but the picture was not nearly so helpful as the physical signs. The stethoscope is still, in my opinion, the best friend of the physician.

A diagnosis of malignant growth had been made in this case, but this was negatived by the history of fairly good health for the past three years, and by the fact that the man was of good colour and well nourished. These conditions were also against a diagnosis of fibroid phthisis (pulmonary tuberculosis), while cough and sputum were also absent. There was no history of syphilis. The diagnosis finally made was that of simple fibrosis in a gouty subject, probably brought on by a quiet non-tuberculous pleurisy during the attack of influenza.

Newcastle-upon-Tyne. T. M. ALLISON, M.D.

SELF-INFLICTED RUPTURE OF SMALL INTESTINE CAUSED BY REDUCTION OF A NON-STRANGULATED INGUINAL HERNIA.

Traumatic rupture of intestine, though rare, is a well-recognized condition and is usually due to a crushing violence or severe blow. The case here described—that of rupture of the small intestine produced during the reduction of an inguinal hernia—seems so rare as to be worth recording. The case is noteworthy, too, in that the patient himself produced the injury.

A. T., aged 52, was admitted to the Leeds Infirmary on September 10th, 1921, about 4 a.m. On admission the patient was collapsed and complained of very severe abdominal pain. He stated that for the last six months he had suffered from left inguinal hernia. He had not worn a truss, and the hernia had given him little trouble and was always easily reduced when it came down. On the night before admission, about 9.30 o'clock, the hernia had come down and he had made several unsuccessful attempts to reduce it. He then used some considerable force, when it went back and he felt as if "something had given way inside him." Almost immediately afterwards he had severe abdominal pain accompanied by vomiting, which continued and which he stated contained blood. The pain got worse and almost unbearable, and he sought admission into the infirmary.

On examination the patient was collapsed, with a subnormal temperature and a thin quick pulse. There were generalized abdominal rigidity and tenderness, both of which were more marked on the left lower abdomen. Two fingers could be passed into the left inguinal canal, but there was no hernia present. It was thought that probably the patient had reduced *en masse* a strangulated hernia, and it was decided to operate. I opened the abdomen through the lower part of the left rectus muscle and found that the peritoneal cavity contained a large quantity of turbid, greenish, and slightly offensive fluid. A coil of inflamed small intestine presented, and on tracing this down about 8 in. a perforation of the gut was disclosed, and below this was a slight constriction of the gut. The aperture was situated close to the mesenteric attachment and was transverse; it was about 1 in. long and gaped. Semi-liquid faeces exuded from the tear. This was sutured and the peritoneal cavity gently swabbed out. A large drainage tube was inserted into the pelvis and the wound rapidly closed. The patient was extremely ill and was sent back to bed, where he was propped up and salines given. He never rallied, however, and died the same morning, about four hours after operation and eleven hours after receipt of the injury.

Dr. Gleave performed a *post mortem* examination and reported as follows:

"There is an early acute generalized peritonitis. The coils of gut are injected and covered with a little coagulated lymph, and there is a very small amount of turbid-free fluid. Three and a half feet from ileo-caecal valve the small intestine has been sutured for part of its circumference; the suture line is intact. On the left side is a large inguinal hernial sac; its neck admits two fingers, but sac is much larger below where it enters scrotum. Examination of other organs shows nothing of note beyond some toxic changes and congestion of liver and lungs."

Mr. James Berry and Mr. Giuseppi, in a paper read before the Surgical Section of the Royal Society of Medicine in October, 1908, made an analysis of 132 cases of ruptured intestine which had occurred in ten London hospitals during the previous fifteen years. The type of injury causing the rupture was as follows: Run over 51, squeeze or crush 24, blow 23, kick 16, fall 11, reduction of hernia 1, uncertain 6. In the case of reduction of hernia mentioned the rupture was due to a mass of lead falling on the scrotum.

I am indebted to Mr. Walter Thompson, F.R.C.S., for permission to publish this case.

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Reviews.

ARABIAN MEDICINE.

The history of Medicine, long neglected in Great Britain, has of late years shown a new vitality. Many are the distinguished physicians who are now devoting their time and abilities to this study, and not a few considerable pieces of work have been done. The Fitzpatrick foundation of the Royal College of Physicians of London has been of great service in fostering this renewal, and to its encouragement we owe the remarkable book now before us.[1] Even before the war Oriental studies likewise have had a new birth; and the College made a very happy choice when on two successive years it called to this Chair Professor Browne, a Cambridge medical graduate, a Fellow of the College, and furthermore one of the most eminent of Oriental scholars.

The Lecturer says that, although the title of Arabian Medicine is convenient, Islamic Medicine would be a more descriptive name. The Arabic language, so he tells us, is nervous, virile, and rich, both actually and potentially; the Arab mind is clear and positive, the people are acute and observant, and, before the deeper penetration of Greek learning, they already possessed a fairly copious anatomical vocabulary. Nay, as Dr. Withington says on the Arab conquests of the seventh century, a Byzantine emperor was astonished to find that the right of collecting and purchasing Greek manuscripts was among the terms dictated by a victorious barbarian, and that an illustrated copy of Dioscorides was the most acceptable present he could offer to a friendly chieftain. Yet even "Islamic" Medicine would not be quite a fitting title? Islam, a narrow and hard religion, did nothing to aid, if it did not restrain the liberal arts; moreover we have to include in our survey Nestorians, various and versatile Syrians, Persians with their long imaginative history, and not least that people of marvellous gifts, the Jews. And, as great travellers and traders, the Jews carried their culture far and wide.

Before the time of the Abbasids physicians were few; the golden age of Arab Medicine was during the great Caliphate of Bagdad—say, 750–850 A.D. Greek learning then streamed into Islam, and flourished abundantly. Huge collections of MSS. were gathered and translations made from Greek and Syriac into Arabic, the learned tongue of Islam. All this civilization, and nearly all these precious records, perished in the sack of Bagdad. Nevertheless we shall not forget that, before Mahomet was born, the Nestorians had founded the celebrated school of Gondisapur, with its great hospital, the very sites of which, thanks to Mongols and Turks, are now hardly to be traced.

We may naturally ask what relics of Greek medical and other culture may have survived in and after Alexandria. The Lecturer seems to think practically nothing; the burning of the library was three centuries before Mahomet: still there remained the tradition, slender enough perhaps, which went back from Bagdad to Gondisapur, thence to Edessa and Antioch, and so to Alexandria. But the Arab conquest was over a much latinized Africa. Certain anatomical diagrams may, in Sudhoff's opinion, be traced back to Alexandria. This may well be, for in more than one instance such drawings are plausibly referred to a still greater antiquity.

But these are points of curiosity; manuscripts were then abundant, from Gaul to Asia Minor; and the translators were busy. The story of these translations from the Greek was well told by Renan; how through Latino-barbaric, Syriac, Arabic renderings of the unhappy Greek originals, carrying the aroma of the cask, if too often little more, yet threw their brilliant reflections over the farther east. And the choice of authors was fortunate; perhaps we ought to say discreet; the works of Hippocrates, Galen (Professor Browne pays due tribute to Max Simon's recovery, and admirable edition, of seven Books of Galen's anatomy, lost in the Greek but preserved in the Arabic), Dioscorides, Paul of Aegina, Alexander of Tralles, Oribasius, and so on. Compilations, such as Oribasius and Paul, were probably then more useful than original works of more limited scope. The Lecturer illustrates by a few examples, as he is competent to do, the difficulty of detecting the exact meaning of many medical terms disfigured by the clumsy and servile renderings of the motley translators. One of their devices, when a word or phrase was not understood, was simply to transliterate it—as one might try to render a Greek word in English letters. When such a process has gone, with its blunders, through two or three languages, none perhaps having fitting symbols for the particular meanings, the results may be imagined. It is fair to remember however, while we disparage these polyglots, that the translations were made for a polyglot people; the translator had an eye to the native reader. Under the Caliphate, as beforetime in Rome, some knowledge of medicine was expected of every educated man.

Was Arab Medicine no more than a transfer? Professor Browne points out that to give a full answer to this question would call for an appalling extent of research into voluminous and largely unpublished works. We may be thankful to hear that he is himself engaged upon an edition of Rabban's *Paradise of Wisdom*. Rabban says: "He who perpends this book with understanding resembles one who wanders in fruitful and pleasant gardens, or in the markets of great cities. . . . But he who limits his knowledge of such gardens and cities to the contemplation of their gates is as one who sees naught of them. . . . But he who masters this book . . ." and so on. Dr. Browne considers that in its later periods Arabian Medicine did attain to some independence of judgement and distinction. At least, the Arabs constructed an effectual eclectic synthesis. It is admitted that Arab chemists had some considerable share in the advance of their science; and in philosophy they deviated so far from Aristotle—for worse rather than better, it is true—that for a while in Padua two chairs coexisted, the one to teach the Greek Aristotle, the other the Averroistic! For Hales and Bacon the Arabs had become "philosophi antiqui." Here we come upon the perennial error of teaching of philosophy and logic as abstract studies unattached to things natural and humane. But we are travelling out of our subject.

The Lecturer finds no indication of any qualifying examination until early in the tenth century; indeed there seems to have been no dissection, even of apes. Arab society protected itself by the regulation that, before practising on the faithful, the tiro must operate successfully on three unbelievers.

As to doctrines, one may observe in the citations given traces, or more than traces, of humoralism, methodism, and pneumatism.

When he came to deal with persons the multitude of Arab writers was overwhelming; wisely therefore the Lecturer, reluctantly omitting Spain altogether, selected for individual notice four, from the century 750–850 A.D.—the "Big Four" we may call them: namely, (1) Ali ibn Rabban, the master of Rhazes, and author of the *Paradise of Wisdom*. This work contains much on climate, and on drugs and poisons. Also some pathology interesting as the earliest attempt. (2) Rhazes, the chief physician of the great hospital in Bagdad. Him the Lecturer puts first; at any rate as a clinical physician. Enormous in volume, and in great part unpublished, as are his works, yet enough is available to bear witness to his preference of good clinical material to crude speculative physiology and pathology. The Lecturer gives us some specimens of able and experienced diagnosis, and of a nosology free from marvels. To his farther credit, Rhazes selected for discussion cases which puzzled or baffled him. In one of these cases we shall sympathise with the learned Arab when he balances in opinion, and really very ably, between abscess of the kidney and malaria. (3) Haly Abbas: whose *Liber Regius* Dr. Browne regards as a "noble thesaurus," admirably arranged, practical, and even critical, in spirit. It held the field until the predominance of the wellknown Canon of (4) Avicenna. Even to this day, it appears that Avicenna holds in the Orient the kind of place that until the seventeenth century Galen held in the West.

Such in faint outline is the book in which the Adams Professor, with great skill in the handling of his remote and abstruse subject, and with profound learning, has

[1] *Arabian Medicine*: being the Fitzpatrick Lectures delivered at the Royal College of Physicians in November, 1919, and November, 1920. By E. G. Browne, M.D., F.R.C.P. Cambridge: The University Press. 1921. (Demy 8vo, pp. 142; one illustration. 12s. net.)

presented to us the features of Arab medical history. It is good to hear from him that inaccessible and occult as the sources are, modern historians, of whom Withington, Pagel, Neuburger, and Garrison are mentioned, have given accounts of Arabian Medicine which are accurate and well informed.

The author's concluding words are that, while communing with the minds of these old Arabian and Persian physicians, he has realized the solidarity of the human intelligence beyond all limitations of race, space, or time; and the nobility of the great profession of Medicine.

C. A.

DIABETES.

Someone has said that it takes at least fifty years for a discovery to become known, and usually the piece of knowledge in question has been forgotten and rediscovered in the interval. The volume entitled *La Cure de Bouchardat et le Traitement du Diabète Sucré*[2] comes opportunely to remind us of this fact. Professor Rathéry expounds the treatment of diabetes as laid down by the eminent French physician Bouchardat in a series of publications extending from 1858 to 1883. The greater part of the book consists of extracts from these writings, and it is indeed remarkable to find facts, many of which have been acclaimed as recent discoveries, stated by him with no uncertain voice fifty years ago. It is true that ideas on the pathology of the disease have changed since he wrote, but his principles of treatment agree in most respects with those of present-day authorities. He laid it down that glycosuria is the result of hyperglycaemia, which in turn is due to excess of carbohydrate in the diet. He established the carbohydrate tolerance in each case, and insisted that the urine of a diabetic patient must be kept sugar-free. His patients were taught to test their own urine and recommended to do so when anything, especially of a carbohydrate nature, was to be added to the diet. He did not prescribe starvation days, but he uttered many warnings against excessive eating, particularly against an excess of protein, and recommended that green vegetables should form a large part of the patient's diet. This is all the more surprising when we remember that at the period at which he wrote, and for many years after, the treatment of diabetes consisted mainly in giving as much meat and fat as the patient could swallow. Again, when he discusses alkaline medication and the use of sodium chloride, his conclusions are essentially the same as those of the most modern exponents of the subject, though, owing to our different conceptions of pathology, his reasoning might not always be accepted. Professor Rathéry gives a summary of modern treatment, noting the additions and amplifications made since Bouchardat wrote. Of these the chief is the principle of alimentary rest and the more exact prescription of the quantities of carbohydrate, protein, and fat which modern science enables us to make. Bouchardat does not seem to have realized the connexion between the ingestion of fat and acidosis. Professor Rathéry, not unnaturally, is biased in favour of his author, and is inclined to overemphasize his points. This does not, however, detract from the value of his work in bringing Bouchardat's teaching before a new generation.

Turning to modern times, the masterly monograph on *Total Dietary Regulations in the Treatment of Diabetes*,[3] in the production of which Dr. F. M. Allen has been associated with Drs. E. Stillman and Reginald Fitz, will be welcomed by all who have diabetics under their care. It is a thick volume in which every detail of management is given, while the principles which govern the treatment are not lost sight of for a moment. About half the book is given up to records of patients, and, unlike many such documents, Allen's case records have real practical value. The reader can match them with cases from his own experience, and he can see exactly what was done and note the result. The first chapter is an interesting summary of the history of diabetes from the earliest days to the present time. Allen and his colleagues show how the work of different observers, more especially in the last fifty years, has led up to the present conception. Under-nutrition and fast days were in vogue before, but with Allen rests the merit of having systematized and placed on a firm foundation the principle of alimentary rest. Important chapters are those on exercise and body weight. The authors insist that exercise can only do harm in severe diabetes, although in mild cases it is of benefit. Tolerance is closely related to body weight—the higher the weight the lower the tolerance. Therefore in severe cases the weight must be kept below normal. Can the downward progress of the diabetic patient be arrested? Allen has shown that in many, even of the severest cases, it can be considerably delayed, and though it is too soon to speak with certainty, he believes that by strict attention to the principles of treatment the disease can be kept in check.

The carrying out of such treatment as is laid down by Allen is apt to seem a complicated matter to the patient, if not to his doctor. Fortunately for both, Dr. Cammidge's *Diabetic Dieting and Cookery*[4] is an excellent guide to the former in the way he should go, and relieves the latter of much tedious working out of diets. The opening chapters are intended to explain to the patient the principles of the diet in health and disease. Other chapters, such as that on the estimation of sugar in the blood, seem to be meant rather for the physician. The dietary tables are of the greatest assistance to the patient. The only disadvantage from the physician's point of view is that the foods are measured in "rations"; and since a "ration" varies in weight according to whether it is composed of protein, carbohydrate, or fat, the result to the physician, who is already struggling in his own mind with ounces and grams, is somewhat confusing. For the patient, who, as a rule, is not troubled with too extensive a knowledge of other measures, all is well. The defect, if defect it be, is not of great importance and is amply compensated by the mine of information in the book. We congratulate the author on a work which should prove useful to patient and doctor alike.

NOTES ON BOOKS.

Many members of the medical profession and other biologists, while anxious to obtain a general but accurate view of the principle of relativity, experience great difficulty in forming a conception of it, owing partly to the inherent difficulty of the subject, partly to the mathematical treatment to which it is usually subjected. To such the monograph by Mr. E. Cunningham, of St. John's College, Cambridge, entitled *Relativity, the Electron Theory, and Gravitation*,[5] may be commended. The object of this book, the first edition of which was published in 1915, is to set out as clearly and simply as possible the relation of the principle of relativity to the generally accepted electron theory. At that time it did not seem possible to arrive at any confirmation from observation, but since then it has been shown that the new theory explained the motion of the perihelion of Mercury, and the observations during the solar eclipse are held to have clinched the matter. The treatment of the subject is necessarily largely mathematical, but generalities are clearly set out. In the early part the exact way in which our fundamental notions of space and time have to be modified is considered; the ideas of momentum and energy are next discussed, and it is shown that some very important conclusions as to the mechanical relations of systems can be drawn without having recourse to any particular theory of the nature of an electron or of the way in which matter is built up out of them. As the author says, our growing sense of the insufficiency of the existing pictures of the constitution of matter makes this a very important consideration. The book concludes with an illuminating comparative survey of Newton's theory of dynamics, of the two stages of Einstein's speculations, and of Weyl's theory.

The new part of the *Old-Lore Miscellany* of Orkney, Shetland, Caithness, and Sutherland, published by the Viking Society (Burlington House), is stated to be the issue for the year 1916. It is in the main for specialists, but contains the beginning of a journal of another expedition made by Dr. Edward Charlton of Newcastle on-Tyne to Shetland; this instalment, however, is concerned almost entirely with the voyage from Leith to Lerwick.

[2] *La Cure de Bouchardat et le Traitement du Diabète Sucré.* Par F. Rathéry. Paris: Félix Alcan. 1920. (Demy 8vo, pp. 276. Fr. 8.50.)

[3] *Total Dietary Regulations in the Treatment of Diabetes.* By F. M. Allen, M.D., Edgar Stillman, M.D., and Reginald Fitz, M.D. New York: The Rockefeller Institute for Medical Research. 1919. (Sup. roy. 8vo, pp. 652; 62 charts. 4.50 dols.)

[4] *Diabetic Dieting and Cookery.* By P. J. Cammidge, M.D. Lond. London: University of London Press. 1920. (Demy 8vo, pp. 251. 10s. 6d.)

[5] *Relativity, the Electron Theory, and Gravitation.* By E. Cunningham, M.A. Second edition. Longmans, Green, and Co. 1921. (Med. 8vo, pp. 148. 10s. 6d. net.)

APPLIANCES AND PREPARATIONS.

London Hospital Catgut.

During the war difficulties in the supply of surgical catgut were encountered at the London Hospital, and from the successful solution of these difficulties has developed a business of preparing in the hospital surgical catgut from the first stage to the last, not only for its own use, but through its agents, Messrs. Allen and Hanbury, for the open market. A staff of over thirty persons is employed; they work in a special block of the hospital buildings and wear sterilized gowns and masks; suitable antiseptics are freely used for their hands (this was found to be preferable to the use of sterile rubber gloves), and the floors, walls, and appliances in the different rooms are scrubbed with antiseptics from time to time. The sheep's intestines, from which the gut is made, are received straight from the carcass; they are split and prepared in several processes, carried out in separate rooms and departments. The strands are thoroughly sterilized in the ribbon, then spun to the required size and sterilized again, and hardened by a special process which is stated to be a great improvement on the chromic process. The gut is next placed in appropriate lengths in glass tubes, and a further prolonged preparation in biniodide solution is carried out. An alcoholic solution of biniodide is then drawn by a vacuum process into the tubes, which are sealed, and are now ready for the market, with or without the attachment to the catgut of the Souttar needle, which was recently described in our columns (July 30th, 1921, p. 156). Perhaps the greatest advantage of this hospital-prepared catgut is that, as it is frequently tested by the hospital bacteriologists and regularly used in the hospital, a constant control is kept upon it and its method of preparation, into which, taking the essential properties of the catgut for granted, no flaw appears to have been allowed to creep.

THE PREVENTION OF VENEREAL DISEASE.

[From a Correspondent.]

The recently issued annual report of the Chief Medical Officer of the Ministry of Health for the year 1920 contains an interesting section dealing with the prevention of venereal disease.

By the courtesy of Dr. E. Martin, Commissioner of Health, Commonwealth of Pennsylvania, it has been possible to compare the medical measures adopted in that State with those enforced or proposed in this country. The Ministry of Health, supported by the National Council for Combating Venereal Diseases, has based its policy upon the recommendations contained in the Report of the Royal Commission, 1916. The principal recommendations of the report were:

(*a*) Confidential registration of causes of death.
(*b*) Extension of facilities for diagnosis.
(*c*) Organization by the local authority of means of free treatment for all classes at convenient hours and under suitable conditions.
(*d*) Improved professional and public education.
(*e*) A grant-in-aid of 75 per cent. of total cost incurred in approved schemes.
(*f*) Treatment in army and navy, Poor Law institutions, prisons, etc.
(*g*) Prohibition of all advertisements of remedies and unqualified practice.
(*h*) Recognition by the Government of the National Council for Combating Venereal Diseases as an authoritative body for spread of knowledge.

The work of the Department of Health of the Commonwealth of Pennsylvania is divided into three parts—medical, educational, and law enforcement.

The most important difference in the British and American policy of controlling venereal disease is the absence of law enforcement by our Ministry; but there are in addition considerable and fundamental differences in the medical policy, which will be considered later. It seems doubtful whether any policy based solely upon educational and medical measures can be effective in eradicating venereal disease, and certain facts which will be alluded to later support this conclusion. But law enforcement "directed to the limitation of the activities of prostitutes" is a doubtful measure, for it is generally believed that venereal disease is spread by the amateur more than the prostitute, especially prostitutes in regulated and controlled licensed houses.

Efficiency of Clinics.

The British report states that: "The number of treatment centres now established is 191 (June, 1921), with approximately 800 weekly sessions. In 120 clinics provision is also made for the intermediate treatment of gonorrhoea, and several 'ablution centres' have been established for an experimental period."

The tables giving expenditure of local authorities and grants paid by the Ministry, and the number of attendances in the last three years at these clinics, show a rapid increase of both. Some authorities may have pointed with satisfaction to this increase of attendances. If it could be proved that these clinics were efficiently dealing with the problem of venereal infection it would be more easy to justify on moral grounds, and for the sake of innocent women and children, an outlay of half a million of the ratepayers' and taxpayers' money in treating (without discrimination of ability to pay) men and women who have in a large majority of instances acquired the disease by promiscuous sexual intercourse. There are, however, facts coupled with statements by the Chief Medical Officer in his report which show that these clinics on the whole are not efficient and cannot be made efficient in controlling effectively venereal disease. These facts are contained in the subjoined table given in the report:

Duration and Effects of Treatment.

	Syphilis.	Gonorrhoea.	Total.
1. Number of persons dealt with during 1919-1920	105,619	87,792	193,411
2. Number of persons who ceased to attend:			
(*a*) Before completing a course of treatment	30,459	28,869	59,328
(*b*) After completion of a course of treatment, but before final tests as to cure	9,350	6,481	15,831
3. Number of persons discharged after completion of treatment and observation	8,240	13,300	21,540
4. Number of persons who on January 1st, 1921, were under treatment or observation	47,894	28,822	76,716

These figures show that the total number of persons dealt with is given as 193,411, but 2, 3, and 4 added together give a total of 173,415 only, so that about 20,000 persons are unaccounted for; some few of these may have been transferred to private clinics or have been treated, after the first attendance, at the private house of one of the medical staff; but doubtless by far the larger proportion were patients who feared they had venereal disease and were found not to be suffering with it. The table shows that 29 per cent. of the cases of syphilis and 33 per cent. of those of gonorrhoea ceased to attend before completing a course of treatment, and therefore, presumably, in a large number of instances while still infective; if to these are added cases who ceased to attend before final tests as to cure had been applied, the total percentage of possibly infective persons is 40 per cent. Only 11 per cent. of the total number of persons treated completed treatment and observation. What percentage of the 76,716 still under treatment and observation would complete the cure was not known.

These figures, regarded in the most favourable way possible, should not give much cause for satisfaction to the National Council or the Ministry of Health; and indeed there are indications that the Chief Medical Officer is aware of this fact. To justify a policy involving the expenditure of half a million of money, a sum which will, according to previous experience, increase with each successive year, a satisfactory explanation is needed. It is not surprising, therefore, to find indications of a change of policy in the future. On page 119 of the report it is stated:

"Thirdly, it is extremely desirable that fuller arrangements should be made by the authorities for bringing the general medical practitioner within their schemes of treatment or education. It cannot be too clearly understood that the best way of dealing with most cases of these diseases is through the skilful private practitioner. For a substantial portion of this problem the public clinic should be looked upon as a temporary organization pending the time when the practitioner is ready, available, competent, and properly equipped to undertake effective treatment. Certain patients require hospital treatment, but the authority should not needlessly establish institutions, if and when the ordinary channels of medical practice are available and reliable or can be made so."

This, which is at present no more than a pious medical opinion, may be compared with the following practical

measures which have been adopted and carried out by the Health Commissioner of the Commonwealth of Pennsylvania:

"The Department of Health of the State of Pennsylvania maintains thirty public clinics for the treatment of venereal disease, over which it has entire supervision, and for which it assumes all financial responsibility. In these clinics free treatment is given to those patients whose economic condition will not permit treatment either by private physicians or by clinics charging a fee. Upon entrance to clinics patients are questioned as to their ability to pay for services. Those able to pay a private physician are referred to outside doctors who are registered with the clinics. If in a position to pay only a small sum they are referred to hospital clinics which charge a nominal fee. Indigent patients are treated free in the State clinics."

It will be observed that discrimination is shown in respect to free treatment. The practitioner registered with the clinic, it may be assumed, is ready to carry out efficiently the treatment for which he is paid by the infected person. As has been said, experience shows that under the system followed in this country a large percentage of the persons discontinue treatment before it is completed, and therefore while still capable of spreading the disease. The health authority of Pennsylvania, foreseeing this risk, has made the following regulations:

"When a patient discontinues treatment before he (or she) is cured or rendered non-infectious, the social service worker follows up the case and sees that the patient returns to the clinic as long as the disease is in the infective state. This is accomplished first by sending him a notice to return for treatment. If this does not effect a return the clinic makes use of the legal machinery at the disposal of the Department of Health."

"Venereally diseased patients in the infective stage are subject to quarantine when, through neglect of treatment, habits, occupation, or failure to protect others, they are menaces to the public health."

In this country no legal measures of this nature can be taken with regard to the very large percentage of persons attending the clinics who discontinue treatment and disregard the warning they receive, or should receive, that they are still infective and a menace to society.

The following passage from the report of the Chief Medical Officer of the Ministry of Health indicates that a number of the clinics are not efficient:

"I am bound to advise that if the work of these clinics is not properly done—if it is casual, superficial, or perfunctory—they should be disapproved by the Ministry. It is better to have only a few clinics well organized and scientifically controlled than a large number which are not thus administered."

The small percentage of persons attending the clinics who are discharged as certainly non-infectious, and the large percentage who do not complete a cure and are still infective, is explained if the service at a large number of these clinics is "casual, superficial, or perfunctory." But is it not the duty of the numerous venereal specialists employed by the Ministry of Health to see that these clinics are made efficient or closed down?

The report states:

"Whilst the venereal disease clinic has proved in practice the centre of treatment, it is but one part of the national scheme for dealing with these diseases. The other and more important part concerns prevention."

"Treatment and prevention are not easily separable, and, indeed, *they should not be separated*. . . . Thus every clinic has direct preventive work to do."

But the report shows signs of dissatisfaction with the service at many of the clinics. Is it likely that ablution and irrigation will be efficiently carried out at clinics where the treatment is "casual, superficial, or perfunctory"? With regard to self-disinfection we are told:

"The Ministry believe that thorough cleaning and skilful disinfection of the body immediately after risk of infection has been incurred tends substantially to reduce the likelihood of disease, but the Ministry are not prepared to recommend a general practice of *self*-disinfection apart from skilled advice and supervision. It is believed that, except under skilled control, attempts at self-disinfection are likely (i) to be ineffective; (ii) to create a false security and thus an increase in promiscuity; and (iii) to lead to postponement of treatment, which thus becomes more difficult and uncertain. It is impracticable to train the general public in effective self-disinfection by means of leaflets of instruction. What is required in all such cases is not general directions for self-manipulation, but prompt and skilled advice."

Is this fear of failure, it may be asked, the sole reason? Is it not in a great measure the same influence at work that interfered with prophylaxis being carried out efficiently in the services during the war—namely, the National Council and its supporters, which set out to combat venereal disease and still finds it increasing in spite of moral propaganda and curative treatment centres? Without any wish to dispute the fact that "skilled disinfection" as carried out by the American Army was efficient, it will be well to see what the Commissioner of Health of Pennsylvania says about skilled disinfection in civil life:

"Immediate treatment (venereal prophylaxis) for those exposed to disease has been approved by the Pennsylvania State Department of Health. Prophylaxis as used in the army by means of stations is impractical in civilian life. Tubes containing material for self-disinfection are given the Department's approval when, after tests, they meet requirements. The material usually employed is after the formula of Metchnikoff. The tubes are on sale in drug stores."

Any unprejudiced person must see many grave objections to trusting to disinfection stations to control venereal diseases effectively, even if these stations could be of guaranteed efficiency (1) by the quality of the personnel; (2) by the location and equipment; and (3) by being always open and ready, which would necessitate a shift of three attendants in twenty-four hours. A large number of people who have exposed themselves to infection would object to go to a public ablution centre. In most cases in civil life disinfection would be delayed, and in a large proportion it would be ineffectual owing to the time lost before it was possible to obtain skilled disinfection. The conditions are different in the services and civil life. A soldier or sailor, except when on leave, cannot stay out at night, and consequently skilled disinfection within a short time of exposure is possible; but a large proportion of civilians who expose themselves to infection could not, or would not, seek skilled disinfection till the next morning, and even if the locality of the station was favourable and its efficiency all that could be desired, nevertheless the delay would prevent skilled disinfection from disinfecting. So that from an economic and efficiency point of view the writer is of opinion that the Health Department of Pennsylvania has wisely adopted "self-disinfection" as one means of controlling venereal diseases.

It is doubtful whether any medical measures alone can effectively control venereal disease. So long as large numbers of infective men and women are permitted without any restraint or disciplinary measures to be at large, infecting innocent women and children, the disease will remain uncontrollable. It is an extremely difficult problem for the Ministry of Health, but practical measures rather than pious opinions and promises are required to control venereal disease and stop or allay its ravages.

Professor Rudolf Kraus has left Buenos Aires to assume the directorship of the serum institute at San Paolo, Brazil.

The annual report of the Samaritan Fund and work of the Lady Almoner's Department of St. Thomas's Hospital for 1920 has just been published. The Samaritan Fund, which was founded in the year 1852, provides such adjuncts to hospital treatment as convalescent treatment, surgical appliances, temporary allowances, fares, and extra nourishment. Its assistance has always been of a most varied nature, the desire of the Governors of the Fund being to mitigate as far as possible the distress and misery that illness and disease are bound to bring into the lives of so many hospital patients. In order that the ideals of such a fund may be carried out considerable care is necessary lest the help afforded should tend to lessen the independence of the patient, and therefore, when help is required, the first source to be considered is the patient and his relatives, the Samaritan Fund merely subsidizing their contributions. In 1920 the patients' contributions towards convalescent treatment and instruments amounted to over £2,984, part paid in direct sums and part by means of loans. At the end of the year, the report states, the outstanding loans only amounted to £38 11s., the whole of which would be gradually repaid, while bad debts came to the small sum of £7 6s. 2d. The total ordinary expenditure was £5,959. The Fund asks for financial help, convalescents' letters, and free hospitality for hospital patients who, though not actually ill, need rest and fresh air; it is a charity which is undoubtedly carrying on a very useful work and deserves support.

British Medical Journal.

SATURDAY, OCTOBER 8TH, 1921.

THE BOARD OF CONTROL'S REPORT.

In view of the unfavourable criticisms which have recently been directed towards asylum administration, the seventh annual report of the Board of Control, for the year 1920, is invested with more than usual interest. In this report the Board deal at some length with certain specific complaints relating to two or three asylums, into which special investigation was made. The inquiry was made before the publication of Dr. Lomax's book which has excited so much public interest, and which was recently reviewed in our columns. In one instance the investigation arose out of serious allegations which had been brought to the notice of the Minister of Pensions by the members of a deputation (headed by Mr. B. Tillett, M.P.) who claimed to speak on behalf of ex-service men in Manchester. Allegations were made as to general conditions, diet, neglect, and harsh treatment of service patients, lack of proper surgical and medical attention, and wrongful detention. A legal and a medical member of the Board of Control, accompanied by Dr. R. Cunyngham Brown, Deputy Director-General of Medical Services, Ministry of Pensions, visited Prestwich Asylum, to which the allegations referred, and inquired into the conditions under which the 268 ex-service men then in the institution were treated. The investigations were exhaustive in character, and occupied two days, during which each of the service patients was interviewed and his bodily and mental condition considered. The conclusions of the Commissioners, with which Dr. Cunyngham Brown entirely agreed, are summarized in the report under eight headings; they are reassuring in character. The complaints were not substantiated, and the patients were held to receive proper medical attention and to be treated with kindness and consideration by the medical and nursing staff.

The other investigation referred to in the report was the outcome of a severe criticism of the treatment of inmates of county asylums, appearing in an issue of *Friend*—a religious, literary, and miscellaneous journal published by the Society of Friends. In view of the allegations made the Board arranged a conference with certain members of the Friends' Ambulance Union, among whom were four conscientious objectors who had been employed as temporary attendants for one to two years during the war at two asylums, and from whom the allegations, repeated at the interview, originally emanated. The complaints proffered were related to inadequate medical treatment, imperfect classification, failure to segregate tuberculous cases, bad feeding, poor and insufficient clothing, the use of cold baths for punishment, assaults upon patients, unnecessary seclusion, and harsh restraint. In recording the result of its deliberations the Board expresses the opinion that due allowance was not made for the war conditions under which these asylums had to be worked while the complainants were employed there as temporary attendants. Perhaps the cogency of these observations can only be adequately realized by those who were responsible for asylums during the years of war. They were carried on under most unfavourable conditions, and the stress of war was acutely felt. Having taken these facts into account, however, it is somewhat disquieting to learn from the further comments of the Board that the allegations were not devoid of foundation. The Board expresses its views as follows: "The allegations which were made and our inquiry served a useful purpose, for they brought to light certain deficiencies and undesirable practices, notably the practice at one of the asylums of giving (though not without medical orders) cold douches as 'correctional treatment' to certain patients who exhibited filthy and destructive habits, and were believed to know better. We entirely deprecate any form of 'correctional treatment' where the insane are concerned, but of course approve of the considered use of hot or cold baths or douches as purely medical treatment. We have communicated with the Visiting Committee of each institution on these matters, and have every hope that in the future there will be no cause for legitimate complaint."

That these investigations have served a useful purpose will be generally recognized. The Lunacy Laws are designed to afford protection to the insane, and the primary function of the Board of Control is to safeguard the interests of the certified patient. The Board has always been fully aware of its responsibilities in this direction, and its attitude has been one of vigilance where laxities or abuses are concerned. The asylum mechanism as a whole is constructed in such a way that, if strictly carried into effect, irregularities should be prevented or, if they occur, remedied. Ultimately, of course, the atmosphere of an institution depends upon the spirit which animates those who are responsible for its administration. This always will be so, and a proper atmosphere cannot be created by legal enactments, rules, and official mechanisms alone.

It must be frankly recognized that the public asylums have not gained the complete confidence of the public. Every asylum physician is conscious of this, however efficiently his hospital may be administered, and his work is rendered all the more difficult on that account. The factors which determine an attitude of mistrust towards asylums are extremely complex. Some of them are unavoidable, and such an attitude will tend to persist whatever internal reforms are undertaken. As a step towards the mitigation of this undesirable state of affairs it is satisfactory to read in the report of the Board that the bulk of the powers of the Home Secretary under the enactments relating to lunacy and mental deficiency have been transferred to the Minister of Health. The Board of Control thus becomes directly associated with the Minister responsible generally for the administration of measures dealing with the health of the community. On this important change the report contains the comment: "The Board anticipate that this step will not only result in considerable administrative advantages, but it may bring about a more general understanding of the fact that the measures that have been taken for the care and treatment of the mentally disordered are in certain essential aspects akin to those which have to be provided in general hospitals and infirmaries; and that it may help to dispel prejudices which often arise against lunacy authorities and administrations, and which often affect injuriously patients under treatment or even after recovery."

The problems associated with the certifiable insane are only part of the wider problem of mental disorder as a whole. Outside the cases of recognized insanity there exists a large group of mental disorders—incipient psychoses, inadequate personalities, psychoneuroses—where hospital treatment is a matter of urgent

individual and social importance. Apart from some amendment of the Lunacy Law, this treatment cannot be given to the extent which is desirable. It is satisfactory to observe, therefore, that the Board hopes that a comprehensive measure for dealing with early cases of insanity without certification will be submitted to Parliament at the earliest practical date. Such a measure is long overdue, and it is earnestly to be hoped that the existing difficulties in the way of effective treatment may before long be removed.

In considering any reform, especially at the present time, the financial aspect cannot be ignored. The report shows that the average weekly cost of maintaining the patients in the county and borough asylums for the year ending March 31st, excluding the cost of repairs, additions, and alterations, was 22s. 2¾d. A table is given, which shows that during the six years —namely, from March 31st, 1914, to March 31st, 1920 —the increase in the cost of maintaining the patients in public asylums amounted on an average to just over 100 per cent. In view of the heavy increase in the cost of maintenance of the certified insane, it may scarcely be possible at present to effect all the improvements in their treatment which are so eminently desirable. Many minor improvements are, however, possible at a relatively small expenditure, as, for instance, certain changes in the dietary, the necessity of which the Board of Control is impressing upon the Visiting Committees. It is certain that if the insane are to receive the benefit of that treatment to which they are entitled, the public will have to be prepared to adopt in the future a policy more liberal than has hitherto been followed. Any money expended upon clinics and research into the causation of mental disorder will, in the long run, be fully repaid, because upon its capital of psychic energy the prosperity of the community must ultimately depend.

VACCINATION.

In our issue of June 5th, 1920, we based some comments on the types and prevention of small-pox upon an instructive paper by Colonel W. G. King printed in the *Transactions* of the Society of Tropical Medicine and Hygiene. The Tropical Diseases Bureau has now issued an essay by the same author on *Vaccination in the Tropics*,[1] in which he provides a full and careful account both of the technique of vaccination and of the preparation of animal vaccine, including some notes on Noguchi's method of purification. This, the larger, portion of Colonel King's essay will be of great value to all serving or intending to serve in the tropics, but the succinct statement of the case for vaccination which occupies some of the earlier pages will suggest to the practitioner at home seasonable reflections.

In his recently published annual report for 1920[2] Dr. Hamer makes some weighty remarks. "The question," he says, "may be raised as to how long it will be possible to keep small-pox at the present low figure." Under existing conditions there is, he considers, a constant risk that small-pox will strongly reassert itself, and assume a more prominent position than it does at present. "A glance at the world map of small-pox," he continues, "makes this self-evident. Small-pox is a world disease, and is very widely prevalent." He takes British India as an example, and points out that during 1918 there were 93,000 deaths from the disease, and that it is therefore probable that there were half a million cases; as it is more or less prevalent in nearly the whole of the rest of the world, it is apparent that the total number of cases must reach a very high figure. "In this country, and especially," he says, "in the metropolis, with its large influx of passenger traffic from all parts, not only from the Continent, but also from the seaports of the Mediterranean and of the Eastern and Western hemispheres—and foreign seaports are among the special breeding grounds of the disease—it can only be hoped to put off the evil day of the return of small-pox as long as possible; under present conditions it is not possible indefinitely to escape what is in effect a universal scourge. The case would be a very different one if general use were made of vaccination. Countries such as Holland and the Philippine Islands have rid themselves almost entirely of small-pox and any scare of it by means of vaccination; but our population is largely unprotected, and is yearly becoming more so. It is always liable to be attacked by the chance importation of a case into a neighbourhood where infection will take hold and spread rapidly. This happened towards the end of the year 1919 in a country district, where a mild and unrecognized case led in a few weeks to 59 other cases, to the closing of all the elementary and secondary schools, and to the closing of the Sunday schools. Similar happenings have often been reported."

So far Dr. Hamer, and it would indeed be a work of supererogation to preach here the orthodox doctrine of vaccinal protection, but it may not be unprofitable to speculate how it comes to pass that one of the most philosophical epidemiologists of our day and one of the keenest critics of many orthodox medical beliefs has no doubts whatever upon the point. If the case against vaccination be examined it will appear that the arguments employed by different writers fluctuate violently from the highly general to the narrowly particular. Bishop Warburton said of the sceptic Bayle, "he whose business it is, to prove the negative, brings all his arguments from considerations, which either affect not the gross body of mankind, or affect not that body, in Society: in a word, from the lives of Sophists or Savages; from the example of a few speculative men far above the view of the common run of *citizens;* or from that of a barbarous crew of *savages* much further below it." It will, we hope, be no discourtesy to rank such authors as Dr. Charles Creighton amongst speculative men far above the view of the common run of citizens. The epidemiological doctrine of such men, based upon a profound study of the documents, is that decline of small-pox after the Jennerian epoch was but the unfolding of a secular evolution which began long before Jenner's century. First a disease mainly but not entirely of childhood and of low fatality, then a fatal disease of adults, then again of children, and, in the later decades of the nineteenth century, once more a disease of adults. "It would be a not incorrect summary of the incidence of small-pox in Britain to say that it first left the richer classes, then it left the villages, then it left the provincial towns to centre itself in the capital; at the same time it was leaving the age of infancy and childhood."[3] Some of these features have been observed in the secular evolution of diseases against which we do not pretend to immunize. Scarlet fever was once a mild disease, then it became deadly, again mild, then once more deadly, and in our own generation it seems to be losing its powers of destruction—but not of infection—year by year. If

[1] *Vaccination in the Tropics.* By W. G. King, C.I.E., Colonel I.M.S. London: Tropical Diseases Bureau. 1920. (Pp. 64; 5s. net.)

[2] London County Council, Annual Report, vol. iii (Public Health). London: P. S. King and Son. 1921. (Pp. 8–9.)

[3] Creighton, *History of Epidemics in Britain.* ii, 617.

about fifty years ago an anti-scarlet fever inoculation had been introduced, would not the statistical case in its favour have seemed overwhelming? The reason why epidemiologists neither unmindful of the importance of history nor lacking the historical sense are left cold by this argument is really contained in another sentence of Dr. Hamer's report: "It is the special risk of small-pox that it cannot be foreseen or calculated against beforehand, either as to time of attack, extent of attack, or as to expense." In scarlet fever, in diphtheria, and even in influenza, there is an internal continuity of the successive events. Epidemics of small-pox have been capricious, and, far more distinctly than influenza, have justified the analogy of bringing a spark to tinder.

If we consider the very large number of epidemics of scarlet fever, diphtheria, and small-pox which have been sedulously investigated during the last fifty years in this country, we shall be struck by the difference between the etiological results. In the two former diseases not only is the existence of an endemic level obvious, but the immediate *fons et origo* of a local outburst has usually been quite indeterminate, while serious and widespread prevalences have never failed to cast a shadow before. With small-pox the state of affairs has been utterly different. In nearly all outbreaks there has been little difficulty in ascertaining the point of origin, and, as Dr. Creighton recognized in the instances of the epidemics of 1858–9 and of 1871–2, no general internal changes of the public health—such as often heralded an influenza—can be assigned. "The great epidemic of 1871 and 1872," he says, "finds no better explanation than our neighbourhood to Germany and Belgium, where the mortality from small-pox was far greater than in Britain, and was doubtless favoured by the state of war in 1870–71."[4] When one recalls the apparent relation between the German outbreak and the introduction into Germany of large numbers of unvaccinated prisoners—the vaccinal state of the French was much inferior to that of the Prussians[5]—and the association between high prevalence of vaccination and low prevalence of small-pox in nations of such different types as Swedes, Dutch, Germans, and Filipinos over a long period of years, it is very difficult to avoid the inference that the secular evolution of small-pox in European countries is utterly unlike that of the other zymotics.

Intelligent men who oppose vaccination, with less learning but not less honesty than Dr. Creighton, have attempted to strengthen the general or philosophical argument by resort to a multitude of particulars, so that we get those violent fluctuations of which we spoke above. The following propositions are, we believe, common ground: (1) That the incidence of small-pox is lower upon the populations of well vaccinated states than upon those of ill vaccinated states; (2) that, measured upon large samples of data, the fatality rate of small-pox amongst those vaccinated is too different from that amongst unvaccinated to be attributable to the random fluctuations of chance; (3) that there is even a significant negative correlation between the fatality of small-pox and the extent or foveation of vaccinal cicatrices. If vaccination does really confer a protection to some extent against attack—to a still greater extent against death from the disease—all these results are intelligible. They are also intelligible if vaccination be a mere delusion, provided we adopt in each instance a special explanation. We may account for (1) by assigning the differences to racial and cultural variations; (2) might be dependent upon a correlation between mildness of attack, high proportion of vaccination, and superior economic status; (3) might be due to a correlation between a special physiological type of dermal structures, intensity of vaccinal reaction, and mildness of disease when incurred. All these arguments have, in fact, been used. But what has not, we think, been perceived by their exponents is that they blunt Occam's razor by multiplying hypotheses without necessity. "The minor species of preceptive sharpness," said Bagehot, "is so different from diffused sagacity, that the two scarcely ever are to be found in the same mind. There is nothing less like the great lawyer, acquainted with broad principles and applying them with distinct deduction, than the attorney's clerk who catches at small points like a dog biting at flies."

These we suppose to be the general principles of reasoning which are applicable to the case and explain the attitude of both philosophical and practical epidemiologists towards the question. The profession has done its duty in this matter; no argument remains unused, and the future will show, not that lives which might have been saved will be lost, but whether these sacrifices shall be numbered in units, hundreds or thousands.

[4] Creighton, op. cit., p. 613.
[5] Hirsch, *Geographical and Historical Pathology*, i, 142.

THE PRESENT POSITION AS TO VACCINATION.

The Ministry of Health has issued for official use a succinct report on "Small-pox and vaccination," based on records relating chiefly to England and Wales. It is lucid, non-polemical—an instructive and convincing statement of the main facts in the epidemiology and practice of these respective conditions. To the officials for whose use it has been ostensibly prepared it is for the most part a recapitulation of facts already known, a basis for inferences already drawn, at once an implicit testimony to and indictment of those vaccination administrative arrangements which are set out with so colourless an impartiality almost to disguise the Ministerial responsibility on which they rest. Perhaps in no better form or more timely could there have been raised the issues with which this taking stock of the position confronts us. We are reminded at the outset that small-pox, one of the most infectious diseases, is always present in some parts of the world, and may at any time be introduced into England from abroad. We are always liable to occurrence of cases of small-pox, and it is never possible to say when or where the next outbreak will occur. "When small-pox breaks out it visits with strict impartiality healthy and unhealthy districts, and the incidence of attack and death falls on rich and poor alike subject only to one condition—the absence or the presence of the protection afforded by vaccination." It is reasonable to infer, therefore, that neglect of this one crucial condition would place us in relation to small-pox very much in the position of our ancestors in pre-vaccination days. The report gives a very interesting analysis of the state of the respective populations in relation to small-pox attack in the towns of Ware, Chester, Warrington, and Kilmarnock in the eighteenth century, illustrative of the statement that "in this country in pre-vaccination days it was accepted as an established fact that everyone would suffer attack by small-pox at some period of his life, and that the date of this attack depended upon opportunity of infection afforded by recurring periodic prevalence of the disease." It was estimated by a distinguished mathematician writing in 1760–5 that small-pox carried off the thirteenth or fourteenth part of each generation. "Amongst those who survived the attack there were many who were rendered blind or deaf, or who had suffered disfigurement of the features and other injuries during the course of the disease that resulted in permanent infirmity and proved contributory causes of early death." All this, of course, is common knowledge and familiar

history. In a country whose Ministry of Health officially recognizes these facts, whose medical advisers—who have established in so many fields their claim to speak with authority—are virtually unanimous in their acceptance of them, what should we reasonably expect, and what do we actually find, as to the practical application of the protective measures so obviously indicated? We find that the population of England and Wales is progressively approximating in respect of its unprotectedness to the population of pre-vaccination days. It is even worse than that, for whereas in pre-vaccination days the greater part of the population was protected from small-pox by previous attack, a continuance of the present conditions will, in the course of a few years, leave the greater part of the population wholly unprotected, either by vaccination or attack by small-pox. The accumulation of so much inflammable material, so to speak, may well give check to the complacency with which some not remote Ministerial experiments have been viewed. The report makes no disguise of the position. The tables showing the observance of the vaccination laws as a whole in 1898 and in subsequent years, and abstention from vaccination and acceptance of vaccination in 1893–97 and in subsequent years, are eloquent. Nothing could more clearly demonstrate than do these cold figures that the Vaccination Act of 1907 was, from the point of view of securing a population protected from small-pox, little short of disastrous. That Act, it will be remembered, made statutory exemption from vaccination easier and far less troublesome to the parent than compliance with its positive requirements, while the cost of vaccination became nominal or was borne entirely by the civil authorities. The "tremendous experiment," as Lord Lister described it, of admitting conscientious objection as valid ground for non-compliance with measures designed to secure the public health, was urged by some of its supporters because they believed that in effect it would conduce to increased vaccination. How far this is from being the case is shown in the official figures It is true that, after the passing of the Vaccination Act of 1898, there was for a number of years a decline in the number of "abstentions" from vaccination as compared with the period immediately preceding the passing of the Act, but this was mainly in the years of small-pox prevalence—namely, from 1901 to 1905. A conscientious objection which quails when the prospective dangers against which the measures are designed become actual can scarcely justify a statutory recognition upon any theory of government. Yet it was in the light of this experience that the then President of the Local Government Board brought in his Vaccination Act of 1907. "The Act of 1907 came into operation on January 1st, 1908, and its immediate effect was to more than double the number of exemptions. In 1908 there were 940,640 births; the exemptions rose to 160,350, or 17 per cent., and the number of primary vaccinations fell to 594,792, or 63.2 per cent. Since that time the percentage of vaccinations to births has decreased and the percentage of exemptions to births has increased. In the year 1919—the last year for which the figures are available—the births numbered 691,370 and the primary vaccinations 281,029, or 40.6 per cent., and the exemptions were 277,558, or 40.1 per cent." In the ten years ending 1919 there have been added to the population under 12 years of age two and a half million children who are legally exempted from vaccination and are unprotected against attack and death from small-pox. This number is augmented in an increasing ratio each year, and has already assumed proportions which cannot be regarded otherwise than with anxiety. It is recognized in the report that for the great majority of persons it will suffice to renew the vaccination at the end of ten years, but it is also recognized that at the present time a considerable proportion of the adult male population is protected owing to having been revaccinated while serving in the navy and army during the war. Though no hint of any contemplated change is given in the report, it is scarcely to be believed that, alive to the facts and their full significance, the Ministry of Health will rest content with giving publicity to a state of matters so disquieting. The issue for official use of so frank an exposition of the actual state of affairs makes it clear that the Ministry is alive to the menace; it may be assured of the hearty co-operation of the medical profession in all reasonable steps it may take to avert it.

THE SHROPSHIRE ORTHOPAEDIC SCHEME.

A CLINICAL meeting of the British Orthopaedic Association was held on October 1st and 2nd at the Shropshire Orthopaedic Hospital, which has recently been removed from Baschurch to larger quarters at Oswestry. On October 1st Sir Robert Jones gave a clinical demonstration of a number of cases under treatment in the wards, including rickety and paralytic deformities and cases of tuberculous disease. Mr. Naughton Dunn demonstrated his stabilizing operation for the treatment of paralytic deformities of the foot, the principle of which is that in severe cases of paralysis of the foot the deformity is corrected by a bone operation, which includes the removal of the cartilage surfaces from all the tarsal joints, so that these joints become fixed, leaving a foot which moves at the ankle-joint as a simple hinge. All the anterior muscles are thus left as pure dorsiflexors of the foot, and the posterior muscles are transplanted into the tendo Achillis to act as plantar flexors. Mr. G. R. Girdlestone demonstrated a method of treating Pott's disease carried out in the hospital, and showed a number of cases which had been treated by bone transplantation. Mr. D. McCrae Aitken demonstrated a method of correction of severe kyphosis and of scoliosis on the Abbott's frame. In the afternoon visits were paid to some of the after-care centres. A number of these have been established throughout the county of Shropshire. The children under observation or treatment attend one day in each week—preferably on market day. They are seen weekly by the visiting nurse and once a month by a medical officer from the Orthopaedic Hospital. Records, including photographs and plaster casts, are kept at the after-care centres, measurements for splints and appliances made, and simple plaster applications made at these centres. On October 2nd a series of operations was performed—namely: (1) Albee's operation for spinal caries, by Mr. Girdlestone; (2) osteotomy for malunion of fracture of the femur, by Mr. Aitken; (3) stabilizing operation upon a paralysed foot, by Mr. Dunn; (4) correction of a club-foot in a child of 7 with the wrench, by Sir Robert Jones; (5) Souttar's operation for displacement of the anterior superior spine of the ilium as a means of correction of flexion of the hip, by Mr. Noble. The meeting was attended by about fifty members and visitors.

WATER POLLUTION AND CHLORINATION.

A FORTNIGHT ago we mentioned a recent circular of the Ministry of Health regarding the chlorination of water supplies. The way in which a community by too strenuous protest against a passing inconvenience may condemn itself to an annual recurrence of disease is shown in a report by Dr. R. G. Perkins, of the Cleveland (U.S.A.) Public Health Department, recently reprinted by the United States Public Health Service. Cleveland, it appears, obtains its water through two "cribs" placed over four miles out in Lake Erie, and delivers it through two pumping stations, at one of which it is filtered, and at both of which it is chlorinated. Chlorination was begun in 1911, when the growth of the city and the increasing pollution of the lake water made treatment essential. After numerous experiments the "dosage" of chlorine necessary to make the water safe was determined; this amount was added, and the typhoid curve fell sharply. It so happened, however, that the purified water had to be delivered through the

mains in some parts of the city so soon after chlorination that the taste of chlorine was still apparent. Many complaints followed; but these were dying out when, early in 1912, a flood in the Cuyahoga River (which enters the lake at Cleveland) carried sewage and trade wastes out into the cribs, through which they reached the city mains. The trade wastes gave the water an unpleasant taste, which everyone promptly ascribed to chlorination. The mayor bent beneath the storm of protest. By his order the "dosage" of chlorine was reduced, and during the ensuing nine years it has never been high enough, the report says, fully to counteract the ever-present pollution in the untreated water. In 1918, in an effort to improve matters, a filtration plant was put into service at the larger pumping station, which handles nearly three-fourths of the city supply. Laboratory tests, however, showed that sewage pollution was present in the unfiltered water in the city mains for nearly half the time, and in the filtered water from 8 to 22 per cent. of the time. In 1918 and in 1920, when these tests showed the water to be badly polluted, the number of cases of typhoid fever in the city which could not be traced to any cause other than the water was twice as great as in 1919, when the tests showed the water to be much better. From this Dr. Perkins argues that the pollution of the water and the amount of typhoid fever are directly related; and that when the pollution is reduced to a minimum, as he suggests it can be by existing facilities, typhoid fever in the city will be very greatly reduced. It should perhaps be added that the engineer of the water department of the city, whose experience the report admits is large, cannot agree that the untraced part of the rise of typhoid in Cleveland in the summer is due to water pollution.

ABDOMINAL PAIN DUE TO FOOD ALLERGY.

The remark of Lucretius, that one man's food may be a powerful poison to others, was paraphrased by Beaumont and Fletcher into "what's one man's poison is another's meat or drink," and the occurrence of food idiosyncrasies was roughly forced on man's attention long before the blessed words anaphylaxis and allergy came on the scene, and before the relation of asthma to hypersensitiveness to foreign protein became the talk of the medical market-place. Purpura with abdominal symptoms, perhaps more familiar as Henoch's purpura, is now recognized to be a toxic idiopathy analogous to hay fever and asthma, and often imitates the acute abdomen of the surgical theatre. In a paper entitled "Food allergy as a cause of abdominal pain," and embodying much clinical observation, Dr. W. W. Duke,[1] of Kansas City, shows that the reaction caused by hypersensitiveness to a food, such as white or yolk of egg, lactalbumin, casein, beef, pork, honey, strawberries, lettuce, cabbage, beans, onions, rice, almonds, and tomatoes, may be solely abdominal pain, and so severe as to be easily mistaken for a serious abdominal lesion. Usually the pain starts soon after the offending article of food is taken, and lasts from three to six hours, but in some instances the onset is delayed for three to twenty-four hours, and then the pain persists much longer. Persons sensitive to rare articles of diet usually give a history of occasional attacks of abdominal pain and digestive upset with freedom in the intervals, whereas individuals sensitive to the common foods — such as milk and eggs — have more frequent attacks, and are often the subjects of chronic indigestion as well. Subcutaneous injection of extract of the food brings on abdominal pain, and Dr. Duke refers to cases of hay fever and asthma in which injections of pollen caused abdominal pain, and to patients with hay fever who have dyspepsia at the beginning of the hay-fever season. This certainly suggests that the indigestion formerly thought to cause asthma is in reality an early symptom of the same reaction. It is not, however, safe to assume that because a patient is hypersensitive to some form of food his abdominal symptoms are solely due to this cause, for nearly 50 per cent. of Dr. Duke's patients with food allergy had demonstrable pathological conditions, such as recurrent appendicitis, gall stones, duodenal ulcer, dense adhesions, and extreme ptosis, in the alimentary canal or its appendages; and, although food allergy is, perhaps, primarily dependent on an inherited constitution which renders the individual susceptible to become hypersensitive, it is quite possible that an abnormal condition of the alimentary tract may be a contributory factor in the etiology of such cases. Further, as in two cases attacks of food allergy were followed by acute appendicitis, it is conceivable that the vascular disturbance, such as the oedema in Henoch's purpura, may favour infection. The diagnosis of food allergy may present difficulties; an individual sensitive to a common food, such as eggs or milk, may be in an almost constant reactive condition, so that any coarse food, such as nuts and condiments, and alcohol, may set up symptoms, and so be erroneously regarded as the primary factor. In such cases skin tests are very valuable, and Dr. Duke prefers his modification of the intradermic method to the cutaneous test by scarification which has been so successful in asthma and hay fever.

[1] W. W. Duke, *Arch. Int. Med.*, Chicago, 1921, xxviii, 151–165.

MEDICAL SOCIETY OF LONDON.

The first ordinary meeting of the 149th session of the Medical Society of London will be held on Monday next, October 10th, at 8.30 p.m., when the incoming President, Mr. James Berry, F.R.C.S., will deliver his presidential address on his medical experiences in South-Eastern Europe; it will be illustrated by lantern slides, and will be preceded at 8 o'clock by the annual general meeting. An attractive programme for the first half of the session has been arranged by the honorary secretaries, Sir William H. Willcox and Mr. Herbert W. Carson. On October 24th a discussion on the modern treatment of diabetes will be introduced by Sir Archibald Garrod, Regius Professor of Medicine at Oxford, who will be followed by Sir William Willcox, Dr. O. Leyton, Dr. W. Langdon Brown, Dr. Edmund Spriggs, Dr. E. P. Poulton, Dr. George Graham, and Dr. P. J. Cammidge. On November 14th there will be a clinical evening, and on November 21st a discussion on the arseno-benzol treatment of syphilis will be introduced by Colonel L. W. Harrison and continued by Professor H. Maclean, Dr. J. W. McNee, Dr. R. L. Mackenzie Wallis, Dr. Henry MacCormac, and Mr. C. H. Mills. On December 12th Dr. Aldo Castellani will read a paper on haemorrhagic bronchitis of non-tuberculous origin, and Dr. J. S. Owens will give a demonstration on dust in expired air. The Lettsomian Lectures will be delivered in February and March, 1922, by Sir Leonard Rogers, who has taken as his subject the pathology, prevention, and cure of amoebic liver abscess. The annual Oration will be delivered in May by Mr. H. J. Waring.

The Italian Society of Internal Medicine will at its eighteenth congress in Naples, on October 26th–27th, celebrate the ninetieth year of Professor Cardarelli, and the fortieth year of Professor Maragliano's work as teacher. These physicians are the directors of *La Riforma Medica*, one of the chief medical journals published in Italy. Each has made many important contributions to medicine, which have frequently been noticed in our columns. We congratulate them on the tribute Italian medicine is paying to them, a tribute in which medicine throughout the world most cordially joins, and we congratulate our eminent contemporary on being able to command the services of directors so distinguished. Professor Drummond, President of the British Medical Association and Vice-Chancellor of the University of Durham, has sent a note of congratulation for publication by *La Riforma Medica*, as have also Sir Clifford Allbutt and other members of the medical faculty of the University of Cambridge.

VIRCHOW.

THE centenary of Virchow's birth occurs on October 13th, and although he is secure in the fame he gained early in life, it is hardly possible as yet to estimate how much of his teaching has stood the test of time, or to determine whether his influence on science and practice has been wholly salutary. His position in the medical world during the second half of the nineteenth century (he died in 1902) was in a sense unique, and hardly to be compared with that of any great innovator before him, inasmuch as he lived in the midst of an incessant bustle of research, stirred up in great part by his own method and example. In more than one respect he resembled Boerhaave—in the multitude of his pupils from every part of the world, and in the simplicity of his life; and the remark which Dr. Samuel Johnson makes in his Life of Boerhaave has point also for Virchow, bating the pious tone of it: "Providence seldom sends any into the world with an inclination to attempt great things who have not abilities likewise to perform them."

On his first appearance before the profession Virchow spoke a lofty ambition and a deep sense of his vocation. At the age of six-and-twenty, fresh from the "Latin clinic" of Schönlein and the workrooms of Johannes Müller, and without backing, so far as appears, from any but youths as enthusiastic as himself, he started an *Archiv* of his own, and carried the early numbers without break through the perilous political crisis of 1848, in which he was himself compromised. Just before he left the capital in a kind of exile to Würzburg, he issued an apologia or confession of faith, entitled *Einheitsbestrebungen in der wissenschaftlichen Medicin*—Efforts after unity in scientific medicine—in which he showed his whole hand. According to Haeckel, who soon afterwards became his pupil at Würzburg, Virchow's philosophical foundation was the frank materialism now called Monism, or the belief that matter and spirit were one substance. But it is clear from the several chapters of the essay that there were other antagonisms or correlatives which Virchow hoped to reconcile, such as morphology and physiology, or structure and function, clinical work and laboratory work, practice and theory, ordinary maladies and epidemics (*Volkseuche*), popular language and the terminology of the schools. The last was a specially German need, for it was often observed by travellers in those days that the *Gelehrten* were a class apart from the industrial and commercial, speaking a language or jargon of their own. "We find accordingly," writes Samuel Laing in 1841, "the most extraordinary dullness, inertness of mind, and ignorance below a certain level, with the most extraordinary development, learning, and genius at or above it."

Virchow, being a thorough democrat, aimed at carrying the popular intelligence with him. The present writer remembers being present at a great concourse in the Sing Akademie, which was virtually a meeting between Virchow and his parliamentary constituents. The subject given out was "Ueber das Kochen," and the professor, learned alike in anthropology and pathology, explained in simple language, beaming genially through his spectacles, how the family and the social state was started when primitive man succeeded in lighting the first fire to cook the first wild rabbit. Of the same kind were his *Vier Reden über Leben und Kranksein* (Four Addresses on Life and Ill Health), containing a non-technical exposition of the cellular pathology, in Gothic type, for popular reading, and the series of lectures on scientific subjects by various hands, which he edited along with v. Holzendorf. During his busiest scientific period he was a member of the Prussian Landtag and of the Reichstag, as well as of the Berlin Municipal Council, on which he was a strenuous advocate of the main drainage of the city, an engineering work of much difficulty owing to the flatness of the site. It is therefore fitting that he should be remembered in Berlin by the great new hospital which bears his name, as well as by the pathological museum within the grounds of the old Charité Hospital.

The famous lectures on cellular pathology were, perhaps, too remorseless in their logical assault upon the old humoral pathology. With leonine vigour he tore to pieces all those dyscrasias or blood diseases which had no visible means of subsistence, temporary or permanent, in any focus of cellular activity. The general extension of the cell theory to the diseased organism was a matter of course, as soon as a normal *Gewebelehre* had been worked out by Kölliker and a cellular embryology by Remak, who anticipated its application to epithelial new growths. Virchow's original ground was rather to lay stress upon the connective tissue and its congeners for the theory of inflammation, repair, tubercle, sarcoma, etc. Much of this had to be given up before long, so that it was freely said, in the seventies, that little remained of the distinctive cellular pathology of Virchow. The series of studies of the lymphatic system in Ludwig's laboratory at Leipzig had reduced the connective-tissue corpuscles to lacunar spaces lined by cell plates which were not made visible by ordinary methods. Cohnheim's discovery, or rediscovery, of the emigration of leucocytes from the blood into the tissues was so far a return to the old exudative view of pus. Caseation was explained as coagulation-necrosis, and tubercle became once more the unity of Laënnec, in which Virchow's peribronchitis caseosa and periarteritis caseosa were parts as much as the miliary granulations. The connective-tissue origin or seat of cancer had to yield to the more attractive theory of epithelial proliferation. Even the dyscrasias of the Vienna school, which were Virchow's *bête noire*, retained a degree of vitality in the practical textbooks; he had merely scotched the snake, not killed it: "She'll close and be herself again."

Perhaps the most formidable competitor of the cellular pathology was the new science of bacteriology. Where do we come in? cried the bacteria. Virchow, to keep in the van of progress, did not set himself to oppose these new facts or ideas, except cautiously in the case of his cancer theory. Thus, as regards bacteria, the present writer recalls an interview with him in his study at Berlin, when he got up from his chair and took down an old volume of his *Archiv* to point out a woodcut of the diphtherial membrane infiltrated with swarms of dark spore like spherules, which proved how near he had been, at that date—the epidemic year 1858—to the microbic theory of the disease. In a long paper on *Krankheitswesen und Krankheitsursachen*, 1880, he argued that he had never meant the cellular pathology to be an etiology, except in his chapter on vegetable and animal parasites.

There remain only a few lines for what may be seen in future as his most characteristic service to scientific medicine. About the year 1860 he acquired the control of the *Jahresbericht über die gesammte Medicin*, which had been started by Canstatt and carried on for some years by Eisenmann from the seclusion of a Bavarian political prison. With Hirsch for his quartermaster-general, Virchow portioned out the whole field of medical science and practice among a very distinguished staff of abstractors, most of them original workers also. The prospectus, in which he laid down the rules for their guidance, should rank as one of the state papers of modern medicine. It is a masterly exposition of the whole gospel of objectivity. They were to give no space to merely speculative papers or to *réchauffés* of the trite and familiar, but to pick out the best ascertained new facts and to summarize them concisely without note or comment. The indexing of the immense mass of facts in the two volumes was one of the most wonderful things in this monument of German system and method. About the same time was started the first *Centralblatt*, which was a kind of weekly jackal or lion's provider to the year-book. Before many years each speciality of science and practice had its own *Archiv* or *Zeitschrift*, its own *Centralblatt*, and its own year-book, and in many cases there were two or more quarterlies or monthlies for the original memoirs—in gynaecology, ophthalmology, dermatology, and syphilis, therapeutics, physiology, anatomy, embryology, and biological chemistry. To see what this prodigious apparatus of research has grown to during fifty years, one has only to enter the College of Surgeons Library, and gaze upon the six tables groaning under the literature of the current year, the shelves packed with the latest bound volumes, and to imagine the cellars filled with the back numbers more than twenty years old. Virchow defended this Frankenstein monster in his installation address as Rector Magnificus of Berlin University in 1893, by which time the system of objective research had had a fair trial. The university had been founded at the end of the Napoleonic

wars, under the auspices of the metaphysicians Fichte and Hegel, and of the theosophic moonshine of Schleiermacher. It had gradually passed under the influence of the Humboldts, of Johannes Müller, of Helmholtz, Mitscherlich, and many other famous heads of laboratories, including Virchow himself, whose Pathological Institute (1856), in the grounds of the Charité, was the first of its kind. After the Franco-Prussian war of 1870–71, a large slice of the indemnity was appropriated to the building and equipment of such institutes at all the universities, and doubtless to the subsidizing of the enormous scientific literature which has become almost a monopoly of the German booksellers. It is certainly a remarkable monument of German method and system, which the future historian will perhaps find to be more distinctive of the national genius than the Krupp foundry or the Vulcan shipyard. The visitor to the library in Lincoln's Inn Fields surveys it with mixed feelings. Even Virchow's own output, running to many hundreds of titles under the two heads of pathology and anthropology, sinks to insignificance amidst this stupendous accumulation of objective facts. We have to go to the old humoral pathology to find the right word for the present state of the body medical —namely, plethora. Assimilation and tissue building have not kept pace with ingestion.

OPENING OF THE WINTER SESSION.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

There was a very large gathering at the opening of the winter session of the London (Royal Free Hospital) School of Medicine for Women on October 3rd. The number of new students joining was about 70. Dr. Louisa Aldrich-Blake, Dean of the School, who presided, said some might feel a little anxious about their prospects in the career which they had chosen. As to the work of women in general, the too-prevalent idea seemed to be that if there was a great deal that wanted doing women could come and do it, but if the work was less in amount, or less pressing, then women should retire to their domestic occupations. The workers of the world might roughly be divided into those who produced, and those who served. In medicine they were among those who served, and surely it was for the public alone to say by whom they would be served.

Dr. Louisa Martindale then gave the address of welcome to the students. They were to be congratulated, she said, upon their choice of a profession. They were entering it at a most interesting time. The birth rate was steadily going upwards, and there had been a wonderful drop in infant mortality—a great modern triumph due chiefly to infant welfare centres, largely started by women doctors. In regard to the mortality of women in childbirth there had been no improvement since 1894. Last year 4,144 women died in childbirth in England and Wales, and another 1,086 died from conditions connected with it. Too little was done to relieve the suffering of childbirth. As long ago as 1907 Kronig and Gauss first published their results from the use of scopolamine and narcophen in producing what they termed "twilight sleep." Many obstetricians had had good results, but unfortunately there was still a high percentage of failures, and there was urgent need of more research in this subject. The whole question of maternity mortality required fuller investigation, and this had been arranged for under the supervision of Dr. Campbell, Senior Medical Officer of the Ministry of Health, who was a distinguished scholar of that school. In regard to the Insurance Medical Service, she did not doubt that unless there was a radical change during the next few years some of them would find their life-work in this service. The chief lesson to be learnt at the moment was the enormous amount of ill health there was among the workers due to colds, bronchitis, and diseases of the digestive system, proving the necessity for the better feeding and housing of the people. A great impetus had recently been given to the *x*-ray treatment of cancer, and she did not doubt that many of these students to-day would be radiologists in the future, having under their care many cases of cancer which were now being treated surgically. It was in cases of cancer that the work of women doctors was most needed, for too often the treatment so urgently required in the earlier stages was delayed because of the patient's dislike of examination; and much of the terror disappeared when a woman doctor was available. With regard to the capability of women doctors, the results of their work in many hospitals spoke for themselves; but they could not forget that much of the success was due to the work and influence of pioneers like Mrs. Garrett Anderson and others, who fought so bravely and founded this school in the face of so much opposition and ridicule. Referring to developments during and since the war, Dr. Martindale said the only serious check to the career of some women practitioners was their inability to secure appointments on the honorary staff of some of the more reactionary of the general hospitals, necessitating the establishment of hospitals entirely officered by women. Even this disability, with the development of the modern hospital, would, she believed, die a natural death. Many thought the time had come for sex distinctions to be done away with in the organization of medical work.

Dr. Martindale concluded by giving from her own experience some hints to the new students. They would never be efficient unless they knew something of the world they lived in, and kept in touch with current politics, literature, art, and civic life. They should wear pretty clothes, for it was unnecessarily annoying to a patient to have slovenly and ugly things to look at. They must learn to be self-reliant and self-controlled. In the end character would carry them further than brains. The future of the woman doctor was full of great possibilities.

Dr. Mary Thorne, honorary secretary, in expressing thanks to the lecturer, spoke of the urgent financial needs of the Royal Free Hospital, which fifty years ago first opened its doors to women students.

MEDICAL SCHOOL DINNERS.

ST. BARTHOLOMEW'S HOSPITAL.

The Old Students' Dinner was held once again, after an interval of eight years, in the Great Hall of the Hospital on October 1st. The chair was taken by Dr. W. S. A. Griffith, Consulting Physician-Accoucheur, and there was a large attendance, including Sir Norman Moore, President of the Royal College of Physicians, Sir Anthony Bowlby, President of the Royal College of Surgeons, Sir Archibald Garrod, Regius Professor of Medicine at Oxford, and Sir Walter Fletcher, Secretary of the Medical Research Council—all four Bart's men; the Vice-Chancellors of the Universities of Cambridge and London; the Master of St. John's, and the Master of the Society of Apothecaries. The Chairman, in submitting the toast of "St. Bartholomew's Hospital," paid a tribute to the memory of his teacher, James Matthews Duncan, who created the modern obstetrical department at St. Bartholomew's, and by his influence brought a new spirit into the teaching of obstetrics and gynaecology throughout the London schools. The toast was responded to by Sir William Lawrence, Bt., one of the almoners, who mentioned his long family association with the hospital. His great-grandfather was a pupil at St. Bartholomew's, his grandfather, the famous surgeon, was apprenticed to Abernethy in 1799, and his father was for many years Treasurer. He spoke with regret of the approaching resignation from that office of Lord Sandhurst, and welcomed his successor Lord Stanmore. He hoped the celebration of the hospital's 800th year in 1923 would be turned to good account by the raising of funds to meet financial needs. The Chairman explained that he proposed separately the toast of "Prosperity to the Medical College," in order to mark the granting of a Royal Charter to the medical school; and Mr. H. J. Waring, Vice-President of the College, in his reply, outlined the reasons for applying for a Royal Charter of Incorporation. Some account of this matter and the full text of the Charter appear in the current issue of the *St. Bartholomew's Hospital Journal*. The health of the Visitors was proposed by Dr. H. Morley Fletcher, and replied to by Surgeon Vice-Admiral Sir Robert Hill, Medical Director-General R.N., and by the Dean of the Faculty of Medicine in the University of Columbia, New York. The toast of "The Chairman" was entrusted to his colleague and successor, Dr. Herbert Williamson, who

dwelt on Dr. Griffith's love for the hospital, his distinguished career, and his kindness to the patients and students, and to the speaker himself. The toast was supported by Lieut.-Colonel J. W. West, who paid a tribute to Dr Griffith's services as consulting gynaecologist to Queen Alexandra's Military Hospital, Millbank. After the Chairman's brief acknowledgement, the company adjourned for coffee and reminiscences in the library, in accordance with immemorial usage.

KING'S COLLEGE HOSPITAL.

The annual dinner of the King's College Hospital past and present students was held at the Café Royal, Regent Street, on Friday, September 30th. Mr. F. F. Burghard, C.B., M.D., M.S., F.R.C.S., Senior Surgeon to the Hospital, presided. The Chairman of the meeting proposed the toast of the hospital, to which Viscount Hambleden, Chairman of the Committee of Management of the Hospital, replied. Dr. Norman Dalton, Senior Physician, proposed the toast of "The Chairman," which was received with musical honours. The attendance numbered 100, and included, amongst others, Lord Gorell, M.C., who had delivered the oration at the opening of the winter session earlier in the afternoon.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.

The annual dinner of the Middlesex Hospital Medical School took place at the Trocadero on October 4th, with Mr. Comyns Berkeley in the chair. Some 221 old Middlesex students were present—a record number. In proposing "The Middlesex Hospital and Medical School," the Chairman gave an historical account of the development of the hospital, and pointed out that its greatest need to-day was for a new out-patient department; the present out-patient department had been built over forty years ago, and had become quite inadequate. Hospital funds which had previously been raised were, on account of the enormous increase in building and maintenance expenses, now insufficient to justify the new scheme which was necessary. The electrical and other special departments also called for the expenditure of considerable sums. The most notable event during the last year was the adoption of a maintenance scheme by which out- and in-patients should pay such sums as were appropriate to their circumstances, and which in its first year would, it was estimated, amount to £13,000. The Earl of Athlone, chairman of the Board of Governors, in responding, said that the board tried to carry out the ideas of the medical committee, and but for the difficult times experienced would have had enough money to commence the new out-patient department. Mr. A. E. Webb-Johnson (dean of the medical school), Surgeon Rear-Admiral Sir Percy Bassett-Smith, and Mr. J. B. G. Muir (Broderip Scholar) also replied to the toast. Sir Edward Penton proposed the toast of "The Guests," and Sir John Bland-Sutton responded in a reminiscent and characteristically racy speech. The toast of "The Chairman" was proposed by Dr. H. Campbell Thomson, who referred particularly to the work which Mr. Comyns Berkeley had done at Clacton during the war, of which an account was given in our columns (June 25th, p. 934).

England and Wales.

Midland Obstetrical and Gynaecological Society.

The 1920-21 session of the Midland Obstetrical and Gynaecological Society has been, according to its annual report, extremely successful. Three meetings of the society were held at Birmingham, one at Bristol, and one at Leicester. The last meeting, which was held at Birmingham in June, constituted the first British Congress of Gynaecology. At this meeting, of which we printed a full account at the time, the Obstetrical and Gynaecological Section of the Royal Society of Medicine, the Edinburgh Obstetrical Society, the North of England Obstetrical and Gynaecological Society, and the Glasgow Obstetrical and Gynaecological Society joined the Midland Society, and a number of important gynaecological questions were discussed. During the ensuing session scientific meetings are to be held at Birmingham, Bristol, Cardiff, and either Derby or Leicester. The annual meeting of the society was held in Birmingham on October 6th, when Dr. Ewan Maclean of Cardiff was elected president for the year; the membership stands at present at seventy-six, an increase of six upon the previous year.

Dinner to Dr. Edward Walford.

Dr. Edward Walford was entertained by his friends at dinner at the Park Hotel, Cardiff, on September 28th, in commemoration of his retirement from the position of medical officer of health to the city of Cardiff, which he had held since 1888. Dr. T. Wallace, who presided, in proposing Dr. Walford's health, recalled the fact that since 1847, when the Towns Improvements Clauses Act empowered the appointment of medical officers of health of districts, burghs, and cities, Cardiff had only had two medical officers of health—Dr. Henry James Payne, appointed in 1847, and Dr. Edward Walford, who succeeded him in 1888. He paid high tribute to Dr. Walford's labours in conserving the health of the population of Cardiff. Alderman Dr. J. Robinson and Dr. D. R. Paterson also spoke of the great services which Dr. Walford had rendered to the community in his capacity of medical officer of health. Dr. Walford, in reply, said he reluctantly gave up his duties at a time when he could see that the Welsh National School of Medicine was about to become one of the most important educational centres in the country, more especially since the medical school and the Public Health Department were so closely linked together. He took great interest in the School of Preventive Medicine, the foundation stone of which had recently been laid by the Prince of Wales. He hoped that his successor would in a short time gain the confidence of the medical profession in the district and receive from them the same kindness that he himself had received.

Presentation to Dr. Henry Malet.

A handsome antique loving cup has been presented to Dr. Henry Malet, Medical Officer of Health of Wolverhampton, by his medical colleagues in South Staffordshire on his retirement from practice. Dr. Malet has been for thirty-eight years medical officer of health for Staffordshire, was senior physician to the Wolverhampton General Hospital, and has twice been President of the Staffordshire Branch of the British Medical Association. He is retiring to Newcastle, co. Down, on account of a breakdown in health. The presentation ceremony, in the Board Room of the Wolverhampton and South Staffordshire General Hospital, was presided over by Dr. Ridley Bailey, who described Dr. Malet as the acknowledged leader of the profession in Wolverhampton.

General Nursing Council.

The report of the Registration Committee of the General Nursing Council for England and Wales states that 1,816 applications for registration had been received down to September 30th, and 366 were recommended to the Council for approval for registration on the General Part of the *Register*, their qualifications and references conforming in every particular to the rules; 14 were recommended for registration on the Supplementary Part for Fever Nurses; and one for registration on the Supplementary Part for Mental Nurses. These recommendations were approved, and the Council directed that the names of the candidates should be entered by the Registrar in the appropriate parts of the *Register* and certificates issued to them.

It is announced that, now that the General Nursing Council has reassembled after the vacation, the large number of applications received will be considered without further delay.

The winter session of the Child Study Society will be opened at the Royal Sanitary Institute, 90, Buckingham Palace Road, on Thursday next, when Mr. C. W. Kimmins, M.A., D.Sc., Chief Inspector of the Education Department of the London County Council, will give a lecture on "Springs of laughter" at 6 p.m. A discussion on individual training in the school will take place (at the Birkbeck Institute) on October 27th, at 6 p.m.

The late Mr. John Francis Taylor, of Whetstone, has bequeathed £1,000 each to Guy's Hospital and the Great Northern Hospital, and £500 each to St. Dunstan's Hostel for the Blind, St. Peter's Hospital for Stone and other Urinary Diseases, and the London Hospital.

Correspondence.

QUINIDINE IN AURICULAR FIBRILLATION.

Sir,—I have read with deep interest the two articles in last week's Journal on "Auricular fibrillation and quinidine." As the drug may prove to be of real value, I venture to point out one or two matters that may be of use in its further investigation.

A great many remedies on their introduction have aroused great expectations which have not been fulfilled, and time has shown them to have but a limited usefulness. Remedies that have been potent for good have also in their indiscriminate use been potent for harm, and, indeed, because of this have been discredited. A drug acting like quinidine is not free from danger, and before its proper use is recognized may do grievous harm. It is therefore necessary to understand where the danger may lurk. Sufficient is now known of auricular flutter and fibrillation to recognize some of the sources of danger.

In these abnormal states the auricle does not contract and expel its contents. One consequence of this is that clots may form and be attached to the musculi pectinati, or in the auricular appendix. These clots may get into the circulation and give rise to infarcts in various parts of the body, and death not infrequently results from this cause in auricular fibrillation.

The danger is more apt to occur if the auricle resumes its normal contraction, for the force with which it expels its contents may detach and expel parts of these clots. This may occur when the auricle passes from flutter into the normal action. My colleague Dr. Orr has had a case where this happened recently under his care, and I have asked him to send you a note about it.

For several years we have recognized that digitalis judiciously administered will, in a goodly proportion of cases, bring back the auricle from the state of flutter to its normal action, and I at one time thought there was no danger attached to the use of the drug. But in the last few years I was in practice the restoration of the normal rhythm was accompanied on three or four occasions by the discharge of clots, which blocked the cerebral arteries, and the patients died.

It should be recognized that auricular fibrillation of itself is not a dangerous or even serious condition. Many people have it and are none the worse. For instance, I was consulted fifteen years ago by a man 60 years of age with auricular fibrillation. The heart was not enlarged, and the rate was between 60 and 70. I told him not to worry but to lead his normal life, and so long as the rate of the pulse was moderate he needed no treatment. He has done so and is alive and well to-day.

The danger depends on the effects of the auricular fibrillation on the ventricle. In many people the ventricle is stimulated to contract rapidly and irregularly so that the output of the ventricle is diminished. If the ventricle is damaged by disease then heart failure of an extreme kind may speedily follow. I have repeatedly seen patients suffer in a few hours from extreme breathlessness, cyanosis, and enlargement of the liver after the onset of auricular fibrillation or flutter. I have also seen the immediate recovery that takes place as soon as the heart is slowed, either through the influence of digitalis or by the reversion to a normal rhythm.

In a great many cases digitalis has this remarkable effect of slowing the ventricle, and this can be kept up for many years. But there are cases that do not respond to digitalis or strophanthin, and the heart failure is pronounced.

I would suggest that in the first instance the quinidine should be employed in these latter cases, consideration being given to the question whether the patient has had an embolism and such cases avoided. Where the ventricular rate is slow, or when it can be kept at a slow rate by the judicious use of digitalis, the drug is not called for at all events until it has been further tested.

The question will arise, How long can the heart be kept free from the abnormal rhythm? In a great many cases the auricular flutter or fibrillation is not persistent, but occurs in attacks lasting for varying periods; the abnormal rhythm ultimately becomes permanent, especially in cases with mitral stenosis. This will require a long investigation. It took me over fifteen years to work out the principles which should guide the use of digitalis in auricular fibrillation, and to detect the signs which indicated danger, for the unintelligent use of digitalis is not without danger. This kind of investigation requires that a large number of individuals with varying diseased states other than the abnormal rhythm should be watched over long periods. This will be realized when it is recognized that it is not the fibrillation which is the essential matter, but the state of the left ventricle and its ability to maintain an efficient circulation, the abnormal rhythm being but an embarrassment.—I am, etc.,

J. Mackenzie.

The St. Andrews Institute for Clinical Research, St. Andrews, Fife, Oct. 3rd.

EMBOLISM IN AURICULAR FLUTTER.

Sir,—The following extracts from notes of a case of auricular flutter, showing many features of exceptional interest, have been selected to illustrate one well-known aspect of this variety of abnormal rhythm—namely, the tendency to the occurrence of embolism, especially on resumption of the normal rhythm. This tendency involves a question of the greatest practical importance, as it not only introduces an incalculable element into the prognosis of the condition itself, but also materially influences the outlook in regard to the question of successful treatment.

The patient when first seen in December, 1919, was a man aged 51, who had led an adventurous life as a sailor for many years, working latterly as a slater and ultimately as a laundryman.

In December, 1919, he was suddenly seized with a severe attack of angina pectoris, and gave a history of similar attacks of slighter severity since July of the same year. For six months he did well. His exercise and diet were carefully regulated, and he remained free from trouble till the end of May, 1920.

On May 31st, 1920, he became urgently ill with symptoms of extreme heart failure. The face was swollen and cyanosed. The pulse was rapid and irregular, approximately 152 per minute. The apex beat was two inches outside the nipple line, and there was intense dyspnœa with œdema of the lungs. The following morning the symptoms were entirely relieved. The pulse was 40 and regular. There was no dyspnœa, and the apex beat was one inch outside the nipple line. In a day or two the pulse was regular at 72 a minute. Tracings were not taken on this occasion.

On October 18th, 1920, he had a similar attack, which lasted from 10 a.m. till early the following morning. Tracings showed a condition of auricular flutter. The passing off of this attack was marked by the occurrence of right naso-temporal hemianopia, associated with loss of memory and of the power of concentration, a condition which persisted during the remainder of the illness.

From this time onwards the attacks of flutter were exceedingly frequent, sometimes lasting a few hours, at other times more prolonged. On November 24th, 1920, after a series of short attacks he developed a curious condition of catalepsy, which lasted fifteen minutes. The face was pale and covered with sweat, and the muscles were in the characteristic condition of plastic rigidity. The patient had no recollection of this attack, nor of the circumstances immediately preceding it.

On December 2nd, 1920, a prolonged attack of flutter occurred, lasting from 6 a.m. till 5.30 p.m. This attack was followed by left-sided facial paralysis. Two days afterwards, following a short attack, the pupils were observed to be unequal, the right pupil being dilated and reacting sluggishly to light. On December 11th, 1920, after an attack lasting three days, the patient complained of aching in the left hand when using a fork, or on movement of the fingers. The hand was blanched, more especially as regards the fingers. Examination showed complete absence of the left radial pulse.

From this date the condition became rapidly and progressively worse, and the attacks of flutter became increasingly frequent. On February 27th, 1921, the patient had an attack of haemoptysis at the end of a three days' attack of flutter, and died three days later. The radial pulse was felt on the left side on February 28th.

These short notes are not intended to represent anything like a complete, or even approximately complete, summary of this most interesting case. The sensations of the patient in the different phases of his illness, the variations in his response to effort, and the gradual onset and progress of his cardiac failure, have not been touched upon.

My object is merely to illustrate one point—that is, the great tendency to the occurrence of embolism in certain conditions of abnormal rhythm of the heart, of which this case affords an excellent example.—I am, etc.,

St. Andrews, Oct. 3rd. James Orr.

THE CLASSICS IN EDUCATION.

Sir,—Your leading article upon this subject recalls a correspondence in the British Medical Journal some time ago in which Dr. Charles Buttar was the protagonist.

The former argument for the compulsory inclusion of Greek and Latin for a degree at Cambridge or elsewhere, and the present fear that the study of these languages may entirely lapse, are both based upon the false proposition that there is an effect connected with this learning which is of extraordinary and distinguishing value to the person acquiring it. Generally speaking, the advantage is said to be derived from the knowledge that comes of a "study of those civilizations which form the very basis of our own." We are living in an epoch which is characterized by a most extensive literature, and it would be a bold thing for one to assert that of all existing books, the ancient Greek and Latin classics are those best calculated to enlighten, enlarge, and refine the human mind, or are those most essential to education. But even should they be thus placed in the forefront of all literature, that would be no excuse for wasting time in learning Greek and Latin in order to read them, since those amongst them of greatest merit have been translated into English, and can be obtained in that form either by purchase or at all large public libraries throughout the kingdom. The question might reasonably be asked: If it is sufficient to have the Bible translated, why is it not sufficient to have these works translated for the dissemination of what they hold? Nor is there any obstacle to having prepared "simple textbooks in English to teach something of the thought and art and science of the Greeks" as you propose, though the necessity for this to be done for the present edification of the English-speaking world might be called in question. Keats, whom I think we may accept as the Englishman most appreciative of the Greek idea, at least on the artistic and poetic side, had no reading knowledge of Greek, and expressed himself delighted with a translation. Shakespeare had "small Latin and less Greek," but he made a splendid use of the English language as derived from all sources, which should go some way to show that a knowledge of "a basic language of Western civilization" is in no way essential to the mastery of our own tongue. Ancient Greek is, no doubt, a more profound basis for modern Greek than for any other language; and in the controversy to which I have alluded a Greek contributor, in a letter to this Journal, seemed to score off Dr. Buttar by the ironic suggestion that the modern Greek young men ought to be superior to English and American young men by reason of their easy acquisition of the benefits to be derived by a knowledge of ancient Greek and the study of the civilization of their country in early times.

The insincerity connected with the claim to know Greek has always been very pronounced, and surely, Sir, it is not "an example worth imitating" to deal with the subject by limiting the effort to teach Greek to the Greek alphabet and a few sentences of Greek, as, for example, from the Lord's Prayer. I can quote an instance of this sort of Greek in practice: An old acquaintance, decadent, and so bereft of pride as to ask for a loan without blushing, after having been lost sight of for many years, preferred his request written in Greek characters, spelling English words, upon his card delivered from the door at dinner time. I fear this is the sort of thing that might grow, should this trifling with Greek be encouraged, though I admit a saving of time, since the ultimate result appears to be the same in any case of school-derived Greek. And this reminds one how easy it is to gain credit for being able to speak a language when nobody inquires how much of it you know. In the little port of Dives, some short time ago, I had a conversation with a French boy, who told me in French that he could speak English. On pushing the inquiry I found that his English was limited to two very naughty words picked up from sailors, but of course I could not deny that he had spoken English when he uttered them. I suspect that such Greek words as nous, kudos, and demos have been introduced into current colloquial English from an authority not greatly higher than that of the French boy.—I am, etc.,

Cheltenham, Sept. 26th. J. H. Garrett.

LEICESTER PUBLIC MEDICAL SERVICE.

Sir,—Many inquiries having reached me of late as to the origin and working of the above service, a short statement has been prepared and can be obtained by Division secretaries and secretaries of Panel Committees on application to the Manager, Leicester Public Medical Service, Bond Street, Leicester.—I am, etc.,

R. Wallace Henry,
Chairman, Panel Committee of the Borough of Leicester.

Leicester, Oct. 1st.

*** Dr. W. Moffat Holmes, Honorary Secretary of the Leicester Public Medical Service, East Bond Street, Leicester, also writes to say that he will be pleased to forward particulars.

INFLUENZA (?) WITH ERYTHEMATOUS ERUPTION.

Sir,—I have been puzzled by an eruptive fever which I have seen in Ireland since the middle of last month. Briefly, the salient points of the most complete cases hitherto observed are as follows:

1. Incubation period not yet ascertained.

2. Sudden onset, with frontal headache, conjunctival injection, generally sore throat (uniform erythema) with or without some coryza. In one or two cases epistaxis. Moderate fever, vague joint pains.

3. Within a few hours a rash appears, generally on the chest (back and front), deltoid regions, possibly arms and thighs, also more or less scattered on the abdomen. In a few cases the face and forehead shows a dull red flush. The coarse appearance is certainly not unlike rubella (German measles), but on passing a finger over it the rash is found to have no depth. With a magnifying lens it is obviously an erythema, chiefly affecting the pores of the sweat glands and the base of hairs. A few stray papules and sudamina are also seen, and when the rash fades also one or two petechiae, like flea-bites.

4. All cases showed marked natural diaphoresis, and in some there was also obvious skin irritation.

5. No trace of desquamation.

6. The whole illness lasted three to four days, the patient feeling little the worse for the fever, which generally comes down with the disappearance of the rash. No complications or relapses were observed. Bacteriological findings:

(*a*) I have so far obtained an almost pure culture of Pfeiffer's bacillus from throat swabs of three cases while the rash was at its height.

(*b*) Positive agglutination tests to the same organism up to 1 in 100 during early convalescence.

(*c*) No leucopenia during the eruptive stage.

(*d*) In one patient who developed several glandular enlargements, with higher fever and rash, a pure culture of a diphtheroid bacillus was obtained from the blood, together with haemolytic streptococci; on the second day of his illness Pfeiffer's bacillus was present in the throat. An examination of the blood on the day of admission showed moderate leucocytosis, with 73 per cent. of mononuclears.

I need hardly refer to the fact that rashes, generally of an erythematous type, have been described in influenza from time to time, by several observers, including Osler. I also enclose an account by another observer, which appeared originally in the *Wiener klinische Wochenschrift*, August 26th, 1920, and was reproduced in the Epitome of the Journal, January 1st, 1921.

I shall be glad if any of your many interested readers will express his opinion on the probable nature of these cases. I venture the suggestion that we are dealing with an unusual type of influenza due to the association of organisms hitherto not mentioned.—I am, etc.,

Curragh Camp, Sept 28th. J. E. H. Gatt, M.D., M.R.C.P.

A RETROSPECT OF NATIONAL INSURANCE.

Sir,—May I protest against Dr. Cox's assertion, quoted in your leading article (August 20th, p. 292) on the paper he contributed to the *Journal of the American Medical Association*, to the effect that not one in a thousand panel doctors would willingly return to the old system? Within the Association I, a very private person, know many more:

outside it, they are far more numerous. The inertness of pure weariness must not be mistaken for active acquiescence.

I am sure Dr. Cox did not intend to insinuate that the panel doctor cares only for his pay and nothing for the national results of the Act: he clearly meant that he accepts it as a national good. Here, again, a sweeping statement cannot be justified. My own Division, for example, has twice in succession submitted to the Representative Meeting a unanimous resolution that it is harmful. It is true that, with a complaisance unhappily rare, they have gone into the economic results: but may not others follow the example? Further, logic, like murder, "will out." Last July Mr. Bishop Harman's resolution as to the hospitals met with an overwhelming acceptance; and it is impossible for a man logically to approve the resolution and the Act. Indeed, if the opinion of the profession on the merits is in question, it is more relevant to stress the fact that the majority, in spite of temptation, remain outside of the service (many from conscientious objections) and that quite a considerable minority on the panel are there against their will.

It is interesting to find a faith so strong in State management, in spite of all our experience during the war (if not before the war), as to associate therewith the idea of a "business proposition." He quotes the aspiration of Mr. Lloyd George as corroborative of his faith that the Act is business not "charity." Let me submit these twin utterances of Mr. Lloyd George: (1) "To me it seems more like 9d. for 4d."; and (2)—this time to capitalist producers—"of course the producer will not pay." Dr. Cox will agree that if (1) is true, it is charity; if (2) is true, if the producer only advances money to be repaid with interest and commission, it is not charity, but calls for another name. Let the Rev. James Spencer describe it in his golden words: "To raise the prices of all the articles a working man must buy is to lower his wages; to do it in such a way that he does not see how it is done is to lower them by fraud."

That the State may legitimately enrich a small section of the community at the expense of the rest, especially of the poorest, is an immoral suggestion; but it underlies the statement of the case. No man has a right to base his hopes of the Insurance Act on conditions wholly artificial and impossible of permanence. Cerberus may be fed full with sops, but it is certain that the sops will have to be reduced. Further, because Cerberus is full, does it follow that they from whom the sops have been ravished are full? Dr. Cox could not have written the same article in 1915, the last year in which the economic effects of the Act could be clearly traced.

To advocate the acceptance of a measure which should be judged solely by its merits on the national scale, by reason of the benefits accruing to a small section of the community, is like bribing of judges. It is the worse in that, ostensibly representing all shades of opinion, it appears to advocate from transitory conditions a system which a strong minority (if it *is* a minority) of the members of the profession abhor.—I am, etc.,

Rayleigh, Essex, Aug. 31st. B. G. M. Baskett.

A CENTENARIAN MEDICAL BOOK SOCIETY.

Sir,—The City of London Medical Book Society, an unpretentious but lively little society, can now claim the distinction of having been in continuous existence for a hundred years. We possess the original minute-book recording the foundation of the society by twenty general practitioners at a house in Frederick Place, Old Jewry, in September, 1821.

The number of members is limited to twenty; there is no subscription, fines for unpunctuality in forwarding books and for other misdemeanours provide a sufficient income, and at the end of the year the books are sold to the highest bidders among the members. An annual dinner is held, and failure to attend involves a fine equal to the cost of the dinner, so that we generally have a full gathering.

We claim to be the oldest medical book society in the kingdom. This year the centenary dinner (Dr. A. T. Davies in the chair) is to be held at the Abercorn Rooms, Great Eastern Hotel, Liverpool Street, at 6.30 for 7 p.m., on October 25th. All old members will be welcome if they will kindly intimate to me their intention of being present.—I am, etc.,

21, [illegible] Square, London, E.C.2, Oct. 3rd. Eric Bayley.

*** We are doubtful about the claim to be the oldest medical book society. The Leicester Medical Society, which celebrated its centenary in February, 1900, began life as a medical book club only. Later on, apparently about 1868, it began also to hold monthly meetings for the reading and discussions of medical papers, and two informal social meetings a year.

MOTOR-CAR TAXATION.

Sir,—It appears to be the intention of the Government to continue the super-tax on motor vehicles. We may grant that it was necessary to spend £9,000,000 on road reconstruction this year, but it is preposterous to ask motorists to find such a huge sum every year. A tax of £23 yearly on a car which only cost £135 six years ago is a gross imposition.

The Government's grandiose schemes with regard to further so-called road improvements in the way of a multitude of expensive sign-posts, etc., might now very well be scrapped and a great part of the army of highly paid officials disbanded, with a corresponding reduction of motor taxation.—I am, etc.,

Sheffield, Sept. 26th. E. B. Hazleton, M.D., L.R.C.P.I.

Obituary.

SIR WILLIAM ROE HOOPER, K.C.S.I., F.R.C.S.,

Honorary Surgeon to the King.

Surgeon-General Sir William Roe Hooper, K.C.S.I. K.H.S., Bengal Medical Service (retired), died at Aldeburgh, Suffolk, on September 29th, aged 84. He was born on January 12th, 1837, the eldest son of the late John William Hooper of Borthwick, Somerset, took the M.R.C.S. in 1858, and entered the I.M.S. as assistant surgeon on February 10th, 1859, attaining the rank of brigade-surgeon on March 31st, 1887, and retiring with an extra compensation pension on January 12th, 1895. After two years' military duty he entered civil employ in the North-West, now the United Provinces, and there spent the rest of his service. After a short period of service as civil assistant surgeon of Azimgarh with charge of the gaol, he was appointed superintendent of the central prison at Allahabad. In December, 1864, he obtained a similar appointment in Benares, and was appointed civil surgeon of this important station in May, 1866. He continued in this employ until August, 1891, when he was transferred to the civil surgeoncy of Lucknow, which he held until his retirement in 1893. In the year 1874 he initiated the project for the construction of the civil hospital at Benares known as King Edward's Hospital, the cost being met by the chief members of the native community, headed by the late Maharajah of Benares, Isri Singh, K.C.I.E., and the late Sir Syed Ahmed Khan, K.C.S.I. On his retirement Sir William Hooper received from the Government of the North-Western Province and the medical administration officer under whom he served warm acknowledgements of his long and valuable services. A resolution of the Provincial Government was issued in December, 1894, on the occasion of his approaching retirement, thanking him for his excellent and devoted services. "In 1881," the resolution continues, "he received the thanks of his Excellency the Viceroy and Governor-General of India, and between 1878 and 1893 on eight occasions those of the Government of these provinces for the working of the hospitals and other medical institutions under his charge, and throughout a long career he has well upheld the high character of the service to which he belongs." In January, 1895, he was appointed President of the Medical Board at the India Office in succession to Sir Joseph Fayrer, Bt., and held the office until 1904, his service being extended for two years. The temporary rank of surgeon-general was bestowed on him, and in the year 1905 he was gazetted colonel. He had previously served, whilst on furlough from April, 1887, to November, 1888, as member of the Medical Board, India Office, his services in this capacity being warmly acknowledged by the president, Sir

Joseph Fayrer. During his tenure of the office of President of the Medical Board at the India Office he fulfilled other important functions. He was *ex officio* member of the senate of the Army Medical School, Netley. He was appointed in 1901 as representative of the India Office on a committee to inquire into the organization of the Army Medical Service, and in 1902 on the Advisory Board for Army Medical Services. He was also a member of the Army Sanitary Committee. In 1897 he was appointed a member of the council of the Lister Institute of Preventive Medicine. He was a member of the committee which prepared the new edition of the *Nomenclature of Diseases* issued by the Royal College of Physicians. In June, 1897, he was appointed C.S.I.; in January, 1903, he was promoted to K.C.S.I., and in August, 1904, gazetted honorary surgeon to H.M. the King.

The foregoing sketch of Sir William Hooper's career presents a record of successful and sustained medical and sanitary work—a result of ability, industry, and devotion. He was throughout recognized as an able and trustworthy officer and won the regard and esteem of all with whom he came in contact, officially or otherwise. The key to his character was loyalty—loyalty to his profession and service; to those under whom he served; to his responsibilities and duties; to India and her institutions and races; to colleagues and subordinates; to patients and friends; to his family and relations. The writer of this notice was closely associated with him on the India Office medical board and the senate of the Army Medical School, then at Netley, and had every opportunity of becoming acquainted with his sound sense, ability, and urbanity. The friendship then established lasted unabated to the end.

Sir William married in 1859 Lucy, second daughter of the late Mr. Henry Benson Cox of Highbury, London. She died in 1919. His eldest son has practised for thirty years as a gynaecologist in Melbourne and his youngest daughter is married to Colonel Langford Lloyd, C.M.G., D.S.O.

ALBERT SIDNEY LEYTON, M.A., M.D., Sc.D., F.R.C.P.,

Late Professor of Pathology, [illegible].

We announced last week the death of Dr. A. S. Leyton, the well known pathologist, which took place on September 21st, at Great Shelford, Cambridge.

Albert Sidney Frankau Leyton was born in London in January, 1869, the son of Joseph Grünbaum, a naturalized British subject, and Delia Frankau. He changed his name to Leyton by deed poll in 1915. From the City of London School, where he won many prizes and a scholarship, he proceeded to Gonville and Caius College, Cambridge, and obtained honours in the Natural Sciences Tripos. He afterwards studied medicine at St. Thomas's Hospital, where he assisted Professor C. S. Sherrington, now President of the Royal Society, in an investigation of the brains of anthropoid apes. The expenses of this research into the physiology of the cerebral cortex were in part defrayed by a grant from the British Medical Association. He graduated M.A. at Cambridge University in 1895, M.D. in 1897, and Sc.D. in 1913. He became a member of the Royal College of Physicians in London in 1896, and was elected a Fellow six years later; he was Goulstonian Lecturer in 1903, taking as his subject "Theories of immunity and their clinical application"; the lectures were published in the British Medical Journal.

Perhaps Dr. Albert Leyton's best known work was done in Vienna at the beginning of 1896, where in March he devised the agglutination test in typhoid fever. In the following month, at the International Congress of Medicine held at Wiesbaden, this test was discussed privately. Owing to the rarity of enteric fever in Vienna at that time, the desire of the observer not to publish his results before 20 cases had been investigated, and the delay in actual publication, an account of the agglutination test by Professor Widal, based upon 2 cases, appeared in the *Presse Médicale* a few weeks before Leyton's paper was printed.

Upon his return to England, Leyton acted as demonstrator of physiology to Professor Sherrington at Liverpool University, and continued his experiments upon the higher apes. He showed that scarlet fever could be transmitted to chimpanzees, and made many investigations upon the relation of the blood of chimpanzees to that of man. He devoted himself to cancer research at Liverpool, and later was elected to the chair of pathology in the University of Leeds. At Leeds he added the work of dean of the medical school to that of the professorship, but nevertheless found time to pursue his work in cancer research, and made many original observations and experiments which proved of value in the treatment of new growths. During the war he held a commission as Major in the R.A.M.C., and acted as bacteriological consultant to the Northern Command. After relinquishing the professorship of pathology at Leeds he held the post of Director of the Clinical Laboratory at Addenbrooke's Hospital, Cambridge, and went to live at Great Shelford. Whilst investigating trench nephritis, the disease to which he succumbed made itself evident. His reserved nature and somewhat austere habits led many who did not know him well to assume that he was difficult to get on with. His intimates were aware that this was not so; he was very reserved but extremely loyal.

Dr. Albert Leyton married Helen Gertrude, widow of Robert S. Stewart, M.D., who with two sons survives him. His brother is Dr. Otto Leyton, physician to the London Hospital.

We are indebted to Professor C. S. Sherrington, M.D., President of the Royal Society, for the following appreciation: As one who knew Professor Leyton well and was intimately associated with him in some of the work which he did, may I add a word of tribute to his memory? None who had close contact with him could fail to be impressed by features of his thought and character which make his relatively early death an untimely loss to scientific medicine. He combined in rare measure enthusiasm for research with a critical, and, indeed, highly self-critical, attitude of mind. An earnest of his power of achievement was seen in his discovery of the agglutination reaction as a means to typhoid diagnosis, a discovery fraught with great and still unexhausted consequences. Widely read and proficient, he was ever on the alert to take avail of means from the progress of collateral science for the immediate profit of medicine itself. He had imagination, and, at the same time, no man endeavoured more sincerely than he to control theoretical suppositions by observational data. The advance of practical medicine was with him a passion; in his devotion to that end he spared no labour or personal sacrifice. Though so much of his time and thought was given to laboratory work and technique, he was not one for whom these latter become *per se* the sole preoccupation. My recollection of him is of one for whom the interest of the laboratory was ancillary to and simply enhanced his interest in practical medicine. He was a man of high ideals, and to know him well was to realize the more his integrity of purpose, and his generous nature and the essential kindness of his heart.

We regret to record the death of Dr. William Russell on July 21st, 1921, at Ranchi (Bihar and Orissa), India, where he was staying for the benefit of his health. Born in 1870 in co. Clare, Ireland, Dr. Russell received his medical training at the Royal City of Dublin Hospital and at the Rotunda Hospital, obtaining the diplomas of L.R.C.P.I. and L.M. and L.R.C.S.I. and L.M. in 1891. He was for one year in charge of the Royal Hospital for Incurables, Dublin, and on leaving was the recipient of an illuminated address and a presentation. He was for some time house-surgeon of Monkstown Hospital. Subsequently he went to Assam, where he was for twenty-five years medical officer to the Jokai Tea Company, except for a break of three years, when he went home on account of his health, and practised at Ilminster, Somerset. He was for many years a member of the British Medical Association, and was President of the Assam Branch in 1917; in 1919 he was nominated by the Government to a seat on the newly-formed Assam Medical Council. He was a hard-working, conscientious, and a very sound practitioner, with a large experience of tropical diseases and sanitation, and a loyal and helpful colleague to his medical brethren. Modest and unassuming, he never spared himself in the interests of his patients, by whom he was esteemed and respected. He leaves a widow and two sons to mourn his loss.

By the death of Dr. HERBERT BURLAND, of Finedon, Northamptonshire, on September 20th, the profession in that area loses one of its best known and most respected members. He was educated at Manchester, obtained the the M.R.C.S. and L.R.C.P. diplomas in 1888. He came to the district as a young man, first as assistant, later as partner, to the late Dr. Crew of Higham Ferrers. Dr. Burland was a man of boundless energy, and grappled successfully with the work of a large and scattered industrial practice which was beyond the capabilities of all but a few. He was known to a large area as a man who never spared himself in his work, and who could give a sound opinion on the diversity of cases met with in such a practice. To his professional brethren he was equally endeared by his direct dealings, and because, busy as he might be, he had always time if called upon for assistance. Dr. Burland had for many years acted as churchwarden, and had assisted in many other ways in the various activities of the town where he lived. He was a strong upholder of the work of the British Medical Association, and could always give valued information as to the statistics of practice from his abundant records. A year ago he underwent a serious operation, and recovered sufficiently to carry on unaided his work for six months. At the time of his death he was president of the Wellingborough and District Medical Society, in which he had since its foundation displayed great interest. He married a daughter of the late Mr. Lane, of Rothwell, and leaves a widow and two daughters.

WE regret to record that Dr. FRANK L. POCHIN died on September 13th, at Teignmouth, to which place he had retired about two years ago owing to ill health. He received his medical education at Edinburgh University and Guy's Hospital, and graduated M.B., C.M.Edin. in 1892, and M.D. in 1908; he obtained also the D.P.H.Camb. in 1907. He settled in practice in Oldham and took great interest in local matters. He was a member of the local Insurance Committee, and for five years was chairman of the Medical Benefit Committee, and a member of the Medical Service Subcommittee. From January, 1915, to March, 1919, he was one of the assistant surgeons at the Woodfield Red Cross Hospital, and in recognition of his services he was appointed an honorary life member of the British Red Cross Society. He had been secretary of the Oldham Medical Society, president of the Lancashire and Cheshire Branch of the British Medical Association, chairman of the Oldham Division, and its representative on the Representative Body.

Universities and Colleges.

UNIVERSITY OF LONDON.

LONDON HOSPITAL.

THE Price Entrance Scholarship in Anatomy and Physiology offered by the London Hospital, and open to students of the Universities of Oxford and Cambridge, has been awarded to Mr. G. L. Thompson, of Trinity College, Cambridge.

GUY'S HOSPITAL MEDICAL SCHOOL.

The following Entrance Scholarships have been awarded:

Senior Science Scholarship for University Students (War Memorial Scholarship): £75, B. G. Scholefield. *Entrance Scholarships in Arts*: £100, R. C. Brock; £50, A. F. H. Stewart.

MIDDLESEX HOSPITAL.

Entrance Scholarships have been awarded as follows: First, H. Mannington; second, R. A. Graff; third, F. D. M. Hocking.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology*. Elizabeth M. Anderson, S. Basham, D. C. Bell, W. A. Brown, L. S. Henry, B. R. Isaacs, L. Minski, I. M. McLachlan, W. A. D. Oliver, L. F. Richmond, H. C. Rollin, W. O. Rubidge, H. F. Watts'ord.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Calendar.

THE Calendar of the Royal College of Surgeons of England for the year 1921-22 has now been published.[1] The first hundred pages or so give the usual information about the history, constitution, and personnel of the College, from its foundation up to the present year. The register of Fellows now contains 1,685 names, arranged both in chronological and alphabetical order. The Members number 16,236. The list of Licentiates in Midwifery (of whom the last were added in 1875 contains 84 names; the Licentiates in Dental Surgery number 2,875. The Diploma in Public Health, granted conjointly with the Royal College of Physicians of London, is held by 987 practitioners; the Diplomas in Tropical Medicine and Hygiene, in Ophthalmic Medicine and Surgery, and in Psychological Medicine, likewise granted conjointly with the Royal College of Physicians, are held respectively by 115, 39, and 10 practitioners. During the past year 129 out of 337 candidates passed the first Fellowship examination, and 87 out of 251 passed the final Fellowship examination. In the final examinations of the Conjoint Board in England, 408 out of 653 candidates passed in medicine; 395 out of 772 passed in surgery; and 414 out of 645 passed in midwifery. During the period under review 89 Diplomas of Fellowship were issued, including 3 to women, 384 Diplomas of Membership, including 84 to women, and 124 Licences in Dental Surgery were issued, including 3 to women. The subject of the Jacksonian Prize for 1922 is "The effects produced by radium upon living tissues, with special relation to its use in the treatment of malignant disease." The subject of the Cartwright Prize for 1921-5 is "Variations in the form of the jaws, with special reference to their etiology and their relation to the occlusion of the dental arches." The gross income of the College, exclusive of that from trust funds, amounted to £37,962, being £8,318 more than in the previous year. The examination and diploma fees for Membership accounted for an increase of £2,409, the fees for the Fellowship for an increase of £1,845, and L.D.S. fees for an increase of £2,941. The total expenditure in respect of revenue amounted to £31,656, being £5,629 higher than in the previous year. The balance on the revenue account was £6,305, which is believed to be the highest balance ever realized in any financial year. The report by the Conservator of the Museum, Sir Arthur Keith, was referred to in an article in the BRITISH MEDICAL JOURNAL of July 16th.

[1] London: Taylor and Francis. 1921. (Pp. 312 + xxvii. 1s.)

The Services.

HONOURS.

M.C.

Captain Atul K. Kar, I.M.S., attached 28th Punjabis, has been awarded the Military Cross for distinguished service in the field whilst serving with the Waziristan Force. The following is the official account for which the decoration has been conferred:

> On April 10th, 1921, during the action below Haidari Kach, this officer was sent out from camp to bring in wounded. All ranks of the regiment testify to his devotion and personal disregard to danger while binding up wounded and despatching them to camp under a heavy fire. Owing to his coolness and splendid organization the wounded were systematically evacuated in very difficult circumstances.

DEATHS IN THE SERVICES.

Fleet-Surgeon George Wilson, R.N.(ret.), died at St. Martin's House, Jersey, on July 19th. He was educated at Edinburgh, where he graduated M.B. and C.M. in 1886, entered the navy soon after, and became fleet surgeon, now surgeon commander, on February 28th, 1903. When surgeon of the *Racoon* he served in the Naval Brigade landed at Mombasa, in 1895, took part in the capture of M'weti, the stronghold of the Arab chief M'buruk, was mentioned in dispatches, and received the Africa general service medal, with a clasp. He also took part in the bombardment and capture of Zanzibar, on August 27th, 1896.

Lieut.-Colonel James William Evans, Madras Medical Service (retired), of Trevaugham, Carmarthen, died at Bournemouth, after a long illness, on July 15th, aged 64. He was born at St. Mary's, Cardigan, on January 4th, 1857, educated at University College Hospital, London, and took the M.R.C.S. and L.S.A. in 1878. Entering the I.M.S. as surgeon on March 31st, 1880, he became lieutenant-colonel after twenty years' service, and retired on May 9th, 1900. He served in the Burmese war in 1885-6, receiving the Frontier medal with a clasp; and during the recent war served in the Indian Hospital at Brighton through the year 1915.

Surgeon-Captain George Ley, R.N.(ret.), was killed in a motor-cycle accident at Thorney, near Iver, Bucks, on August 6th, aged 56. He was the son of the late Captain H. S. Ley, R.N., and was educated at University College Hospital, taking the M.R.C.S. and L.S.A. in 1889. He entered the navy soon after, became fleet-surgeon in 1905, and surgeon-captain in November, 1919; he retired last year. He served throughout the late war.

Dr. David William Reese of Neath, South Wales, died at Littleham Cross, near Exmouth, on June 23rd. He took the Scottish triple qualification in 1897, after which he went to India as medical officer of the Eastern Duars tea district in Bengal, and while there was also surgeon-captain in the Northern Bengal Mounted Rifles. He joined the Welsh Border (Chester) Mounted Brigade Field Ambulance, R.A.M.C.(T.F.), as captain, or December 8th, 1914, and during the war served with the Egyptian Expeditionary Force, latterly as acting major. Since he had been demobilized he had acted as medical inspector of compensation claims.

Medical News.

The Medical Branch of the Board of Education has been transferred from Bridgewater House, Cleveland Square, S.W.1, to Nos. 5 and 6, Clement's Inn, Strand, W.C.2. (Telegraphic Address, "Meducation Estrand, London.")

The post-graduate lectures and demonstrations on medical, surgical, and special subjects given by the honorary staff of the Manchester Royal Infirmary commenced on Tuesday, October 4th. They will be continued every Tuesday, with the exception of December 27th, January 3rd and April 18th till May 2nd, 1922. No fee is charged and tea is provided at 4 p.m.; the lectures starting at 4.30 p.m. The honorary secretary is Dr. E. Bosdin Leech.

The annual meeting of the French Society of Psychotherapy will be held at 49, Rue St. André-des-Arts on October 18th, when Dr. Jules Voisin, president of the society, will deliver an address, and various discussions will take place.

Among the courses of lectures on the history of science to be given at University College, London, are two by Dr. Charles Singer on the history of the biological and medical sciences from the earliest times to the present day. The first course, which will be given at 5 p.m. on Thursdays, beginning on October 13th, will bring the history down to the seventeenth century. The second course, beginning on Thursday, January 19th, will continue the subject to the present day. A prospectus and full particulars as to dates and fees can be obtained on application to the Secretary, University College, London, W.C.1.

The late Colonel Charles Henry Hale, C.M.G., D.S.O., R.A.M.C., who died on July 21st, leaving estate valued at £5,037, has, in addition to certain personal articles, bequeathed the residue of his property, after payment of some personal bequests, to the St. Dunstan's Hostel for the Blind.

A course of lectures at the Hospital for Sick Children, Great Ormond Street, W.C., commenced on Thursday, October 6th, at 4 p.m., and will be continued on successive Thursdays up to and including December 15th. The lectures are free to medical practitioners. Further particulars can be obtained from the acting secretary at the hospital. The lectures are announced each week in the Diary of Post-Graduate Lectures in the Supplement.

The opening Clinical Meeting of the Harveian Society of London will be held at Paddington Green Children's Hospital on Thursday, October 13th, at 4.30 p.m.

The first meeting of the winter session of the London Dermatological Society will be held at 4.30 p.m. on Tuesday, October 18th, at 49, Leicester Square, W.C. Members of the profession are invited to attend. The opening address on "Skin eruptions related to intestinal stasis" will be delivered by Sir W. Arbuthnot Lane, Bt., M.S.

A course of instruction, open to post-graduates (and students of the hospital), on the diseases of children will be held at the London Hospital Medical College, commencing on Wednesday, October 12th, under the direction of Drs. Robert Hutchison, Theodore Thompson, and Charles Miller; the course includes lectures on general diseases, on organic and functional nervous diseases and mental deficiency, and clinical demonstrations.

Commission 3 (Armaments) of the League of Nations has accepted a resolution, proposed by Lord Robert Cecil, expressing the opinion that it would be advisable to consider whether an appeal should be made to the scientific men of the world to publish their discoveries as to poison gases and similar subjects so as to minimize the likelihood of their being used in any future war.

A course of twenty lectures on elementary psychotherapy will be given by Dr. H. Crichton Miller at the Tavistock Clinic for Functional Nerve Cases, 51, Tavistock Square, W.C., on Mondays at 5.15 p.m., commencing on October 10th. Further particulars regarding the lectures and fees will be found in our advertisement columns.

The twenty-fourth annual meeting of the French Society of Psychotherapy will take place on October 18th, at 4 p.m., and on October 19th, at 10 a.m., at 49 rue St. André-des-Arts, Paris. The programme includes consideration of the psychological work of Dr. Jules Voisin, perpetual president of the society; homage to members who died during the war; the discussion of general questions—(1) psychotherapy, its progress and tendency; (2) the question of "race" in nervous and mental pathology; and individual communications. Practitioners interested in psychotherapy are invited to attend and present communications. Applications and the titles of communications should be sent to Dr. Bérillon, General Secretary, 4 rue de Castellane, Paris 8e. The session of October 18th will be followed by a banquet.

Sir Robert Armstrong-Jones will deliver a course of four lectures on the nervous system and the mind, at Gresham College, Basinghall Street, E.C., at 6 p.m., on October 11th, 12th, 13th and 14th. The subjects are: "The brain as the organ of the mind"; "Roads to the mind"; "The mind"; and "Abnormal mental notes." The lectures are free to the public.

The Guild of St. Luke annual service—a special thanksgiving for peace—will be held in St. Paul's Cathedral, on Tuesday, October 18th, at 7 p.m., when the Rev. Father Waggett will preach. The doors will be opened at 6.30 p.m., and doctors and students are requested to wear academic dress. The offering, after defraying the cost of the service, will be devoted to one of the hospitals in London.

A conference attended by 160 members of the medical profession was held in Kovno on September 29th, under the presidency of the Prime Minister, Dr. Grinius, who is one of the leading physicians of Lithuania. The principal objects of the conference were to encourage the development of the medical profession in Lithuania, to promote the interchange of scientific ideas, and to improve methods of combating tuberculosis and other diseases. Some forty-five reports and papers dealing with various phases of these subjects were read.

The executive committee of the National Association for the Prevention of Infant Mortality has adopted a resolution expressing the opinion that the distribution of milk by sanitary authorities is a valuable measure for the protection of infant life, and urging the Minister of Health, while doing everything possible to curtail extravagant expenditure, to continue the 50 per cent. grant to those authorities who were complying with Circular 185.

The late Mr. John Warrington Haward, F.R.C.S., consulting surgeon to St. George's Hospital, left estate valued at £16,275 gross, with net personalty £13,692.

A hospital for 500 patients, to cost 1,000,000 dollars, is to be established in Chicago as a memorial to the late Dr. J. B. Murphy.

With the help of a gift of 1,785,000 dollars, made by the Rockefeller Foundation, Harvard University is to establish a school of public health, the purpose of which will be to train public health administrators. Special courses in preventive medicine, tropical medicine, and industrial hygiene are already given, but the new school will afford opportunities for instruction in public health administration, vital statistics, immunology, bacteriology, medical zoology, physiological hygiene, and communicable diseases.

The third National Birth Congress was held at Bordeaux from September 22nd to 26th, under the official patronage of the President of the French Republic. It comprised five sections—namely, religious activities, education, hygiene, professional activities, and legislation. The congress emphasized the necessity of solving the problem presented by the lessening of the population of France. Legislation has recently been enacted in France penalizing the propagation of methods of birth control.

The quinquennial prize for the best work in medical sciences, offered by the Académie de Médecine of Brussels, has been awarded to Professor A. Brachet, professor of anatomy and embryology of the University of Brussels, for his contributions to topographical anatomy.

The American Society for the Control of Cancer announces a seven days' campaign to be designated "Cancer Week," from October 30th to November 5th. The purpose of the movement, says the *New York Medical Record*, is to reach as many persons as possible in the United States and Canada, with the hopeful message of "cancer control." The campaign is to be carried on through three main activities—lectures, literature, and publicity—and it is stated that public health departments, medical societies, and medical schools and colleges will co-operate in carrying these out. Information is lacking regarding the exact significance of "cancer control," and on its value to the general public.

A recent report from Riga announces that a total of 78,011 cases of cholera were registered in Russia from the beginning of the year to August 10th. It is stated, however, that the conditions in Astrakhan are so desperate that the local authorities have proposed that the whole population should be transferred to Siberia and the city set on fire.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"J. A. M." bought a second-hand P. car in 1917 and has now bought a second-hand S. car, but retains the P. car. He asks what allowance he can claim.

*** We are of opinion that until the P. car is disposed of no allowance can be claimed. When our correspondent finds a purchaser he can claim as a professional expense the excess of the 1921 cost of a P. (or similar) car in the same condition as his first car when he bought it, over the realization price.

"F. X." sold his car in 1920 for £410 and bought a new one for £842; the inspector of taxes admits the claim for £432, but says it must be deducted from the partnership assessment.

*** We think that the inspector is correct legally. Under the Income Tax Acts the profits of a firm must be assessed in one sum and the replacement of a car is a professional expense deductable in arriving at the average liability of *the firm*. But in dividing the firm's assessment between the two partners the fractional basis of division need not be applied to the actual assessment. It is the convenient and usually adopted method, but it would be more correct to divide it on a basis which takes individual professional expenses into account. The assessment is really the aggregate of the two individual shares, and if they can be combined to result in the assessment, "F. X." will know what is his correct share of the tax payable, and the fact that the assessment is made in one sum will be immaterial.

LETTERS, NOTES, ETC.

THE experience of the law courts shows how difficult it may be to make a plain statement which perversity cannot misinterpret. In our issue of December 18th, 1920, it was by a printer's error announced that the diploma of the Fellowship of the Royal College of Surgeons of England had been conferred upon "G. E. Elkington"—an impossible name. A correction to "G. E. Elkington" was made a fortnight later. We are informed that there are persons who still profess to doubt whether Mr. G. E. Elkington is a Fellow of the College; the diploma of Fellow was granted to him on December 9th, 1920.

THE FORMOL-GEL REACTION IN SYPHILIS.

MAJOR W. LEONARD FORSYTH, M.B., I.M.S., Professor of Pathology, King Edward Medical College, Lahore, writes that since December, 1920, he has been interested in the formol-gel reaction as a possible clinical help in the diagnosis of syphilis in India. He examined a series of 34 patients, including 15 cases of different stages of syphilis, 7 of malaria (including a case of asthma with a history of malaria), 5 of kala-azar, 2 of leprosy, 1 each of Dupuytren's contraction, lymphadenoma, dysentery, soft sore, rheumatism, and simple ulcer, and also a hospital servant apparently free from disease. The technique followed was that of Gaté and Papacostas. These observers found that the results of the Wassermann reaction and formol-gel reaction were parallel in 85 per cent. in a series of 400 serums examined. In Professor Forsyth's series discrepancies occurred in 14 cases, or approximately 41 per cent. These were confirmed by repeating the test. My own serum, he continues, used weekly as a negative control in the Wassermann reaction, gave a positive formol-gel reaction on one occasion, although it usually behaved in a negative way. There may be something in the test, but discordant results are to be expected until its empiricism is explained and technique standardized; it cannot at the moment be considered even a reliable clinical test.

BACTERIOLOGY.

A CORRESPONDENT asks who coined the word "bacteriology," and in what publication it first appeared. Reference to Murray's *New English Dictionary* indicates that the word bacterium was first used by Todd in the *Cyclopaedia of Anatomy and Physiology* (1847-49). The reference for "bacteriology" is to the *Athenaeum* of August 30th, 1884. "In Germany it has become a separate study under the name of bacteriology." We are unable to take the matter further.

A REPORT.

DR. J. MANSON has been good enough to send us a copy, neatly printed in pamphlet form, of a document read by him at the annual dinner of the Warrington Division of the British Medical Association held early this year. It professes to be the report to the Right Hon. Lord Hoxton, Minister of Health, by J. Pessary Smith, M.D., Regional Medical Officer, on the insurance practice of Sub-Area C3 in District 2a of Region 4. The comments upon the insurance practitioners (Drs. Sawder, Pauell Jones, Flem, Koff, and Colic) and upon the insured persons, and the "comments and recommendations of a general nature," are conceived in a spirit of levity appropriate to the entertainment of an after-dinner audience of doctors. Perhaps the best point is made in Dr. Pessary Smith's advice that, "instead of illustrated or other papers being put for the use of patients in waiting-rooms, tracts on health from the Ministry of Health be supplied to all surgeries so that patients may usefully employ their time while waiting to see the doctor."

"WHITAKER'S ALMANACK."

THE board of directors of J. Whitaker and Sons, the publishers of *Whitaker's Almanack*, now consists of three sons of the late Dr. J. Whitaker, F.S.A., who founded this very useful annual in 1868, and edited it until his death in 1895. Two of his sons are members of the medical profession—Mr. G. H. Whitaker, M.R.C.S., is the managing director, and Mr. Edgar Whitaker, M.R.C.S., L.R.C.P., who recently left New Zealand to become the business manager of the firm, was ophthalmic surgeon and treasurer of the board of the Palmerston North Hospital; that hospital, which has just been enlarged and provided with *x*-ray and bacteriological laboratories at a total cost of £56,000, is one of the largest and best equipped in the Dominion. Mr. Edgar Whitaker served in the Royal New Zealand Artillery at the outbreak of war, and was President of the Palmerston North Division of the New Zealand Branch of the British Medical Association in 1919-20. The third son, Mr. C. W. Whitaker, M.A., F.S.A., who is editor of the annual, is a member of the Common Council of London and chairman of the Central Markets Committee.

A CORRECTION.

THE presentation to Dr. T. T. Kelly, reported in our issue of October 1st, p. 543, should have been ascribed to Dr. W. W. Kelly, late of Bottesford, Leicestershire, and now of Thurnscoe, near Rotherham.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36, 37, and 38.

THE appointment of certifying factory surgeon at Waltham Abbey (Essex) is vacant.

THE MEDICAL INSURANCE AGENCY (429, Strand) asks us to call the attention of a member of the Association (in Cardiff, according to the postmark), who sent a postcard regarding the insurance of a "Standard" motor car, to the fact that he omitted to give his name and address.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

A Lecture
ON
PERICARDITIS IN CHILDHOOD.

BY

F. JOHN POYNTON, M.D., F.R.C.P.Lond.,

PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

In this lecture I intend to pay particular attention to the non-rheumatic forms of pericarditis, although rheumatic pericarditis must also be taken into consideration because it is the pivot of so much of our knowledge of pericardial affections in the young; it is the most frequent in its occurrence, and for this reason the most thoroughly investigated. No attempt will be made to give an exhaustive account of the subject of pericarditis, but I will try to give some personal experiences of the difficulties and dangers in which one may become involved.

There can be no doubt that all forms of pericarditis are serious, though we may occasionally meet with a rheumatic case which runs a very favourable course, producing no degree of distress and leaving no appreciable damage. Such cases are rare, for it is unusual for rheumatism to cause pericarditis as a solitary fleeting lesion of the heart.

Suppurative pericarditis is a very fatal disease, and tuberculous pericarditis with its formidable complications has a gloomy outlook. When suppurative pericarditis occurs in association with osteomyelitis it is usually staphylococcal in origin, and it has been my unfortunate experience to find it then but one factor in a general septicaemia for which any local treatment has been futile.

The outlook is more favourable in cases of pneumococcal origin, and we win an occasional triumph with the assistance of skilled surgery and excellent nursing. We may be inclined to wonder why the danger is so great in pneumococcal pericarditis, for empyemata, though serious enough, are repeatedly treated with great success, and we do not as a rule see in pneumococcal pericarditis that great cardiac dilatation we meet with in the severe rheumatic form, and the cardiac valves are usually unaffected. There are, however, some good reasons for this. One is the very early age at which pneumococcal pericarditis most frequently occurs. In an analysis of 100 fatal cases of suppurative pericarditis of all varieties I found that 84 per cent. of the patients were under 4 years of age. Another is the rarity of this form of pericarditis as a solitary event. I found only one such case in this series, and have seen one other; 54 were associated with empyemata and 31 with pleurisy or pneumonia. When treating pneumococcal pericarditis, then, we are almost invariably dealing with it as a complication of already serious disease.

There is still another reason due to the difficulties in the diagnosis which leads to delay or actual oversight of the condition. One great cause of difficulty is the frequent absence of pericardial friction. Thus it was only recorded in two cases in the series I analysed, and though it is more likely to be detected in adults and in the older children, it is in my experience usually, even in the latter, soft and evanescent. It is difficult to realize how much we depend upon pericardial friction in the diagnosis of pericarditis—almost as difficult as to realize how much we rely upon coal until we have none. Then, again, there is always difficulty in making a diagnosis of a new event in an illness where already the first event has been a grave one. An empyema takes up much of our attention, and when progress is arrested we naturally and reasonably expect to find the explanation connected with the original trouble, and look for imperfect drainage or loculation of the abscess, or suspect some tuberculous infection to be complicating the suppurative process.

Again, in a very young child the symptoms of suppurative pericarditis are not distinctive. Sudden sharp rises of temperature, sudden attacks of dyspnoea and cyanosis, and sudden death have been recorded, but many cases have never been even suspected during life. Lastly, these cases are comparatively infrequent, and we have time to forget the lesson we have learnt from a previous failure, by the time the next case presents itself.

Diagnosis.

The diagnosis of suppurative pericarditis is naturally much easier when there is pericardial friction, but it is very possible to miss this evanescent sign or not to appreciate its value. The development of a definite effusion is our great assistance in diagnosis when there has been no friction. In medical textbooks you find the signs of pericardial effusion clearly stated, and here I shall only touch upon certain points which have attracted my attention.

The diagnostic signs to which I attach most importance are the gradual disappearance of the heart sounds step by step with an increase in the area of precordial dullness. Unfortunately we may not see the patient in the early stage or the notes of that stage may be deficient or inaccurate, and if this is the case there may be doubt whether the faintness of the sounds is not the result of severe cardiac dilatation or great thickening of the pericardium. The outline of the precordial dullness requires careful mapping out, and we may be struck by its wooden character if the effusion is considerable. A noticeable feature in pericardial effusion is the upward extension of the dull area, sometimes on both sides, but particularly on the left. This upward extension compresses the upper lobe of the left lung, with the result that you may find impairment of the percussion note over the left clavicle, below this tubular breathing from the pulmonary collapse, and below this again the wooden dullness of the pericardial effusion. Nevertheless, these signs may be puzzling, for we have to remember to take into account the possibility of pneumonia in the left upper lobe, or, again, we may know that there is an empyema on the left side, and this may have already been opened. When this is the case, as you know, the physical signs in the chest, quite apart from any pericardial effusion, are apt to be difficult.

The dull area due to pericardial effusion may extend far beyond the apex beat into the left axilla, and then you find yourself wondering whether this dullness is entirely due to the fluid in the pericardium, or whether there is in addition a left pleural effusion. During the war I had a young soldier under my care with a tuberculous effusion in the left pleura, which I tapped. This was followed by a large pericardial effusion, which in turn was drained, and then for some months, at intervals, I drew off fluid from his chest by paracentesis in the left posterior axillary line. I thought I was emptying a recurrent pleural effusion, but when he eventually succumbed I found his left pleura was firmly adherent, and that I had been in reality tapping the pericardium. I mention this case to remind you how extensive a pericardial effusion may become when it persistently recurs.

On the right side the precordial dullness may reach the nipple line, and, as you are aware, the direction of this right line extends from above downward and outward, forming with the horizontal upper limit of the hepatic dullness an obtuse angle opening outward. On the other hand, when the heart is dilated and there is no effusion, the outline of the dilated right auricle is generally curved, and forms with the hepatic line an acute angle. When there is extreme dilatation, particularly when in addition there is an adherent, thickened pericardium, this distinction unfortunately does not hold.

This precordial dullness reaching to the right of the sternum needs as much consideration as that on the left side. It may be the result not of a pericardial effusion, but of a pleural effusion on the left side displacing the heart, or it may be due to a collection of fluid between the right lung and pericardium, and a recent case will illustrate the kind of problem I am now considering.

A girl of 8 years was admitted with the signs of a large effusion in the left chest and a precordial dullness extending to the right nipple line. This was apparently explained by the collection in the left pleura, which proved to be an empyema. Two pints of pus were evacuated, but the child after a brief interval of improvement began to go downhill, and one morning I heard a suspicion of pericardial friction, and found the precordial dullness once more extending to the right nipple. Seeing how freely the empyema had drained, why was this? I was forced to conclude that it was the result of a pericardial effusion, and Mr. Addison explored the pericardium for me and discovered a haemorrhagic exudation. This was, however, unfortunately not the whole explanation, for there was also an overlooked empyema at the root of the right lung.

You will be expecting the mention of radiographic

investigation. It is of great value in these cases, but I have not had a good reason for hurrying to it. Every year the opportunities for radiography are growing, but it is quite possible you may not be within reach of a radiographer, for these cases are very acutely ill. Even if he is at hand I am sure that the use of the rays ought never to replace minute clinical examination, for you want in these difficult cases every atom of evidence you can collect. Without any intention of laying down the law, I would venture to say that the use of this method tends to make us neglectful of minute clinical examination, a danger also illustrated in the diagnosis of thoracic aneurysm. I would remind you that the difficulties in the interpretation of x-ray shadows may be as great as those of the clinician, and carry with them this additional danger, that they are apt to resolve themselves into a dogmatic "yes" or "no" when it is really impossible to make so definite a decision. You must not expect the radiographer to be intimately acquainted with all the intricacies that surround the diagnosis of a pericardial effusion, and he must, however skilled, always be giving you an opinion upon shadows. I doubt, indeed, if it is possible to distinguish by radiography between a pericardial effusion and a dilated heart with a greatly thickened and adherent pericardium; personally I cannot do so, though I realize that the indications for treatment are very different in those two conditions. If you can distinguish the darker shadow of the heart's outline surrounded by a somewhat lighter zone bounded by the pericardium you are a distinct step forward.

There are some very interesting physical signs at the back of the chest in some cases of pericardial effusion—signs which are also met with when there is great cardiac dilatation, and, particularly obvious when, as in acute rheumatic pericarditis, both factors are present. In children these signs are very striking. A patch of intense tubular breathing appears to the left of the spine about the level of the inferior angle of the scapula—below it the breath sounds, though diminished, may be natural and above it they are unaltered. Later the note becomes dull on percussion even to the base, and the area of tubular breathing expands downward, but over this area there may be no adventitious sounds. As the pericardial effusion subsides and the heart becomes less dilated the note improves, the breath sounds become first puerile and finally vesicular again, but the area of intense tubular breathing in the region of the angle of the scapula is the last to disappear.

Two mistakes may be made if you are not acquainted with this phenomenon, of which I have seen most striking examples: you may diagnose pneumonia or a pleural effusion. The condition is, however, one of pulmonary collapse, and is due to the cardiac lesion and not to a secondary pulmonary or pleural infection. Nevertheless, these are such involved cases that I advise you to weigh the evidence for each patient, as it is quite possible that there may be a concurrent pneumonia or pleurisy in any particular case. The area of intense tubular breathing at the level of the angle of the scapula is a very suggestive sign of the cardiac origin of the pulmonary signs when combined with a faint vesicular murmur below this level and the absence of any moist sounds.

Obliteration of the left intercostal spaces in the left precordial region and a wavy impulse over several spaces and absence of diaphragmatic movement may each have their value in the diagnosis. You will notice the rapid short respiration and abrupt cough and pay great attention to the pulse. A small, almost imperceptible, wave is a warning of an embarrassing effusion.

The diagnosis of pericardial effusion once made, the next step is to decide upon the cause. This is often obvious but sometimes difficult. In exceptional cases of pneumococcal origin with loud friction rheumatism may be diagnosed, but it is tuberculous pericarditis, on account of its rarity, that is most likely to deceive us. A blood-stained effusion in a child is not usually tuberculous or malignant in nature, for the most frequent cause is acute rheumatism.

Tuberculous pericardial affections are most interesting and perplexing. There may be friction and no effusion. There may be extensive and recurrent effusions without friction, and there may be recurrent forms with recurrent friction, ending in that rare but definite disease called multiple serositis. The course of multiple serositis in a child is this: you first meet with the case as one of pleurisy and pericarditis, and may believe it to be rheumatic, although you are surprised by the absence of other rheumatic symptoms or of a previous history of rheumatism or of any valvular lesion, although this latter may be present in tuberculous heart disease. The case drags on month after month, and I have watched one for three and another for two years, the children coming under notice at one time for a fresh attack of pleurisy, at another for fresh pericarditis. Gradually you find the liver enlarging, the spleen becoming palpable, and ascites developing. The heart sounds are now muffled and the precordial dullness is wooden, and there may be clear signs of pericardial adhesion. The ascites may be tapped time after time, but invariably recurs, and the child gradually loses ground. Finally there are convulsions, or ocular palsies, with a rise of temperature and death in coma. The necropsy shows adherent pleurae, an adherent greatly thickened pericardium strangling the heart, an enormous nutmeg liver, ascites, and tuberculous meningitis.

Treatment.

The treatment of pericarditis with effusion is always difficult. The first question is, Ought we to use surgical measures? The second, What surgical measures should we use? The third, How should we apply them?

In the pneumococcal cases we feel sure we ought to liberate the pus. Ought we to drain the rheumatic cases, which are also infective, early in their development?

The answer seems to me to be involved in these considerations. The rheumatic infection is apparently destroyed by the tissues more effectually than the pus-forming organisms. There seems to me also to be this difference in their toxins. The pus-forming infections destroy the cells and survive in the fluid; but the rheumatic organism, though it may often lie dormant in necrotic tissue, is less destructive, and is difficult to find in any numbers in a fluid containing phagocytic cells which, though damaged, are many of them not destroyed. The poisons are of a different nature, and not, in my opinion, merely attenuated suppurative infections.

Thus it is we find that in the rheumatic pericarditis the process generally subsides, leaving, however, behind it traces of its destructive nature. The pneumococcal and other suppurative infections may also quiet down in very exceptional cases of slight severity, but far more frequently they tend to remain active, sometimes acutely so and sometimes with diminished intensity. We must remember, also, that the infection commences within the pericardial tissues, and that drainage of the sac can only remove the bacteria and toxins present in its cavity.

I have seen several rheumatic cases opened in the early stage of pericarditis and a certain amount of fluid removed, but the course of the case has not, as a result, been perceptibly altered for the better, and there is a distinct risk involved in such an operation. Our need in rheumatic heart disease is clear enough: we want a serum which would give that assistance to Nature which would enable the tissues to overcome the infection more rapidly and more completely than at present—a service that salicylate of soda, in my opinion, has failed to give us.

Moreover, we can never afford to lose sight of the cardiac dilatation which occurs in rheumatic pericarditis. I never study such a case without attributing the great enlargement of the precordial dullness first to dilatation. When I am convinced that this explanation is not sufficient I still keep before me the element of dilatation, and when the history points to previous heart infection, recall the fact that a dilated heart with an added pericardial effusion and a dilated heart with a much thickened pericardium are almost indistinguishable.

Yet in spite of this caution, the result of repeated observation, I am guilty of being the inciter of an exploration in which the heart was pierced in three different places! When I tell you that I have seen dilated rheumatic hearts with small aneurysmal projections in the right ventricle due to the visceral pericardium being the only barrier between the blood in its cavity and the pericardial sac, you may well ask me what was the result of this adventure. As so often happens to the wicked in this world, the result was astonishingly successful, for this almost moribund child from that moment commenced to mend, and left the hospital in fair case. I have, however, no intention of

repeating that mistake, and this I can tell you with absolute confidence, that paracentesis of the pericardium in rheumatic pericarditis under 12 years of age is rarely called for. I would venture to impress this general rule upon you as the result of experience—move slowly to paracentesis in rheumatic pericarditis.

The next question, having decided that an effusion should be surgically treated, is, What method should we employ? We have two alternatives. We can explore with a trocar and cannula, or we can open the pericardium. For a decision on this question we need all our judgement, which will be based upon a complete review of the case. A rheumatic effusion is often sero-fibrinous and difficult to drain through a cannula. A purulent effusion requires ample drainage, but a serous tuberculous effusion flows easily through a cannula. Another point for consideration is that of anaesthesia. Upon this I can say from my experience that though these children are desperately ill, I have been much encouraged by the ease with which a skilled anaesthetist has managed them. There must be a risk, but I have never yet seen any mishap even in the worst cases.

As a general rule, I prefer to use drainage of the pericardium rather than to trust to paracentesis, and aim at making the diagnosis sufficiently sure to justify immediate recourse to opening the pericardium. Individual cases in which there is good reason to believe the fluid is serous, or in which immediate relief by the simplest method is urgent, will be excepted from such a general rule.

Lastly, there is the method of exploration of the pericardium. There are various routes, and all things being equal, that by which the most effective drainage can be obtained is the best. The one I prefer, and the one my colleague Mr. Addison has chosen, is the abdominal route—in French literature often termed Marfan's route. In paracentesis the procedure is to define the tip of the ensiform cartilage, and introduce the needle immediately below the tip for some three-quarters of an inch, then to direct it upward, grazing the under surface, and lastly slightly backward, entering the pericardium through the base. When opening the pericardium the ensiform is removed and the pericardium incised from below. This route is not indicated when there is deformity of the thorax or considerable abdominal distension, but I have not met as yet with these contingencies. In such a case the incision to the left of the sternum, avoiding the internal mammary artery and resecting costal cartilages, is the alternative.

I can give precise information as to the result of drainage by the abdominal route, for in a recent case, after the left pleura and pericardium had been drained, death resulted from an overlooked right empyema that lay deep near the root of the lung. The necropsy showed that the pericardium was perfectly drained and rapidly becoming adherent.

There may be some after-difficulty with the drainage, but in my own cases this has generally been easily overcome. The great dangers are the high degree of toxaemia due to the disease, with the consequent tax on the child's vitality, and the liability in these cases for other suppurative lesions to be present or to develop later; for example, the overlooked right empyema in the case I have just mentioned, or a suppurative meningitis, which may be very deceitful in its latency, but which is invariably fatal in such a condition; or, again, a suppurative peritonitis.

The use of an autogenous vaccine is clearly indicated where progress is slow but drainage satisfactory.

Reverting now to rheumatic pericarditis, I would direct attention to a peculiarly malignant type which I have seen on more than one occasion in young children since the war. These are cases with a very gradual onset and with little or no fever, in which the heart has stealthily developed extreme disease. Endocarditis appears first, with dilatation, and then, sometimes after weeks, pericarditis, which may be haemorrhagic, is detected. Usually small subcutaneous nodules appear, and throughout the child has no pain, but lies quiet and taciturn, reacting to no remedies. I cannot help feeling that it is some result of the poor food during war-time which has weakened the tissue resistance, and, rightly or wrongly, I associate this feebleness with the prevalence of grave anaemias in childhood, of which I have seen of late frequent and most distressing examples.

I also wish to direct attention in rheumatic pericarditis to signs of pleuro-pericarditis and to very superficial crepitations immediately under the sternum and in its neighbourhood, the result of a concurrent mediastinitis. These are indications which will lead you to expect the formation of extensive external pericardial adhesions, which, as you know, are the great factors in the development of serious trouble from an adherent pericardium. The heart, dilated and weakened by the rheumatic poisons, is tethered to the surrounding structures by these adhesions. Compensation, then, is never effectual, and a prolonged history of gradual failure will be the outcome.

If a child previous to an attack of pericarditis has already an aortic lesion you may find that signs of angina develop, and the outlook then is very grave. In a few exceptional cases thrombosis of the large veins in the neck may occur, and you must suspect this complication when when one or other arm suddenly becomes oedematous. I have seen the superior vena cava with all its great branches obliterated by such a thrombosis and death occur from pulmonary infarction.

I have already mentioned several times great thickening of the pericardium, and I would compare the process to that which occurs in mitral stenosis. You suspect it when the pericarditis is subacute, but continually recurring at intervals which may extend over many weeks. Nodules may form in the pericardial tissues, and the heart becomes greatly dilated. You can readily understand that paracentesis or exploration must be a failure and a danger, and unless you have actually seen such a case explored you can hardly realize the difficulty the surgeon will have in locating his path. It is quite easy to burrow into the mediastinal tissues by the thoracic route and never to enter the parietal pericardium at all, and even if you do with a trocar you will very easily find yourself in the cavity of the right ventricle. It was for an adherent pericardium due to multiple serositis that Mr. Trotter did for me the first published case of Brauer's operation in this country, although Mr. Thorburn had previously undertaken a like operation. This operation consists in stripping an area of the chest wall off the adherent pericardium, and is an alarming undertaking. The indications that the cardiac failure is due to the adhesions must be very clear to justify it; in my case three years of comfortable life resulted. Previous to the operation the boy could not walk down the ward and rapidly developed oedema in the erect position.

In this case, when the ribs were freed from the apical region, it was remarkable to see the heart jump back as if it had been held by a spring. There was no valvular disease, and the tough adhesions were chiefly located to this apical region. It was, as you can understand, a very favourable and very unusual case, and the patient would have done very well indeed had it not been tuberculous in origin, and that later tuberculous pleurisy developed and recurred. This embarrassed his respiratory system, and eventually caused heart failure. For two years this boy, who had been unable to walk down the ward, was able to act as cricket scorer to his club. I have never had a rheumatic case in which I could find the courage to advise this operation, though others have had successful ones. The presence of valvular disease, and the possible disaster that might occur if the diagnosis was incorrect, are formidable deterrents.

In one case of rheumatic serositis I have seen the Talma-Morrison operation done for the recurrent ascites, but it was a failure.

The medical treatment of rheumatic pericarditis has not altered in recent years; there are still some who believe that sodium salicylate is a specific, and others who do not. Which side be right, I cannot say that I am much impressed by the efficacy of our treatment. We are waiting for further researches to discover some specific serum or other biochemical therapy. You must all have been struck from time to time with the remarkable recoveries that result occasionally from serum and vaccine therapy in acute streptococcal infections; we wait in hope for such a result with the rheumatic. In the meantime, Sir William Gull's warning remains as true to day as when he gave it: not to persecute the child with over-treatment.

The indications and the remedies in vogue are plainly stated in handbooks on diseases of childhood, and I need not detain you with a recapitulation of them. It is essential to remember that it is not sufficient for the

symptoms to subside, we have to wait also for the recovery of the damaged cardiac muscle and adaptation of the heart to the valvular lesions which are almost invariable in the rheumatic form of pericarditis. Six months spent in nursing the heart back to efficiency is a very small part of a lifetime, and you cannot go far wrong if you make each forward step a test, guided by the pulse, the apex beat, the cardiac outline, the temperature, and, above all, the general condition of the child.

In conclusion, though I realize you already know much that I have commented upon, this lecture may help to recall to you that in the treatment of pericarditis in childhood we must be prepared to display all our clinical knowledge and that balance of judgement which it is so difficult to keep when pressed by urgent illness, complicated conditions. anxious parents, and possibly divergent opinions

A Study
OF
SOME FACTORS CONTROLLING THE NORMAL SUGAR CONTENT OF THE BLOOD.

BY

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Accurate knowledge of the mechanism by which the sugar content of the blood is normally maintained and controlled is obviously an indispensable preliminary for a correct interpretation of the means by which hyperglycaemia and glycosuria may be produced. When, therefore, we found it impossible to explain satisfactorily on current theories many of the phenomena we observed in the course of an experimental investigation of diabetes mellitus to which we had been led by previous work upon the changes in carbohydrate content of the blood associated with pancreatic disease, it became necessary to study the subject afresh. The experimental part of the work was commenced in 1919, and reference has been made to some of the results in a previous paper,[1] but we now propose to discuss the subject in greater detail.

Before doing so it will be advisable to deal briefly with the methods of analysis adopted, for the discrepancies between the figures quoted by different observers are no doubt to be explained to some extent by the various processes for estimating the carbohydrate content of the blood employed. Many of the older findings were obtained with methods which do not completely remove all traces of protein, and are therefore of little value, but even in some of the more modern processes, such as Benedict's picric acid method, where this is successfully accomplished reducing substances other than sugar are included in the determination. After much preliminary experiment to discover a method of analysis which would give a reliable estimate of the reducing sugar, and that alone, we adopted in the first place a modification of the process described by one of us in 1917.[2]

In this the proteins are removed by filtration after they have been precipitated by heating with sodium chloride and dilute acetic acid. The reducing power of an aliquot part of the filtrate is then determined by boiling with a solution containing copper sulphate, sodium carbonate, and potassium citrate, converting the cuprous oxide formed into cuprous chloride by adding hydrochloric acid and then estimating the cuprous chloride with standard iodine and sodium thiosulphate solutions, using starch as the indicator.

Later, we more frequently employed a modification of the process described by Folin and Wu,[3] as a considerable saving of time is effected when a large number of estimations have to be made, as was often necessary.

In the Folin and Wu method the proteins are precipitated with a solution of sodium tungstate and dilute sulphuric acid; an aliquot part of the filtrate is heated with an alkaline copper solution and the reduced copper dissolved in an acid mixture containing sodium molybdate and sodium tungstate. This solution is then made alkaline with sodium carbonate, diluted to a fixed volume, and the depth of the resulting blue colour compared in a colorimeter with that given by a standard solution of pure dextrose treated in the same way.

Although these methods differ in principle, numerous control experiments with sugars, and many simultaneous estimations of the sugar content of normal and pathological bloods, have shown that they give results which correspond within the limits of experimental error, the variation being not more than 0.002 per cent. either way in experienced hands. It is therefore probable that they give as accurate a determination as is possible of the proportion of reducing carbohydrate. Since our investigations of the blood were carried out at hourly, or in some instances at half-hourly, intervals for several hours, and sometimes throughout the whole day, it was necessary that we should work with as small an amount of material as possible and obtain it with a minimum of discomfort, to avoid the effects of nervous disturbance and fatigue; we therefore employed as a rule 0.3 c.cm., taken from the root of the nail in the human subject and from the marginal vein of the ear in animals. This amount was drawn into an accurately calibrated narrow pipette, direct from the puncture made by a sharp needle, without the use of oxalates or other anti-coagulating substances.

It is now recognized that the percentage of sugar present in the blood is not a fixed quantity, even in health, but varies within limits which are, however, confined to a comparatively narrow range. As the most important factor influencing the proportion of sugar in the blood at any particular time is the ingestion of food, it follows that, to obtain comparable results, the blood must be taken after a fast of sufficient duration to eliminate the direct action of food, or that the effects of test diets of known composition should be studied.

To consider first the figures obtained after fasting. We have found that in fifty human beings from whom samples of blood were taken in the morning, twelve to sixteen hours after the last meal, the sugar content of the blood averaged 0.085 per cent., with extremes of 0.070 per cent. and 0.102 per cent., but that nearly half (44 per cent.) gave a fasting level of 0.080 per cent. or 0.082 per cent. This agrees with the results obtained by Rona and Doblin,[4] who found an average of 0.080 per cent. in ten individuals, with extremes of 0.048 per cent. and 0.128 per cent. by the polariscopic method. In the carnivorous dog our average fasting level for eight animals was 0.083 per cent., with extremes of 0.074 per cent. and 0.090 per cent., which corresponds closely to Oppler and Rona's polariscopic average of 0.085 per cent. for four animals, their extremes being 0.073 per cent. and 0.102 per cent. The average fasting value for twenty-five rabbits, which we took as examples of herbivorous animals, worked out at 0.083 per cent., the extremes being 0.080 per cent. and 0.096 per cent. These figures are lower than were obtained by Oppler and Rona and most other observers, but agree with the more recent values quoted by Jones, working with MacLean's micro-method,[5] who found an average of 0.086 per cent. in sixteen rabbits, the highest being 0.116 per cent. and the lowest 0.068 per cent. The great difference in the blood sugar values found in rabbits by many experimenters is probably due to the fact that they are peculiarly liable to emotional disturbances which raise the percentage of sugar in the blood. The fasting value for cats is usually stated to be very high. Lyttgens and Sandgren[6] give 0.291 per cent., and Oppler and Rona an average of 0.280 per cent. for four estimations, with extremes of 0.154 per cent. and 0.354 per cent., but a sample of blood we obtained from a small accidental cut on the paw of a fasting cat showed a blood sugar content of 0.094 per cent., a figure which corresponds more nearly to the average values for other mammals, and agrees fairly closely with the value of 0.088 per cent. quoted by Pavy[7] as given by the heart blood of a cat killed by pithing. The higher figures for cats, like those quoted for rabbits, are probably to be attributed to emotional excitement.

Although we have found that the same person, or animal, does not invariably give exactly the same fasting value, the length of the fast does not appear to exert any material influence on the proportion of sugar in the peripheral blood, judging from our experience with rabbits which we have examined after twelve to seventy-two hours' abstinence from food. Allen[8] has come to the same conclusion, and states that "approximately the normal percentage is stubbornly maintained through prolonged starvation, almost up to death." It would therefore seem that, when the digestive apparatus is functionally inactive, the sugar content of the blood is kept at an almost constant level for the same individual, and only varies within very narrow limits for different mammals, irrespective of their usual diet.

Turning now to the effects of food on the sugar content of the blood, we find that the rise in the percentage of sugar associated with functional activity of the digestive apparatus follows a curve which ranges within well-defined limits that appear to be practically identical for all

mammals under similar conditions; the shape of the curve is also of a similar type for omnivorous, carnivorous, and herbivorous animals. Since Jacobson[9] published his observations on the normal sugar values of the blood and their physiological variations, in 1914, it has been known that the effects produced by food vary to some extent with its composition. According to Jacobson, sugar taken by the mouth causes the most rapid rise in the percentage of sugar in the blood, with starch a comparable though slower increase occurs, but with proteins and fat there is no appreciable change. Our observations confirm his conclusions as regards sugar and starch, but we cannot agree with the statement that protein foods have no appreciable effect on the sugar content of the blood.

As the charts (Figs. 1 and 2) show, dextrose and lævulose taken by the mouth produced in both human beings and dogs a rapid rise in the blood sugar, which reached its maximum at the end of an hour, and during the next hour there was an equally rapid fall, so that the normal fasting level was regained. Starch, whether in the form of bread taken by man or a dog, or of oats given to rabbits, produced a slower increase, which did not reach its maximum until the second or third hour, and was equally slow in subsiding (Figs. 3, 4, 5). Although our observations show that a purely protein meal, in the shape of 6 ounces of boiled haddock containing 40 grams of protein, did not raise the sugar content of the blood as rapidly or to as high a level as 100 grams of bread containing 54 grams of carbohydrate, there was an unmistakable rise, which reached its maximum at the fourth hour in man (Fig. 3), while 4 ounces of lean meat taken by a dog gave the same maximum percentage of sugar as a mixed meal of bread, dog biscuit, meat, bones, and an ounce of marmalade, but the increase did not take place as rapidly as with the mixed diet (Fig. 4).

In order to study the effects of fat, an ounce of olive oil was taken fasting by one of us, and on the two following days test meals of bread-and-butter and of sardines were given to the same subject. The meal of plain oil was followed by a very slight rise in the sugar content of the blood at the first hour (Fig. 3), then by a slow and steady fall in the next two hours, after which it returned to the fasting level again. The addition of fat, in the shape of butter, to bread was found to retard the rise and prolong the fall in the percentage of sugar in the blood, so that the maximum level was not reached until the third hour, instead of at the second, as when the same amount of bread was taken alone and the maximum was also a little lower. Similar results were obtained with normal dogs. A meal of protein and fat in the form of sardines gave results which differed in much the same way from those obtained when a fat-free protein was taken (Fig. 3).

It is therefore clear that sugars, starches, and proteins all increase the sugar content of the blood in animals and man, but that the rate at which the increase takes place, and the extent of the rise above the fasting level, vary with the nature of the material, pure sugars producing the most rapid rise and fall, then starch, and then pure protein; fat, on the other hand, tends to depress the level of the blood sugar when taken alone or with another food, either carbohydrate or protein. On comparing the effects of mixed meals consisting of oatmeal porridge, eggs, bread-and-butter, marmalade, sugar, milk, and tea in man (Fig. 3), and bread, dog biscuit, meat, bones, and marmalade in the case of a dog (Fig. 4), with oats, cabbage, carrot, for a rabbit (Fig. 5), it will be seen that the form and range of the blood sugar curves are remarkably constant, reaching their maximum point at the third hour, and returning to the fasting level again about the fifth or sixth hour. The slightly higher level attained in man than in the dog, and in the rabbit than in man, is possibly related to the amount of fat contained in their respective diets, although there may be a constant difference of this degree in the upper blood sugar limit characteristic of the species, for in each case the maximum on a mixed diet and on simple foods was approximately the same.

From these results it is evident that (1) the fasting level of the blood sugar is remarkably constant, and is not related to the habitual diet; (2) the time and space relations of the variations in the sugar content following the ingestion of food are also strikingly similar in herbivorous, carnivorous, and omnivorous animals; (3) while carbohydrate foods induce the greatest excursion above the fasting level, the effect of a purely protein meal is little if any less, but that fat causes a very slight increase, and has a delaying action and depressing effect on the rise which would otherwise occur with carbohydrates and proteins; (4) the upper limit attained by the blood sugar after a meal is apparently not directly dependent upon the amount of food taken after a certain minimum has been consumed.

Any theory, therefore, regarding the mechanism by which the sugar content of the blood is controlled must account for all of these facts, and also be capable of explaining how hyperglycæmia may occur under pathological conditions. It has been very generally assumed that the increase in the percentage of sugar in the blood following a meal is due to the direct passage into the peripheral circulation of sugar derived from the food. If it were true that such an increase only follows the ingestion of sugar or starch, this might be accepted as a possible explanation, although even then it would be difficult to account for the remarkably constant maximum level produced by different carbohydrates and varying quantities of the same starch or sugar; but as a purely protein meal causes a similar rise, which may attain the same maximum as after a carbohydrate meal (Fig. 4), the true explanation is probably not so simple.

It may, of course, be contended that sugar can be formed from protein in the body; but it seems unlikely that it would appear in the circulation almost as rapidly as the sugar produced by the digestion of starches, and one would expect the rise in the sugar and urea of the blood after a protein meal to correspond more closely in point of time than the experiments of Jacobsen and Edwards[10] have shown is the case. Another fact which cannot be explained by the current theory is the distinct reduction of the sugar content of the blood following the ingestion of oil. The delay in the sugar curve produced by the addition of fat to either carbohydrate or protein might be accounted for by more prolonged gastric digestion, but this would not explain the effect of fat taken alone.

When we were investigating the blood changes produced by solutions of various amounts of sugar we carried out a series of controls in which the same fluid without the sugar was taken, and found that a distinct, although much less pronounced, increase in the sugar content of the blood could be produced (Fig. 1). This result led us to investigate the blood changes following "sham feeding," and we found that when a patient was given a meal of "thrice-boiled" vegetables (that is, vegetables of low carbohydrate value which had been boiled in three changes of water to remove practically all the starch and sugar) a blood sugar curve of the same type, but of diminished range, as that induced by a carbohydrate meal was produced.

A pronounced example of this is seen in the diagram (Fig. 6), where the effects of a meal of oatmeal porridge and another of thrice-boiled vegetables are contrasted. It will be noticed that in this case the maximum height of the sugar curve was attained at the end of the first hour in both experiments, instead of at the second or third hour as is usual. Since the patient complained of symptoms suggesting hyperchlorhydria, and analysis of a specimen of stomach contents recovered after an Ewald test meal showed an excess of hydrochloric acid, it seemed possible that the unusually rapid rise in the sugar content of the blood might depend upon this. We accordingly investigated the blood sugar changes in healthy persons following the additions of varying amounts of hydrochloric acid to a similar meal taken on successive days, and found that as the quantity of acid was increased the maximum level of the blood sugar curve was reached more quickly, so that with the addition of 60 minims of dilute hydrochloric acid (*B.P.*) a first-hour instead of a third-hour curve was produced (Fig. 7). At the same time the curve became steeper in its ascent and descent, and also reached a higher level, 60 minims of the acid being followed by a maximum of 0.17 per cent. of sugar and 30 minims by 0.164 per cent., compared with a maximum of 0.152 per cent. when no acid had been taken by the mouth. The converse experiment of taking an alkali with the meal produced the opposite effect, depressing the maximum and prolonging the fall of the curve; 10 grams of bicarbonate of soda, for instance, taken with a meal of the same composition as in the preceding experiments, resulted in a maximum blood sugar of 0.140 per cent.

From these findings it is evident that the space and time relations of the blood sugar curve induced by food, or even the introduction into the stomach of any substance stimulating its physiological activities, are intimately related to the acidity of the gastric contents. The fact that the ingestion of olive oil induces practically no change in the sugar content of the blood, and that fat taken with carbohydrate or protein delays and depresses the rise which would otherwise occur, is in conformity with this conclusion, for it is well known that fat inhibits the flow of acid in the stomach and induces neutralization of the gastric contents by regurgitation of the alkaline duodenal secretions into the stomach.

The question which now arises is, How does the acid produce its effect? The first answer that suggests itself

is that since the speed at which the stomach empties is related to the acidity of its contents, the rapidity with which the sugar derived from the food enters the circulation may also be dependent upon the acidity of the gastric contents. Although this theory would explain the results obtained with starch and sugar, it would not account for the effects produced by sham feeding or of tea without milk or sugar. It seems probable, therefore, that the presence in the duodenum of the acid is itself in some way responsible for the rise in the blood sugar. There are three ways in which this effect might be brought about—(1) by the direct action of the acid upon the liver cells, with consequent glycogenolysis; (2) through the formation of salts, which activate a glycogenolytic ferment in the liver; (3) by the inhibiting of some controlling factor which interferes with the conversion of glycogen into sugar in the fasting state.

Murlin and Sweet[11] have endeavoured to explain the rapid onset of diabetes in depancreatized dogs on the first hypothesis. They maintain that since the hydrochloric acid of the gastric juice cannot in such a condition be completely neutralized owing to the absence of the alkaline

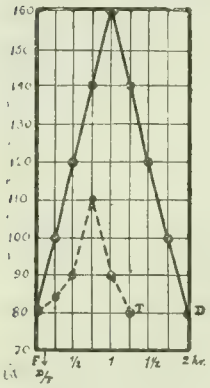


FIG. 1.

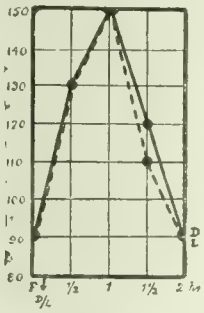


FIG. 2.

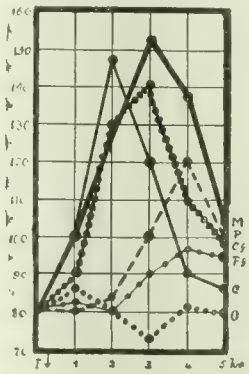


FIG. 3.

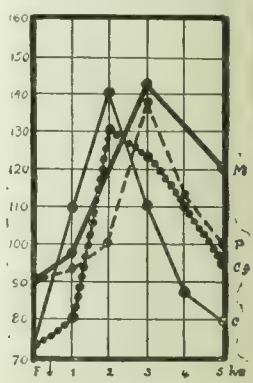


FIG. 4.

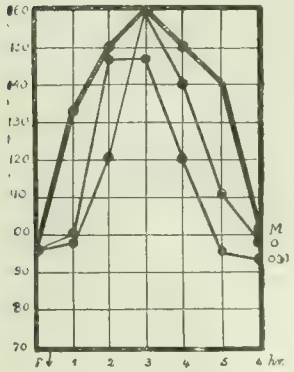


FIG. 5.

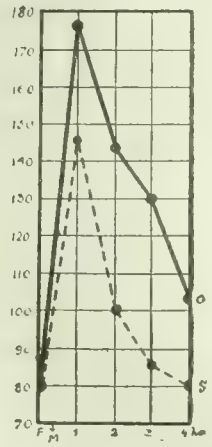


FIG. 6.

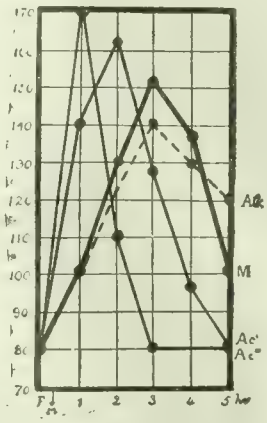


FIG. 7.

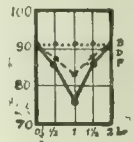


FIG. 8.

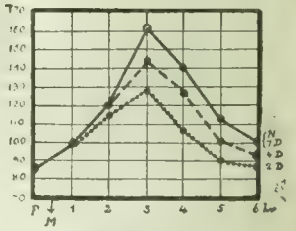


FIG. 9.

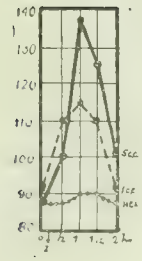


FIG. 10.

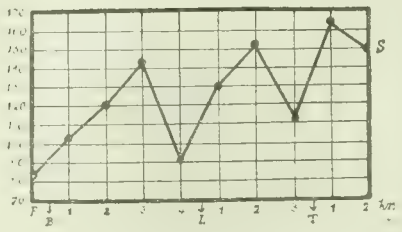


FIG. 11.

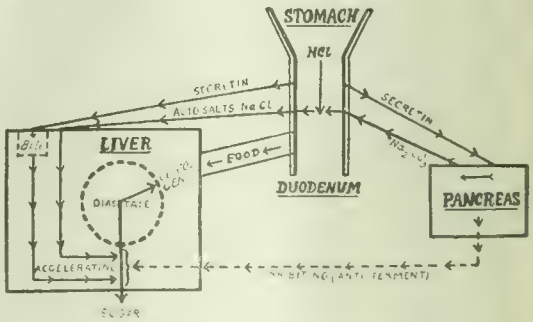


FIG. 12.

FIG. 1.—Blood sugar content following dextrose (D, 100 grams) by mouth, and weak tea (T) without milk or sugar, taken fasting.

FIG. 2.—Blood sugar in normal dog following 1·5 grams per kilo of dextrose (D), and 1·5 grams per kilo of lævulose (L) by the mouth, taken fasting.

FIG. 3.—Blood sugar content in man following M, mixed meal; P, protein (haddock); C, starch bread; O, olive oil; Cf, starch and fat (bread and-butter), Pf, protein and fat sardines; F, fasting level.

FIG. 4.—Blood sugar content in a dog following M, mixed meal; P, protein (lean meat); C, starch bread; Cf, starch and fat (bread and margarine); F, fasting level.

FIG. 5.—Blood sugar content in a rabbit following M, mixed meal; O, dry oats; O(p), oatmeal porridge; F, fasting level.

FIG. 6.—Blood sugar content in man following O, oatmeal porridge; S, sham feeding with "three boiled" vegetables.

FIG. 7.—Blood sugar content in normal man following M, mixed meal; Ac', a similar meal with 30 minims acid. hydrochl.; Ac'', a similar meal with 60 minims acid. hydrochl.; Alk, a similar meal with 150 grains sod. bicarb.; F., fasting level.

FIG. 8.—Effects of intravenous injections of pancreas extract on the blood sugar of a fasting rabbit. F, pancreas taken from a fasting rabbit; D, taken three hours after a mixed meal; B, boiled extract.

FIG. 9.—Blood sugar content of rabbit after mixed meal (M) following the injection of 0.05 gram hydrazine phosphate; 2 D, two days after injection; 4 D, four days after injection; 7 D, seven days after injection; N, normal values before injection; F, fasting level.

FIG. 10.—Effects of intravenous injections of secretin (5 c.cm. and 1 c.cm.), and dilute HCl (5 c.cm. of 0·2 per cent. solution) on the blood sugar of a fasting rabbit.

FIG. 11.—Variations in the sugar content of the blood in a normal person through the day; F, fasting; B, breakfast; L, lunch; T, tea; S, sugar.

FIG. 12.—Scheme of the more important factors controlling the sugar content of the blood.

pancreatic secretion, it is absorbed into the portal circulation, and, reaching the liver, causes injury of the cells, which result in the liberation of glycogen and its rapid transformation into sugar. Subsequent experiments by Hendrix and Crouter[12] have not supported these conclusions, and, in any case, injury of the hepatic cells such as Murlin and Sweet assume cannot be the explanation of the rise in the blood-sugar after a meal under normal conditions. It is conceivable, however, that the sugar-producing mechanism of the liver may be sensitive to very slight variations in the hydrogen ion concentration of the blood, such as would be produced by acid phosphates, and that, like the respiratory centre, it may respond to a much smaller change in reaction than the equivalent of the difference between tap water and distilled water. Experiments by Pavlov and his pupils have shown that the amount of alkali secreted by the pancreas is apparently proportional to the production of acid in the stomach, and that secretion by the pancreas begins as soon as the production of acid commences in the stomach; but as it is well recognized that the urine becomes less acid, and may indeed become alkaline to litmus, during gastric digestion (the so-called alkaline tide), it is evident that a proportion of the hydroxyl ions entering the circulation as the gastric glands secrete acid into the stomach are not appropriated by the pancreas for the formation of its secretion and are lost to the body in the urine, thus bringing about for a time a slight, but possibly sufficient, variation in the hydrogen ion concentration of the blood from the fasting level to induce a temporary formation of sugar from glycogen by the liver.

That very slight variations in the reaction of the blood do influence its sugar content is suggested, on the one hand, by the hyperglycaemias of asphyxia and muscular exercise, on the other by the drop below the fasting level we have found to occur in normal persons during the first half-hour or so after a meal, which is the period where the alkaline tide in the urine is apt to occur and there is probably a relative excess of sodium ions passing into the circulation from the stomach.

In one case, for example, specimens of blood were taken at intervals of a quarter of an hour following breakfast, starting three quarters of an hour after the meal had been commenced. From a fasting level of 0.084 per cent. the sugar fell in the first quarter of an hour to 0.060 per cent., fifteen minutes later it still stood at the same figure, then it began to rise, and in another quarter of an hour stood at 0.080 per cent.; at the end of the hour 0.120 per cent. of sugar was found.

As the result of experiments carried out with a glycerol extract of minced and dried calf liver, at body temperature, with phosphate solutions of different hydrogen ion concentrations and added glycogen, Langfeldt[13] came to the conclusion that, since only inconsiderable hydrolysis occurred at a reaction corresponding to that of the blood and the optimum conversion of glycogen into sugar took place at a hydrogen ion concentration so far on the acid side as to be practically impossible, the regulation of the blood sugar content cannot be exerted through such an influence alone under physiological conditions. When, however, corresponding experiments were carried out with similar mixtures to which 0.6 per cent. sodium chloride had been added, glycogenolysis was found to be much accelerated, more complete hydrolysis of the glycogen occurring at the normal hydrogen ion concentration of the blood, and the optimum being reached at a point representing neutrality. He therefore inferred that, although the liver diastase forms complexes with both phosphates and chlorides which vary in their activity with the hydrogen ion concentration, the chloride diastase compound is the more important. Normally, the reaction of the liver is removed some way on the alkaline side from the neutral point at which chloride-diastase exerts its maximum effect, but when the hydrogen ion concentration is changed through the absorption, or formation, of acids or acid salts, so that the reaction more nearly approaches neutrality, an increasing hydrolysis of glycogen will occur and the sugar content of the blood will be raised accordingly. In this way the practically constant fasting level of the sugar in the blood could be explained and the effects of the passage of hydrochloric acid from the stomach into the duodenum can be accounted for.

The fact that pure liver diastase is inactive has been pointed out by several observers, but Bang[14] was the first to show that contact with sodium chloride is necessary for the development of its glycogenolytic powers in the liver. As the normal resting cell is impermeable to sodium chloride, he came to the conclusion that secretion of bile by the liver cells is a necessary preliminary for its absorption. It is believed that bile is constantly being secreted by the liver, but there is undoubtedly a rapid rise in the output when the stomach contents enter the duodenum; and it is clear from the experiments of Starling and others that this is due to the same cause as the simultaneous flow of pancreatic juice, to which it runs parallel—namely, stimulation of the cells by the secretin formed by the mucous membrane of the intestine. According to Starling,[15] the injection of secretin may double or treble the output of bile. If, as Bang maintains, activation of the liver diastase is dependent upon the cells being rendered permeable to sodium chloride through the secretion of bile, it would seem probable that the entrance of secretin into the portal blood may increase sugar formation by the liver cells, and since the production of secretin appears to be proportional to the acidity of the gastric contents, the quantity of sugar passing into the blood would also vary with the amount of acid entering the duodenum. That secretin hastens glycogenolytic changes in the liver is indicated by the effect of perfusing the surviving liver of a rabbit with a neutralized preparation suspended in Locke's solution, and comparing the results with those obtained on perfusion with Locke's solution alone.

In one such experiment, for example, we found that whereas with Locke's solution alone 70 per cent. of the glycogen originally present had been broken down, with the production of 64 per cent. of sugar in sixty minutes, perfusion with neutralized secretin was followed in the same interval of time by the disappearance of 81.5 per cent. of the glycogen and the formation of 73 per cent. of sugar.

Further confirmation of the direct participation of the liver in the maintenance of the normal sugar content of the blood is furnished by the absence of the usual rise in the ferment value of the blood and the lower maximum level of the blood sugar curve, after a meal, met with in rabbits whose livers have been damaged by subcutaneous injections of hydrazine phosphate, a drug which has a specific toxic action on the hepatic parenchyma[16] (Fig. 9).

We have also investigated the effect of intravenous injections of secretin on the sugar content of the blood in rabbits, and found that there is a gradual rise for about an hour after the injections in all cases, followed by a fall which took place more slowly the larger the dose given. The maximum percentage of sugar reached also varied with the dose, an injection of 5 c.cm., for example, inducing a rise of 0.050 per cent. above the fasting level, whereas 1 c.cm. of the same preparation only increased the blood sugar 0.018 per cent. (Fig. 10). In order to exclude the effect of the acid used in preparing the secretion a control experiment was carried out, in which 5 c.cm. of dilute hydrochloric acid (0.2 per cent.) was injected intravenously; the result was a rise of only 0.004 per cent. in the sugar—a figure within the limits of experimental error. It is therefore evident that secretin raises the sugar content of the blood, and that a sufficient dose will cause as great a rise as the ingestion of food—a meal of dextrinized oatmeal, for example (Fig. 5). Since this effect cannot arise from a change in the hydrogen ion content of the blood, it must be due to the action of the hormone itself.

It is possible, as we have suggested previously, that the action of secretin may be produced through an increased permeability of the liver cells for sodium chloride as a result of an augmented flow of bile, but it seems unlikely that alone would account for such a striking increase in the blood sugar, and it appears probable that some other mechanism must also be set at work by the injection. One naturally thinks of the pancreas, for it is well known to play an important part in carbohydrate metabolism, and its external secretion is controlled by secretin.

Our experiments upon dogs[17] have shown that after pancreatectomy the fasting level of the blood sugar rises as increasing proportions of the pancreas are removed, although as long as about a quarter of the gland is left the increase is comparatively small.

Thus a dog with a normal fasting level of 0.090 per cent. gave a fasting value of 0.120 per cent. two weeks after one-third of the pancreas had been excised, another with the same fasting level showed 0.130 per cent. of sugar a fortnight after a two-thirds pancreatectomy, while a third dog, having a normal

fasting value of 0.084 per cent., gave a fasting value of 0.190 per cent. a couple of weeks subsequent to total pancreatectomy. At the same time the amylolytic ferment of the blood showed a corresponding increase, rising from a normal level of 2 or 3 units to 5 units in the one-third depancreatized animal, 15 units in the dog from which two-thirds of the pancreas had been removed, and 50 units after total pancreatectomy.

These results suggest that the diastase of the liver is, partly at least, under the control of the pancreas, and that as the inhibitory powers of the gland are decreased by the removal of larger proportions, the glycogenolytic powers of the enzyme become more active, so that increasing amounts of sugar pass into circulation, even in the fasting state. If this inference is correct we should expect a corresponding fall in the blood sugar to be produced by additions of pancreas, and this in fact appears to be the case. We have found that intravenous injections into fasting animals of the clear liquid produced by centrifugalizing the extract prepared by grinding fresh pancreas in Locke's solution with sand give rise to a rapid fall in the sugar content of the blood, which reaches its maximum about one hour after the injection has been made (Fig. 8). Since boiling the liquid previous to injection prevents the effect, and there was no evidence of shock or reaction, it is probable that it is not due to a toxic action of the injected protein, but arises from the presence of a substance destroyed by heat, which is most likely, therefore, an enzyme. Experiments described by Kleiner[18] prove that in depancreatized dogs intravenous injections of a watery extract of fresh pancreas cause a more pronounced temporary decrease in the blood sugar than we found in normal rabbits. He further showed that injections of submaxillary gland, spleen, or voluntary muscle induced either an increase or only a very slight drop.

Numerous determinations of the diastase content of the blood before and after a variety of test meals have shown that in both normal individuals and animals it increases and decreases in proportion to the sugar; and since our experiments with depancreatized dogs have suggested that such variations are related to the functional efficiency of the pancreas, it is not unlikely that the rise which occurs during digestion may be the result of a temporary diminution in the internal secretion of the gland induced by the stimulating effect of secretin on the external secretion. Support is lent to this view by a comparison of the effects on the sugar content of the blood of a fasting animal produced by injecting extracts of the resting pancreas and of the pancreas taken at the height of digestion.

In the former case the level of the blood sugar was reduced from 0.092 per cent. to 0.076 per cent., whereas the injection of a preparation of the gland taken three hours after a heavy meal only brought down the sugar to 0.084 per cent. at the end of an hour (Fig. 8). A comparable effect is seen in normal individuals as the result of a series of meals when estimations of the sugar content of the blood are made at hourly intervals throughout the day. We have found that the curves become steeper, and the maximum percentage attained is slightly higher, after each successive meal (Fig. 11), so that a person with a maximum of 0.14 per cent. at the third hour after breakfast may reach a maximum of 0.15 per cent. two hours after lunch, and of 0.16 per cent. one hour after tea.

These changes can hardly be explained by differences in the food taken, or in the hydrogen ion content of the blood and liver, but suggest rather fatigue, and can be accounted for by diminishing control of the pancreas over the glycogenolytic activities of the liver arising from its inability to produce a sufficiency of its internal secretion.

As a study of the factors controlling the sugar content of the blood confined to glycogenolysis would be incomplete, it is necessary also to consider the question of glycogen formation. In 1903 Grube[19] showed by a series of experiments upon surviving liver-pancreas preparations that perfusion with glucose leads to the deposition of glycogen in the liver, and the following year Dovon and Morel[20] reported similar results with glucose injected into the mesenteric veins of dogs; subsequently other observers confirmed their observations. Martz,[21] on the other hand, experimented on isolated livers, without pancreas, and failed to observe glycogen formation after glucose injections. It is therefore evident that the presence of the pancreas is necessary for the deposition of glycogen in the liver, and that this is so is further suggested by the observations of Barrenscheen,[22] who found that when the liver of a dog which has undergone total pancreatectomy some days previously was transfused with dextrose no glycogen was formed, but that after partial pancreatectomy glycogen formation still took place. It is generally agreed that the pancreas influences the formation of glycogen in the liver through an internal secretion, but it is not necessary to assume, as some authors have, that it acts through a special ferment which is directly concerned in the building up of glycogen. It is probable that liver diastase, like other enzymes, is reversible in its action, so that glycogenolysis and glycogenesis go on side by side. When the ferment acts unchecked the disruption of glycogen into sugar predominates, and the fasting level of the blood sugar is raised, but when its glycogenolytic activities are inhibited glycogenesis predominates, and the fasting level of the blood sinks in proportion to the control exerted. The experiments we have quoted suggest that the pancreas exerts such an inhibitory power over liver diastase, possibly by means of an antiferment. This would agree with the changes in the total carbohydrate content of the blood associated with disease of the pancreas we have described elsewhere,[23] and also account for the fact that the liver is never quite free from glycogen, even after total pancreatectomy. It would further explain the lack of any direct relation between the percentage of sugar in the blood and the amount of carbohydrate in the food as long as the latter lies with certain limits, representing on the one hand a maximal stimulating effect on the mechanism of sugar production, and on the other the capacity for glycogen formation existing in the liver at the time the food is absorbed.

The more carefully one considers the normal sugar content of the blood the more certain it becomes that, both in the fasting condition and after a meal, the level is determined by the interplay of a number of influences, some of which accelerate the production of sugar, while others inhibit the process and promote the formation of glycogen, but that under average conditions the food itself takes no direct part in the process. We have considered individually each of the most likely factors taking part; it now remains to discuss them collectively and suggest a scheme which will represent their combined effect.

Summary.

The theory we at present hold is shown diagrammatically in the figure (Fig. 12), and may be summarized as follows:

1. The liver contains a diastatic ferment, the action of which is reversible.
2. In the fasting state the glycogenolytic activities of this ferment are very largely inhibited by (*a*) an antiferment formed by the pancreas, (*b*) the impermeability of the resting liver cells to sodium chloride, (*c*) the reaction of the fasting blood and liver cells.
3. As long as the pancreas and liver are functionally intact and a flow of blood with a normal reaction is maintained, glycogenolysis will be constant therefor and the sugar content of the blood vary within very narrow limits. This is true of all animals of similar constitution, no matter what their habitual diet may be.
4. The entrance of food into the stomach causes a flow of acid, and when this acid reaches the duodenum a formation of secretin results.
5. The secretin (*a*) stimulates the liver cells to produce bile, thus permitting the entrance of sodium chloride, which activates the diastatic ferment; (*b*) causes the pancreas to pour out its alkaline secretin into the intestine to combine with the acid gastric contents, forming acid salts and sodium chloride, which pass to the liver and increase the activity of the diastatic ferment; (*c*) interferes with the formation of the internal secretin of the pancreas, thus diminishing its inhibitory effect on glycogenolysis in the liver.
6. Carbohydrates reaching the liver from the intestine or formed from proteins in the liver are converted into glycogen by the diastatic ferment, the efficiency of the process depending upon the extent to which the glycogenolytic action of the enzyme is inhibited by the internal secretin of the pancreas. Unless the power of glycogen formation possessed by the liver is exceeded, sugar as such, or formed from starch in the intestine, does not pass into general circulation or play any direct part in the rise of blood sugar following feeding.

This theory appears to account for the constant level of the normal sugar content of the blood in a fasting condition and to explain the variations produced by the ingestion of food. It also permits of a reasonable explanation

of the changes occurring in disease. There are no doubt other factors, such as emotional excitement, nervous disturbances, changes of temperature, etc., which affect the percentage of sugar in the blood, but these are probably of comparatively minor importance under normal conditions, and a discussion of their mode of action would not have a material bearing on the subject we are considering, or affect the general principles of the scheme we have outlined.

In conclusion, we wish to express our thanks to Professor Starling for permission to carry out the animal experiments described in his department at University College.

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ANAESTHESIA FOR NOSE, THROAT, AND ABDOMINAL SURGERY BY THE NITROUS OXIDE-OXYGEN–C.E. COMBINATION.*

BY

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In the study of anaesthesia there can be no better or surer way of improving our knowledge than by conferences such as this. Here are gathered together anaesthetists from every quarter of this great continent, all ready and willing to share their knowledge with their fellows for the benefit of mankind in general and anaesthetics in particular.

As regards the administration of nitrous oxide–oxygen–chloroform ether combination for nose, throat, and abdominal surgery, let me begin by saying that I think the two great essentials for an anaesthetist to keep in his mind are (1) the safety and comfort of the patient, and (2) the comfort and convenience of the operator. If we take the first, and most important, I think that in a great many cases safety depends on the knowledge the anaesthetist has of some given method. By this I mean that it is safer for a man to use a method he knows rather than to use another method which in itself is safer but of which he has no knowledge.

When considering this question of safety and comfort of the patient we must include the pre-operative, operative, and post-operative periods. Take the pre-operative time; this includes the preparation before operation, etc. In my opinion there is no need for the drastic treatment that used to be meted out prior to operation; there is no need for that starvation and severe purgation that were in vogue years ago. The patient should be on a light diet and should be given an ordinary laxative. We must remember that any operation entails a certain amount of strain on the patient; it calls for an effort on his part, and he should not be enfeebled by starvation, purgation, and enemata. Of course there are a certain number of cases when it is essential to have the bowel clear, and naturally one does not include these in the above statement.

Pre-operative medication has done much to rob operations of their terrors, and if the patient is given hypodermically some morphine and atropine, or morphine, atropine, and scopolamine, before the operation, he usually comes to the table in a drowsy state with his mind somewhat dulled—a great gain on the condition of years ago, apart entirely from the fact that less anaesthetic is usually needed.

During the last four years I have been endeavouring to find some anaesthetic or mixture of anaesthetics which could be used in combination with gas and oxygen as an adjuvant to produce relaxation when necessary, and in nose and throat work to assist in the maintenance of anaesthesia. I have tried a great many mixtures, and until the introduction of ethanesal recently by Dr. Mackenzie Wallis and Dr. Hewer, I was using as my adjuvant a mixture of chloroform and ether of equal parts. Now I have substituted ethanesal for ether, and I find that the chloroform is only needed for nose and throat work and in some of the abdominal cases. The aim of all who have been working on this matter has been to produce a form of anaesthesia not only safe and pleasant for the patient and adequate for the surgeon's needs, but also as little toxic as possible.

The after-condition of a patient who has been operated on under gas and oxygen anaesthesia ought to be, and is in practice, far better than when ether or chloroform has been given, for since the nitrous oxide and oxygen is non-toxic and quickly eliminated, the patient returns to a normal state far more readily than after the more potent and toxic drugs. After an ether or chloroform administration it takes some time for the drug to be eliminated from the system, and this process of elimination must add to the strain on the patient. The actual technique of the administration is quite simple and the necessary skill is readily acquired.

In 1917, when I read a paper on gas and oxygen with regulated rebreathing in military surgery, I had not then had much opportunity for using this anaesthetic in civil work, but since then I have been using it for a great variety of cases. In 1917 I thought that gas and oxygen was not well suited to abdominal work; I have been trying to form a combination of anaesthetics which would give me adequate relaxation and yet would use the minimum of toxic substances. At the moment I am using as my relaxant a mixture of chloroform and ethanesal of equal parts, so that the anaesthetic becomes a combination of nitrous oxide–oxygen–ethanesal–chloroform, and with this I have been producing a type of anaesthesia which entails but little strain on the patient, and is wholly adequate for the surgeon's needs. The actual technique I employ now is as follows:

The patient is given morphine, atropine, and scopolamine half an hour before the operation. Gas and oxygen is then given in the proportion of about 1 of oxygen to 10 of gas, and as soon as the breathing begins to get deep and regular the gases are allowed to pass over the surface of a mixture of chloroform and ethanesal (equal parts), so that they pick up a small amount of mixture. In a few minutes the breathing becomes automatic, with slight soft stertor, thus showing that anaesthesia has been obtained. The tap on the mixture bottle is then turned back, so that the patient is only having gas and oxygen, and the operation is started. The amounts of gas and oxygen must now be regulated to what the administrator thinks will be the correct amount, and this for the majority of cases is about 1 to 4 (or 1 of oxygen to 4 of gas). For a great number of operations it is quite unnecessary to give any more mixture, and the remainder of the operation is conducted under gas and oxygen.

Given in this way, the anaesthesia is excellent both for patient and operator, whilst the after-condition is extremely satisfactory. The patients readily regain consciousness and are not usually inconvenienced by nausea or vomiting. In addition to this is the fact that they are hardly, if ever, conscious that they have had anything save gas and oxygen, for they do not, as a rule, have any taste or smell of ethanesal or chloroform. This lack of smell and taste of ethanesal and chloroform carries another point worth bearing in mind: Those working in the theatre—surgeons, anaesthetist, nurses, etc.—do not become impregnated with the smell and odour of ether or chloroform—an important point for their own comfort.

I find nowadays in using this method that after a long afternoon in a theatre I can leave feeling quite fresh and well, and the atmosphere of the theatre never becomes laden with the vapour of ether and chloroform as it often did formerly. The small amount of ethanesal or mixture that one needs with this method is sometimes astonishing to those who are unfamiliar with it, for it is quite usual for only a drachm to a drachm and a half to be used during a long operation like, say, the removal of a breast.

Operations such as amputation of the breast, hernias, varicoceles, and the like, are quite easily done under gas and oxygen, and a very small quantity of either ethanesal or mixture; it is when one comes to the abdominal and nose and throat work that the difficulty begins. For some time now many of us have been trying to get some combination to act as a really good relaxant for abdominal

* Abstract of Honorary Chairman's address, Canadian Society of Anaesthetists, Niagara, June, 1921.

work. Gwathmey of New York uses a combination of ethyl chloride, ether, and chloroform, while McKesson of Toledo recommends a saturation of nitrous oxide. Personally I have not tried this method up to the present, and I have preferred to rely on my mixture of equal parts of ether and chloroform, but I hope before returning to London to have an opportunity of seeing Dr. McKesson use this method. I have been using this mixture for the last two years, and have only subsituted ethanesal for ether during the last three months, with, I think, a great improvement, not only in the anaesthesia but also in the after-effect, and I am only now beginning to realize what a good relaxation I can obtain, and how easily it is to produce almost at will, and within a few minutes.

Now, turning to the use of this combination in nose and throat work, when I first began to use this method I had nothing to guide me; so far as I knew, my friend Gwathmey of New York was the only man who had tried to give gas and oxygen for throat work, and he had only begun, for the war cut short his work in New York and he came over to Europe. Our technique is, briefly, as follows:

Hypodermic injections (in children, none or at most 1 2:0 gr. atropine; in adolescents, morphine 1 6 gr. and atropine 1 150 gr.; in adults, hyoscine, morphine and atropine, in Burroughs Wellcome's hyoscine compound "A" or "B") are given half an hour before the time of operation. The patient is then anaesthetized with gas and oxygen, and the anaesthesia deepened with ether or mixture until the breathing is deep, regular and slightly stertorous; the colour should always be pink. The face-piece is then removed, a gag placed in the mouth for those cases—for instance, enucleation of tonsil—when it is necessary, and the anaesthetic is continued by means of a tube placed in the mouth. Let me hasten to say that one of the astonishing things about this method is the small amount of mixture that is necessary to maintain the requisite anaesthesia. Indeed, in a certain proportion of cases hardly any mixture at all is necessary for the rest of the operation—that is to say, after the face-piece has been removed; after that, as I have said, in a certain proportion of the cases gas and oxygen alone is sufficient.

In this connexion I must mention one particular type of case in which I have been forced to use chloroform alone as my adjuvant. I refer to cases of diathermy. In our throat department Mr. Harmer is treating cases of carcinoma of the tongue, fauces, etc., with the diathermy cautery, and, I gather, with excellent results. Occasionally in these cases there is a certain amount of sparking—either accidental or intentional—and so one cannot have any ether in the adjuvant bottle lest there be an explosion, so that one has to use chloroform. In a large number of these cases the best way to continue the anaesthesia is to pass one or two small rubber tubes through the nostrils and lead the anaesthetic into the post-nasal or endopharyngeal space, and I do this by means of a metal stirrup and tubes. A still further development of this method has become necessary when dealing with certain plastic operations on the face and with such cases as laryngo-fissure and the like.

The first occasion on which I used endotracheal gas and oxygen was on October 9th, 1918, for a case of laryngo-fissure. In this case, after the tracheotomy was performed, I gave gas and oxygen by means of a small catheter through the tracheotomy tube, and with excellent result. Since then I have resorted to endotracheal gas and oxygen on many occasions for similar operations and for plastic face operations.

THE VALUE OF SPINAL ANAESTHESIA FOR URGENCY OPERATIONS IN THE AGED.

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SURGICAL REGISTRAR, MANCHESTER ROYAL INFIRMARY.

This method of inducing anaesthesia, for operations upon the abdomen and lower limb, is of distinct value in urgency surgery; particularly so in elderly subjects where the use of inhalation anaesthesia may be a matter of considerable risk. In fifty cases where I have employed spinal anaesthesia, a general anaesthetic being at the time contra-indicated, I have had no difficulties or complications, and in half this number the patients have been 70 years of age or more. In every case the anaesthesia has been completely successful and the results distinctly satisfactory.

In elderly patients where shock, pulmonary and other complications are liable to follow general anaesthesia, spinal anaesthesia should be employed. It can be used for practically all operations upon the abdomen and lower extremity. I have found it satisfactory even when operating upon the upper abdomen, though here more care must be used in handling the abdominal contents, otherwise the patient may complain of discomfort and pain. Pulling upon the stomach is apt to cause retching or even vomiting, and contact with the abdominal surface of the diaphragm gives rise to pain in the shoulder, through the connexions of the phrenic nerve and the cervical plexus.

Spinal anaesthesia has been used with complete success for the following operations: Strangulated femoral, inguinal, and umbilical herniae; intestinal obstruction, acute appendicitis, perforated duodenal ulcer, acute pancreatitis, retention of urine due to enlarged prostate, amputation of lower limb for senile and diabetic gangrene. The following cases will serve as examples of its usefulness:

A male, aged 75 years, admitted with a strangulated femoral hernia of four days' duration. He was very distended, and the vomit was faecal in character. He had well marked bronchitis. His recovery after the operation was uninterrupted.

A female, aged 73 years, with a large strangulated umbilical hernia, cardiac weakness, and a bad chest. She made a satisfactory recovery after operation and her bronchitis became no worse.

A female, aged 64 years, sent in with a diagnosis of perforated gastric ulcer. Her pulse was so irregular and intermittent that it was uncountable. Operation was thought to be her only chance, but the anaesthetist did not consider she would stand a general anaesthetic, her condition being so bad. Stovaine was given. Laparotomy showed she was suffering from acute gangrenous pancreatitis, and the pancreas was freely drained. After discharging sloughs of pancreatic tissue for nearly three weeks she subsequently made a good recovery.

The technique adopted is as follows:

An injection of omnopon, 1 c.cm., and scopolamine, 1 300 gr., is given about half an hour before the operation. For producing the anaesthesia Barker's solution of stovaine, prepared by Billon of Paris, is used. This contains 0.05 gram of stovaine and glucose respectively in each cubic centimetre of the solution. The usual dose given was 2 c.cm., a smaller dose not being found sufficient in adults. For the injection the patient lies on his left side on the operating table, with the thighs and knees well flexed, and the head drawn down to the chest. By this means the intervertebral spaces are opened up and the introduction of the needle facilitated. His head and shoulders are raised on two pillows. The spinal needle, with stylet in position, is inserted between the second and third lumbar vertebrae, a little to one side of the middle line, and pushed inwards and slightly upwards for a depth of 2 to 2½ inches. The stylet is then withdrawn and a few cubic centimetres of cerebro-spinal fluid are allowed to flow out. Two cubic centimetres of stovaine are then slowly injected with the syringe and the needle withdrawn. Absolute asepsis must be maintained during this procedure. The patient is now placed on his back, a single pillow being left under his head and shoulders. It is of great importance not to raise the head more than this.

There is a considerable fall of blood pressure following the injection, due to the loss in tone and dilatation of the vessels of the alimentary canal and lower extremities. If the head is raised symptoms of faintness or even syncope may follow, due to cerebral anaemia. Readings of the blood pressure taken before and after the injection show the pressure may fall as much as 30 to 40 mm. of mercury after the stovaine has been administered. The patient's head and shoulders are therefore only raised sufficiently to prevent the solution reaching and paralysing the vital centres in the cervical cord. If high abdominal anaesthesia is desired, the buttocks should be elevated immediately after the injection, to enable the drug to reach the higher dorsal nerves.

The operation is commenced as soon as the screen and towels are arranged and the surgeon is ready. The patient's expression is watched when the first incision is made to see if the anaesthesia is successful; if not, the operation is delayed for a few minutes until anaesthesia is complete. I have not found that the preliminary injection of omnopon and scopolamine has any ill effects in the aged. It acts as a preventive of shock, and the patient frequently sleeps peacefully throughout the operation and is quite unaware of what is being done. If thirst is complained of, fluids may be given by the mouth.

After the operation is completed the patient must be kept flat in bed for several hours, until the blood vessels regain their tone and the blood pressure returns to normal. An injection of pituitrin may with advantage be given

during this stage. Where this procedure has been carried out I have had no failures and no fatalities due to the anaesthetic. The absence of post-operative shock, vomiting, and pulmonary complications has been remarkable in all cases.

Spinal anaesthesia has also distinct advantages over local anaesthesia in operating for strangulated herniae. It is in these cases often impossible to obtain satisfactory anaesthesia of the parietal peritoneum by local infiltration, and much pain and discomfort are thereby caused to the patient. Further, the pain experienced after operations performed under local anaesthesia is frequently a marked and disagreeable feature.

I would therefore emphasize the advantages of spinal anaesthesia for urgency operations in the aged. Where the patient's condition is so bad as almost to negative operation, spinal anaesthesia enables the operation to be safely undertaken. No preliminary preparation is necessary, and fluids can be taken by the mouth during and immediately after the operation is completed—a great gain to elderly patients. Shock, post-operative vomiting, and pulmonary complications are completely avoided. The extreme relaxation of the abdominal wall makes the handling of distended gut an easy matter in cases of intestinal obstruction.

All these details are of equal importance to surgeon and patient alike, and tend appreciably to reduce the mortality for these operations.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF PROCTOLOGY.

J. P. LOCKHART-MUMMERY, F.R.C.S., President.

DISCUSSION ON OPERATIVE TREATMENT OF HAEMORRHOIDS.

OPENING PAPERS.

I.—Sir C. GORDON-WATSON, K.B.E., C.M.G., F.R.C.S.,

Surgeon, St. Bartholomew's Hospital and St. Mark's Hospital.

AT the Annual Meeting at Cambridge last year, when speaking on the subject of the operative treatment of cancer of the rectum, I affirmed that there was no surgical subject on which surgeons differed so much or had varied their views so often. To-day, in discussing the operative treatment of haemorrhoids, I feel that we are dealing with a subject which is in the main stabilized, but I recognize that there are differences in practice in different schools and details in the technique and after-treatment which may afford useful material for discussion.

For the purpose of this discussion I have prepared some figures based on a series of 1,000 consecutive cases treated at St. Mark's Hospital, and I am much indebted to Mr. Clement Chapman for the trouble he has taken in examining the records and preparing these figures. I think I cannot do better than go through them and consider their bearing on the operative treatment of haemorrhoids.

The first point to note is that, excluding external haemorrhoids, which are in reality haematomata, only 560 out of 904 cases of internal haemorrhoids—that is, 62 per cent.—required to be operated on as in-patients. It is possible that if more beds were available this figure might have been higher, but I do not think it would be appreciably so, because all cases considered to require operation go on the waiting list, and very rarely fail to come in when sent for—that is, they have not sought admission elsewhere. In other words, it is possible to cure some 40 per cent. of cases of piles proper without operation. We are not concerned to-day with non-operative treatment.

With regard to the cases of external haemorrhoids little need be said, for they are cured, and cured quickly, by incision and turning out the clot, or cutting off *en bloc* with or without a local anaesthetic. They have, in my opinion, little relationship to true piles, and are usually due to haemorrhages from the venous radicles of the inferior haemorrhoidals which occur as the result of straining at stool, and are of little consequence unless they become inflamed.

The subject of the treatment of internal haemorrhoids by injections is of some interest and one of the points which I hope will provide fruitful discussion. My personal experience of this treatment is limited to a small number of cases treated some years ago in the out-patient department at St. Mark's Hospital and to an occasional case injected in private. So far as the practice at St. Mark's is concerned, you will see that only 49 cases out of 598 internal haemorrhoids were submitted to treatment by injection, and that the results were as follows: Cured 33, or 67 per cent.; improved 9; required operation 7, or 1 in 7. A perineal abscess followed in one case. It would appear from inquiries made at St. Mark's Hospital that there is a prevalent impression that this form of treatment is freely practised there—an impression which may have arisen from an article having been written on the subject in the BRITISH MEDICAL JOURNAL by an advocate of this method who did temporary work at St. Mark's during the war. The method does not, however, find much favour with the assistant surgeons of the hospital at the present time. Without doubt carbolic injections are most useful for and frequently cure the single bleeding pile, which is a great inconvenience, and yet hardly seems to justify an operation; sometimes by a single injection, but more often after three or four weekly injections. Treatment by injection, so far as experience at St. Mark's goes, is not satisfactory for multiple piles or for the intero-external variety. Failure to replace a thrombosing pile, if it prolapses after injection, may result in active inflammation, and though only one case of abscess occurred in the 49 under review, perianal and even ischio-rectal abscess is well known to be a serious complication of this form of treatment, though probably due to faulty technique. No doubt, like all surgical methods, experience improves results, and it may be that we ought to give a more extended trial to this method, especially amongst those who can ill afford the time to lie up and do not enjoy the benefits of national insurance, out-of-work pay, and the like, and also for those who for some cause or another are unsuitable patients for an operation under an anaesthetic.

The important factor to arrive at is the percentage of cases who, after treatment by injection, subsequently require operation. In the present series of 49, 7 were not cured by injection and required operation—that is, 14 per cent. The author of a recent article in the *Practitioner*, Mr. Eadie, a whole-hearted advocate of injection* in preference to operation, gives injections two or three times a week, and finds that some nine applications are usually necessary for a cure. He goes on to say:

> "There appears to be a tendency for other veins of the anal canal to become varicose when the supporting pressure of the piles is removed, and by seeing the patient from time to time we can inject these as these show in the speculum and before they give rise to symptoms. I therefore like to keep the patient under observation for a year, seeing him every two or three months."

I think that this prolonged period of treatment must prove irksome to the patient, and it seems to me that twelve days or so in bed after a clamp and cautery operation might prove not only more efficacious in the long run but more economical, both as regards time and money. It seems to me, however, that treatment by injection is entitled to more consideration than it has met with in the past, and it is one of the points which I expect to hear freely discussed at this meeting.

The next point I wish to consider is the type of operation to be recommended and the special advantage and disadvantage of each. You will see that in the series under consideration the ratio of the Whitehead operation to ligature is about 1 in 60 and the clamp and cautery to ligature about 1 in 40. At the present time the clamp and cautery percentage is higher, because I believe I am more partial to this operation than either of my colleagues on the senior staff, and during a good part of the period involved in these statistics I was absent at the war. During 1920 there were 272 ligature operations, 23 clamp and cautery, 10 Whitehead, or about 1 in 27 Whitehead to ligature, and 1 in 12 clamp and cautery to ligature.

* Carbolic 10 parts, hamamelis 10, and water 80.

In 1909 Mr. Graeme Anderson, when house-surgeon at St. Mark's, very carefully analysed the results of the different types of operation. At that time Sir Frederick Wallis, who was very partial to the Whitehead operation, was on the staff, and I was then his assistant surgeon. Consequently the results of the Whitehead operation were more easily estimated than they can be at the present time, when very few are performed. Mr. Anderson's estimates were based on 150 ligature operations, 100 Whitehead, and 50 clamp and cautery, and he considered results under the following headings:

1. Pain (severe, moderate, slight).
2. Use of catheter.
3. Return of sphincteric control.
4. Contraction of anal canal.
5. Development of tags.
6. Haemorrhage.
7. Abscess, fistula, and ulceration.
8. Recurrence.
9. Duration of treatment in hospital.
10. Healing of wound.

I think it will assist this discussion if I refer now to some of these headings.

1. *Pain.*

The degree of pain experienced in the three following operations—whether severe, moderate, or slight—may be tabulated thus:

	Severe.	Moderate.	Little.
Clamp and cautery ...	0 %	30 %	70 %
Ligature	10 %	57 %	33 "
Whitehead operation	16 %	56 %	28 "

The small amount of pain which follows the clamp and cautery operation compared with the other operation should be noted. Should, however, any skin be included in the clamp pain is severe.

The relationship of pain to stretching of the sphincter deserves consideration. Graeme Anderson found that the degree of stretching seemed to bear but slight relation to the degree of pain. At the present time the practice at St. Mark's is not to stretch the sphincter unless, owing to chronic spasm and hypertrophy in long-standing cases, the piles cannot be brought down without stretching. In my opinion it is not necessary to dilate in the majority of cases. When the sphincter is relaxed under anaesthesia, the anal mucosa can usually be everted with the fingers and the piles pulled down with forceps. Gentle dilatation is harmless, but the tone of the sphincter varies greatly in individuals and with the degree of anaesthesia. If the sphincter is stretched in the accepted sense so that it remains flaccid, muscle fibres are sure to be torn, and effusion amongst the fibres, just as in traumatic rupture of a limb muscle, will occur and be followed by tension, swelling, and pain. The risk of post-operative haemorrhage is increased when the sphincter has lost its tone and does not contract down on the tube after recovery from the anaesthetic. If the sphincter is injured during the cutting stage or any fibres included in the ligature pain is increased.

2. *Use of Catheter.*

The catheter was used in 10 per cent. of the ligature cases; in 6 per cent. of the Whitehead operations; and in none of the clamp and cautery cases.

The requirement of the catheter varies with the nervous temperament of the individual and with the degree of pain caused by the operation. Hot fomentations, the upright position, and copious drinks, which should include imperial drink, will minimize the necessity for the catheter.

3. *Sphincteric Control.*

Graeme Anderson tested the return of sphincteric control in three ways: (1) The ability to retain a pint enema; (2) adequate warning before defaecation; (3) ability to distinguish between passage of flatus and motion. The average dates of return in the 300 cases were: sixth day clamp and cautery, tenth day ligature, twelfth day Whitehead. At the present time at St. Mark's the sphincter is not stretched, so that control is not lost.

4. *Contraction of Anal Canal.*

None of the clamp and cautery cases showed any tendency to contract. Of the ligature cases, 55 per cent. showed no tendency, 40 per cent. slight contraction easily remedied by digital dilatation during the third week, 5 per cent. showed marked contraction requiring dilatation up to six weeks after operation. All these did well later and showed no further tendency to contract, and occurred in patients who left the hospital earlier than usual and had neglected digital dilatation.

It is interesting to note that at the present time the out-patients' surgeons report that contraction is becoming more frequent, and the explanation is that we have been discharging cases on the twelfth day for some time past and giving instructions to patients to attend the out-patients' department once a week. Many of them go away for two or three weeks before coming to out-patients. At the time that Mr. Graeme Anderson collected his statistics the ligature cases were being kept in for three weeks, and digital dilatation was carried out during the third week.

5. *Tags.*

In 6 per cent. of the clamp and cautery, 15 per cent. of the ligature, and 5 per cent. of the Whitehead cases, large tags formed which required removal under local anaesthetic during the third week. In 50 per cent. of the clamp and cautery, 40 per cent. of ligature, and 70 per cent. of the Whitehead cases, there were practically no tags; and in 44 per cent. of clamp and cautery, 45 per cent. of ligature, and 25 per cent. of Whitehead cases, there was decided tag formation, which subsided in from four to twelve weeks. My personal experience has been that tag formation is more difficult to avoid with the clamp and cautery than with other operations, but that it is never an important post-operative factor.

6. *Haemorrhage.*

Eight cases of post-operative haemorrhage occurred in the 300 operations, of which 4 were due to secondary haemorrhage, 2 after ligature (ninth and tenth days), or 1.3 per cent., and 2 after the Whitehead operation (sixth and eighth days), both cases of sepsis after operation for gangrenous prolapsed piles. The other 4 cases were trivial recurrent haemorrhage—1 after clamp and cautery and 3 after ligature.

7. *Abscess, Fistula, and Ulceration.*

None of these complications occurred after clamp and cautery. Two ligature cases developed chronic infected ulceration with stenosis. Sepsis and retraction occurred in four Whitehead cases, three of them cases of gangrenous prolapsed piles, and in two of the latter secondary haemorrhages occurred. The fourth case left the hospital in good condition but became infected later, probably during digital dilatation, and developed a severe infective proctitis. The clamp and cautery again comes out on top. The clamp produces a longitudinal cicatrix which is not under tension, the vessels and lymphatics are sealed off by the cautery and no ligatures are employed—all factors which tend to minimize sepsis. I am convinced that it is the best operation for prolapsed and gangrenous piles, and that the Whitehead operation should not be employed in these cases.

From time to time cases of infective ulceration occur after the ligature operation, and this troublesome condition may occasionally spread in the ward so that clean cases become infected. Great care is necessary in sterilizing nozzles and rubber tubing used for enemas, etc., and in making digital examinations. Cases of infective ulceration should be isolated. Whether the silk used is a contributory factor I do not know, but it is somewhat remarkable that silk ligatures left long round the pile stump and readily absorbing faecal matter during action of the bowels do not induce sepsis commonly. That they do not is clear from the figures I have quoted. I have no figures to show whether the use of catgut instead of silk for the ligature operation gives greater immunity to contraction and ulceration.

Preparation for Operation and After-Treatment.

Uniformly good results depend very largely on the preparation for operation and the after-treatment. The

following is a summary of the treatment adopted for my cases at St. Mark's:

The patient is admitted two days before operation, preferably at noon.

Preparation.

Tuesday: Before 8 p.m., Ol. ricini 1 oz.

Wednesday: In the morning, Mist. alba 1 oz.; after 5 and before 8 p.m., Enema saponis 2 pints, Mist. catechu 1 oz.

Operation.

Thursday: 5 a.m., Enema saponis 2 pints; 5.30 a.m., Mist catechu 1½ oz.; 10 a.m., Omnopon 1/6 grain. 2 p.m. and after operation,

Half an hour before operation a hypodermic injection of morphine 1/4 or 1/6 grain, with atropine 1/100 or 1/120 grain, is given.

If the second enema result is reported coloured, a plain water wash-out is given.

Diet.

Tuesday—

Noon: Meat or fish, potatoes, bread and pudding.

Tea: Tea, half a pint, bread-and-butter, jam.

Supper: Soup, half a pint.

Wednesday—

Breakfast: Tea or coffee, half a pint, bread-and-butter or toast.

Noon: Beef-tea, half a pint, bread and pudding; no fruit.

Tea: Tea, half a pint, bread-and-butter.

Supper: Beef-tea or cocoa, half a pint, bread.

Thursday—

Breakfast, 5 a.m.: Tea, half a pint, two pieces of bread-and-butter.

11 a.m.: Beef-tea, half a pint.

The mouth should be washed and the teeth brushed before operation.

Note: Eggs are not given for two days before operation.

Diet after Operation.—On the day after operation the same diet as the day before is given; afterwards ordinary diet with fruit and eggs may be given.

After-Treatment.

First Day.—Renew outer dressing only if there is no bleeding. If the patient does not complain of the tube giving discomfort, it is kept in for three days—it helps to keep down external tags. (The tube is ½ in. in diameter and 3 in. long.) If the patient is not able to pass urine, the tube is removed after fourteen hours.

Second Day.—Change all dressings and irrigate with H_2O_2 (vol. 10); dress with a wool swab prepared in mercury perchloride 1 in 2,000, outside dressing pad of wool. Keep pressure with T bandage.

Third Day.—Evening: Olive oil injection, 5 oz. sterile), to be retained; dress always as above.

Fourth Day.—Give aperient, ol. ricini 1 oz. If when the bowels have acted there is no bleeding, the patient starts daily baths.

Clamp and cautery and Whitehead operations wait one or two days longer for aperient. Whitehead cases are dressed and irrigated every four hours—gauze and flavine.

If a patient develops ulceration, four-hourly wash-outs of normal saline are given, then injections of flavine vaseline 1 per cent. If there is only slight ulceration, ordinary dressings are used with the addition of iodex or iodoform suppositories twice a day. If the ulceration is bad the patient is isolated.

Choice of Operation.

The ligature operation in the absence of acute inflammation is suitable for all cases, and because of its simplicity should be the operation of choice in the great majority of cases. Clamp and cautery is an admirable operation in selected cases, and when the case is a suitable one for this operation it has, I think, decided advantages over the ligature operation. It is bloodless, and pain after operation is less than after ligature or Whitehead. The average length of stay in hospital is shorter than after the ligature operation. Contraction never occurs, and, as I have shown, all post operative complications are less prone to occur than with the ligature or the Whitehead operation. Contra-indications are as follows:

1. When haemorrhoids are partly covered by skin the operation, unless combined with a cutting operation, is unsuitable; consequently a third or more of the cases are ruled out.

2. When the haemorrhoids exceed three in number or cannot be grouped into three clamps (or four at most) it is not suitable, partly from manipulative reasons, and partly because there is not enough mucosa available in the circumference of the anal canal to allow more than three (or at the most four) haemorrhoids to be clamped at one and the same time. To apply a clamp in one place after the cautery has been used in another presents obvious dangers.

The operation is especially suitable:

1. In strangulated cases, or cases of prolapse with inflammation, when operation cannot be delayed for fear of strangulation.

2. For patients who require to get back to their work as quickly as possible.

3. For the aged, debilitated, anaemic, and very nervous people, who require to be spared as much pain and loss of blood as possible.

Against the operation is the fact also that it is less foolproof than the ligature operation. An inefficient clamp and cautery operation might be followed by violent recurrent haemorrhage (though I have no knowledge of any such case occurring), and in consequence is not, I think, so safe an operation for private practice, at any rate outside a nursing home. Stout ligatures give a greater sense of security to the surgeon at a distance. As regards secondary haemorrhage, figures show that the clamp and cautery operation is no more liable, if anything less liable, to secondary haemorrhage than the ligature operation. The clamp and cautery operation, however, is more prone to produce large tags.

The Whitehead operation is a radical method which gives excellent results in experienced hands. For the great majority of cases, however, it is an unnecessarily severe operation, involving, as it often does, considerable loss of blood. Great care is required in the after-treatment to avoid anal stenosis or extroversion of mucosa with a moist anus, which is often followed by pruritus ani. In some instances incomplete control both of flatus and faeces follows the operation, the result, I think, either of sepsis or imperfect after-treatment producing a fibrous ring round the anal margin which does not readily yield to the action of the sphincter. The average length of stay in hospital of patients operated on by Whitehead's method is nearly double that of the clamp and cautery operation. It is, I think, the best operation in skilled hands when there is a complete and extensive ring of haemorrhoidal tissue and bleeding is a marked symptom, or when haemorrhoids are complicated by severe pruritus ani or by multiple anal fissures and submucous pockets (the pre-fistulous state). It is not a good operation for the inexperienced surgeon.

Summary.

To summarize: the surgeon who is familiar with, and practises, rectal surgery can secure excellent results with all three operations, and should, I think, use all three according to the case in hand, using the ligature most, and the Whitehead least. The general practitioner who dabbles in surgery will, I think, secure the best results if he sticks to the ligature operation, and he will do well to study the methods of those who operate frequently in these cases; for though the technique is simple the minor details are important, and make all the difference to the comfort and cure of the patient.

Some Statistics on 1,000 Consecutive Cases of Haemorrhoids at St. Mark's Hospital.

External haemorrhoids only	96
Internal haemorrhoids only	598
Internal and external	306
	1,000
Treatment:	
Treated without operation	330
External haemorrhoids operated on as out-patients under local anaesthetic	61
Internal haemorrhoids treated by injections as out-patients	49
Cases admitted and operated on	560
	1,000
Operations:	
Ligature	536
Clamp and cautery	15
Whitehead's operation	9
	560

Two deaths from bronchopneumonia = 0.35 %.

Complications following Operation:	
Constriction (however slight)	58
Tags (however slight)	53
Fistula	6
Secondary haemorrhage	5
Submucous abscess	2
Fissure	1

Treatment by Injections as Out patients.—Of 49 cases treated by injections of 20 per cent. carbolic acid in glycerin (5 to 10 min.), 35 were cured and 9 improved. Operation was subsequently required in 7 = 1 in 7. The only complication was an abscess in one case.

Recurrence.—Of the 1,000 cases dealt with, 29 had had a previous operation for haemorrhoids. Of these 29, only 11 were submitted to a second operation; in other words, the recurrence percentage requiring re-operation is about 1 per cent.

II.—D. P. D. WILKIE, O.B.E., F.R.C.S.,

Assistant Surgeon, Edinburgh Royal Infirmary.

IN dealing with a condition such as haemorrhoids, which, although causing much inconvenience, and frequently suffering and interference with the general health, does not threaten life, we must assess very carefully whether any appreciable risk attaches to operative treatment and how such risk may be reduced to a minimum; secondly, we must consider the question of suffering associated with the operation; and thirdly, whether the prospect of relief or cure by the operation is reasonably secure. I would therefore consider the operative treatment under the three headings—dangers, discomforts, and disappointments.

Dangers.

The risk attaching to an operation for haemorrhoids is very small, not even more than 0.2 per cent. It is, however, an operation with potential risks, for it is carried out on an area which is both vascular and septic, and unless certain principles are attended to, an unfortunate result is bound to occur sooner or later. Haemorrhage is a surprisingly rare complication in my experience. I have never encountered a case of reactionary haemorrhage, and have met with but one case of secondary haemorrhage, occurring on the eighth day. The best treatment for the latter is ligation of the bleeding point after free exposure under an anaesthetic.

Sepsis, although always a factor present in some degree, seldom threatens danger. It must not be discounted altogether, however, and I can recall three cases seen in the *post-mortem* room where death occurred from sepsis following an operation for haemorrhoids. The infection may attack and may spread along either (1) the veins, causing a phlebitis which may be portal or systemic, or (2) the cellular tissue planes of the submucous coat of the rectum, giving rise to a dissecting cellulitis which may later invade the pelvic cellular tissue, and is apt to be complicated by a septic bronchopneumonia. Spreading septic phlebitis is, fortunately, a very rare complication, less frequent, indeed, after operation than without operation. Dissecting cellulitis may be prevented by allowing of free drainage after any wound of the rectal wall. A complete closure by suture of a rectal wound is always a mistake, and has been responsible for some unfortunate results.

Discomforts.

Post-operative pain and retention of urine—the two bugbears of the operation from the patient's point of view—are, in my experience, due to one or more of three faults in the operation. First and foremost, failure to provide free drainage, with consequent oedema of the anal region; secondly, the inclusion of a few fibres of the sphincter muscle in the ligature or stitch applied to the base of the haemorrhoid; thirdly, bruising and tearing of the sphincters from forcible and excessive stretching. The latter procedure is usually unnecessary altogether, and if required should be done slowly and gently. There need be relatively little pain associated with the operation, and retention of urine is quite unusual if the foregoing points are attended to.

Disappointments.

Stricture following the operation is happily rare. The only cases of stricture which I have seen have been after an imperfectly performed Whitehead's operation. In my opinion this operation should never be performed. A good rule in any operation for haemorrhoids is to err on the safe side by removing too little tissue rather than too much, provided always that no actual formed haemorrhoid is left behind. Recurrence after any well-executed operation is quite exceptional. If met with, recurrence is usually early, and is really a continuance of the trouble owing to one or more piles having been left behind. My experience of haemorrhoids is that the majority of cases requiring operation are of the combined intero-external type—an internal haemorrhoid directly associated with an external haemorrhoid. My remarks in regard to operation will therefore refer to this type.

Operation.

The only operations which at the present day demand consideration are the injection method, the clamp and cautery, and the ligature operation in one form or another. I have had no personal experience of the injection method. Of the clamp and cautery operation I can say, from a limited experience, that it is the most painless of all the operations, and that it appears to be singularly free from risk; my only objection to it is that it is perhaps less radical than some forms of the ligature operation. The ligature operation is carried out in so many different ways, and so many details unite to make each surgeon's procedure a success in his hands, that the most helpful contribution to the discussion must be a full statement of the method which each surgeon employs. My own practice is as follows:

The bowel is cleared by a dose of castor oil, ʒj, thirty-six to forty-eight hours before the operation. On the evening before a soap-and-water enema is given, followed by a boracic wash-out. No enema is given on the morning of operation, as a bowel at rest is an essential condition.

A general anaesthetic is used, and when the patient is fully under, the piles will usually prolapse; if not, the sphincter is gently stretched. The individual piles are caught in forceps, and the more posterior ones dealt with first. A V-shaped incision is made through the skin and muco-cutaneous junction over the external part of the haemorrhoids, and the skin is stripped backwards from the veins. The connexion between the external and internal haemorrhoidal veins is now evident, and the two can be dealt with together either by transfixion and ligature or by over-stitching the clamps after the method of Mitchell. In either case the lower end of the wound is left open, the skin at no point being included in the ligature or suture. In stripping up the external haemorrhoidal veins the external sphincter is usually exposed, and can be avoided in the later stages of the operation. Catgut is used for all ligatures. A mixture of vaseline and iodoform, or bipp, is applied within the anus and on the dressing. No flatus tube is used and no suppository is given.

Heroin, 1/12 grain hypodermically, is given if required on the afternoon or evening of the operation. As soon as the patient recovers from the effect of the anaesthetic he is given liquid paraffin, a dessert-spoonful three times a day, and on the morning of the fourth day olive oil ʒiv by the rectum, followed by castor oil ʒj by the mouth. Not infrequently, however, the patient has an almost painless action of the bowels before the dose of castor oil is given, and it is a question if the latter is required. The patient is kept in bed for eight to ten days, and continues to take liquid paraffin for a month at least after operation.

As in so many operations, so in that for haemorrhoids, attention to details before, during, and after the operation makes all the difference between a picnic and a purgatory.

DISCUSSION.

Dr. LOUIS J. HIRSCHMAN (Detroit, U.S.A.) said: I assure you that I appreciate the honour of being asked to address you as a representative of American proctology. The wonderful papers to which I have had the pleasure and profit of listening have made my long journey across the Atlantic well worth while. In order not to consume valuable time I am going to confine myself to a brief discussion of two or three points brought up by the previous speakers. The subject of anaesthesia has been mentioned, and I would like to state that in America the majority of proctologists are using local anaesthesia to a far greater extent than is being done on this side of the water. In our personal practice we operate upon practically all cases of haemorrhoids, fissures, polyps, and all other kindred diseases of the rectum and anus under local anaesthesia unless there is some very decided reason for using general anaesthesia. About 25 per cent. of our fistula cases are operated upon also under local anaesthesia. We find that the more we operate under local anaesthesia the wider is its field. We frequently combine the use of sacral anaesthesia with that of purely local anaesthesia. In our practice we employ novocain in a strength not exceeding one-half of 1 per cent., and the quantity of solution used is governed by the individual case.

The type of operation used by almost all the American proctologists is some modification or other of the incision and ligature method. The use of the clamp and cautery is restricted to those cases where there is a great amount

of prolapse, for the cicatricial contraction following a burn is of distinct advantage in the ultimate result following an operation for prolapse.

Sir Charles Gordon-Watson mentioned the injection method of treating internal haemorrhoids, and has asked for a word or two in discussion. We do not use carbolic acid at all in our practice. We get very good results from the employment of a 5 to 10 per cent. solution of quinine-urea hydrochloride. Each haemorrhoid is injected to mild distension with this solution, and is reinjected at the end of five to seven days if necessary. We have found that this solution causes a deposition of fibrin around the blood vessels of the haemorrhoids, which, becoming organized, shuts off the circulation to such an extent that the mass rapidly atrophies. If one is particular to inject the solution deeply into the tumour, and not to deposit it directly into or beneath the mucous membrane, sloughing is never encountered. The average length of time for a haemorrhoid patient to be entirely relieved is from three to four weeks.

The Whitehead operation has been mentioned by two or three of the preceding speakers. We never employ it, because we believe that, no matter how severe the case, there is always a better way of disposing of the redundant mass by elliptical excision. The resulting scars are always in the longitudinal axis of the bowel, and the functional result is ideal. I think that the less we talk about the Whitehead operation the sooner it will be discarded. It is emp'oyed mostly by the "surgical dabblers" of whom Sir Charles Gordon-Watson has spoken. It is their unfortunate results which have brought prejudice upon the surgical treatment of haemorrhoids.

I have been tremendously interested in the presentation of the subject, and have been gratified to have had the honour of being the guest of the Association at this meeting. I trust that the Section of Proctology of the American Medical Association, of which I have the honour of being the chairman, will soon have an opportunity of welcoming some of your members as our guests in the sister country of the United States of America.

Mr. Ernest Miles (London) said he considered the operation for internal haemorrhoids simple and safe whatever method were used. There should be no failures; therefore when failures did occur one must inquire very carefully their cause. He pointed out that there were three stages in the development of piles; one cause of failure was that early piles were overlooked because they were obscured by others more advanced. Again, there were three primary fixed positions for haemorrhoids, besides four other secondary positions where they might develop. When all these positions were not carefully examined a pile might be missed. This might happen through imperfect exposure of the haemorrhoidal area, a common cause of which was the submucously situated pecten band, upon which the speaker had previously laid emphasis. This band should be divided by a knife. Again, a bad operation might be chosen. He had no hesitation in saying that such an operation was Whitehead's. He did not deny that good results could be obtained from Whitehead's operation, but after performing three different series of Whitehead's he had come to this conclusion, that it was a bad operation because in 9 or 10 per cent. of the cases bad results were obtained owing to such causes as, for example, a tendency to the formation of keloid on the part of the patient, which were quite out of the control of the surgeon. As regards the treatment by injection, he had had considerable experience of its results as performed by others; for when he was in France he had seen 139 cases that had been injected at thirty-seven different hospitals, all of which had subsequently to be operated upon.

Sir Charles Ryall, C.B.E. (London), said that no operation gave such consistently satisfactory results in all variety of cases as ligature. Whitehead's operation, though excellent in many ways, frequently gave unsatisfactory results even in the best hands. The ordinary human being was able to tell whether the rectum be empty or loaded, and whether the contents were gaseous, liquid or solid, and this was due to what might be called "anal sense." Whitehead's operation, by frequently interfering with the sensitive skin of the anal canal, sometimes caused impairment and even loss of anal sense, and this was a severe disability. Ligature was a very simple operation, and in surgery one ought to resort to the simplest measure which obtained the desired result, and, above all, teach this measure, as it was so much less harmful in the hands of an inexperienced surgeon. With regard to interstitial injections, he considered they gave very good results, and this method of treatment was especially useful in the aged and debilitated, but at the same time one could not call it a cure. It was treatment not free from risk, the main one being tissue necrosis causing severe haemorrhage. He remembered being called to a case of haemorrhage, which proved fatal, where this method of treatment had been resorted to.

Mr. Cecil Rowntree (London) said that he thought the Section was to be congratulated upon the excellent discussion evoked by Sir Charles Gordon-Watson's paper and upon the choice of a subject which made such a wide appeal. His own experience of the operative treatment of haemorrhoids could not compare with that of other speakers, but he had had large opportunities of observing the results of many different kinds of operations. Some years ago he had had the privilege of becoming associated with Mr. Miles, and he had learnt from him the exact technique of the ligature method as employed by him. Since then he had used no other method, as he regarded it as the safest, most effective, and the most universal in its application. Whitehead's operation was, he thought, thoroughly bad as ordinarily employed, for it was an extraordinary fact that it was the method generally selected by the inexperienced surgeon, possibly because it gave more opportunity for blood-letting than any other method with which he was familiar. During the war he had had some considerable experience of secondary operation for haemorrhoids, and he nearly always found that Whitehead's operation had been the method originally selected. With regard to the question of stretching the sphincter, his own belief was that it originated as a consequence of difficulties experienced by many anaesthetists in obtaining complete relaxation. In such cases stretching was essential in order to obtain exposure. He had had his share of these difficulties, and had got over them very easily and completely by using spinal anaesthesia, which gave complete relaxation and perfect exposure. He was therefore in agreement with the last speaker in thinking that dilatation was not only unnecessary but in fact harmful.

Mr. J. P. Lockhart-Mummery (London) thought the meeting was to be congratulated on the very excellent discussion that had taken place. One point at least had been definitely decided—namely, the question of Whitehead's operation for piles. He thought it was certainly time that the obituary of this operation should now be written. While everybody seemed to condemn the operation, nobody had been found to defend it. Personally, he would feel some regret, as operations for correcting the bad results of Whitehead's operation had always been a steady source of income for many years. He agreed with the other speakers that, as a general routine, a ligature operation was the best, but that the clamp and cautery was a very good operation in certain cases.

The question of pain after operation had been mentioned by most of the speakers, and in his opinion the question of post-operative pain was almost entirely one of sepsis. Assuming that the surgeon was reasonably skilled in performing the operation, and was not one of those surgeons who operated, as had been described by Crile, like the carnivora, there should be no pain after operation, provided the parts can be kept aseptic for the first forty-eight hours. Although this was difficult, it was by no means impossible, and, in his experience, pain was now quite an exception after an operation for piles when proper aseptic precautions were observed.

The method he preferred for getting the bowels open was to use liquid petroleum, given by the mouth the day after operation, assisted by a small enema on the second or third day. He had quite given up the use of castor oil or any purge for this purpose, and believed it quite unnecessary. Also, he thought, a very important point was the question of diet. He never allowed his patients to be put on a slop diet, but gave them ordinary solid food from

the beginning, and since doing so he had had far less trouble from wind pain and distension.

He agreed with the other speakers that while the injection treatment for piles was useful, and had a very definite place in the treatment of this complaint, it should not be looked upon as a substitute for operation. It was really only a good and useful form of palliative treatment. Recurrence of the piles after injection was the rule rather than the exception, but there would always be a certain number of cases where operation was for some reason or other contraindicated, and in which the patient could be given relief by injection. Injection was a treatment requiring a good deal of practice and a certain amount of skill, and, except in skilled hands, was liable to be followed by complications which were no less serious than those following operation.

Sir Charles Gordon-Watson, in reply, expressed gratification that the meeting had, on the whole, expressed agreement with his views. With regard to Dr. Hirschman's statement that the American proctologists had abandoned carbolic acid for quinine and urea hydrochloride as the best substance for injection, he would mention that they had made experiments at St. Mark's with a view to ascertaining the best compound for that purpose, and carbolic acid had given the best results. He did not believe in transfixion of the piles before removal. He thought that in cases in which transfixion was used there was danger of pulmonary embolism. He thought that the American practice of allowing the patients to get up three to seven days after an operation for haemorrhoids, performed under local anaesthesia, was to a certain extent dangerous, for it was from the sixth to the tenth day after the operation that there was a certain liability to secondary haemorrhage. Sooner or later a surgeon who allowed his patients to get up so early would have an unpleasant experience.

Mr. D. P. D. Wilkie also referred to the excellence of the discussion, and said that he was particularly interested in the use of sodium bicarbonate instead of soap for enemata, and that he would certainly try it. He said that he would try the method mentioned by one speaker of giving liquid paraffin to open the bowels after operation in one large dose instead of several small doses, as being less likely to upset digestion. With regard to spinal anaesthesia, he had been effectually deterred from using it, except in very special cases, by seeing in Bier's clinic (and Bier had had an experience of spinal anaesthesia amounting to thousands of cases) an unfortunate patient who had been submitted to spinal anaesthesia nine months previously and had been paraplegic ever since.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

IONIZATION IN SUPPURATIVE OTITIS MEDIA.

No doubt the recent discussions on ionization, at the Royal Society of Medicine and the annual meeting of the British Medical Association, will lead many to try this method of treatment. I can foresee what may often happen. A case of otorrhoea turns up. The patient is laid on the couch. The ear is cleaned and a warm 0.25 per cent. solution of zinc sulphate is poured into the meatus. The positive electrode is inserted and a current of 2½ milliampères is turned on for ten or twelve minutes. Next day the ear is cleaner, but the day after it is discharging just as usual. Another case is tried with much the same result, and perhaps one or two more. Then the conclusion is arrived at that ionization is no good. Next time the subject comes up for discussion the above experience is related and a vote cast for the "nays." In the hypothetical cases just related no fair trial of the treatment has been made.

It cannot be too emphatically pointed out that this treatment is suitable only for certain cases of tympanic sepsis. The surgeon must always bear in mind that the zinc ions sterilize only in the area with which the solution is in contact. If the solution does not reach all the infected area all labour is in vain.

The first essential, then, is diagnosis. All cases of chronic mastoiditis must be excluded. In cases secondary to oral and pharyngeal sepsis the primary cause must first be treated. The opening in the membrane must be adequate. The perforation must be of sufficient size to admit a cannula through which the middle ear can be washed out with zinc solution. Polypi in the middle ear are not an absolute contraindication. An effort may be made to get rid of them if they are small and there are no signs of chronic mastoiditis, but until the polypi have been got rid of the case is not suitable for ionization. Cases of cholesteatoma form another doubtful class. If the cholesteatomatous débris can be washed out by intratympanic irrigation, and if the cholesteatoma has not spread to the mastoid cells, ionization will improve the condition.

In suitable cases the results of ionization are often almost magical. Over a year ago a girl of 21 was attending the Central London Throat Hospital; her otorrhoea had been continuous since childhood. For nearly a year she had been treated by others and myself at the hospital with the usual antiseptic methods. Her case was eminently suitable for ionization—a large perforation, no polypi, clean mouth and throat, and no signs of septic absorption, such as headaches, giddiness, etc. I ionized her with the usual ritual. Next day the ear was dry and has remained dry ever since. Even one case like this compels one to welcome ionization. Several other cases yielded equally good results. Some relapsed. All the cases which did not conform to the above postulates of suitability were unaffected by the treatment. My personal experience is that ionization is a most valuable form of treatment, but I would impress on those about to try it that they are doomed to failure unless they try it on suitable cases.

T. B. Jobson, M.D.,
Surgeon to the Ear, Nose and Throat Department, Royal Surrey County Hospital, Guildford.

TREATMENT OF ASTHMA.

I have now treated thirty cases of asthma and asthma-like seizures with subcutaneous injections of the patients' own blood. My attention was drawn to this method of treatment by the account of somewhat similar treatment used in cases of migraine.

A 10 c.cm. serum syringe, having a needle with a somewhat large bore, is filled with boiling liquid paraffin and emptied, leaving a film of paraffin on the glass and needle. A large-bore intravenous needle is used to draw from 5 to 10 c.cm. of the patient's blood, according to the weight of the person treated, direct into the syringe with the piston removed and the needle in place; the syringe should be about blood temperature. The piston is replaced, air is expelled, and the blood is injected subcutaneously into the patient's back towards the inner side of the lower angle of the shoulder blade.

The cases treated were examples of asthma and of asthmatical seizures occurring in bronchitis, acute and chronic. Of nineteen cases of asthma (seven in Europeans and twelve in natives), five were cured and fourteen improved. Two instances of asthmatic attacks in acute bronchitis and six in chronic bronchitis were improved. Of three cases of asthmatic attacks in Europeans occurring in chronic bronchitis of a severe type following influenza, one was cured and two improved.

The apparently cured cases were those watched over three months without a relapse or any discomfort. The improved cases, all but one, had the same history—a complete cessation of asthmatic spasm for a time, varying from a week to two or three months. Bronchitis seemed to be improved but not cured by the treatment. Of the improved cases, twelve have had a second injection, two have had three injections; in these I gave half the amount given originally; all but one of these have been at once relieved.

The one exception among asthmatic attacks in bronchitis following influenza was a young woman whose bronchitis had lasted for over two years, and had reduced her to a wretched condition; she was thin, listless, sleepless, with a hard cough and slight sputum occasionally tinged with blood. Every few weeks she would have violent asthmatic attacks lasting for four or five days. She was tested for tuberculosis repeatedly, and by many different men, without result. After the first injection given for the asthma, and during an attack, the asthma ceased, and the bronchitis almost disappeared, but returned as badly as ever on the eighth day. I repeated the injection, which only seemed to make the condition worse, and a further

injection proved useless. This case cleared up under intravenous injections of electro-argol.

Of course this is only a preparatory excursion; it will take time to consolidate the treatment and classify the cases in which it will be of use, lasting or temporary.

Eshowe, Zululand, South Africa. G. H. WILDISH, M.B.

Reviews.

PULMONARY TUBERCULOSIS.

ALTHOUGH SIR JAMES FOWLER more than once insists that his *Pulmonary Tuberculosis*[1] is intended for students who are either still at a medical school or are engaged in the practice of the profession, no one, even the critics—who by a famous definition may be supposed to have retired on account of failure—can read this retrospective volume, brightened by many personal sidelights and *obiter dicta*, without pleasure and benefit. During his professional life Sir James has not only seen, but taken an active part in, many changes that have come over our conceptions of pulmonary tuberculosis; his advocacy of this name in the place of "phthisis" and of the abandonment of "the stages of phthisis," his demonstration of the march of the tuberculous infection, and the part he took in the nineties in the introduction of sanatorium treatment into this country, entitle him to speak with authority and not as do the scribes. Many medical men have wondered why a second edition of Fowler and Godlee's *Diseases of the Lungs* (1898) never appeared; to some extent the desire for a new edition is now satisfied by the present volume with its riper experience, appropriately dedicated to "Rickman John Godlee, a Master of the medico-chirurgical Art."

His review of the history of tubercle and pulmonary tuberculosis is noteworthy for the unearthing of William Stark's (1740–1770) work, which, hitherto almost entirely neglected except by Professor William Bulloch, should by right have gained for him much of the credit ascribed to Laënnec, for he anticipated that great Frenchman by forty-eight years in the conception of "the unity of phthisis"; though he appears to have performed no more than ten necropsies on cases of pulmonary tuberculosis, he was an incomparable observer, and very possibly was the first to describe aneurysms on the branches of the pulmonary artery. There is also an appreciative sketch of the life of William Budd of North Tawton, with a reproduction of his far-seeing "Memorandum on the Nature and Propagation of Phthisis," which he kept back for ten years, in order to be sure of his ground. Sir James Fowler's opinion about the influence of heredity in pulmonary tuberculosis is to the effect that the problem is so surrounded with difficulties in the collection of accurate data that the attempt to form a scientific estimate is doomed to failure. A welcome feature, though unusual in such authoritative treatises, is the solution of a debatable point by an imaginary duologue, as in that between the pathologist and the tubercle bacillus on the reasons why tuberculosis begins near the apex and more often in the left lung, and in that on some practical questions in connexion with the spread of infection.

On the basis of his own and Dr. S. Martin's *post-mortem* experience at the Middlesex Hospital, fortified by Sir John Rose Bradford's recent figures respecting British soldiers in France, Sir James concludes that obsolete lesions in the lungs are found in 9 per cent., and contrasts this with the generally accepted opinion that latent tuberculosis is present in 90 per cent. of human bodies; to explain this wide discrepancy we may point out that one group of figures refers to the lungs and the other to the body as a whole, and that recent observations, such as those of E. L. Opie, show how easily small tuberculous glands along the bronchi may escape detection. The term paratuberculosis is suggested—on the analogy of paratyphoid—for bovine tuberculosis, but as the latter term is now thoroughly established and free from any ambiguity, and as paratuberculous has been employed in another sense—namely, with a significance like that originally attached to parasyphilitic—the advantage of such a change is problematic. Hilum tuberculosis is described as "a shadow seen in a darkened room but not yet clearly recognized in the daylight of the *post-mortem* room"; there is, however, a special chapter on tuberculous disease of the intrathoracic lymphatic glands, though without any mention or criticism of Krönig's areas. The terms "open" and "closed" as applied to tuberculosis are viewed adversely. The vast and therefore difficult subject of chronic pulmonary tuberculosis receives a well-balanced account; Sir James Fowler states that he has not seen a single case of pulmonary tuberculosis in which he could satisfy himself that any good had been done, and he has seen many in which any chance of recovery that they might have possessed has been destroyed by the administration of tuberculin; and of the diagnostic tuberculin tests he remarks that "when reliable the use of these tests is fraught with grave danger, and that when not fraught with grave danger they are unreliable." The chapter on sanatorium treatment, of which a high opinion is expressed, is dedicated to the memory of Otto Walther; and artificial pneumothorax is regarded as the only advance in treatment since the introduction of sanatorium methods as carried out at Nordrach. The last chapter consists of attractive *obiter dicta*, from which we will quote only two: the "lesions of pulmonary tuberculosis do not 'open' and 'close' like a mollusc," and "No fool is ever cured of tuberculosis of the lungs."

In conclusion, this remarkable book is admirable alike for its style and its matter, and though all may not agree with its outspoken opinions there will be few who will not feel that they must read it, and they may be assured that they will do so with advantage.

POLYCYTHAEMIA AND ERYTHRAEMIA.

DR. PARKES WEBER'S exhaustive monograph on *Polycythaemia, Erythrocytosis and Erythraemia (Vaquez-Osler's Disease)*[2] is an expansion of his critical review of 49 pages in the *Quarterly Journal of Medicine* for October, 1908, and contains a supplement epitomizing fresh literature mostly published since 1908, together with notes on unpublished cases, and, finally, concluding remarks and a note on the terminology; these additions include a paper published in our columns a year ago (October 30th, 1920, p. 658). Polycythaemia rubra, or for short polycythaemia, signifies an increase in the number of the red blood corpuscles, and is divided into two forms, which correspond respectively to leucocytosis and leukaemia in the case of the white blood corpuscles—namely, (1) erythrocytosis, in which the increase of cells is secondary to some definite factor, such as concentration of the blood by diarrhoea, vomiting or sweating, or compensatory as in the polycythaemia of high altitudes, and in cardiac or pulmonary disease with cyanosis; and (2) erythraemia, in which a well-marked persistent relative and absolute increase in the number of red blood corpuscles is due to a primary disorder of the erythroblastic tissue in the red marrow of bone and so analogous to the leucoblastic activity in leukaemia. This is the condition originally described in 1892 by Professor H. Vaquez of Paris and brought more prominently to our notice by the late Sir William Osler in 1903 and 1904. Although the spleen is nearly always enlarged, Dr. Weber considers that the synonym splenomegalic polycythaemia should only be used in a clinical sense—that is to say, as signifying a symptom-group composed of polycythaemia not obviously secondary to blood stasis and of splenomegaly for which no local cause, such as thrombosis of the portal or splenic vein, is suspected, for necropsy may show that the splenic enlargement is due to some definite lesion, such as syphilis or tuberculosis, and the associated polycythaemia may be due to blood stasis, and so not true erythraemia. The cases described by Geisböck as polycythaemia hypertonica appear to Dr. Parkes Weber to be examples of secondary polycythaemia in some way or other intimately connected with high arterial blood pressure. Though he insists at length on the forms of secondary polycythaemia, Dr. Parkes Weber joins issue with Professor A. S. Warthin's contentions that erythraemia is always secondary, and that Ayerza's disease, or cyanosis with secondary polycythaemia due to arteriosclerosis of the pulmonary artery, is usually due to syphilis.

This valuable monograph is a model of critical clinical

[1] *Pulmonary Tuberculosis.* By Sir James Kingston Fowler, K.C.V.O., C.M.G., M.A., M.D., F.R.C.P. London: Macmillan and Co. 1921. (Demy 8vo, pp. 238; 52 illustrations. Price 20s. net.)

[2] *Polycythaemia, Erythrocytosis and Erythraemia (Vaquez Osler Disease).* By F. Parkes Weber, M.A., M.D., F.R.C.P. London: H. K. Lewis and Co., Ltd. 1921. (Cr. 4to, pp. 156; 1 figure. Price, 21s. net.)

and literary research in which every point receives a full share of bibliographical reference; but in addition the author's own views are clearly set forth and supported by sound reasoning. This, of course, is precisely what everyone who knows his work would expect from Dr. Parkes Weber, but he is to be congratulated on thus adding to his high reputation by supplying a work that must long remain the standard source of reference on this subject.

ELECTROLOGY AND RADIOLOGY.

THE thirty-first volume of the series *Traité de Pathologie Médicale et de Thérapeutique Appliquée*, published under the direction of Drs. SERGENT, RIBADEAU-DUMAS, and BABONNEIX, is on electrology,[3] and is the work of Drs. DELHERM and LAQUERRIÈRE. Their main object is to provide practitioners of medicine who are not familiar with the employment of electro-therapeutic measures with a book from which they can learn the general methods adopted by specialists in the treatment, by electrical means, of medical disorders, and also obtain information as to the methods of electro-diagnosis. The surgical uses of electrical currents are not included. As is usual with books of this description, the first part deals with generalities and with the various types of electricity used in medicine, such as the galvanic, faradic, static, high-frequency, and so on; its illustrations follow the usual conventional lines. The second part takes in order maladies of nutrition, of the skin, of the circulatory, the digestive, and nervous systems, and diseases of the genito-urinary organs; by far the larger portion is taken up, as might be expected, with the nervous system, from the points of view of both treatment and diagnosis. The final chapter is on the dangers of electrical currents and the precautions which should be taken. Although the book does not contain anything particularly novel, the whole subject is treated in a manner quite up to date and according to the most modern ideas; moreover, there is not so much padding as is usually to be found in textbooks upon this subject. It is well printed on excellent paper, the illustrations are of practical value and of good quality, and a good index renders reference an easy matter. Those who wish to be conversant with the present-day practice of electrical methods as carried out by the best French authorities will find it useful, and the price is moderate, especially in view of the rate of exchange.

The third edition of SINCLAIR TONSEY'S book entitled *Medical Electricity, Röntgen Rays, and Radium*[4]—it is true it also contains a chapter on photo-therapy—is such a stupendous volume and contains such an enormous amount of material that a review of it as a whole becomes a somewhat serious undertaking. Whether at the present time a book of this kind really repays the labour, time, and expense involved in its production is a matter of considerable doubt. It is not a book which one would like to take up with a view to reading through page by page its large and closely-printed pages, to the number of thirteen hundred; but as a book of reference, well indexed as it is, it should have its uses. The subjects of medical electricity, *x* rays—diagnostic and therapeutic—and radium have grown in the past twenty years or so to such an extent that an attempt to deal satisfactorily with them all in one volume is an almost impossible task, and, indeed, we doubt if it is a profitable one. There is more than enough material here to have warranted its division into three, if not four, separate volumes, and nothing would have been lost, but a considerable amount gained, by such an arrangement of its contents. Medical electricity especially is a subject which has hardly any connexion with radiology, and radium and *x*-ray therapy are quite distinct from *x*-ray diagnosis; here we have 654 pages of the former, 556 devoted to *x* rays, and 41 on radium. As compared with the two leading subjects, it is evident that radium has been squeezed into such a small space that the value of this chapter, even for the purposes of reference only, is very small; it should have been omitted. One point becomes very obvious as we glance over that part devoted to medical electricity and *x* rays—the author has been afraid to omit anything; there has been no attempt to cut down in any direction, and the amount of detail becomes somewhat overwhelming. There is nothing noteworthy in the part dealing with medical electricity, and practically nothing new; it is a compilation of all that is known on the subject put forward in the more or less usual manner, and illustrated with the usual pictures and diagrams. In the *x*-ray part, however, there is a certain originality, and many claims are made as to the designing of special pieces of apparatus, etc.; a study of the index shows two columns of references to the text to which the author has prefixed his own name. The illustrations and diagrams are numerous, and for the most part satisfactory—a few in colour are especially good. On the other hand, many of the radiographs are poor and do not adequately illustrate the points under consideration, whilst their reproduction leaves much to be desired; this is notably the case with those of the stomach after an opaque meal.

SUGGESTION AND AUTO-SUGGESTION.

Suggestion and Auto-Suggestion[5] is the English translation by EDEN and CEDAR PAUL, who have placed their readers under an obligation not only by the excellence of their rendering, but also by a useful preface, of Professor CHARLES BAUDOUIN'S psychological and pedagogical study based on the investigations of the new Nancy school under Coué. Thirty-five years ago there were two antagonistic schools of hypnotism in France: the school of the Salpêtrière in Paris with its dramatic results, led by the great personality of Charcot, taught that the phenomena of hypnotism were mainly, if not exclusively, morbid, or a neurosis, and the manifestations of major hysteria or hystero-epilepsy; on the other hand the Nancy school, founded by A. A. Liébault, a general practitioner, and expounded by H. Bernheim, professor of medicine, regarded hypnosis as a physiological state allied to normal sleep, which can be produced in anyone, and considered that the remarkable results obtained at the Salpêtrière were artificial and due to unconscious suggestion on the part of the operator. This old Nancy school founded the regular practice of suggestion, and its tenets have been so widely accepted that the interest of the pathological hypothesis of the Paris school is mainly historical. In 1913 Paul Emile Levy, a pupil of Bernheim, published *L'Education rationelle de la volonté*, which is transitional between the old Nancy school and the new. The new Nancy school has grown up under the guidance of Emile Coué, who has carried the work of his teacher, Liébault, further, so that he regards auto-suggestion as the powerful and widely diffused force of which hypnotic suggestion, the only form of suggestion hitherto consciously studied in medicine, is but one of many applications. Coué has written very little, less even than Liébault, and Baudouin, Professor at the Jean Jacques Rousseau Institute in Geneva, and more particularly interested in the psychological and educational aspects of the subject, now comes forward as the theoretical exponent of his teaching, and stands in much the same relation to him as Bernheim formerly did to Liébault.

In his introduction Professor Baudouin defines suggestion as "the subconscious realization of an idea," and contends that suggestion does not demand transference between the consciousness of the operator and that of the subject, and in fact that a "suggestor" is unnecessary. It is an active process going on inside the individual and starts from an idea; it is, moreover, distinct from instinct, habit, and will, the three usually recognized types of mental activity. The kinds of suggestion—spontaneous and reflective, which constitute auto-suggestion, and induced or hetero-suggestion—are discussed at length in the three parts of the volume. Auto-suggestion, in its spontaneous form, is an ordinary phenomenon of our mental life, and is as natural as emotion; it can therefore be trained in anyone, and must not be substituted for the will, but added to it. The organic control rendered possible by suggestion is thought to be the recovery of an ancient heritage which was lost during the course of evolution. Organic diseases have not generally been regarded as suit-

[3] *Electrologie.* By Drs. Delherm and Laquerrière. Paris: A. Maloine et Fils. 1921. (Demy 8vo, pp. 332; 153 figures. Fr.18.)

[4] *Medical Electricity, Röntgen Rays, and Radium.* By S. Tonsey, M.D. Third edition. Philadelphia and London: W. B. Saunders Company. 1921. (Roy. 8vo, pp. 1337; 860 figures; 16 plates. 50s. net.)

[5] *Suggestion and Auto-Suggestion.* A Psychological and Pedagogical Study based upon the Investigations made by the New Nancy School. By Charles Baudouin, Geneva. Translated from the French by Eden and Cedar Paul. London: George Allen and Unwin, Ltd. 1920. (Demy 8vo, pp. 288. 15s. net.)

able for treatment by suggestion, though it is true that Liébault sometimes employed them with this end in view; but examples are here quoted of the alleged cure of warts, uterine fibromyomas, and tuberculosis. Further, at the worst there are in every case of illness two elements: a primary factor due to the actual disease, and a secondary factor due to auto-suggestion; this secondary factor cannot but be influenced by suggestive treatment, and the inference is to the effect that suggestion can and should be tried in every case; thus a prescription should always be given, even if medicine is not absolutely necessary. Professor Baudouin insists that induced suggestion is so simple that it can be used by all parents and by all educationists for the benefit of their children and their pupils. It is only necessary to suggest the idea of cure, and the subconscious makes it its business to discover the physiological means for realizing the cure without either the operator or the subject having to know the nature of these means. For these reasons the educational applications of the new Nancy school are regarded as even more interesting and important than its therapeutic uses.

We have endeavoured to give an impartial account of the views Professor Baudouin expounds and, as we understand him, accepts. They seem worthy of consideration, but we must not be understood to subscribe to them.

VEGETABLE HISTOLOGY.

Professor C. W. Ballard's *Elements of Vegetable Histology*[6] is a manual intended to serve as an introduction to botanical microscopy for the beginner. The opening chapters deal in a very serviceable manner with the preparation of specimens and with the common types of microtome and the microscope. The last section is excellent in that it gives a really intelligible account of the optical principles of the microscope; moreover, terms frequently employed, such as "spherical and chromatic aberration," are clearly and concisely explained with the aid of simple diagrams. Very useful also are the chapters on the chemical reactions of plant tissues and on accessories to the microscope.

But the author has aimed further than writing a purely practical manual, for he has about a dozen chapters devoted to plant morphology. Here it seems to us that the text has suffered in the attempt to compress so much subject matter within so small a space. For instance, the structure of the plant cell and mitosis are discussed in four pages—with results that are decidedly sketchy. Again, the chapters on the various plant tissues are condensed to such an extent that the clearness of exposition has somewhat suffered. Terms such as "meristematic tissues," "bract," and "calyx," though very elementary, are introduced into the text with no accompanying explanation—which seems a pity, since the book is apparently intended for the beginner, who, as such, may be ignorant of the meaning of even the simplest botanical terms. There are several unfortunate misprints. In a discussion of the differences between animals and plants (p. 118) the word "plant" occurs instead of "animal." Also the English equivalent of the micron is the 1/25000 of an inch, and not 1/2500 as stated in the text. Though these are trifles they are none the less confusing to the beginner.

As a practical manual, however, this book should be of genuine value, especially to those interested in the botanical aspect of pharmacology, to which frequent reference is made in the text.

NOTES ON BOOKS.

Mr. Wightman has produced a compact little book on *Home Nursing*,[7] containing a large amount of information. Hitherto very little has been written on this subject, and the brief references in manuals on first aid have been quite inadequate. The arrangement of Mr. Wightman's book is good, and he has taken the trouble to append an index. In the hope that the book may reach further editions, we offer a few criticisms. In the first place, the language is sometimes defective. In Chapter II, on respiration and ventilation, there is much poor writing, due perhaps to the difficulty of condensing such a subject with due consideration to lay intelligence. Under the heading "Effect of Remedies—Opium," the nurse is instructed to note carefully the size of the pupil, but she is not told why she should do so. In several matters there is a lack of definition, and some of the statements are debatable. Thus the airy way in which Mr. Wightman defines "epidemic," "endemic," and "zymotic" will surprise those who have attempted to place meanings on these difficult words. The statement that the "breathing powers of infants are, at the best, but feeble," would be contradicted vociferously by most healthy infants. The validity of "chill"—frequently mentioned—as a cause of disease is open to doubt; and is indigestion really a cause of earache in children? Defects such as these will no doubt be remedied under revision. In the meantime the little book should be very useful, and of great help to those called upon to nurse their friends or relatives.

In the preparation of Vol. II of the second and revised edition of *A Dictionary of Applied Chemistry*,[8] Sir Edward Thorpe was assisted, we note, by some fifty-two chemical authorities, each of whom has initialled the section for which he is personally responsible. These sections cover all subjects falling in the alphabet between the words Calculi and Explosion. The comprehensive nature of the various articles may be indicated by a few figures; despite the succinctness of style appropriate to a book of the dictionary order, the article on disinfectants is, we find, some 20,000 words in length, and those on carbohydrates and chlorine are not far short of 40,000. As we observed in our review of Vol. I of this valuable reference book, it is as yet uncertain whether the whole work will necessitate six or seven volumes. In addition to the text there are numerous diagrams, tables, and illustrations.

Operative Dental Surgery,[9] by Mr. J. B. Parfitt, contains the substance of a course of lectures, and students of dentistry who read the book carefully will be well repaid. The author goes very carefully and thoroughly into the more important details of operative dental surgery, but many readers will be disposed to draw the unfortunate conclusion that if so much care, time, and detail are necessary for conservative dentistry, especially in relation to the treatment of "dead teeth" and the operation of crowning, it becomes a luxury to have it carried out. This may account for the many hopeless failures following these operations. It is better to advise the loss of the affected teeth if the treatment cannot be carried out efficiently. The chapter on the teeth of children is very short. The statement that "children are decidedly tolerant of septic trouble about their teeth" is not our experience. In the chapter on the operation of scaling the author states: "If there has been infection of the tissues beyond the reach of local applications," vaccine treatment is advised, but we fear it must be said that vaccine treatment is no cure for septic infection through the gums. The book contains many good illustrations, especially in the chapter on pulpless teeth and their treatment.

The aim of *Laboratories*,[10] by A. E. Munby, is to facilitate the construction of scientific institutes by bringing together both architect and scientist. There is a preliminary section on the "Scope and Inception of Building Schemes," in which the general principles to be kept in mind when planning the construction of a laboratory are clearly exposed. The author is above all a practical man, and the book abounds in suggestions for increasing the efficiency and comfort of laboratories. There are also special chapters dealing with the requirements of the various sciences. Of these, biology—under which heading Mr. Munby includes physiology—has the most bearing on medical teaching and research. This section not only deals with the general construction of laboratories, but also includes designs for such special requirements as physiological demonstration theatres, aquaria, and tanks for keeping amphibia. There is an amusing historical introduction by Sir Arthur Shipley containing interesting information about the earlier laboratories, much of which will certainly be new to most workers. The book is abundantly illustrated by excellent photographs and drawings, and should be of genuine value to all concerned with laboratory construction.

[6] *The Elements of Vegetable Histology*. By C. W. Ballard. New York: J. Wiley and Sons, Inc. London: Chapman and Hall, Ltd. 1921. (Post 8vo, pp. 240; 75 figures. 18s. net.)

[7] *Home Nursing Manual*. By C. F. Wightman, F.R.C.S.Eng. London: George Gill and Sons, Ltd. 1921. (7½ × 5¼, pp. 193; illustrated. 1s. 1½d.)

[8] *A Dictionary of Applied Chemistry*. By Sir Edward Thorpe, C.B., LL.D., F.R.S. Vol. II. Revised and enlarged edition. London: Longmans, Green, and Co. 1921. (Med. 8vo, pp. 723; 18 figures. 60s. net.)

[9] *Operative Dental Surgery*. By J. B. Parfitt, M.R.C.S., L.D.S. London: Edward Arnold and Co. 1921. (Demy 8vo, pp. 319; 108 figures. 21s. net.)

[10] *Laboratories, their Plannings and Fittings*. By A. E. Munby, M.A., F.R.I.B.A. With a historical introduction by Sir A. E. Shipley, G.B.E., Sc.D., LL.D., F.R.S. London: G. Bell and Sons, Ltd. 1921. (Cr. 8vo, pp. 235; 165 figures. 25s. net.)

OPENING OF THE WINTER SESSION.

PROFESSIONAL TRAINING.

Sir David Prain's Address to the Pharmaceutical Society.

The inaugural address before the Pharmaceutical Society of Great Britain, at the opening of the eightieth session of the School of Pharmacy, was given by Sir David Prain, F.R.S., M.B., Director of the Royal Botanic Gardens, Kew. The annual report was read by Dr. H. G. Greenish, who stated that for the coming year the school was quite full. The President, Mr. E. T. Neathercoat, presented the Pereira medal to Mr. D. Stephenson.

Sir David Prain began by saying that his excuse for giving a sessional address before the Pharmaceutical Society was that his work had led him to study the natural history of some of their materia, and that he had been much indebted to its members for assistance while so engaged. He asked to be regarded as one of themselves because his official duties had included the investigation of the sources of certain drugs and the actual production of others. A school of this kind was not made by the building which housed it, but by the training it imparted. Much of his official work during thirty-five years had been undertaken with the help of horticultural colleagues, trained in accordance with the policy so long observed by the Pharmaceutical Society. For sixteen years he had been closely associated with the training of student-gardeners in pure and applied science as a sequel to pupilage in the practice of their craft. This educational sequence led him to consider professional training in general. Critics to whom the practice of a craft was unfamiliar displayed a tendency to think of "practice" and "theory" as being antagonistic; but experts in particular vocations knew that, so far as their own work was concerned, conflict between "theory" and "practice" was impossible. Hence discussions on the relative merits of theory and practice, even when they failed to do good, did no real harm. Modifications in training necessary at different times, and variations in training possible at a given time, were best understood if actual cases were considered. Medicine afforded a good example of the one, husbandry of the other. Public opinion insisted that training in medicine should go hand in hand with training in surgery. Though the duties in the two arts might differ, the law ordained that before a neophyte could practise either he must be able to undertake both. The obligation to secure a double qualification involved complete professional training in the *fabrica* of surgery, the *institutes* of medicine, and the *materia* which both arts shared with pharmacy.

Originally practical pupilage was the recognized procedure. It worked fairly well. The surgical *fabrica*, before the advent of antiseptics, were patent to the eye; success in practice depended on caution and manipulative skill. The medical *institutes* consisted largely of physiological and pathological postulates, which might be memorized; success in practice rewarded natural sagacity and saving common sense. But pharmacy, which taught intending practitioners how their *materia* should be used, incidentally proved to them how desirable it was that they should possess some acquaintance with chemical principles and with the characters and qualities of living organisms. When the *institutes* of medicine, discarding clinical authority, initiated the methods of direct observation and controlled experiment, students soon discovered for themselves that they could not grasp the facts underlying those subjective conceptions of the normal and the irregular they were expected to master, without some knowledge of physics and some understanding of the structure and functions of vital mechanisms. Early journeymanship, originally spent at seats of learning discussing debatable questions and "wrangling" for degrees, was replaced by a system of "walking the hospitals." This developed into "a course of professional studies" which expanded at the expense of pupilage until the latter disappeared. Medicine found that professional training gave better results than the practical instruction of pupilage, but that the opportunities for education, as contrasted with instruction, which pupilage afforded, could not be provided during a course of professional study. More was needed than a widening of the scientific foundation on which sound professional training rests. In order to "kill two birds with one stone" the "training in pure science" which future practitioners ought to undergo was made a discipline distinct from the professional training which had to be imparted. The purpose was as sound as the theory on which it was based. But the extent to which it might be attained depended on the nature of the scientific discipline provided.

The suggestion that pharmacy should adopt this policy emanated from men of vision who foresaw a time when, in pharmacy too, pupilage might be only a memory. But while practical pupilage in pharmacy remained possible, the need for a preliminary "course in pure science" was not clear, and the policy long adopted by the Society seemed preferable. When pharmacy had to devise a new policy, she might do well to study, rather than copy, the example set by medicine. When instruction in pure science formed an integral part of professional study, the principles of a science taught might be illustrated by facts connected with the calling the pupil was to follow. This involved some duplication; these facts must be referred to again when the methods of practice were expounded. But such duplication had an educational value, for it enabled the same truth to be envisaged from different points of view. Where, however, instruction in pure science formed a prelude to professional training, this advantage largely disappeared. A decision had to be reached in advance whether scientific instruction be confined to the principles of a particular study or should include the presentment of its salient facts. No middle course was feasible. The needs of different callings varied; it was not uniformly necessary that the master of a profession be an all-round scientific expert. Thus medicine believed that if her disciples could master the principles of physics, chemistry, and biology before professional training began, they might acquire familiarity with the special truths of each that bore on future practice, while being disciplined in the medical institutes. If this were true of those who practised medicine, it must also be true of competent teachers of medical practice. But it could not apply to those who taught the institutes; such teachers, whether on the physiological or the pathological side, must be fully versed in physics, chemistry, and biology. Yet teachers of the institutes of any art should, like teachers of its practice, be recruited from among those who had studied that art and knew its needs.

When the institutes of medicine merely embodied the philosophical conclusions of clinical experience no difficulty arose; now that they derived their inspiration directly from physics, chemistry, and biology, it was desirable that some who studied medicine at a given time should have made themselves as fully acquainted with the facts as with the principles of these sciences before beginning their professional course. In some medical schools the proportion of students who had undergone this intensive training in pure science was steadily increasing, but their presence was due to idiosyncrasy and not to reasoned medical policy. Some who found the physiological side of the institutes of medicine specially attractive showed a tendency to omit the study of practice and to refrain from seeking a medical qualification. This, however, was not from lack of interest in the diagnosis and treatment of disease; much recent progress in both was due to the institutes rather than the practice of medicine. Some noteworthy advances had emanated directly from those pure sciences on which physiology and pathology depended.

Sir David Prain then touched on the beginnings of medicine and pharmacy and their relationship with husbandry among primitive peoples. When her hands were not tied by public opinion husbandry showed her firm belief that the best way to prevent sickness was to destroy disease. Early civilization, unable to follow the advice of husbandry or to depend on that of pharmacy, was led to invent medicine—an art "directed first to the prevention of diseases and afterwards to their cure." Limited to offensive tactics, the new art at first hardly appreciated the strategy to which her evolution was indirectly due. With tireless zeal and courage medicine in the field of practice had striven for four millennia to prevent sickness on defensive lines, but now she had at last adopted the tactics of husbandry, and in passing from the defensive to a vigorous offensive she now tried to abolish disease. For this task pharmacy still had to supply the necessary materia; hence the friendly relationship between the new calling and the old. Pharmacy wisely concentrated her attention on the "qualities" of the materia, leaving medicine to study their "uses." On this scientific basis the respective responsibilities of the two professions towards their common materia were at present clearly defined.

In callings like pharmacy or garden craft there were, or might be, at least four distinct types of training: there might be practical pupilage alone; or there might be a training in pure science (1) as a prelude, (2) as a complement, or

(3) as a supplement to practical pupilage. The part which pupilage unaided might play in the formation of character was perhaps less appreciated now than it once was. Its first aim was, by means of instruction and supervision, to make a pupil expert in his vocation; but where supervision was thorough the pupil underwent education as well. Were this not so, pupilage might be almost as valueless as attendance at a school where games were forbidden. The system of education now prescribed had to subserve preparation for examination. Teachers, through no fault of their own, were largely limited to the task of imparting instruction, and the education their pupils obtained was merely acquired unconsciously while at play. That the instruction given was good did not alter the fact that when examinations must be prepared for education suffered.

The lecturer then balanced the advantages and disadvantages of (i) a training in pure science that preceded practical instruction; (ii) a training in pure science that went hand-in-hand with practical instruction; and (iii) a training in pure science that followed practical pupilage. The first arrangement might be useful, but it was not always valuable; the second violated the axiom that it was usually best to do one thing at a time; the third was not a course of instruction at all, but was throughout a process of education, full of pleasure and interest alike to teacher and taught. But, whatever the method of training that prepared a man to follow his calling, he must not conclude, when the course was over, that his training was then at an end; in a sense it might be said that only then did real training begin. The facts of life were inexorable; their lessons could not be evaded; we must all educate ourselves to accept them. But education could be carried further than this, for it was not what facts brought home to a man but what he could extract from them that really counted.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.

At Charing Cross Hospital, on October 5th, the prizes and certificates awarded during the winter and summer sessions of the medical school were distributed by Sir Frederick Mott, the chair being taken by Sir Herbert Waterhouse, senior surgeon to the hospital. The Dean of the school (Dr. Fenton) reported that there was continued evidence of solid progress. The number of students was about 200. Ten men and four women qualified last year. The whole resources of both school and hospital were open equally to men and to women, and the system adopted allowed of no sex distinction.

Sir Frederick Mott, in the course of his address, said he had often thought that if he had the opportunity of again teaching physiology he would, especially in the light of the experience of the last eight years, give a special attention to the influence of the mind on the body, and of the body on the mind. It had always seemed to him that doctors had neglected this branch of medicine too much, and the consequence had been Christian Science, faith healing, neuro-induction, and other modes of inspiring faith. It was true, as Charcot said, *C'est la foi qui sauve, ou qui guérit*, in the case of the functional neuroses. Before the war it was thought that the neuropathic tendency occurred seldom in men, as compared with women, but the formation of a conscript army, in which only physical disabilities were recognized as causes of unfitness, had shown that a large percentage of men were neuropathic and liable to these neuroses, hysteria, and neurasthenia, provided the stress was sufficient to excite their onset. Why was it that physiologists, with few notable exceptions, had ignored psychology, and psychologists had ignored physiology? It was because academic psychology was mainly introspective and metaphysical. There was no mind without memory, and no memory without body. All psychic processes were subordinate to physiological processes. All human activities had their primal instincts common to men and animals—namely, self-preservation, preservation of the species, and the instinct of the herd. The physiological experiments of Pavlov, of Canon, of Elliot, and of Crile, together with the progress made in our knowledge of the endocrine and reproductive organs in relation to the autonomic nervous system, showed the important influence of the body on the development and functions of the mind. The neuroses and psychoses were intimately connected with the function of reproduction, for there was a special tendency for these functional disorders and diseases of the mind to manifest themselves when the sex instinct matured and waned. There was no doubt that in adolescence, when the reproductive organs were becoming mature, a new source of psychic force connected with the primal instinct of propagation arose which produced a complete mental revolution. The energy of the sex instinct might undergo sublimation or diversion into other channels, and he agreed entirely with McDougall in the acceptance of the general truth of the Freudian doctrine, without committal to any of the other doctrines of the sex instinct of Freud. He was of opinion that the sex instinct, serving as the great source of psychic energy, was a fundamental principle of biological psychology, and the researches which he had been carrying on for many years upon the reproductive organs in normal and insane persons, especially the subjects of dementia praecox, supported this conclusion, and explained why the biogenetic psychoses came on in adolescence and at the climacteric periods of life. The psychology of dreams had during the war shown us what an important part they played in disclosing past experiences. A sign of convalescence in neurasthenia, amongst the soldiers, was the cessation of terrifying dreams. The wise practitioner, when examining a patient, would remember that the patient was carefully watching every shade of expression on his countenance, and though he might feel anxious he would never show it. Sir Frederick Mott having spoken of the herd instinct, and of the great service rendered by those courageous men who thought and acted differently from the herd, added a few words with regard to the neglect of medical psychology. The law required all medical practitioners to diagnose all forms of mental disease. How could this be effected? The question arose whether a short course of lectures on biological psychology should not form part of a student's teaching in physiology, or whether it should form part of the instruction in mental diseases. That he should know it was certain. If he had to teach physiology again he would devote ten or more lectures to the elements of mental physiology. He doubted, however, whether teachers in physiology would agree, for he found an admirable textbook, *The Physiology of the Emotions*, dismissed it in two lines with the plea that the subject was mainly speculative, although the practical physician was aware of its importance. After all, they wanted students to be taught the foundations of human life in order that they might be applied to the practice of medicine.

A vote of thanks to Sir Frederick Mott, proposed by Dr. Amand Routh and seconded by Dr. William Hunter, and a similar vote to the Chairman, proposed by Sir James Galloway and seconded by Mr. J. C. F. Tower, concluded the proceedings.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.

The opening of the eighty-seventh winter session of the Middlesex Hospital Medical School took place at the Scala Theatre on October 4th, the Earl of Athlone presiding over a large attendance. Mr. G. Gordon-Taylor, O.B.E., F.R.C.S., delivered the introductory address, choosing as his subject "The dramatic side of surgery." Dramatic and spectacular surgery, he said, might be, and often was, the result of brilliant achievement. The extirpation of a large tumour commended itself at all times to the wonder and admiration of those who were less qualified to estimate the character of surgery, and it earned the gratitude and esteem of the patient. His late chief, Sir John Bland-Sutton, was a dramatic operator partly because of his speed. The few implements he required were in a tiny case that could be carried on one finger. Ultra-modern surgery was characterized by the employment of much special apparatus designed to facilitate the manipulation of less skilful surgeons, to improve results in dealing with malignant and other tumours, and to expedite and assist the more specialized forms of surgery. The terrific mortality of operations for the removal from the thoracic portion of the oesophagus of artificial teeth and other foreign bodies accidentally swallowed was well known to older surgeons: it had been completely altered since the introduction of the oesophagoscope. It was axiomatic that abdominal wounds involving several organs were attended with a heavier mortality than those which implicated a single viscus. This truth was still more applicable to simultaneous wounds of more than one body cavity. The results of

abdominal wounds operated upon by French surgeons during the war showed a recovery rate of some 50 per cent. if these cases were selected with some care. The statistics of abdomino-thoracic wounds in the early years of the war were gloomy reading, but out of 207 cases of this type operated upon in the Fourth Army in 1918, which he collected and analysed, 66.6 per cent. got well. The successful extraction of a stone by surgical means must be a somewhat dramatic event. That hospital had been closely associated with the history of calculus surgery. The perfecting of the cystoscope and its accessories had led to a change of attitude in respect of the surgical treatment of stones in the lower end of the ureter. He could recollect the thrill which he experienced some years ago when he enlarged the ureteric meatus with cystoscopic scissors and beheld the calculus, which he had watched with the *x* rays for some months, extruded into the bladder. The marked improvement in health which was consequent upon the surgical removal of portions of the digestive canal and its associated organs must impress the thoughtful with the wondrous compensating powers of nature. Patients who had been relieved of their gall bladder lived thereafter normal lives. In the treatment of chronic ulcer of the stomach, the pendulum had swung from the often unsatisfactory indirect attack by gastro-jejunostomy to direct operation upon the ulcer itself. Partial gastrectomy was now the operation of choice in this class of case. Men and women could live happy and healthy lives without the greater portion of their stomach. Surgery of the heart was naturally invested with dramatic splendour. The difficulty overcome in the removal of a rifle bullet by Pierre Duval from the intrapericardiac portion of the inferior vena cava was, to his mind, the most brilliant operation in surgery. Lastly, Mr. Gordon-Taylor gave several striking instances of dramatic surgery performed during the war, in dug-outs, and even in front line trenches.

The Dean of the School, Mr. A. E. Webb-Johnson, then presented the annual report. Special mention was made of an anonymous gift of £20,000 for the endowment of the chair of physiology. The school, it was reported, was continually making progress, and there were 640 students last year. Reference was made to the valued assistance rendered by old students of distinction, including Sir Richard Douglas Powell, Sir James Kingston Fowler, Sir Alfred Pearce Gould, Surgeon Rear Admiral Sir Percy Bassett-Smith, and Dr. William Wanklyn. The untiring efforts of Lord Athlone on behalf of the hospital were warmly recognized.

Sir John Bland-Sutton, consulting surgeon to the hospital, then presented the prizes to students and the Fardon Memorial Medals to the nurses. The customary votes of thanks concluded the proceedings.

MEDICAL SCHOOL DINNERS.

CHARING CROSS HOSPITAL.

The annual dinner of past and present students of Charing Cross Hospital was held on the evening of October 5th at the Adelaide Hall, Gatti's Restaurant. Sir James Galloway, senior physician, took the chair, and among those supporting him were the Principal of King's College, London; Professor Barclay Smith, Sir Frederick Mott, Dr. William Hunter; and the Vice-President and Treasurer of the hospital. After the toast of "Our Most Illustrious Doctor, His Majesty the King," had been honoured, the Chairman proposed "Prosperity to the Hospital and Medical School;" this was replied to by two of the students, Miss H. L. J. Wallace and Mr. W. H. Williams. The health of the guests was submitted by Dr. J. M. H. MacLeod, and responded to by Principal Ernest Barker, whose witty speech satisfied his hearers that, like Themistocles, "he was the best man of his time to improvise for the occasion." Sir Frederick Mott, who was called upon by the Chairman amidst great applause, also replied, and was persuaded to sing two good songs. The Chairman's health was proposed in very warm terms by Dr. W. C. Bosanquet, and the toast received with enthusiasm; Sir James Galloway's genial reply brought the formal proceedings to an end. Musical selections were given during the evening by performers from the Coliseum.

ST. MARY'S HOSPITAL.

The annual dinner of St. Mary's Hospital Medical School past and present students was held at the Connaught Rooms, London, on October 3rd. Dr. E. Graham Little, Physician to the Skin Department, presided, and proposed the toast of "The Hospital and the Medical School," to which Mr. A. R. Pridcaux, chairman of the Committee of Management of the hospital, and Dr. C. M. Wilson, Dean of the Medical School, replied. The Chairman proposed the health of Sir William Willcox, in order to mark the distinction of K.C.I.E. lately conferred upon him; the toast was received with vociferous applause and musical honours. Mr. Zachary Cope, surgeon to the out-patients, proposed the toast of "The Chairman," which was also greeted with great applause. The attendance numbered 150, and included, amongst others, Sir Howard Frank and Sir Henry Lunn, guests of the chairman, and Sir Leonard Rogers.

UNIVERSITY COLLEGE HOSPITAL.

The annual dinner of past and present students of University College Hospital Medical School was held at Oddenino's Imperial Restaurant on Thursday, October 6th. The chair was taken by Dr. Henry D. Waugh, and over a hundred old students attended. The toast of "The Hospital and Medical School" was proposed by the Chairman and was responded to by the Dean, Dr. George Blacker. A very pleasant musical programme was supplied by Drs. Poynton, Leslie Williams, Somervell and Claremont, and the evening concluded with the toast of "The Chairman," proposed by Sir Rickman Godlee.

WESTMINSTER HOSPITAL.

The annual dinner of the Westminster Hospital past and present students was held at the Great Central Hotel on October 7th. Sir Charles Ryall, F.R.C.S., presided. The attendance numbered 101, including seven ladies. The Chairman proposed the toast of "The Hospital and Medical School," to which Dr. A. S. Woodwark, the Dean, replied, pointing out the successful development of the Medical School in its return to pre-war conditions, the present number of students being the largest for the past fifteen years. Mr. Arthur Evans proposed "The Past and Present Students," to which Surgeon Rear Admiral W. E. Axford, Lieut.-Colonel S. Scanlan, D.S.O., and Dr. Walter Baron replied, the latter expressing his pleasure, as a general practitioner, that the hospital was to remain in its present situation. Mr. Souttar also spoke on behalf of the present students, and referred to the exceptional teaching facilities provided. Mr. Rock Carling proposed "The Visitors," for whom Sir Murdoch Macdonald and Dr. Edwin Smith responded. Sir Edward Pearson, who has recently accepted the chairmanship of the hospital, and Mr. Gluckstein, the Mayor of Westminster, had accepted invitations but were prevented from attending. Mr. W. G. Spencer proposed the health of the Chairman.

The eleventh London Medical Exhibition, held last week at the Central Hall, Westminster, was considerably larger than that of 1920. Last year about ninety firms exhibited; this year the number was a hundred and twenty. Although no attempt had been made at grouping the exhibits in sections, from the point of view of attractive display the exhibition was certainly one of the best yet held, and much ingenuity was shown in the arrangement of the stands. The quality of the goods is, of course, the thing that matters, but a little additional effort to please the eye of the visitor is never wasted. Perhaps the most prominent feature this year was to be found in the *x*-ray department, for the apparatus shown represented recent advances in *x*-ray work, both for radiography and therapeutics, and there were some good specimens of instantaneous radiography. While Londoners had the opportunity of seeing much that was on view in the successful exhibition held last July in connexion with the Annual Meeting of the British Medical Association at Newcastle, there were one or two interesting exhibits which did not find their way north. It would be impossible to mention in a brief note the many new pharmaceutical preparations and the displays of food, instruments, and appliances encountered in a tour of two crowded halls; but in general it may be said that most of the well-known firms were represented, and the organizers of the exhibition are to be congratulated on their success.

British Medical Journal.

SATURDAY, OCTOBER 15TH, 1921.

NATIONAL DIETETICS.

It is scarcely four years since the energies of the ablest men of science and administrators were directed to solving the problem of feeding the nation, and were, indeed, almost concentrated upon it. It was believed, and rightly believed, that upon the accuracy of the answers given to the questions then asked the immediate destiny of the Empire depended. Correct answers were given to those urgent questions. The great administrator who understood the answers and based his action upon them is in his grave, hardly better remembered by the public than his scientific advisers. "The British nation," writes Dr. Corlette, "can never repay the debt it owes to these men. It has never tried to, and it does not know that it owes it. It has been allowed to think that the politicians, on whom the limelight falls, deserve the credit."

It is a commonplace that only an immediately impending calamity can command and retain the general interest of a whole nation. Looked at from the distance of 1,700 years, the conduct of those subjects of the later Empire whose light verses and even jests have come down to us, seems as indecently frivolous as that of the grave-digger in *Hamlet;* they were, as it seems to us, jesting on the brink of a precipice. We forget that no civilization breaks up like the wonderful one-horse shay, that a short time in the history of a nation is a very long time in that of its individual members living from hand to mouth. The twenty millions said to be now perishing of hunger in Russia do not seem to belong to the same order of events as the relatively slight increment of general misery in this country which has distinguished 1921 from 1920. Life here was only a little harder in 1920 than in 1919, and may not be much worse in 1922 than this year. We can all see the direction of movement, but the pace is not nearly sufficient to excite any public demand for a concentration upon the fundamental issues of existence, similar to that of 1917. Even our present rate of acceleration towards ruin could not bring us to the Russian pass for years. Inhabitants of another continent have towards ourselves some of the advantages of posterity, and it is not surprising that we should owe to the New South Wales Board of Trade the most recent and useful contribution to the literature of national dietetics. Of the three publications recently received,[1] Dr. Wardlaw's study of the food consumption of a series of university teachers and students is a good example of careful experimental work, and Professor H. G. Chapman's leaflet on food requirements contains as much information as can be compressed into two octavo pages. Dr. Corlette's monograph, *Food and Nutrition*, is, we think, the best presentation of the facts in a guise attractive to the ordinary citizen which we have yet seen.

Any medical man who has had to write or lecture on the subject of dietetics knows how hard it is to explain in non-technical language modern scientific ideas. Usually the lecturer ends by shirking some of the difficulties and taking refuge in platitude. Dr. Corlette has bravely faced all of them, even the portentous difficulty of specific dynamic actions, and, so far as we can see, has omitted little of real importance. His discussion of the influence of external conditions upon metabolism suffers from a lack of acquaintance with the recently published work of Professor Leonard Hill, and he has perhaps devoted undue space to the opinions of Professor A. L. Taylor, many of which seem to us to justify the comment Dr. Corlette makes upon one he does not quote ("it defies paraphrasing into easily understood language, but it contains nothing but what every physiologist knows"). These, however, are small points; as a whole the pamphlet is thoroughly efficient. Dr. Corlette has justly and vivaciously criticized some of the usual methods of inquiry; he points out that the process of computing "man values" has been carried too far. Obviously the wife of a blacksmith does not —*qua* wife of a blacksmith—need more food than the wife of a tailor; but if the same coefficients are used when reducing the consumption of a blacksmith's family to man values as when reducing the consumption of a tailor's family, we do reason falsely. This criticism affects the routine reduction of diets in any family groups the working members of which are engaged in more than "moderate" work, and does not appear to have been specifically admitted by other writers. Undoubtedly the method of calculation used by the Food Committee of the Royal Society, by which the reduction coefficients are only applied to the basal fraction of metabolism, should be adopted in important cases.

Dr. Corlette is generally in favour of a low protein ration, and holds that, for Australians, 80 grams of protein, including only 50 of animal protein, are an ample supply. He also thinks that the conventional energy standard of 3,500 calories for moderate work is too high. In order to determine the allowance to be made for differences of climate, Dr. Corlette has computed the amount of heat required to warm the respired air and saturate it with moisture at different external temperatures, estimating the total volume of air breathed from Haldane and Douglas's results. This, as we have hinted above, is probably too summary a way of dealing with the climatological factor. However, it leads to the conclusion that the inhabitants of Sydney would need some 200 calories a head a day less than the North Americans whose diet furnished Atwater's standard.

Dr. Corlette's remarks upon food economics in detail are of local application (in Sydney, potatoes and bread are at the same price per pound, so that potato calories are five times and potato protein ten times as dear as bread calories or protein), but in principle are of importance to us all. His report ends with these words: "Last, and by no means least, *acquire knowledge*, real knowledge. Serious research work needs to be done, and it is worth doing at almost any cost. There are many questions to be answered as regards the metabolism of people in New South Wales."

There is an even larger number of questions to be answered respecting the metabolism of people in England and Wales. Some of these questions are being answered; the work done under the auspices of the Medical Research Council on accessory food

[1] *A Preliminary Inquiry into the Diet of Australians*, by H. S. Halcro Wardlaw, D.Sc.; pp. 11. *Food Requirements*, by Professor H. G. Chapman; pp. 2. *Food and Nutrition, including an Examination of the Climatic Factor*, by C. E. Corlette, M.D., Ch.M., D.P.H.; pp. 71. (Sydney, 1921, Government Printer.)

factors has already earned a high rate of interest upon the public money expended, if to save life and diminish suffering can be given a money equivalent. But a great many other questions are not being answered at all. Many of the inhabitants of these islands are at the present moment insufficiently nourished, and within the next few months many more will become physiologically inefficient. There seems to be a difference of opinion amongst the economically learned as to the etiology of the disease. According to some sages it is Bolshevism, according to others profiteering, while many affirm that the salaries of bureaucrats are the efficient cause. However this may be, the prognosis is certain—namely, that the real wages of *all* classes, bureaucrats and others, must fall. It follows that the 60 per cent. of expenditure which, in the handworking classes, is the fraction normally devoted to the purchase of food, must be used more wisely than ever before if even the present level of efficiency is to be maintained.

We already know enough to give good advice upon many points, but there are many others, and these not the least important, which must be elucidated by further scientific research. In the work of Dr. Plimmer, which we recently noticed, mention was made of certain practically important unsolved biochemical problems. To the statistico-physiological facts respecting the sufficiency of diets taken by persons variously employed which physiologists and statisticians on war work collected, few *post-bellum* additions have been made. Professor Cathcart and his co-workers may properly be said to have solved the problem of the soldier as an energy transformer; we must still attempt to answer similar questions as to the civilian labourer on the faith of budgetary statistics, which, with Dr. Corlette, we think are wholly insufficient guides, and the quest for precise experimental data carries us at present into the remote perspective of Helsingfors. The Food (War) Committee of the Royal Society in 1919 based their calculations upon the accurate but limited inquiries of Becker and Hämäläinen and remarked, "the above report shows how very inadequate is our present knowledge of the science of nutrition, and demonstrates the necessity of renewed investigations of almost every point discussed in it."

Should economic conditions become just a little worse and the question again be asked, "What is a sufficient diet for a labourer doing such and such work?" we should be in precisely the same position as in 1919; no experimental measurements which command the general assent of the physiologists who have attended to the subject have been added to what we knew then. We have not even got together a representative collection of food budgets. We know that to obtain such knowledge costs money; we also know that, for the psychological reasons mentioned above, any expenditure of the sort would fail to secure popular approval. With that we have nothing to do, but it is our business to point out that the nation is entering upon what may be a long campaign against starvation without an adequate intelligence service. It does not even know it needs an intelligence service. There is still no such thing as a rational public opinion upon dietetics; idle chatter in the newspapers about vitamins or jokes about calories and medical fads are its equivalent. To create a sane public opinion will be a difficult task and may be achieved too late. The medical profession can, however, do something and will, we are certain, inculcate the lesson that the food problem is almost as urgent now as it was four years ago.

REACTIONS AFTER SALVARSAN.

In an article based on 9,000 cases treated during six years in the syphilis department of the Johns Hopkins Hospital, Baltimore, and in private practice, Moore and Keidel[1] give particulars of the cases in which dermatitis and allied reactions followed salvarsan. They distinguish two groups—mild and severe; in the former salvarsan injections may be continued, but in the latter grave blood changes occur, and treatment by salvarsan must be given up. Eighteen of their patients manifested grave reactions which contraindicate repetition of at any rate the same salvarsan preparation, and four had mild reactions—namely, urticaria, erythema, or facial herpes—which do not contraindicate further salvarsan injections, as this hypersensitiveness is soon lost. Urticaria appears soon after the injection, is transient, and, except that it may be associated with vasomotor nitritoid crises, is not accompanied by constitutional symptoms; it can be completely controlled by the intramuscular injection of epinephrin, or prevented by its preliminary injection. On the other hand, emphasis is laid on the danger of repeating a salvarsan injection if itching, or even a mild macular, maculo-papular, or vesicular eruption has occurred. No salvarsan product employed was free from the liability to be followed by reactions, and as a rule there was not any tendency for cutaneous manifestations to occur more frequently after large than after small doses; in less than one-fifth of the cases showing reactions was any drug other than salvarsan given; this point is important, as otherwise mercury might be incriminated as a factor in the causation of some of the reactions, especially stomatitis.

The group of grave skin reactions include macular, maculo-papular, vesicular rashes and exfoliative dermatitis, these being merely degrees of the same process. They appear from one to fourteen days after injection of salvarsan. Exfoliative dermatitis may be accompanied by conjunctivitis and diarrhoea, or by the graver complications of arsenical neuritis, jaundice, skin infection, bronchopneumonia, and nephritis. Out of ten deaths from salvarsan at the Johns Hopkins Hospital five were from dermatitis, and it is noteworthy that haemorrhagic encephalitis is almost unknown in America. Among Moore and Keidel's eighteen cases of grave reactions three had mild jaundice and nine skin infections, two of which proved fatal from streptococcic septicaemia. Bronchopneumonia follows denudation of the bronchial epithelium, and is favoured by the lowered resistance due to the direct action of arsenic on the bone marrow, as shown by the blood picture to be mentioned below. Thirteen out of these eighteen patients had fever ranging from 100° to 105° F., and more than three-quarters of them albumin and casts in the urine, two proving fatal.

The blood changes, on which little has previously been written, are not due to the skin lesions, but, on the contrary, favour their occurrence; these are leucopenia with diminution in the polymorphonuclear neutrophils, eosinophilia, increase in the number of the large mononuclear transitional group, and the appearance of many fragile cells. In the mildest cases the stimulating effect of arsenic on the bone marrow causes eosinophilia only, whereas in the most severe cases aplastic anaemia may result. The eosinophilia, though previously regarded as secondary to the dermatitis, is not really so, as it may occur in its absence. Under the heading "Allied reactions" are included two other grave manifestations—namely,

[1] J. E. Moore and A. Keidel, *Arch. Int. Med.*, Chicago, 1921, xxvii, 716-747.

itching without any eruption, and stomatitis which is also accompanied by blood changes and may occur in the absence of mercurial medication. After discussing the following hypotheses namely, damage to the blood-forming tissues, the cumulative effect of arsenic when its normal excretion is impaired, and hepatic damage as to the cause of the grave reactions, the authors regard them as the expression of anaphylaxis. The prognosis of the exfoliative dermatitis cases is bad; but there is evidence that although the sensitiveness of the patient to a salvarsan preparation causing a severe reaction persists for a long time and is brought out by even small doses, some such patients, who unfortunately cannot be accurately recognized beforehand, can tolerate another form of salvarsan preparation, which, however, should be tried with great caution.

THE INSURANCE CAPITATION FEE.

The Minister of Health met the Insurance Acts Committee of the British Medical Association on the afternoon of Tuesday, October 11th, and informed the members that it was his intention, acting on the Government's decision, and after full consideration, to reduce the present capitation fee paid to insurance practitioners, which by arbitration was fixed at 11s. in March, 1920, to 9s. 6d. as from December 31st. He considered this a reasonable and generous fee, and appealed to the patriotism of the profession to accept it in the present state of the finances of the country. The Committee having considered the matter in private, the Chairman, Dr. Brackenbury, informed Sir Alfred Mond that the statement would be placed before the Panel Conference on Thursday, October 20th. While the profession, he said, might for patriotic reasons be prepared to consider a reduction of the capitation fee, it must feel assured that there was no risk of any deterioration in the efficiency of the service; he feared that reduction of the fee might induce some medical practitioners now upon the panel, and those among the best, to retire from it; if this process continued the efficiency of the service must suffer. He therefore urged the Minister to reconsider the amount named—9s. 6d.; this, however, Sir Alfred Mond declined to do; the offer made was not, he said, one about which he was prepared to haggle. If it were not accepted the whole matter would have to be reopened; the result could not be foreseen, but might quite possibly be the offer of a lower figure. Sir Alfred Mond was accompanied by the Secretary of State for Scotland, who appeared fully to concur in the views he expressed. A full report of the proceedings is published in the Supplement this week.

THE ARMY MEDICAL SERVICE SINCE THE ARMISTICE.

At the meeting of the War Section of the Royal Society of Medicine on October 10th the new President, Sir John Goodwin, Director-General of the Army Medical Service, delivered his address from the chair, taking as his subject the Army Medical Service since the Armistice. Sir John Goodwin said that on the cessation of military operations in 1918 a period of reconstruction began, affecting every branch of the army. The matters which claimed first attention in the R.A.M.C. were: (1) the release as speedily as possible of temporary commissioned officers; (2) the closing of hospitals as beds became vacant; (3) the organization of a dental service for the army; (4) the revision of orders and regulations for war establishments, a task to be carried through while the experience of the war was still fresh in the mind; and (5) the reinstitution of classes of instruction for both officers and men. As for the difficulties which had to be overcome, the first of these was war-weariness; then the service suffered through the death or retirement of many most valuable officers; the stringent and urgent need for economy was continually impressed upon those in charge of administration; and another cause for anxious thought, though scarcely to be described as a difficulty, was the stream of questions and criticisms both in Parliament and in private. The greater part of the criticism was helpful, but some of it was destructive or ill-informed. One had to listen to every view, and to be prepared to discuss a matter from every possible aspect; but there came a time in the argument over any question when a principle was reached, and beyond this point there could be no further discussion. The first task was the release of officers for civil life, and from 13,000 at the time of the armistice the number had been steadily reduced to 1,400 without any breakdown. At the armistice the hospital beds, in round numbers, were distributed as follows: United Kingdom, 364,000; France, 156,000; Egypt, 48,000; Salonica, 42,000; Malta, 8,000; Italy, 9,000; Mesopotamia, 10,000; Northern Russia, 1,000 (nearly). In November, 1918, 578,000 patients were in the charge of the service. In the United Kingdom at the present day the number of hospital beds was under 8,000. With regard to the dental service, an Army Dental Corps had now been established, and there were more than sixty commissioned dental officers in the army. Committees had been formed to deal with the question of the amendment of orders and regulations, and in this connexion Sir John Goodwin paid a tribute to the work of the late Sir William Babtie. Another matter which had to be considered was the compilation of the official history of the war. The first volume of the general *Medical History of the War*, dealing with the medical services in the United Kingdom, garrisons overseas, and colonial expeditions, was now being bound for issue; and the second volume, dealing with medical services in France, would, it was hoped, be published in the first half of next year. The first volume on diseases of the war was almost ready, and other sections were well advanced in preparation. The first volume dealing with the hygiene of the war would be ready next year; the volume on pathology was further from completion, but ten subjects had been treated, and the MSS. were in hand. He thought it doubtful whether they would ever obtain complete statistics covering every period of the war and every area of operations. The re-education of officers and men was another task which had been taken in hand. The R.A.M. College at Millbank was reopened as an instructional centre. All the large provincial hospitals and infirmaries were approached and asked to offer facilities as regards clinical work to officers of the R.A.M.C. stationed in the vicinity, and the most cordial assent was given in every case. Three schools of hygiene were now doing excellently. Instruction and training in administration were also being carried out. The training of the non-commissioned officers and men of the R.A.M.C. was being attended to, and 400 had been trained and qualified as nursing orderlies, *x*-ray and laboratory attendants, and dispensers. More than 100 officers had passed through the post-graduate courses at Millbank, and 59 of them had passed as distinguished and had qualified as specialists in various subjects. Out of 30 officers who presented themselves for examination for the D.P.H., 27 had passed. Sir John Goodwin mentioned that the rank of major-general is now open to officers who specialize in pathology, hygiene, medicine, or surgery. The war museum had been the subject of an immense amount of correspondence, but it was felt that at the Royal College of Surgeons the pathological collection was in the best possible hands and in a place of most ready access. Sir John Goodwin concluded with a tribute to all the officers concerned in reconstruction, not only those more immediately associated with him at the War Office, but many junior officers who, although extremely war-weary, went through the post-graduate courses, doing in all cases well, and in many cases excellently. It was a matter for

congratulation that at the end of five years' war both officers and men should have set themselves wholeheartedly to the task of reconstructing the service. It was a revelation of national character, of happy augury for the future. Sir Anthony Bowlby, in proposing a vote of thanks, said that Sir John Goodwin took over the director-generalship at a time of great difficulty, when the German offensive in the west was at its worst, and when new military enterprises were being taken in hand in various parts of the world. Since the war he had had continually to be doing things which were unpopular, depriving people of appointments they wished to retain and refusing appointments to others who wished to receive them. Nevertheless he had accomplished his task with the utmost credit. The speaker referred to the war museum at the Royal College of Surgeons, and said that when it was displayed as they hoped to display it no country in the world would have so complete and valuable a collection. Sir George Makins, in seconding, recalled Sir John Goodwin's command of the 14th General Hospital at Wimereux—he had never seen a more happy hospital—and also the part he took in the small medical society connected therewith.

WOMEN AT CAMBRIDGE.

At a Congregation held on December 8th, 1920, the proposal for the admission of women students to full membership of the University of Cambridge was rejected by the Senate, 712 voting for it and 904 against. Subsequently the Senate, by a narrow majority, authorized a vote to be taken on June 16th, 1921, upon two alternative propositions for regulating the position of women students in the University. The Council of the Senate, however, decided to postpone the vote to October 20th on account of travelling difficulties at the earlier date. The first of the two proposals, known as Grace I, was brought forward by its supporters as a compromise, in that it "gives the women full degrees, but meets the most serious of the objections put forward to the proposals of last December." On the one hand, women students would be matriculated members of the University, all degrees and prizes and studentships would be open to them, and they would be eligible to be members of boards of studies, and for professorships, lectureships, and examinerships. On the other hand, they would be excluded from membership of the Senate and the electoral roll, the number of resident undergraduate women would be limited, and their discipline would be in the hands of a women's representative board. Further, the supporters of Grace I state that a proposal will be put forward to prevent a men's college from electing a woman as a Fellow or in any other way admitting a woman as a member. Although the proposals contained in the compromise do not meet their full wishes the representatives of the women's colleges support it and have pledged themselves not to appeal to the Royal Commission on Oxford and Cambridge Universities if it is carried. The second proposal, Grace II, would simply confer titular degrees by diploma, without other privileges, on duly qualified women students. It is put forward by its supporters as an equitable settlement, "conceding all that the women asked for in 1897," when a proposal to admit women to titles of degrees was rejected by 1,713 against 662 votes. To this proposal the women's colleges offer uncompromising opposition. At the Congregation next Thursday votes for both Graces will be accepted at the same time. In the event of Grace I being carried (even by a majority of one vote) Grace II will be withdrawn and the votes for it destroyed uncounted. The "battle of the fly-sheets" is now once more being waged. The supporters of Grace I claim that "it affords the only practical possibility of a constructive policy or of a policy with any respectable claim to be regarded as generous," and they add that "it is certain that the rejection of the present compromise will lead to decisive action by Parliament." The committee opposing Grace I, and supporting Grace II, hold that as the question of full membership of Cambridge University for women students was decisively rejected last December, it should not be reopened for a reasonable term of years. They argue that Grace I is an unwarranted attempt to go back on a decision already taken, that it involves an interference by women in the education of men, and that it is not, and cannot be, a permanent settlement. They profess to see little or no connexion between women's education and women's membership of the University. "They are willing to affix the same hallmark to ability and attainment and continue to the women the existing preferential treatment in the matter of fees, but they are not willing to be governed by women nor to have men's education modified in the interests of women." Lastly, in regard to the probable appeal to the Royal Commission by the authorities of Girton and Newnham, if Grace I is not passed, they hold "that as long as the government of the University is vested in the Senate it is the privilege and duty of each member thereof to vote as he thinks right." We have briefly attempted to state impartially the main arguments of the rival parties on the question the graduates of the University of Cambridge are called upon to decide next Thursday.

EARLY BOOKS ON LONDON HOSPITALS.

Of the lore relating to the old hospitals and medical societies of London Sir D'Arcy Power is a master; as his recent note on the bibliography of three sixteenth century English books connected with London hospitals is published in *The Library* (1921, ii, 73) and might otherwise miss the attention it deserves from colleagues, a brief reference to its scope is desirable. His paper, which was read before the Bibliographical Society, throws light on the history of three works of a bygone day. The first is "The Order of the Hospitalls of K. Henry the viiith and K. Edward vith, viz., St. Bartholomew's, Christ's, Bridewell, St. Thomas's." It is in black letter, without the name or place of the printer. It bears the date 1557, but as the result of much research Sir D'Arcy Power concludes that there was no edition in that year, and that the book was first printed between 1690 and 1700 from a manuscript, possibly at the expense of Samuel Pepys, who, as Secretary to the Admiralty, was keenly interested in the welfare of Christ's Hospital, which it had been intended should train officers for the king's ships. The reason for the belated printing of "The Order" was a determined effort of the Court of Aldermen in 1681 to regain their ancient jurisdiction over the four Royal Hospitals, which had practically lapsed from disuse. In his second bibliographical study on "A profitable treatise of the anatomie of man's body: compyled by that excellent chirurgion Thomas Vicary," Sir D'Arcy Power supplements the late Dr. J. F. Payne's critical examination (vide British Medical Journal, 1896, i, January 25th), which conclusively proved that this work was an abridgement of a manuscript by an unknown English surgeon in 1392; Sir D'Arcy also shows that his predecessor at St. Bartholomew's was no purloiner of other men's brains, but that the "Anatomie" was issued originally as part of a scheme to go back to old writers at a time when surgery was just beginning to take a new lease of life after the dead period of the Wars of the Roses. The third work, "The Ordre of the Hospital of S. Bartholomewes in West-Smythfielde in London," issued in 1552 in order to counteract an outcry against the governors, is described, with interesting extracts from its provisions, one of which directed that an unbroken record should be kept in the form of a Repertory, a book of Survey, a book of Accounts, and a Journal, and thus rendered possible Sir Norman Moore's recent monumental History of St. Bartholomew's Hospital.

PUBLIC HEALTH IN FRANCE.

It is admitted that public health administration in France stands in need of improvement, and there has been much discussion of the subject during the last year or so. The principal Act by which it is at present governed came into force in February, 1902, but it has not produced the desired results. In fact, to say that it came into force is an exaggeration. The initiative was left to the central authority and its local representatives; if the prefect of a department was keen on matters of hygiene a good deal might be begun during his tenure of office, but when he ceased to hold office, unless his successor was like-minded, the apathy of the local authorities or the self-interest of their individual members brought the reforms to a standstill. In short, though not ostensibly permissive, the Act did not provide any adequate machinery for compelling local authorities to carry out its requirements. The Ministry of Hygiene recently issued a draft of a new law, in which it was proposed still further to increase the powers of the central authority. The draft was submitted to the Académie de Médecine for its opinion; after receiving a report from a special committee and discussing the matter on many occasions during the last two or three months, it has now issued a statement of general principles which, while it may seem to foreshadow a scheme that would according to British ideas be over-centralized, would yet permit a far wider application of the principle of devolution than was contemplated by the Ministry. The Académie recommends the establishment of a public health service the members of which, while responsible to the Minister of Hygiene for the carrying out of the public health laws, would at the same time act as advisers to the local authorities. The whole of France would be divided into sanitary areas (circonscriptions), each with a local medical officer of health (médecin sanitaire); the circonscription would be small enough to make it possible for the médecin sanitaire permanently to maintain close relations with the people, the medical profession, and the administrative authorities of the area. These sanitary areas would be grouped into sanitary regions, each with a regional medical inspector. The regions would be large in order to ensure that the inspector should be a highly trained and independent officer. Paris and other large cities, while retaining their municipal sanitary organization, would be subject to the control of a regional inspector. The local medical officers (the médecins sanitaires) of the areas would not be able to do more than recommend the administrative authorities to carry out the improvements they deemed necessary, but the hope would seem to be that the responsibility of the local medical officers, through the regional medical officers, to the Ministry, would ensure that action would be taken by the local administrative authorities. The Académie proposes that the new law should provide for the compulsory notification of infectious diseases to the médecin sanitaire both by the head of the family or institution and by the doctor; it would make revaccination against small-pox compulsory in the seventh, thirteenth, and the twentieth year, and, in exceptional circumstances, at any other age the prefect of the department might decree. In a final omnibus clause it is declared that the measures which ought to be adopted to combat transmissible diseases are vaccination or preventive immunization, isolation, disinfection, special precautions during epidemics, the protection of drinking-water supplies and of shellfish beds, the purification of sewage, and the adoption of what we should call in this country building by-laws. The methods of local government in France differ fundamentally from those which prevail in this country; we have, for instance, no officials comparable with the prefects and subprefects, and it is through the prefectorial system that sanitary administration has hitherto been conducted. It is therefore difficult for observers in this country to form any sound opinion upon the proposals now made in France. The experience of this country, however, is that sanitary administration cannot move far ahead of public opinion, and that education of the public must precede official attempts to apply improved methods. We suspect that in this matter human nature is very much the same in France.

SCIENTIFIC AND INDUSTRIAL RESEARCH.

The work which has been carried out during the past year under the auspices of the Committee of the Privy Council for Scientific and Industrial Research is still largely a record of adjustment to new and unforeseen conditions. The wholesale destruction of life and wealth in the war gave place to a feverish demand for commodities which, after a brief space, has led to the present exhaustion and lassitude, and each phase has brought its own urgent difficulties. "It appears," says the Committee in its report,[1] "that the main directions for advance lie in higher efficiency, increased output, and greater economy. The tragic destruction of men and the enormous loss of wealth will enforce a reduction in output in every sphere in the national life unless a wise economy and an increased use of science can be made to counterbalance them." Scientific research is the main, if not the only, source of fresh productivity and industry, and it is only by increased production that the world will find a way out of its present difficulties. A promising beginning has been made in the task of co-ordinating research activities of the fighting services and the other Government departments, and research boards have been set up for this purpose and also to form a central finance authority for research of general, industrial, and scientific importance. These boards are also to act as a source of information on the results achieved and to arrange for researches for which no adequate provision is otherwise made. Preliminary investigations by the research boards have shown that in a strict sense there is remarkably little overlapping in the investigations conducted by the different services, and in many instances where the same problem was apparently being attacked at different establishments closer inquiry showed that it was being attacked from very different points of view. Considerable progress has been made with a scheme for co-operative research by the interested industries themselves, and a number of new research associations have been established during the past year in such industries as, for instance, the motor cycle trade, the cutlery trade, the music industries, and the silk industry. It is three years since the first research association was formed under the Government's scheme for industrial research, but even those associations which were first instituted can hardly be said to have had sufficient time to produce any large amount of new knowledge. Scientific research is inevitably slow in fruition, and the deeper the problems attacked the longer are the results likely to tarry; yet some of them have already done what will repay their expenditure. It would be a short-sighted policy to confine research organizations to a search for results of immediate commercial value. In a few instances, states the Committee, there is still a tendency to attach undue importance to early practical results, though the associations are concentrating their attention more and more on the fundamental principles underlying the methods and processes of their trades. The report includes the results of work which has been carried out by the British Cotton Industry Research Association, the British Research Association for the Woollen and Worsted Industries, the Linen Industry Research Association, the Research Association of British Rubber and Tyre Manufacturers, the British Photographic Research Association, the

[1] Report of the Committee of the Privy Council for Scientific and Industrial Research for the Year 1920-21. London: His Majesty's Stationery Office. 1921. Price 1s. net.

British Scientific Instrument Research Association, and the British Refractories Research Association, which show the many spheres of industry in which this valuable work is being done. Nor is this by any means the sum total of the work carried on under the directions of the Scientific and Industrial Research Committee. The Food Investigation Board, whose activities have been already noticed in our columns, is only one of many other different branches of its activity. Another is the National Physical Laboratory, which continues to increase in scope and importance, and has resumed the natural functions which were diverted into special channels during the war. The geological survey is carried out under the aegis of the Central Committee, and the Fuel Research Board has made for it a survey of British coal seams from the fuel point of view, and has conducted experiments on peat and on power alcohol. A special research board has been making important investigations into building materials and construction. The Physics, Chemistry, and Engineering Co-ordinating Research Boards have considered such subjects as the application of *x*-ray methods in the examination of materials, the production of formaldehyde, and the fatigue of materials, respectively. Investigations have been carried out on, for instance, the production of adhesives, oxygen and liquid air, the production of cylinders for the storage of gases, on the theory of the action of lubricants, and on tests for metal struts and spars for air craft. A committee was appointed to carry out the preliminary work necessary for investigating the flow of streams and tidal currents, as a beginning of a comprehensive survey of the water and water-power resources of Britain and of the Empire. At the British Museum fascinating research work has been successfully accomplished on technical problems connected with the preservation and restoration of antique objects, such as the prevention of damage to old drawings and engravings by moulds, and the removal of deposits of copper compounds from antique silver. In addition to the work carried out directly under the Scientific and Industrial Research Committee, grants have been made to certain universities and other independent institutions and to individual workers and students for specific researches, and the question has been considered—favourably, it may be hoped—whether State grants should not also be made to scientific societies to meet the increased cost of scientific publications. The total expenditure for the year was just over £552,000, of which some £373,000 came directly from the Exchequer; but, as the short review of the activities of the committee which we have given above shows, not the most ardent economist can deny that value is being received for money.

THE REASSEMBLING OF PARLIAMENT.

Our Lobby Correspondent writes: When Parliament adjourned in August until Tuesday next, October 18th, the hope was encouraged that the resumed meeting might be only formal—for the purpose of prorogation—unless Irish negotiations had sufficiently matured to enable a legislative settlement to be submitted. The adjournment was in fact regarded as a precautionary measure rather than necessary action for contingencies, as in any case Parliament could have been specially summoned. The unemployment situation has, however, altered the aspect of affairs. The whole position will come under review on a statement of the policy of the Government to meet the pressing circumstances, and one or more bills—probably several short measures—will be required to give the Government authority to carry out whatever proposals they may determine upon. How long these and other matters may take cannot be estimated off-hand, but the wish of the Whips is to get the prorogation by November 10th, as members have undertaken to address meetings in the provinces during the late autumn in pursuance of a Government campaign. Leading members of the Cabinet will also have severe calls upon their time in connexion with the Irish Conference, unless it should suddenly collapse, as is possible. The contemplated reduction in the payment to insurance doctors does not involve legislation, the remuneration being a matter of agreement between the Department and the profession. But it obviously can and may be brought before Parliament, as the Minister of Health is ultimately responsible to the House of Commons, if thought desirable, a day might be sought and obtained for discussion. It is fairly certain that there will be talk in Parliament on the 50 per cent. reduction made by Sir Alfred Mond in the grant from the Ministry of Health for the supply of milk to mothers and children under the maternity benefit provision, which is carried through by local authorities. It need scarcely be added that the department is not presenting, on its own initiative, any legislation on any subject in this short session, and there is little probability that any will be called for. Outside official circles, however, few persons familiar with parliamentary procedure are sanguine enough to think that once the session is re-started it can be stopped within three weeks.

Sir Marriott Cooke, K.B.E., M.B., and Dr. Sidney Coupland, F.R.C.P. (Consulting Physician to the Middlesex Hospital), have retired from their position as Commissioners of the Board of Control. Both were appointed Commissioners in Lunacy in 1898, and the former, who was previously Medical Superintendent of the Worcester County and City and the Wiltshire Asylums, acted during 1916–18 as Chairman of the Board.

As announced in our advertisement columns this week, the festival service of the Guild of St. Luke will be held in St. Paul's Cathedral on Tuesday next, October 18th (St. Luke's Day), at 7 p.m., when the preacher will be the Rev. Father Waggett. On this occasion the Guild is offering special thanksgiving for peace, and it is hoped that the congregation will be a large one. Academic dress will be worn. Tickets of admission can be obtained on application to the Rev. H. Kirkland-Whittaker, M.D., Chaplain's House, Banstead Downs, Sutton, Surrey, or to Mrs. Scharlieb, M.D., 149, Harley Street, W.

Demonstrations of specimens in the Museum of the Royal College of Surgeons of England will be given by Professor Shattock and Sir Arthur Keith in the theatre of the College on Mondays and Fridays at 5 p.m. from October 24th to November 11th. They are open to advanced students and medical practitioners.

A Chadwick Public Lecture on "Plant diseases and their relations to diseases in man" will be given by Professor V. H. Blackman, Sc.D., F.R.S., in the Lecture Room, Chelsea Physic Garden, S.W.3, on Thursday, October 20th, at 5.15 p.m. The chair will be taken by Sir William Collins, Chairman of the Chadwick Trustees. The gardens will be on view before the lecture.

Lieutenant-Colonel R. McCarrison, I.M.S., will give the Mary Scott Newbold Lecture before the College of Physicians, Philadelphia, on faulty food in relation to gastro-intestinal disorders, on November 11th, and the de Lamar Lecture before the School of Hygiene, Johns Hopkins University, on November 14th. On November 1st, at the Harvard Medical Society, Boston, he will speak on deficiency diseases and disturbances of internal secretion, and will address the Royal Canadian Institute on November 5th. On November 21st he will give the Hanna Lecture at the Western Reserve School of Medicine, Cleveland, on faulty food in relation to endocrine disorder; and the Mayo Foundation Lecture, at Rochester, Minnesota, on the etiology of goitre, with special relation to fats, on November 30th. He is to speak at the New York Pathological Society on November 9th, and at the Institute of Medicine, Chicago, on November 5th.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

The Show Season and a Year's Development.

Twelve months have passed since the last motor show season in Europe. Last year, in spite of difficulties with respect to labour and raw material, transport and coal troubles, the Society of Motor Manufacturers and Traders expanded its enterprise to an unprecedented extent by leasing the White City to supplement the accommodation at Olympia; whereas, by contrast, the French industry abandoned its projected show in the Grand Palais in October, and there was no exhibition in Berlin. This year there has been a complete change, the Germans opening the season last month with an exhibition which produced quite surprising results in respect of the trade done, particularly for export. The French industry is now holding the sixteenth of its twice interrupted series of yearly exhibitions in the Grand Palais, Paris. On November 4th the Society of Motor Manufacturers will open its motor car exhibition, under the patronage of the King, at Olympia, Kensington, and at the White City. Last year car prices were absurdly high, and relatively few firms introduced new models. This year nearly all firms will be introducing new models. Practically no firm in the world's industry will introduce a more powerful model; whereas the leading makers supplement their enterprise by the introduction of smaller cars. Prices are proportionately lower, and fuel costs have come down, though they are nothing like as low as they should be. Nevertheless, it is possible to buy petrol at just under 2s. 6d. a gallon for the lower grade, against the equivalent current price of approximately 4s. 2d. ruling at the moment in Paris. In this connexion, however, it must be pointed out that prices vary, not only from day to day, but also as between one centre of purchase and another throughout France; therefore it is almost impossible to give an exact idea of the situation beyond the fact that fuel costs very much more there than in this country. Moreover, apart altogether from the influence which the high cost of fuel had in causing makers to devote great attention to supplementary air devices for securing more economical fuel consumption, we find that the world's motor industry is learning also to gear its cars lower so as to give proportionately better performances in the case of small scale machines in the way of smarter hill climbing, quicker acceleration, as in traffic and so forth—of course, at the cost also of reducing the maximum possible rate of travel on the flat.

A Year of Three speed Cars.

It has long been discovered that claims as to fast maximum rates of travel on the flat do not promote sales to nine potential purchasers out of ten, because we have long passed the period at which it first became possible to produce vehicles sufficiently fast for all reasonable purposes; whereas we have not anything like attained to the maximum degrees of acceleration the average motorist desires, as, for example, the doctor who has to use his car in the midst of traffic. The quicker a car can be accelerated the safer that vehicle is in traffic, because the more quickly can it be manœuvred out of an emergency. Again, time can be saved by prompt hill-climbing. That has been had in mind, particularly by the British industry, which has again led the way in the reduction of weight, and by the French industry in its new style cars, which are by comparison much more conventional but still quite notable vehicles. Yet this is a year of three-speed cars, from the twelve-cylinder Super Fiat of 40/60-h.p. to the new 5-h.p. Citroen two-seater cycle cars. The reason is that the new style gearing and the engine facilities now standardized makes possible this weight carrying. Incidentally the odd situation obtains that the country that alone profited by the war—the United States of America, whose national wealth was more than doubled by it—finds it practically impossible to export its cars to the Continent by reason of the exchanges; whereas the country that lost the war, Germany, has secured such vast orders, particularly for export, that her motor passenger-car building industry was never busier than to-day. Despite what might be held to be a prohibitive import duty and the luxury tax, the French industry is scared at the prospect of German competition, and the point is beginning to be realized in industrial circles in this country, too. Sensational types of German car development, such as the Rumpler, with engine in the stern and the control gear in the front, or of the freak exhibits in the Paris show, are of no more interest to medical men than are the vast number of cycle cars, and so-called light cars, introduced by the provincial French industry on the one hand, and on the other by firms more or less lacking post-war factory equipment in this country. Above all things, the medical man must have sound engineering work. The large engineering houses of the world now have every opportunity to produce in as great quantities as their order books justify them in embarking upon.

Pedigree versus Nondescript Cars.

There is no lack of cars, nor is there any need to wait for delivery of them. Therefore medical men should buy what might be called pedigree cars, and take no risks in "here to-day and gone to-morrow" propositions. Importers of cars into this country and builders at home have alike announced their 1922 programmes early this autumn. Again, the lesson of this year's racing for the Blue Ribbon events, wherein really useful experimental work is done, is that the 3-litre types of engine, which before the war were called small cars or voiturettes, are now too big even for the large car class. This was first brought to light when Ballot ran a 2-litre engine car, now standardized and shown in the Grand Palais, in the 3-litre French Grand Prix Race, and attained a mean speed of 68½ miles an hour without sustaining the tyre trouble that handicapped the 3-litre engined vehicles. A few months afterwards, on the Brescia circuit in Italy, a team of four Bugatti cars, with 1½ litre engines only, put up remarkable speeds, the leading vehicle doing approximately 72 miles an hour on a course which is chosen for its absence of turns and relatively level and straight going. The culminating surprise of all, therefore, came when the French had their Voiturette Grand Prix Race, also for cars with 1½-litre engines only; it was run on the Le Mans circuit, which abounds in corners, variations of gradient and abrupt curves; therefore, instead of a car getting under way and running almost without check to the finishing post, it is tested in really useful fashion by being subjected to constant braking, changing of gear and acceleration. In those circumstances a team of three Talbot-Darracq cars that come under the 10-h.p. tax in this country carried the day, the winner achieving a mean speed of 72 miles an hour and thus utterly eclipsing the astonishing 2-litre performance earlier in the year which had led a number of Continental manufacturers to hit on that size of engine for standard cars, as witness the introduction by Belgium of the Minerva 2-litre double-sleeve valve-engined type; and by Panhard-Levassor, and others, of machines also coming within this category. Nor is the development without parallel in this country, as witness the introduction by Sunbeam of a nominal 14-h.p. 2-litre, four-cylinder overhead valve-engined car with three-speed gearbox.

It will be noticed incidentally that, alike on the Continent and in this country, whereas the three-speed gearbox was wont to be attacked as inadequate before the war, quite a number of firms are using the type in face of such successful practice over years by firms such as Rover with their 12-h.p. vehicle, and later with the two-cylinder 8-h.p. type, and on the other hand by Vickers's concern, Wolseley, with their nominal 15-h.p. four-cylinder and 10-h.p. four-cylinder overhead valve types. The fact is, modern engines can be made so flexible and efficient, while nevertheless coming under low Treasury ratings, that there is no occasion to incur extra weight and complication by fitting four speeds forward. Of course, if an engine has a narrow range of useful revolutions, the case is different. But there is no occasion nowadays to concern oneself with other than modern motor engineering practice.

A Guide to Car Selection.

The time of the London motor show is so close at hand that those medical men who have it in mind to purchase cars will find it pay them, unless they have individual reasons for having made their choices already, to await the opening of the exhibition in London in the first week of next month. There everything that matters on the world's motor market—and, alas! much that had better

never have been built will be placed in convenient juxtaposition whereby type can be compared with type. Nor need the large number of exhibits worry the medical man in the least, in that, at most, twenty types will be all that will concern any individual. There is no need to concern oneself with shoddy stuff, or with material produced by other than the firms which have adequate production resources. Nor is there need for medical men to embark on experiments, as by acquiring a new model rushed on to the streets in frantic haste to have something ready for the show, as some firms are doing, in that some of the sound types which were new, and to some extent experimental, in the hands of the public twelve months ago have now been "tried out" by motor users in hundreds. As a result a number of lessons have been learnt and the necessary improvements have been incorporated in the vehicles in question, which are now on sale, moreover, at lower prices. Most of the leading manufacturers can tell the inquirer right away what are their prices for the 1922 season, in which connexion there have been appreciable reductions practically all round. In the case of non-wasting assets, which alone concern the medical man—by which I mean cars designed on post-war lines to suit post-war conditions—the reductions are less drastic than in the case of stocks that may be said to hang heavy on vendors' hands because there is no demand for them by reason of their old-style design. In the case of the most modern designs the reductions range from 10 per cent. to 12 per cent.; in which connexion it must be had in mind that such design invariably indicates that the given vehicle is likewise cheap as to taxation, maintenance, and running costs, being economical of tyre and fuel consumption. Vast improvements have been made in springing. Notably such developments as the 10-h.p. and the 15-h.p. Wolseley system have had much to do with reducing tyre wear. This finds an echo in some fresh French enterprise. Our neighbours, however, still largely use half elliptic springs for the rear suspension. But the British lead of the full cantilever is favoured by Renault, Berliet, Darracq, Fiat, and many others for their latest models.

The Scale of Price Reduction.

Some notion of the scale of price reduction in the case of proved and unproved types may be had from the fact that the two-cylinder, air-cooled, three-speed, worm-driven 8-h.p. Rover car, of ample body accommodation, has now been reduced to 230 guineas. There has been a corresponding reduction in the cost of the 12-h.p. water-cooled four-cylinder type. The 10-h.p. Wolseley (complete) specification two-seater is now retailed complete at £475, this being a type of vehicle that is as handy in traffic as it is surprising in hill climbing and speed performance in the open country; in this connexion it is to be borne in mind that it will give thirty-eight miles to the gallon touring across country in spirited fashion. Again, the 15-h.p. Wolseley chassis is reduced to £615. All these vehicles, moreover, are produced in improved form, as the result of a year's service in the hands of the public, the designs being so notably original and sound that they are being paid the compliment of very extensive imitation. In another direction progress may be illustrated by citing the introduction, by Daimler, of a four-cylinder, £20 tax, sleeve-valve engined chassis complete at £700, which is capable of accommodating the largest classes of covered coachwork for town service; by Armstrong-Siddeley of a new six-cylinder, overhead valve engined, £18 tax chassis at £575 only, the vehicle being furnished complete with saloon coachwork at £895; by Austin a 12-h.p. four-cylinder type to retail at about £550 complete; by Singer of a nominal 15-h.p. six-cylinder type; Sunbeam of three-speed, cantilever spring, 14-h.p. four-cylinder type with overhead valve engine; by Vauxhall of a nominal 14-h.p. side-valve four-cylinder engine car with three speeds forward at £750 the complete vehicle; by Talbot-Darracq of a 10-h.p. four-cylinder overhead valve engined type with cantilever rear suspension; by Standard of a smaller four-cylinder type than the already well-established model; by B.S.A. of a nominal 10-h.p. air-cooled 90° twin-engined, three-speed Lanchester-worm-driven small car to retail complete at £340; by Horstman of a 10-h.p. car of original construction; by Belsize of a Bradshaw designed nominal 9-h.p. air-cum-oil cooled twin-cylinder car to retail at about £300; and by Wolseley of a nominal 7 h.p. flat twin-cylinder, water-cooled, side-valve engined, three-speed, worm-driven, quarter-elliptic sprung two-seater car. Turning to the foreign industry we have, among approved undertakings, a series of remarkably low prices for 1922 in the case of Fiat. Among the new French types the 11-h.p. four-cylinder Delage, with side-valve engine, retails at a chassis price of £575 or as a four-seater complete at £725 in this country; the 10-h.p. four-seater Citroen has come down to £395; the new 5-h.p. 55 mm. bore by 89 mm. stroke four-cylinder two-seater Citroen, introduced at the Paris show, sells in France at the equivalent of £170; and so on. Panhard introduces the smallest sleeve-valve engine, a nominal 10-h.p. car of 1,187.51 c.cm.; Berliet a light 20-h.p. model; while Renault has a small 10-h.p. type and Voisin introduces a small 12-h.p. type as well as an 8-h.p. sleeve-valve type; and 10-h.p. models are brought forward by Peugeot, Delahaye, Rolland-Pilain, and Chenard-Walcker, among many other well-established car builders. In short, whether among proved models or new style cars by the principal makers there is no lack of choice; nor need there be any delay as to delivery.

How to Judge a Car and its Salesman.

Some medical men stand in need of advice as to how to judge a vehicle when he is being subjected to what Florio would style the "wordy wily beguilies" of the able salesman. For example, this is the period at which petrol and tyre economy—in other words, running costs—are of prime importance; therefore, no sooner does one vehicle possess some particular point of merit in this connexion than, of course, it is claimed for every other one. Thus, where good suspension resulting in lightness on tyres is claimed, it is well, when a car is being tried, to watch whether the tyres are flat. Often poor suspension is hidden by running demonstration vehicles with relatively soft tyres, which is the exact opposite of tyre economy. Again, the fuel consumptions claimed are usually quite impossible. Neither is an R.A.C. certificate much good in this connexion, because the routes chosen are probably not the type the given user has to traverse, apart from which the vehicle will be demonstrated in the hands of experts and specially tuned up.

The average medical man runs, as a rule, relatively a short distance between his cases, therefore his engine is always getting cooled. For this reason the air-cooled engine is, among the types on cheap cars, not an impossible proposition for him. Of course, it is easy to abuse an air-cooled engine, which may be defined as running it fast before a following wind. Even so, if it becomes overheated all that has to be done is to ease it for a spell. Moreover, British roads are so devious that it is rarely one runs quite away from the wind for more than a few minutes at a spell. Indeed, the troubles encountered by those who know how to manufacture air-cooled car engines are not so much in regard to cooling as to silencing. This is one of the reasons why the Rover car is so clever. It runs very quietly, and it does not hold out the lure of great speed. On the contrary, the maximum rate of travel of the vehicle is limited strictly. Yet it is adequate. The engine size shows that the whole structure is stressed lightly. This makes for success. By contrast, a number of the air-cooled cars brought forward this year with a view to competing for the great market that Rover has opened hold out the inducement of greater speed. That way trouble lies. The air-cooled method is easy enough if you do not stress it; but the moment you do so you begin to court trouble. Again, the actual economy of the Rover is notable, forty-five miles to the gallon being quite ordinary.

Another interesting thing about the development of these twin-cylinder engines, whether of the air, air-cum-oil, or of the water-cooled type, is that they owe their evolution to the practicable stage primarily to the motor-cycle industry, not to the motor-car one. The flat opposed twin-cylinder motor is a type that has a very good balance by contrast with the vertical twin-cylinder engine, which was a popular early type that fell out as soon as manufacturing methods were developed to enable four cylinders to be bored in a single operation, thereby making negligible the difference between boring a small four-cylinder block and boring an equivalently larger two-

cylinder block, a type of construction that has inherently a bad balance. Thus we find in the case of Wolseley, who pioneered even the single cylinder horizontal engine with chain drive, made when Sir Herbert Austin was the mainspring of the enterprise in the early days, ultimately abandoned it as a type, whereas the flat twin engine is justifiably employed as the latest practice for cheap car production in the form of the water-cooled 7-h.p. Wolseley. Nevertheless the French makers chiefly favour four vertical cylinders, as instance the water-cooled 6/8-h.p. Mathis. The extensive use of the "hot spot" for warming the mixture in the induction pipe before it enters the cylinders makes for economy as well as for convenience.

Competition between Air and Water Cooling.

These developments have largely been made possible by the frame and suspension design evolved by the Vickers Wolseley concern when they made the Stellite car before the war, as instance the quarter-elliptic springing and the abbreviated frame which characterizes the 10-h.p. and the 15-h.p. Wolseley cars, as well as the new 7-h.p. variety, the 8-h.p. Rover, and the 10-h.p. B.S.A. A development is the rapidly increasing use of the disc or plate type of clutch in combination with three speeds and worm-drive in the back axle. Evidently during next year there will be quite a battle in the small car market between the water- and the air-cooled type of engines, also between twin- and four-cylinder constructions. Mr. Edge is of opinion that the air-cooled type is doomed; but I should hesitate to endorse this view so long as manufacturers proceed on such sound lines as Rover, whose car, now obtainable at the 1922 price, constitutes a real link between the motor cycle and side-car proposition and the motor car, combining as it does motor cycle costs with car service, as witness the amplitude of the body accommodation—a point that seems to have escaped nearly all who seek to enter the market thus created. The French produce a number of cycle-cars, chiefly of no manufacturing or material merit, in which, it seems to be imagined, the world is wishful to progress at great speed and in a sensational fashion, instead of under refined and economical conditions.

From time to time this year a section of the trade and press that objects to the current system of motor-car taxation in this country has put abroad rumours to the effect that the Government is going to abandon the present scheme. That, of course, is manifestly absurd in that the Treasury has to reap a year's revenue from it, and the cumulative results, quarter by quarter, show that anticipations as to yield have been more than realized. Moreover, motorists as a whole have not felt hardships from this. You cannot legislate for the benefit of the manufacturer or user of one make of car and penalize the majority of manufacturers who develop in other directions and the users of their machines. Whether they are British or Continental built cars, all the new style motor cars of the economical sort, which concern eight users out of ten, come off very well under our new taxation. Some hold that there can be no future for these small car constructions, because they do not accommodate four passengers apiece. Unfortunately, some of them are made to do so on occasion, very few of them on lines that can be praised. The Standard is perhaps an exception in this connexion. But for the most part such chassis should be used with two seats and a dickey if really successful service is to be got. It is not so much that the machines by the responsible houses break down as that the going is relatively rough and the accommodation wofully cramped. Unless a small vehicle is produced by a really responsible house, the four-seater design can be described only as unreliable. The costs of running these smaller classes of vehicles are so modest as to widen the market for them every year. The public is now realizing that, though some of them are relatively expensive to buy, the difference in cost between them and the cheapest products of their type is saved in the first year or eighteen months of use. The new scale of price, however, in practically all cases reveals that the vehicles are actually cheap to buy. European motor manufacturers are in the main working on the right lines, looking to long-wearing life as well as economy of service. France and Italy are doing sound business by following this policy. We shall see great developments in this connexion, notably through the aid of racing as an experimental enterprise. In the course of next year in the Isle of Man there will be an event for 3-litre engined cars for the Tourist Trophy, and another for 1½-litre engined cars, apart from which, on the 22nd instant, there will be a 200 miles race at Brooklands for 1½-litre engined cars, as well as for cycle cars having engines of 1,100 c.cm. Next year's Grand Prix race for large cars in France will be for engines of 2-litres volume. Therefore the small high efficiency engine will be tested increasingly with the lapse of every twelve months. A hint of the nature of the value of the development may be had from the fact that limited fuel consumption and the fitting of coachwork will constitute features of one of the Automobile Club de France's Grand Prix races next year. In short, the era of the small economical engine and the durable chassis is already at hand and uninterrupted development in this direction is assured.

England and Wales.

Endowment of a Chair of Bacteriology at Leeds University.

Sir Edward Allen Brotherton, Bt., M.P., has given £20,000 to the University of Leeds for the development of bacteriological study and research, more particularly in the interests of public health. This is the largest individual gift ever received by the University of Leeds. Sir Edward Brotherton, who is an ex-Lord Mayor of Leeds, has been actively interested in many branches of public life, and a number of good causes have benefited by his generous help. But perhaps nothing has made a stronger appeal to him than the problem of improving the health of the community, and in this direction he has been profoundly impressed by the importance of the study of bacteriology. He is Chairman of the University Advisory Committee on the Department of Pathology and Bacteriology. This body includes representatives of the Weekly Board of the General Infirmary, of the Leeds City Council, and of the County Councils of the North, East, and West Ridings. The department of the University of Leeds with which this committee is concerned is engaged in research into pathological and bacteriological questions as well as with the instruction of students, and also performs the bacteriological tests required by the Public Health Department of the city, by the General Infirmary at Leeds, and by other bodies outside the city. The volume of work thus undertaken by the University is now very large.

Manchester Radium Hospital.

The Manchester and District Radium Institute began work in 1915, and we have year by year given an account of the progress of its work. In 1920 the number of patients applying for treatment reached a total of 834, or 157 more than in the previous year. Recently Sir Edward and Lady Holt acquired and equipped a large residence near the Manchester Royal Infirmary as a hospital for the patients of the Institute. Lord Derby, who presided over the meeting at which the deeds of the building were handed over to the Lord Mayor of Manchester last week, said that the record of work done in the Institute showed that much suffering had been obviated or relieved.

Medical Evidence by a District Nurse.

A medical man sends us from North Wales an extract from the *Cambrian News* of September 16th, 1921, containing the report of a coroner's inquiry held at Penmorfa, Portmadoc, into the death of a single woman, aged 64, who had been living alone. No mention is made of the calling of any medical evidence, but it appears from the conclusion of the report that a district nurse's statement of the cause of death was accepted by the coroner: "Nurse Maggie Williams, district nurse, who had attended deceased, said she saw her a week prior to her death, when she complained of being unwell. She suffered from the delusion that she was ailing when she was not. On being informed that she had been found dead, witness made an examination and found that she had died of haemorrhage, followed by suffocation. She had been dead for several days. A verdict of death from natural causes was returned."

A woman is found dead in her house some days—apparently five or six—after she had last been seen by neighbours. No medical evidence is called, but instead the district nurse is permitted to state her opinion that the woman died of haemorrhage, followed by suffocation. This evidence appears to have been accepted in spite of the fact that this same nurse alleged that the dead woman suffered from delusions that she was ailing when she was not. As the woman died this seems to have cast some doubt on the value of the nurse's evidence. However this may be, to call a nurse to give evidence as to the cause of death is, we believe, an innovation, and, in our opinion, a most undesirable one. So far as can be gathered from the short report from which we have quoted, the circumstances of this inquiry call for comment.

Scotland.

New Professors at St. Andrews.

At the opening of the winter term of St. Andrews University the customary ceremony took place in the United College Hall, Principal Irvine presiding. The newly appointed professor of chemistry, Dr. Robert Robinson, F.R.S., and the newly appointed professor of bacteriology, Dr. W. J. Tulloch, were inducted to their respective chairs. In welcoming the new professors Professor Irvine remarked that there was something appropriate in the fact that on the same day a chemist and a bacteriologist should be inducted to their professorial chairs, for the science of bacteriology was as much the offspring of chemistry as of biology.

Edinburgh Royal Infirmary.

At the last meeting of the board of managers of the Edinburgh Royal Infirmary a minute was approved by which there was placed on record the managers' appreciation of the valuable services rendered to the Royal Infirmary by Dr. J. Malcolm Farquharson, whose term of office as surgeon to the ear and throat department expires on October 29th of this year. Dr. Farquharson was appointed to the department in December, 1904, and in conveying to him their hearty thanks for the work which he had accomplished the managers invited him to become a consulting surgeon to the ear and throat department.

Professor Alexis Thomson on Radiation.

In his opening lecture in surgery at the University of Edinburgh, on October 5th, Professor Alexis Thomson dealt with the subject of radiation. He said that there was unanimous agreement in the medical profession that neither *x* rays nor radium could take the place of operation, and they were obliged to confess that operation was still the most important way of getting rid of malignant disease. What radiation did do was to complete the cure that operation might initiate, and now it was almost a routine for operation in such cases to be followed as soon as possible by the introduction of radium into the wound, or by the subsequent exposure to *x* rays. He thought it was already possible to say that this routine was giving a larger percentage of cures. The second achievement of radiation was to convert an inoperable tumour into an operable one; but when putting radium into a tumour with a view to performing an operation at a later stage it was most imperative that the operation be performed at the right time. The third advantage of *x* rays and radium was that they could palliate in hopeless cases; they could improve the condition of the patient by relieving pain, though, unfortunately, in the early stages of malignant disease pain was usually absent, and many serious conditions thus escaped attention. For the most successful results in radiation the surgeon and radiologist should work together, and the medical profession must look to the co-operation of the radiologist and the surgeon for the best results in the future.

The late Countess of Eldon bequeathed £500 each to the Cripples Fund of the Lord Mayor of London, the Victoria Hospital for Children, the Cancer Hospital, and the Hospital for Diseases of the Heart, and £250 to the Evelina Hospital for Children.

Correspondence.

On the Operation of Prostatectomy.

Sir,—We are deploring the loss of one of the most eminent surgeons of our time, Sir Peter Freyer; and no one can have read without cordial appreciation the interesting notices of his personal qualities, and of his career, that have appeared in the columns of the press, both lay and medical. Sir Peter Freyer was a man of strong and original character, and remarkable for foresight and skill in his profession. If some of the statements made in the warmth of admiration and friendship seem to us to call for modification, we desire notwithstanding to associate ourselves no less warmly in the tributes now being paid to a distinguished and lamented colleague. At the same time we feel sure that Sir Peter Freyer's colleagues and friends are far from desiring to describe his achievements, great as they were, in terms inconsistent with truth, and of justice to other distinguished surgeons in the past whose memory we are no less bound to cherish.

To Sir Peter Freyer's qualities of character, invention, and skill, then, we desire to add our own testimony; but, after waiting a while lest we should seem in the least to detract from these tributes, we feel that, in respect of surgical history and of personal justice, there is something more to be said. So far as we have read the obituary notices it has been assumed in all, and in many explicitly asserted, that the modern operation of prostatectomy, as practically effectual, owed its origin and its first performance to Sir Peter Freyer. One writer says scornfully that "some German" had been put forward as his forerunner. We think that this writer—so far as his historical knowledge went—was hardly competent to express an opinion on the matter. A correspondent of the *Times* (September 10th, 1921) said very truly that Sir Peter Freyer's name will always be associated with the great operation of suprapubic prostatectomy; but he added the words "which he devised"; and then described the pitiable state of the victims of prostatic disease before his time. Not of all; we shall show that some of them had already obtained relief.

You, Sir, in the editorial notice of your issue of September 17th, say that "Sir Peter Freyer, on his return to India, may be said to have originated—he certainly perfected and brought into common use—the operation of suprapubic prostatectomy, one of the great advances of modern surgery." A statement so guarded, although containing some error, might not have called for adverse criticism, at any rate not at present. But in the same issue a notice by Mr. Thomson Walker is much less guarded. After claiming for Sir Peter the whole credit for this operation, he writes: "It would be as ungrateful as it is unnecessary to raise again the points of controversy that raged around Freyer's claim to have originated the operation of suprapubic enucleation of the prostate," etc. These words might seem a little arrogant did we not recognize in them the ardour of friendship; that they are excessive we propose to prove. We feel sure of Mr. Walker's good faith; but generosity and gratitude are due to all our great dead, not to one at the expense of another.

Now, Sir, let us set forth, so far as your limits will permit, some historical facts which are not matters of "controversy," but plain witness to truth.

Passing by for the moment earlier publications, at the meeting of the British Medical Association at Leeds in August, 1889, the late A. F. McGill, F.R.C.S., Professor of Surgery, Surgeon to the General Infirmary at Leeds, and Fellow of King's College, London, opened a discussion on "The treatment of retention of urine from prostatic enlargement." He confined his remarks to the chronic condition. His propositions were that the prostatic enlargements which gave rise to retention symptoms were not rectal but vesical; that they depended upon certain anatomical changes (which he described); that catheterism, if effectual for a time, soon began to fail; that to drain the bladder and to remove the cause of the obstruction permanently more radical measures were necessary; that for this purpose it was better to operate by a suprapubic than by a urethral or perineal route (which alternatives were discussed); that this operation

should be performed with certain means and precautions, among which were (we must omit much detail) the previous management of the bladder and "removal of the prostate, as far as possible, by enucleation by the finger, and not by cutting." He tabulated 24 cases, from the wards of the Leeds Infirmary, thus treated by his colleagues and himself. In estimating the results of these operations he set aside 7 cases as complicated (for example, by calculus); of the remaining 17, 4 deaths were due to the operation (these were of patients in very bad condition), another died of suppuration in the cavum Retzii, another of pneumonia during convalescence, 2 were still under observation in the hospital, one could not be traced. Of the remaining 10, 8 were completely cured, and had recovered full control of the bladder; of the other 2, in one "the operation was very difficult and unsatisfactorily completed," and the result after convalescence disappointing; in the other, after a recovery for eight months, a relapse occurred; the state of this patient also was extremely bad, and he became insane. Eight patients then, who had suffered from long-standing prostatic disorder, had done well, and the bladder had been fully restored to its function. At that time, of course, the operation could not be advised except as the last resource, when the patient was in advanced and menacing disease. In computing McGill's results this condition must be borne in mind. Yet Sir Peter wrote (D.U.O., p. 107): "Apart from the high mortality attending the (McGill's) procedure, it possessed the disadvantage that, though frequently followed by the subsidence of the most prominent symptoms, temporarily, at least (at most?), and rendering the employment of the catheter more easy, in a very large proportion of cases the bladder failed to regain its powers of expelling the urine." . . . "This was because only the prominent portions of the prostate in the bladder were removed." Were these reflections quite judicial?

In concluding his paper McGill pointed out that the priority in this operation belonged to Belfield of Chicago, who, as McGill himself discovered, had performed the operation in October, 1886. Now this report of twenty-four cases was not McGill's first publication on the subject. He had read to the Clinical Society in November, 1887, the notes of three cases, all successful, both immediately and permanently. In the *Lancet* of June 16th, 1888, his colleague, Mr. Atkinson, had published two more, as treated by McGill's operation; one of these was the patient tabulated by McGill who died of pneumonia. Another successful case was reported by Mr. Atkinson at the British Medical Association at Glasgow in 1883.

Now as regards enucleation, on which much stress is rightly laid: in 1889 Mr. Atkinson, while operating on one of his cases, to the surprise of his colleagues and his own satisfaction, enucleated and turned out the whole prostate. One of us who was present well remembers Mr. Atkinson's exclamation, "Look, McGill, what I have done!" This specimen, with many others, is still to be seen in the Leeds Pathological Museum. In his lectures on urinary diseases (p. 108) Sir Peter Freyer wrote: "On Dec. 1st, 1900, I performed a new and what seemed at first sight a very formidable operation for the radical cure of the disease—namely, enucleation of the enlarged prostate." In Leeds, from the day of Mr. Atkinson's happy demonstration, enucleation had been performed in this manner (in appropriate cases) as a rule. As by McGill himself, so by his colleagues, the capsule was incised with scissors and the gland dislodged with the finger. How can it be said, except by those who have never read McGill's papers, that "only the prominent portions of the prostate in the bladder were removed by McGill." Any experienced surgeon must realize that enucleation means either removal of the whole or the major portions of the fibro-adenomatous masses of the prostate, whether it is removed in one mass or in two or more pieces. As some evidence that enucleation was practised as a routine in Leeds, we make a chance reference to a paper by one of us in the *Lancet*, January 4th, 1896.

Of course we do not dream of questioning Sir Peter Freyer's good faith; but he cannot, and his disciples cannot, have read the literature of their subject. Had Mr. Walker before writing his sketch read McGill's classical paper of 1889, a paper wholly free from all egoism? Certainly Sir Peter never went down to Leeds to see these operations, or to inspect the specimens in the Museum. Had he done so we feel sure that he would have been among the first to recognize McGill's priority. May we gently suggest that London also is not without its provincialism. While, during the succeeding years, surgeons in London and other centres were running after phantasies such as vasectomy and castration, in Leeds McGill's operation was never "dropped" nor "died out" . . . "after enjoying a temporary and fitful notoriety" (D.U.O., p. 108). Is it "grateful" to the memory of this brilliant but unhappily short-lived surgeon, who indeed, while initiating "the greatest advance of modern surgery," had upon him a mortal disease (he died in 1890), to say that his work "got no hold on his generation"? If so it were, whose fault was that?

Once more: A method of operation has recently been proposed by which the parts affected can be brought into full view, and so dealt with more precisely. This advantage was not overlooked by McGill. A few weeks before his death he operated in this manner: Having placed the patient in the Trendelenburg position, he made a transverse incision through the abdominal wall just above the pubes, and then, opening the bladder also by a transverse incision in a corresponding position, he gave a perfect view of the parts. This operation was a complete success and the final result excellent. If we remember right, Mr. Hurry Fenwick was present on that occasion.

To Sir Peter Freyer's zeal, skill, and drive we owe the rout of vasectomies, castrations, and other follies; the persistent advocacy of a most beneficent operation; the improvement of it in many details; and, as aseptic surgery was elaborated, the judicious boldness which urged its performance at earlier and earlier periods of prostatic disorder, and so under less and less adverse conditions. Thus insistently and successfully he brought the method into general acceptance, and achieved a great work for which he will be remembered as one of the benefactors of mankind.—We are, etc.,

HARRY LITTLEWOOD,
CLIFFORD ALLBUTT.

Cambridge, Oct. 5th.

INFLUENZA (?) WITH ERYTHEMATOUS ERUPTION.

SIR,—The letter, published by you on October 8th, on an erythematous rash being met with at present in Ireland is of great interest.

Last April I encountered this rash on a patient complaining of "palpitation." The erythema was confined to the face, but on both forearms and both shoulders there were present a number of spots which resembled flea-bites. They were, however, certainly not flea-bites. They spread to the groins and legs and did not disappear for about ten days.

About a week later I developed the same rash myself. Its appearance was heralded by slight giddiness and nausea and some joint pains. I noticed that after every meal there was a sense of heat and burning in the skin, which lasted a short time. After this I saw several other cases—in all twenty-six. The following are notes of one of these:

> A woman noticed marked tenderness of her gums and a painful area near the palate. She felt markedly drowsy. About six days later there was a sense of fullness in the abdomen, some cyanosis, very evident "puffiness" under the eyes, and what was correctly described as a "measly look." There was abdominal pain. The condition got worse and the facial blotching resembled rubella. There was some blotching on the arms and the "flea bite" rash appeared on arms and shoulders. Burning of the skin after a meal was also marked. Twitching of the eyelids was complained of. The rash faded in about five days, leaving a sense of great exhaustion. There was a branny desquamation which was considerable. The flea-bite spots disappeared much more slowly. This patient has had a slight relapse of the condition recently.

The other cases were, in the main, similar. The curious thing about the condition seems to be its tendency to relapse. The flea-bite spots reappear, though in a much less evident form. There is gastric disturbance and some pallor. There is also a tendency to palpitation, faint feelings, and giddiness. It is this last fact about the disease which seems to mark it off from influenza—though I am not in a position to discuss its bacteriology. Its effects on the heart more nearly resemble those of a prolonged infection—for example, subacute rheumatism—than those of a sharp but passing attack.—I am, etc.,

R. M. WILSON.

London, W., Oct. 9th.

Sir,—With regard to the letter from Dr. J. E. H. Gatt about this type of influenza I may say that during the last great influenza epidemic I saw two cases with a scarlet rash, and I at once told the patients that the condition was influenza with a rash and not scarlet fever. The temperatures ranged from 101 to 103. The rash existed for some days and it was more like the scarlet rash of scarlet fever than anything else. The throats were scarcely affected. There was no desquamation and each case recovered without any after-effects. I did not see any other rashes in the district at the time. There is not the slightest doubt as to the occurrence of these cases, but as to their nature I cannot say.—I am, etc.,

Glandyfi, Cardiganshire, Oct. 8th. D. Owen Williams, M.B.

PATHOLOGY OF INSANITY.

Sir,—A few days ago the Bishop of Kensington presided at a conference of a Spiritual Healing Fellowship at Church House, Westminster. For an account of the proceedings I am indebted to the London daily papers. I quote from one of them:

"Dr. Montagu Lomax, whose book describing his experiences as physician in a lunatic asylum has recently created so much stir, spoke about the wide scope available for spiritual healing. Psycho-analysis he sweeps aside. Of merely material medical treatments he knows the futility. In spiritual forces against mental weakness he has profound belief. And then Dr. Lomax expressed a rather startling belief in demoniacal possession and reincarnation. 'While I believe that the ills men suffer are the consequences of their own misdeeds,' he said, 'I do not necessarily mean in their present existing life, but in a previous incarnation.' The Bishop's fine head became a little more covered by his hand, and his manner a little anxious at this pronouncement by Dr. Lomax."

A quotation from a second London daily newspaper is as follows:

"A paper on spiritual healing in relation to mental disease was read by Dr. Montagu Lomax, who said he believed that insanity was sometimes much more than the uncontrolled riot of the subconscious mind. He believed that in many cases, especially those of epilepsy, acute mania, and melancholia, the subconscious mind of the moment was not uncontrolled, but that it was controlled by an evil and obsessing discarnate entity."

Has Dr. Lomax been correctly reported?—I am, etc.,

October 5th. M. H.

Sir,—The causation and pathology of insanity are complex and obscure subjects on which enlightenment has been a very slow and disappointing process. Many have been too ready to account for this by the easy method of laying the whole blame on asylums and asylum doctors; but this is unjust, for it must be admitted that our knowledge of the physiology of mental operations is still in a very primitive condition, and a psychology of any practical value whatever in medicine is only now being created. Can it be alleged that in the analogous problems connected with epilepsy, presumably of a much simpler nature, in spite of special hospitals and the application of the ablest intellects engaged in medicine, our insight is any more satisfactory?

These reflections have been elicited by reports in the daily press of a paper "On spiritual healing in relation to mental disease," by Dr. Montagu Lomax, read at a conference at Church House, Westminster, presided over by the Bishop of Kensington. As is well known, Dr. Lomax is the author of a book (reviewed in the British Medical Journal of August 20th) in which the administration of asylums, with the exception of the Metropolitan and the Scottish, is adversely criticized; at the conference he seems to have entered upon a new field of inquiry and speculation, for, if he be correctly reported, he has given expression to views on the causation and pathology of insanity which, to say the least, are in "an asylum doctor" most unusual, if not unique, and if true must create as much stir in scientific circles as his work has done among those engaged in administering asylums. It is reported that "Dr. Lomax expressed a rather startling belief in demoniacal possession and reincarnation." "While I believe that the ills men suffer are the consequences of their own misdeeds," he said, "I do not necessarily mean in their present existing life, but in a previous incarnation." Also, "He believed that in many cases, especially those of epilepsy, acute mania and melancholia, the subconscious mind of the moment was not uncontrolled, but that it was controlled by an evil and obsessing discarnate entity." These views are of course not original, for they have been and are still held by primitive man in many parts of the world to account for mysterious psychic phenomena; but many would read in another book the elaboration of these themes and the evidence of their truth by the cultured and able pen of Dr. Lomax with great interest. In passing, it may be said that one of Dr. Lomax's chief complaints in his book is that he was not sufficiently consulted regarding his cases by the medical superintendent of the asylum in which he was a temporary medical officer during the war; but if the above reports of his views on insanity be accurate, it is not altogether surprising that co-operation was not perfect. Dr. Lomax in his book records his great admiration for the late Dr. Charles Mercier, but there can be little doubt as to the value that eminent psychiatrist would have attached to the views of any assistant medical officer entertaining such opinions.—I am, etc.,

October 9th. North Britain.

TREATMENT OF SYPHILIS IN WOMEN.

Sir,—I notice that in the discussion, reported in the Journal of September 24th, on the treatment of syphilis Dr. Swayne uttered a warning against the use of large initial doses of salvarsan substitutes in women. It is not reported that he said what he considered "a large initial dose." He attributes the death of a girl of 20 to "a large initial dose," though he admits he does not know the dose she received.

I have recently had a fatal case in a girl, aged 23, after a second dose of 0.45 gram N.A.B. given after a week's interval, during which potassium iodide was administered and no mercury. The first dose had produced marked benefit both locally and generally. The second dose produced marked benefit locally, but after four days the patient returned to hospital in a moribund condition.

This case was clinically tertiary, probably congenital, and very dirty locally and generally. At the *post-mortem* examination she was found to have a persistent thymus and a haemorrhage in one suprarenal capsule; the kidneys were congested and their capsules adherent in patches; there was atheroma of the arteries at the base of the brain, but no haemorrhages nor increased cerebro-spinal fluid, nor meningitis, though the history indicated that the patient suffered from gradually deepening coma from the evening on which the intravenous injection was given; the relative's words were that she returned home "not properly out of the chloroform." Going home involved a railway journey, and there is room to doubt whether she obeyed instructions as to preparing herself for the injection beforehand or resting after it.

It is my observation that congenital cases do not tolerate large doses, but I have not hitherto had reason to regard 0.45 gram as a large dose.

The possibility has occurred to me that secondary organisms may make patients peculiarly susceptible to N.A.B. I should be glad to know if this association has been observed in other fatal cases. If so, should we withhold salvarsan substitutes in thoroughly dirty cases until the patient has first been cleaned up, or can we regard 0.3 gram as a sufficiently small dose?—I am, etc.,

Cardiff Sept 29th. Erie Evans.

RHEUMATISM AND BACON.

Sir,—In the Journal of October 1st there appears an interesting letter under the heading "Rheumatism and Bacon," in which the writer comes to certain conclusions after sixteen years of observation, and advances a thesis which he hopes will be confirmed or refuted. Having suffered severely from the "muscular rheumatism," "lumbago," "myalgia," and "neuritis," to which he refers, and having during a similar period paid special attention to the rheumatic type of disease and treated a very considerable number of cases, I would like to make a few comments.

In the first place it is unfortunate that the term "rheumatism" is still so extensively used and abused. Most cases diagnosed as such have no relation, as far as we know, to acute rheumatism or rheumatic fever, and are

better classified under the now generally accepted term "fibrositis," which explains the pathology of the condition.

We do not as a rule know the definite cause of the initial fibrositis, but once fibrous tissue has become thickened there are many causes which will produce pain, stiffness, or discomfort.

It is extremely doubtful if any one article of diet is more liable to cause fibrositis than another, but it appears certain that any form of diet which increases intestinal fermentation or decomposition may precipitate an attack. The old saying, "One man's meat is another man's poison," is very true in this connexion, and if any definite foodstuff can be proved to be the *fons et origo mali* it should be avoided; otherwise sufferers from fibrositis, in my experience, do best on an ordinary mixed dietary.

Bacon is not indigestible if suitably cooked, and bacon fat has the great advantage that it can be easily digested by those who have difficulty in digesting other fats. I have treated many Jews suffering from fibrositis who had never eaten bacon, and, on the other hand, have seen many patients cured who had always eaten bacon and continued to eat it every morning at breakfast. I have suffered from fibrositis during periods in which I had not partaken of bacon, and have had no recurrence during periods when I ate bacon freely. I therefore do not agree with the statements—"bacon is unsuitable for rheumatic people," "it may be called a poison to rheumatic people," and "rheumatic people (muscular type) are always bacon eaters."

I do not know of any evidence to prove that "bacon excites an attack of rheumatism."

Aspirin I prefer to sodium salicylate in fibrositis, as it gives more efficient relief from the pain, and certainly bacon does not prevent its beneficial action. As a rule the results obtained from medicinal and dietetic treatment in these cases are disappointing.—I am, etc.,

K. R. COLLIS HALLOWES,
October 3rd. Physician, Peebles Hydropathic.

SIR,—In suggesting some relation between bacon and rheumatism Dr. Drinkwater states that "those who never touch bacon or ham or other salted meat seldom, if ever, complain of rheumatic pains." Jewish people are by no means immune from rheumatism. I believe it is of common occurrence among them. The majority, however, do not partake of bacon or ham, and other salted meat is not a frequent dish.—I am, etc.,

Cambridge, Oct. 4th. S. LEVY SIMPSON.

SODIUM BIBORATE IN EPILEPSY.

SIR,—I was very glad to see Dr. McCartney's second contribution on this subject in the JOURNAL of October 1st after his first contribution of October 9th, 1920. I tried the combination of potassium bromide with sodium biborate on several of my patients with very satisfactory results. I also induced some of my friends to try it, and their results have been equally satisfactory. On my holiday this year I visited a large asylum with 800 patients and a goodly number of epileptics, which I had visited last year, and the two doctors there had been trying it, but their results were not so satisfactory as mine. This may be due to various causes, such as traumatism or long chronicity, but I think there must be a large number of cases in which the combination must act very well. Dr. McCartney's results are remarkable, and I think a wider exhibition of the remedy ought to be encouraged and further notes of experiences given in the JOURNAL.—I am, etc.,

JAMES CRAIG, L.R.C.P. and S.Edin.
Dennistoun, Glasgow, Oct. 5rd.

ZYMOTIC DIARRHOEA AND EARTH TEMPERATURE.

SIR,—In your article headed "Zymotic diarrhoea and earth temperature" (August 20th, p. 292) it is stated that the observation of Ballard regarding the correlation of summer diarrhoea and the rise of the 4 ft. thermometer above 56° F. has been strikingly illustrated this year, although the chain of events connecting these two facts is unknown. The prevalence of flies has been suspected as the cause, but as they are often numerous in spring and late autumn, when the 4 ft. thermometer is below 56° F., there is still a missing link. May I suggest a possible one?

As the result of following up observations first made in India in 1909, I am of opinion that the only important method of enteric infection by flies is by means of their excrement, and, further, that the bacterial flora of the fly's intestine depends on the first meal of the newly hatched larva; that is to say, that a fly bred in horse manure passes in its excrement during the whole of its life the bacteria of the manure it was bred in. Similarly, a fly bred in faecal matter passes the bacteria of the faeces, thereby, in suitable cases, becoming a true host and carrier of typhoid bacilli. Evidence in support of this view was published in the *Journal of State Medicine*, September and October, 1915.

The same theory would account for the fact that in France, for some unknown reason, bacillary dysentery became very prevalent every August and September, subsiding again in October. Thus in 1918 the figures for August and September were 5,000 cases in each month, while the average for the remaining ten months was about 700. In August, 1918, when I was A.D.M.S. of the Fourth Division, I found flies breeding in faecal matter buried in shell holes on our front trenches, dysentery having at this time become prevalent. In October and November we occupied billets left by the Germans, and found the sanitary conditions absolutely filthy; yet, although there were plenty of flies, there was not only no dysentery, but scarcely any diarrhoea. Considering the cold weather these flies could only have been bred in fermenting horse manure. As a contrast to this the Americans who followed the Germans in August and September of the same year had a very severe outbreak of dysentery. In these last-named months it was quite hot enough for flies to hatch out in faecal matter.

As regards summer diarrhoea, then, my suggestion is that till the 4 ft. thermometer reaches 56° F. flies can only breed in horse manure, which does not contain the germ of summer diarrhoea; there can therefore be no epidemicity resulting, in spite of the insanitary conditions in privy middens and earth closet towns. After the temperature reaches 56° F., however, flies can also mature in garbage or other refuse containing the germ of summer diarrhoea, and epidemicity results.—I am, etc.,

N. FAICHNIE,
Port Elizabeth, South Africa, Sept. 19th. Colonel Army Medical Service (retired).

WOMEN AT CAMBRIDGE.

SIR,—Although we hold diverse views on the position of women in the University of Cambridge, we have determined to support the compromise contained in Grace I to be laid before the Senate on October 20th. If this were carried, women would be admitted to degrees; they would be represented on the Boards of Studies and become eligible for lectureships and professorships. But they would not be full members of the University, and the number of women students at any one time would be restricted to five hundred. We believe that it is of the utmost importance to put to the test of further experience whether women should be placed in precisely the same position as men in the University. This compromise would give such an opportunity, and we understand that if it were carried the women's colleges would not appeal against such a settlement. For these reasons we hope that other members of the Senate may find themselves able to accept this compromise. — We are, etc.,

S. M. COPEMAN, HENRY HEAD,
MAURICE CRAIG, HUMPHRY ROLLESTON,
H. H. DALE, G. ELLIOT SMITH.
T. R. ELLIOTT,

London, W., Oct. 11th.

SIR,—Throughout a long controversy the supporters of Grace I have brought forward no valid reason why the decision of last December should be reversed. Their proposals are now even more objectionable than those of December 8th; the suggested safeguards are illusory. I hope that medical members of the Senate will mark their disapproval of an unjustifiable proceeding by voting *non-placet* on Grace I, and will remove the disabilities from which women feel they suffer by voting *placet* on Grace II. —I am, etc.,

London, W., Oct. 11th. CHARLES BUTTAR.

SOME FACTORS CONTROLLING THE NORMAL SUGAR CONTENT OF THE BLOOD.

Sir,—Since our paper bearing the above title was written, in the early part of this year, we have obtained further experimental evidence in support of our argument that the sugar content of the blood is largely dependent upon its reaction, and that the variations in the percentage of sugar following the ingestion of food result from changes in the reaction of the blood produced by the absorption of salts formed from the digestive secretions.

As the carbon dioxide tension of the alveolar air varies inversely as the hydrogen ion content of the blood, and furnishes a very delicate index of changes in its reaction, it occurred to us that a comparison of the carbon dioxide content of the alveolar air and the percentage of sugar in the blood at short intervals for several hours after a test meal would be interesting. Numerous experiments have proved that there is a direct and intimate relation between the two, the carbon dioxide tension falling regularly as the blood sugar rises, and vice versa. Bennett and Dodds (*Brit. Journ. Exp. Path.*, 1921, ii, p. 58) have recently shown that in normal individuals the curve of alveolar carbon dioxide tension after a meal corresponds closely with the curve of secretion of gastric hydrochloric acid, and, since we find that the blood sugar curve moves in exactly opposite directions to the carbon dioxide curve of the alveolar air, it follows that the variations in the sugar content of the blood after a meal are probably also related to the secretion of gastric hydrochloric acid.—We are, etc.,

P. J. Cammidge.
J. A. Cairns Forsyth.
H. A. H. Howard.

London, W., Oct. 7th.

*** The paper by Dr. Cammidge, Mr. Cairns Forsyth and Mr. Howard is printed at p. 586.

Obituary.

CHARLES GIBSON, M.D., J.P.,
Harrogate.

We regret to record the death of Dr. Charles Gibson, of Harrogate, which took place on October 3rd. Educated at the medical school of the University of Durham, at Newcastle, Dr. Gibson obtained the diplomas of L.R.C.P., L.R.C.S.Edin., and L.S.A. in 1875, and subsequently graduated M.D.Brux. in 1888. He was appointed house-surgeon at Bootle, and thereafter was in practice for some years at Tynemouth. In 1891 he went to Harrogate, where he spent the remainder of his life and built up a large practice as a physician.

Dr. Gibson was for many years physician, and later consulting physician, to the Royal Bath Hospital, Harrogate, and he acted also as physician to a number of other charitable institutions there. Dr. Gibson was for many years a very keen member of the British Medical Association, and was for a time president of the Yorkshire Branch. For a long period he acted as honorary secretary of the Harrogate Division, and he was a regular attendant at the annual meetings of the Association. In 1897 Dr. Gibson wrote some practical notes on Harrogate as a health resort, which were printed in the British Medical Journal. He was a member of the Harrogate Medical Society, secretary for many years of the West Riding Medical Charitable Society, and secretary of the Royal Medical Benevolent Fund. In 1904 he was appointed a Justice of the Peace.

He leaves a widow and two sons, one of whom is in practice at Worthing; a third son was killed at the Dardanelles in 1915.

BENJAMIN POULTON, M.D., M.R.C.S.,
Adelaide, South Australia.

We regret to record the death of Dr. Benjamin Poulton, one of the leading Australasian surgeons, and a prominent officer-bearer of the British Medical Association in Australia. Dr. Poulton received his medical education at the University of Melbourne, where he graduated M.B. in 1874; he subsequently took the degree of Ch.B. in 1879, and the M.D. in 1884. He also spent a considerable time in London, working both at St. Bartholomew's and St. Thomas's Hospitals, and in 1880 he took the diploma of M.R.C.S.Eng. On his return to Australia in 1882 he was appointed a house-surgeon at the Adelaide Hospital, where in time he became an honorary assistant surgeon, and eventually honorary surgeon. In 1890 he was appointed lecturer in surgery at the University of Adelaide, and in 1892 he was elected dean of its faculty of medicine. Dr. Poulton took much interest in the work of the British Medical Association, which he joined in 1882. On his initiative the first Intercolonial Medical Congress was held in Adelaide, in 1887, when he acted as secretary, a post which he again held in 1905, when the congress, now having changed its name to the Australasian Medical Congress, again came to that city. He was honorary secretary of the South Australian Branch of the Association for four years, and in 1909 and again in 1912 he was elected president of the Branch. He retired from most of his professional offices in 1920. He was known as an accurate and keen observer, as a popular teacher for thirty years, and as an excellent surgeon of unfailing industry. He is survived by his widow and three daughters.

Colonel Valentine Matthews, C.B.E., whose death is announced at the age of 66, was educated at St. Paul's School and King's College Hospital. He qualified with the diplomas of L.S.A. in 1878, and M.R.C.S.Eng. in 1880. After a career of some distinction as a medical student he served as house-surgeon and medical registrar at his hospital; subsequently he was senior surgeon to the Westminster General Dispensary, and he practised for thirty-five years in Suffolk Street, Pall Mall, and afterwards at Onslow Square. He was the author of a number of contributions to the medical journals. Colonel Matthews had been a very keen volunteer, and was in command of the London Company R.A.M.C. Volunteers from 1904 to 1908; he was a holder of the Volunteer Decoration. At an age which made active service impracticable, Colonel Matthews was, however, in the early days of the war one of the first to realize the necessity of arranging to meet men returning home on leave from the Continent and to convey them from one railway terminus to another. Before any real organization was completed he was constantly at work during the night in these early days, but it was as an active organizer of the Rest Houses, with their many thousands of beds, and of the Free Buffets in the metropolitan area, that Colonel Matthews will best be known. His genial personality and encouraging presence found a way through difficulties which at times appeared unsurmountable. His services were publicly recognized by the award of the C.B.E. (military). He leaves a widow and one son, who is a medical man in practice at South Kensington. His younger son, who was a lieutenant in the Royal Navy, went down in H.M.S. *Hampshire* during the war.

The celebrated physiologist, François Franck, professor at the College de France, and member of the Académie de Médecine, has recently died at the age of 72.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Mr. Edward Liddell, M.A., B.M., has been elected to a non-official fellowship at Trinity College, for research in physiology.

UNIVERSITY OF LONDON.
University College.

A course of eight lectures on nutrition were commenced on October 14th at University College, Gower Street, W.C., by Dr. J. C. Drummond, and will be continued at 4.30 p.m. on succeeding Fridays up to and including December 2nd. Attendance at the course is recognized in connexion with the B.Sc. (Honours) degree in physiology. The lectures are addressed to advanced students of the University and others interested in the subject; admission is free without ticket.

King's College: Department of Psychology.

A course of public lectures on psychology and psychotherapy will be delivered by Dr. William Brown, Wilde Reader in Mental Philosophy in the University of Oxford, on Tuesdays, at 5.30 p.m., beginning October 18th. Admission is free without ticket.

UNIVERSITY OF MANCHESTER.

The following awards have been made:—Kay-Shuttleworth Scholarship: R. Pendlebury. Entrance Scholarships in Medicine: W. Brockbank, C. N. H. Long. Edmund Roscoe Post-Graduate Scholarship: Margaret R. Toynbee. The Sir Clement Royds Memorial Scholarship in Chemistry: J. F. Wilkinson.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

At a meeting of the Royal Faculty of Physicians and Surgeons, held on October 3rd, the following were admitted (after examination) as Fellows of Faculty: G. E. Brand, J. W. Dalgleish, J. R. C. Gordon, M. A. Keshvalu, J. W. Leitch.

CONJOINT BOARD IN SCOTLAND.

The following candidates, having passed the requisite examinations, have been admitted Diplomates in Public Health:

A. F. Adamson, Isabella M. M. Aitken, W. R. Clayton-Heslop, E. M. E. Cumming, W. Cunningham, A. Davidson, A. M. Davidson, Jean D. Don, D. Fyfe, Janet Grant, D. C. Lamont, Isabel Macfie, W. McKendrick, Jane S. McPhail, G. Morris, T. D. Murison, E. W. Richards, Helena J. Robertson, R. Sandilands, J. W. Simpson, A. D. Stewart, Mary C. Walker.

THE INSURANCE CAPITATION FEE.

After the conference on October 11th between the Minister of Health and the Insurance Acts Committee, reported in the Supplement this week, the Committee met and addressed a letter to the Minister in which it stated that while recognizing the force of the appeal to insurance practitioners to make some sacrifice on patriotic grounds, the Committee is not prepared to ask the Panel Conference to accept, even on those grounds, a reduction of the capitation fee to 9s. 6d. In view of this expression of opinion, the Committee accordingly urges Sir Alfred Mond to reconsider the position. If, the Committee says, he could modify his offer to one of 10s., the Committee on its part is prepared to urge the Conference to accept it. In a circular issued at the close of this week to the Secretaries and Chairmen of Local Medical and Panel Committees and to the representatives appointed to the forthcoming Conference, the Medical Secretary asks these committees not only to meet before the Conference and discuss the position, but to take a referendum of every insurance practitioner in their areas on the two questions: "(*a*) Are you willing to accept a capitation fee of 10s.?" "(*b*) Are you prepared to refuse service at a capitation fee of 9s. 6d.?" Should the Minister not be prepared to modify his offer, it is essential that the Panel Conference on October 20th shall know what prospect there is of insurance practitioners throughout the country refusing service at a capitation fee of 9s. 6d. In order that the Conference may be in a position to come to a decision which will represent the wishes of insurance practitioners generally, it is of the utmost importance that their representatives shall come to the Conference prepared with the fullest and latest local information.

Medical News.

The South-Eastern Union of Scientific Societies is, at the request of the Ministry of Health, continuing its inquiry into the distribution, habits, and breeding places of *Anopheles plumbeus*, a mosquito which it has been shown may become infected with the malarial parasite. Inquiries made by the Union this year show that the species is extensively distributed throughout the south-eastern area of England. In some districts all stages have been found; in others only larvae and imagines; it hibernates as partly grown larvae, mainly in beech, birch, chestnut, and holly tree holes; imagines are found in every season of the year, except winter.

The first general meeting of the Midland Tuberculosis Subgroup of the Society of Medical Officers of Health will be held at the Anti-Tuberculosis Centre, 44a, Broad Street, Birmingham, on October 22nd, at 3 p.m. All members of the Society of Medical Officers of Health actively engaged in connexion with tuberculosis work are asked to attend. The business includes the confirmation of the proposed rules and the election of officers and committee.

The Prince of Wales's General Hospital inaugural dinner will be held at the Trocadero Restaurant, Piccadilly Circus, on Thursday, October 27th, at 7.30 for 8 p.m. Past residents and students of the hospital who have not received a notice can obtain further particulars by writing to Mr. H. W. Carson, 111, Harley Street, W.1.

A post-graduate course of lectures and demonstrations in the Sheffield hospitals, arranged by the Faculty of Medicine of the University of Sheffield, was commenced at the Sheffield Royal Infirmary on Tuesday last, when Professor Connell dealt with fractures and Professor Mellanby with recent views on diet. The course will be continued on Wednesday and Friday up till and including December 16th.

At the meeting of the Medico-Legal Society, to be held at 11, Chandos Street, W.1, on Tuesday, October 18th, at 8.30 p.m., Mr. W. Valentine Ball, Barrister-at-Law, will read a paper on "Incapacity for work within the meaning of the National Insurance Act, 1911."

Under the auspices of the Fellowship of Medicine a course of twelve lectures on gastro-intestinal affections in children will be given at the children's clinic, Western General Dispensary, Marylebone Road (next door to Edgware Road metropolitan station), on Mondays and Thursdays, at 4.45 p.m., commencing on October 17th. The fee for the course is one guinea and a half to members of the Fellowship, or two guineas to non-members; tickets can be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

Dr. William F. R. Burgess, O.B.E., has been elected Master of the Society of Apothecaries.

Ether was first used for a surgical operation on October 16th, 1846, and the seventy-fifth anniversary will be celebrated at the Massachusetts General Hospital on October 18th, in association with the centenary of the hospital.

According to the *Boston Medical and Surgical Journal* the death rate in the United States from tuberculosis of the lungs was 20.7 per cent. lower in the first three months of 1921 than in the corresponding period of 1920.

At the annual dinner of the Society of Medical Officers of Health, to be held at the Café Royal, Regent Street, on Friday, October 21st, the speakers will include Sir Alfred Mond, Minister of Health, the new President (Dr. W. J. Howarth), the retiring President (Dr. F. E. Fremantle, M.P.), Sir George Newman, the Bishop of London, the Attorney-General, Lord Burnham, and the President of the Royal Society. Application for tickets (15s. each) should be made to the Executive Secretary, 1, Upper Montague Street, Russell Square, W.C.1.

The late Mr. J. C. Pipe, of Ipswich, has bequeathed £1,000 each to the East Suffolk and Ipswich Hospital and St. Bartholomew's Hospital, London. The residue of the estate, after payment of certain other bequests, goes to his brother for life, and reverts subsequently to certain charities including the two hospitals.

The hospital founded at San Remo by German physicians in 1912 for medical diseases, excluding infectious disorders and tuberculosis, has been purchased by Italian capitalists for three million lire. Professor Giovanni Galli has been appointed director.

According to the *East African Standard* of August 31st a Government measure, the Medical Practitioners and Dentists Bill, came under the consideration of the Legislative Council of Kenya in August. This bill apparently dealt with the subject of granting licences to (partially trained) subassistant surgeons of a certain standing, but by one vote an amendment was passed that licences should be granted to European assistant surgeons only. The Government accordingly withdrew the whole bill.

The University of Maryland has made tentative plans for medical extension work by establishing health clinics in the smaller towns, where medical practitioners may see demonstrations of new ideas in medical and surgical practice, and receive instruction in certain special subjects. This work will be carried on by co-operation between the United States Public Health Service and the Johns Hopkins Medical School.

A course, we are informed, has recently been held at Frankfort-on-Maine to instruct the wives of medical practitioners how to do the book-keeping for their husbands.

The Countess Brassey formally opened the Bruce-Porter Convalescent Home at Folkestone on September 24th. The home is a branch of Dr. Barnardo's homes, and is intended as a convalescent home for destitute boys and girls. It has been presented by Mr. Howard Williams, and named after Sir H. E. Bruce-Porter, K.B.E., C.M.G., M.D., in commemoration of his work for the wounded in the great war.

THE mortality among children under 1 year in the famine area in Russia is stated to be 75 per cent. As the result of an investigation made by the Bolshevist authorities 112,582 cases of cholera have been found in thirty departments.

THERE will take place at the same time at Naples—namely, from October 25th to 28th—the twenty-seventh Congress of the Italian Society of Internal Medicine, the twenty-eighth Congress of the Italian Society of Surgery, the twelfth Congress of the Italian Society of Orthopaedics, and a meeting of the Italian Committee of the Internal Society of Urology (to reconstitute an Italian Society of Urology).

MESSRS. DUNCAN, FLOCKHART AND CO. inform us that in future all preparations issued by them containing any of the medicaments affected by the regulations made under the Dangerous Drugs Act, 1920, will be fully labelled to this effect. The firm has prepared a card summarizing the salient points of the regulations. It will be sent to any member of the medical profession, and may be useful as a reminder to those who have studied the article published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 27th.

PROFESSOR LÉON FREDERICQ is to presented with a medallion in recognition of his distinguished services as professor of physiology for fifty years in the University of Liége; the presentation will take place in November, when his son will begin to occupy the chair which Professor Léon Fredericq has held so long.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediocra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

LETTERS, NOTES, ETC.

DEGREES AND DIPLOMAS.

"TRIPLE QUALIFICATION" writes: In the article on the profession of medicine in the Educational Number of the BRITISH MEDICAL JOURNAL of September 3rd the writer frankly recognizes the inferior position in which a holder of licences or diplomas may remain in comparison with those who possess a university degree. In this he but voices the popular sentiment of the profession, and more so those responsible for the disposal of medical appointments. That this is a general feeling and attitude cannot be denied. It is all very well to bring forth official statements as to diplomas and licences being recognized as on an equality with university degrees; but let a man with a diploma and one with a degree try for the same post and let but these facts of their training become known—the want of the degree is all but damning in most cases. In the face of such evidence how can the faculty go on philosophically discussing equalities when there are no equalities? The universities have quietly taken over the use of college hospitals and college teachers and college lecture halls which they are continuing to use, and in return for this they have given us nothing but an empty honour; such a state cannot continue. To warn the future student to enter the medical profession only by university training and university degree is to discourage all future attendance at colleges which the faculty have recognized on an equal basis with the university training. The problem is vital and must be faced. If the faculty is clean-handed and sincere, let them grant the colleges the right of conferring degrees. There is only needed a change of names—degree for licence, degree for diploma: that for the present student and the future students. But they must also render justice to the great army of college-trained men who have already passed through, and are at present carrying on practice. Many of these with giant practices and splendid records behind them are smarting daily under the social injustice and "their position is indeed unfortunate." To them, too, the opportunity of retrieving must be given—a one-portal system, or some system able to give them that recognition which years of success and personal endeavour have failed to give them.

FACILITIES FOR MEDICAL MOTORISTS.

THE proprietors of Maude's Motor Mart, 100, Great Portland Street, W.1, are developing some interesting proposals which may be of service to medical practitioners. All motor cars require occasional overhauling and repair; but the work of a doctor is so continuous that unless he keeps two cars, or is prepared to forego the pleasure and comfort of a car during his holidays, he is compelled to find other means of conveyance, often for some weeks in each year. At Maude's Motor Mart the medical man can hire a small car and drive it himself, while being responsible, not for ordinary wear and tear, but only for such damage as is usually covered by his own insurance policy. The cost of hiring is about ten guineas a week, with substantial reduction if in the meantime the hiring-out firm does the repairs to the doctor's own car. This proposal offers a convenience to medical practitioners which we have long thought to be required. Again, the proprietors of this motor mart, in offering for sale Albert cars, are allowing prospective purchasers to hire a demonstration car of that make at a charge of four guineas for twenty-four hours, so that by driving himself the prospective buyer may ascertain whether the car will suit his requirements instead of being at the mercy of an expert tuner-up engaged in showing forth the merits of his wares. Finally, facilities are given for extended payments, so that the purchaser may spread the cost of a new car over two years on moderate terms. Enterprise of this nature shows that the motor business is beginning to assume a reasonable attitude wherein the comfort and convenience of motorists is the first consideration.

VERDANT VERSE.

"J. G. M." (South Africa) writes: I send the following verses, based on the *first* few lines of the *first* paragraph of the *first* article in the *first* number of the BRITISH MEDICAL JOURNAL for 1921, dated the *first* of January: "Abdominal pain in a child must always be a source of anxiety to the doctor. It may mean so little or so much. It may be due to nothing worse than an attack of acute indigestion, set up by a *green* apple; or it may indicate an attack of acute peritonitis set up by a *green* and gangrenous appendix. It is a matter, therefore, which craves wary walking in diagnosis."

O, stay me not, the Muse hath cast
Her spell upon me, for at last
I find the cause of belly pain
Is varied—that at least is plain.

Now, children's tummies oft contain
The elemental seeds of pain;
For *apples green*, so hard and sour,
Cause ructions there at midnight hour

But these can eas'ly be allayed
By Castor Oil, a bribe being paid
Of cash, or jam, or trivial toy;
Don't let *green apples* you annoy.

A young appendix, green with age
Of suppuration's latest stage,
'Tis *gangrene green*, Oh, dearie me
Here's something worth a largish fee.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 33, 34, 35, 38, 39, and 40 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36, 37, and 38.

THE appointments of certifying factory surgeons at Finedon (Northampton) and Purfleet (Essex) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
Each additional line	0 1 6
Whole single column (three columns to page)	7 10 0
Half single column	3 15 0
Half page	10 0 0
Whole page	20 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

The Harveian Oration

ON

WILLIAM HARVEY, OBSTETRIC PHYSICIAN AND GYNAECOLOGIST.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON ON OCTOBER 18TH, 1921,

BY

HERBERT R. SPENCER, M.D., B.S.Lond., F.R.C.P.,
OBSTETRIC PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

(With Special Plate of the Canterbury Portrait of Harvey.)

Mr. President and Fellows,—When you, Sir, did me the high honour of nominating me to give the Harveian Oration I was elated as an obstetric physician, depressed as the prospective orator. That you, Mr. President, should deem the obstetrical and gynaecological work of Harvey worthy of special commemoration was not surprising since, as a learned *alumnus* of Harvey's school and our chief historian of medicine, you are aware that sufficient attention has not been directed to that part of Harvey's life-work which can be appreciated best by an obstetric physician.

The compliment which you have have conferred by your nomination is highly appreciated by myself and by my obstetric and gynaecological brethren. It is not so very long ago that one who, in the words of the learned and sympathetic Regius Professor of Physic, Sir Clifford Allbutt, "had been taken in the act of laparotomy and kept on doing it," would have been considered unfitted to give the Harveian Oration. Yet Harvey, the greatest Fellow of this College, performed operations, sometimes of considerable gravity, though he did not magnify the position of operations, which are indeed the most facile and least noble part of medicine. For three hundred years many of the chief practitioners of midwifery and gynaecology have held the time-honoured title of physician, and I find no worthy reason why they should call themselves surgeons, although, like Harvey, they are sometimes called upon by the nature of their work to perform operations.

Before proceeding to the main purpose of his oration, which was to depict Harvey as an obstetric physician and gynaecologist, the orator made a digression to give an account, founded on Miss Mary F. S Harvey's recent book, *The Life, Correspondence, and Collections of Thomas Howard, Earl of Arundel, "Father of Vertu in England,"* of Harvey's activities as physician to the Earl's Embassy to the Emperor Ferdinand II at Vienna, and as picture-buyer for Charles I. The Embassy was absent from England from April 8th to December 27th, 1636. The Earl, writing from Ratisbon on July 20th, said, "Honest little Harvey is going a little start into Italy, and I give him some employment . . . about pictures for His Majesty." Harvey was put into quarantine and "miserably vexed" in the lazaretto at Treviso. He had to lie out on the grass or sleep on a straw bed "in a little poore garden howse full of lumber, durt, and knatts without window or dore, open to the highway att midnight." Three days later he wrote, "I have a sciatique in my right thigh and legg that much discourageth me and maketh me lame." Harvey at this time was 58 years old. He was not successful in buying pictures, but nothing damped his enthusiasm for research, for, according to Aubrey, "Harvey would still be making of excursions into the woods making observations of strange trees and plantes, earths, etc., and sometimes like to be lost. So that my Lord Ambassador would be really angry with him for there was not only danger of thieves but also of wild beasts."



Frontispiece of the first (Latin) edition of Harvey's *De Generatione Animalium*, published in London, 1651. The inscription on the egg which Jove is opening is "Ex ovo omnia."

Passing next to fulfil the injunction to commemorate past benefactors by name, the orator said that it was his duty "to enrol amongst the list of benefactors an obstetric physician, the late Dr. Lloyd Roberts of Manchester, who bequeathed a sum of £3,500 to the College and 1,800 medical books, including 50 incunabula and an almost complete set of the editions of *The Byrth of Mankynde*, the first book on midwifery to be translated into English." "In bequeathing these gifts," Dr. Spencer said, "Dr. Lloyd Roberts has set an example to other obstetric physicians, and I am but carrying out the injunction of Harvey in exhorting them to follow that example, so that our College, whose immortal Fellow wrote the first original English work on midwifery, shall have in its library the best collection of books dealing with the functions and diseases of women.

"That distinguished Fellow of the College, Sir Thomas Browne, in speaking of the value of the College library, specially recommended the work of the Paduan teachers — Vesalius, Spigelius, Bartholinus, Falloppius, and Fabricius —adding, 'Be sure you make yourself master of Dr. Harvey's piece, *De Circulatione Sanguinis.*' The other great work of Harvey is the *De Generatione Animalium*, containing the chapter *De Partu.*

"It was the activity of anatomists in research on the female generative organs which aroused Harvey's interest in obstetrics and gynaecology, and, bearing in mind the value of the tradition of a medical school in moulding the character and the work of a physician, I need make no apology for briefly reviewing the obstetrical and gynaecological writings of the school of Padua, whither Harvey went to study in the year 1600."*

* Sir Thomas Barlow, Harveian Oration, 1916

PADUAN TEACHERS IN THE SIXTEENTH CENTURY:

THEIR CONTRIBUTIONS TO OBSTETRICS AND GYNAECOLOGY.

Padua was at this time the most distinguished university in Europe. Thither flocked the eager students, especially of medicine, to learn from the most celebrated teachers in the world. Since the memorable siege of Maximilian in 1509, when its citizens, men and women, had performed prodigies of valour, it had enjoyed profound peace, sheltered by the wings of the dreaded Lion of St. Mark. Besides its admirable teachers Padua had other attractions. It was a healthy town, and was a very cheap place to live in. Montaigne, who visited it in 1580, found that he could live well and in good company for 7 crowns a month, fire and lighting only excepted, and gives the low cost of living as one reason why so many students and others resided there; Evelyn, who visited it in 1646, also notes that provisions were remarkably cheap.

From contemporary prints, one of which is reproduced here, we can see what the University building—the "Gymnasium omnium Disciplinarum"—was like. The handsome façade of this Renaissance building was repaired during Harvey's student days, as we learn from a memorial tablet dated 1601. Over the gateway was the stemma of a Doge of Venice,* and beneath it the Lion of St. Mark. Both these have since been taken down and—to the detriment of the appearance of the building—replaced by the Royal Arms of Italy. There still remains, however, the legend, "Sic ingredere ut te ipso quotidie doctior evadas," an injunction which Harvey so faithfully obeyed. Passing through the gateway, we come to the courtyard with its celebrated cloisters in two tiers. In these cloisters, with their vaulted roofs, the "stemmata" of distinguished students were painted, amongst them that of Gulielmus Harveius. Aubrey has given us a portrait of Harvey in his younger days. He was "of the lowest stature, round-faced, olivaster (like wainscott) complexion; little eie, round, very black, full of spirit: his hair was black as a raven, but quite white 20 years before he dyed. . . . He was always very contemplative, and said he did delight to be in the dark as he could then best contemplate." He was indeed one of those of whom Cicero speaks *quibus vivere est cogitare*, and one can picture him deep in study in the cool and shadowy cloisters of the University, even as later he had caves made in the earth near his house at Combe in Surrey, in which in summer time he delighted to meditate.†



Padua. Façade of the University building early in the seventeenth century. The inscription over the entrance reads "Gymnasium omnium disciplinarum," and that higher up "Sic ingredere ut te ipso quotidie doctior evadas." (From Guzzoni's *L'Italia Ostetrica*, 1911.)

Among the teachers at Padua who influenced Harvey was Galileo, who had been appointed professor of mathematics in 1592, and continued to hold the office for eighteen years. Galileo had been a medical student, and was a critic of the Aristotelian philosophy: it was by the beats of his pulse that he timed the oscillations of the swinging lamp at Pisa which led to the enunciation of his pendulum law and the construction of the astronomical clock. Francesco Barberini, the nephew of Pope Urban VIII (at whose instance Galileo was tried by the Inquisition), showed Harvey much attention at Rome, and probably pointed out to him the Baldachino in St. Peter's, on the pillars of which Bernini carved, in the stemmata of the Barberini family, the face of a woman expressing the emotions of the various stages of labour. Galileo was the first to give lectures in the Italian language. We learn from Aubrey that Harvey was "pretty well versed in mathematiques, and had made himself master of Mr. Oughtred's *Clavis Mathematicae* in his old age; and I have seen him perusing it and working problems not long before he dyed, and that book was always in his meditating apartment." It is not improbable that he received his first lessons in exact observation and sustained argument in the lecture room of Galileo.

Of those Paduan teachers who wrote on obstetrics and gynaecology, Vesalius (1514–1564), the Reformer of Anatomy, is first in time and importance. He gave the first adequate description of the pelvis, and described also the form, position, connexions, and muscles of the uterus and its changes during pregnancy. Falloppius (1523–1562) described the oviducts or tubes known by his name, although they had been observed by Herophilus, Rufus, Soranus, and Galen. Realdus Columbus (1494–1559), a practical obstetrician as well as anatomist, gave the first correct description of the lie of the foetus. Aranzius (1530–1589) in his *De humano foetu liber* (1571) gave a detailed description of the uterus, placenta, and membranes. He was the first to describe deformity of the pelvis, and to state that the placenta was not always attached to the fundus uteri, and that as the placenta ("jecur uterinum") intervened between the foetal and maternal vessels there could be no communication between them.

Hercules Saxonia, Professor of Practical Medicine at Padua, where he taught from 1590 to 1607, wrote on conception and diseases of women; but Fabricius ab Acquapendente, who succeeded Falloppius at Padua, was Harvey's special teacher and guide. He made many researches in comparative embryology. He studied the placenta in various animals, delineated the decidua, and figured the cord around the neck of the foetus. Eloy says of him, "The degree of doctor of medicine with which he was honoured did not prevent him from publicly performing surgical operations." He taught for about fifty years at the school of Padua, and died there in 1619, universally regretted, at the age of 82. He refused fees, and put the presents his patients sent him into a cabinet labelled "lucri neglecti lucrum." He built an anatomical theatre at Padua at his own expense, which generous act prompted the signory of Venice to build a much more spacious amphitheatre in his honour.

Casserius (1545–1616), a servant of Fabricius, who was educated and advanced by him to be his pupil and assistant, employed two distinguished artists, Edoardus Fialettus and Franciscus Valesius, to draw and engrave his preparations. When he died in 1616 he was succeeded in the chair of anatomy by Spigelius, whose work *De formato foetu* (quoted by Harvey) was published by Crema in 1626, the year after his death.

Mercurialis (1530–1606) was born in 1530, about ten years before Mercurius (Scipione Mercurio), with whom he is sometimes confounded. He taught at Padua for eighteen years, was created a Knight of St. Mark, and amassed a fortune of 120,000 golden crowns. His most celebrated book is *De arte gymnastica* (1569), but many others were published by his pupils. He wrote an important work, *De morbis muliebribus*, which was published in the collection of all the ancient and modern works on obstetrics and gynaecology, entitled *Gynaecia*, the third and most complete edition of which was published by Israel Spachius in 1597, three years before Harvey went to Padua.

Mercurius ("Scipione Mercurio,") was born in Rome about 1540 and died in 1616. He studied medicine at Bologna and Padua; he devoted himself to theological studies, and entered the Dominican monastery at Milan.

* The stemma is that of the Cigognas, who conferred many benefits on the university. Pasquale Cigogna, Podesta of Padua, and Doge of Venice from 1585 to 1595, was descended from an apothecary who was called up to the Great Council after the Chioggian war in 1380. (Letter from Professor Guzzoni of Modena, and Haslitt's *Republic of Venice*.)

† The Earl of Arundel had similar caves made in the grounds of his house at Albury; on one occasion a cave collapsed shortly after he and Oughtred, the mathematician, had left it.

but continued to occupy himself with the study of medicine; finding his monastic life did not afford him sufficient opportunities for the practice of medicine, he quitted the monastery and travelled in France and Spain in 1571 and 1572, as physician to a German officer, Hieronymus de Ladrone. On his return to Italy he practised with great success in Padua and settled in 1601 in Venice, where he lived for fifteen years. He wrote *La Comare o Ricoglitrice*, the first Italian work on midwifery. It contains chapters on Caesarean section on the living patient, which operation he introduced into Italy. It is illustrated by drawings, one of which is reproduced here. He relates that in his travels in France he had seen two women in Toulouse who had been delivered by Caesarean section, one of whom had since been happily delivered nine times. To commend the operation to his countrymen he wrote that it was as well known in France as bleeding for headache in Italy. This passage was erroneously rendered by Welsch, who published a German translation of *La Comare* in 1653, "so gewöhnlich in Frankreich als das Aderlassen in Italien"—"as *common* (or *usual*) in France as bloodletting in Italy"—whereas Scipione Mercurio only said it was *as well known*. This error has been often repeated by subsequent writers and has been used to throw doubt on Mercurio's accuracy. In this work Mercurio is the first author to mention contraction of the pelvis as an indication for Caesarean section. It contains a description and illustration of the "hanging-legs" position for delivery in cases of contracted pelvis, which Walcher published in 1889 as something new, and also a description of the operation of bimanual version, generally associated with the name of the late Dr. Braxton Hicks. It was long thought that *La Comare* was published in the beginning of the seventeenth century; according to Haller the first edition was published in 1604; and others have given 1601 as the date of publication. Research, however, has shown that the first edition was actually published in 1596 (the second and third parts being dated 1595). This edition is extremely rare, only four copies being known to exist—three in Italy and one in this country; its title-page is reproduced. It is interesting to find that the first Italian book on midwifery was a *cinque cento* production, and was published by a Paduan obstetrician four years before Harvey went to that University. It can hardly have failed to arouse Harvey's interest, must have had an effect in popularizing Caesarean section on the living, and may have been the stimulus to Harvey to emulate the Paduan obstetrician by writing his *De Partu*, which was the first original English work on midwifery.

I hope I may be pardoned for referring to these great teachers of the Paduan School. It was under the influence of these men, who had shown their interest in the subjects of embryology and midwifery, that Harvey was led to write his great work on generation and labour. In order to appraise this work it is necessary to consider the position of obstetrics at the end of the sixteenth and the beginning of the seventeenth century.

OBSTETRICS IN THE SIXTEENTH AND SEVENTEENTH CENTURIES.

Italy was the first country in Europe to encourage anatomical research. At the School of Salerno in 1238 it it was ordered that every five years a human corpse should be dissected before the students of medicine and surgery, and in 1442 two corpses were annually provided free of cost for dissection in the University. In Mundinus's work on Anatomy written in 1316 is the first description of the dissection of the human body since ancient times. The progress of anatomical study in Italy was favoured by the ancient Lex Regia, which enacted that no pregnant woman should be buried until the foetus had been cut out of the womb, and by the ritual of the Roman Catholic Church, which prescribed "if a pregnant woman die the foetus shall be cautiously extracted as soon as possible, and, if alive, shall be baptized"; which led to a great extension of the operation of Caesarean section on the dead, especially during the frequent epidemics of plague.

The common belief that the Church in Italy obstructed anatomical research as, for instance, by the celebrated Bull of Boniface VIII (1303), has been disproved by Filippo Lussana, professor of physiology in the University of Padua, who shows that the Bull of excommunication was directed against those who for gain disembowelled corpses and boiled them so that the bones could be buried in their native land, and not against dissection by doctors, for Benedict XIV expressly states in his "Institutione" dealing with the Bull, "Quamobrem membrorum incisio minime interdicitur quae adeo necessaria est medicinae facultatem exercentibus." In Curatulo's work, *L'arte de Juno Lucina in Roma*, many instances are given of the favour extended by the heads of the Church of Rome to anatomical research, even to the extent of leaving their own bodies for the purpose, and the good influence exerted on the practice of midwifery is shown by the celebrated Bull of Sixtus V (1588) in which he expressed the Church's *detestatio criminis abortus* and punished it with excommunication.

France in the person of Ambroise Paré had begun to progress in midwifery even before Italy. But in England the Art of Obstetrics was neglected. There was no

LA COMARE
ORICOGLITRICE
DI SCIPIONE MERCVRI
CITTADINO ROMANO,
Medico della Magnifica Communità di Lendenara,
DIVISA IN TRE LIBRI.

Nel primo si tratta del parto naturale dell'huomo, e dell'officio della Comare, che in esso è necessario.

Nel secondo del parto preternaturale, illegitimo, e vitioso, e di quei modi, con i quali può la Comare aiutare così le madri, come le creature.

Nel terzo delle principali infirmitadi, che accadono & alle Impagliolate & a i fanciulli, e de i rimedy loro.

Al molto Ill. & Eccell. Sig. Bartolomeo Malmignati Dottore dell'vna, e l'altra legge, e mio Signore.

CON PRIVILEGIO.



IN VENETIA,
Appresso Gio. Battista Cioti. M D XCVI.

Title-page of the first edition (1596) of Scipione Mercurio's *La Comare*. The author's name is here printed "Scipione Mercuri," but in the title-pages of the second and third books (dated 1595) "Scipione Mercurio."

riginal work on midwifery in the English language; only translations of Rhodion, Guillemeau, and Paré were available.

The ordinary practice of midwifery was in the hands of midwives, who, although practising as specialists since the dawn of history, had failed to develop the science or advance the art or dignity of their calling. They were mostly recruited from an uneducated class, and their characters were not beyond reproach. Harvey's friend, Percivall Willughby, gives many instances of their shortcomings and misdeeds. They were bitterly opposed to the doctors, who were only called in to difficult and operative cases, which were often rendered fatal by the ignorance and brutality of the midwives. The doctors, on the other hand, having little experience of normal cases, were apt to intervene too soon, especially when instruments, hooks and (later) forceps, were employed.

Only in France, where the modern development of midwifery began, had midwives attained any considerable position. In 1598 the first of the great French midwives, Louise Bourgeois, obtained her diploma. She was the first to describe prolapse of the umbilical cord, face presentation and its treatment, and expression of the placenta. She attended in her confinements Marie de Medicis, wife of Henry IV and mother of Henrietta Maria, the wife of Charles I, to whom Harvey makes many references in his work *De Generatione Animalium*.

The grievous practices of many of the midwives in England are related in great detail by Willughby; but he gives a testimonial in favour of the practice in London, where "the young midwives be trained seven years first under the old midwives before they be allowed to practice for themselves." In 1616 Peter Chamberlen II made a petition to King James that some order might be settled by the State for the instruction and civil government of midwives; but nearly three hundred years were to elapse before the desirable result was obtained through the persistent efforts of the Obstetrical Society of London (Midwives Act, 1902).

In England the position of midwifery was degraded and the study of anatomy was in an inactive state when Harvey went to Padua, where both subjects were being assiduously studied. The obstetrical and gynaecological writings of ancient and modern authors had just been published in the *Gynaecia*; the circulation of the blood, "the greatest physiological discovery of all times," was as yet unknown; the compound microscope had not been invented, and thus neither the ovum nor the spermatozoon could be seen. The ovary was still called the testis muliebris, but the ovarian follicles, although observed by Spigelius, were not well known till De Graaf published his observations in 1672, and the spermatozoon was discovered in 1675 by a medical student, Louis Ham, a pupil of Leeuwenhoek's, who published the observation in the *Philosophical Transactions* in 1677. Thus, when Harvey wrote his book on the generation of animals he was dependent on naked-eye observations and experiment. In the preface to that book Harvey approves the opinion of Aristotle as to the necessity for observation and personal experience. He wrote:

"No man can be truly called *prudent* or *knowing* who doth not by his own experience followed by manifold remembrance, frequent sensation and diligent observation know these things to be so. For without that we think only, or believe, and such knowledge as that is to be reputed other men's rather than our own. Wherefore fond and erroneous is that method of seeking truth in use in our times: while most men diligently enquire not what the truth is, but what other men say it is: and inferring universal conclusions from particular premisses and their own [illegible] to themselves irrational deductions they transmit to us things like truth for truth itself.

"Hence [illegible] passages and half-known rules, polling other [illegible] sayings impose them upon us for their own [illegible] the phrase and order and adding some impertinences of their own), and render Philosophy (which ought to be clear and perspicuous) obscure, intricate and confused. For whoever they be that read authors and do not by the aid of their own Senses abstract true representation of the things themselves (comprehended in the author's expressions) they do not [illegible] true *Ideas*, but deceitful *Fictions* and *Phantasms* by which [illegible] they frame to themselves certain *shadows* and *Chimeras* of all their theory and contemplation which they commit [illegible] to represent nothing but *natural men's dreams* and *stoical sophisms*."

Harvey had a great admiration for the ancient writers, but said that only the ignorant will grant that they had "engrossed the whole truth." He had little faith in "bookwrights, who conceive it plentifull satisfaction of minde to them that they finde it in Books and have their memories well loaded with sage sentences; for they that are thus philosophers *ex traduce*, by descent and derivation, are just as wise as their libraries." He appealed to observation of Nature and experiment. His statement, "Nature herself must be our adviser; the path she chalks must be our walk," is an indication of the course he followed in his chapter on labour.



Caesarean section. From the first edition (1760) of Scipione Mercurio's *La Comare*. The incision is made to the right of the middle line, in order to avoid the spleen

The Embryological, Gynaecological, and Obstetrical Work of Harvey.

Harvey was engaged during many years in almost daily observation and dissection of eggs and the uterus and embryo of animals and man. The results of his patient researches added greatly to our knowledge, and justify the remark of Frederick Ruysch that Harvey, "who is to be considered amongst the greatest of true philosophers," advanced the history of generation by his personal observations more than his predecessors by their united labours.

One pregnant generalization, "ex ovo omnia" or "omnia animalia ex ovo," resulting from his researches is placed in the forefront of his *De Generatione Animalium*, and it is, to use a favourite expression of Harvey, "strange" that a distinguished writer should have failed to find the aphorism in the work, since "ex ovo omnia" appears on the remarkable frontispiece, here reproduced, of the Latin edition published in London (with illustrations of the "animalia"), and on the second page appears the statement "omnia animalia . . . ex ovo." The mistake was probably due to the writer's having read one of the Amsterdam editions in which the plate does not bear the legend.

Harvey was a supporter of the doctrine of epigenesis, as opposed to preformation of the embryo, and although he failed to discover the true nature of the ovum and regarded the uterus itself as an "exposed ovum," yet he is to be numbered amongst the "ovists" as opposed to the "animalculists," who were misled by incorrect observation with the compound microscope, while Harvey formed a correct judgement based on accurate observations with the naked eye. Harvey had only the aid of a simple lens ("perspective") to aid him in observing the minute changes occurring in the early stages of development; but the care he took is remarkable. He would place his specimens in water in a silver basin (no doubt to get reflected light), and took care to arrange for brilliant illumination of the

object, as, for example, in his observation of the *punctum saliens*.

"If you are desirous to make discovery of this observation towards the declining of the third day, you may, if you be extremely intent, by the assistance of a clear and *great light*, or by the *Sun beams*, or a *Perspective*, make a shift to discerne it. For else this purple streak is so exceedingly nice, and fine, and the motion of the *Punctum saliens* is so imperceptible, that you will only loose your labour."

Harvey was the first to locate the origin of the embryo in the "cicatricula," and refuted Fabricius's opinion as to its origin in the chalazae, the function of which as ligaments for the yolk Harvey was the first to discern. He showed by many direct observations and convincing arguments that the chalazae had nothing to do with the embryo, and casts a little ridicule on his master Fabricius's view in the words, "How improbable a thing is it that every egg should have two seeds or rudiments for the constitution of only one chicken."

The bulk of Harvey's *De Generatione Animalium* is made up of his careful observations and descriptions of the development of the ovum and foetus in all stages in birds, animals, and man. He made many dissections of human embryos, "from the big-ness of a tadpole and so upwards to the birth." He calls attention to the great changes which take place in the second, third, and fourth months. He had often dissected the human ovum in the second month. It was of the size of a pheasant's egg; sometimes he found a foetus, at others none. The foetus was of the length of the nail of the little finger, but the shape was like a little frog save only that the head was great and the legs extremely short; just like the tadpoles in June. "The face was like that of other animals, as of a dog or cat without lips, and a wide mouth from one ear to the other."

His description of the foetus and its viscera at various ages commands our warmest admiration, both for its accuracy and happy illustration; thus of the foetus at the third month he writes, "the substance of the heart was most white, having two ventricles of equal magnitude and thickness and a double *cone* like two twin-kernels of a nut; the liver was wondrous little and also white. All this time, namely, for three months, scarce anything of the after-burden is to be seen." He points out how the head at first outstrips the body in bulk, but afterwards is very much short of it, and that "the like disparity is between the body and the limbs, so that at the second month his arms are so short that if you stretch out his fingers to their furthest extent they will not be able to touch one another and his thighs are so short that being inflected upon his abdomen they will hardly reach to his navel." In newborn children the bulk of the body is a pretty deal larger, he says, than that of the limbs until they are able to stand and go, "but go upright they cannot till the prolixity of their legs and thighs exceeds the longitude of the rest of the body. And hence is it that their first venture to foot it represents them a prone kind of cattell which can scarce exalt themselves to the erection of a cock."

Harvey made a discovery of the highest medico-legal importance when he observed that the lungs of foetuses which had breathed "stretched and dilated by the air put on a whiter colour, and by this observation of the different complexion you may discover whether a mother brought her child alive or dead into the world; for instantly after inspiration the lungs change colour, which colour remains, though the foetus die immediately after."

The great and original merit of Harvey's work on generation lies in the careful and methodical observation and record of the embryo and foetus at all stages. Harvey did for development what the illustrious Paduan professor, Malpighi, subsequently did for disease in his *De sedibus et* (1761).

When Harvey came to consider the *causa causans* of generation he confessed he was "at a stand." It was a "dark, obscure business" about which "authors do nowhere more cavil and contend." Having failed, owing to the non-existence of the compound microscope, to discover the ovum or the spermatozoon, and having convinced himself by many observations and experiments that no part of the male seed entered the uterus, "and yet there is a necessity that something should be there which may render the female fruitful," he had no refuge left but to apprehend that the woman was impregnated by the conception of a general immaterial idea, "that the same thing is effected in the womb as in the braine, unless," he adds, "some cunning Philosopher whom the gods have better provided for can finde out some efficient cause which is not included in our recapitulation." Atoms, contagion, effluvia, odours, incorporeal spirits, had all been cited as the efficient cause: Harvey pleads for a place for his conjecture, which he offers "in a problematical way," until there be some certainty established in the business. "Let the learned and ingenious stock of men consider it; let the supercilious reject it; and for the scoffing ticklish generation, let them laugh their swinge."

The whole of the work on the development of the foetus is a testimony to his great powers of observation and reasoning, and justifies Sir Thomas Browne's description of Harvey as an "ocular philosopher and singular discloser of truth," and his work as "that excellent discourse of generation so strongly erected upon the two great pillars of truth, experience and solid reason."

To gynaecology, which in his time was in an embryonic state of development, Harvey made several notable contributions. He gives a good description of the broad ligament of the uterus—"the pendulous band or tie," he calls it; mentions the Hottentot apron of which he received information from a surgical friend, "an honest man": this he likens to the "vail" in animals. He describes the green sickness in virgins "whose womb is slender and their terms are at a stay"; he had seen ectopic gestation; alludes to the displacements of the womb; and is doubtful as to the agitation of the womb in hysteria. He gives a good account of spurious pregnancy and mentions an instance in a noble matron, whom in spite of all the arguments he could suggest, he was unable to persuade that she was mistaken; this shows considerable experience and confidence in diagnosis.

Harvey applied his knowledge of the circulation of the blood to surgery, pointed out how by tying the artery going to a tumour the tumour could be removed with safety, and thus laid the scientific foundation for the extensive operations, such as hysterectomy, now performed by the same method (isolated ligation of vessels instead of ligation *en masse*), a lesson not yet learned by all gynaecologists at the present day.

For the treatment of intrauterine diseases Harvey invented a dilator, after which he used injections, and by this means cured patients suffering from offensive discharges and from sterility.

Harvey discovered a peculiar bleeding tumour of the uterus which he called the "honey-comb"; for the mention of it we are indebted to the *Observations in Midwifery* of his friend, Dr. Percivall Willughby. When we recall that we owe to Ent the publication of the *De Generatione Animalium*, we can only surmise how many other observations of Harvey's were contained in his lost *Medicinal Observations* to which Harvey often refers. Willughby writes:

"There came unto my house, at Darby, my honoured good friend, Dr. Harvey, 1642.

"Wee were talking of severall infirmities incident to the womb.

"After that I had related the aforegoing story de caudâ mulieris, and how shee flouded and was cured, hee added to my knowledge an infirmity, which hee had seen in women; and hee gave it the name of a honey-comb, which also, hee said, would cause flouding in women."

No further details are given; but the appellation "honey-comb" suggests that the growth had holes in it discharging thick fluid; so far as I know, the only condition of the cervix corresponding with this description is a very rare form of cancer, an instance of which has been published, with illustration, in the Lettsomian Lectures for 1920. Percivall Willughby was at the time of Harvey's visit 66 years of age, and was well acquainted with the ordinary forms of cancer, of which he records many observations. It is interesting, therefore, to find that Harvey should be able to add to the knowledge of this experienced gynaecologist an undescribed disease, the "honey-comb."

Harvey's chapter on labour (*De Partu*) is the first original English work on midwifery, and justifies Aveling's designation of Harvey as the Father of British Midwifery. The scientific part consists of criticism of previous opinions on the anatomy and physiology of the foetus and of parturition based on his own observations; the practical part

gives evidence of extensive personal experience in midwifery and is in the main devoted to the recommendation of patient watchfulness and gentleness, imitating nature, in ordinary cases, with resort to podalic version in difficult ones.

Harvey was the first to describe accurately the foetal circulation and the great development of vessels in the pregnant uterus. He also had observed, as had Ambroise Paré before him, the softening and loosening of the sacro-iliac and pubic articulations before labour.

He gives a careful description of the lie and posture of the foetus in utero, states that it executes the somersault ("dives down") a little before labour, and that it sometimes changes its presentation from time to time.

"For he swimmeth in a water and moveth himself to and fro, he stretcheth himself now this way, and now that, and so is variously inflected and tumbled up and down, in so much that sometimes, being entangled in his own navel-string, he is strangely ensnared"; "and the Great-bellied women know full well that he doth sometimes acquire a different scituation when they find the Child kick sometimes above, sometimes below and now on this side and at other times on that."

Harvey alludes to cases in which the foetus is born completely enclosed in the unruptured membranes, and cases of adherent placenta "oftentimes hardly divided from the uterus which doth induce evil symptoms, noisome smells, and sometimes gangreen whereby the mother is brought into imminent danger."

With regard to the duration of pregnancy Harvey gives the usual ten lunar months. He quotes Franciscus Valesius's case of the survival of a five-months' girl and another case of a woman who bore a living child after a gestation lasting sixteen months. "But I confess," says Harvey, "these are rare accidents." "It must not be denied that there are many crafty and fraudulent women which for lucre sake, or for fear of punishment or infamy, will feign and swear they are with child. And likewise it is well known that others are easily deceived and do conceive themselves to be with child when it is no such thing." And a superfoetation may cause the duration of pregnancy to be apparently longer than it is in fact.

Harvey shared the opinion of Hippocrates that the birth of the child was due in the main to its own efforts, and here is at variance with Fabricius, who ascribed the work to the uterus, the muscles of the abdomen, and the diaphragm. Harvey admits, however, that the uterus has its share in the business, and gives details of a case of labour in a procident uterus as a proof, and states that an unnatural birth sometimes results from failure of the mother in her expulsive office (uterine inertia).

Harvey shows his extensive experience by mentioning rare cases in his own practice, such as ectopic gestation, the passage of by-waters (hydrorrhoea) without premature labour ensuing, which "he had often seen," the survival of the infant which had been delivered by Caesarean section several hours after the death of the mother, the child sucking the finger while still in the passage (? face presentation), the successful delivery of an unconscious woman (? eclampsia) by irritation of the nares; the removal of a putrid "false conception" (? sloughing fibroid) after delivery; the vagitus uterinus, etc.

Harvey has a special chapter on the membranes and humours of the uterus. With regard to the chorion, he points out the error of Fabricius in stating that the urine of the foetus was passed through the allantois into the chorion and that the amnion contained the sweat of the foetus, and asks if his master had ever seen such a creature as a sweating chicken. His own opinion was that the liquor amnii served as food for the foetus. He based upon the opening of the mouth of the foetus seen through the membranes, the fact that the child will suck the finger while still stuck fast in the birth and the way in which a newborn child sucks "as if he would devour the nipple; he still draws it into his mouth and by the aid of his tongue and palate he sucks the milk as if he chewed it, with farre more earnestness and delight than a grown body. Wherefore he seems to be good at it of old and to have practised it in the womb."

Harvey showed, as Aranzius had done, that there was no communication between the vessels of the foetus and the mother; the placenta "served to concoct or digest the alible nutriment which proceedeth from the parent to support the foetus"; perhaps Harvey here anticipated the discovery of the function of the syncytium.

In considering the practical side of Harvey's work in obstetrics we are handicapped by the unfortunate loss of his *Medicinal Observations*. In the management of ordinary labour he advocates patience and gentleness in imitation of Nature, which "is a perfect operatrix"; "if you carefully ponder Nature's works you shall find none of them made in vain, but all directed to some end and some good." He especially rebukes

"the younger more giddy and officious midwives who, lest they should seem unskilful at their trade, do mightily bestirre themselves and provoke the expulsive faculty by medicinal potions whereby they rather retard and pervert it and make it an unnatural and difficult delivery and vainly persuading the women to their three-legged stoole weary them out and bring them in danger of their lives. It is much happier with poor women, and those that dare not own their great bellies where the midwives help is never required, for the longer they retain and retard the Birth the easier and more successful proves the delivery."

The birth in breech presentation is slow and painful,

"and yet notwithstanding in abortment, and where the foetus is dead or that there would be a hard delivery any other way, so that there is necessity of handiwork in the business the more convenient way of comming forth is with the feet forward; for by that means the straights of the uterus are opened as it were by a wedge."

An excellent description is given of the contraction of the uterus after labour, of the after-pains, of the condition of the os as indicative of the state of the contents, of the powerful contraction of the uterus resulting frum stimulant injections, and the state of the lochia as a guide to treatment. He points out that if any clotted blood or any other preternatural matter remains in the cavity of the womb after delivery, the womb will neither retire upwards nor close its orifice, but its neck will continue soft and open, and mentions a case where, guided by this experience, he successfully removed an "almost gristly substance" (apparently a sloughing fibroid) as big as a goose's egg from a puerperal patient suffering from fever, a disordered pulse, and a cold sweat, "as if she were a-dying."

He gives a careful description of the involution of the uterus after delivery and of the lochial discharge. "It is indeed a wonderful thing that the so vast bulk of the uterus should so much lessen in so short a space—namely, in the space of fifteen or twenty days." This is a more accurate statement of the period during which the uterus is palpable in the abdomen after delivery than that given by many modern textbooks.

Fortunately we are able to judge of the high esteem in which Harvey was held as an obstetric physician by the writing of his contemporary Percivall Willughby (1596–1685), who was the son of Sir Percival Willughby of Wollaton Hall, Nottinghamshire, and uncle of Francis Willughby the naturalist. He was educated at Tunbridge, Rugby, Eton, and Oxford, graduated B.A. on July 6th, 1621, and was admitted an extra Licentiate of the College of Physicians on February 20th, 1640. He practised in Derby from 1631 to 1655, when he removed to London for the better education of his children, returning in 1660 to Derby where (except for a short interval at Stafford) he practised till his death at the age of 89. He acquired a great reputation in midwifery throughout Derby and the neighbourhood, and wrote *Observations in Midwifery* and *The Country Midwife's Opusculum*,* which were first published in one volume in 1863, by H. Blenkinsop at Warwick, from a manuscript then in his possession, and now in the Library of the Royal Society of Medicine. In this work, which gives the best contemporary account of midwifery in England, Willughby quotes his honoured friend Dr. Harvey on no less than sixteen occasions, attributes all his knowledge to him, and recommends his work in the following words, with which I will conclude: "I know none but Dr. Harvey's directions and method, the which I wish all midwives to observe and follow, and oft to read over and over again; and, in so doing, they will better observe, understand, and remember the sayings and doings of that most worthy, good and learned Dr., whose memory ought to bee had for ever in great esteem with midwives and child-bearing women."

* A Dutch translation of the *Opusculum* was published in 1694 at Leyden.


William Harvey, M.D.
born at Folkstone, Kent
1578. Died 1657
Given to the Kent and
Canterbury Hospital by
William Kay Clifton 1907

THE PHYSIOLOGICAL COST OF MUSCULAR WORK:

A REPLY TO OBJECTIONS.

BY

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In articles published in the British Medical Journal of May 21st, 1921, p. 733, by Leonard Hill and J. A. Campbell, and of July 9th, p. 39, by J. B. Orr and J. P. Kinloch, objections have been raised to the validity of the method by which Waller and De Decker have arrived at a preliminary estimate of the physiological cost of various kinds of industrial work, of which a summary was published in this journal on May 7th.

These objections are not new to us, and have, indeed, already been dealt with by one of us in Dr. Waller's first interim report to the Food (War) Committee of the Royal Society,[1] and a reference to that paper might serve as a sufficient answer to them. That report, which took origin from an agreement that "Waller's method by which determinations of CO_2 alone are made at short frequent intervals, was to be taken on trial," dealt at length with all of the objections now raised *de novo* in their unaltered form without any reference to the fact that they were then, as we believe, completely met and disposed of. But inasmuch as they have not been discussed at all in this journal, and as our further experience of the method has confirmed our forecast of its utility, we are unwilling to let the opportunity pass of making a direct reply to the objections. A final and in itself sufficient reason for doing so consists in our belief, confirmed now by more than two years' experience, that by this method, as by no other, further knowledge is to be obtained regarding a primary factor in industrial life—namely, a knowledge of the physiological cost of various kinds of industrial work measured during its actual performance in the workshop and at the ship's side, in the factory, and on the road. If our belief is wrong, we have merely wasted a couple of years of our time, and all that matters is that other people's time should not be similarly wasted. But if we are right, it is important that many other people should add their endeavours to ours in the application of our method of observation.

Briefly stated, the method consists in measuring and recording the ordinate of CO_2 discharge during the working day by taking its percentage in small samples (10 to 20 litres) collected at convenient intervals during the working day with least possible interruption of the work in progress. Obviously there is nothing new in such a method; the only novelty consists in its practical application and in the subsequent translation of the CO_2 data into their equivalent calories, so as to establish comparison between our results and those of other observers for such forms of exercise to which more elaborate methods can be applied. And we take walking at moderate speed on a horizontal path as the form of exercise that most readily affords comparative data by different methods.

The objections, as stated by Hill and Campbell, and by Orr and Kinloch, are three in number:

First Objection: *The period (half a minute) during which our samples of expired air are taken has been too short.*

Obviously we should have preferred longer periods if such had been practicable, since on short periods the error of volume by turning the tap on and off at different phases of respiration can be very serious, and at the outset we thought it would hardly be possible to make use of half-minute samples. But after trial, and especially in cases where ventilation (during work) has high values (30 and 40 litres a minute), we found that the half-minute samples were sufficient and necessary; we learned from our first observations on dock labourers that during a three minutes rest the ordinate fell to nearly half its work value.[2] For normal ventilation we always take longer samples—that is, for one or two minutes or 100 seconds.

Short samples do not unduly tax the patience of the worker nor cause him to lose time. Interruptions of work for four minutes would usually be quite impracticable; nor would it be convenient to fit him with a large bag and face-piece to collect 80 or 100 litres of his expired air. We have to use a small (20 to 30 litre) bag with a mouth-piece and a nose clip that do not require laborious adjustment. We did as a matter of fact expressly state that the error of volume inherent in short sampling might be of a serious order, but by repeated trial we became convinced that the error is less serious than we had anticipated before trial. Moreover, the serious error in any single reading is reduced to insignificance when the final result is averaged from many readings. Obviously a first sample collected from an unaccustomed subject, if found to be of markedly deficient volume, is to be rejected; it means that the subject has failed to breathe naturally into the bag.

The numbers quoted by Hill and Campbell for their unaccustomed subject, "J. A. C.," on April 1st (Table I)—namely, 1.3, 2.1, 4.1 c.cm. CO_2 per second (resting values) are evidently wrong; unfortunately the volume of ventilation and percentage of CO_2 are not stated, but, as is shown by their low probable caloric value as calculated from oxygen, it is clear that they took an incomplete sample. On April 4th, on the now accustomed subject, they get the more reasonable-looking figures—3.8, 3.7, 3.3 c.cm. CO_2 per second. Nevertheless, they bring their previous trio of absurd numbers in evidence of the unreliability of our method. We cannot admit the validity of such criticism.

The figures given by Hill and Campbell in Table II are a little more satisfactory. They show, on careful inspection, what, indeed, might be taken for granted *a priori*—that half-minute samples vary more than do four-minute samples; but they afford no means of comparing the two sets of figures to a common scale. We have been at some pains to do this, on the assumption that their heat figures were taken on a normal subject with a skin area of 1.75 square metres. These figures show far more clearly than do the original figures the actual extent to which the CO_2 figures diverge from the caloric figures of Hill and Campbell.

	Data given by Hill and Campbell.			Kilo-calories per hour as calculated by us from the data.		
	Hour of Work.	Heat cost in milli-calories per cm^2.	CO_2 in c.cm. per sec.	Theirs (from the heat data).	Ours (from the CO_2 data).	Difference.
April 25th.						
Half-minute samples	2nd	5.8	17.7	365	354	−11
	3rd	6.3	19.2	397	384	−13
	4th	5.4	16.4	340	328	−12
Four-minute samples	2nd	4.6	12.7	290	254	−36
	3rd	—	11.0	—	220	—
	4th	4.2	11.2	264	224	−40
May 4th.						
Half-minute samples	2nd	3.3	8.3	208	166	−42
	4th	4.8	12.7	302	254	−48
Four-minute samples	2nd	5.1	13.6	321	272	−49
	4th	4 9	13 2	309	264	−45

The differences in the individual results of the two methods of calculation are here considerable, but hardly as great as might have been anticipated from the data as given by Hill and Campbell; they do not give the area of J. A. C., and we have therefore had to assume it of an average value of 1.75 M^2. The authors' heat figures, which are given in millicalories per square centimetre, represent single observations taken chiefly in the second and fourth hours of work, and the range of error in single observations of the kind is considerable, even in the hands of the most skilled observer. The observations are too few and too unsystematic to allow of averaging.

Second Objection: *We (W. and De D.) have failed to place sufficient emphasis on the influence of food.*

As a matter of fact, we took no account at all of the small variations of metabolism due to the influence of food, but regarded them as negligible in comparison with the increased metabolism occasioned by muscular work. From our own observations, as well as from those of many

previous observers, we reckoned that the post-prandial increase of CO_2 might amount to one-fifth of the resting value, whereas the increase by moderate muscular work amounts to at least five times the resting value. We considered that it would be very hazardous to make any attempt to detect, far less take account of, the varying influence of food. Our neglect of this factor was, moreover, justified by the conclusion arrived at by Benedict and Murschhausen[3] to the effect that "the increment (of energy discharge) due to the work of forward progression was constant, irrespective of whether the subject was with or without food." And we were concerned with measurements of CO_2 output of labourers under their normal conditions of life.

THIRD OBJECTION: *We (W. and De D.) have neglected the significance of the respiratory quotient (R.Q.) in determining the caloric equivalent of the volume of CO_2 exhaled.*

This objection, which was dealt with at length in Dr. Waller's first report cited above, is, of course, fundamental and theoretically the most important of the three, since it strikes at the root of the short method by CO_2 alone, and claims for the long method that it is the sole and only means of ascertaining the cost of work in terms of calories per unit of time and body surface.

We demur to this exclusive claim made on behalf of the longer method represented as valid, as against the shorter method represented as invalid. In our opinion, the apparent accuracy of the long method must be reduced by the notorious difficulties of reading and calculation, while the apparent inaccuracy of the short method is reduced by the facility with which relatively large numbers of observations can be made and worked out on the spot.

As stated by Dr. Waller two years ago, in his first communication on the matter to the Physiological Society in December, 1918, both methods have their proper uses—as a "low-power method" and as a "high-power method" respectively—the former being best adapted for use in the factory and on the road for the necessary preliminary survey on an extensive field, the latter for the closer determination of particular points in the laboratory. We have, of course, considered and studied very carefully the range of error incurred by disregarding the fluctuations of the caloric value of CO_2 which accompany possible fluctuations of the respiratory quotient during observation, and the adoption of a fixed factor for the calculation of the caloric value of observed CO_2.

We used in the first instance a factor calculated upon a mean R.Q. = 0.85 and a temperature difference of 14° between air as expired and as analysed, which gave the following simple equivalence:

(1) 1 c.cm. CO_2 per second = 20 kilocalories per hour. We still use this equation for summary comparison of data on the two scales, but we now prefer to use as a simpler and more generally intelligible figure the equivalence:

(2) 1 c.cm. CO_2 = 5 calories, whereby the R.Q. is taken = 1 and the corresponding value of CO_2 rounded from the tabular value 5.047, as originally given by Zuntz (*Pflüger's Archiv*, vol. lxv., 1897, p. 201).

Orr and Kinloch give the following figures to show the extent of error that may occur when caloric values are calculated from CO_2 alone. Their subject was marching at a rate of 100 yards per minute.

Data and Calculations by Orr and Kinloch.

1919.	CO_2 per min.	O_2 per min.	R.Q.	Calories calculated from O_2 and R.Q.	Calories calculated from CO_2, R.Q. assumed at 0.85.
Jan. 8 ...	743	989	0.75	4.69	(4.36)
Jan. 9 ...	865	960	0.90	4.73	(5.07)
Difference...				0.04	0.71

This is an extreme case, selected by Orr and Kinloch to show the extent of error incurred by the short method as compared with the accuracy afforded by the long method. Our critics ought to have taken as their illustration a group of several observations as homogeneous as might be, and have then worked out the comparative figures afforded, with and without the O_2 readings taken into account, when, if we are not mistaken, they would have realized that the short method data do not compare unfavourably with long method data, but rather the contrary. Taking, for example, as a fair group of cases their own data for the subject M. marching at the speed of 100 yards per minute, as given in Table L on page 45 of their report on the Energy Expenditure of the Infantry Recruit in Training, we have the following figures; the total number of observations (7) is too small to allow of strict statistical inference; it is, however, the largest group number we can find in that publication.

Data by Cathcart and Orr (loc. cit., p. 45).

O_2.	CO_2.	R.Q.	Calories per Hour. Calculated from CO_2 and O_2.	Calories per Hour. Calculated from CO_2 alone.
1,305	1,057	81	376.8	352.3
1,322	1,004	76	376.8	334.7
1,131	995	88	332.4	331.7
1,053	947	90	310.8	315.7
1,137	1,012	89	334.8	337.3
1,104	949	86	322.8	316.3
1,178	989	84	342.6	329.3
Arithmetic mean			342.4	331.0
Standard deviation			23.62	11.71
Probable error			15.9	7.9
Coefficient of variation			6.900	3.540

The results in calories per hour by the long method are here given as calculated by Cathcart and Orr in accordance with the R.Q.; those by the short method have been reckoned by us on the assumptions that only CO_2 figures were available and that 1 c.cm. CO_2 per second was equivalent to 20 calories per hour. As will be seen, the arithmetic mean obtained by the short method is only 11.4 ± 6.72 calories below that by the long method—that is, the difference is not significant. Further—and this certainly gives us some surprise—the probable error and the coefficient of variation for this particular group of observations comes out with oxygen about twice as high as without. The measurement of oxygen has evidently introduced an additional error of observation.

But this can be an accident, and all that we may claim from the two columns of figures is that the short method requires to be taken into serious consideration.

The best evidence of the validity of the short method has been afforded by its results—by those more especially that are obtained from measured amounts of work on the staircase and on the horizontal path. We insist upon the latter because it is the most universally practicable, and because it affords the readiest possible means of demonstration as well as the necessary bridging measurement from cost of known to cost of unknown work. We do not desire to overload this communication with tables of data, and shall therefore content ourselves with the following detailed account of a single observation made for the purposes of demonstration at the Institut Marey upon two French soldiers walking together at a remarkably uniform speed round a circular horizontal track of three laps to the kilometre (see table and chart, p. 629).

We have found it useful, for reasons that are self-evident, to carry out such observations upon two subjects walking together at the same pace.

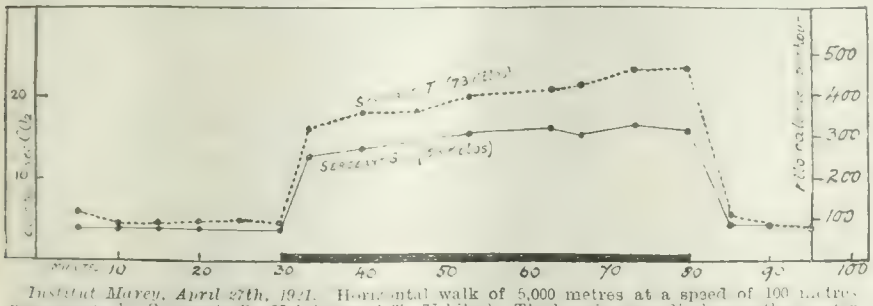
Orr and Kinloch insist very properly upon the spurious fluctuations of the respiratory quotient that take place at the beginning and end of a period of work, and on the necessity of disregarding fluctuations of the respiratory quotient caused by pumping out or retention of CO_2. They go on to say:

"It is obvious that in the method of estimating the cost of work from the CO_2 exhalation, results at the beginning of work or immediately after the work stops are of little value. In the

Institut Marey, April 27th, 1921. Sergeants S. (53 kilos) and T. (75 kilos) walking together round a circular track of 5 laps per kilometre, S. setting the pace; no load. They walked at a regular speed of 100 metres per minute (= 3¾ miles per hour), and covered 15 laps (5,000 metres) in 50 minutes. Samples of expired air were collected for 30 seconds over the last 50 metres of the 1st, 3rd, 7th, 10th, 11th, 13th, and 15th laps.

	Time of Lap.	Time of Sample.	Sergeant S. Volume of Sample in Litres.	Sergeant S. CO_2 per 100.	Sergeant S. CO_2 in c.cm. per second.	Sergeant T. Volume of Sample in Litres.	Sergeant T. CO_2 per 100.	Sergeant T. CO_2 in c.cm. per second.
At rest (sitting).								
End of 5th min. ...		60"	9.0	2.5	3.75	12.0	3.0	6.0
10th ,, ...		60"	9.0	2.5	3.75	9.0	3.0	4.5
15th ,, ...		60"	9.0	2.5	3.75	9.0	2.5	4.5
20th ,, ...		60"	9.0	2.5	3.75	12.0	2.5	5.0
30th ,, ...		60"	9.0	2.5	3.75	9.0	2.5	4.5
Walking.								
At end of Lap 1 ...	3' 40"	30"	11.0	3.5	12.8	16.0	3.0	16.0
,, ,, 2 ...	3' 35"	—	—	—		—	—	—
,, ,, 3 ...	3' 34"	32"	11.0	4.0	13.8	18.0	3.5	19.0
,, ,, 4 ...	3' 34"	—	—	—		—	—	—
,, ,, 5 ...	—	30"	—	—		15.5	3.5	18.0
,, ,, 6 ...	—	—	—	—	—	—	—	—
,, ,, 7 ...	3' 34"	30"	11.5	4.0	15.3	15.0	4.0	20.0
,, ,, 8 ...	—	—	—	—	-	—	—	—
,, ,, 9 ...	—	—	—	—	—	—	—	—
,, ,, 10 ...	3' 32"	30'	12.0	4.0	16	15 5	4 0	20.7
,, ,, 11 ...	-	30'	11.5	4.0	15.3	16.0	4 0	21.4
,, ,, 12 ...	—	—	—	—	—	—	—	—
,, ,, 13 ...	3' 33'	30	12 5	4.0	16.7	17.5	4.0	23.3
,, ,, 14 ...	—		—	—			—	—
,, ,, 15 ...	3' 33'	30"	12 0	4.0		18.0	3 9	23.4
At rest (sitting).								
End of 5th min. ...		60	9.0	3.0	4.5	10.0	3.5	5.9
10th ,, ...		60'	9.0	3.0	4.5	9.0	3 0	4.5
15th ,, ...		60"	—	—	-	8.0	3.0	4.0

	Sergt. S.	Sergt. T.
Average CO_2 during walking	1 1	20 1
Average during rest at rest ..	4 0	4 9
Average net cost of walking ..	11 48	15.2
Work of walking	88 53 KgM. (hor.)	121 7 KgM. (hor.)
Cost of walking per KgM hor	0 129 c.cm. CO_2 ..	0.125 c.cm. CO_2
That is, at 5 calories per c.cm CO_2	0 645 calories	0 625 calories



Institut Marey, April 27th, 1921. Horizontal walk of 5,000 metres at a speed of 100 metres per minute by Sergeants S. (53 kilos) and T. (75 kilos). The heavier man discharges the greater amount of CO_2. Both men are discharging at approximately the same rate per kilogram-metre—namely, 0.129 and 0.125 c.cm. (100 metres = 109.3 yards.)

former case CO_2 is accumulating in the body, while in the latter it is washed out. In neither case is there any parallelism between the production of CO_2 in the tissues and the discharge of CO_2 by the mouth."

We are in complete accord with all of these warnings and have acted upon them from the outset of our observations. Spurious fluctuations of the respiratory quotient do not concern us at all, since in our method it is not taken into account. Effects of pumping and retention of CO_2 at the beginning and end of a spell of work are likewise left out of account by us, since we measure only the CO_2 ordinate when the constant régime of work is established.

A fourth and somewhat indefinite objection has been raised by Hill and Campbell, which, addressed as it is to matter of interpretation rather than to matter of fact, will ultimately require careful discussion after further investigation.

The matter of fact is that by our method we find regularly that the CO_2 ordinate taken at hourly intervals during several hours' work, exhibits a progressive increase towards a maximum (after several hours it exhibits a decline). The increase can of course in some instances be due to increase of work; the terminal decline is certainly due to decrease of work, and is in our view a sign of fatigue pushed to the degree of exhaustion. But in other cases where there has been no such speeding up—for example, in piecework and in military marching where the rate has been approximately constant or even declining, it must have been due to some other cause. We thought it might be due to a gradually developing insufficiency of ventilation entailing a gradually rising carbon dioxide tension throughout the system, or that it might be a sign of decreasing mechanical efficiency—that is, an early sign of muscular expenditure (objective fatigue).

But whatever the explanation may be, the fact itself is unquestionable, and cannot be disposed of by the statement that it has not previously been detected by other observers using other methods. We find the increasing ordinate on all classes of workers—on heavy workers in the docks and in cold storage, on less heavy workers in the casting-room and at the coal-face and on march; in least heavy workers, such as tailors and shoemakers. We can only repeat the tentative explanation given in Dr. Waller's first report:

"Between the two possible causes of the gradually increasing CO_2 ordinate (1) increase of work, (2) decrease of efficiency, I am inclined towards the second as the more probable. The root fact in fatigue is a consumption of material, presumably of carbohydrate, in first instance, also of fat and of protein; subjective fatigue is felt when a certain degree of waste has been incurred. Objective fatigue commences long before its subjective aspect is experienced; it begins indeed with the beginning of work, with increased metabolism, of which increased CO_2 is the indicator and measure, and in the progress of the expenditure there is no line of demarcation to be drawn between a state of freshness and a state of fatigue; these terms are statements of the subjective states associated with the filled and unfilled reservoir of fuel. Moreover, the progressive increase takes place with piecework where the work is of steady value."

Hill and Campbell object to our view in the following terms:

"It is well known that a fatigued or uncomfortable subject carries out a given amount of work at a greater cost than when normal, but it does not seem reasonable that the colliers and shoemakers under consideration, are so unskilled and of such poor calibre as to show signs of fatigue after a couple of hours' constant work, when this work is of the degree specified."

Our critics do not seem to have formed any clear idea of the conditions under which our observations were carried out; the colliers and shoemakers under our observation were first-rate workmen; we never examined them for only a couple of hours, and they never exhibited any signs of "fatigue" as imagined by Hill and Campbell. They did, in fact, as do all kinds of workers, exhibit this progressive increase of the CO_2 ordinate (with which we observed in the cases of the colliers a progressive increase of pulse frequency). We may or may not be right in attributing the rise of cost to decreasing efficiency. We are in presence of a new fact, and are not yet satisfied with our own or any other explanation—least of all with that suggested by Hill and Campbell, to the effect that the progressive increase has been due to food. This suggestion is contradicted by our own experience, as well as by

the far more extensive and methodical experience of Benedict and Murchhausen, as quoted above.

Conclusion.

In conclusion, we wish to repeat and emphasize our opinion that the measurement of primary importance to our further knowledge of the physiological cost of industrial labour consists in the measurement of CO_2 expired during the day's work—recording the CO_2 values observed as ordinates throughout the day.

A fixed factor for an approximate conversion of CO_2 values into calories may be used in order to compare the findings by the short method with those of other observers by the long method. In cases where both methods are applicable we find that the results come out very close together.

In our opinion the most satisfactory and accessible test case is afforded by the cost of walking on a horizontal path at ordinary speeds—80 to 100 metres per minute (= 3 to 3¾ miles per hour). At 80 metres per minute we find by the short method that a subject "fit for military service" expends approximately 1/10 c.cm. CO_2 per second to carry 1 kilo of his body 1 metre horizontal—a finding that corresponds with that of other observers—for example, Benedict, of 0.5 calorie per horizontal kilogram metre.

As regards the relative (numerical) accuracy of the two methods, we should be very glad to find an opportunity of carrying out upon the same subjects simultaneous observations in parallel by the short and by the long method. We believe that it would be found that the relative accuracy of the two methods would prove to be very close by reason of the fact that the number of observations to be obtained is much greater by the short than by the long method.

The systematic measurement of the physiological cost of industrial work cannot be accomplished by the isolated effort of private enterprise; it requires the support of team work and the services of many industrious if not highly skilled professional researchers. The long method is impracticable without undue disturbance of the workman; indeed, no recent attempt has been made to apply it to "the determination of the energy output of men and women workers," or if such attempt has been made, the results have not been reported. The purpose of our observations of the last two years has been to show by actual trial at the docks, at the coal-face, and in the workshop that this physiological aspect of the industrial problem can be approached by a suitable method.

P.S., October 1st.—We are glad to learn that there is a prospect of carrying out for the Industrial Fatigue Research Board a parallel series of measurements by the long method and by the short method.

Our justification for taking the figure 0.85 as our standard value for the respiratory quotient consists in the experience of many previous observers (including ourselves), who have found that, apart from its spurious fluctuations, the true value varies very slightly from this mean value—thus, for example, in the series of observations given by Benedict and Murschhausen on p. 50 of their monograph on the *Energy Transformations during Horizontal Walking*, the average value of the respiratory quotient for the series of readings taken on four successive days—December 17th, 18th, 19th, and 20th—upon their subject, A. J. O., comes out at the identical value 0.8475 when the subject is standing at rest (twelve observations) and while he is walking at about 105 steps per minute (sixteen observations).

References.

[1] *Proceedings*, 1919, B, vol. 91, p. 166. [2] Waller, Calibration of a Dock Labourer by means of his CO_2 Discharge, *Proceedings Physiological Society*, December 14th, 1918. [3] Energy Tranformations during Horizontal Walking, Carnegie Institution Report, No. 231, pp. 92-95.

THREE new cinematograph films have been produced by the New York State Department of Health, and are lent free of charge within the state; these films are entitled "Mouth hygiene," "Saving the eyes of youth," and "Swat the fly." The Health Department is now co-operating in the production of a film on water supply in farms; two reels are devoted to showing the rural resident how he can install a complete plumbing system in his house, and the difficult parts of the plumber's trade are shown in detail.

GLYCOSURIA OF MALARIAL ORIGIN.*

BY

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I was particularly interested to read the account of the two cases published by Dr. A. Castellani and Dr. J. G. Willmore in the British Medical Journal of August 20th, 1921. Recently Sir Charlton Briscoe asked me to investigate a case of glycosuria, and the conclusion was reached that the condition must have been due to malaria. On referring to several textbooks of medicine, no mention of glycosuria of malarial origin could be found. Castronuovo, however, regards malaria as important in the etiology of some cases of diabetes mellitus. (See *Medical Science*, iv, 6, 497, September, 1921.)

A Jewish merchant, aged 32, went to Bombay in 1919. In March, 1920, he was in bed for three weeks with "dysentery and colitis." He then went to Indore for further treatment and to convalesce. Whilst there he developed malaria. Parasites were found in his blood, but for three weeks only did he continue quinine treatment. The ague stopped, but he had a relapse a month later. During the following six months he had a series of relapses, but did not take any more quinine. In March, 1921, he sought professional advice on account of excessive thirst. He thought that he had lost about 7 lb., but did not consider that he had been passing an unusual amount of urine; he never had to rise at night to micturate. He had been much worried by his business. Sugar was found in his urine, and a diagnosis of diabetes mellitus was made. Carbohydrates were reduced; the glycosuria decreased considerably, but was still present when he left India in May, 1921. In June, after arrival in England, sugar was again discovered, but in July Sir Charlton Briscoe found no trace.

The patient stated that he had had a "mastoid abscess and glands" at 14; an operation for removal of adenoids at 16; scarlet fever at 18; and an operation for removal of nasal septum at 27 under a local anaesthetic. The operations were successful; no post-operative complications were noted. His father died at 45 of "creeping paralysis." His mother is alive and well, aged 61. He has one brother and two sisters, all very healthy. His maternal grandfather and maternal grandmother both died from "diabetes" at the age of 72 and 70 respectively.

The patient first saw me on June 28th, 1921. He had just recovered from another relapse of malaria, having had ague on June 23rd, 25th, and 27th at mid-day. I examined samples of blood and urine, and advised him to come into hospital for further investigation.

Blood.—Fairly large number of benign tertian malarial parasites present; haemoglobin 90 per cent.; red blood corpuscles not counted; white blood corpuscles 9,600, polymorphs 73.6 per cent., eosinophils 0.4 per cent., lymphocytes 24.4 per cent., large mononuclears 1.2 per cent., mast cells 0.4 per cent.

Urine.—No albumin, no sugar, no acetone nor aceto-acetic acid; urobilin present in large amount.

He came into hospital on the evening of June 29th; his blood still showed malarial parasites, but they were fewer in number than on the previous day. There had been no further attack of ague. No quinine had been taken before admission; 10 grains were given by mouth later in the evening; 30 grains a day were prescribed for the next three days, followed by 20 grains daily for a fortnight, and 10 grains daily for a further two months. The urine again contained no sugar. A full diet, including sugar, was ordered.

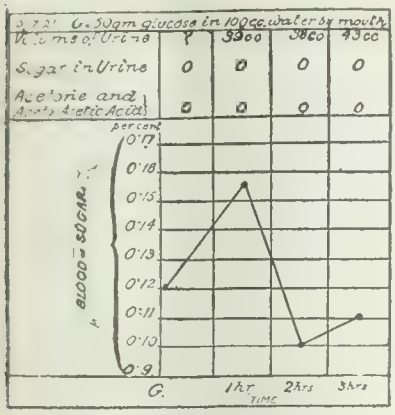
On examination on June 30th, 1921, the patient was well nourished, the skin slightly pigmented, the conjunctivae had a sub-icteric tinge, the glands were nowhere enlarged, and his general condition appeared excellent. Pulse, temperature, and respiration were normal. His weight (in clothes) was 11st. 9 lb. His teeth were in good condition, there was no pyorrhoea; nothing abnormal was to be seen in the mouth or throat. Thyroid, heart, lungs, and abdomen all appeared normal. Blood pressure was 105/85; liver and spleen were not palpable. His pupils reacted to light and accommodation; knee-jerks were present; the plantar reflex was flexor.

A specimen of the twenty-four hours' urine (52 oz.) examined on July 1st contained a very slight trace of sugar, no albumin, no acetone, no aceto-acetic acid, but a trace of urobilin. The sugar did not exceed 0.2 per cent. in concentration. Typical glucosazone crystals were easily obtained. No rotation was observed with the crude polarimeter available. After fermentation with yeast, the urine no longer reduced Benedict's solution, yet no gas had been collected in the inverted tube. Bial's test, and the phloroglucin hydrochloride test were both negative. The reducing substance was therefore, in all probability, glucose. Wassermann reaction, negative.

Sixteen different specimens of urine were tested for sugar in the next five days, all with negative results. The volume of the urine in the twenty-four hours was always normal, the highest measurement recorded being 54 oz. During his week's stay in hospital the following results of tests were obtained.

* This investigation will be included at a future date in a report to the Medical Research Council.

(1) *Pancreatic Function:* Loewi's adrenaline mydriasis test, negative; diastase in blood plasma, 6.7 units (normal); diastase in urine, 20 units (normal); creatorrhoea, nil; steatorrhoea, nil; bulk and general appearance of faeces, normal.



(2) *Kidney Function:* Albuminuria, nil; deposit, nil; oedema, nil; urea concentration test (Maclean and de Wesselow)—at end of first hour, 1.87 per cent. (vol. 240 c.cm.); at end of second hour, 2.34 per cent. (vol. 120 c.cm.), that is to say, a normal result. Diastase in blood and urine (see above), normal.

(3) *Blood:* Sugar curve July 5th, 1921, after 50 grams glucose on an empty stomach in the morning, result normal, though it was unfortunate that no estimate was made thirty minutes after the dose of sugar. Glycosuria, nil throughout test.

Remarks.

The diagnosis of "glycosuria of malarial origin" is preferred to that of "very mild diabetes mellitus in a malarial subject," owing to the negative findings in a fairly exhaustive clinical and chemical study. The family history of diabetes would naturally suggest caution. The case should be a very instructive one with which to keep in touch for several years. It is unfortunate that, while under my observation, the nature of the reducing substance in the urine could not have been more conclusively established, but the history makes it extremely unlikely that it was anything but glucose.

It is interesting to speculate as to the site of action of the malarial toxins. Possibly the glycosuria may have been due to diminished glycogenic function of the liver and other tissues. Presumably the urobilinuria resulted from destruction of red blood corpuscles by the malarial parasites, but, in part at any rate, may have been due to the effect of their toxins upon the liver. The islands of Langerhans may have suffered from the toxic action, so that the supply of internal secretion was insufficient to prevent glycosuria on a full diet. Against this is the fact that all the pancreatic function tests performed were negative; it would probably be objected, however, that such tests are too crude. Owing to toxic action on the kidneys their "leak point" temporarily may have been lowered. The type of blood-sugar curve may be said to give some slight support to this hypothesis, for it is not altogether unreasonable to imagine that four days after evident glycosuria the curve should have revealed some degree of hyperglycaemia unless the glycosuria was of the renal type.

Lastly, we may picture a toxic influence on several of the ductless glands, so that the balance between their secretions was upset in such a direction as to cause glycosuria. Of course, there is always the possibility of two or more of the above causes being simultaneously at work. Such theorizing may seem a waste of time and space, but obviously suggests several possible lines of research in malarial patients that might be of interest if not of real value; for instance, (1) examination for glycosuria before treatment, and (2) blood-sugar curves to decide, among other things, if the glycosuria is renal in origin.

Turning now to the malaria itself in this particular case, the differential blood count is noted as unusual (250 cells were counted). Though probably of common knowledge to pathologists with experience in malaria, it was of interest to me to find a number of benign tertian parasites in the peripheral blood (on June 28th and 29th) without any further attack of ague. As in the two cases previously published, so in this instance the glycosuria cleared up with quinine in the absence of dietetic treatment; in fact, sugar was deliberately included in the diet throughout the stay in hospital.

OVER FIVE HUNDRED GALLONS OF FLUID FROM AN OVARIAN TUMOUR.

BY

JOHN D. MALCOLM, F.R.C.S.EDIN.,

AND

G. A. GIBB, M.D.

THE cyst from which this fluid came was noticed in 1893, when a surgeon was consulted and advised against operative treatment. The abdomen was tapped in the autumn of that year. There is no record of the tappings until 1904, but as a conservative estimate there were twenty-five before that date. G. A. Gibb has kept a record since then. The tappings increased gradually from four in 1904 to from thirty-four to thirty-six in each of the last four and a half years. The amount removed was always as nearly as possible 11 pints, and, counting twenty-five for the first ten years, there were 368 tappings in all. Taking 11 pints on each occasion, the total is 4,048 pints, or 506 gallons, which would weigh considerably over two tons.

In 1899, after about six years' tappings, the late John Langton tried, and failed, to remove the tumour. On July 20th, 1906, John D. Malcolm tried again, with the same result.

Almost to the last the condition of the patient was fairly good. She got up and about and ate enormous quantities of food, except just before the tappings, when she suffered from nausea and vomiting. The legs were oedematous as early as 1906.

The tappings in recent years were always performed with a trocar and cannula having a diameter of one-eighth of an inch. The evacuation was usually completed in about fifteen minutes. There was never any adverse symptom. Occasionally the puncture leaked, and then the need for the next tapping was delayed. Hard masses remained after each tapping, and these were never the same shape.

On June 30th, 1921, when a tapping was about due, the patient was seized with abdominal pain and vomiting, and she was tapped without relief. One-third of a grain of morphine hypodermically removed the pain, but vomiting continued, and the patient died early on July 6th at the age of 67.

At the autopsy 4½ pints were removed, leaving a secondary cyst five inches in diameter lying on the left pelvic brim. It was obvious that this secondary cyst would soon have burst into the main cavity, and that a development and rupture of secondary cysts caused the constant change of shape observed after the tappings. There was also much papillary growth from the cyst wall. A piece of this was described by Dr. C. Fletcher as having

"the histological structure of a serous papillary cyst of the ovary. The epithelium covering the papillary processes is of a low columnar (cuboidal) type, and there is in places a deposition of salts from the secretion. The stroma is of very dense fibrous tissue with areas of commencing infiltration with lime salts. The tumour is innocent."

As in 1906, the cyst was everywhere firmly adherent, and its wall was so friable that many hours of careful dissection would have been necessary to remove it. The intestines occupied a very small space at the back of the abdomen. They were not distended. No peritoneal cavity was found. The liver when exposed was smooth and not enlarged. The other organs were not examined.

One of us (G. A. Gibb) has found the following record on a tombstone in Bunhill cemetery, City Road, E.C.:

"Here lies Dame Mary Page, relict of Sir George Page, Bart. She departed this life March 11th 1728 in the 56th year of her age. In 67 months she was tapped 66 times: Had taken away 240 gallons of water without ever repining at her case or ever fearing the operation."

Possibly this lady had an ovarian tumour.

Sir John Bland-Sutton has drawn our attention to a case recorded by Dr. Pye-Smith.[1]

Dr. Pye-Smith's case was that of a woman suffering from papilloma of both ovaries with secondary deposits on the peritoneum; she was tapped 299 times in Guy's Hospital between 1884 and 1893, when she died at the age of 44. The

[1] This case was referred to in the President's valedictory address to the Obstetric and Gynaecological Section of the Royal Society of Medicine in 1920. Proceedings of Section, vol. xiii, p. 212. The record is now complete.

fluid in this case was secreted into the peritoneal cavity. The amount removed is not given, but as much as 16 and 18 pints were withdrawn at a time, so that the total quantity might possibly be greater than in the case now recorded. This patient also "ate, slept, and looked well" after many tappings. Dr. Pye-Smith stated that he should have recommended early operative interference more urgently than he did, because removal of a primary papilloma is sometimes followed by shrivelling of the secondary growth and a complete cure.

The case now related shows that sometimes an ovarian tumour causes death simply from exhaustion and pressure. The enormous appetite of the patient was an index of the nourishment required by the growth, and it was only by constantly removing the pressure that the patient could be kept alive. There can be no reasonable doubt that she could have been easily and completely cured if an operation had been performed as soon as the cyst was discovered. It is clear that as late as 1893 some surgeons did not recognize the importance of early interference in these cases.

REFERENCE.
Transactions of the Pathological Society, vol. xliv, p. 111.

A METHOD OF SKIN-GRAFTING.

BY
SAMUEL SAMUEL, M.D., CH.B., M.R.C.S.ENG.,
LATE CAPTAIN R.A.M.C.

THE operation of skin grafting, usually regarded as a trivial and simple procedure, is not always attended with the success that one would expect. During the war, when skin-grafting was so frequently employed, faulty technique, especially the omission of details of procedure, often led to a failure of the operation. The following method which I adopted gave invariably good results.

The accompanying diagram is almost self-explanatory and calls for very little description. The grafts and area to be covered are prepared in the ordinary way, and the grafts are applied to the skin-free area in the usual manner. Silk threads are then carried from one side of the surrounding healthy skin over and through the graft and into the underlying granulation tissue, as the diagram explains, and then through to the healthy skin on the opposite side. The grafted area is then covered with perforated sterilized protective (preferably the transparent variety which is used in America for watching the progress of wounds—the perforations being easily made with the punch used for making holes in Carrel-Dakin tubes), which is then anchored in position as per diagram. On top of the protective is then placed the thick layer of sterile gauze damp with the physiological saline or artificial serum, and then a final over-all dressing consisting usually of a thin layer of dry sterile gauze. The silk threads are then utilized, as the diagram shows, for anchoring all the dressings, the silk being finally threaded through thin rubber tubing and then knotted on the tubing to prevent cutting through. The knots are tied so that they can be easily undone, and the ends of the silk threads are left long. The whole of the operation area is then covered with a layer of wool and the usual bandaging is applied.

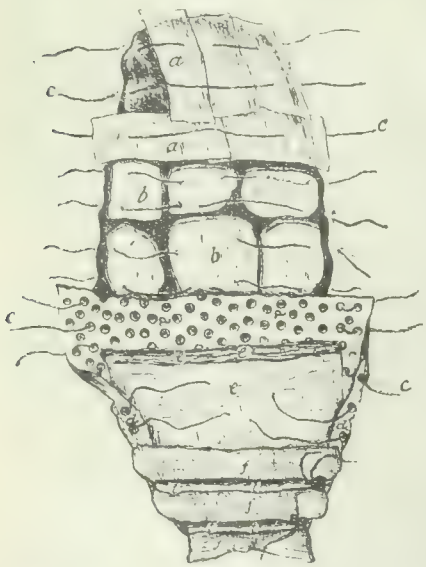


FIG. 1.—*a*, Thiersch's grafts; *b*, small Wolfe grafts; *c*, silk threads; *d*, protective; *e*, deep dressing, thick layer of sterile gauze; *f*, over-all layer of aseptic dressing; *t*, rubber tubing.

By this method the grafts can be easily and frequently fed, after removing the bandage and wool, by squeezing the artificial serum or saline from a swab on to the silk threads between the dressings and the skin, or additionally, by undoing the knotted threads and taking out and replacing the damp thick layer of gauze. The silk threads not only carry the feed, but act as in the operation for lymphangeioplasty and drain away the discharge which forms round the granulations. The amount of the discharge also is lessened by the frequency and simplicity with which the feed can be given. The great advantage of this method is that it is not necessary to disturb the grafts and there is little risk of doing so as with the old methods when the dressing is changed on the third or fourth day. A change of new sterile protective is also unnecessary. Curling and retraction of grafts does not so readily occur and healing is accomplished more certainly and more quickly. The anchoring of the grafts and the dressings is also beneficial in providing the means for applying firm gauze pressure, which is so essential for ensuring success, and for keeping grafts and dressings in position in cavities and hollow surfaces and over convex areas such as the shoulder, breast, and ischium. Grafting over the latter area, previous to the adoption of this new method, was rarely successful because of the difficulty of keeping the grafts in position, and of keeping clean the parts, which often become soiled by the dressing shifting to the anal area. The use of splints, strapping, and the application of collodion is thus also done away with. When the transparent variety of protective is used the state and progress of the grafts can be watched each time a new feed is given when the thick layer of damp gauze is replaced by a fresh one.

The only disadvantage of this method is the little extra time involved in performing the operation. This naturally becomes less and less with practice, and is readily compensated for by the greater percentage of successful cases.

The method adopted can thus be briefly stated as consisting of the principle of the application of the method of lymphangeioplasty combined with that of anchored dressings.

EIGHTY-NINTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Newcastle-on-Tyne, July, 1921.

SECTION OF SURGERY.

Professor J. RUTHERFORD MORISON, D.C.L., LL.D., F.R.C.S., President.

DISCUSSION ON COMPOUND FRACTURES OF THE THIGH AND LEG.

OPENING PAPER
BY

NAUGHTON DUNN, M.A., M.B., Ch.B.Aberd.,
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SUCCESSFUL treatment of compound fractures demands a thorough knowledge of the treatment of fractures by external splintage. Before the war the results of the operative and non-operative treatment of simple fractures was a subject of investigation by a special committee of this Association. In nearly every age-group operative cases showed a higher percentage of good results than non-operative cases. The suggestion to an unbiassed observer was that operative technique would in time almost entirely supplant treatment by splintage.

I think you will agree that as a result of the war the outlook is changed. In the early days the compound fractures presented a problem which could not be solved by operation. The splints of the textbooks got a fair trial and were found wanting. The minds of the greatest surgeons of all countries were endeavouring to devise means for the fixation of the compound fracture of the lower extremity, and only after two years did it become

generally recognized that life, limb, and function could be best conserved by the use of a splint first offered to the profession by Hugh Owen Thomas of Liverpool almost half a century ago.

During the latter years of the war it replaced all others. Its ready application allowed of its use in the front line. The fixation it offered diminished shock and prevented further injury to the tissues during transport—while the principle on which its efficiency depended was surpassed by no other in the hospitals specializing in the treatment of fractures of the lower extremity. That it was effective is proved by the fact that at one period the statistics of 500 cases of compound fracture of the femur under treatment at the orthopaedic centres in this country showed an average shortening of less than half an inch.

The compound fracture differs from the simple fracture in that there is as a rule a greater degree of shock; there is the risk of acute primary infection; complete union is as a rule delayed, and there is the possible complication of chronic sepsis, resulting from the presence of sequestra or infection of a cavity in bone. It behoves us now to review our experience of the last seven years, and to lay down certain definite lines on which compound fractures and their complications should be treated in civil life.

Emergency Treatment of Compound Fractures.

One of the most important factors in reducing the mortality from compound fractures of the femur in France was the early and efficient fixation afforded by the use of the Thomas splint. We may therefore safely urge the authorities at home to provide this form of splint as a standard in cases of civil accidents.

The emergency treatment of a compound fracture of the lower extremity consists of:

1. Exposure of the wound by slitting the trousers to allow of the immediate application of a sterile dressing.
2. A tourniquet is applied if necessary.
3. The Thomas splint is then threaded on to the leg until the ring impinges on the tuber ischii. Extension of the limb to the end of the splint is maintained either by a clove hitch round the ankle, or by a bandage attached to a metal clip (Tapson's) gripping the sole of the boot.
4. Suspension of the end of the splint diminishes the discomfort of transport.

Shock.

My service abroad did not allow of an adequate experience of the treatment of shock following compound fractures. I will therefore take the liberty of quoting *The Early Treatment of War Wounds* (H. M. W. Gray) in this connexion. Experience abroad indicates that while different individuals may vary widely in their capacity to withstand shock, haemorrhage, cold, and pain are factors which aggravate it and must be combated. As the result of shock and haemorrhage the body suffers two great losses, a loss of its fluid reserve and a loss of its alkalis.

The failure of intravenous saline to sustain blood pressure in these cases was noted during the war, and the use of a solution of gum acacia in saline was more effective. Direct or indirect transfusion of blood was found to be indicated in any case where a blood pressure of at least 85 mm. of mercury could not be sustained by other means. Where symptoms of acidosis are likely to be present, alkalis should be freely administered by the alimentary tract, or, if necessary, intravenously.

Operation in Compound Fractures.

As regards anaesthesia in cases of shock, the superiority of gas and oxygen has been amply proved by various authorities. The nature and extent of the infection which may develop as a result of a compound fracture is still a matter of uncertainty. It is a safe rule in these cases to operate early. The extent of the operation will necessarily vary with the circumstances of the case.

Our object must be to remove all severely damaged tissue. The skin and muscle leading to the site of fracture should be excised. Blood clot and completely detached fragments of bone should be removed, the wound washed thoroughly with spirit and a film of bipp applied to its surfaces. The wound may then be sutured and temporary drainage established, or we may decide to irrigate freely until healthy granulation tissue and the absence of sloughs allows of secondary suture. Antitetanic serum should be given as a routine in all cases of compound fracture.

Treatment by Splintage.

Efficient splinting requires:

1. Replacement of the main fragments into their normal anatomical position.
2. Immobilization of the limb so that there is no disturbance of the fragments in moving.
3. Avoidance of compression of the limb and easy access to all dressings.

Its efficiency will also be judged by the relative comfort it affords the patient during treatment, and the end-result as regards function. I believe the Thomas extension splint will meet these requirements for all fractures of the long bones of the leg below the upper third of the femur. Compound fractures of the upper third of femur require special consideration. The deformities and disabilities following fractures inefficiently treated are almost constant, and a knowledge of these must guide us in our treatment.

Fracture of the Upper Third of the Femur.

The common result of malunion in fractures of the upper third of the femur is flexion and abduction of the upper fragment. Excellent results may be obtained by:

1. The Jones abduction frame. By this means fixed extension in the abducted position is secured, while fixation of the spine and hip results in relaxation of the psoas and iliacus muscles.
2. Pearson used the simple Thomas splint fixed with the limb flexed and abducted. By means of his sectional bed, nursing of these cases was possible without disturbing the relation of the fragments.
3. For cases of fracture of the upper third of the femur, associated with severe buttock injuries, Sinclair devised a special net bed suspended in an oblong wooden frame. This allowed of easy dressing, while the fixed abduction of the limbs and body weight of the patient assured adequate extension in a position of abduction and flexion.

Compound Fractures of the Shaft of the Femur.

The common forms of malunion resulting from fractures of the shaft of the femur are:

1. Outward angulation at the site of fracture;
2. Sagging of the fragments;
3. Internal rotation of the limb below the fracture.

The Thomas splint has now been recognized as the standard splint for the treatment of these fractures, and I will here describe in detail its application.

Extensions having been applied to the limb from the ankle to two inches below the site of the wound, a Thomas splint, bent at the level of the knee-joint to an angle of 160 degrees, with a well-fitting ring is passed over the foot until the ring impinges on the tuber ischii. While the limb is held by an assistant, a double flannel bandage four inches wide is fixed to the lateral bars by a clip at the site of fracture. This band should be sufficiently tight to ensure the normal anterior bowing of the femur when the extensions are tied to the end of the splint. Other suspensory bands are then applied from the buttock to a hand's breadth above the heel. They should be sufficiently tight to support the limb, but not so tight as to render the band at the site of fracture loose.

A serrated wooden footpiece (Sinclair's) attached by glue to the foot is a useful adjunct both in supporting the foot and in controlling rotation of the limb so as to obtain anatomical reposition with the upper fragment.

In order that the splint may easily follow the movements of the patient, it should be suspended by weight and pulley. By raising the foot of the bed ten inches and tying the splint to a vertical bar at the end of the bed, body weight may be utilized as a secondary extension. This will also obviate undue pressure of the ring on the tuber ischii.

The position of the fragments and the results of treatment should be tested by x rays at intervals. As soon as there are clinical signs of union graduated exercises of the knee may be allowed. This may be done while extension is maintained by means of a duplicate of the lower portion of the Thomas knee splint, hinged at the

level of the knee-joint. The extensions and supporting bands are transferred to this and gradually increasing movement of the knee allowed.

At the end of ten to twelve weeks, if union feels firm, the splints may be discarded and physio-therapy employed to restore the musculature and movements of the limb. Weight-bearing without a protective calliper splint should not be allowed until the *x* rays show definite trabeculation of bone at the site of fracture.

As an alternative to extension by strapping or glue the use of callipers has been found effective, and was preferred by Major Pearson at his fracture hospital at Edmonton. These take a direct pull either above the condyles or the malleoli, while a locking screw on the stem of the tongs prevents undue penetration of the bone. With suitable dressing there was little trouble with secondary infection. In fractures of the lower third of the femur the special tendency to tilting backward of the upper end of the lower fragment must by guarded against by increasing the flexion of the knee and increasing the extension force.

Compound Fractures of the Tibia and Fibula.

We must anticipate and prevent the probable deformities in fractures of the tibia and fibula. These are valgus deformity at the site of fracture or, more frequently, failure to restore the normal curvature of the tibia, with sagging of the fragments. The resulting misdirection of body weight causes secondary flat-foot, with strain of the internal lateral ligaments of the knee-joint and an apparent genu recurvatum.

The Thomas knee splint with fixation of the knee and extension by means of a plaster anklet, or the Sinclair foot-piece should obviate the occurrence of these deformities, while allowing easy access to the site of fracture.

Compound Fractures involving Joints.

Where the nature of the fracture will not allow of the restoration of the normal contour of the joint surfaces by external splintage, operative reduction should be undertaken. This is especially to be recommended in cases of fractures involving the knee-joint, where a portion of the articular surface of the tibia or femur may be displaced from its normal relation with the main fragment. Unless the normal level of the fragments is re-established, instability of the joint and deformity on weight-bearing will result.

Effect of Compound Fractures on the Hip, Knee, and Ankle.

Limitation of movement in joints following compound fractures may result from either intra- or extra-articular causes, and is often aggravated by the prolonged immobilization involved in their treatment. The chief causes are the result of inflammatory changes in the soft tissues and in the joint surfaces. These lead to fibrotic changes in the muscles controlling the joint, and to fibrous adhesions both within and without the joint itself.

Limitation of movement in some cases is still inevitable. The steps to be taken to guard against it are:

1. Early fixation to prevent further infection of the tissues.
2. Early elimination of sepsis, either by primary excision of the wound, or free drainage and secondary suture.
3. Splintage which will allow movement of the neighbouring joints when acute inflammation has subsided.

In old-standing cases where limitation of movement is an established condition, we should depend on graduated splintage rather than sudden force applied under an anaesthetic. Where direct infection or destruction of joint surfaces renders ankylosis probable the treatment should be modified to ensure that this takes place in the most favourable position for function.

The best functional positions for ankylosis of the joints of the lower extremity are:

1. Hip.—Extension, 20 degrees abduction and 15 degrees external rotation.
2. Knee.—Full extension.
3. Ankle.—At a right angle with the leg.

Chronic Sepsis following Compound Fractures.

The chronic sinus is one of the most common sequelae of compound war fractures. These men have, as a rule, had many operations for the removal of sequestra, but the sinus persists. It persists for one of three reasons: either the removal of foreign material (in this I include all sequestra) has not been obtained; a septic bone cavity has been left; or the separation of devitalized bone—that is, potential sequestra—is not yet complete. For the first two the surgeon is entirely responsible; the last is a process of nature, which to my knowledge may take as long as nine months for its completion.

We must therefore appreciate the fact that success of an operation to eliminate discharge cannot be assured for a considerable time after the injury. The operation to be successful must be a radical one, and the question of when it is safe to open up fresh planes of tissue in the presence of sepsis arises. Certain clinical points should guide us in our decision:

1. The general health of the patient must be good.
2. There must be no signs of local reaction—for instance, oedema or tenderness at the site of fracture.
3. An absence of rise of temperature for at least three months.
4. History of only slight reaction after previous operations.

When these conditions are present I believe that the patient has reached the stage at which he has developed a natural immunity to his original infection, and discharge depends mainly on the presence of some body foreign to the living tissues, usually a sequestrum or metal fragment. Where there is uncertainty as to the immunity of the patient to the local infection, a preliminary course of Goadby's vaccine, a sensitized streptococcal vaccine, has been found effective in preventing reaction after radical operation for sequestrectomy in war wounds. The operation, which I will describe, is effective and final in over 80 per cent. of these cases.

Before undertaking this operation good skiagrams are taken in two planes so as to locate the sequestra. A 25 per cent. sterile mixture of bismuth and vaseline is then injected into the sinus under pressure. This penetrates to every point where infection is present, and further *x*-ray examination demonstrates the full extent of the infected area. The routine of the operation in fractures of the femur is as follows:

1. Excision of sinus.
2. Incision 8 to 10 inches long on the outer aspect of the femur.
3. Free subperiosteal exposure of bone extending both above and below the affected area.
4. The cloacae are probed and the cavity located.
5. Bone is freely removed until all sequestra are exposed and the cavity in which they lie converted into a groove, and its lining membrane removed.
6. The entire wound is then washed out with spirit, followed by rubbing with bipp until a thin oily film covers the entire surface of the wound.

Care is taken to allow the neighbouring soft tissues to fall into the cavity, and after adequate posterior drainage has been secured the wound is closed by deep and superficial sutures. The drainage tubes may usually be removed at the end of forty-eight hours.

The following history is typical of these cases:

Corporal G., on January 6th, 1916, sustained gunshot wounds of both thighs, with a compound fracture of the left femur. He was admitted to hospital in this country in October, 1916. The following is a summary of his notes:

December 17th, 1916. Sinus scraped.

March 6th, 1917. Large piece of shrapnel and band of brass removed, also sequestrum 2 inches long.

August 10th. Two sequestra removed from shaft of femur.

September 20th. Discharging as freely as ever, very offensive.

December 17th. Operation: wound opened up, many small pieces of bone removed from sinus, which completely perforated femur. Free drainage established through femur to wound on inner side of thigh.

January 16th, 1918. Fracture united; considerable discharge from sinus in middle of femur. *X*-ray examination shows numerous sequestra embedded in new bone.

May 16th. On this day a radical operation was undertaken. A long incision was made on the outer side of the thigh, and free subperiosteal exposure of the femur obtained. A mass of overhanging bone having been removed, a cavity in the femur

containing numerous sequestra was exposed. After treatment with spirit and bipp, the cavity was filled with an attached muscle flap. Two rubber drainage tubes were inserted to secure drainage, and the wound closed.

May 18th. Drainage tubes removed.
May 28th. Stitches removed.
June 11th. Wound quite healed.
The wound has remained healed since.

Some of you may have come to the conclusion, from the slides I have shown, that the equipment used for these cases is complicated and not likely to be readily available. I wish before I finish to show you two cases to impress upon you that the foot-piece and the suspension apparatus, while desirable, are not absolutely essential.

The first is a badly comminuted compound fracture of both bones of the leg; you will note the simplicity of the apparatus, the effectiveness of the extension, the ease of dressing, and the final result.

The second is a case of compound fracture of the upper third of the femur. You will notice in the first radiograph the metal bar of the interrupted long Liston splint, and the extreme displacement of the fragments. The following radiographs and photographs show the result of treatment on the Jones abduction frame.

Some surgeons of experience may prefer other forms of splintage for the treatment of these cases, and the results in their hands may be equally good. My intention in this short paper has been to emphasize the simplicity of the Liverpool splints, and the fact that they can be used effectively either in the cottage or the hospital.

DISCUSSION.

Mr. A. H. Tubby (London) thanked the President of this Section for inviting him as President of the Section of Orthopaedics and Diseases of Children to take part in this discussion. He (Mr. Tubby) was of the opinion that whilst the Thomas splint or its modifications was invaluable during the transport of patients from the fighting area, yet it was not necessarily the only or the standard apparatus available for treatment of these fractures in all stages. A drawback to its universal employment was that its use presupposed a thorough knowledge of its application by all medical officers, and Mr. Tubby had found that this was very far from being the case, at least in the war areas in the Near East. Many cases had come under his observation at the Base, where Thomas splints had been applied, which left very much to be desired. So that he and his colleagues often reverted to other methods, notably Mr. Hey Groves's modified wire splint, which permitted flexion of the hip and knee, with adequate extension on the foot and leg. Difficulties were encountered over this latter point, but they were usually overcome by using Sinclair's glue in place of the ordinary adhesive strapping. With the glue, extension weights up to 40 lb. could be maintained on the limb for some weeks without the strapping dragging away. From his experience Mr. Tubby found that in some cases it was desirable to apply much greater extension force to the limb than was customary. Thus, after operation for mal-union of the femur, a traction force of over 40 lb. had been applied with successful results.

In some severe and exceptional cases transfixion of the condyles of the femur by a pin had been done, where no other means of securing a firm grip on the lower fragment of the thigh was feasible. He (Mr. Tubby) quite realized the possibility of suppuration, and later of ostitis and sclerosis, following the introduction of the pin; but he was agreeably surprised to find that the cases, whilst under under his observation for several weeks, very rarely gave trouble if care was taken to apply iodine frequently to the skin at the points of perforation. It was realized that to achieve the immediate object of controlling the fragments some risk of future trouble had to be faced. The opportunity of following up the cases, after they had been transported home, were very imperfect at the time; but on his return, Mr. Tubby had heard from the commanding officers of several hospitals at home that the condition of the patients after compound fractures of the thigh treated in Egypt was good. It was certain that equally satisfactory results could be obtained by several methods, provided that each was fully understood, and watchful care over the position of the fragments and length of the limb was observed from first to last. Every method had its own special indication and employment.

Mr. Hamilton Russell (Melbourne) disagreed with Mr. Tubby as to the excellence of the results obtained by Professor Hey Groves's method of extension of the thigh from a metal bar driven through the condyles. The late results, as seen in the Melbourne military hospitals, had been very bad; prolonged sinuses lasting for years had been of frequent occurrence, and he cited one case under his own care in which amputation had become necessary from suppuration that had extended to the knee-joint. He pointed out that the methods of wound treatment in compound fractures had arisen largely by reason of the special characters of war injuries as distinguished from those seen usually in civil practice; the injuries of civil life, however, remained what they were before, and it was necessary to exercise a wise discrimination in introducing methods appropriate to war injuries into the much milder type of cases usual in civil practice. He pointed out that, in any case, open fractures must be regarded as infected wounds, and that the first principle of treatment should be to conserve the resisting power of the tissues to bacterial invasion. With this object he deprecated the application of powerful antiseptics, and briefly detailed the ritual he had laid down for his students, in which, after preparation of the limb as for an operation, the wound itself was cleansed only with sterilized salt solution.

Mr. C. Max Page (London) said: A consideration of the subject under discussion in all its ramifications would involve most of the major problems of surgery. The opener has tended to confine his attention to the methods of splintage suited to fractures of the lower extremity. The methods he has detailed are, I think, those generally accepted as the most satisfactory by all who have had during the past seven years an intensive experience of the condition under review. I propose therefore, in the first place, to make some observations which deal more particularly with the early treatment of the wound in the varying types of compound fracture, and will terminate by raising one or two points in which I am not in agreement with previous speakers.

Before going further I should like to say a few words about the nomenclature of these injuries. The old-fashioned and well-established term "compound fracture" is held to mean any fracture in which there is a breach in the tissues extending from the skin to the bone at the site of fracture. The term "open" has been proposed as a substitute, and, as it gives some indication of the condition present, and is less liable to misinterpretation, I think it is a better one to use.

Considering the immediate treatment of an open fracture, the essential aim is the conversion of the fracture (for working purposes) into a simple one. It is common ground that the prevention of the development of infection in the wound depends on the action taken within twelve hours of the injury. Exactly what this treatment should be is therefore of the first importance. It varies, I think, with the nature of the wound of the soft parts. One must clearly distinguish three types of the condition. These three types may be termed: (*a*) Direct, (*b*) indirect, and (*c*) secondary compound or open fractures.

(*a*) Direct open fractures are those in which the skin and underlying tissues down to and including the bone have been broken by violence acting from without. Examples of such fractures are those due to missiles and those caused by run-over accidents.

(*b*) Indirect open fractures are produced by the protrusion of the fractured bone through the skin from within outwards as the result of a force acting after the continuity of the bone has been broken. These fractures are by far the commonest type of open or compound fracture met with in civil practice.

(*c*) Secondary open fractures result from the sloughing of the skin and underlying tissue over a simple fracture. The sloughing may be due to the bruising from the primary injury, to splint pressure, or to suppuration arising in the haematoma about the fracture.

It is clear that the nature and extent of wound contamination varies widely in these three types. In (*a*) gross infection right down to the bone is almost necessarily involved, and at the same time the local trauma leads to a severe depression in the antibacterial properties of the tissues involved; this latter factor is probably the most important one in allowing the infection to get a serious

hold. It is this type of fracture which is liable to fulminating infection with gas-forming organisms or the streptococcus. In (*b*) infection occurs initially on the surface of the wound. The deeper part of the track only becomes infected by the reposition of the fracture carrying bone which has been exposed and probably contaminated back into the deeper parts of the wound; in (*c*) the process of sloughing is a relatively gradual one, and if the skin overlying in the damaged area is treated with the usual surgical precautions no serious or acute infection should ensue.

Immediate operative treatment is called for only in cases of the first two types. In (*a*), cases of direct injury, this can only be effected by the complete excision of the wound track from the surface down to and including the damaged bone. It is not always possible to make a clean section of the bone in cases of complete fracture without involving an unjustifiable risk of shortening or non-union; further practical difficulties which stand in the way of complete execution of this method may exist in the close relationship of main nerves or vessels to the wound track. In such circumstances free drainage must be afforded after operation in order to limit the extent of any infection which may arise. In any case, the exposed surface is treated with paraffin or bipp. If this line of treatment has been carried out extensive gas gangrene will not occur in the limb and the toxaemia from a streptococcal infection should be a limited one. It is, of course, in this type of case that the question of primary amputation will have to be decided upon, and that will always remain a matter of clinical judgement. In the case of (*b*), indirect infection, if possible the immediate treatment should fix the limb in a splint with the bone still protruding from the wound, reduction of the deformity not being allowed until thorough surface disinfection has been carried out. As soon as proper conditions are available an anaesthetic should be given and the surface wound and the protruding bone should be cleanly excised. In some examples of this class the skin wound is a mere puncture made by the sharp fragment of a long bone. If the clothing overlying the puncture is not torn through by the injury the necessities of the case are met by merely painting the surface with a solution of iodine or similar antiseptic.

Leaving on one side the treatment of established infection in a fracture, I should like to comment on a few points raised by other speakers. With regard to internal fixation by means of plate, wire, or other foreign substance, I am convinced that the use of such materials is undesirable in fractures of type (*a*), direct open fractures. One cannot exclude the presence of infection in the wound, and the extra manipulation alone involved in their use must lower the local resistance and so prejudice the course of the case.

Mr. Dunn gives an important place to the tourniquet in his list of the first-aid requirements for these fractures. From my experience I should say that in unskilled hands its use is subject to great abuse. When its application is imperative, definite instructions should be given that it is not to be left in place for more than an hour; the treatment of the haemorrhage on surgical lines should be carried out at the first opportunity.

With regard to the use of physio-therapy in these cases, if the infection is slight or localized, I think use of these methods should be commenced much earlier than Mr. Dunn indicates. Muscles and joints at a distance from the fracture should certainly be kept moving from the first few weeks of injury.

The use of transfixion pins and callipers to produce extension have their place, but their use requires care and experience anywhere near the knee-joint.

For fractures of the tibia and fibula I consider that, though the Thomas splint is useful if there are extensive discharging wounds, fixation is more easily and satisfactorily secured by means of a plaster-of-Paris case with suitable interruptions as soon as the infection of the wound is under control.

One last point in regard to the operative treatment of the chronic sinuses which may arise late in cases which have been infected. I should say that after operation deep and superficial sutures should be used with caution; in instances in which the operation on the infected bone is incomplete their insertion prolongs rather than shortens convalescence.

Mr. HENRY WADE (Edinburgh) said: No one will gainsay the fact that we have learned many valuable lessons in the treatment of compound fractures from our experiences during the late war. At the same time I think it is very important to remember that the compound fracture we meet with in civil life is very different from the gunshot wounds of war time, and that it is not advisable to apply too rigidly the methods we employed in dealing with these latter cases to the accidents of civil practice. During the war we administered antitetanic serum to all our cases. Personally, I must confess that in many cases of compound fracture, especially where the skin has been broken in a clean puncture by the sharp end of the broken bone, I do not administer it. Is this practice wrong?

In the later stages of the war it was our custom to carry out a complete excision of the wound—skin, muscle and bone—in virtually all our cases of compound fracture. This is of great value, of course, in certain cases that we meet with in civil practice, but personally I only do this in the minority of them. In the majority the break is a clean one; the damage to the muscle and skin is slight, and my practice is to cleanse the wound with an aseptic solution without using any chemical antiseptics. The results that follow this treatment appear to be good.

So strongly do many of us realize the value of the Thomas splint as an emergency treatment for fractures of the lower extremity that we have been recently conducting, in conjunction with certain of our colleagues who are located in the industrial districts in our vicinity, a campaign to encourage its more widespread employment in all such cases. No one has questioned the unique and pre-eminent value of the Thomas splint for such work, but when the patient is admitted to hospital I think it is important to remember that the necessity of any splint being employed must be first of all taken into consideration.

It is our practice, and we teach our students, that after the fracture has been set in many cases the posture in which the limb is placed will suffice to maintain the broken bones in satisfactory apposition and accurate alignment. In certain cases the application of extension by adhesive plaster, a weight and pulley, with the foot of the bed elevated, will be all that is required for this purpose. In others it will be found necessary to place the limb between sand-bags as well as carrying out the former treatment.

In all fractures we emphasize the vital importance of carrying out massage of the limb from the time of the accident onwards, and passive movement—to be followed later by active movement—of all the neighbouring joints. The splint we look upon as an unfortunate necessity in certain cases, for the use of which we almost apologize. In many cases of fracture of the femur, however, a splint will be found to be necessary, especially in fractures of the upper third and lower third. For these we employ a Thomas splint unbent, but with a knee flexion piece attached to it. The great value of this is that it permits of the knee-joint being moved daily without disturbing the fracture. As extension must be carried out, of course, in the line of the thigh, adhesive plaster cannot be carried below the level of the knee-joint, and as this is insufficient in many cases to permit of suitable extension we employ Pearson's ice-tong callipers applied to the condyles of the femur. From the surgeon's point of view this is a safe and satisfactory line of treatment, and the patients do not complain of it producing any discomfort. A most important adjunct to our treatment is the Morrison R.I.E. bed frame that we employ in all these cases.

For the treatment of fractures of the bones of the leg I have recently been employing in virtually all cases a bent Thomas splint. Extension, where it is required, may be obtained by grasping the malleoli with ice-tong callipers. To these rubber tubing is attached, which is tied to the end of the splint. By this means a comfortable, simple, and satisfactory method of extension is obtained.

Lastly, there is the difficult case of a fracture of the thigh or a fracture of the tibia, where, despite all our efforts, lateral deviation of one of the fragments continues to persist. For this we employ pressure pads which are attached to the Thomas splint and exercise lateral pressure at the point desired on the broken bone. In using these, however, it is of very great importance to

remember the readiness with which a pressure ulcer may develop. The responsibility of preventing this must be a personal one or the duty of a very well trained resident or sister.

Mr. G. H. EDINGTON (Glasgow) said: Civil cases differ greatly from gunshot wounds, the latter often having large, lacerated, and much befouled cavities. In civil cases the chief point to be kept in view is the risk of sepsis occurring in the injured osseous tissues. If this be constantly remembered, and efforts to prevent be employed, the results will be so much the better. The wound in the soft parts is covered by a preliminary dressing of lint and 1 in 20 watery carbolic solution and the surroundings are cleansed. Under a general anaesthetic the wound is thoroughly and forcibly douched with 1 in 20 carbolic lotion. Theoretically, this should damage the tissues; practically, such damage is quite immaterial, and may be neglected. For fractures of leg bones I find the half-box wooden splint all round satisfactory. If my efforts after asepsis have been successful, but good alignment of the fragments has not been obtained, the fracture may be plated in the course of a week. When this has been necessary my routine practice is to remove plate and screws at the end of the third or fourth week. My experience of Hey Groves's transfixion pin in femur cases has not been quite so favourable as some of the other speakers have found.

Mr. ANDREW FULLERTON (Belfast) said that owing to the condition of affairs in Ireland he had been obliged to return to the practice of war surgery. When on service in France during the war he had had the pleasure of being intimately associated with Major Meurice Sinclair, R.A.M.C., and of seeing the magnificent results of his work on fractures. So impressed had he been with these results that he had adopted them in his own wards at home. On his invitation Major Sinclair had, with the consent of the Director-General of the Army Medical Service, visited Belfast, and by his enthusiasm had stimulated house-surgeons and students to emulate his example and strive after the same results.

With the Thomas splint, in simple and compound fractures, proper alignment and length could be restored if adequate extension could be obtained. He and his house-surgeons were, unfortunately, unable to obtain the results with glue which Major Sinclair demonstrated, and he was more and more inclined to the use of screws or callipers on the tibia for the purpose of obtaining extension. Glue and strapping were liable to blister or to become loose, possibly from some error in technique.

His results with callipers inserted into the tibia had been universally good, and the patient who had had glue or strapping previously invariably preferred the callipers as being more comfortable. He avoided callipers or foreign bodies inserted into the femur in the neighbourhood of the knee-joint, and had seen no bad results from traction exerted on the lower fragment through the tibia and knee-joint. No evil results from sepsis had ensued from the use of callipers. His house-surgeons and dressers would consider shortening of an inch a disgrace, and most of the cases treated since the war had had no shortening. One case only showed an inch of shortening.

Excision of wounds had come to stay. In civil injuries, such as lacerated wounds, careful excision of all dead and damaged tissue, or primary closure of the wound, was followed in a large proportion of cases by primary union instead of suppuration, lasting possibly for months. No antiseptics were applied to the raw surfaces of the wound in his practice.

Professor RUTHERFORD MORISON (President of the Section) emphasized the importance of opening up all war wounds. He mentioned one particular case where he was deceived by the initial stages and apparent aseptic condition of the wounds: a man with a rifle bullet wound of the femur was admitted under his care; an aseptic scab covered each wound, the temperature was normal, the man's condition satisfactory: he was left alone, and for ten days nothing untoward took place. At the end of ten days the man had a rigor and developed infective osteitis of the femur with acute sepsis, of which he nearly died; he required two or three large operations but ultimately recovered. After that experience every case of the kind was opened up very freely, so that he got to the bottom of the wound. Each wound was bipped and sutured, and he never had any more trouble.

Mr. NAUGHTON DUNN, in replying to the discussion, said that he thought it was generally agreed that the Thomas splint was the most efficient splint for fractures of the lower limb. He regretted that Mr. Tubby should have spoken as he did on the use of this splint. He himself was certain that the best results were obtained from this splint and not from the Hey Groves apparatus and transfixion methods. He thought that as little splintage as possible should be employed.

THEORY AND METHOD IN EXTENSION OF THE THIGH.

BY

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WHY does shortening occur when the femur is broken? The answer is that it is brought about by the long muscles that are attached to the pelvis above and traverse the length of the thigh to be inserted into the upper end of the tibia and fibula. The shorter muscles that pass from the trunk to the femur and from the femur to the leg bones may be disregarded, for they cannot produce shortening. Moreover, the long muscles in the thigh are found on both flexor and extensor surfaces, an arrangement which renders shortening inevitable; were they found upon one aspect only, as is the case in the leg, shortening could be easily avoided.

The actual agency that produces the shortening is to be found in the "tone" of these long muscles; and "tone" means, for practical purposes, that the muscles are normally in a condition very like rubber bands slightly stretched. This condition of "physiological stretch" is clearly dependent for its maintenance on the integrity of the femur, which keeps the muscular attachments at their right distance apart. Immediately the femur is broken the muscles shorten and the ends of the fragments override. Here, however, the resemblance between the muscles and rubber bands ceases; for in muscle the contraction is vital and progressive, so that unless it is controlled by surgical intervention it will continue to progress and the shortening to increase until the femur unites; hence the excessive shortening invariably seen in ununited fracture of the femur.

When the femur is broken, then, the aim of treatment will be to pull out these long muscles to their normal length. I shall adduce evidence to show that a very moderate amount of force should suffice for this, were it not for two complicating factors. These are: (1) Active contraction of the muscles excited by mental apprehension, pain, or discomfort, and (2) the weight of the limb and the action of gravity. Neither of these complications is such as ought to add seriously to our difficulties. The weight of the limb in a recumbent patient means merely so much permanent addition to the extending force; the active contraction due to fear will quickly pass away when it is found that there is nothing to be feared; and that due to pain and discomfort will be abolished when we have rendered the patient comfortable.

And now as to the actual procedure: We want first to bring the limb into the best possible position. Needless to say, the surgeon does not merely lay hold of the leg and pull it; he will almost instinctively act as follows: Standing by the side of the bed he passes one hand beneath the knee and bends it slightly, while the other hand, grasping the leg just above the ankle, makes steady traction. He finds, however, that he cannot by this effort overcome the shortening, but he begins to think physiologically, thus: "The patient's muscles are contracting involuntarily. If I could stand here motionless doing this until the patient became quiescent and went to sleep, I should have no difficulty in drawing out the muscles to their proper length; and if I were able to keep it up night and day for six weeks the bones would unite without any shortening at all."

This, then, is the problem of treatment clearly indicated;

the way in which we attempted its solution is shown in the accompanying figure. This is a device in which

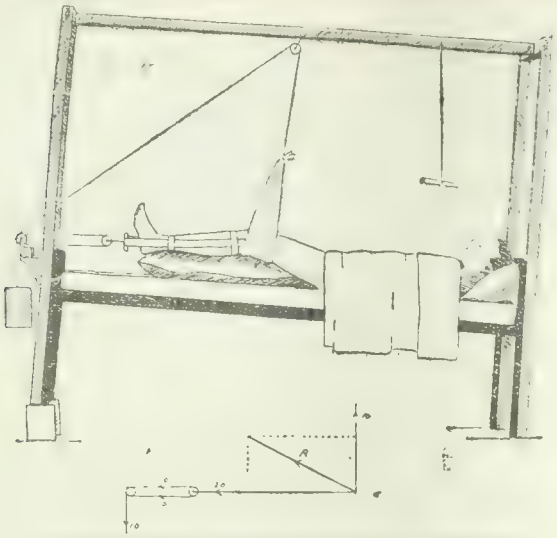


Diagram showing the method of extension in use at the Alfred Hospital, Melbourne.

small block pulleys and cord, together with a wooden framework over the bed, constitute the most striking features; the arrangement is such that the knee is supported and slightly bent while the leg is pulled upon, the pull upon the leg being approximately double the upward pull upon the knee. The general mechanical efficiency is indicated by the little diagram, which shows a parallelogram constructed on these two forces with its resultant lying approximately in the line of the thigh. There are two other very essential adjuncts —a box or some such support (not shown) for the foot of the sound leg, and a handle suspended over the upper part of the patient by means of which he can help to raise himself from the bed. The foot of the bed is raised upon blocks. For the last ten years or more this method has been used almost exclusively at the Alfred Hospital in Melbourne; it is astonishingly comfortable, far more so than any other apparatus known to me.

In fracture of the shaft, whether in the upper, middle, or lower part, the treatment is the same; in fracture of the neck I have had one or two results that have been disappointing, and others that have been very gratifying; perhaps it were unreasonable to hope for greater uniformity of good result in fractures of the neck.

In compound fractures of the femur the dressing of the wounded limb will be found remarkably easy. With his three sound limbs, the two hands grasping the handle suspended above him for that purpose, and with the sound leg bent up so that he can rest upon the foot, the patient will be able to lift himself freely off the bed without any pain while the dressing is changed; a process which, if well managed, should not necessitate his being raised up for more than a few seconds. In children, as might be expected, we have met with a remarkable uniformity of good result, and a little child a year old has been allowed to roll over on its stomach every night, without the slightest impairment of the result.

In many cases other than fracture we use this method extensively. In acute arthritis of the hip-joint the sudden transition from terrible suffering and much morphine to incredible relief and no morphine is one of the most dramatic things that surgery can show. Again, in ordinary hip disease with flexion, nothing is so efficient in bringing the limb down to the straight position. At the Melbourne Children's Hospital an infant of 9 weeks with streptococcal suppuration in the hip-joint was rigged up in this way with little pulleys and string by my house-surgeon. I was at first inclined to regard it not quite seriously, but the sister of the ward took it very seriously indeed. The nursing and general management were made so very easy; and the tiny patient lay quite comfortable and happy, came rapidly through its formidable illness, and made a complete recovery with perfect movement in the hip-joint. In bad fracture of the pelvis, a class of case very difficult [illegible] have been relieved from putting an extension on both legs; it will be readily understood how benefit from this might be expected.

Perhaps if I were asked what I consider to be the most valuable individual feature of this method, I should emphasize its diagnostic value during the early days of treatment; it would render impossible such a catastrophe as that to which I have alluded—namely, non-union with 3½ in. of shortening after ten weeks of treatment. If after the apparatus is applied the length has not come easily and perfectly right in the first twenty-four hours, I am at once on the *qui vive*. If it obstinately refuses to come right, and if, as probably will be the case, the contour of the limb feels not quite normal and a little lumpy and irregular about the fracture, then I conclude that there must be something intervening between the fragments which prevents them from coming into position, and operation is undertaken.

And now a few words with respect, and I may add "with all respect," to the Thomas bed-splint which is at present very generally employed in the treatment of fractures of the femur. The Thomas splint has been of such incalculable value as a means of transportation from field to hospital that I feel reluctant and almost ashamed at having to deny any claim made for it. I believe that it is not so good, nor nearly so good, as no splint at all in the treatment of fractured femur; and that for any sort of lesion above the knee it is unsound in theory, uncomfortable in practice and quite superfluous.

I said that I would adduce evidence to show that the amount of contraction force resulting from muscle tone must be very moderate, and therefore easily corrected by a correspondingly slight extending force. My evidence is taken from a study of fracture of the shaft of the humerus. In this case similar conditions are present to those which are answerable for shortening in the case of the femur, and doubtless if the humerus were treated like the femur in the horizontal position some overlapping of the fractured ends would be seen. But here the patient is allowed up, the arm lying comfortably against the chest, with the forearm slung at right angles by the wrist only; the weight of the elbow region of the arm will then exercise a slight but continuous extending force under the influence of gravity, and it is here seen that this slight force is sufficient to overcome the uncomplicated tonic contraction of the muscles, although the patient was a muscular man. I therefore conclude that the contractile force of muscle due to its tonicity is really very moderate, and that the greater part of the extending force which we use in the case of the femur is in reality expended in counterbalancing the weight of the limb.

Before concluding, I wish to allude to two matters that have become the objects of widespread error. The first concerns the part which it is alleged that muscular action plays in producing displacement and deformity after fractures. Let me say at once that this is a pure myth: there is no such thing as the displacement of fragments and the production of deformity by muscular action. Gravity may do it; and so may unsuitable apparatus. But let us clearly understand that if a limb, normal before the injury, recovers from the fracture with a deformity, whatever may have been the cause of the bad result it must not be ascribed to muscular action, but to something else that ought to be completely under our control.

The second error has to do with the ligaments of the knee, and the dangers that threaten them in the application of extension. It is perhaps not quite recognized that as soon as the femur is broken the ligaments of the knee are at once removed from all danger of being pulled upon during extension. Forgetfulness of this has often led the surgeon to face difficulties that need not have troubled him, and it has sometimes led to the employment of expedients that are in themselves actually dangerous, in the endeavour to shield the patient from a danger that is purely imaginary. There is no advantage, so far as I can see, to be gained from carrying the extension plaster above the knee; because when fracture has occurred the whole of the extending force will fall upon the long muscles of the thigh, none at all upon the ligaments of the knee, which are thrown entirely out of commission. How clearly correct this statement is will be rendered very obvious by the reflection that were the muscles to be severed in such a case the limb would drop off.

DISCUSSION.

Sir Hamilton Ballance (Norwich) thought that the essential feature of treatment was adequate extension. He presumed that according to Mr. Hamilton Russell's method there would be no difficulty in the nursing arrangements, as the patient would assist the nurse; the pelvis and the thigh would easily rise. The same thing applied to the Thomas splint: the extension in Thomas's splint was transmitted through the muscles of the thigh and not through the ligaments of the knee-joint. He had never observed any injurious effects in the knee-joints from weight extension. The amount of extension necessary in fractures of the thigh in war wounds was not anything like as great as that required in civil practice. In war injuries a weight of 15 lb. was all that would be required, but in civil cases 25 lb. might be necessary. Sir Hamilton Ballance said that he preferred weight extension to fixed extension. He did not believe that the leg ought ever to be allowed to get loose within the Thomas splint as that meant a little displacement at the seat of fracture. He disliked glue for weight extension. Major Sinclair admitted that in 10 per cent. of the cases glue would cause an abrasion of the skin. In his own experience glue caused an abrasion of the skin in 50 per cent. Ordinary adhesive strapping was adequate for weights up to 25 lb. Calliper extension gave the most direct extension; it was not so necessary or so desirable in civil fractures. Fractures of the fibula and tibia should be treated in the Thomas splint, as they required extension as much as fractures of the femur.

Mr. McAdam Eccles (London) said he would venture again to suggest that in this twentieth century surgeons should avoid the terms "simple" and "compound" as applied to fractures and employ always the nomenclature "closed" and "open." In the open fracture of the femur he agreed with Professor Rutherford Morison that it was best to consider the wound septic in every case, and to open up and dissect out the edges of the wound in all its parts. Whether or not an antiseptic should be used must be a matter of individual opinion, but it was safer to use an antiseptic.

Then, with regard to splinting, it was important to have a means whereby early relief to pain and maintenance of alignment could be obtained. A Thomas splint appeared to have an advantage of helping to prevent external rotation. A sling behind the knee might press upon the popliteal vessels and nerves.

Mr. Hamilton Russell, in replying to the discussion on his paper, protested that he in no way underestimated the value of Thomas's splint. For transportation purposes it was invaluable, while for the treatment of fractures of the leg he preferred it to any other apparatus. But for fractures of the thigh he thought it quite wrong in principle. If used as a means of extension it had the fault that the extending force was exerted against a portion of the patient's body; this meant that if efficient it must be uncomfortable. Again, it failed to meet another cardinal requirement, in that it did not fix both the joints contiguous to the fracture, but only one of them. Finally, if, as seemed to be very usual, it was used simply as a trough or support for the limb, while extension was made by a weight, then he held that it accomplished nothing that could not be better accomplished without it. It was a complete error to state, as had been stated, that the Thomas splint was a source of comfort or that it aided nursing; the exact opposite was the case, for it was simply an addition to the weight of the limb and an unnecessary complication.

Mr. Hamilton Russell instanced the case of a man who fractured both thighs, returned to full military duty in fourteen weeks, went to France and fought for three years in the infantry. This patient's six weeks in bed while the bones were uniting were most comfortable, for he had liberal freedom of movement and the nursing was rendered very easy and convenient. He also instanced the case of a man who, a few hours after his femur had been divided for malunion, was able to lift himself high off the bed while a mattress was changed; this man was amusingly triumphant about it; he had previously had experience of a Thomas splint.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF INJURIES OF THE INTESTINES.

OPENING PAPERS.

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The diagnosis and treatment of intestinal injuries may demand the consideration of the surgeon, either when he is confronted by a severe or, mayhap, even a slight contusion of the belly, or when he is called upon to deal with a penetrating wound of the abdominal cavity. Four years' war surgery has evoked a wealth of surgical writing around the latter portion of the subject under discussion, and has furnished abundant practice therein; but the literature of the intestinal lesions due to contusions, run-over accidents, kicks and buffer injuries, has been but little augmented during those years when man has been maiming man with all the machinery of modern warfare.

Intestinal Injuries from Non-penetrating Wounds.

It is the traumatic rupture of intestine without any penetrating wound of the abdominal wall which is so difficult of diagnosis. James Berry and Paul Giuseppi in the end of 1908 made a most valuable contribution to the subject, basing their findings on 132 cases admitted to ten London hospitals in the fifteen years from 1893 to 1907 inclusive. They affirm that the diagnosis of rupture of the bowel rests not upon any single symptom or sign, but upon a careful consideration of all the facts dealing with the particular case under treatment; every case of abdominal contusion should be looked upon, when first seen, as a case of possible severe intestinal injury. Much help may be obtained from careful attention to the history of the accident, the manner in which the blow was inflicted, and the exact part struck. Although intestinal lesions are generally the result of the more severe forms of violence, nevertheless, it must be borne in mind that fatal visceral rupture may be caused by an apparently trivial blow.

V. Zachary Cope reopened the subject in 1913, and at the discussion which followed his paper and which dealt with the reports from ten London hospitals upon 44 cases admitted during the five years from 1908 to 1912 inclusive, it was pointed out that the more important symptoms detailed corresponded very closely with those in Berry and Giuseppi's series, and could be arranged in order of frequency thus: Abdominal pain, with or without marked tenderness; rigidity; vomiting; rising pulse; marked shock; bruising of the abdominal wall; dullness in one or both flanks; diminution or loss of liver dullness.

Sir George Makins especially emphasized the importance of sharply localized tenderness, which, although not constant, was, when present, the most valuable indication of all. Sir Berkeley Moynihan notes the value of Claybrook's sign, which consists in the transmission of the cardiac and the respiratory sounds, so that these can be heard all over the abdomen almost as well as, or possibly even better than, they can over the chest.

Cope urges that, if chest and kidney injury can be excluded, ruptured bowel should be suspected: (1) When abdominal pain persists for more than about six hours after an injury, especially if the pain is accompanied by (*a*) vomiting, particularly bilious vomiting; (*b*) a gradually rising pulse; (*c*) persistent local rigidity which tends to spread; (*d*) deep local tenderness with shallow respiration. (2) When abdominal pain is absent or very slight, but the pulse rises steadily and the patient is very restless or listless. It is important to exclude a spinal injury before making a diagnosis of intestinal rupture and undertaking an operation for the latter.

The prognosis in intestinal injuries is so intimately related to early diagnosis and to early operation that the case should be kept under the closest observation and the pulse rate counted at least every half-hour, and I would submit that whenever there is the slightest suspicion of any intestinal lesion the abdomen should be explored forthwith. Rapid operating, the use of Crile's local anaesthesia, with warm ether or gas and oxygen inhalation, and possibly the employment of blood transfusion,

will reduce to a minimum the risk of the actual operative manipulations, and the surgeon will have assured himself of the integrity of the intestinal canal or will have dealt with any damage that he may have found.

The exact management of the damaged bowel will be dealt with in a later section; it suffices here to say that if only a slight contusion of the intestine be found, it may be left alone. If the contused area is sufficiently damaged that a secondary perforation is liable to follow, then it should be turned in by suture, reinforced by omental grafts, or even resected.

The liability of the duodenum to retroperitoneal injuries must be remembered, lest an overlooked tear of this aspect of the bowel be followed by a fatal retroperitoneal extravasation and infective cellulitis.

The treatment of the peritoneum in these cases of ruptured bowel varies according to the amount of extravasation and the duration of time which has elapsed since the injury. If the effused bowel contents be strictly limited, dry sponging only should be employed, and the belly wall may be closed without drainage; if the escaping contents are widely spread, the gross infective material should be wiped up, and the pelvic cavity may be cleansed with a weak solution of flavine.

Intestinal Injuries due to Penetrating Wounds of the Abdomen.

The diagnosis of cases of intestinal injury due to penetrating wounds of the abdomen is not beset with the same difficulty that obtains in deciding whether the bowel has been damaged or not by contusions or non-penetrating injuries, and the indications for treatment are far more clear. Whatever be the injury—a stab with knife or dagger, a sword or bayonet thrust, a laceration with an animal's horn, a gunshot wound from bullet, shell, or bomb—the general principles of treatment are alike. No surgeon would advise an expectant line of treatment, nor assume the responsibility of abstention from operation; a penetrating wound of the abdomen probably means a penetrating wound of the bowel and demands the earliest surgical interference.

It is true that until the great war gunshot wounds of the abdomen received under conditions of warfare were placed in a special category by themselves in the matter of treatment, but the "expectant attitude" prescribed had always appeared to the civil surgeon bizarre and wrapped in mystery. Experiences in the Boer war had shown that laparotomy for abdominal wounds caused by rifle bullets was attended by a very considerable mortality, contrasting somewhat remarkably with the high percentage of recoveries in cases not operated upon; it was, indeed, said that one-third of the injuries of the small intestine and about two-thirds of the cases of injury to the large bowel recovered without operation. Such results from this *laisser faire* policy led to the surgical decision against operation for abdominal wounds under military conditions, and this opinion appeared to gain further support from experiences in the Russo-Japanese war, the French war in Morocco, and the Balkan war.

In the earliest period of the recent great war the "expectant" treatment obtained, save for a few operations performed sporadically by individual surgeons. Because of "the military situation," abdominal operations under anything like favourable conditions of time and environment were obviously impossible during the retreat from Mons, and in the early months of the campaign before the "line" became fixed; but even when abdominal surgery became a possibility military tradition died hard, and the old belief and confidence in the efficacy of the expectant line of treatment persisted. Experience in this "preoperative" period of the war, however, showed that at least 80 per cent. of the abdominal cases died, and that with the rarest exceptions wounds of the small gut were fatal injuries.

Then in the summer of 1915 Owen Richards of Cairo demonstrated, both by operative and *post-mortem* findings, that the abdominal injuries of warfare were of such a nature that recovery was not to be expected without surgical interference, save in a few instances. This demonstration of the extensive gut injuries which the bullet produced gave the lie to those advocates of the "expectant" attitude who had laid stress on the small lesions produced by the modern small bore bullet and on their relative innocuousness. The enormous experience of the casualty clearing station surgeons amply vindicated the truth that the principles underlying the treatment of gunshot wounds in the intestine are alike in peace and in war, and that apart from certain few contingencies, dependent on time and place, there can be only one method of treatment for a penetrating wound of the coelom—early laparotomy.

Diagnosis.

The abundant literature relating to gunshot wounds of the abdomen during the recent war—a literature based upon so vast a wealth of experience—far transcends in magnitude any dealing with penetrating wounds of the abdomen received in any previous campaign or produced under peace conditions, whether the damage be inflicted by bullet, by dagger or knife, the spike of a railing, the horn of an animal, the instrument of the abortionist, or the maladroit efforts of some inexpert obstetrician. One's views upon the diagnosis and treatment of these penetrating wounds must therefore almost inevitably be those born of war experience.

An escape of faecal material or flatus from a wound involving the abdominal parietes, or even a portion of the body somewhat remote from the coelom, is self-evident proof of an intestinal lesion. An abundant and persistent discharge of blood from wound in the back, flank, or anterior belly wall, an ebb which flows the faster and with greater force when the patient coughs or makes any effort, will likewise suggest some deep visceral lesion and will call for surgical exploration. No comment is needed upon those cases where a portion of bowel or omentum projects from a wound in this region. Still more significant will be the diagnosis and still more urgent the need for resuscitatory methods and preparation for laparotomy if the wounded man is "shocked," blanched, or passing blood from the rectum, or if there is haematemesis. The situation of the wound may, however, not at first suggest an involvement of the coelomic cavity or its contents; it is, perhaps, hardly necessary to reiterate the frequency with which gunshot wounds of the buttock implicated the peritoneal cavity, and to emphasize the danger with which these injuries were fraught in the late war.

The wound of entry may be in the thorax, and, passing through the diaphragm, the missile may implicate the intestinal tract; it has been pointed out by others as well as by myself that the immediate prognosis of these abdominothoracic wounds is in very many cases largely determined by the nature of the abdominal injury and that those accompanied by a wound of a hollow viscus are very fatal. Sir Cuthbert Wallace found that only 7 out of 28 such cases in his collected series were evacuated to the base; Gask and Wilkinson saved only 3 out of 13 such cases. Some, it is true, were more fortunate, for Lockwood had 8 successful cases out of 20, and I have a record of 11 recoveries out of 22 cases of hollow viscus injury, of which several were complicated intestinal lesions.

Wounds of entry may be even still more remote from the abdomen and have been encountered in the supraclavicular fossa or as far down the lower limb as the region of the patella; it may be pointed out here that these "longitudinal wounds" are very fatal in character.

It should be borne in mind that the bowel may be damaged by small bony spicules being driven through the peritoneum, although the projectile itself does not penetrate that membrane; and non-penetrating wounds may also jeopardize life, the intestine being ruptured by indirect violence without any penetration of the coelom by the missile. Such cases are very familiar to all who have had first-hand experience of gunshot wounds of abdomen in the recent war. The small bowel in these "burst" wounds gives way either into the mesentery or along the antimesenteric border; the large bowel bursts more frequently between the taeniae coli and often behind the peritoneum, occasioning a fatal retroperitoneal cellulitis or diffuse peritonitis, as has been shown by Hamilton Drummond. It must be remembered that the mere fact of penetration, apart from the presence of any intestinal or visceral lesion, is in itself a serious menace to life, since infection of the abdominal cavity may occur from the wound of entry, and a fatal peritonitis may ensue.

What symptoms and signs enable us to make a diagnosis of intestinal injury in these less obvious cases of abdominal wounds? Rigidity, pain and tenderness, vomiting, the

facial expression and a rising pulse are all suggestive. No one sign or symptom individually is diagnostic, but when they are present in combination the clinical picture becomes more clear. An *x*-ray examination will give valuable information as to the direction of a wound of gunshot origin; and will, in addition, furnish useful suggestions as to the exact mode of approach to be adopted in the particular case.

In the abdomen there are no insignificant wounds. Every wound, whether penetrating or not, should be thoroughly explored, excised, and disinfected. What matter if an operation is perhaps occasionally unnecessarily performed! In these days of improved resuscitation and operative technique, the patient will suffer no detriment from the exploration; nay, rather, with the excision of his parietal wound his convalescence will be more sure, his wound will heal more kindly, and the surgeon will have that comfort which comes of assurance that no intraperitoneal injury has been overlooked.

Treatment of Penetrating Injuries of the Intestine.

It was counselled, even before the war, that bowel resection should be adopted only when simple suture seemed impossible. The enormous experience of both methods of treatment during the years 1915 to 1918 appears to strongly favour the minor operative procedure, save when the bowel is practically destroyed, when there are several severe injuries or complete divisions close together, when there is infarction of vessels or extensive damage to the mesentery or separation of the bowel from the latter for more than an inch or two. It is a matter of some surprise that whereas in most regions of the body the tendency of the surgery of gunshot injuries was towards wider excision of damaged tissue, yet in the case of bowel lesions more conservative surgery yielded better results. The gradual trend of surgery of the intestinal tract during the latter years of the war was towards a reparative operation of suture of the various perforations and was opposed to bowel resection.

It is true that resection eradicates at one sweep all damaged tissue, and, at its inception during the late campaign, intestinal surgery, in a high proportion of cases, consisted of excision. Owen Richards, who did so much in the First Army to put abdominal surgery on a sound footing, urged in his early writings the necessity of wide resection, advising the extirpation not only of the injured segment, but also of such portions as were likely to remain out of action and constitute a functional obstruction, just as Barker had urged in cases of strangulated hernia years before; by 1918, however, he sums up strongly in favour of suture, and states that the mortality of resection is about double that of repair.

Writing in 1917, John Fraser of Edinburgh and Hamilton Drummond of Newcastle, who admitted that in their earlier work they had a bias in favour of resection, strongly advocated suture wherever possible; in 38 cases of resection they had but 8 recoveries—a recovery rate of only 20 per cent.—whereas nearly 50 per cent. of their cases of suture did well.

Walters of Bristol and his colleagues during the first battle of the Somme also found that the mortality from bowel resection for cases of gunshot injury was double that of suture, and they urged that resection should seldom be done, especially if it was merely undertaken to save time. Lockwood and his colleagues arrived at a similar decision and concluded that resection in itself definitely increases the gravity of the prognosis.

On the contrary, F. Gordon Bell of Edinburgh, quoting also his Somme results of 1916, obtained a 46 per cent. recovery rate in a series of 30 intestinal resections.

It is interesting to note that whereas in 1916 Walters and his colleagues resected about half their cases, the ratio of the cases treated by suture to those treated by excision by the different surgeons in the casualty clearing zone in the last two years of the war was about 4 or even 5 to 1. Charles of Ipswich, for example, resected but one-sixth of his intestinal injuries, and Gordon Bell in his later series of resections in 1917–18 had a much higher mortality rate, presumably because the more severe operation was reserved for only the more severe type of case. It is, however, necessary to look sanely upon severe intestinal injury; it is useless to cobble a piece of bowel in which the life has been crushed out, which has been badly bruised, or which has been widely detached from its mesentery and its blood supply, merely because the mortality of resection is reputed to be double that of suture.

The writer has unhappy recollections of at least one case where he had sutured a badly damaged bowel and repaired the mesentery, which had been riddled with wounds. The boy had been rescued from the resuscitation ward, then apparently died on the operating table, and was revived by the transfusion of 1,000 c.cm. of blood, which reached his veins some four minutes after his abdominal aorta had ceased to beat. His desperate condition prompted the less radical operation, but he died some four or five days later of an infarct of his liver, and except for a septic thrombus in his mesentery in the neighbourhood of a perforation, no lesion was found *post mortem* which was not undergoing natural and healthy repair. A resection of bowel and mesentery at the original operation instead of the minor measure would doubtless have saved his life.

Wounds of the Large Intestine.

As in the case of the small bowel, suture should always be preferred to resection, unless the latter is inevitable. The whole experience of the surgery of the war demonstrated that suture suffices in an overwhelming majority of cases of injury to the colon; by reason of the size of this portion of the intestinal tract its wounds are mostly of the nature of perforations or tears, and the bowel is rarely completely divided. Moreover, the absence of numerous loops and coils makes multiplicity of wounds of the colon uncommon when compared with their frequency in the small intestine.

It is important to bear in mind the extreme probability of the wound of the colon or rectum being of a perforating nature, and it behoves the surgeon to satisfy himself as to the existence of a retroperitoneal wound in addition to the more obvious and accessible peritoneal injury of the large bowel. These retroperitoneal injuries, with consequent infection of the subperitoneal tissues, are much more fatal than intraperitoneal wounds. The term "colon septicaemia" was applied by John Fraser to a group of symptoms indicative of an intensely rapid septicaemia, which was met with in the case of wounds of the colon with spread of infection to the retroperitoneal space; such were especially encountered in lesions of the more fixed portions of the large intestine, where no mesentery was present. These wounds ran a sinister course, because the tissues behind the coelomic cavity had not those powers of dealing with organisms, and especially anaerobes, possessed by the omentum and the peritoneum, because the retroperitoneal space, when infiltrated with blood, provided an ideal pabulum for the spread of infection, because the injuries of the bowel were difficult of exposure and held suture badly, and because it was difficult in some cases, especially in rectal wounds, to establish adequate drainage.

As a means of preventing fatal infection of the retroperitoneal space a colostomy may prove a most valuable operative measure, but it must be employed at a very early period before infection has actually obtained hold of the lethal cellular tissues behind the peritoneum, and it must not be used as an alternative to the establishment of free and adequate local drainage.

There are certain cases of gunshot injury of the large bowel where a resection of the damaged portion is always indicated, more especially when infarction is present. Further, in some cases where the wound of the large intestine has been of such magnitude or difficulty of approach as to suggest the formation of an artificial anus, recourse might well be made to resection, when the high mortality of the colon anus in the late war is borne in mind; the adoption of this procedure would, of course, be influenced by the general condition of the patient. If excision is to be practised the removal should be free, and the bowel sections planned in accordance with the dictates of general surgical experience. The wide removal of damaged bowel and of the adjacent devitalized retroperitoneal tissue, which the resection facilitates, finds justification not only in being in accordance with the ordinary rules for the treatment of gunshot wounds by excision of the damaged area, but also by the end-results in those cases in which this more drastic operation has been undertaken. A temporary or provisional caecostomy has proved of inestimable value in my hands in these large intestine resections.

It is appropriate on this occasion to make mention of the gangrenous ulceration of the mucous membrane of the more fixed parts of the large bowel, to which Hamilton Drummond and Shaw Dunn first drew attention. This very rapid gangrene of the mucous membrane seems to be caused by the deprivation of its blood supply through rupture of the small vessels and laceration of the underlying muscular coat of the bowel, produced by a missile the actual track of which may be separated some distance from the intestine. In these "bursting" or traction injuries the gangrene of the bowel leads almost at once to a severe infection of the retroperitoneal space, and a colostomy can be of no more service in this class of case than the performance of an enterostomy as the treatment of a gangrenous appendicitis.

It is in such wounds that heroic measures must be employed to freely expose, drain, and possibly excise the damaged area of the bowel; portions of the innominate bone or the coccyx may require removal to effect a thorough exposure of the rectum and the post-rectal tissues, and the writer has even performed an abdomino-perineal excision of rectum and sigmoid, removing coccyx, part of the sacrum and the retroperitoneal tissue, in order to get rid of the intense and fatal local sepsis.

Multiple Bowel Resections.

In pre-war surgical writings there is but little reference to multiple resections of intestine, and one generally seems left to assume that when an excision has to be done the segment removed must include the whole of the damaged area. Even Sir Berkeley Moynihan makes but the briefest reference, and merely states "on rare occasions a double or even a triple resection may be necessary."

Published results of abdominal operation for gunshot injuries and conversations with other surgeons at the casualty clearing stations gave one the impression that double resections of bowel for wounds of gunshot origin were but rarely successful, and it was generally admitted that in cases where such a procedure appeared to be indicated it was preferable to either remove one damaged segment only and make every effort to "cobble" the other by means of suture, or alternatively to extend the resection so as to include all the damaged bowel in the one portion ablated, sacrificing the intervening healthy bowel to carry into effect this principle of single excision.

Webb and Milligan thought that two feet was the amount of healthy bowel intervening between two segments requiring removal which might be sacrificed so as to make the resection a single one. On the other hand, if the distance between the two damaged segments exceeded this, a double resection should be performed.

It follows from what has already been stated in respect of the surgical treatment of wounded bowel, that it is only the cases of very severe intestinal injury or very gross damage to the mesentery which have required such drastic measures, and it is interesting to note that in the majority of the eleven cases of double resection of intestine of my own (of which I have notes) other wounds of the bowel required repair by suture. Of these eleven cases, four recovered; the one triple resection which I performed for a bomb wound of the abdomen, though the patient was transfused with blood, died of his injuries, which included an enormous wound of the liver and diaphragm, a prolapsed and shattered transverse colon and jejunum, and other wounds involving the sigmoid and gall bladder.

Poppert is quoted by v. Mickulicz as having performed a quintuple resection for a pistol wound of the intestine and to have saved his patient. A triple resection of small bowel was performed by W. A. Campbell of Glasgow, and of No. 37 Casualty Clearing Station; in no case did the resection amount to more than five or six inches. The patient made an absolutely uneventful recovery so far as his abdomen was concerned; the bowels moved naturally and freely, and there was never any intestinal paresis. But the cold and damp weather during the latter part of the advance in the autumn of 1918 proved too much for the patient, who developed pneumonia and rapidly succumbed.

Successful multiple resections of bowel under civil conditions, and more especially in non-traumatic surgery, do not appear to be remarkable; Sir John Bland-Sutton tells me that he has probably had half a dozen such, and I have had a successful triple resection which survived the removal of some 2 ft. of jejunum and two segments of large intestine in the course of extirpating a large inflammatory tumour in the umbilical region. Ernest Hunt, of Worcester, U.S.A., had a successful triple resection for a bullet wound which involved the removal of 21 in. of lower jejunum and two segments of ileum. Most of the successful results of double resection have involved the ablation of but short segments of bowel, but in one of my own 4 ft. of jejunum and 2½ ft. of lower ileum were successfully excised.

In the War Museum of the Royal College of Surgeons is a specimen of a double resection which ended happily, and successful cases are recorded by Shaw, by Meyer and D. C. Taylor, and by C. H. S. Webb. My friend and colleague Victor Bonney had a "late" double resection for a gunshot wound at the Middlesex War Hospital at Clacton, and this case also ended happily.

The high mortality of double-bowel resection is doubtless due to the serious injuries which necessitate such a severe operation, and is unconnected with the actual nature of the operation itself. In no successful case of my own was the post-operative history characterized by any condition of ileus or any intestinal obstructive phenomenon, nor was any such demonstrable in the fatal cases at autopsy.

Other Factors Influencing the Results of Treatment.

Time and space are wanting to deal with every aspect of the treatment of intestinal injuries due to penetrating wounds, but a few further points may perhaps be emphasized.

The fatality of wounds of the duodenum was notorious in the late war, but cases did recover, and Professor Saint, of Capetown, had a successful case of abdomino-thoracic wound involving the hepatic flexure and the second part of the duodenum, which was produced by a fragment of shell weighing two ounces. According to Sir Cuthbert Wallace, wounds of the jejunum had a better prognosis than those of the ileum.

Associated injuries to other abdominal viscera naturally increase the gravity of intestinal wounds. The pancreas had a very sinister reputation in this respect; but at least one patient of my own, a stalwart Australian, wounded on Mount St. Quentin in 1918, survived a suture of twelve wounds of his ileum, the resection of 18 inches of the lower jejunum, and a severe wound of the pancreas with extensive fat necrosis present all over the omentum and mesentery.

The "early" mortality amongst combined bowel and bladder injuries was very high; it is said to have been "dismal in the extreme," yet of those who survived to reach the French base 70 per cent. recovered. Isolated successes remain indelibly fixed in one's mind: Gordon Bell's successful resection of 5 ft. of small intestine and the suture of bladder and rectum, D. C. Taylor's 4 ft. resection of small bowel and removal of a fragment of shell from the bladder, and my own case of extraperitoneal wound of the rectum, extra- and intra-peritoneal wounds of the bladder, and a 3½ ft. resection of small bowel, including a damaged Meckel's diverticulum, are "the exceptions which serve to prove the rule."

The prognosis in cases of evisceration from gunshot injuries to the abdomen is extremely serious; nevertheless, extraordinary successes have been seen by individual surgeons as the result of their treatment. Bayonet wounds involving the intestinal canal are usually fatal on the field, but the writer has had one successful case of a bayonet wound of the rectum and sigmoid, and a damaged sigmoid artery which had bled very freely. The few stab wounds which have come under my notice in civil surgery have been treated by an exploration through the wound, which has been appropriately enlarged after thorough disinfection or excision. This affords a satisfactory access to the damaged bowel, which is usually in the near vicinity of the puncture, in contradistinction to gunshot wounds which are best approached through a median or a paramedian incision, in order to explore adequately the coelomic cavity for possible intestinal injuries.

Anoci-association.

For the past nine years I have counted myself an adherent of the sect who profess the doctrine of the kinetic theory of shock and of its prevention through anoci-association, and I have embraced many, if not all, the tenets of that school. I am convinced that whether combined with nitrous oxide and oxygen or with warm ether

vapour inhalation, local anaesthesia of the abdominal wall by means of novocain solutions is a most valuable measure and facilitates abdominal operative procedures.

Blood Transfusion.

In blood transfusion we have the most potent means of treating the shock-haemorrhage combination which is such a feature of intestinal wounds, especially those due to penetrating injuries. Its value was amply proved in the late war. A series of 34 abdominal cases of my own with pulse rates of over 120, treated with blood transfusion and operation, showed 14 recoveries (41 per cent. recovery rate), and still another series of mine of 32 cases with pulses of 140 and upwards, transfused and operated, gave 12 recoveries (37.5 per cent. recovery rate). The results in this series of desperate abdominal injuries may be fortuitous; nevertheless, they may be contrasted with some of the figures published before transfusion became such a relatively common practice in the casualty clearing zone. In June, 1917, it is said, "of 145 cases with pulses over 120 only 16 recovered, a recovery rate of but 11 per cent."; and another well-known surgeon in the early part of the war strongly urged "against any operation in a man with a pulse over 140."

In the late war blood transfusion and the anoci-association operation rescued many almost moribund abdominal cases, and these measures should be employed in severe intestinal injuries, whether due to contusions or to penetrating wounds inflicted by accident or design.

II.—JAMES BERRY, F.R.C.S.,

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MR. GORDON-TAYLOR has dealt so well and so fully with the subject of ruptured intestine accompanied by external injury that I propose, in the short time at my disposal, to limit myself to a few points in connexion with traumatic rupture without external wound, which in civil practice is the more important subject of the two.

Much has been written upon the manner in which such injuries are produced. Of the three alleged causes—crush, tear, and bursting—there is, in my opinion, but little doubt that by far the most common and important is direct crush between some hard substance and the lumbar spine, or, less often, the innominate bone. Tearing occurs mostly at or near the duodeno-jejunal junction, and is quite a rare cause of rupture. Bursting is little more than a pathological curiosity. It may occur occasionally in the case of a blow upon a hernia. It occurs also in those rare cases in which air is forced at high pressure into the rectum (chiefly American cases of so-called pneumatic rupture). The site of the rupture is shown in the accompanying table, comprising the statistics of three large series of hospital records, excluding all isolated cases collected from literature, which are notoriously somewhat misleading.

TABLE I.—*Site of Rupture in 221 Cases of Ruptured Intestine without External Wound.*

	19 London Hospitals (1893–1907).*	12 London Hospitals (1908–1912).†	Zeidler's Clinic at Petrograd (1897–1910).‡	Total
Duodenum and jejunum	23	5	1	29
Jejunum and ileum	92	37	48	177
Large intestine	10	1	3	15

* Berry and Giuseppi, *Proc. Roy. Soc. Med.*, November, 1908.
† Cole and Raymond Johnson, *Proc. Roy. Soc. Med.*, January, 1914.
‡ Tschistosserdorff, *Beitr. z. klin. Chir.*, 1912, vol. 79.

Personal observation of more than twenty cases and the study of the clinical records of some hundreds of collected cases has convinced me that the diagnosis could and should be made earlier than it often is. If we are to get better results in the future than many of us have had in the past, it can only be by making a very early diagnosis and following this up by prompt operative treatment. Especially must we disabuse our minds of the still too common idea that abdominal distension and evidence of free gas in the abdomen must be present before rupture of the intestine can be diagnosed. After all, as Dr. Giuseppi and I wrote in 1908: "The important question to be decided is usually not so much, 'Is there a rupture of the intestine?' but 'Is there an abdominal lesion sufficiently grave to demand an immediate abdominal section?'"

I am far from recommending immediate operation in all cases of abdominal contusion. The great majority of such cases recover without operation. But a blow upon the abdomen, followed by severe and continuous localized pain and marked local tenderness, indicates almost always rupture of the intestine. These symptoms alone are usually sufficient to demand exploration, especially if muscular rigidity be present as well. Vomiting often occurs, but is not essential for the diagnosis. At this stage, the most favourable for operation, the pulse rate is often normal. A little later the pulse rate rises owing to absorption from the peritoneal surface or from cellular tissue.

At this stage, if no distension has occurred, operation still has a good chance of success. Later still, with much abdominal distension, the chances of successful operation are greatly diminished. When absence of liver dullness and marked signs of general septic absorption have set in, operation is usually wellnigh hopeless. And here I would say that general practitioners who see these cases early and do their own operations have a great advantage over hospital surgeons, who are largely dependent upon resident medical officers and are often not summoned until the most favourable time for operating has already passed away.

Rupture of the intestine, *per se*, does not necessarily produce shock. Shock is often present, but is generally due either to concomitant injuries such as damage to the solar plexus or to other abdominal organs, or, rarely, to the sudden escape of large quantities of intestinal contents. A rupture of the intestine is not usually attended in the first few hours after the accident by the escape of any considerable quantity of gas or other intestinal contents.

It has been shown both by experiments on animals[1] and by clinical observation that the immediate effect of a severe injury to the intestine is usually a contraction of the bowel in the immediate neighbourhood of the lesion. This contraction tends, for a time at least, to prevent further extravasation. That it may sometimes last for many hours was shown to me by the case of a Russian soldier under my care during the battle of Marasesti in Rumania in 1917.

I found this man at a dressing station near the battlefield thirteen hours after he had sustained a bullet wound causing five perforations of the small intestine, varying in size from that of a halfpenny downwards. When I opened the abdomen, less than an hour later, the wounded portions of intestine were found glued together, forming a mass as large as a double fist. On drawing this mass out of the abdomen it was seen that the intestine immediately above the perforated area was still tightly contracted for a distance of five or six inches. It then suddenly relaxed, and a great stream of intestinal contents poured out on to the table. Had this relaxation occurred before the abdomen was opened the man would have had little or no chance of recovery. The holes were all closed by suture, nothing whatever was given by mouth for four or five days, and the man was sent back convalescent to the base between two and three weeks later.

Clinically, cases of ruptured intestine without external wound generally present themselves under one or other of three different aspects:

1. Cases of localized primary rupture involving all coats of the bowel. These cases are common, and include most cases of kicks, blow and falls against hard substances. Most of these could be diagnosed very early from (*a*) the history of the injury (not necessarily severe, and sometimes apparently trivial), (*b*) severe local pain with sharply localized tenderness and muscular rigidity. Vomiting frequently occurs, but is not essential for diagnosis. These cases should be operated upon immediately without waiting for rapidity of pulse, distension, presence of gas or fluid in the abdomen, or absence of liver dullness. Yet hospital records show that these latter are the symptoms upon which many hospital residents and some surgeons seem to rely.

2. Cases of secondary rupture (lumen of bowel at first not completely perforated and with no extravasation of intestinal contents into the peritoneal cavity). Symptoms are usually not so characteristic until perforation occurs secondarily. These are the cases which often walk to

hospital and are apt to be sent away as trivial injuries. I have personal knowledge of several such cases. Here is one: A boy received a blow upon the abdomen and walked to the nearest hospital. He had so little pain and seemed so well that he was allowed to go home. He proceeded to eat a good supper, but immediately afterwards he was seized with severe pain in the abdomen and other signs of intestinal perforation. He was taken to another hospital where he shortly afterwards died. At the necropsy an extensive rupture of the duodenum was found. The peritoneal coat was much less extensively ruptured than the others, and had evidently given way secondarily.

3. Cases complicated with other internal injuries, including most of the "run-over" cases. These are generally very severe, and often attended with much shock. They are generally difficult to diagnose accurately. In these the surgeon has to separate the symptoms which are due to rupture of the intestine from those due to other conditions, such as haemorrhage, rupture of pancreas, liver, etc. Not only may diagnosis before operation be a matter of much difficulty, but at the operation itself the rupture may easily be overlooked owing to the presence of much blood in the abdomen, the signs of the intestinal lesion being overshadowed by those of some more obvious gross lesion. Among the 84 operation cases recorded by Dr. Giuseppi and myself, there were no less than 15 in which the rupture of the intestine was overlooked at the time of operation. Many of these were ruptures of the duodenum.

Summary of Treatment.

To be successful, operation must be undertaken early—within the first few hours of the accident. Early diagnosis, based upon a few characteristic signs and symptoms, is essential. At the operation a sufficiently long incision should be made. The wounded bowel will usually be found immediately below that point on the surface at which the blow was inflicted, or between this and the lumbar spine. Simple suture is generally better than resection. Local sponging is better than irrigation. Drainage can often be avoided, but when in doubt, it is best to drain suprapubically for a short period. The after-treatment should be to sit the patient up, give nothing at all by the mouth for four or five days, and administer continuous rectal saline by the drop method for many hours.

TABLE II.—*Results of Operation for Rupture of Intestine without External Wound.*

	10 London Hospitals (1893-1907).	12 London Hospitals (1908-1912).	Zeidler's Clinic at Petrograd (1897-1910).
Cases admitted	132	44	52*
Cases operated upon	84	30	49†
Recoveries after operation	17	9	8
Percentage of recoveries after operation	20.2%	30%	16.3%

* None of these were "run-over" cases.
† Of these 49, 10 were operated on within six hours, and 5 recovered: of those operated upon after twenty-four hours, none recovered.

Probability of Cure.

Careful examination of the details of the cases recorded in the above table appears to bring out clearly the fact that the probability of cure by operation in uncomplicated cases of primary rupture varies inversely with (1) the number of hours between accident and operation, and (2) the amount of extravasation of intestinal contents, which is usually, in the first few hours, not great, owing to spontaneous intestinal contraction.

Some statistics appear to show that operation performed from seven to twelve hours after the injury are more likely to end in recovery than those performed in the first six hours, and this has recently been used as an argument for some delay. But as Dr. Giuseppi and I pointed out in our original paper, there is a fallacy in this, because many of the most severe and complicated cases in which the necessity for operation admits of no doubt would be operated upon early, while many of the slighter cases with but little extravasation, and cases of secondary rupture, are often watched for hours before operation is undertaken.

Conclusion.

In conclusion, I should like to show, as illustrating my remarks, a sketch from a specimen in the Royal College of Surgeons of England (by kind permission of Professor Sir Arthur Keith). It depicts a specimen (R.C.S. Museum, No. 2,435) which is quite characteristic of the commonest form of rupture of the intestine, and is of historic interest as well, since the injury was inflicted exactly one hundred years ago.



External surface of jejunum, showing small complete rupture of all coats with protrusion of mucous membrane. Natural size. Museum, Royal College of Surgeons, No. 2,435.

It is described thus in the catalogue: "A portion of jejunum, the coats of which were ruptured by a blow. The aperture is transverse and oval, measuring about a quarter of an inch in its greatest diameter. The edges of the ruptured mucous membrane are protruded through the aperture in the peritoneal coat and everted, so as to form a deep border round its margin, by which the apparent extent of the aperture is considerably lessened. The adjacent peritoneal coat is thinly covered by lymph."

The following is a transcript of the original notes published by Mr. Joseph Swan, surgeon of Lincoln, in the *Edinburgh Surgical and Medical Journal* for 1824, vol. xxii, p. 93:

"*Case of Rupture of the Jejunum.*

"John Copaldish, aet. about 70, was kicked by a horse just above the navel, on the 24th of April, 1821, at one p.m. He was very faint for some time and in extreme pain. He was bled, and had his body fomented; he took an opiate, and had a clyster. He was *in great pain always at the spot* where he was injured. There was a little discoloration, as from a slight bruise, but there was not the least wound. The abdomen became tense about two hours after the accident, and so tender as not to bear being touched. He died at ten a.m. on the 25th. He was *able to retain some gruel* and other mild things on his stomach, and he *never vomited* after the accident. The clyster purged him well, and passed plenty of urine.

"*Examination.*—There was a small opening in the lower part of the jejunum, and the lips of the wound were everted; the whole of the small intestines near the injured part were inflamed, so that coagulable lymph was effused, by which several folds were glued together. The villous coat was not inflamed. The whole peritoneum was becoming inflamed; but the omentum was in a high state of inflammation, and adhered to the intestines. There was a large quantity of bloody serum in the abdomen, but *very little feculent matter had escaped*. On two portions of the intestine there was a black patch of the size of a shilling, which was only an ecchymosis."

This case is a very typical one as regards both history of the injury and subsequent symptoms (severe local pain from the beginning and local tenderness). It also illustrates the bad treatment (according to modern ideas) often adopted by patient and others—namely, food by the mouth, opium before diagnosis, and no early operation.

In conclusion I should like to express the debt of gratitude we all owe to successive surgeons of St. Thomas's Hospital—especially Mr. Croft, Sir George Makins, and Mr. W. H. Battle—for all that they have taught us about the diagnosis and treatment of rupture of the intestine.

REFERENCE.

[1] Bazbrin, *Lésions de l'intestin*, Thesis, Paris, 1903.

DISCUSSION.

Mr. Zachary Cope (London) said: Mr. Gordon-Taylor has dealt so fully with the question of penetrating wounds of the intestine, and Mr. Berry has considered so judicially the problem of non-penetrating injuries, that I can add little to their able contributions.

I find myself in complete agreement with the wise counsel of Mr. Gordon-Taylor, especially with regard to his statement that every wound of the abdomen is serious or should be regarded as such until proved otherwise. Wounds of the abdominal wall, even small and apparently superficial lesions, need the most careful attention. They should not be investigated by the probe, which is an instrument unnecessary, if not harmful, in the conduct of abdominal wounds. Such injuries should be thoroughly examined under an anaesthetic, the edges of the wound either excised or suitably cleansed, and the presence or absence of any lesion of the peritoneum determined. If the peritoneum be penetrated, the further abdominal exploration is a matter of course.

The question of treatment of a non-penetrating abdominal injury resolves itself into a matter of diagnosis. If there be any symptom present which in any way points to or is suggestive of serious intra-abdominal lesion—especially of the intestine—then operation is indicated. It is unfortunately true that there is no one symptom or sign which constantly proclaims the presence of intestinal injury. There are two indications, however, at least one of which always serves to point to the peritonitis which sooner or later supervenes on a rupture of the intestine. The first is persistent pain, the second progressive change in the pulse.

The pain is shown in four ways: The facial expression may betray it, superficial or deep pressure on a certain area of the abdominal wall may elicit it, or the patient may openly and spontaneously complain. Finally, rectal examination may show that the pelvic peritoneum is tender. Importance must also be attached to any shifting of the site of the pain. An epigastric blow followed by hypogastric pain is very suggestive of a ruptured viscus.

In those very few cases in which pain is not complained of or easily elicited there are usually changes in the pulse, either a progressive increase in rate or decrease in force, or both combined. I am well aware that many cases of ruptured intestine present a normal pulse at the time of examination, nor should the surgeon wait for change in the pulse if there be any other symptoms suggestive of gut injury. If pain be accompanied by vomiting the indications for operation are clear. It is necessary to bear in mind that an attack of appendicitis sometimes appears to be precipitated by a blow on the abdomen, but in such a case the symptoms are in no way peculiar.

The symptom termed by Tschistosserdorff "primary meteorism" may occasionally be puzzling. It is especially after retroperitoneal injuries that there may follow an alarming distension of the intestines which may suggest peritonitis. In these cases the pain will be less and the condition of the pulse more normal than in cases of intestinal injury. A perfectly placid countenance is seldom seen accompanying peritonitis.

No one in this discussion has referred to those cases of rupture of the colon consequent on the application of the nozzle of a high-pressure air apparatus to the anal region. Several cases have been recorded in the United States in which the colon has been torn to ribbons by the enormous pressure of the gas which entered the anal canal. This should be an avoidable accident if strict warnings were issued to all the workers of such apparatus.

Mr. Berry misunderstood what I intended to convey if he thought that I would always wait six hours even when the symptoms of intestinal injury were present. I should operate so soon as I had made up my mind that there was a possibility of any intestinal rupture. But many patients for one reason or another do not reach the surgeon for several hours after the accident. The rules that I laid down for guidance referred particularly to such cases.

With regard to the value of liver dullness in diagnosis I agree that one should never wait for the liver dullness to disappear, yet the case need not be hopeless even when resonance be obtained over the liver. I have succeeded in saving a patient who had such a condition.

The prognosis in cases of intestinal rupture without external injury used to be very grave, with a mortality of 30 to 50 per cent. I believe that with earlier diagnosis and more prompt surgical intervention the outlook will be much more promising. The experience at St. Mary's Hospital would seem to support that view, since the last five cases (operated on by four different surgeons) have recovered from the condition.

Mr. Hamilton Barclay (Newcastle) recommended, with regard to penetrating wounds—for example, gunshot wounds—that median or paramedian incision should be a rule. There ought to be a systematic search of the viscera after opening the abdomen in order to avoid missing lesions, and all the lesions should be found and investigated before dealing with any single lesion. Haemorrhage should be dealt with first of all. Other important points were gentleness and avoidance of undue evisceration of the intestine during the operation. With regard to contusions, in doubtful cases where there was a real possibility of ruptured intestine, the abdomen should be explored rather than wait.

The President of the Section (Professor Rutherford Morison) said that the most important point in the problem of the treatment of intestinal injuries was the education of the practitioner. What they wanted to do from the Surgical Section was to send out rules for the practitioner which he could observe when he met with such cases. He always reminded his students of a case which came under his notice which was accurately reported, and which created great interest at the time: A prominent footballer was struck on the abdomen forcibly by the knee of an opponent; he collapsed, and was carried into the pavilion, a doctor was sent for, saw him, and said he was only "winded" and would be all right. Apparently the man was soon better, and he was taken home in a taxicab. This occurrence was on a Saturday afternoon; he was seen at home on the following day, and everything seemed well, but on the Thursday following—that is, five days after the injury—he was dead. A *post-mortem* examination was held, and a rupture of the jejunum, close to its junction with the duodenum, was discovered. Now this case was typical of all these abdominal conditions.

There was only one point on which he did not agree with Mr. Berry, and that was that in all these cases there was some shock. What is shock, and what is not shock, was a difficult problem. The patients' appearance was bad; sometimes they were so cold and so feeble and so ill that everyone could recognize the facts; but the shock stage might be so transient that almost nobody observed it. After the shock stage there came a reaction stage, and that was why they, as surgeons, did not get these cases so very early. The general practitioner sometimes did not recognize that a patient might appear to be almost quite well with a rupture of a viscus, stomach or intestine, or suffering from bleeding; he might appear on a superficial examination to be quite well and yet suffer any of these conditions. He had seen a man with a ruptured liver and a ruptured pancreas and yet with such an excellent reaction from shock that those who saw him regarded him as only "winded" for the moment. The three important and common stages were: the period of shock, the period of reaction, the period of haemorrhage, peritonitis, or whatever gross lesion was present. His next point was as to the importance of the history of the case, and he strongly advocated accurate information being conveyed to the surgeon in charge. If a man got a sudden serious blow—a kick of a horse, a blow with a shaft of a vehicle—almost certainly they would find ruptured intestine. How were they to get those cases early into hospital? Every speaker had emphasized the importance of diagnosis and early treatment, and he had emphasized the difficulties in doubtful cases. The practitioner had only one course: if a man was kicked or otherwise injured in the abdomen, and even if he could see no urgent symptoms, every such person who had a severe localized injury, whether he appeared to be ill or not when seen by the practitioner, should be sent to a hospital straight away for observation.

Mr. F. J. S. Heaney (Liverpool) mentioned a case in which he had found rupture fourteen hours after injury,

and in which he had had to operate twice subsequently for intestinal obstruction. He had some difficulty in understanding such recurring adhesions.

Mr. D. P. D. Wilkie (Edinburgh) asked what was the attitude of the surgeon to the cases sent into hospital. It was difficult for the surgeon to say whether there was injury to the viscus or not. Wherever there was a lesion about they ought to explore the abdomen. Surgeons had frequently been surprised to find extensive lesions where apparently nothing was to be expected. He mentioned a case where a footballer was kept under observation for three days and demonstrated to students, but on the fourth day was operated upon and found to be suffering from a very complete rupture of the jejunum. He was impressed with the practical impossibility of stating whether the patient had a definite rupture or not, and he thought that such cases should not be left for prolonged observation.

Mr. Ernest Finch (Sheffield) laid stress upon the slight extent of injury necessary to produce a rupture of intestine. He quoted a case of a man, aged 21, who slipped off a curbstone at 4 p.m., and afterwards complained of pain, but was able to get home. He vomited and was seen by his doctor, who diagnosed appendicitis. At 11 p.m. the following day, over thirty hours after the accident, the condition was diagnosed as a rupture of intestine. He was operated upon and recovered. The mild extent of the symptoms was also of great importance. The symptoms were not always such as would even draw attention to the possibility of an injury to the intestine.

A boy had a contusion of the abdomen and was seen almost immediately. He had a slight degree of shock, but beyond that nothing could be elicited, and he was left. Ten hours after the accident he suddenly became extremely collapsed, complained of intense pain, vomited, and in less than one hour died. At the autopsy he was found to have an almost complete rupture of the jejunum high up, and the amount of intestinal contents free in the peritoneal cavity was about one ounce.

In all probability the original injury caused a paralysis of the gut; with gradual recovery the first peristaltic wave down the gut forced out the contents and death resulted from the shock. A type of injury not mentioned by previous speakers was injury from within. The intestine can be ruptured by foreign bodies, pus, rabbit bones, etc., from within the lumen of the gut. They can give rise to most acute symptoms; in one case the speaker mentioned the condition was diagnosed as intussusception, and in the other as acute infection of the gall bladder. In both these cases a rabbit bone had perforated the transverse colon; both cases recovered.

These cases illustrated the following points: The slight extent of the accident necessary to produce a ruptured intestine, the immense importance of pain, and the advisability of operating early rather than waiting for symptoms to make the diagnosis certain; but there was always a possibility of recovery even after thirty hours.

Mr. C. Firmin Cuthbert (Gloucester) said that he would like to refer to two cases of severe abdominal trouble produced by comparatively slight injury:

1. A gentleman fell across a pipe over a ditch when on special constable duty at night. He lay in great pain for some hours, and was then found and taken into the guard-room. He went home and put himself to bed. He had pain during the day. When seen, at 10.30 p.m., he had localized pain and localized tenderness over the epigastrium, no rise of pulse. With difficulty of persuasion he was removed to a nursing home and the abdomen opened up. A considerable bruising of the jejunum close to the duodeno-jejunal angle was found, with part of the omentum bent over the bruised area. He made an uneventful recovery.

2. The other case, although not strictly one of intestine injury, was a boy of ten who was playing leap-frog. When just about to jump, the other boy straightened up his back and the jumping boy struck his abdomen against him. He had intense pain and shock, and soon presented a blanched appearance. Within an hour his abdomen was opened and found full of blood, caused by a transverse tear of the spleen. Splenectomy was done, which microscopically showed no previous disease of the spleen.

These cases emphasize the necessity of immediate operation in comparatively minor abdominal contusions.

Mr. C. P. Childe (Portsmouth) was interested in the length of intestine which was capable of removal. He quoted the case of a woman, 61 years of age, who suffered extensive gangrene of the bowel due to thrombosis of a mesenteric vessel, who had had 7½ feet of bowel excised, and who died nine months later from malnutrition. He thought, on the whole, it was unsafe to remove so much bowel.

Mr. F. A. Hadley (Perth, Western Australia) mentioned a case of slight injury where a patient had simply struck himself on the abdomen with a small parcel consisting of two books, without actually falling, in whom a small perforation was found about 2 feet above the ileo-caecal valve.

Mr. H. S. Souttar (London) said: For the successful surgical treatment of intestinal wounds perfect conditions for operation and after-treatment were essential. In wounds of the colon complicated by injuries to a kidney or the spine an ileo-sigmoidostomy would sometimes be very valuable.

Mr. Gordon-Taylor, in reply, referred to Mr. Berry's interesting case of the Russian soldier, where he had found that even fourteen hours after injury no extravasation had taken place, on account of the contracted condition of the bowel at the seat of injury. He was greatly indebted to Professor Rutherford Morison for his remarks, and agreed that it was of greatest importance that every contusion of the abdomen should be seen by the surgeon or sent at once to hospital. The longest resection for traumatic lesion he had seen successfully performed was a resection of 6 ft. 6 in. of bowel. He had resected 7 ft. 6in. of bowel in thrombosis of the mesenteric vessel of the bowel, and this case did very well; he also had one other case of resection of 9 ft. of bowel in an old lady who lived for two years afterwards. In regard to treatment he was fully in sympathy with the necessity for full control of materials given to the patient, and he felt certain that if the patient were content to limit himself to water only he would do well, but if, through mistaken kindness, he got food, he would almost invariably do badly.

Mr. James Berry, in reply, said that he was not perhaps so far from disagreeing with Mr. Cope as appeared. In regard to waiting for six hours, he meant that the surgeon would do so only for the purpose of overcoming temporary shock; therefore he thought that it was not wise to wait for such a sign as the absence of liver dullness. There was shock in practically every case, but when the patient came to hospital, when first seen by the surgeon, there might not be evidences of shock, and he thought that it was because of the teaching that there was always shock that mistakes were made.

THE EMPLOYMENT OF CRUSHING INSTRUMENTS AND THE CAUTERY IN CERTAIN INTRA-ABDOMINAL OPERATIONS;

With Demonstration of some Special Instruments.

BY

Charles P. Childe, B.A., F.R.C.S.,

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As far as operative work on the stomach or intestine is concerned—for instance, gastrectomy or enterectomy—for tumour, valvules, stasis, etc., the method I am about to describe involves closure of the cut ends of the stomach or bowel and lateral anastomosis. Cases, of course, arise where it is desirable and even compulsory to perform end-to-end union, and some surgeons practise this method as a routine. Though in cases in which I have been compelled to adopt this method I must say that results have generally been satisfactory, I have always considered lateral anastomosis as the operation of choice in stomach or intestinal work. It is, though not so artistic in appearance as end-to-end union, the safest way of joining the interrupted gastro-intestinal tract, the more perfect in its aseptic technique, and it obviates all difficulty which may arise from a difference in calibre of the parts requiring anastomosis. This being postulated, the matter with which this paper deals is the best method of closing the cut ends. In the case of the intestine this can always be done in the following manner.

A crushing instrument, two examples of which I have here, one invented by myself several years ago (Fig. 1), and the other (Peyr's), which I first saw employed in Vienna and generally use now, is applied to the intestine where it is intended to divide it at two points about one inch apart. After removal of the crusher the intestine is tied with a piece of silk or catgut in the two grooves made by the instrument. After inserting a piece of gauze beneath the intestine the latter is cut through with Paquelin's cautery between the ligatures, and the knob of tissue to be turned in is reduced in size with the cautery. A purse-string suture of catgut is then run loosely round the serous coat of the bowel a full inch from the cut end, so as to allow of the latter being readily tucked in, and the bowel is closed by drawing on the purse-string just as in appendicectomy.

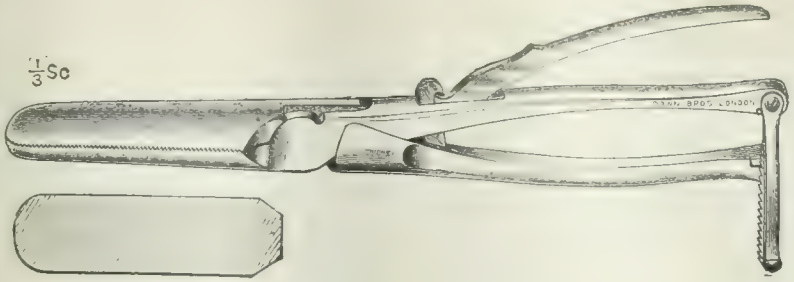


Fig. 1.

The method is absolutely aseptic and prevents any chance whatever of soiling by intestinal contents. The only infected part of the operation is the lateral anastomosis, and by a careful technique soiling during this stage can always be avoided, especially if clamps with blunt teeth which cannot slip are employed. These clamps may be applied with the absolute assurance that they never cause anything more serious than a temporary contusion of the gastric or intestinal wall at the points where the teeth grip. In gastrectomy it is not possible to tuck in and close with a purse-string suture the proximal end of the stomach. A modification is therefore necessary. The crushing instrument is applied along the line it is intended to divide. Clamps with blunt teeth are applied on either side of the crusher, and in place of the ordinary long stomach clamps I have had some smaller straight clamps made which are handy in some cases when it is difficult to apply the former. (Fig. 2.) For instance, when it is necessary to divide the stomach high up, one of these smaller clamps can be applied from below and another from above so as to completely close its proximal end, when the application of the larger clamp ordinarily used is difficult. These smaller clamps are also frequently useful and more handy in intestinal work than the larger blades which are sometimes in the way.

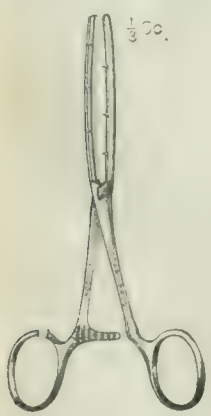


Fig. 2.

After the clamps have been applied as described above on either side of the crusher, the stomach is severed with the Paquelin cautery close against the blade on its distal side. The crusher is then removed. The crushed portion sticks together for the moment, but will very easily come apart again, and if so some contents would escape. It is therefore immediately seized with Poirier's forceps at intervals of about one inch—that is to say, three or four of these forceps are applied along the crushed line. Supported and kept closed by these, the crushed portion is then stitched up with a continuous suture of catgut. It is then very easy to apply a continuous serous suture over this thin crushed line, which readily tucks in. If the technique is properly carried out not a particle of the stomach contents should escape.

I have briefly sketched above what appears to me to be the most perfect method and technique of closing divided ends of stomach and bowel, a method which reduces to vanishing point the chief danger attending the operative procedure—namely, the spilling of gastric or intestinal contents. In closing the end of the large intestine after sacral excision of the rectum exactly the same method is adopted, and all danger of infection from this source is thereby obviated.

So many general surgeons perform Wertheim's abdominal panhysterectomy for carcinoma of the uterus that, without wishing to intrude on the preserves of the Gynaecological Section, I may perhaps be permitted to bring before you a similar procedure which for the past fifteen years I have followed in this operation. The only ligatures I employ in panhysterectomy are those for the ovarian and uterine arteries. After these have been secured, the ureters have been cleared out of the way, and the vagina separated from the bladder in front and the rectum behind, these powerful crushing clamps which I have had made are applied one on each side to the parametrium close out to the pelvic wall. You will see that they are of a size and so curved as to adapt themselves to this end. The parametrium is then cut through with scissors close to the clamp, and the wound so caused seared with Paquelin's cautery right down to the blade of the clamp. The vagina is treated in exactly the same way with a powerful crushing clamp, cut through and cauterized. After removal of the uterus and as much of the vagina as is considered advisable, the three clamps are taken off. Haemostasis is perfect, and I have never had a case of subsequent haemorrhage. No ligatures which may act as sources of irritation or infection are left at the bottom of the pelvic wound.

Wertheim's instruments, which are intended only for securing these structures preparatory to ligaturing them, have little crushing power and are unsuitable. The instruments I show you here are furnished with the requisite power, and I have stood the test of an extensive experience of this operation. The operation, moreover, done in this way is quicker, and a saving of time here means a saving of life, shock being a factor of the utmost importance. The time taken is about forty-five or fifty minutes. No vaginal drainage is employed, there being practically no vaginal discharge after the operation done in this way. I submit this as an easier, quicker and better method of performing that part of Wertheim's operation which involves the parametrium and vagina. These crushing clamps are made by Down Bros.

DEMONSTRATIONS.

On the afternoon of July 22nd Mr. G. Grey Turner, F.R.C.S., gave a series of demonstrations at the Royal Victoria Infirmary. The first was a demonstration of eight cases of intraperitoneal implantation of the ureter into the pelvic colon, the details of the cases being as follows:

Case 1.—Male, aged 8 years; total epispadias with incontinence. Operation in two stages—the first in December, 1912; the second, six months later. Whooping cough occurred as a complication. The patient was cured, and is now eight and a half years after operation—in excellent health; there is no incontinence.

Case 2.—Female, aged 22; epispadias with incontinence. Two-stage operation the first in December, 1914; the second, three months later. Cure resulted, and the patient is now perfectly well—six and a half years after operation. She is married and has one child.

Case 3.—Male, aged 19; ectopia vesicae. Operation in March, 1917 two stages, with three weeks between. The case was complicated by intestinal obstruction. The patient was cured; he is now very well and works regularly on a farm. He has some incontinence at night.

Case 4.—Female, aged 20; epispadias. Operation in May, 1917—one stage. The case was complicated by peritonitis and pyelonephritis, resulting in death.

Case 5.—Female, aged 6; ectopia vesicae. Operation, November, 1917—two-stage, with three months between. Complicated by extraperitoneal abscess. The patient was cured, and is now, nearly four years after operation, in very good health.

Case 6.—Male, aged 13; ectopia vesicae. Operation, May, 1919—two-stage, with two months between. Complicated by peritonitis from leaking ureter. Died.

Case 7.—Male, aged 5; epispadias, with incontinence. Operation (two-stage) May, 1920. Complicated by extraperitoneal abscess with urinary fistula. The patient was cured and is now very well; the urinary fistula healed spontaneously.

Case 8.—Male, aged 13; epispadias with incontinence. Operation in January, 1921. At present, six months after operation, there is some suspicion of pulmonary tuberculosis, and the second stage is deferred on account of the chest condition.

The second demonstration was of twenty-five patients after operations for cleft palate at all ages according to the method of Sir William Fergusson. These presented no special features except that with one exception the cases were all successful, a few of them requiring more than one operation. Some of the cases were in little children about a year old, operated upon as out-patients. Mr. Turner did not think that this was a specially good thing to do, but they were so short of hospital accommodation that he was in a measure compelled to carry out the treatment as out-patients—these all did well. Some of the older children and the two adults talked exceeding well, and Mr. Turner's view was that speech was a matter of education. The most to be expected from even a successful operation was that the patient was brought into a condition in which he could learn to speak correctly.

Mr. Turner then showed a boy from whom he had removed a tumour of the liver weighing 2 lb. 3 oz. It occupied the greater part of the right lobe, including the fissure for the gall bladder, which was excised at the same time. The operation was done in March, and the patient had made an excellent recovery. The tumour, which was shown at the same time, was reported upon as a hepatoma, which he regarded as a true adenoma of the liver, but as some of the cells were atypical he quite expected it to prove to be of a malignant nature.

Mr. Turner also showed a boy suffering from a stricture at the lower end of the oesophagus, which had resisted all his efforts at cure by means of dilatation. He had opened the chest, divided the diaphragm, and made a direct anastomosis between the dilated oesophagus above the stricture and the fundus of the stomach. The patient made a good recovery and had very greatly benefited, although there was still some hesitation in swallowing, and his general condition had not improved as much as he had hoped for.

SECTIONS OF MEDICINE, AND PATHOLOGY AND BACTERIOLOGY.

Professor THOMAS BEATTIE, M.D., F.R.C.P., President of the Section of Medicine, in the Chair.

DISCUSSION ON ENCEPHALITIS LETHARGICA.

OPENING PAPER

BY

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ENCEPHALITIS LETHARGICA continues to occupy a prominent place in current medical literature. There are obvious reasons why this should be so, for the features of the disease were unfamiliar, even admitting the possibility that sporadic cases may have occurred in the past and escaped recognition until Economo,[9] Netter,[25] Harris,[11b] and Hall,[11a] described cases in Austria, France and this country respectively, while the incidence of the disease has been world-wide and its mortality alarming. Further, encephalitis lethargica presents a protean symptomatology which is showing a tendency to change in type, and since laboratory methods as yet afford little help in its recognition, there is perhaps no affection which at the moment gives rise to so many difficult problems in diagnosis. Again, although much has been learned regarding the morbid anatomy of the disease and considerable information acquired as to the causative virus, the identity of the specific organism, its path of ingress, and the manner in which the infection is spread, have not yet with certainty been determined. Under circumstances such as these it is advisable that we should pause from time to time and review the existing state of knowledge. In a communication such as this it is neither possible nor is it desirable that I should attempt to describe the features of the disease in a systematic or exhaustive manner, consequently I shall confine my remarks to a brief summary, indicating, in passing, points which appear to afford profitable topics for discussion. In selecting the question of diagnosis for special consideration I do so in the hope that subsequent speakers will discuss aspects of the subject to which I am unable to refer in the time at my disposal.

Exception may be taken to the term "encephalitis lethargica" on the grounds that the pathological process is not limited to the brain and that lethargy, though a frequent and often prominent symptom, is not invariable; while "epidemic encephalitis," a terminology preferred by some writers, is also open to valid objection, since to many cases the term "sporadic" is more correctly applicable. Other alternative synonyms have been employed, but it would appear to be advisable to retain tentatively a nomenclature which is in very general use until such time as the etiology of the disease has been definitely established.

Cases of encephalitis lethargica differ in their mode of onset, in the character of the symptoms which they present, and in the course which they pursue. The symptoms met with fall into two groups—namely, manifestations attributable to an infective process, and phenomena dependent upon disordered function of the nervous system, in which the local lesions are essentially situated. Prodromal symptoms are observed in many cases, although the onset is exceptionally so abrupt that it may suggest an apoplexy. Among the earlier symptoms the following are especially frequent: Lethargy, drowsiness, lassitude, nocturnal insomnia, headache, giddiness, a dry mouth, constipation, hiccough, difficulty in passing urine, muscular tremors, diplopia, blurred vision, tinnitus, and localized pains in various situations. These pains, which are sometimes severe and apt to be misleading, are, I am inclined to think, in some cases of thalamic origin.

Transition from the prodromal period, where this is recognizable, to the actual stage of invasion is sometimes gradual; but, on the other hand, it may be more or less sudden. A rise of temperature, accompanied in some cases by acceleration of the pulse rate and respirations, usually marks the true onset of the illness; the febrile disturbance in the majority of cases is, however, slight, and the temperature commonly falls to the normal within a few days. Headache and a general feeling of malaise, cramp-like pains, sometimes vomiting, and the appearance of various skin rashes, together with a general aggravation of the earlier symptoms, may be observed. Slight rigidity of the neck and hamstring muscles may be noted, as also a transient lymphocytosis in the cerebro-spinal fluid, with, in some cases, a slight and temporary leucocytosis in the blood. A great variety of nervous symptoms may be met with, while symptoms referable to other organs have been described. Thus Netter[26] emphasizes the frequency with which the salivary glands are involved, while Boyd[3] noted the occurrence of an associated acute nephritis during the Winnipeg epidemic. Pneumonic changes are very usual towards the termination of a fatal case.

The nervous symptoms in individual cases of lethargic encephalitis are very varied, and many clinical pictures are met with. An adequate and satisfactory classification which correlates the clinical phenomena with the anatomical distribution of the lesions is not possible, since the symptoms depend not only upon the localization, but also upon the character of the pathological process. Again, a case of lethargic encephalitis may present very different appearances according to the period when it is examined. Further, as Leonard Findlay[10a] and others have pointed out, the symptoms met with in children often present unusual features. A great variety of clinical types have consequently been described. Walshe,[29] who takes exception to the utilization of clinical types for purposes of classification, proposes the following scheme, in which he employs the phraseology of the late Dr. Hughlings Jackson: (1) General nervous symptoms of a positive kind, such as delirium, mania, restlessness, and hallucinations; (2) general nervous symptoms of a negative kind—for instance, lethargy and coma; (3) localizing nervous symptoms of a positive kind, such as convulsions, involuntary movements, muscular contractions, rigidity; and (4) localizing symptoms of a negative kind—for example, paralysis. This classification has the undoubted advantage that it groups the

clinical manifestations according to their nature and mode of production, and while it in itself may not perhaps prove directly helpful in diagnosis, its adoption ensures the maintenance of the broad outlook which is so essential when a disease is still "in the making," and is for this reason preferable to a scheme which is based upon clinical types—a procedure which is apt, I agree, to limit our conceptions.

Evidence as to the nature of a disease may be derived from a variety of sources. The peculiar incidence of lethargic encephalitis, which in this respect presents points of resemblance to epidemic poliomyelitis, the febrile onset and other general symptoms, and the transient changes in the cerebro-spinal fluid and in the blood observed in some cases, clearly indicate that the disease is to be classed with the infective disorders. The anatomical observations of Netter,[25] Marinesco,[22] McIntosh,[16] James Miller,[23] and others corroborate this conclusion. Perhaps the most striking anatomical change consists in an infiltration of the brain tissue, and especially the perivascular lymphatic sheaths of the smaller blood vessels (notably the veins) and their immediate neighbourhood, with lymphocytes and plasma cells. Dilatation of the capillaries is often observed; infarcts in the brain substance, evidently due to thrombosis, are also described (Greenfield[11]); in some cases haemorrhages are met with, while oedema and neuroglial proliferation may be noted (James Miller[23]). Extensive cellular chromatolysis is very usual with, in some cases, an increase of the intracellular pigment. Neuronophagia is but seldom seen (Mott[21]).

Almost all observers emphasize the fact that the pathological appearances above referred to are especially located in the mesencephalon and pons, and more particularly in the grey matter around the iter, as also in the region of the substantia nigra. Often, however, they are much more widespread, while they have repeatedly been observed in the spinal cord. Preconceived ideas dependent upon clinical conceptions which have centred attention upon the brain stem have no doubt been responsible for the limitation of the histological examination in many reported cases, and further systematic observations may demonstrate that in individual cases the intensity of the process is more pronounced in, or actually confined to, other regions of the brain. The pathological process would appear to be of a subacute inflammatory nature. Marie and Tretiakoff's anatomical researches[20] indicate the constant presence of both degenerative and irritative phenomena. Netter[26] believes that the irritative clinical manifestations are attributable to a minimal effect of the virus, and the paralytic phenomena to its more intense action. Walshe[29] points out that the paralytic phenomena are restricted and selective, while the irritative phenomena are non-selective, and appear to affect neurons of every physiological level; he suggests that the virus has a double action and a double incidence.

Clinical experience demonstrates that individuals of all ages may suffer, although adults of middle age are perhaps more liable; that there is no special sex susceptibility; that, although in some instances the patient has a short time previously suffered from a nasal catarrh or from an influenzal attack, he is often in good health at the time of onset; that at times, when the disease has been specially prevalent, influenza has repeatedly, though not invariably, been rife; that cases of lethargic encephalitis have occurred, especially during the colder months;[8] that the incidence of the disease is greater in an urban than in a rural population (Reece[27]); that instances of contagion have been, in the past at least, of extreme rarity; and that no satisfactory information is available as to the duration of the incubation period or the manner in which the infection is spread. My experience is similar to that of most observers, since among 120 cases I have met with no instance in which two cases occurred in the same house, or in which there was any evidence of spread by contact. The outbreak in a school reported by MacNalty[19] is unique.

Experimental results, more especially those of Strauss, Hirshfeld and Loewe, of McIntosh and Turnbull,[17] and of Harvier and Levaditi, are of much interest. It would seem to have been definitely established that, both in the case of rabbits and monkeys, although the latter are somewhat refractory, intracerebral injections either of brain emulsion from a fatal case of lethargic encephalitis, or of nasopharyngeal washings, or (in rabbits) of cerebro-spinal fluid from a patient so affected, may, after passage through a porcelain filter, produce symptoms and histological appearances similar to those observed in cases of the disease in the human subject; while, further, the virus is subsequently capable of transmission from one animal to another. Harvier and Levaditi have also found that the disease may be successfully inoculated into the rabbit by intra-ocular injections, and by injections into the peripheral nerves,[13] but not by intraperitoneal, intravenous, or intratracheal injections. The same observers found that injections of blood, extracts of bone marrow, lung, spleen, kidney, liver, and salivary gland were ineffective in conveying lethargic encephalitis to animals.

Thus it would appear that the virus is located in the brain tissue; that it is also present in the cerebro-spinal fluid, and that it is met with on the surface of the nasopharyngeal mucous membrane. Further, since the virus after passage through a porcelain filter is capable of multiplication, it would appear to be a living organism. Levaditi and Harvier[13] also affirm that the disease can be transmitted by the mucosa of the nose after the latter has been irritated by croton oil. The case of a soldier who was admitted to a military hospital with a nasal discharge of long standing which was attributable to a polypus is of some interest in this connexion; the polypus was removed by operation, and "within a few days" the man, who was under my care and was incidentally proved to be a meningococcal carrier, developed very typical symptoms of lethargic encephalitis. The question arises whether the nasal mucosa is the usual path of infection. Is it possible that the catarrh of the nasal mucous membrane which occurs so frequently in influenza permits of the entry of the virus of encephalitis which is lying on its surface? So far as I am aware, the presence of the virus in the nasopharynx has only been demonstrated in the case of individuals who were at the time actually suffering from symptoms of the disease. Netter,[26] who has drawn attention to the comparative frequency with which the salivary glands are affected, suggests that this may be the path of egress of the virus.

The identity of a specific organism responsible for the disease has not as yet been established beyond dubiety. Since there seems to be definite proof that the virus is filtrable and subsequently capable of multiplication, it appears probable that the bacteriological agent is possibly ultramicroscopic, and for this reason, among others, it would seem that the diplococci described by Wiesner[30] and others were probably contaminations. Strauss and Loewe,[15] using Noguchi's ascitic medium, affirm indeed that they have succeeded in cultivating from the brain, nasopharyngeal mucous membrane, spinal fluid, and blood from cases of lethargic encephalitis, a minute filtrable organism resembling that described by Flexner and Noguchi in poliomyelitis, and, further, that they have recovered the organism from animals which have succumbed after inoculation with the virus and also with cultures so obtained.

In the opinion, however, of some of those best qualified to judge, corroboration of these interesting observations is called for before they can be accepted as conclusive. The minute intra- and extra-cellular bodies described by da Fano and Ingleby[7] in the nervous tissues of cases of lethargic encephalitis, as also by the former observer in a salivary gland from an acute case of the disease, call for mention. Da Fano[9] puts forward the tentative suggestion that these bodies, "to all appearances consisting of a central, generally basophil, particle and of a delicate little stainable body irregularly round or oval in shape," may indicate the presence in the tissue of a living agent, the cause of the disease. Bernard Shaw[27a] reports that he has observed similar appearances. Marinesco[22] in 1918 described bodies resembling diplococci in the nerve cells in a case of lethargic encephalitis, but since the cells in which he noted these bodies possessed no nucleus, he came to the conclusion that they might be chromosomes. Leonard Findlay and C. S. Shiskin[10b] have studied the colloidal gold test in the cerebro-spinal fluid in 21 cases of epidemic encephalitis in children. In 17 of these the fluid behaved differently from the normal. Since the reaction, although differing from that of syphilis, is of the syphilitic type, these observers suggest that the virus may be of the nature of a spirochaete.

The question of a relationship between acute polio-

myelitis, influenza, and epidemic hiccough on the one hand, and lethargic encephalitis on the other, has been repeatedly discussed. Although poliomyelitis and lethargic encephalitis present certain points of resemblance, clinical and anatomical considerations indicate that the two diseases are distinct, a conclusion which is supported by recent experimental work. The evidence as regards influenza is not so definite. A striking though not invariable tendency to a simultaneous prevalence of the two diseases at once arrests attention. Time, however, does not permit me to discuss this problem, which would in itself afford an adequate topic for a separate communication. The generally accepted view at the present time is, I think, expressed by Crookshank when he speaks of an epidemiological liaison between the two affections. Epidemics of hiccough have been met with in many parts of the world during the past year or two. The circumstances that these cases have usually occurred simultaneously with, or immediately before or after, an outbreak of encephalitis, that the hiccough may be preceded by prodromal symptoms and accompanied by slight febrile disturbance, and that this symptom has repeatedly been observed in cases of lethargic encephalitis, are among the chief reasons for the view that epidemic hiccough probably represents a mild type of the disease.

Diagnosis is necessarily often difficult in the case of a disease with such a varied symptomatology, which may simulate or be simulated by so many other disorders, which is characterized by no constant or distinctive symptom, and in the recognition of which laboratory methods have not so far proved to be directly helpful. Netter,[25] when in the spring of 1918 he described the first cases met with in France, emphasized the occurrence of febrile disturbance, lethargy, and cranial nerve palsies—notably pareses of the third nerve with consequent diplopia and associated dimness of vision—as cardinal symptoms. While there can be no question that these symptoms were conspicuous in the majority of the earlier cases which were recognized in Germany, France, and this country, cases of the type so commonly met with in 1918 have of late been relatively infrequent. The febrile disturbance may be so slight as to escape notice; ocular palsies, when they occur, may be very transient; and lethargy may be either absent or replaced by states of mental excitement. Again, these symptoms, even when present, are often masked by more conspicuous manifestations. Consequently, it not uncommonly happens that when a case of lethargic encephalitis is first seen weeks or months, it may be, after the onset of the illness, no history as to the occurrence of a rise of temperature, somnolence, or ocular palsy in the initial stages, can be elicited.

When a new disease is differentiated largely upon clinical evidence, and especially when the symptoms show a tendency to change in type as time goes on, as has been admittedly the case with encephalitis lethargica, a symptom-complex which at first appeared to be distinctive and constant may be found to be too rigid in its confines. The essential purpose of a symptom-complex is to establish the identity of a disease and to assist in its recognition, and if the symptom-complex in question is not sufficiently comprehensive, its retention may, as Walshe has indicated, by retricting the outlook, retard rather than further progress. While the symptom-complex above referred to has served a useful purpose in the past, I for my part no longer allow it to occupy such a prominent place as formerly in my conception of lethargic encephalitis. My reasons are not only that it is not constant, but that, in my opinion, it tends to unduly emphasize the importance of certain symptoms at the expense of others which, if perhaps not so frequent, are, when present, at least as characteristic. Again, the stress that is laid upon this symptom-complex is, I think, apt to exaggerate anatomical localization as a factor in diagnosis by focusing attention too prominently upon the mid brain as the essential seat of the disease.

It is instructive to compare the diagnosis of disseminated sclerosis with that of lethargic encephalitis. When Charcot in his description of the former disease emphasized the occurrence of certain frequent and characteristic symptoms—notably intention tremor, scanning speech and nystagmus—he did not intend to imply that these symptoms were to be considered as constituting an essential symptom-complex. Yet I think I am right in saying that there was a tendency so to regard them, and that some considerable time elapsed before it was generally recognized that other features were equally characteristic, and that disseminated sclerosis could often be diagnosed in the absence of the symptoms above referred to. Consequently it is inadvisable to regard this association of symptoms as a symptom-complex, for to do so is to limit the outlook. Those who have had much experience of disseminated sclerosis realize that it is often essential in arriving at a diagnosis to take into account all the facts, notably the history and course of the case, and the presence of individual symptoms which are more or less characteristic; while it may be necessary to eliminate by a process of exclusion other affections which resemble the disease in question. I agree with Buzzard,[4] Walshe,[29] Haynes,[14] and others that a similar broad outlook is to be adopted in the case of lethargic encephalitis, and in the diagnosis of this disease I would emphasize the following points: (1) The history of onset, with special reference to the occurrence of (*a*) prodromal symptoms (for instance, drowsiness, diplopia, dimness of vision, and pains), and (*b*) febrile disturbance with associated general symptoms (for instance, headache, giddiness, delirium, a dry mouth, constipation, etc.). (2) The presence of certain symptoms and signs which present features often dependent as much upon the nature of the pathological process as upon its anatomical distribution. (3) The exclusion of a number of other affections which in individual cases may closely simulate the disease under consideration.

Among the symptoms and signs to which I would attach particular diagnostic importance are the following:

(*a*) An ophthalmoplegia of central origin and more or less acute onset characterized, it may be, by bilateral ptosis, palsies of the external ocular muscles of varying degree and distribution, unequal and dilated pupils with sluggish reactions, which sooner or later shows a tendency to improve (although some paresis of the extrinsic, and particularly of the intrinsic, muscles of the eye may persist long after the acute period of the disease has passed off, and sometimes permanently), is observed in a certain proportion of cases, and when present is in itself so characteristic as to be almost distinctive.

(*b*) Transient diplopia, lasting for a few days at the onset of the illness, is of very common occurrence in lethargic encephalitis, and since this symptom is very rarely met with in any other condition its value in diagnosis, especially in those cases which manifest no evidence of ocular paresis at the time of examination, is obvious. As Farquhar Buzzard[4] has pointed out, diplopia is an extremely sensitive indicator of disturbance of function; consequently a history of transient diplopia does not necessarily indicate that the mid-brain is the chief seat of the pathological process, for this symptom may be merely an expression of a widespread process.

(*c*) Nystagmus, which is often observed in cases of lethargic encephalitis, notably in the earlier stages, presents at times unusual features which I have not personally observed in any other condition. Irregular flickering movements, which vary not only in rapidity and amplitude but also in direction, may be noted upon any attempt to move the eyes. I take it that this symptom must be explained by the irregular distribution and possibly the irritative effect of the minute histological lesions which implicate the ocular nerves and their connexions.

(*d*) Paralysis of the conjugate upward movement of the eyes is a symptom I have observed in several cases in which there was otherwise little or no impairment of the ocular movements. I have met with no other affection, with the exception of tumours of the mesencephalon, in which this phenomenon, which is evidently due to involvement of the anterior part of the third nerve nuclei, has occurred as an isolated symptom.

(*e*) Drowsiness and lethargy of varying degree were such prominent symptoms in most of the earlier cases that they scarcely call for special description. No one who has seen a case of the kind in which the lethargy was prominent can forget the patient's appearance as he lies, it may be for hours, motionless, apparently asleep, taking no notice of his surroundings and making no remark. Yet after persistent questioning he may respond intelligently, although his responses are slow, while his intonation may be monotonous and his articulation wanting in precision. A definite history of drowsiness may often be obtained long after this symptom has passed off. Frequently the drowsiness is associated with an occupational delirium, and it may be nocturnal insomnia. Various views are held as to the manner in which the lethargic state is produced, some believing that it is a consequence of interruption of afferent impulses in the brain stem; others that it is due to a hydrocephalus, the consequence of obstruction of the iter; while again it has been attributed to a disturbance of pituitary function.

(*f*) The mask-like face indistinguishable from that of paralysis agitans, and often accompanied by postural attitudes reminiscent of this affection, is a conspicuous feature in many cases and may persist for months after the acute stage. Buzzard,[5] Wilson,[31] and Marie and Levy[21] have emphasized cases of this type. This symptom, which is due to interference with conduction in the extra-pyramidal system, is so common that it is of great value in diagnosis. Although I but seldom observed this appearance among my earlier cases, I have noted its presence in a large proportion of those recently met with.

No doubt the explanation why facial immobility is met with in lethargic encephalitis and not in other conditions is to be found in the fact that the minute lesions of this disease are capable of picking out the rubro-spinal tract and its cerebral connexions without at the same time involving the pyramidal fibres. Many of you will probably recall cases of lethargic encephalitis in which at the first glance you obtained invaluable information from the patient's expressionless face.

g) The mental disorientation often present in the initial stages, and sometimes continuing long after the earlier symptoms have passed off, is very similar to that met with in cases of chronic alcoholism, while it is rarely observed in other affections.

(*h*) Numerous types of involuntary movement—myoclonic, athetoid, and choreic—have been observed, more especially in the cases recently reported. Sicard[28] was the first to describe myoclonic cases, and Ellis[10] and others have recorded cases in this country. A choreo-athetoid type is described by La Salle Archambault.[1] These movements are otherwise so unusual that they should at once recall lethargic encephalitis, and suggest an inquiry with the object of eliciting any further evidence in support of this diagnosis.

Cases of lethargic encephalitis present very different features, and this remark is applicable also to the stage at which the case comes under the notice of the physician. Although there are possible objections to the use of clinical types as a basis of classification, illustrative clinical pictures, when employed for the purpose of demonstrating the resemblance which the disease may present to those which simulate it, are, I think, of the greatest value. In the time at my disposal, however, I must content myself with enumerating those conditions which experience leads me to believe constitute the chief difficulties in differential diagnosis. I have referred to the pains which sometimes occur in the prodromal period, as also to the abrupt onset, which may suggest a haemorrhage, a haemorrhagic pachymeningitis, and especially a cerebral softening. During the febrile stage a meningitis, and particularly the tuberculous variety, may be suspected, while, when febrile disturbance dominates the picture and the nervous symptoms are insignificant, influenza, enteric fever, and even pneumonia (as Sainton has pointed out), are diagnoses which may be erroneously suggested. The resemblance between some cases of lethargic encephalitis and acute alcoholism has been referred to, while in certain instances the disease may pose as an acute psychosis, its organic basis for a time being unsuspected. Paralysis agitans may be simulated so closely that were it not for the history a correct diagnosis would sometimes be impossible. Tabes may at first sight be suggested, when in the later stages of encephalitis lethargica the pupils are unequal and react poorly to light and the knee-jerks are absent. Brain tumour, cerebral softening, and tuberculous meningitis, and especially the first named, are the three affections which, in my experience, are especially apt to give rise to diagnostic difficulty. Very real difficulties sometimes arise in differentiating between lethargic encephalitis and brain tumour.

Prognosis embraces both the risk to life and the ultimate condition of those patients who survive. Some 20 per cent. of the cases I have met with terminated fatally, but this figure, perhaps, overestimates the actual mortality, since the hospital physician no doubt meets with the more severe types. Death may be due to an extension of the encephalitis to the medulla, to pneumonia secondary to paralysis of the vagus or glosso-pharyngeal, or to general wasting complicated by bedsores (Netter). While four-fifths of these patients eventually recover, it is impossible in the majority of cases, when seen in the early stages, to predict the future with any degree of certainty. A high temperature is, in my experience, always a sign of ill omen; indeed, I can recall no case where the temperature reached 102° or over and persisted for more than a week at this height in which the patient survived. Pronounced delirium and a rapid pulse are also of serious import, while the outlook, it is affirmed by more than one writer, is particularly bad in the myoclonic cases; neither the age or sex of the patient, the manner of onset, nor the features of the prodromal stage seem to afford any criteria of value bearing on the subsequent course of the case. Death occurs in the great majority of cases during the first three or four weeks, and although a fatal result is exceptionally delayed to a much later date, the chances are all in favour of recovery after this period has passed.

Although in slight cases the symptoms may clear up entirely in the course of three or four weeks, in others the patient may remain in a stuporose condition for weeks on end, and when this is so improvement is usually very slow. The focal symptoms may for a time show a tendency to progress, and Economo[9] has reported cases which have run a subchronic course extending over several months. A relapse characterized by various types of involuntary movement may, as Buzzard has pointed out, occur a considerable time after the patient has apparently recovered from the original illness. Eventually recovery is often complete or almost complete, but in a considerable proportion of cases some permanent disability persists. Thus, I have met with instances in which ocular pareses and notably pupillary changes were still present eighteen months or more after the attack, and two in which there was a persistent hemiplegia. Several patients two years or more after the original attack complained of defective memory and power of concentration, that they still felt easily tired both mentally and physically, and that although they were able to carry out their routine duties as well as previously, they experienced a want of mental alertness and initiative and an inability to satisfactorily grasp new problems. This question of the end-results in these cases is of much interest, and I hope that some of those present will give us their experience in this connexion.

No method of treatment has so far been discovered which will with certainty arrest the progress of the pathological process. Yet the insidious onset in many cases and the histological appearances are such as to suggest that were a remedy known which had a direct effect upon the causative agent, the morbid changes might be dispersed before irretrievable damage was produced. As Economo remarks, it is very difficult to judge of the effects of treatment in this disease. Netter has employed intrathecal injections of serum from a convalescent patient with possible benefit, although he considers it premature to recommend this procedure. Hexamine has been largely used in the febrile stage in view of the observations of Flexner in experimental poliomyelitis, but we have no definite proof of its therapeutic value. Netter[26] has advocated the use of sialogogues, since he believes the virus may be stimulated by the saliva. The withdrawal of cerebro-spinal fluid by lumbar puncture has sometimes been followed by temporary improvement, and is certainly called for in any case in which there are indications suggestive of meningeal irritation. Netter has been impressed with the results he has observed in cases in which a localized abscess has been produced in the thigh by the hypodermic injection of turpentine, and now advocates this procedure in every case as soon as the diagnosis has been established. This observer affirms that among 27 cases so treated an abscess requiring incision was produced in 19; only 2 of the 19 cases died, and 13 which had been in an apparently hopeless condition recovered completely. In other words, 17 of the 19 cases recovered, whereas of 25 serious cases not so treated 13 died. The risk of contagion is very small, and cases of encephalitis lethargica may be treated in the wards of a general hospital.

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C. da Fano, M.D.,

London.

Dr. da Fano said he was very glad to accept the President's invitation to take part in this discussion. He wished to demonstrate the minute bodies which he had been able to find in the nerve cells in several cases of the disease. The actual preparations were to be seen in the museum of the Pathological Section. The lantern slides he was about to show were prepared from these specimens.

The first slide showed a nerve cell from a case investigated by himself and Dr. Ingleby. It was full of minute bodies consisting of a central dark granule surrounded by a halo. The number of these bodies seen in different cells varied greatly. They were not universally present; some cells contained only two or three. On first noticing the bodies he thought that the "halo" might in reality represent a space or vacuolated area, but later he succeeded in staining the halo pale green or bluish with Giemsa. In addition, he showed a slide with vacuoles and halo bodies side by side, and there were obvious differences between the two. The central part of the body appeared to be made of a substance resembling chromatin.

In one of the nerve cells he showed a large body within the nucleus which appeared to be a conglomeration of halo bodies. The significance of this body was uncertain, but recently Levaditi and Nicolau had described similar intranuclear formations in nerve cells from rabbits inoculated with the virus of encephalitis. In addition to their presence in the nerve cells, the bodies he described were to be seen in and around wandering cells in the central nervous system. Some cells of this character were shown surrounded by minute bodies which seemed to be adherent to them. These appearances were noted at the beginning of the investigation, but little importance was attached to them. In a very acute case, however, which was recently examined they were observed again in large numbers. Besides the nervous system, halo bodies had also been found in the salivary glands. In the section shown some were in leucocytes, some free in the tissue. They had exactly the same appearance as those seen in the brain.

Dr. da Fano had no definite explanation to offer as to the significance of these bodies. He pointed out that similar appearances had been noted by Dr. A. F. Bernard Shaw. Quite recently Levaditi and Nicolau described somewhat larger formations of the same character in experimentally inoculated rabbits. Dr. da Fano then read a communication he had received from Dr. A. H. Booth of Victoria, Nigeria. Dr. Booth had seen bodies apparently identical with the halo bodies in fresh blood plasma and juice of lymph glands from patients affected by an obscure disease characterized by lethargy and other nervous disorders. Swelling of the salivary glands was a feature of these cases.

The presence of halo bodies in the salivary gland was very interesting, since it brought in the question as to whether there was any parallel between encephalitis lethargica and rabies. Dr. da Fano then showed two reproductions from papers by Negri and De Rio Hortega. The first showed a structure within the Negri bodies having a striking resemblance with da Fano's bodies. The second was from a case of distemper in a dog. The nerve cells again showed the presence of minute granules surrounded by a halo.

In conclusion, Dr. da Fano said that though the cause of the disease had not yet been discovered, there was evidence of alterations in various tissues similar to those produced by other filter-passing organisms. He then described his findings in an acute case of encephalitis, in which the disease lasted three days. There was intense perivascular or interstitial infiltration of all parts of the central nervous system, but especially of the white matter of the cortex and optic thalamus. In contradistinction to what was generally seen in encephalitis lethargica, the infiltration consisted of polymorphonuclear leucocytes and macrophages, with few lymphocytes and no plasma cells. Such acute cases were rare, and he would like to know whether other histologists had had similar findings.

C. H. Melland, M.D., F.R.C.P.,

Manchester.

I should like first of all to say a few words about the nomenclature of the disease with which we are dealing. When I first began to come across the cases in the winter of 1917–18 I formed the opinion that they were instances of the cerebral form of poliomyelitis, and I published them accordingly as an epidemic of polioencephalitis. As the result of much, and at times almost acrimonious, discussion it has come generally, though not universally, to be thought that the condition is not the cerebral type of poliomyelitis, although it is probably a closely related disease, and so the designation polioencephalitis has been dropped. But I am of opinion that the name which has taken its place—encephalitis lethargica—is a most misleading one. In some cases, no doubt, lethargy is a most striking feature of the disease; in others, I believe the majority, it is inconspicuous or entirely absent. Personally I use the term epidemic encephalitis when speaking of the disease, but even this has its defects, since most of us, on stirring up our memories or looking up our clinical notes, will be able to recall sporadic cases of an obviously similar character met with long before the recent epidemic. When one regards the protean symptoms which the disease may present, according to the part of the brain which may happen mainly to be involved, one feels almost inclined to suggest the name of encephalitis polymorphica as the most suitable designation.

Now I am of opinion that owing to the misleading term "lethargica" a very great number of minor (and some major) cases of the disease fail to be recognized, and in the absence of such recognition the study of the epidemiology of the disease must be naturally wholly imperfect, and it is to cases of this kind that I want especially to draw your attention to-day. They are cases in general of slight paralysis of one or more ocular muscles, with squint and double vision, but with practically no general disturbance and certainly no suggestion of lethargy. The relation of these apparently more or less trivial and transient cases to the more typical severe and often fatal lethargic cases is not easy to demonstrate, but one may meet with an almost continuous sequence of cases from the more serious and typical down to the most trivial, such as I now put before you.

Case I.

A woman, aged 26, a W.R.A.F., a patient of Dr. Scotson of Longsight. There was a sudden onset on January 24th, 1918, with "drooping of the eyelids," the left more than the right. This lasted for four or five weeks. For a fortnight she was dizzy and sleepy; "if she kept still for a few minutes she went fast asleep"; if anyone spoke to her she woke up and answered and then went off to sleep again." Later she noticed that she had double vision. Her doctor sent her to the Royal Eye Hospital, and from there she was transferred to the Manchester Royal Infirmary, where it was recognized that she had a partial third nerve paralysis. The Wassermann reaction of the blood was negative on two occasions after provocative injections of salvarsan. She gradually, but very slowly, improved, but when I saw her in May, 1919, there was still some weakness of the internal rectus of the right side.

Case II.

A boy, aged 13, was admitted under my care to the Manchester Guardians' Children's Hospital on May 2nd, 1919. He had been ill at home for about three weeks with a history of fever and delirium. His doctor sent him into hospital with a diagnosis of "diplopia and severe cerebral pains." He had a slight rise of temperature on the day of admission, and this and the history of his mental condition suggested to one of my colleagues that this might be a case of enteric fever, but the Widal reaction was negative. On examination it was found that he had double vision due to paralysis of the left external rectus and to a less extent of the right external rectus. There was marked double optic neuritis. He seemed quite well in himself after the first day in hospital, and continued so till his discharge about three months later. The optic neuritis and the ocular paralysis slowly cleared up, though he was not completely well in these respects even at the time of his discharge.

Both these cases had marked general symptoms as well as the local paralytic features, and definite evidence in the second of increased intracranial pressure, and would probably be generally recognized as fairly typical cases of lethargic encephalitis with recovery. The next case

is one which I have described in my notes as polio-encephalitis with poliomyelitis. I suppose I must re-christen it as lethargic encephalitis without lethargy but with spinal symptoms simulating poliomyelitis.

CASE III.

An office boy, aged 16, under the care of Dr. Scanlon of Moss Side. He noticed weakness in his legs and a bad headache about the beginning of September, 1918. This came on on a Saturday, and he took to bed on the following Tuesday because he felt so ill. The headache lasted five days, and the weakness in the legs was after a time limited to the left leg, so that on getting up after fourteen days in bed he could hardly bear his weight on the left leg and had to walk with a stick for a time. He still limped slightly when I saw him on December 12th, 1918, and all the measurements of the left leg were about ½ in. less than the right. He noticed double vision about the time he took to bed, and also some drooping of the left eyelid. (He only noticed this last, when looking in the glass, after his attention was drawn to it; it did not affect his eyesight.) When he was examined at the Royal Eye Hospital, on November 26th, his diplopia was then well, except when he looked in certain directions, to the left and downwards. There was paresis of the right internal rectus and slight drooping of the left eyelid.

CASE IV.

A signalman, aged 40, under the care of Dr. Tullis of Hereford. He was well until about Christmas, 1920. Then he began rather gradually to feel run down and weak, and soon after Christmas he began to see things double and had a definite squint. He continued to feel weak and good for nothing, and he had a distinct tendency to drop off to sleep easily, though he did not sleep long. His brother, with whom he was living temporarily when he was first brought to see me at the Manchester Royal Infirmary, in March, 1921, described him as "vacant and not as sharp as he was, and as sitting brooding a good deal and not talking." When I saw him he had a very fixed expression—a fairly typical Parkinson's mask. His pupils were very sluggish both to light and accommodation; his optic discs were normal. His diplopia had recovered, and there was no evidence of any paresis of ocular muscles. His face and his apparent lack of interest in what was going on suggested early general paralysis, but he talked quite intelligently when persuaded to be interested; his speech was slow, but not slurred or stumbling. His blood gave a negative Wassermann reaction. I have recently heard from his doctor and his brother that he is well again and that he has returned to work.

CASE V.

A clerk, aged 49, was admitted under my care to the Manchester Royal Infirmary on November 19th, 1919. He had been quite well until the day before admission; then he felt dizzy about breakfast time, and found that he was seeing double. On examination he was found to have nystagmus on looking to the left with both eyes; there was paresis of the right internal and right inferior rectus muscles and slight drooping of the right upper eyelid. He seemed quite bright and well in himself, with certainly no undue sleepiness, and continued so till his discharge from hospital about three weeks later. His blood also was negative to the Wassermann test.

CASE VI.

A man, aged 47, a patient of Drs. Dunstan and Mitton of Crewe. I saw him on December 8th, 1920. He gave a history that about five weeks before, on a Sunday evening, he had suddenly developed double vision. This came on all in a moment and was accompanied by dizziness. Next morning the dizziness had gone, but the double vision remained and continued. He described to me that his right eye turned outwards at first, but that after an hour or two, having had a rest and a sleep, his right eye became straight and his left eye turned out. Next morning the noticeable turning outwards of the left eye had gone, but he still saw double, especially if he looked downwards. When I saw him there was a slight convergent squint, affecting particularly the left eye, when looking at a near object below the level of the eye. He was very irritable and nervous generally, his nerves so on edge that he could hardly bear anyone to speak to him, and this continued along with the diplopia for many weeks afterwards.

CASE VII.

A woman, aged 48, a patient of Dr. Roberts n of Middleton, Lancashire. She had sudden onset of squint, which she noticed first on getting up in the morning three weeks before I first saw her at the Manchester Royal Infirmary on July 1st, 1921. This was accompanied by diplopia and, temporarily, by a certain amount of pain in the right side of the forehead. She vomited twice the morning it came on, but there was no dizziness, no sleepiness—if anything, she was unable rather to "catch her sleep"—and she felt all along perfectly well in herself. There was complete paralysis of the right external rectus, no other muscles being involved, except perhaps a slight degree of ptosis of the right eyelid.

It is the cases of similar type to these later ones which are, I believe, so much more common than is generally regarded, and the true nature of which fails, in many instances, to be recognized. They often appear very trivial, and yet I have published elsewhere notes of similar apparently trivial cases in which the presence of grave intracranial disturbance has been proved by demonstration of the presence of optic neuritis. It is because I believe insufficient stress has been laid upon them that I have welcomed this opportunity of bringing them to the wider notice of the profession.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

STRANGULATED SCROTAL HERNIA WITH A VOLVULUS OF THE SMALL INTESTINE IN THE INGUINAL CANAL.

A DUSTMAN, aged 52, was admitted into the Norfolk and Norwich Hospital on June 29th, 1921, under the care of Mr. Everett. Five hours previously he had suddenly experienced acute pain in the right scrotum. The pain was present on admission, and was accompanied with profuse vomiting of partly digested food. He had had a right scrotal hernia for years, but had always been able to reduce it until the onset of this acute pain. He had worn a truss, but this had never been really effectual. Examination on admission showed a large right scrotal hernia with considerable bulging of the right inguinal canal. The hernia was irreducible. The right testicle could not be felt.

Operation.

Operation was performed one hour after admission. An incision was made parallel to Poupart's ligament over the inguinal canal. The external oblique muscle was divided as far as the external ring. The latter was found to be constricting the scrotal portion of the hernia. A director was inserted with difficulty and the external ring was divided. The coverings of the sac were separated, and the sac was opened in a downward direction. About two and a half feet of distended small intestine were then pulled up out of the scrotum. This length of small intestine appeared healthy. On pulling down the small intestine lying in the canal a loop that was plum-coloured and obviously strangulated appeared to come through the internal ring. The portion of small intestine lying in the canal was then examined and found to be twisted on itself. The volvulus was unravelled and hot saline applied to the congested portion. The circulation commenced to return immediately. The intestines were then replaced in the abdomen.

The scrotal sac was then inspected, and a slightly undersized testicle was found which was completely invaginated into the sac, so that it appeared to be lying free; it did not reach to the bottom of the sac. About one and a half inches of the cord immediately above possessed a small mesentery. Owing to the combined condition of the cord and testicle, orchidectomy was performed. The cord was divided at the level of the external ring. The sac proximal to the external ring was then freed, a purse-string suture was inserted into the sac at the level of the internal ring, and the sac below this was divided. The conjoined tendon could not be identified, so the external oblique was reunited with silk mattress sutures, and the skin incision closed.

The patient made an uneventful recovery, and was discharged on July 18th, 1921, having been fitted with a truss provided with an extra large pad over the site of the external ring. The testicle, on pathological examination, was reported to be fibrotic and atrophied.

I am much indebted to Mr. E. W. Everett for permission to publish the notes of this case.

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A LARGE RENAL CALCULUS.

THE following case is perhaps of some interest owing to the size of the renal calculus and the condition of the kidney in which it was found:

A fellah, aged about 50 years, entered hospital on June 29th, complaining of pain, severe and continuous, in the left renal region. His urine was slightly cloudy, was of low specific gravity, and contained a trace of albumin. An *x*-ray picture showed a large stone in the left kidney, and a smaller one in the right. The patient insisted that the right side gave no trouble, that he had come for relief only of the left side, where a dull grinding pain had existed for years; for that pain he begged for operative intervention on the left side only.

Next day, under spinal anaesthesia, by a large incision in the lumbar region I removed the left kidney. Its substance was represented by a sort of capsule, or thin mitten, drawn over the calculus. The weight was 1,130 grams (about 2½ lb.). The operation did not diminish the renal secretion. In fifteen days the man left hospital perfectly satisfied.

Three years ago I removed a renal calculus weighing a little less than a kilogram. In that case the kidney had dropped and become an evident abdominal tumour. I removed it by laparotomy; the other kidney was quite healthy. Both specimens I offered to Professor Marnoch for the surgical museum of Aberdeen University. In the first case I removed the stone from the much-attenuated kidney substance; this latter calculus I sent home in its capsule. My best thanks are due to my excellent hospital assistant, Dr. Iatrou, for devotion in the after-treatment, and to Dr. S. Nahas, radiologist, for care bestowed on the pictures of the calculi.

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Reports of Societies.

TREATMENT OF CONGENITAL SYPHILIS.

At the first meeting for session 1921–1922 of the Royal Medico-Chirurgical Society of Glasgow, held on October 7th, Dr. G. B. Fleming read a communication on "The post-natal treatment of congenital syphilis." After briefly outlining the methods of treatment by mercury and their results, he spoke of mercurial treatment combined with treatment by the salvarsan group of substances, and explained the methods adopted at the Royal Hospital for Sick Children in Glasgow for injecting these drugs. In considering the results of treatment the criterion of cure adopted was a negative Wassermann reaction which remained negative. It had been possible to analyse 74 cases treated between 1917 and 1920, and 35 cases had been followed up for longer or shorter times after treatment ceased. In children under one year—47 cases in all—44 had negative Wassermann reaction at the end of treatment, and 15 out of 21 were still negative after six months. In children over a year old, of whom there were 27 cases, 20 were negative at the end of treatment, and 8 out of 14 tested were still negative after six months. These facts seem to show that intravenous injection of salvarsan reinforced by mercury was the best post-natal way of treating congenital syphilis. The younger the patient the greater was the probability of cure. A case should only be pronounced cured when the Wassermann reaction had been proved to remain negative.

Dr. Ethel Crawford then read a paper on "Sulfarsenol in congenital syphilis." The damage to the tissues when salvarsan or neo-salvarsan was given intramuscularly had led to the use of an arsenical preparation with a sulphurous acid radical incorporated, named "sulfarsenol," which could be injected intramuscularly without local injury. This substance was tried in a series of cases and in various doses without any toxic symptoms resulting. Thirty-five children were so treated, and they all improved with remarkable rapidity so far as symptoms were concerned, but so far as the Wassermann reaction was concerned the results were not so satisfactory. In children under 1 year when the treatment was commenced, of 23 cases, 14 remained positive and 9 became negative. In children over 1 year, of 12 cases treated 11 remained positive and 1 became negative. The number of doses given varied from 7 to 18. The results showed that the intramuscular injection of sulfarsenol was not as efficacious in producing a cure of congenital syphilis as the intravenous injection of salvarsan substances, if cure was to be judged by the behaviour of the Wassermann reaction.

Professor C. H. Browning made a communication on "The antisyphilitic action of arsenical compounds in relation to their constitution." Although for one reason or another there were many substitutes for the original "606," they were all similar in chemical constitution to salvarsan, although there was an unfortunate diversity of names. Atoxyl had a serious effect on the optic nerve, and while atoxyl was a stage in the synthesis of salvarsan, there was nothing to encourage the belief held by some ophthalmologists and others that salvarsan had any harmful action on the nervous system. Atoxyl bore a relation to salvarsan that might be compared with the relationship of sugar to alcohol. There was, however, danger in allowing solutions to remain exposed to air for long, as the solutions underwent decomposition; and there was also some danger from any large quantity of fluid used at one time. Nowadays improved methods of administration and improvements in the drug itself had eliminated these risks. Salvarsan substances were not clearly defined chemical entities. They were colloidal substances, incapable of definite purifying, and consequently impurities appeared in the various preparations. These modified solubility, reaction after administration, etc., and might possibly modify the toxicity of the drug in the body. Thus it was an impossibility to test the activity of any of the salvarsan substances *in vitro*; it must be done *in vivo*. This was done with some of the substitutes but not with others. The tests should be controlled by a disinterested party. The relative efficacy of the members of the group was not only a scientific question but a practical one. Whereas the new substances were more easily given than the old, the balance of efficiency lay with the old. In most instances, however, the administrator was anxious to avoid danger, and therefore used the least toxic substance, although it was possible that by reducing toxicity the therapeutic effect was also reduced. In the case of the original salvarsan a febrile reaction was often produced. An inquiry, years ago, was made into the history of syphilitics in the Austrian army and afterwards, and it was found that those men who had developed a fever reaction after infection did not develop general paralysis. In checking the efficiency of treatment the disappearance of clinical symptoms was not a sufficient test, and therefore the more rigorous biological tests, the Wassermann and the precipitation tests, should be used.

Dr. J. R. C. Greenlees spoke on the ante-natal treatment of congenital syphilis. Post-natal treatment of congenital syphilis attacked the disease too late. The focus of the infecting spirochaetes was probably the placental tissue, and therefore treatment should aim at prevention of their development there, and their spread to the foetus. Ante-natal treatment with mercury and iodide of potassium had long been tried, but had been found wanting. In Galliot's statistics 217 pregnant women actively syphilitic were treated, with only 17.4 per cent. of living births; while in pregnant women suffering from latent syphilis similarly treated 75 per cent. of the pregnancies proceeded to a successful issue. Dr. Greenlees quoted several cases showing failure after thorough treatment, in the absence of active syphilis. In contrast to this were the histories of fifteen cases treated at the Royal Hospital for Sick Children, Glasgow, where ante-natal treatment was carried out with arsenical compounds and mercury, and 100 per cent. of successes resulted. Some of these cases were followed up for as long as seven years.

Dr. Leonard Findlay read a communication on "The ravages of congenital syphilis, and how to combat them: a plea for notification." The foregoing communications showed that ante-natal treatment was the treatment *par excellence*. Prophylaxis was beyond question better than curative treatment. As some of the children born healthy and without symptoms subsequently developed a positive Wassermann reaction, it was too early to be quite certain that symptoms might not develop later. Further, the ease of the ante-natal method of treatment and the avoidance of the pain and misery many young syphilitics underwent in the course of the curative treatment were striking recommendations in its favour. Dr. Findlay criticized statements recently made as to the question of change of type of congenital syphilis, to the effect that it was becoming less severe in its manifestations. He strongly advocated the application of the ante-natal method of treatment by the general practitioner, and voiced the opinion that with the Wassermann test available and the new salvarsan preparations so easily administered, there was no necessity for the special venereal clinics, nor for the so-called venereal specialist, in the case of syphilis. In concluding, he referred at some length to the desirability of making syphilis a notifiable disease, with particular regard to its influence on infantile mortality.

CANCER OF THE BREAST.

The fortieth session of the West London Medico-Chirurgical Society opened on October 7th, when Sir George Lenthal Cheatle delivered his presidential address on "A study of breast cancer in relation to the cancer problem." He said he had always been deeply impressed

with the fact that any sufficient stimulus—mechanical or chemical—would cause the egg to awake and divide. If the stimulus was a living one, it was probably of a physico-chemical nature. There were many factors influencing cell division—for instance, age, sex, and heredity. He particularly emphasized the importance of life-wear and nerve influence on the epithelial cells in this connexion. He had investigated some 200 cases of carcinoma of the hand with a view to ascertaining the points of incidence of the disease. In only four did it begin in the palm. In most of the rest it commenced on the dorsum in the skin over the second metacarpal bone. He thought that the rarity on the palms was explained by the protection which the horny layers afforded the underlying delicate epithelium. As instances of nerve influence on epithelium he cited cases of greyness occurring in definite nerve areas, and several lantern slides were shown illustrating this. He had many years ago been struck with the similarity between the changes which occurred in the common "enlarged" prostate and other glands, and the changes he was about to describe as occurring in the breast.

In considering cancer of the breast he did not believe that corset pressure was an important factor; the traumatic mastitis that might result from this rapidly disappeared on removing the cause. He showed how a diffuse, benign, desquamative hyperplasia of epithelium induced cyst formation in ducts and acini, or in ducts alone and acini alone. He believed the cause of the hyperplasia to be due to an irritant within the ducts or acini respectively. The irritant might enter the breast by the open orifices of the ducts on the surface of the nipple. He did not believe that the inflammation sometimes seen outside the ducts was the cause of the hyperplasia within. This was in many cases secondary and due to the irritant leaking out here and there, and causing isolated collections of lymphocytes.

The formation of cysts meant stagnation of contents, and as they caused irritation their action might remain undisturbed over long periods. Hence two possible events might occur: (1) the formation of uni- and multi-radicular papillomata (simple), and (2) the development of definite cancer (papillomatous or laciform). All of these he described as beginning in duct cysts and in more than one part of the same breast. The multi-radicular papillomata were often malignant, and for this reason were the more important. The ampullae of the ducts were a favourite site for their growth. The laciform type of duct cancer was very malignant, and might be pure or mixed with the papillomatous type. Cysts containing papillomata or cancer were first small cysts. The epithelium of the large cysts was so atrophied and degenerated that it was no longer capable of responding to the stimulus of further irritation.

Many surgeons were saying that because they had never seen cancer in breasts from which they had removed cysts, therefore cancer in cysts must be rare. There was nothing in that statement. He had recently had a breast sent him for examination which had been removed for cysts only. In it was a multi-radicular papilloma, and near it a focus of cancer invading the fat around it. Again, if surgeons removed cystic conditions, they had removed possible sites of cancer. The small cysts were the most dangerous, as in them the epithelium was active.

POLYPOID DECIDUAL ENDOMETRITIS.

A MEETING of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine was held on October 6th, with Professor HENRY BRIGGS in the chair. Dr. FRANK NYULASY (Melbourne) read a paper on polypoid decidual endometritis, illustrated by the epidiascope and by microscopical and naked-eye specimens.

In introducing his subject Dr. Nyulasy quoted from a leading article on puerperal mortality in the BRITISH MEDICAL JOURNAL of March 5th, 1921: "It is a disheartening and almost humiliating discovery to find by the Registrar-General's report that puerperal mortality in England and Wales, both as a whole and as regards puerperal sepsis separately, was greater in 1919 than in any year since 1905," and "our present methods for preventing puerperal infection are still insufficient." One important cause of puerperal septic infection seemed to be generally overlooked—namely, polypoid decidual endometritis, first mentioned by Virchow in 1861, under the name "Endometritis decidualis polyposa vel tuberosa," because of the peculiar appearance of the decidua in a three months' abortion case which came under his notice. Since Virchow's single observation, other observers had recorded odd cases associated with abortions, but generally the condition had been regarded as a pathological curiosity of extreme rarity. The author's own observations, extending over many years, however, showed that the disease was not uncommon, though often unrecognized; that it was associated with full-time labours, and not only with abortions; and that it was not an uncommon cause of septic infection with its consequences. The existence of the disease in full-time pregnancy was of the highest practical importance; for although after labour in such cases the placenta or a portion thereof might be found adherent to the diseased decidua, it might come away apparently "complete," leaving behind the masses of polypoid decidua, which were extremely prone to undergo septic infection, and, if not promptly removed, to lead to death of the mother.

This disease was a result of pre-existing chronic endometritis beginning prior to, or coincidentally with pregnancy, and continued into the puerperium, during which acute processes were grafted upon the chronic condition in consequence of septic infection. Chronicity was indicated by the fact that it was often found to be distinctly syphilitic in nature. An extreme degree of endarteritis obliterans, essentially a chronic process, was always found in such cases, and to an extent far exceeding the amount ever seen in the normal puerperal uterus and ripe placenta. With it there was often much organization of large thrombosed capillaries and new formations of fibrous and muscular elements. The venous spaces were mostly empty, except for a few blood corpuscles, and lined with a single layer of endothelium, at times actively proliferating. Decidual cells—rounded, oval, polygonal, or flattened—were found in some specimens over fairly large areas, often separated by bands of muscular and fibrous tissue or forming "decidual islands." Recent inflammatory reaction was chiefly shown by small round-celled infiltration, small extravasations of blood, and active endothelial proliferation. In some sections a few villi were found attached to the polypoid tissues; occasionally the whole placenta was attached. On the other hand, it might come away without expression and apparently "complete," leaving on its site large or small, irregularly rounded, or dome shaped masses of chronically inflamed decidua, so full of vessels as to resemble cavernous angiomata. These masses were favourable beds for the development of septic organisms, and accounted for many of the cases where the most careful practitioners had apparently "left something behind," even after a minute scrutiny of the expelled placenta. Polypoid decidual endometritis was neither a hypertrophic nor an adenomatous condition, as formerly taught, but a combination of chronic endometritis and metritis, exaggerated by pregnancy and usually showing the signs of acute inflammation grafted upon the old chronic condition, as the result of sepsis in the puerperium. Dr. Nyulasy showed examples of unrecognized specimens of uteri with well marked polypoid endometritis, but given some other title. If practitioners would submit to microscopic examination the material removed when clearing out retained products of conception after labour or miscarriage, the disease would be recognized much more often.

Clinically, the patient might seem to be doing well for a day or so, but usually there was a slight rise of pulse, then of temperature, which might rise suddenly on the third day or later to 103° or 104° F. with a rigor. Sometimes free bleeding occurred after labour, but profuse secondary haemorrhage was not common, though a sudden rather free flow after the passage of a normal amount for two or three days was suggestive. The diagnosis depended on the presence of subinvolution, a patulous os, generally admitting two fingers, and in the uterus a mass of varying size, usually covered with blood-clot, together with the symptoms above described; an early rise of pulse was most important. Prognosis depended on the virulence and dosage of the infecting organism and the tissue resistance of the patient, but chiefly on prompt and efficient removal of the polypoid masses after labour or miscarriage. Almost every case recovered if operated upon early, but the danger was extreme if operation was delayed. Early and complete removal of the masses was essential for satisfactory results; from the third to the fifth day was the best time. Death was known to have occurred in some cases of this disease on the tenth day after delivery; hence postponement of operative treatment was inadvisable. The greater part should be removed by the fingers, but the remainder (which might extend down to the internal os) could, if

preferred, be evacuated by a large-looped sharp curette. The fingers alone might be employed by those who thought they could thus operate satisfactorily.

The President confirmed the accuracy of the descriptions of the tissues removed from the uterus, but doubted whether the interpretations placed upon them by Dr. Nyulasy could be wholly substantiated.

Dr. J. S. Fairbairn expressed some difficulty in understanding clearly what Dr. Nyulasy's thesis was. These polypoid conditions of the interior of the puerperal uterus were familiar, but he did not feel convinced by this paper that it was a specific condition, though the author's careful investigations greatly strengthened his position.

Dr. Amand Routh thought that pregnancy, in cases of polypoid endometritis, must be rare, but if the author's view of its frequency were confirmed, it would be a distinct advance in knowledge of the causation, prevention, and treatment of puerperal sepsis. He advocated much more careful investigation of adherent tissue removed from the septic puerperal uterus.

Dr. Arthur Giles congratulated Dr. Nyulasy on his valuable contribution to a subject so far too little investigated. He thought that careful attention to this subject, leading to early treatment, should materially reduce the mortality after childbirth.

The first meeting of the new session of the Leeds and West Riding Medico-Chirurgical Society was held at the Leeds General Infirmary on October 14th, when the new President, Sir Berkeley Moynihan, occupied the chair. There was a very large attendance of members. Amongst a number of interesting cases and specimens on view Mr. Carlton Oldfield showed a specimen of "ovarian gestation." At the conclusion of the discussion on cases Sir Berkeley Moynihan delivered his opening address on "Medicine in art." A large number of lantern slides illustrating the portrayal of diseases and deformities in the works of the great masters were shown by the speaker.

Reviews.

THE ENGLISH PRISON SYSTEM.

It is not possible to write within the space of this review an adequate notice of this book, the importance of which is signified by the manifold interest of its contents as well as by the author's long experience and deep study of his subject. In a comparatively small volume Sir Evelyn Ruggles-Brise [1] has given to all who desire either general or special information a full, concise, and eminently readable account of the system of prison administration in this country, prefaced by an historical retrospect of the relation of imprisonment to punishment for crime, and of the objects of state-punishment generally. This work is unique in English prison literature, for among the writings and discussions which have appeared here from time to time on crime and punishment in their various bearings no book approaching it in thoughtfulness, accuracy, and practical value has ever been placed before the public by an expert hand.

During the period covered by Sir Evelyn's chairmanship of the Prison Commission, which began almost coincidently with the maturing of the Prison Act of 1898, there have been many important happenings of great moment. The notable Report of the Committee of Inquiry which led up to this Act unquestionably marked an epoch in English prison history—a passage, indeed, from old to new conceptions and methods of punishment. This Act was followed by several others, largely governed by the spirit of the words used in the above mentioned report, saying that "prisoners have been treated too much as a hopeless and worthless element of the community, and that the moral as well as the legal responsibility of the prison authorities has been held to cease when they pass outside the prison gates." From this date onwards, mainly owing to the initiative and energy of Sir Evelyn, far-reaching changes have been taking place, and are still proceeding, in the reorganization and improvement of the prison system. Among these changes were the Probation Act of 1907, the Children Act of 1908, the Prevention of Crime Act of 1908, which established (1) the special Borstal system of treating young prisoners of both sexes, initiated by Sir Evelyn at Borstal several years before, and now fully proved to be of great value; and (2) the new system of preventive detention under which habitual criminals, sentenced for long periods, are treated specially: one of its objects being that of ascertaining as far as possible the number of such prisoners as may give to a specially appointed committee of advisers good reason for believing that they can be discharged from prison under a strict special licence while their sentences are still running. A notable measure of success has resulted from this part also of the Prevention of Crime Act. In this context Chapter V on Preventive Detention, Chapter VIII on the Borstal system, and Chapter XIV on Aid-on-discharge, are of much interest, and illustrate the value of the scheme conceived by Sir Evelyn, and now in full operation, of the Central Association for the aid of discharged convicts and the Association for the care of inmates released from the Borstal institutions.

Throughout the author's account of the reforming movement of the last quarter-century, during nearly all of which period I had the opportunity of closely following it, the great importance of the medical element in prison administration comes out clearly. Stress is laid on this in the preface and other parts of this book, and in Chapter I, "On the Meaning of Prison Reform," the author states his opinion that "the medical care of criminals in this country is as exact and patient and considerate as can be secured by an able, humane, and untiring medical staff." It may be said here that, especially during the last dozen years or so, the work of the medical officers of our prisons has been very onerous, owing not only to the rapid growth of medical knowledge from the latter part of last century up to now, but also to various incidental circumstances. Within this period the whole question of prison diets has been reorganized on a scientific basis, and from time to time modified, under the technical supervision of successive medical inspectors, especially by Sir Herbert Smalley and Dr. Treadwell, late Medical Commissioners of Prisons. The difficulty of this task was greatly increased by the necessary changes introduced under the stress of the war time, when there was much scarcity of the staple foodstuffs. Nor must we forget the exceptionally grave responsibility thrown by the Government on the prison medical officers, both before the war and later, during the frequent and protracted spells of "hunger striking" on the part of various classes of prisoners commonly described as "political." For these medical officers were charged with the extraordinarily harassing obligation of reporting from time to time whether such persons were physically and mentally fit for further detention. I venture to hope, as I have long contended, that in case of further occurrences of this kind the whole responsibility of preserving the life of such persons will be cast on their own friends and advisers, to whom all possible facilities and means should be provided by authority. Recent events seem to justify this hope, if they may not as yet have solved this difficulty.

In Chapter XIV, on "The Medical Service," Sir Evelyn gives a detailed account of the functions of the medical commissioner, the medical inspector, and the medical officers of prisons, and pays the following well-merited tribute to the medical officer as an "expert" in mental disease: "Although a practical acquaintance with lunacy is expected of a candidate for the medical service, it is owing to the exceptional opportunities afforded for diagnosis of the varying and often peculiar mental states of prisoners that he is expected and is able to give an expert opinion on cases of doubtful insanity and mental defectiveness. The growing practice of the courts to remand for special observation in prisons when any doubt exists as to the state of mind has the desired result of preventing the commitment to prison of persons who would be certified to be insane almost as soon as received. Twenty years ago the number certified insane after reception into prison was a little over 1 per cent. of the total receptions. To-day it is about half that number."

The sixteenth chapter, "A Criminological Inquiry," is devoted to an account of the work entitled *The English Convict: a Statistical Study*, which was published in 1913 by the Government as an official Blue Book, and has since, in 1919, appeared in an abbreviated form as the work of its author, the late Dr. Charles Goring. Sir

[1] *The English Prison System.* By Sir Evelyn Ruggles-Brise, K.C.B., Chairman of the Prison Commission for England and Wales, and President of the International Prison Commission. London: Macmillan and Co. 1921. (Octavo, pp. xix + 275. 7s. 6d. net.)

Evelyn makes it clear that he "does not attempt to criticize either the method or the conclusions of this work, being aware that such an attempt would involve much discussion of some matters on which there is much difference of scientific opinion." But it seems probable that readers interested in this chapter as well as in the preface, where the work is referred to as the "first attempt to analyse the causes of crime by strictly scientific method," will infer that Sir Evelyn has virtually given his imprimatur to the method employed and the conclusions arrived at in the *Statistical Study*; and that the very absence of criticism may lend colour to this inference.

Sir Evelyn states that this *Study* is the first essay made to arrive at results on criminology by the strict application of what is known as the Biometrical Method of statistical treatment of recorded observations: but there are those who hold that this method is not always applicable, and is not applicable to certain parts of the inquiry in question, which deals with some biological and psychological matters that are not so simple as they are made to appear, and therefore cannot be correctly handled as recorded observations.[2] Space prevents me from supporting this position here by more than a few remarks on that part of the *Statistical Study* which relates to the question of the comparative importance of so-called constitutional or natural or "inherited" characters which contribute to the make up of criminal persons, and to the final conclusion on the question, based on the use of the biometrical method, that "relatively to the origin in the constitution of the malefactor, and especially in his mentally defective constitution, crime is only to a trifling extent, if to any, the product of *social inequalities, adverse environment, or of any other manifestations of what may be called the force of circumstances.*

This conclusion, based on this method, implies several assumptions, such as (1) that the *observable* mental characters of men are practically divisible into the above mentioned two categories, and can be severally treated as either one or the other; (2) that the mental quality of intelligence, apart from other mental factors, is to be regarded as of exclusively constitutional origin; and (3) that the confessedly *possible* environmental factors of crime can be eliminated as such by selecting certain of such possible factors as may have been adduced by various writers as causes of crime, by showing that they possess no significant correlation with crime. It thus appears that much of the material involved in this inquiry differs widely from that which can be practically estimated by measurement, and that in this instance the biometrical method in some of its applications cannot claim to have "founded a new knowledge of the criminal upon facts scientifically acquired and upon inferences scientifically investigated." It may, as Huxley said in quite another context, be "compared with a mill of exquisite workmanship which grinds material to any degree of fineness, but what comes out of it depends upon what is put in." As to that part of the inquiry, however, which deals with the strictly physical and measurable observations on criminals and with the teaching of the Lombrosian or "positive" school of criminologists, I wholly agree with Sir Evelyn's view that this work finally abolishes the once popular belief in the existence of an anthropological type of criminal.

H. BRYAN DONKIN.

PULMONARY COMPLICATIONS OF INFLUENZA AND MEASLES.

Epidemic Respiratory Disease, or "The Pneumonias and other Infections of the Respiratory Tract accompanying Influenza and Measles," is the report of a commission, consisting of E. L. OPIE, A. W. FREEMAN, F. G. BLAKE, J. C. SMALL, and T. M. RIVERS,[3] appointed by the Surgeon-General of the United States Army Medical Corps in July, 1918, to study the pneumonias prevalent in the army. This commission started work at Camp Funston in August, 1918, when the pneumonia, chiefly in coloured troops drafted from the Southern States, had a low mortality rate, presented few complications, and differed from the ordinary pneumonia of civil life in being associated etiologically with those types of pneumococci—Pneumococcus atypical II, Type III, and the group of micro-organisms represented as Type IV—commonly present in the mouths of normal persons, whereas Pneumococcus Type I and II, which are responsible for two-thirds of the lobar pneumonia in ordinary civil life, were either present very exceptionally or absent. Early in September the commission moved to Camp Pike, where throughout the encampment pneumonia had been so rife as to place it third in the death rate in lobar pneumonia and fourth in the death rate in bronchopneumonia among the thirty-two camps in America. In September, soon after their arrival, there was a severe outbreak of over 12,000 cases of influenza, with 1,499 cases of pneumonia and 466 deaths. This valuable and detailed report may with advantage be compared with that of a similar commission presided over by W. G. MacCallum, Professor of Pathology in the Johns Hopkins University, and published in the *Johns Hopkins Hospital Reports*, vol. xx (vide BRITISH MEDICAL JOURNAL, 1921, i, 710, May 14th). It contains seven chapters contributed by various combinations of the members of the commission, the last chapter, summarizing the results of the investigations, being from the pen of Professor E. L. Opie, of the Washington University, St. Louis, where the study of the pathological changes was completed.

In view of the unsettled state of opinion on the subject, three members of the commission specially investigated the bacterial etiology of influenza, and preface their research by a short critical review of the history of this disputed problem. After full discussion of their results they conclude that the *Bacillus influenzae* is in all probability the specific etiological agent of epidemic influenza, thus disagreeing with W. G. MacCallum's view that the virus is invisible, ungrowable, unstainable, and different from the bacteria at present recognized.

There is no reason to believe that the recent pandemic influenza differed essentially from that of 1889–1890, and it should be regarded as a self-limited disease of two to five days' duration, never proving fatal unless complicated. In 36 per cent. of the influenzal cases there was purulent bronchitis, with, in addition to the influenza bacillus, other micro-organisms, such as pneumococci, haemolytic streptococci, and *Streptococcus viridans*; the same bacterial flora was found in the cases with pneumonia, which though usually bronchopneumonia was lobar in 40 per cent. Clinically a diagnosis between these two forms is very difficult, as was shown by the 36 per cent. of erroneous diagnoses among 227 cases at necropsy; the difficulties are in part due to the frequent association of lobar pneumonia with purulent bronchitis or with bronchopneumonia, or with both. Half the fatal cases showed invasion of the lungs and blood by the haemolytic streptococcus. The pneumonia following measles reproduces the anatomical and bacteriological features of post-influenzal pneumonia, and this suggests that influenzal infection plays a part in the production of pneumonia after measles.

The account of secondary infection of influenzal and pneumonic patients has important practical bearings; an influenzal patient may carry pneumococci and streptococci capable of causing pneumonia, but usually the organism responsible for pulmonary complication is derived from someone else; and an influenzal patient runs a grave risk by contact with pneumonic cases, especially those due to the haemolytic streptococcus. Each case of pneumonia should be strictly isolated, not only to prevent infection of others but to avoid additional infection by other types of pneumococcus or the haemolytic streptococcus; and it is pointed out that an individual primarily attacked by influenza may suffer from a succession of pneumonias, one micro-organism preparing the way for another. The microscopical changes are clearly described and well illustrated, and the five following forms of post-influenzal pulmonary disease are recognized: Acute bronchitis, haemorrhagic pneumonia, secondary pyogenic infection of the bronchi and lungs,

[2] I have dwelt in some detail on this *Study*, and on the relation generally between mental defect and crime, in the *Journal of Mental Science* for July, 1916, January, 1917, April, 1919, and in two lectures delivered to the class of Psychological Medicine at the Maudsley Hospital in October and November in 1920, and published in the *Lancet*, 1920, ii, 979.

[3] *Epidemic Respiratory Disease.* The Pneumonias and other Infections of the Respiratory Tract accompanying Influenza and Measles. By Eugene L. Opie, M.D., Professor of Pathology, Washington University School of Medicine, Francis G. Blake, M.D., Associate Member of the Rockefeller Institute for Medical Research, James C. Small, M.D., Bacteriologist, Philadelphia General Hospital, and Thomas M. Rivers, M.D., Associate in Bacteriology, Johns Hopkins University. London: Henry Kimpton. 1921. (Med. 8vo, pp. 402; 53 figures. 36s. net.)

bronchiectasis, and chronic pneumonia. In an appendix the Commission summarize the positive results obtained in their experimental inoculation of monkeys with the influenza bacillus and micro-organisms isolated from influenzal pneumonia.

TREATMENT OF SURGICAL TUBERCULOSIS.

This volume,[4] amounting in space to some 276 pages, deals essentially with the clinical aspects and the treatment of bone and joint tuberculosis. The contents of the book may be divided into two sections; one, the larger, is concerned with the case histories and clinical features of the diseases; the other, and it is of great interest, records certain methods of treatment to which the author has given special attention.

In regard to the first section there is little to be said; it deals with ground that has already been traversed by others. Dr. Eugen Kisch has not succeeded in throwing fresh light upon any particular problem. The various subjects are presented, however, in a lucid and attractive manner; throughout the strongest claims are put forward for conservatism and the limitation of operation.

The section which records special methods of treatment is of greater interest. Dr. Kisch begins by alluding to the imperfections of the present methods of treating surgical tuberculosis—the surgical method of elimination, and the conservative method of rest and fixation. He recounts the disadvantages of both, and then describes the advantages of Bier's methods, and from Dr. Kisch's statements one gathers that Bier has considerably modified them with corresponding improvement in results.

Several chapters are devoted to heliotherapy, and the problem of pigmentation receives detailed attention. Various theories are stated and discussed: Kisch believes that the heat rays are responsible for skin pigmentation, and that the ultra-violet rays, while they give rise to reddening and faint brown coloration, do not produce real pigmentation. Heliotherapy and radiation owe their value, Kisch thinks, to the hyperaemia which such treatment induces, and he records experiments in which blood pressure readings gave estimations of the degrees of hyperaemia induced. Since heliotherapy at high altitudes —as practised by Rollier at Leysin, for example—must necessarily remain an advantage of the few, Kisch has endeavoured to supplement it in the interests of the majority by certain special methods of radiation which he describes. Heat rays may be produced by the oxy-acetylene flame, ultra-violet rays by the use of a quartz lamp, the interior of the lamp being filled with mercury vapour. More recently, however, he has been using an aureole lamp backed with a powerful reflector. Both local and general raying are carried out, specially large types of aureole lamps with cluster burners being used for the latter process. Kisch gives the following directions:

"We always begin with three minutes' raying at a distance of 150 cm. from the lamp. Next day this is increased to five minutes, and next day five minutes more, and so on to thirty minutes. Then the distance is diminished by 25 cm. and, when this is done, the raying has to last ten minutes only, and this is daily increased as before to thirty. The distance is then further reduced to 100 cm. for ten minutes, and increased as before to thirty minutes. General raying is never done at closer range than 100 cm., but local foci are rayed at a distance of 75 cm."

In addition to the heliotherapy and radiation, there are two special methods of treatment which Kisch employs—congestion treatment and the administration of iodine. The former treatment is carried out on the lines laid down by Bier—it is applied for periods of four hours three times a day, with one hour's interval between each application. The iodine is administered in the form of sodium iodide.

Kisch does not believe in complete and prolonged fixation in the treatment of tuberculous joints; at regular intervals during the period of rest and extension movements of the affected joint are carried out. He hopes thus to prevent atrophy of muscles and diminish the chance of ankylosis, and thinks there is little risk of lighting up the disease.

The book is well illustrated and the type is excellent; a complete index is supplied. It is an excellent contribution to the study of surgical tuberculosis, and the general section contains a number of very suggestive and helpful points; the book will well repay careful perusal.

AN AMERICAN TEXTBOOK OF PSYCHIATRY.

Dr. A. C. Buckley, the Medical Superintendent of Friends Hospital, Frankford, and Associate Professor of Psychiatry in the University of Pennsylvania, has written a comprehensive guide to the study of mental disorder, entitled *The Basis of Psychiatry*.[5] The subtitle of this volume, *Psycho-biological Medicine*, indicates the psychiatric outlook of the author. He points out in the preface that a change in the direction of approach to the problem of mental disorder has come about through the development of a closer relationship between biology and psychology; that mental disorders are not primarily mental diseases, but reflections of some bodily disorder which through its effect upon the organ of adjustment—the nervous mechanism and its lower and higher (psychic) reflexes—prevents the patient from making appropriate adaptations to environmental conditions; that the reactions of the individual as a whole form the subject underlying every problem in psychiatry; and that before any conclusion can be reached from the standpoint of diagnosis, prognosis, and treatment of the mental condition there must be a thorough investigation of all bodily functions. Such views are thoroughly sound, and the author keeps them well in the foreground of his descriptions of the various forms which mental disorder assumes. The importance which he ascribes to biological conceptions for our fuller understanding of mental disorders leads him, in the earlier chapters, to deal more fully with biological phenomena than is usual in most textbooks of psychiatry. Thus he discusses the fundamental vital characteristics included under the term *reaction*; the development of the nervous system; conditioned reflexes; the laws of inheritance; and the development of the brain and receptive organs, and applies these various data in subsequent chapters to illuminate the problems of insanity in respect to causation and symptomatology.

The chapter on methods of examination includes a useful account of laboratory diagnostic procedures, and Part II of the volume, devoted to a description of the various types of mental disorder, is clearly written and generally adequate for the needs of the student. We do not quite understand, however, why the author has purposely omitted any description of the various forms of congenital deficiency. Apart from the fact that this group of cases would have afforded him an excellent opportunity for illustrating the basic principles upon which his conception of mental disorder is founded, it is of great importance that the student should be thoroughly grounded in this aspect of psychiatry. It might reasonably have been expected that a volume so large as this would have included a comprehensive account of the methods of estimating the intellectual level, such as the Binet-Simon tests. A useful glossary of biological, psychological, and psychiatric terms is appended. Each chapter includes a number of references to the literature of the subject with which it deals, and these will be found of distinct service to those who wish to gain a fuller knowledge of the subject. The author has a thorough acquaintance with the work of English psychiatrists, and frequent references are made to the researches of Bolton, Mott, Head, and others in this country. In general he follows the teaching of Tanzi, Bianchi, Regis, and Kraepelin in relation to mental disorder.

HOWARD MARSH.

St. Bartholomew's men of the last quarter of the last century, and many others, for he had innumerable friends, will welcome *A Memoir of Howard Marsh*,[6] consulting surgeon to that great hospital, and subsequently professor

[4] *Die operative Therapie der Knochen und Gelenktuberkulose; mit besonderer Berücksichtigung der Tiefen- und Prinzip der Sonnenbehandlung.* Von Dr. med. Eugen Kisch. Leipzig: F. C. Vogel. 1921. (Imp. 8vo, pp. xx + 276, 6 plates, 291 figures. M. 120, bound M. 140.)

[5] *The Basis of Psychiatry (Psycho-biological Medicine).* A Guide to the Study of Mental Disorders for Students and Practitioners. By Albert C. Buckley, M.D. Philadelphia and London: J. B. Lippincott Company. 1921. (Med. 8vo, pp. xii + 447; 78 figures. 30s. net.)

[6] *A Memoir of Howard Marsh, F.R.C.S., D.Sc., M.A., Surgeon to St. Bartholomew's Hospital, sometime Master of Downing College.* By V. S. M. London: John Murray. 1921. (Pp. 86, with portrait, price 5s. net.)

of surgery and Master of Downing College, Cambridge, by V. S. M. Coming of an East Anglian farmer stock, he was christened Frederick Haward, but changed the latter to Howard, and as Howard Marsh was known to many generations of students, who regarded him as pre-eminently their friend; for, his ward sister writes, to spare others' feelings was an instinctive reflex with him. His active association with St. Bartholomew's covered a period of forty-five years, and an interesting picture is drawn of the conditions of hospital life sixty years ago, when surgeons were in a decidedly inferior position, both professionally and socially, to physicians. Though a general surgeon and much influenced by his neighbour by birth, Sir James Paget, whose private assistant he was for some years, Howard Marsh foreshadowed the modern vogue of specialism by his attention to surgical diseases of joints, and especially the tuberculous affections of bone, being probably attracted to this subject by his association first as resident and then as a member of the visiting staff of the Hospital for Sick Children, Great Ormond Street. At St. Bartholomew's he served a long and laborious apprenticeship; he became assistant surgeon in 1873, but it was not until eighteen years later that he became full surgeon, a post he resigned shortly before he reached the compulsory age for retirement at 65.

But in this year (1903) he was elected professor of surgery at Cambridge, in succession, after an interval of seven years, to Sir George Humphry, the first incumbent of that chair, who had died in 1896, after holding it for thirteen years. This post of honour was not without its difficulties, and these, by wise tact, Marsh overcame successfully, as Sir German Sims Woodhead shows in a critical appreciation of his work at Cambridge. It is probable that the twelve years in the atmosphere of a university with traditions so different from those of a busy London consultant were the happiest of Marsh's life, and he certainly never spared himself in performing his duties, some of which, such as the first Commissioner of Scouts in Cambridge, must have been somewhat novel. The secret of his success in life was said to be his power of concentration on whatever he undertook; but his kindly nature and broad-mindedness must not be forgotten, and probably exerted considerable weight in his election, only four years after his arrival, as Master of Downing College. How he played his part is well set forth in this "short story of a man greatly beloved."

NOTES ON BOOKS.

To the authors of the *Essentials of Physiology*[7] are due hearty congratulation on the appearance of another edition of their useful compendium within a year. The present issue, apart from a few alterations in the text and the addition of a number of new figures, has undergone but little change. The book gives a most succinct and readable account of the facts of physiology.

Dr. BURNET'S *Materia Medica*[8] is a cram-book for students who find—as the author observes they commonly do—the subject of materia medica a bugbear. It consists of an alphabetical list of the commoner drugs, together with a mention of their chief features and lists of the preparations in which they are employed. At the end of the book are notes on prescription writing. Experience seems to show that cram-books are indispensable, and if ever they are justified it is in such a subject as this. Dr. Burnet's volume should be of service.

The second edition of the excellent textbook of *Microbiology*,[9] edited by Professor MARSHALL, was reviewed at some length in the BRITISH MEDICAL JOURNAL of October 25th, 1919 (p. 531). The third edition, revised and enlarged, is now before us and may be warmly recommended to readers of all classes who are interested in the study of bacteriology in any of its many various applications.

The late Professor LÖWIT'S textbook on infection and immunity,[10] edited by Professor BAYER, may be recommended to bacteriologists in search of a straightforward and uninspiring German account of the subject with which it deals. It is a laborious compilation, based mainly on the German literature of the subject, and doing scant justice to the pioneer work of men of science outside German and Austrian laboratories.

Fired by the literary activity of surgeons who publish their works in the form of annals, collected papers, surgical clinics, and the like, Dr. PRESNO Y BASTHONY of Havana has printed a volume of surgical clinics and operative technique,[11] in which he has collected some sixteen papers communicated by him to the scientific societies of Havana or to its review of medicine and surgery. The volume is well got up and illustrated, and gives evidence of the surgical skill and literary accomplishment of its author. It should be of interest to the surgical specialist and gynaecologist.

Hints to Travellers,[12] scientific and general, edited for the Council of the Royal Geographical Society by its map curator and instructor in surveying, Mr. E. A. REEVES, has now as the result of its deservedly recognized utility reached a tenth edition. Of its two volumes the first and larger is devoted to surveying and practical astronomy, and contains imposing tables of the logarithms of numbers; so well has the ninth edition stood the test of years that no serious alterations have been necessary. In the second volume, however, more changes have been required; the notes on photography have been thoroughly revised by the late Mr. J. McIntosh, Secretary of the Royal Photographic Society of Great Britain, and the other sections have also been submitted to careful revision. The advances of tropical medicine have led to what is practically a rewritten article on medical hints by Dr. Andrew Balfour, Director-in-Chief of the Wellcome Bureau of Scientific Research, though parts of the original article by the late Dr. W. H. Crosse still remain. The hundred and thirty pages thus occupied contain an immense amount of practical information in simple common-sense language. The ideal traveller is defined as a temperate man, with a sound constitution, a digestion like an ostrich, a good temper, and no race prejudices. From experience in many tropical countries Dr. Balfour recommends a flannel cholera belt at night only, and, even so, chiefly in dry desert climates where there is a great difference between the day and night temperatures. An abdominal belt, by the gentle support it provides, is also useful in sea-sickness, in which affliction Dr. Balfour has found that sucking a lump of loaf sugar containing three or four drops of chloroform often prevents vomiting.

The *Essentials of Veterinary Physiology*,[13] by Professor NOËL PATON and Dr. ORR, first published in 1905, is now in its third edition. It is a book designed to meet the requirements of students and practitioners of veterinary medicine, supplementing the demonstrations or practical work from which alone physiology can be properly learned, as the authors very wisely point out. The volume is subdivided into appropriate parts and sections on lines that are not unusual. The text is clearly and dogmatically written, with an economy of words that will appeal to the intelligent and well-found student. The authors assume a fair knowledge of chemistry and physics in their readers, but insert brief and highly concentrated appendices on elementary physics and organic chemistry for the benefit of those who are less well-grounded in their elementary training. The text is full of information, and the whole volume is adequately illustrated. It may be warmly recommended to those for whom it is written.

The issue of *Medical Science, Abstracts and Reviews* for September completed the fourth volume, and a double index (subjects and authors) to that volume is published with the issue for October.

[7] *Essentials of Physiology.* By F. A. Bainbridge, M.D.Cantab., D.Sc.Lond., F.R.C.P., F.R.S., and J. A. Menzies, M.A.Dunelm, M.D.Edin. Fourth edition. London and New York: Longmans, Green and Co. 1920. (Demy 8vo, pp. 497; 195 figures. 14s. net.)

[8] *Materia Medica, with Notes on Prescription Writing.* By J. Burnet, M.A., M.D., B.Ch., M.R.C.P.Edin. London: J. and A. Churchill. 1921. (Cr. 8vo, pp. 80. 4s. 6d. net.)

[9] *Microbiology: A Textbook of Micro-organisms, General and Applied.* Edited by C. E. Marshall. Third edition, revised and enlarged. London: J. and A. Churchill. 1921. (Demy 8vo, pp. 1071; 200 figures. 21s. net.)

[10] *Infektion und Immunität.* Von Fr. M. Löwit. Nach dem Tode des Verfassers herausgegeben von Prof. Dr. G. Bayer. Berlin and Vienna: Urban and Schwarzenberg. 1921. (Sup. roy. 8vo, pp. 558; 2 plates, 33 figures. M. 80; bound, M. 120.)

[11] *Clínica Quirúrgica y Técnica Operatoria (1915-1919).* Dr. J. A. Presno y Bastiony. Habana: Imprenta "El Siglo XX." 1920. (Demy 8vo, pp. 311; 61 figures.)

[12] *Hints to Travellers, Scientific and General.* Revised and corrected. Edited from the ninth edition by E. A. Reeves, F.R.A.S., F.R.G.S. London: The Royal Geographical Society. 1921. (Vol. i: Cr. 8vo, pp. xx + 470, 94 figures, map in pocket; Vol. ii: Cr. 8vo, pp. viii + 318, 30 figures. Price of the two volumes, 21s.; to Fellows, at the Office of the Society, 15s.)

[13] *Essentials of Veterinary Physiology.* By D. Noël Paton, M.D., B.Sc., LL.D., F.R.S., and J. B. Orr, D.S.O., M.C., M.A., M.D., D.Sc. Third edition, revised and enlarged. Edinburgh: W. Green and Son, Ltd. 1920. (Roy. 8vo, pp. 692; 246 figures. 25s. net.)

APPLIANCES AND PREPARATIONS.

A Hot-air Steriliser for Steel Needles.

Dr. A. G. Sheba (Clinical Pathologist, Princess Alice, Ear and Eye Hospitals, Eastbourne) has designed an apparatus for sterilizing steel hypodermic needles. It is intended for the conservation of steel needles in hospitals, in the consulting room, and also especially for venereal disease clinics where a number of fresh sterile needles are required in series. It consists of a tripod nickel-plated steel sterilizer 8.5 in. high with an upper chamber 3 in. by 2.75 in. In the upper chamber is a carrier supporting a bottle of forty needles held up by their hilts in open glass tubes, the points being free. The bottle is one-third filled with fresh liquid paraffin. Heat is supplied by a spirit lamp below, and sterilization occurs in twelve to fifteen minutes, and is shown by a gentle tinkling of the boiling paraffin which occurs at 118° C. The bottle is then lifted out by a lifter which is attached to the carrier, and then is used or transferred to its case for transit. Resterilization of the bottle when once opened is not necessary if due asepsis in extracting needles is observed. The wholesale makers are Messrs. R. B. Turner and Son, 9–11, Eagle Street, Southampton Row, W.C.1. An Arkansas stone and a leather case containing also a bottle of liquid paraffin and a spare needle bottle are supplied optionally.

INTERNATIONAL ASPECTS OF ALCOHOLISM.

With Special Reference to Prohibition in America.

Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P., late Principal Medical Officer to the Local Government Board, delivered the Ninth Norman Kerr Memorial Lecture before the Society for the Study of Inebriety on October 11th. The chair was taken by Sir Alfred Pearce Gould, President of the Society.

The lecturer said that the subject on which he had promised to speak was obviously too vast to be dealt with in the course of an hour's talk. The real title of the lecture ought, he thought, to be American Prohibition and its Relations to the Problem of Public Control of Personal Conduct. He first gave the history of the steps which led to the passing of the Eighteenth Amendment of the Constitution of the United States, giving the details of the votes in its favour at various stages. Total prohibition was the culmination of the efforts of nearly a century. The history of Great Britain showed that it was common ground that the sale of alcoholic drinks required to be made the subject of restrictive measures. In the United States there had been waves of advance and retreat in the local enforcement of prohibition, the area under prohibition increasing as time went on. Advance in prohibition had been rendered easier by repeated legal decisions to the effect that breweries, distilleries, and saloons were subject to the police powers of the State, and that prohibition was not confiscation but only deprivation of a privilege. The following motives and factors leading to American national prohibition were discussed: the active propaganda of the Anti-saloon League, the instruction respecting alcohol in elementary schools, the desire for "clean" politics, the desire to make State and township prohibition successful, the strong lead of the American medical profession.

The following resolution was passed in 1917 by the American Medical Association:

> "Whereas we believe that the use of alcohol as a beverage is detrimental to human economy, and whereas its use in therapeutics as a tonic or a stimulant, or as a food, has no scientific basis, therefore be it resolved: That the American Medical Association opposes the use of alcohol as a beverage; and be it further resolved, That the use of alcohol as a therapeutic agent should be discouraged."

Other factors were the determination to secure industrial efficiency, and the desire to save white women from negroes inflamed by drink. The results of the first year of national prohibition were admittedly only partial, partly because in the main only Federal, and not also State and city, and partly because of the wide Canadian and Mexican borders, over which smuggling at first was easier even than it was from overseas. The domestic manufacture of alcoholic drinks had increased, but this was a small offset to the general result. For the vast majority of the population alcoholic drinks had become unobtainable or too expensive to be indulged in frequently. There was in America evidence of increased prosperity and of the diversion of large sums of money to the purchase of better clothing, and so on, which was, partly at least, due to the saving on alcohol. Rescue work in large cities had been largely replaced by preventive work. Drunkenness and admissions to hospitals from acute alcoholism showed remarkable declines. Though alcoholism was often but one part of a mesh of evil circumstances, the short cut towards the removal of that evil which prohibition provided promised to be successful in diminishing disease, poverty, and crime.

There remained the general question whether prohibition was likely to exercise a sinister influence on the moral fibre of the people, encouraging other "prohibition cranks" to enter the field. Sir Arthur Newsholme regarded such fears as fantastic, government by majorities forming an adequate protection. The notion that prohibition was the cause of law-breaking and perjury had no better foundation than similar notions in regard to other prohibitions—for example, the prohibition of smuggling. Much stress had been laid on the argument from analogy, to the effect that, as in the cases of railways and automobiles, regulation short of prohibition was indicated as the appropriate method of procedure. No point of principle was involved. Each case—as, for instance, that of public gambling—must be decided on its merits. No pedantic consistency could be expected in regulations affecting personal conduct; but in a democratically governed country the sale of an article for consumption would probably never be prohibited unless its consumption could be shown to the satisfaction of a large majority of the people to produce mischief on a scale justifying the limitation of enjoyment on the part of a large portion of the population. Admittedly moral suasion and individual initiative were healthier and more valuable motives for securing temperance than prohibition; but prohibition might be justified if the evil of intemperance was great, and if the success of those motives could be secured only after many years, or even after generations, of suffering from alcoholism. The case in favour of the enforcement of prohibition was rendered stronger when a large majority of the people persistently demanded it, and when it became clear that prohibition could be enforced.

The problem of prohibition had an important bearing on the fundamental question of how liberty and authority were to be reconciled. The lecturer made this problem the subject of an historical review, and showed the evolution of the present ideal, which was rather one of the liberation of large groups of the community from oppression—parental, social, industrial or political—than of personal liberty, which might easily become licence. He then showed the extent to which communal life had necessitated police restrictions, Poor Law obligations, interference in industrial relations and in the parental control of children, and had produced severe differential taxation, and he then proceeded to illustrate the ways in which coercion had led to extended liberty. The inequality of men, mentally as well as socially, formed a strong reason for judicious regulation. In conclusion, he stated, first, that compulsion was a necessary element in government; secondly, that success in government could be permanent only with the consent of the governed; thirdly, that democratic government was government by majorities; fourthly, that majority government was practicable and beneficial to society only when the welfare of the majority was given priority over personal liberty; it failed if a large minority demanded the privilege of disobeying laws which ran counter to their own appetites or opinion; fifthly, that there were, in civilized countries, many examples of enactments involving diminished freedom of action for the many in order to protect the few; sixthly, that in all such instances moral and voluntary action was preferable to compulsory action. The case for compulsion, which was a good case, was that moral suasion acted slowly on minorities, and, meanwhile, multitudes of innocent persons continued to suffer, and the community suffered in pocket and in efficiency.

The Chairman, in proposing a vote of thanks to the lecturer, said that Sir Arthur Newsholme's residence of two years in America since he ceased to be able to serve this country in his old position had given him very special means of becoming intimately acquainted with the subject. He had lived in one of the great centres of education, with the best means at hand of learning the real facts about it, and he (the Chairman) was sure that the Society and all of those who were present were very much indebted to him for undertaking to tell them of his experience of the great experiment in America. He had told them how prohibition presented itself to his experienced, scientific, acute mind—a mind deeply versed in the intricacies of public health and municipal administration, and in so doing he had really conferred a very great benefit on this country.

BELLAHOUSTON HOSPITAL INQUIRY.

The Committee appointed in May by the Minister of Pensions to inquire into the management of Bellahouston Hospital, Glasgow, on grounds that were referred to in our issue of June 11th (p. 872), issued its report on October 15th. The hospital was managed by the Ministry of Pensions and the Joint Disablement Committee for the South-West of Scotland. The appointment of the Committee followed questions asked in Parliament by Mr. Neil Maclean, M.P. for Govan, and correspondence in the press in which allegations were made against the administration of the hospital and the treatment of patients, particularly in the out-patient department. The chairman of the Committee was Lord Scott Dickson, Lord Justice-Clerk of Scotland, the other members being Sir Donald MacAlister, President of the General Medical Council; Mr. C. M. Douglas, a member of the Joint Disablement Committee for the South-West of Scotland; Mr. William Grieve, late sergeant Staffordshire Yeomanry, a disabled ex-soldier; and Colonel Sir Arthur Lisle Webb, Director-General of Medical Services, Ministry of Pensions. The report, which is unanimous, may be summarized in three sections, affecting respectively the out-patient department, the discharge of in-patients, and the administration of the hospital.

Out-patient Department.

The most important complaints appear to have arisen from the large number of discharges of patients which took place from February 5th to 12th, 1921, when 953 patients, or about 50 per cent. of those on the out-patient list, were dismissed: 706 were considered fit for work and not requiring further treatment, 79 were sent to special clinics, and 30 were sent for admission as in-patients, the remainder being accounted for by what are termed "automatic discharges for non-attendance." A new medical superintendent of the hospital, Colonel A. R. Henchley, D.S.O., M.D., had been appointed on January 18th, and he was immediately struck by the extraordinary condition of the out-patient department, crowds of men collecting sometimes as early as 7.30 a.m.; there was a long waiting queue of patients, and there was no doubt, he stated to the Committee, that the accommodation was totally inadequate to the numbers attending. He therefore, with the aid of his medical staff, examined and reclassified the out-patients. The Committee says in its report:

> "Unless we are to challenge the capacity or truthfulness of the medical men who conducted this examination and appeared before us, it is impossible, in our opinion, to discredit the results at which they arrived. We find no sufficient grounds for making such challenge. On the contrary, we believe the examination was honestly and carefully conducted."

Of the cases discharged between February 5th and 12th, 2 were readmitted as in-patients, 6 as out-patients, and a total of 57 to institutions within the area, but it is pointed out that this may have been largely for conditions which did not come within the consideration of the staff at Bellahouston Hospital, conditions due to military service alone being within their province. The Committee concludes:

> "In our opinion, the out-patient department was towards the end of 1920 in an unsatisfactory condition. In February, 1921, it was thoroughly reorganized, and, as appears from the subsequent charts, the numbers in attendance were brought within practical limits. This was done by Colonel Henchley, the medical superintendent, with the assistance of the other members of the staff, and it was work which quite legitimately fell within the scope of Colonel Henchley's duties as medical superintendent to initiate and carry out. The department is now in good working order."

Discharge of In-patients.

Dealing with the circumstances connected with the discharge of nearly 300 in-patients from Bellahouston Hospital in April, 1921, the Committee points out that the questions connected with the discharges arose out of the industrial strike crisis. The coal supply had been causing some anxiety, and as the result of a conference the Commissioner of Medical Services telephoned to the medical superintendent, not only of Bellahouston, but of all the larger Pension Ministry institutions, asking them to get the respective staffs to review the cases and to send those patients home who could go without detriment to themselves, for a definite period of home treatment for one, two or three weeks. The patients so sent home were to be recalled earlier if the crisis passed away sooner. The Committee states that, in its opinion, this duty was carried out by the visiting and resident staff in the most careful and sympathetic way; no patients were forced to go home, and they went on full treatment allowances, and knew that they were going home for a brief and limited period. From the patients' point of view there is, states the report, no foundation for any suggestion that what was done in what was admittedly a time of great crisis caused an injury or hardship to any patient. What was done was done on the initiative and instructions of the Regional Director, without consultation or notification to the Joint Disablement Committee, and, having regard to the state of friction which existed, the Committee thinks that this was unfortunate and that a frank disclosure and discussion might have prevented the controversy which arose.

The Committee next referred to the letter of Sir Charles Cleland, Chairman of the Joint Disablement Committee, to the Secretary of the Ministry of Pensions, which we quoted in our columns on June 11th (p. 872); the most important allegations in it were that amongst the 300 patients discharged from Bellahouston were some who had been prepared for immediate operation, and that because the necessary forms had not been in many instances properly completed, treatment allowances could not be paid, and much unnecessary suffering and hardship to the pensioners consequently ensued. Sir Charles Cleland declined to give evidence, and the Committee says that it does not know on what information he felt himself warranted in making and publishing a statement involving such a serious allegation against surgeons of eminence and repute in their profession.

> "In our opinion," states the Committee, "the allegation is entirely untrue, and one which should never have been made, and we desire to express our sympathy with the professional men regarding whom such a serious allegation has been so publicly and, as we think, so unjustly made."

Complaints as to Administration.

The third part of the report relates to various complaints dealing with hospital administration and with incidents connected therewith. The Committee says that many witnesses were examined in support of numerous complaints of very varied kinds, and if the statements as to these complaints were to be accepted as well founded, "there was very little, if anything, that was right connected with Bellahouston Hospital. That, indeed, seemed the impression desired to be produced in the minds of the Committee." The Committee was satisfied that the value of the hospital and of the treatment given there to the in-patients were highly appreciated by the vast majority of the patients. As to "the house doctors and sisters making life miserable for the men," as one witness said, apart altogether, states the Committee, from the personal character of those so charged as members of honourable professions, which would require evidence of a very different kind from any that had been submitted to disparage or destroy confidence in their fitness for the positions they held, it would be impossible for such a state of things to have existed, much less continued, without its having become known to the visiting committee, the senior medical staff, and the matron. The facts that Bellahouston Hospital has largely to combine the functions of a convalescent with that of a curative institution, that its patients therefore enjoy greater freedom from ordinary hospital discipline and restraint, and that admission to and residence in its wards are attended with certain pecuniary advantages extraneous to its medical functions as a place of treatment, have made it, in the opinion of the Committee, much more difficult to manage satisfactorily than an ordinary general hospital for the relief of the sick and injured. The Committee see no reason "why any of those who are more immediately interested in its patients should cease to continue to it the confidence which, in their opinion, the great majority have hitherto placed in it."

Professor H. Curschmann has succeeded Professor Martius as director of the medical clinic of Rostock University, where Professor Uhlenhuth, formerly of Strasbourg, has been appointed director of the Institute of Experimental Medicine.

British Medical Journal.

SATURDAY, OCTOBER 22ND, 1921.

WILLIAM HARVEY, OBSTETRICIAN.

The fame of Harvey's book on the circulation of the blood is so great that the fact that he was the author also of a great book on the reproduction of animals is not always remembered. Even when the fact is borne in mind the recognition of it is often coupled with the depreciatory comparison that the former has the glory of the sun whilst the latter has only that of the moon. But the comparison is hardly just if it is intended to suggest that the latter shines only by reflected light. The *De Generatione Animalium* is in itself light producing, and if the *De Circulatione* owes little or nothing to borrowed rays, the same may be said of its less known companion. It is an interesting coincidence, too, that both works appeared in English for the first time in the same year (1653). When, therefore, Harvey's contribution to physiology is reviewed, as it so regularly is, there is reason for the occasional selection of his contributions to obstetrics and embryology for appreciative remembrance.

There was thus appropriateness in the choice which the President of the Royal College of Physicians of London made when he nominated Dr. Herbert R. Spencer to deliver the Harveian Oration for 1921. It was timely also, for nearly fifty years have passed since to another obstetrician (Dr. Arthur Farre, in 1872) this honour was accorded; it was also appropriate, for no one could be expected to fulfil the duties of Harveian Orator with a greater equipment of knowledge and a greater grace of communication than the Obstetric Physician of University College Hospital. Dr. Spencer has not disappointed expectations in dealing with Harvey as "obstetric physician and gynaecologist"; the perusal of the Oration yields proof of the wisdom of the President's selection.

Dr. Spencer has skilfully reproduced the atmosphere of student life in Padua at the beginning of the seventeenth century. Harvey was there as a medical student between the years 1600 and 1602; and it was then that the foundations were laid of the anatomical and obstetrical knowledge on which he afterwards builded so firmly and so extensively. The house of the university—the Gymnasium omnium Disciplinarum—was undergoing some reparations in 1601; under Harvey's eyes therefore; in its quiet cloisters, "in two tiers," the young English student would spend many hours, for, wrote Aubrey, "he was always very contemplative, and said he did delight to be in the dark, as he could then best contemplate." Aubrey gives the picture of him in his own way, as "of the lowest stature, round-faced, olivaster (like wainscott) complexion, little eie, round, very black, full of spirit, hair black as a raven." In the Canterbury portrait by Janssen, reproduced as a special plate this week, we can see something of what Aubrey means—the eye keen, and the face and attitude very "full of spirit." But the men of Padua, and especially the teachers, would mean more to Harvey than the cloisters. In later life Harvey amused his leisure by studying mathematics, and it is safe to assume that when a young student in Padua he went to see and hear the great Galileo, then professor of that subject, and himself once a medical student too (using his pulse for timing the oscillations of the swinging lamp at Pisa and so founding his pendulum law). Harvey would hear much, too, of the great teachers of anatomy and obstetrics whose lives had just closed. Vesalius was dead some thirty-six years past, but his book *De Corporis Humani Fabrica*, with its first adequate description of the pelvis, was there for his study, and from him he would learn of the changes in the uterus in pregancy, of the foramen ovale, and of the respiratory movements of the foetus in the membranes. Of Falloppius also he would hear, and of the tubes which still bear his name, notwithstanding the recommendations of the Basle Anatomical Nomenclature Conference; perhaps he may have wondered as to the nature of the follicles and corpora lutea in the ovaries which Falloppius had discovered. Naturally, however, the Paduan teachers who were active in the years during which Harvey attended the University would influence his thought most. There was Saxonia, the professor of practical medicine, who wrote treatises on the diseases of women and conception; there was Falloppius's successor, Fabricius ab Aquapendente, professor for about fifty years; he will have pointed Harvey along the way of comparative embryology; there was Casserius, great as a dissector, who, though poor, employed artists to draw for him; there was Spigelius, whose work on the foetus is quoted by Harvey; there was Mercurialis, the rich Knight of St. Mark, who wrote on diseases of women among other subjects; and lastly, there was Mercurius (Scipione Mercurio), the writer of *La Comare*, the first Italian work upon midwifery.

Living amidst such influences in the most impressible years of his life, it would have been surprising had Harvey not felt their impact; as a matter of fact he returned to England to study the generation of animals in the hen's egg and in the deer, to gain for himself the designation of the Father of British Obstetrics by writing the first original English work on midwifery, and to practise, with a brilliance vouched for by Dr. Percivall Willughby, as an obstetrician and gynaecologist.

How great and real Harvey's knowledge of midwifery was the Harveian Orator had no difficulty in proving, and everyone will join in his regret that the "Medicinal Observations" have been lost, as completely, it would seem, as the missing books of Livy (also a Paduan). But the great work *De Generatione Animalium*, containing the section "De Partu," remains for anyone to read. It was, indeed, a happy chance that sent Dr. George Ent to visit Harvey that Christmas Day in 1650 and let him bring away in his pocket (for publication) the manuscript entitled "Exercitationes de Generatione Animalium, quibus accedunt quaedam de Partu, de Membranis ac Tumoribus Uteri et de Conceptione." Dr. Spencer refers to many noteworthy observations which lay in that manuscript, and there are others which will well repay consultation by the present-day obstetrician. Without the compound microscope, and with only a "perspective glass" to help him, it is little short of a miracle that Harvey saw so much and was able to advance embryology so far on the path it has ever since pursued. Dr. Spencer passes rather lightly over Harvey's enunciation of the great doctrine of epigenesis in embryology; but full credit had already been given to him by Dr. W. K. Brooks[1] for this truly remarkable and far-sighted conclusion, in which he anticipated Caspar F. Wolff by about a hundred years. His great phrase "Ex ovo omnia"—to be read on the egg Jove has opened in the drawing reproduced at page 621, which formed the frontispiece to the

[1] *Johns Hopkins Hospital Bulletin*, 1897, viii, 167.

Latin edition—was a splendid generalization which should never be forgotten. Harvey appealed to observation of nature and experiment, and was in that respect a modern of the moderns. "Nature herself," he wrote, "must be our adviser; the path she chalks must be our walk." *Sic itur.*

WAR AND POPULATION.

An evidently well-informed correspondent contributed to the *Times* of September 23rd an instructive comparison between the German censuses of 1910 and 1919, and, since the changes in our population must be of the same kind, the conclusions drawn from the German figures are applicable to ourselves. One consequence of the war, a vast increase of the excess of women over men in the age group 20–45, and its bearing upon the rate of natural increase, has already been noted and perhaps for the present sufficiently discussed. The vital-statistical implications of another change deserve mention. The correspondent points out that the proportion of persons aged 45–65 has necessarily increased; according to his figures, out of 10,000 of the population in 1910, there were 592 males aged 45–60 and 643 females in the same age group. The corresponding values in 1919 were 712 and 749, a 20 per cent. increase for males and a 16 per cent. increase for females.

If one compares the vital statistics of urban areas with those of rural districts in any one country or those of an industrial nation with those of a non-industrial nation, the industrial country, as a rule, compares most favourably with the agricultural country during later childhood, adolescence, and young manhood, and least favourably at the epoch of later maturity, between, say, 40 and 60. Most industrial countries do badly in the first year of life as well, but that is for reasons which we have not now to discuss. This phenomenon of unfavourable mortality between 40 and 60 is, as Dr. Stevenson noted in his last decennial review, very readily observable in our own statistics, and it would not be a serious exaggeration to say that our mortality at mature ages is very unfavourable. For instance, while the mortality of males aged 45–55 in England and Wales had only fallen from 19.2 per 1,000 in 1846–50 to 15.5 in 1906–10, the corresponding rates in Sweden had changed from 22.6 to 10.9. Since 1860 Swedish mortality in this age group has always been less than ours. The story of death rates at earlier ages is very different. In 1861–65 English males aged 15–20 died at a much faster rate than Swedish males, 6.4 against 4.5. In 1906–10 they died at a much slower rate, 3.0 against 4.3. In the latter quinquennium the death rate in the registration county of Lancashire was smaller than for all Sweden at ages 15–20; not far short of double the Swedish rate at ages 45–55.

In other words, the war has increased the relative proportion of precisely that age group upon which existing conditions of life in an industrial country bear hardest. It is a matter well worth inquiry whether our failure to control the mortality of middle age is inevitable. The peculiarities of urban mortality rates have often been discussed; much importance has been attributed, and rightly attributed, to the factor of migration, both external and internal. Yet this cannot be the whole explanation. If, for instance, the very unfavourable mortality of Sweden at young adult ages were due to the emigration of healthy males—and Sweden is a country which has an outward balance of migrants—we must explain on other lines her steadily declining mortality at maturity.

The *post hoc ergo propter hoc* argument is never more dangerous than when applied to secular changes of vital statistics, yet the facts that the water-borne diseases which urban sanitation has controlled had a predilection for young lives and that, down to a very recent epoch, hygienic-industrial legislation chiefly concerned women and young persons does tempt speculation. The late Professor Sundbärg attached great importance to the decline in the use of alcohol as a factor of the reduction in Swedish mortality at later ages, but there seems to be some dispute as to the extent to which Swedish legislation has been responsible for the alteration of habits, and the discussion is one into which foreigners cannot profitably enter.

The point, however, that we wish to make is that the hygiene of middle life is a subject which deserves more attention than it has yet received and that the war changes in the constitution of our race emphasize the importance of the matter.

THE HARVEIAN ORATION.

On St. Luke's Day, October 18th, after Dr. Herbert Spencer had concluded the delivery, before the Royal College of Physicians of London, of the Harveian Oration, a report of which is published elsewhere in this issue, the Baly medal was presented to Dr. H. H. Dale, F.R.S., by the President, Sir Norman Moore. The medal is awarded every alternate year to the person who shall be deemed to have most distinguished himself in the science of physiology. The Moxon medal, which is awarded every third year to the person who is deemed to have most distinguished himself by observation and research in clinical medicine, was presented to the Right Hon. Sir Clifford Allbutt, K.C.B., F.R.S. The Weber-Parkes prize and medal, which is awarded every third year for the best work done in connexion with the etiology, prevention, pathology, or treatment of tuberculosis, was presented to Dr. Louis Cobbett. The Harveian dinner took place in the evening; the President, who was in the chair, gave the toast of the guests, who included the medallists, the Master of the Rolls (Lord Sterndale), Lord Ashton of Hyde, the President of the Royal College of Surgeons (Sir Anthony Bowlby), Sir Julian Corbett, Mr. Laurence Binyon, Dr. F. H. H. Guillemard, Sir Frederick Kenyon, K.C.B., Director of the British Museum, and Mr. John Sargeaunt, a scholar whose most recent work deals with the plants of Virgil. The two last-named responded. Sir Clifford Allbutt spoke in the name of the medallists, and Sir Humphry Rolleston gave the health of the Harveian Orator, which was duly acknowledged by Dr. Herbert Spencer.

THE CANTERBURY PORTRAIT OF HARVEY.

The portrait of Harvey printed this week on a special plate is from a picture not previously reproduced, which now hangs in the Board Room of the Kent and Canterbury Hospital. We are indebted to Dr. F. William Cock, whose authority with regard to all that concerns the history of his native county of Kent is unrivalled, for the assurance that the painting is almost certainly the work of Cornelius Janssen, who lived for six or seven years in Kent and painted many of the worthies of the county; Janssen even called himself Johnson, and got armorial bearings assigned to him when living in England. As the inscription on it shows, the picture was given rather more than a century ago to the Kent and Canterbury Hospital by Mr. G. Best, who was M.P. for Canterbury for a good many years. He was head of an old Kentish family of brewers, and lived at Chilston, Boughton Monchelsea. Dr. Cock believes that the Bests were connected with the Harvey family.

Some years ago the picture was in a bad state, but attention having been called to the matter, Lord Northbourne, the president of the hospital, had it very judiciously cleaned and restored by Mr. G. Hillyard Swinstead, R.I. To Lord Northbourne Dr. Spencer is indebted for permission to reproduce the portrait. Mr. Swinstead was allowed to make, for the Wellcome Medical Museum, a copy which may be seen there by those interested in the matter. Sir D'Arcy Power, in the essay on the *Portraits of Dr. William Harvey* which he prepared for the Historical Section of the Royal Society of Medicine,[1] when discussing the well known portrait in the large library of the Royal College of Physicians of London, about the authenticity of which there can be no question, states that there are several reputed portraits by Janssen, some of which may have been painted as replicas by one or other of Janssen's pupils. The Canterbury portrait resembles that preserved at Kingsweston, near Bristol, but is manifestly superior to it. The portrait at Kingsweston was placed there by Sir Robert Southwell, a President of the Royal Society, who married a niece of Harvey. Opinions will no doubt differ, but many will be inclined to agree with Dr. Cock that the Canterbury portrait of Harvey is the most striking and satisfactory that exists.

[1] Oxford University Press. 1915.

MEDICINE IN PUBLIC LIFE.

In the Journal of April 9th we gave an account of a speech at Exeter by Dr. Addison, then Minister of Health, on "Medicine in Public Life." Last week he revisited the large lecture theatre where he used to teach anatomy and gave an address on "Medical Men and Public Life" to the Abernethian Society of St. Bartholomew's Hospital. The themes being so much alike, and the audience wholly different, he may have been tempted to repeat himself, but, if so, he overcame the temptation. Free for the time being from the cares of office, Dr. Addison said little about large questions of public medical policy, and directed his remarks mainly to practical suggestions for winning success in a political career. His advice, in brief, to the medical parliamentarian, was to acquire a special training in some subject, to have plenty of outside interests, to know what he wants while concealing his aim, to cultivate the art of biding his time quietly, to avoid cut-and-dried ideas and bumptious people, and lastly, in regard to quarrels, to follow the maxim of Polonius. The House of Commons, he said, dislikes faddists and people with missions, political pot-boilers, and those who lecture to it; it respects a man who applies himself to a group of topics and gets them up thoroughly. Dr. Addison was a Minister throughout the whole period of the war, and in giving a few impressions of office he spoke of the gain to be derived from a medical and scientific training in the handling of national business. If this education did nothing else, it enabled a Minister to understand the language used by technical experts; but in fact scientific principles applied all round, and of this he gave several instances. Thus, the investigations he asked the Medical Research Council to make into trinitrotoluene poisoning, at a cost of two or three thousand pounds, led to a saving of millions of public money in pensions. Again, the problems set before the Industrial Fatigue Research Board were such as a medical Minister could grasp better than others. For those who aspired to ministerial rank Dr. Addison urged the cultivation of equanimity and the habit of storing cares and responsibilities in a system of water-tight compartments, the whole being closed at will on lying down to sleep; Cabinet office and insomnia are incompatibles. Further, a Minister should remember that the House of Commons is his master, and that our Civil Service is the best in the world; if reasonable and keen, he could always win the loyalty of his staff. In general the training of a medical man should enable him both to see and to take an opportunity with promptness and decision—qualities indispensable for success in political life. Dr. Addison ended an interesting address by stating his belief that the future holds immense opportunities for medical knowledge in the wise direction of public affairs.

GENERAL PRACTICE AND MODERN LABORATORY METHODS.

The Clinical Society of Manchester has resolved to strike out on a new line and to devote its meetings in future to the demonstration and discussion of the latest methods of scientific investigation and their practical bearing on clinical medicine. The professors of anatomy, physiology, pathology, and pharmacology have been elected honorary members of the society and will co-operate with the committee by giving practical demonstrations of recent work in his department, so that its direct bearing on the practice of medicine may be jointly discussed by laboratory workers and medical practitioners. At the first meeting, which takes place in November, respiratory problems will be discussed, in relation more especially to the composition and chemistry of alveolar air. In January the professor of pathology will demonstrate the Wassermann reaction and other blood tests. In March a special meeting will be held at which an eminent physiologist will be invited to read a paper on the bearings of modern physiology on clinical medicine. In May the digitalis group will be discussed and demonstrated; the subject for the meeting in July is nerve injuries. The society was originally founded to meet the needs of general practitioners by giving them an opportunity of discussing unusual or difficult cases which from time to time come under their observation, and has endeavoured to put the clinical side of medicine foremost in all papers and communications at its meetings. The post-graduate clinical lectures which are now held in several hospitals in Manchester have rather diminished the scope of the society in this direction, hence the new departure, the result of which will be awaited with much interest, for it will undoubtedly influence the policy of medical societies in other centres. We are disposed to prophesy that it will be successful, for we believe that a large proportion of general practitioners view with regret the tendency, which it is not difficult to perceive, for the sciences mentioned to drift apart from practical medicine. The separation has always been regretted by the clinical worker, and the evil of it is, we think, now more clearly perceived by the laboratory worker than has been the case during the last generation.

THE CENSUS.

The Registrar-General, Mr. Vivian, who before his recent promotion to that office was deputy registrar, last week gave some results of an inquiry into the history of the census in a lecture at Southend. The knowledge that a census of peoples was taken in early ages is familiar owing to many references in the Bible, but it is not so well known that there was a census system in Babylonia prior to 3800 B.C. In Egypt statistics of population were collected in connexion with the construction of the pyramids, and statistics of the people were collected in China probably as early as 3000 B.C. In Greece there was at an early date a regular system of inquiries in connexion with the privileges and obligations of citizenship, and among the Romans a census, with similar objects, was an established practice. In this country no regular census appears to have been taken until 1801; there were, however, enumerations at an earlier date. Thus in the reign of Edward III subsidy rolls were compiled, county by county, and it was estimated that the population at that time was about two millions and a quarter. Under Elizabeth, and again under James I, the bishops were required by the Privy Council to make

returns of the numbers of families in each diocese. In 1753 a bill was introduced in the House of Commons for the annual registering of the total number of people, and of marriages, births, and deaths. The old Jewish superstition that the numbering of the people would be followed by pestilences was strong, and though the bill passed the House of Commons it was defeated in the Lords, one reason against it being the fear that the result might reveal to Continental nations a paucity of man power. The census taken in 1801 gave a total population for Great Britain of nearly eleven millions, and for England and Wales, allowance being made for some parishes which did not make a return, of about nine millions. The census of 1801 did not show any disparity in the number of the sexes, whereas the recent census revealed an excess of nearly two million females over males.

WHARTON JONES.

THE inconstancy of the relations between scientific and professional eminence on the one hand, and worldly success on the other, has seldom been better illustrated than by the career of Thomas Wharton Jones, F.R.S., of whom a short and sympathetic Life has lately been written by Sir Rickman J. Godlee, at the request of the Editorial Committee of the *British Journal of Ophthalmology*. Wharton Jones and William Fergusson were assistants to Robert Knox in Edinburgh at the time of the crimes and trial of Burke and Hare. Both Jones and Fergusson went to London to join the staffs of hospitals, Jones in 1838 to Charing Cross, and Fergusson two years later to King's College. Jones earned world-wide repute as a physiologist, comparative anatomist, and ophthalmic surgeon, but hardly enough money to make both ends meet, so that in his old age he was reduced to obscure penury. Fergusson, after making notable advances in surgical practice, became the acknowledged leader of British surgery and died rich and celebrated. That the combination of physiology and ophthalmic practice is not necessarily unremunerative is shown by the career of Sir William Bowman. The explanation of the financial failure of Wharton Jones's life is probably to be found in his idiosyncrasies and eccentricities of manner, which did not inspire medical men with confidence, and their patients still less. Certainly he seems to have been conspicuously wanting in those arts which sometimes transfer guineas from the pocket of the patient to that of the practitioner. If these were the disadvantages under which he laboured in his younger days they must have been increased as he grew older by his failure to move with the times and his indulgence in embittered controversies. After fourteen years at Charing Cross Hospital, where he impressed Huxley as a great teacher, he was appointed the first Professor of Ophthalmic Medicine and Surgery at University College and Ophthalmic Surgeon to the Hospital. Here he continued his investigations into inflammation, did much good work, and inspired Lister with his enthusiasm. He wrote much on ophthalmic surgery, but he was not very receptive of other men's ideas and failed to grasp the importance of Babbage's ophthalmoscope when that genius showed him his instrument. Had Jones been less conservative, the credit of a very great advance would have come to British instead of to German surgery. In truth, Wharton Jones, with all his good qualities, lacked magnanimity and was hypercritical and jealous of the discoveries of others. He was bitter in controversy, whether it had to do with science or with disputes as to his own genealogy and claims to heirlooms; as his biographer says, "this great little man thought as much of a supposed sixth cousinship to Queen Victoria as of his discoveries about the circulation of the blood and inflammation." He never ceased to protest against Darwinism, and he seems to have considered that his old pupil Lister was only a pushing upstart who had attempted to pick his brains. Perhaps his lonely private life and a premature crystallization of his nature are to blame for much of this. Sir Rickman Godlee tells us that in his own student days Jones's lectures had entirely lost the merits to which Huxley and Fayrer have testified, and that he was then known as "Mummy Jones." The characteristic likeness which forms the frontispiece to the pamphlet shows him as the present writer well remembers him when he had the honour of assisting him to enucleate an eye. Arriving at the patient's lodgings betimes, Wharton Jones cut short an attempt at conversation by remarking that he made a practice of sitting still and silent and composing his thoughts for fifteen minutes before any operation. Thus the operator and his assistant passed the time until the arrival of the anaesthetist. Sir Rickman Godlee describes the queer little house in George Street, Hanover Square, where Jones lived for at least thirty-five years. It was here that Sir John Tweedy found him in the winter of 1880–1881 almost starving from cold and hunger. It is pleasant to remember that the last ten years of his life were passed in comfort, and were probably happier than any that preceded them.

INTERNATIONAL CONGRESS OF EUGENICS.

THE second International Congress of Eugenics was held in New York, at the American Museum of Natural History, from September 22nd to 28th, under the presidency of Professor Henry Fairfield Osborn. Representatives attended the meeting from a large number of foreign countries, the delegates including Major Leonard Darwin and Dr. A. F. Tredgold from England. Major Leonard Darwin delivered the opening address on the history of the eugenics movement. In his presidential address Professor Osborn said that he found little promise from the practical standpoint in the "melting-pot" theory of admixture of races. All experiments showed quite definitely that the mixture of a poor stock with a good one did as much harm to the good stock as it did benefit to the poor. Eugenists saw little of promise for America in an unrestricted immigration, though it had to be confessed that at present the eugenic programme had not proved eminently practical. The sterilization of the obviously unfit was legalized in a dozen states, but was practised in very few. The idea of a standard of physical health for marriage had encountered obstacles of prejudice, and of practicability, which were apparently insurmountable. The hopeful factor in the situation was that progress, however slow and halting, could already be discerned both in the public conscience as to marriage, and in the collection and interpretation of scientific data. In the first section of the Congress—Human and Comparative Heredity—the opening address was given by Dr. Lucien Cuénot, of Nancy, France; and in the second section—Eugenics in the Human Family—by Dr. Herman B. Lundborg, of the University of Upsala, Sweden. In the third section—Human Racial Differences—the opening address was delivered by Dr. G. V. de Lapouge, of Poitiers, France. In the numerous papers and discussions stress was generally laid upon the importance of heredity, and a point emphasized was that education and environment, contrary to popular opinion, did not appear to alter racial values. In addition to the scientific meetings a number of excursions were arranged for delegates, among them one to the Eugenic Records Office of the Carnegie Institution of Washington.

CHILD WELFARE WORK IN AUSTRIA AND GALICIA.

CHILD welfare work in Austria, threatened as it was with extinction owing to financial difficulties, has been given a new impetus by the programme of the American Red Cross, which has taken over 100 welfare stations that were about to be closed, and has guaranteed financial support for twelve months. Scientific child welfare work was begun early in Austria, for the first centre was

established by Dr. Spork in 1904; the work grew slowly but surely until 1911 when interest in it was much stimulated by the International Congress which met that year in Berlin. After the war the appalling condition of children in Austria became apparent, and a number of foreign agencies went to Vienna to give what aid they could, the most important from the scientific point of view being that sent jointly by the Lister Institute and the Medical Research Council. Many welfare stations were opened by the Society of Friends and other organizations, and free rations were supplied through them. The American Red Cross Society, when it began its child welfare campaign in Austria this year, decided that the best plan was to make use of the stations already established, retaining their staffs where possible. This relief work had three branches — the provision of rations for children under four years of age, of cod-liver oil to those children whose parents were unable to buy it, and of clothing. The cod-liver oil was sent in bulk to selected druggists' shops, and was there obtainable on presentation of cards for a definite amount, issued by the health centres. Milk for hand-fed infants was prepared in a milk kitchen conducted by each organization, the mothers paying about three-quarters of the market price for milk. In Lemberg, the capital of Eastern Galicia (Poland), a child welfare campaign is also being carried on by the American Red Cross medical unit stationed there. At intervals of two months examinations are made of several thousand children, and it has been found that those who received food at the relief stations showed a definite improvement in nourishment, weight, and height. Boys were, in general, better nourished than girls, the explanation offered being that they are more energetic and show more ingenuity in getting food, and that they are given preference over girls in their homes. Dr. Leland Mitchell, the medical director of the American Red Cross in Lemberg, states that this tendency is noticeable only among non-Jewish children, for no difference could be detected between boys and girls in the Jewish families.

LONDON WATER SUPPLY.

THE fifteenth annual report[1] to the Metropolitan Water Board by Sir Alexander Houston, the Board's Director of water examination, deals with the year ending March 31st, 1921. It is much more than a mere record of work accomplished in the Board's laboratories during a twelve-month. There is contained in its pages the story of the purification of the raw river waters as it has been carried out since the early years of the present century. The methods of purification adopted include storage, filtration, and in quite recent years chlorination. With the principle of filtration we have been long familiar; but it was only in the year 1902 that it was observed by Houston that the number of excremental bacteria became enormously reduced as a result of storage, and in later years he found that it devitalized the microbes of water-borne diseases such as typhoid fever and cholera, that it reduced the amount of suspended matter, colour, ammoniacal nitrogen, and oxygen absorbed from permanganate, and that it usually reduced the hardness. It is evident, therefore, that the life of the filters is lengthened by storage, for the demands upon them are not so exacting as when they receive the raw water without previous storage. The system has stood the test of time, and has produced a reasonably pure supply, but it entails considerable cost in pumping. About five years ago, therefore, it was decided by the Metropolitan Water Board to chlorinate a portion of the Thames river water, and the position of the Staines aqueduct enabled this to be done without resorting to pumping, for the water could pass by gravitation from the aqueduct to the supply reservoirs. The process has been in continual operation since the middle of 1916, and a population of about two million persons have been supplied with chlorinated water without a single complaint having been received as regards taste. By substituting chlorination for storage at Staines it is stated that there is an annual saving of about £20,000, in addition to a capital sum of £50,000 which it had been proposed to spend on the Staines storage reservoir, thus showing "that applied science is the surest goal to economy." Another important advantage of chlorination over storage is that whereas stored water gives the least satisfactory results in the winter months, the results of chlorination are actually better in winter than in summer. The advantages of sterilizing water by means of a solution of bleaching powder are stated in the report to be that the treated water is innocuous, tasteless, and odourless; the process is exceedingly cheap, and the treatment confers absolute, not merely relative, protection against epidemic water-borne disease, for the typhoid bacillus and the cholera vibrio are destroyed, as judged by the total elimination of *B. coli*. In support of this last contention, Sir Alexander Houston states that in 1905 he sterilized the Lincoln water supply with "chloros," an alkaline solution of sodium hypochlorite, containing about 10 to 15 per cent. of available chlorine, and that of sixty-two samples collected consecutively no single one contained typical *B. coli* even in 100 c.cm. of water. When discussing the alleged harmfulness of chlorinated water he points out that neither at Lincoln nor elsewhere has there been any tangible evidence of injury to health owing to its consumption.

[1] London: P. S. King and Son. Price 15s.

ANTHRAX FROM SHAVING BRUSHES.

ON several occasions in the last few years we have published information in regard to the danger of infection by anthrax from the use of contaminated shaving brushes sent into this country from abroad. A further circular on this matter has been issued this week by the Ministry of Health to sanitary authorities, drawing attention to the occurrence of cases of anthrax in man, including several fatal cases, in which the infection has been traced to the use of shaving brushes the hair of which was infected with anthrax spores. It will be recalled that the Anthrax Prevention (Shaving Brushes) Order, 1920 was issued on February 9th last year, prohibiting the further importation of Japanese shaving brushes. At the same time steps were taken to trace brushes belonging to consignments known to be infected, and to secure the destruction of the brushes or their return to the wholesale dealers or importers. With regard to shaving brushes made in this country, the Minister is advised that as the hair in brushes after manufacture cannot be effectively sterilized, all practical measures must be taken to ensure that the hair used for this purpose is efficiently disinfected before the brushes are made. Attention is accordingly drawn to the methods of disinfection of hair recommended by the Home Office Departmental Committee on the disinfection of horsehair. The formaldehyde process devised for the disinfection of wool is equally efficient in the disinfection of horsehair; but this method requires the installation of special plant and machinery, and effect cannot immediately be given to it. The adequate disinfection of horsehair used for shaving brushes by means of ordinary chemical processes is extremely difficult, on account of the high resistance of the anthrax spores, and the protection afforded to them in the hair by clots of blood, grease, and other substances. The most trustworthy method of disinfection at the present time is by steam under pressure, at a temperature which should not exceed 230° F., for at least 30 minutes. The steam disinfecting apparatus should be in the hands of skilled persons; a temperature of 245° F., commonly used for the disinfection of bedding, may seriously damage horsehair. In these circumstances the Minister suggests that local

authorities possessing efficient steam disinfecting apparatus should afford brush manufacturers in their districts all facilities needed for the disinfection of hair. Special arrangements should be made for proper records of all such material disinfected.

THE UNEMPLOYMENT PROBLEM.

Our Parliamentary Correspondent writes: The speech of Mr. Lloyd George in review of the industrial situation and in explanation of the Government proposals for lessening unemployment was delivered on October 19th, and not on the 18th, the first day of the resumed session, as originally intended. It occupied nearly two hours. The Premier took up warmly the frequent assertion that nothing had been done in anticipation of what was happening; he referred to the expenditure of 48 millions sterling in unemployment insurance, which began more than a year ago; to the grant of 20 millions for relief works, which had occupied 200,000 men; and to the State-aided settlement in the Dominions of 60,000 men. As to the further steps to be taken, he spoke first of a bill to be introduced to extend trade credits, enlarging the guarantee from 85 per cent. to 100, but with the same limit of 42½ per cent. of risk; with extension of areas to which the scheme would apply. The Dominions will be included. The Prime Minister next announced that 25 millions sterling would be provided by guaranteed loans to assist in developing the means of production and transport, and in so doing find work for a considerable number of men. There will also be a grant of 10 millions sterling for relief works, which will include forestry and drainage construction. In addition to the present unemployment allowance, an unemployment fund is to be established for a period of six months, under which grants for maintenance, in no case to exceed 9s. a week, are to be allowed, at the rate of 5s. for a wife and 1s. for a child. The money is to be provided by a special levy under the Unemployment Insurance scheme, whereby every insured man is to contribute 2d. a week, the employer 2d. a week per man, and the State 3d. For young people up to 18 the contribution will be 1d. a week per insured lad or girl, with 1d. from the employer and 2d. from the State. Another bill will deal with the cases of necessitous areas. Where guardians find it impossible to cope with difficulties a Government loan will be made to help them for a period of years. For further settlement of ex-soldiers in the Dominions a sum of £300,000 is to be voted.

At the annual conference of the British Commercial Gas Association, held lately in Glasgow, Mr. J. W. McLusky referred to an investigation made some years ago by a large gas undertaking into the number of doctors who used gas fires. In a London area (which included Harley Street and Wimpole Street), of a total of 4,281 medical practitioners, 3,350, or 78 per cent., were known in 1914–15 to be using gas fires. The total number of gas fires in use by these doctors was 8,455, or nearly three fires in each house, and it was stated that the fires were as much in the residential parts of the house as in the consulting rooms.

According to the *New York Medical Record*, the New York City department of health prosecuted a physician of that city for violation of Section 118 of the Sanitary Code, which relates to fraudulent representation concerning treatment. Evidence given at the trial was to the effect that the accused had claimed that a preparation made by him was a specific cure for tuberculosis. It was proved in court that the preparation was a "gunshot" mixture of many common drugs; a fine of 500 dollars was imposed by the court. According to the *Paris Médical* a chemist and a pharmacist were recently condemned by the Seine court to a month in prison and a fine of 5,000 francs for advertising "Toxicurol," which they claimed would cure tuberculosis with less expense than any other treatment; experts testified that the remedy in question was a typical quack nostrum; the court imposed the penalty stated for the illegal practice of medicine, without taking into consideration the value of the treatment.

England and Wales.

Manchester Radium Hospital.

The Manchester Radium Institute, to the opening of the new buildings of which reference was made last week, has worked since its foundation in premises provided by the board of management of the Manchester Royal Infirmary. Under the original scheme, which was elaborated by Sir William Milligan, and brought into effect on January 1st, 1915, there were eight participating hospitals, and patients were received at the institute on the recommendation of the members of the staff of these different hospitals. In addition, private patients were seen during the afternoon by appointment. The work of the institute has gradually and steadily increased, and the accommodation at the Royal Infirmary was found to be inadequate. Through the generosity of Sir Edward and Lady Holt, a house completely furnished as a hospital has been handed over to the committee of the institute. The new hospital is situated close to the Royal Infirmary, and has accommodation for five paying and eight other in-patients. It has also eight treatment rooms for patients receiving local applications. There is a well equipped operating theatre and sterilizing room. The staff consists, in addition to the radiologist, Dr. A. Burrows, of a matron, five nurses, a physicist, a laboratory assistant, and two secretaries. The building includes a large and well-equipped research laboratory fitted up at an expense of over £1,000, and a workshop. The public has subscribed over £40,000, and the institute has recently bought some more radium and intends to purchase still more very shortly as the demand for radium treatment steadily increases. The majority of the patients suffer from inoperable malignant disease, and the results, so far as concern the mitigation of pain and the diminution of haemorrhage, are striking. The records contain many instances of carcinoma declared to be inoperable in which the patients have remained free from symptoms for periods of from two to five years after radium treatment. Inquiries are being prosecuted into the action of radioactive substances, but at present no definite opinion can be expressed as to the possibility of cures in cancer. Before Lord Derby opened the hospital on October 7th the committee, with the Lord Mayor of Manchester as *ex officio* chairman presiding, entertained Sir Edward and Lady Holt at luncheon, and presented them with a handsome silver salver.

Leeds School of Medicine.

The winter session of the Leeds School of Medicine has opened with some 250 medical students on its roll, which is about the same as last year; in addition there are 64 dental students. With so many students the medical school has absorbed the whole of its accommodation, and is making temporary use of additional premises known as the Northern Institute. It is hoped when funds are available to build an extension to the medical school at the opposite side of St. George's Road, and certain property has been acquired with this purpose in view.

The opening address of the Leeds Medical Society was given on October 4th in the School of Medicine by Mr. Harold Collinson, D.S.O., who dealt with the life and work of Ambroise Paré.

Proposed University of Reading.

Last December University College, Reading, petitioned the Privy Council for the grant of a charter as an independent university. The petition was not opposed, and the Privy Council, in its report just issued, approves the policy of establishing a University of Reading and recognizes the merits of University College. The Privy Council, however, considers that before a charter can be granted the number of students studying for university degrees must be larger and the annual income of the institution raised to approximately £30,000. The College was founded in 1892, and possesses a fine site and buildings; an endowment fund for the University, amounting to £250,000, was provided some years ago by the late Right Hon. G. W. Palmer, the late Lady Wantage, and Mr. Alfred Palmer, present chairman of the College council. The College provides exceptional facilities for education and research in agriculture, dairying and horticulture, and it possesses a

system of residential halls for students. The council of the College, in acknowledging the letter conveying the decision of the Privy Council, expresses the belief that within a short time it will be able to fulfil the conditions required by the Privy Council. The movement to obtain a university charter has met with strong support in Berkshire and the neighbouring counties, as well as in Reading itself, and the council of the College naturally expects that the approval of its work now received from the Privy Council will be generally regarded as the most significant and decisive testimony of worth the College has earned since its foundation.

Popular Medical Lectures at Liverpool.

At the World Service Exhibition held at St. George's Hall, Liverpool, a feature has been made of popular addresses in different branches of science. Sir Wilmot Herringham, for instance, gave an address on "Advances in medical science in my lifetime," pointing out the new birth that medicine underwent about the middle of the last century. Until this time physiology had hardly advanced at all since Harvey's discovery of the circulation of the blood in the reign of James I. The first great contribution chemistry had made to the service of medicine was the discovery of anaesthetics, but one of its most striking advances was in relation to the modern theory of vitamins. The science of biology had mothered the researches and experiments of Lister and all that they had done for surgery—advances which had taken place since he first went to St. Bartholomew's Hospital. Sir Wilmot Herringham referred also to the medical problems presented by the war, and of their successful and frequently dramatic solution.

Another lecture was delivered at the exhibition by Sir Robert Jones, on the care of cripples. He emphasized that the cure or amelioration of the cripple depended largely upon early treatment, and that there was barely a crippled child, however distorted in limb, who could not be sufficiently improved to make him an industrial asset. It was necessary to co-ordinate all activities to secure not merely education, but effective treatment on modern lines. To attain this end individual voluntary effort was essential, as no great scheme of amelioration was ever initiated by our Government. A great advance had been made by the building of hospitals in the country fully equipped and with expert staffs, such as the Welsh National Memorial, the institutions at Alton and Oswestry, and the hospital at Leasowe. The national scheme might be based on the work done in Shropshire, where there was a central hospital staffed by experts, and after-care centres in various parts of the country, visited once a week by a member on the staff of the hospital, usually accompanied by the school doctor and a representative of the medical officer of health.

Scotland.

The report of the inquiry as to the Bellahouston Hospital is noticed at page 661.

Post-Graduate Instruction in Glasgow.

The Glasgow Post-Graduate Medical Association, of which Sir Donald MacAlister is chairman, will begin its new course of demonstrations for practitioners on Wednesday, November 16th, when Dr. Leonard Findlay will give a demonstration of medical cases at the Royal Hospital for Sick Children, Glasgow. The course will be continued each Wednesday with the exception of December 28th, 1921, and January 4th, 1922, until May 24th. The inclusive fee for the series is £3 3s. Further particulars can be obtained on application to the Secretary, Post-Graduate Medical Association, The University, Glasgow.

Edinburgh Royal Medical Society.

The inaugural address of the 185th session of the Royal Medical Society was delivered by Sir Dyce Duckworth in the Society's Hall at Edinburgh, on October 14th, on "Art in relation to modern medicine." Dr. J. F. C. Haslam, president of the society, presided over a large audience. Sir Dyce Duckworth said that a purely scientific education by itself could never produce the skill or essential personal qualities of a practical physician at the bedside. The first object for the physician was the study of the individual patient; the second one was the nature of the disease. In recent years many medical men seemed to have been paying much more attention to the disease than to the patient. Both kinds of inquiry were needed: the former related largely to science; the latter to medical art. The latest therapeutic novelties were not seldom snares to the unwary, and he ventured to think that they were not adequately informed as to the failure of many vaccine treatments which were now widely practised. In the wild hurry of to-day it was not recognized that therapeutic novelties and methods required long and severe clinical study. Frequent announcements in the public press of the newest alleged remedies and methods of treatment were, he believed, harmful and mischievous to many readers. Referring to the prescription of various forms of alcohol, he urged the necessity for giving instructions about their use. At the present time he believed that the average student, when he qualified, often began practice without an intelligent training and acquirement of the value of any form of alcohol in disease, its benefits, and its dangers. It was wholly a clinical question, which related to the patient, not to the disease, and alcohol must be as carefully prescribed as any article in the medical pharmacopoeia. The experienced clinician knew it was beneficial when indicated. Recent researches went to show that it tended to diminish, if anything, the output of energy of a worker; but when a man's work was done careful observers declared that a strictly moderate use of some alcoholic beverage might, if desired, be taken with some meal later in the day with refreshment and comfort to the body. He spoke next of the general failure of the panel system, and expressed the opinion that it had degraded both science and art and lowered the respect of the Government and public for the profession. Recent political changes, he added, had placed the profession under bureaucratic influences which, in his opinion, were injurious to its independence and dignity and not less to the highest welfare of the public. Speaking of the artistic side of medicine, he said that art in medicine was purely clinical. "Real art is always modest and not conscious." Buffon said, "*Le style est l'homme même.*" Medicine was not an exact science, and the art of medicine could not be transmitted. Begbie combined the scientific and artistic spirit in a high degree, and it had been said of him that he was greater than any of his books. Art in medicine was an individual acquirement, and only acquired by contact with patients at the bedside. In medicine humanity dealt with humanity, and the patient must not be regarded as a mere subject for study. Pure science could never replace art. In conclusion, the speaker referred to the value of the Royal Medical Society from this point of view. Character must not be confounded with skill. Such a society as the Royal Medical Society inspired its members to the highest aspects of the profession and the future humanity of medicine.

Dr. Byrom Bramwell moved a vote of thanks to the speaker, and referred to the brilliant quartet of clinicians —Lauder Brunton, David Ferrier, Crichton-Browne, and the speaker of the evening—who went to London from Edinburgh. For himself, he also thought that too much attention was paid to laboratory methods and not enough to the clinical aspects of disease. Some branches of physiology and pathology could only be studied in man —for example, aphasia. Observation of cases for a long number of years and a *post-mortem* examination at the end was a most valuable system; it must be remembered that clinical research was earlier in the field than laboratory methods, which followed upon clinical observation and amplified it. Dr. Davidson seconded the vote of thanks, which was heartily adopted and suitably acknowledged.

Opening of Ayr Maternity Hospital.

The Seafield Maternity Hospital (and Child Welfare Centre), Ayr, was opened on October 12th by Sir W. Leslie Mackenzie, of the Scottish Board of Health, in the presence of a large company. Dr. G. Douglas Macrae, Chairman of the Maternity and Child Welfare Committee for Ayrshire, presided, and in calling upon Sir Leslie Mackenzie to declare the hospital open, said that Seafield House, which now passed into the public service of the county of Ayr, had been built for his own use by Sir William Arrol, the famous engineer. The hospital was a development of the scheme of maternity and child

welfare, which had grown with such phenomenal speed during the last fourteen years. The maternity hospital made it easy for the medical man to apply his best skill, for he could rely both on the good physical accommodation of a well-ordered institution and on the presence of a team of skilled nurses. It made it easier for the mother to pass through the crisis of childbirth, and, above all, it reduced the danger to mother and child. Seafield House had been purchased by the county authorities at a cost of £16,500, and had been altered for the purpose of a hospital at a cost of £2,000; the furnishing and equipment would probably cost £1,500, but the farm which was included in the purchase would give an annual return of about £140, while this ground could be utilized at any time for the purpose of extension. The hospital, which is delightfully situated overlooking the bay of Ayr, has at present accommodation for fourteen women and thirty-four children.

Federation of Mother and Child Welfare Associations.

A well-attended meeting of the Scottish Federation of Mother and Child Welfare Associations was held in the City Chambers, Edinburgh, on October 12th. Lady Salvesen, who presided, struck the keynote of the proceedings when she emphasized the fact that it was ante-natal work that was of the greatest consequence in the welfare of children. At the present time deaths after the first month of life were being reduced, but those in the first week and in the first month (neo-natal deaths) were untouched. Mrs. Chalmers Watson, C.B.E., M.D., spoke of ante natal factors in connexion with the dietary of expectant mothers, and laid stress upon the risks to the unborn child of bad teeth in the mother, and upon the dangers of white lead poisoning and alcohol. Dr. J. W. Ballantyne dealt with recent work among expectant mothers at the Edinburgh Royal Maternity Hospital (Department A). He drew attention to the necessity for discriminating between adequate and inadequate ante-natal supervision in judging of the results obtained. By inadequate supervision he meant the paying of one or two visits to the ante-natal clinic in the last month of pregnancy. An analysis of 1,000 cases recently seen at the clinic showed that the mothers who had adequate as contrasted with inadequate ante-natal supervision had markedly fewer stillbirths, the percentages being as 4.6 to 7.5. The pressing need was adequate ante-natal supervision, not the make-believe supervision which consisted in one visit in the last week or two, or a few days before labour. He also sketched the work which was being done among pregnant women infected with one or other of the venereal diseases.

Ireland.

Royal College of Surgeons in Ireland.

At the eleventh annual congress of the American College of Surgeons, to be held in Philadelphia on October 24th, eight famous American surgeons are to receive the Honorary Fellowship of the Royal College of Surgeons in Ireland. The fact that the honour is to be conferred on so many surgeons simultaneously may cause surprise to those who know how jealously the Honorary Fellowship has been guarded in the past, but it must be admitted the idea was well timed and graceful. The names selected are household words wherever the practice of surgery is understood: Charles and William Mayo, George Emerson Brewer, W. W. Keen, R. H. Harte, George W. Crile, John M. T. Finney, Albert E. Ochsner. In honouring these surgeons the Irish College honours itself.

A deputation consisting of Sir William I. de C. Wheeler (acting president), with Sir Robert Woods and Sir William Taylor (past presidents), was nominated by the Council to confer the degrees in Philadelphia. Owing to the continued illness of the president, Professor E. H. Taylor, Sir William Wheeler was at the last moment prevented by college business from joining the deputation. In a letter to Dr. Franklin Martin, Secretary-General of the American College of Surgeons, he wrote apologizing for his absence and said that he regarded the entry of eight famous American surgeons into their ranks as a most important and happy landmark in the history of the Royal College of Surgeons in Ireland. It was symbolic of the great admiration and regard which all Irish surgeons felt for the achievements and surgical triumphs of their American confrères, and was indicative of the cordial relationship between the surgeons of the two countries.

The strong desire expressed by the American surgeons to receive the diploma when assembled in Philadelphia next Monday, instead of in Dublin at some uncertain date, was acceded to by the Council, and the preliminary arrangements for a reception in Dublin were abandoned. Sir William Wheeler and Sir Robert Woods are to receive the Honorary Fellowship of the American College of Surgeons. Sir Thomas Myles and Sir William Taylor were similarly honoured on a previous occasion.

Opening of the Session, Belfast.

The opening address of the session of the Royal Victoria Hospital, Belfast, was delivered in the King Edward Hall of the hospital on October 13th, by Dr. McKisack, F.R.C.P.Lond. Mr. Mitchell, F.R.C.S.Ire., who occupied the chair, said, in calling upon the lecturer, that in common with every one he regretted the absence of Professor Sinclair, their chairman, who was prevented from presiding by family bereavement. After welcoming the students, the lecturer in his address dealt with a large variety of interests in the profession, and said that despite their often gloomy and anxious surroundings they were not an unhappy race: they led a full and useful life. He contrasted the clinical and the laboratory sides of hospital work, and emphasized the necessity for the student putting all his talents into the clinical work and spending more time in the study of the patient. There were opportunities for research in clinical work as well as in the laboratory, and high efficiency of all the faculties was required. To be a good practitioner it was necessary to be a good clinician; a good pathologist might fail utterly as a practitioner. Mr. Mitchell conveyed the warm thanks of the meeting to Dr. McKisack for his instructive and timely address.

National Maternity Hospital.

The twenty-seventh annual report, submitted to the annual general meeting of the National Maternity Hospital, Holles Street, Dublin, on October 14th, expressed regret at the death of four of the governors, including Dr. Walsh, Archbishop of Dublin, who could be regarded as one of the founders of the hospital. The bazaar organized by Sir Joseph Glynn realized £6,446, of which £2,200 was raised by the individual effort of Surgeon McArdle; the institution was thus freed from debt. Mrs. Gordon paid tribute to the great kindness and care shown by the staff. Sir Joseph Glynn said that everyone who went amongst the poor heard nothing but praise in regard to the hospital; during his association with it there was never a complaint; it was carried on with the utmost economy. He appealed for increased support for the institution, which was in the forefront of the maternity hospitals of the United Kingdom. The Lord Mayor expressed the hope that some philanthropist would come forward with substantial support for the hospital when the new era arrived, which they all sincerely hoped was at hand. It was not the duty of the private citizen to support maternity hospitals; their maintenance was a matter which should be looked after by the State. Surgeon McArdle said that it was the only hospital in which a patient was never refused admittance. Until the time came when the Irish State would maintain its own hospitals, as he was sure it would, they were bound to carry on the institution in the spirit in which it started. Tributes to the efficiency of the institution were also paid by the Right Rev. Monsignor Dunne, Sir Andrew Horne, and Mr. H. C. Lynch.

Health Insurance: Effects of Partition.

The proposed taking over of the National Health Insurance service by the Government of Northern Ireland was considered at a meeting of the Executive of the Approved Societies' Association of Ireland in Dublin on October 14th. Counsel's opinion on the legality of the proposal was read, and it was decided to submit it to a general meeting of the association. In connexion with resolutions recently forwarded to the Insurance Commissioners, replies were read stating that no decision had

been come to regarding the definite transfer of the national health insurance on January 1st, 1922. The correspondence also showed that every society operating in Ireland would require instructions as to how they were to deal with the separation of their members according as they were resident in Northern or Southern Ireland. Steps were accordingly being taken to hold, at as early a date as possible, a conference between the National Health Insurance Joint Committee, the Ministry of Health (England), the Board of Health (Scotland), the Board of Health (Wales), and the Irish Insurance Commission.

Correspondence.

WHITEHEAD'S OPERATION FOR HAEMORRHOIDS

SIR,—The widespread condemnation of this operation by the proctologists assembled at Newcastle-upon-Tyne at the last meeting of the British Medical Association, as reported in your issue of October 15th, compels me to urge the attention of these gentlemen to a modification of this operation, described by O'Conor of Buenos Aires,[1] which, with but little alteration, I carry out under local anaesthesia.

In making this recommendation I am aware that I may be classified in the proctologist mind as a "surgical dabbler" (*sic*), and that ridicule may be poured upon my suggestion by those who have not seen the operation performed under local anaesthesia and adrenaline anaemia of the parts. I claim that the operation can be done painlessly, practically aseptically and bloodlessly, and without stretching the sphincter; that healing by first intention follows in nearly all cases *in the whole extent of the wound;* that the operation, when properly done, is not followed by stenosis, haemorrhage, loss of sphincter control or of "anal sense," abscess, fistula, or ulceration; that the patients do not require to be kept in bed any longer, if so long, as those submitted to the other methods of operation mentioned, and that the after-treatment is simple when compared with that described as necessary after such other methods. In other respects—for example, after-pain, use of catheter, formation of tags, I do not claim that the operation has great advantages. Complaints of after-pain and necessity for use of the catheter depend largely, it seems to me, on the mentality of the patient and on the preparation and post-operative treatment of the case. With regard to treatment of tags, which occasionally form, I may be particularly "finnicky," as I like to send patients home with a normal anal region on which there are no irregularities which might interfere with proper cleansing of the part.

I prefer this modification of Whitehead's operation practically to the exclusion of any other method of treating haemorrhoids which require surgical interference. The "ligature" and the "clamp and cautery" methods do not conform to the principles which regulate surgical operations on other parts. So long as the method which I advocate gives the uniformly excellent and permanent results which my patients show I shall continue to practise it and to demonstrate it to students. It is, in my opinion, the best operation for the radical cure of haemorrhoids, and the fact that bad results follow operative attempts of unpractised hands should not condemn it in the minds of those who possess the necessary skill and training.

The question whether any operations on such an important part of the anal canal should be undertaken by men who have comparatively few opportunities of practising surgical technique is quite another matter. The bad results reported, as mentioned by nearly every speaker at the meeting, indicate the answer to the question.—I am, etc.,

Aberdeen, Oct. 17th. HENRY M. W. GRAY.

[1] *Lancet*, September 24th, 1910.

SANATORIUM BENEFIT.

SIR,—I was asked the other day by one "having authority" if I, as one of the earliest appointed tuberculosis officers, thought sanatorium benefit had been a success. I refused to answer the question, but it has struck me that the time is ripe for (1) the leaders of the profession, (2) the general practitioner, (3) those actively engaged in the treatment of tuberculosis, to have the courage or to spare the time to answer or to try to answer the following pertinent questions:

1. Has sanatorium benefit been a success?
2. Has the notification of tuberculosis been a blessing or a curse?
3. Have sanatoriums failed?
4. Should we adopt the army method of diagnosing tuberculosis by the presence of tubercle bacilli in the sputum?
5. Why is tuberculin so little used?
6. Are we, as a race, being immunized against tuberculosis?
7. Do children under 12 get pulmonary tuberculosis?

I am aware that we are suffering from the aftermath of the war, but the medical world is in a transitional stage, as it was in 1912, and decisions have again to be taken to-day and not postponed till the morrow.—I am, etc.,

J. D. MACFIE,
Tuberculosis Officer,
Colchester, Oct. 13th. Essex County Council.

"PAUPER" LUNATICS.

SIR,—You comment in the JOURNAL of October 8th on the *rapprochement* between the Board of Control and the Ministry of Health. That co-operation between these two Government departments of health is needed, is illustrated by this little fact: The Ministry of Health has been doing its best to eliminate the word "pauper" from everything within its administration; if reception orders for the county asylums do not certify in explicit terms that the patient is a pauper the Board of Control returns the order to the justice to have that word inserted.—I am, etc.,

London, N.W., Oct. 10th. E. CLAUDE TAYLOR.

AURICULAR FIBRILLATION.

SIR,—When a horse falls under a heavy load, and begins to struggle to regain its feet, the usual treatment is to sit on its head, or otherwise hold it down, to prevent its damaging itself. This treatment does nothing towards pulling the cart. In the same way the treatment of auricular fibrillation or flutter, *per se*, probably does nothing towards recovery from cardiac breakdown, though it may be very useful in preventing the auricle embarrassing the ventricle.

Cardiac breakdown associated with fibrillation appears to be usually due to dilatation of the auricle. It occurs most characteristically and permanently in mitral stenosis, and auricular dilatation is the common determining cause of cardiac failure in mitral stenosis cases.

This is indicated by the fact, to which I long ago called attention (BRITISH MEDICAL JOURNAL, February 5th, 1898), that the auricle is not found dilated in mitral stenosis cases when the heart did not fail, but the patient died from accident or operation. It is commonly found dilated after death due to cardiac failure from the stenosis, and the oncome of failure is most easily explained by the oncome of auricular dilatation previously absent. The occurrence of embolus after fibrillation, to which Dr. James Orr and Sir James Mackenzie have called attention, is in accord with the probability of auricular dilatation, which is a well known condition encouraging the formation of a clot in the auricle.

When the auricle dilates it no longer can contract efficiently, but when it thus fails as a whole, like a horse which is down, it can still kick or fibrillate.

Sir James Mackenzie says: "It should be remembered that auricular fibrillation of itself is not a dangerous or even serious condition." I would go further and say that it is not a "condition" at all. The "condition" is cardiac breakdown, usually due to auricular dilatation, of which fibrillation is but the indication.

Valuable as the study of auricular fibrillation has been, and beautiful as was the description of the cause of auricular flutter lately given in your columns by Sir Thomas Lewis and others, these are but side issues in cardiac phenomena. Quinidine sulphate, digitalis, or anything else which aids or relieves the heart beat may incidentally control them, and I have little doubt that 100 years ago they would have disappeared altogether, at least temporarily, by bleeding, and easing the embarrassed and dilated heart.—I am, etc.,

Knowle, Clyst St. George, Devon, Oct. 11th. D. W. SAMWAYS.

TREATMENT OF SYPHILIS IN WOMEN.

Sir,—In reply to Dr. Erie Evans (October 15th, p. 616), I would suggest that the cause of death in the reported case was due to a "reaction."

It is advisable in all cases of tertiary and congenital syphilis to put the patient for about a month on mercury alone or in combination with potassium iodide. The mercury will produce a reaction which is mild and extended over a considerable period. At the end of a month's treatment "914" can be administered, commencing with a small dose (0.15 gram) and gradually creeping up to larger doses, somewhat as follows, weekly: 0.15 gram, 0.2 gram, 0.3 gram, 0.3 gram, 0.45 gram. After the fifth injection an interval of about six weeks should be allowed on mercury alone. If it is desired to give further doses, start on a smaller dose than the final dose of the previous course and gradually creep up for another five doses. Any reaction can be carefully watched and the dose of 914 regulated accordingly.

It would be far safer if a somewhat similar line of treatment was carried out in all cases of syphilis. In a primary local lesion (except, perhaps, chancre of the tonsil) it is safe to start on 0.45 gram of 914, but where there is a general infection, with severe headache pointing to meningeal infection, it is better to give 0.15 gram followed in three or four days by 0.3 gram and afterwards carry on with the larger weekly doses.

It is extremely important, in dealing with out-patient injections of 914, to warn all patients, especially women, to put on some warm wrap or mackintosh when returning home after an injection. In the case recorded, the patient apparently died of a severe kidney or cerebral "reaction," perhaps aggravated by cold or draught on the railway journey, causing a contraction of the superficial blood vessels with consequent increase of the internal arterial pressure in atheromatous vessels.

Attention has frequently been drawn to the fact that a large number of patients at venereal disease treatment centres attend only once or twice for syphilitic treatment. It is possible that the administration of large initial doses (0.6 gram) may be responsible for this state of affairs, as patients often remark, "I was given an injection at ——— clinic, and it laid me out for a couple of days—I *was* bad." The average out-patient cannot afford to lose two days' work, and as a result does not attend again. *Festina lente.*—I am, etc.,

V. D. Treatment Centre, Plymouth, Oct. 18th. G. D. Kettlewell.

CAPILLARY PRESSURE.

Sir,—Dr. Henderson (September 24th, p. 507) states it to be a fact that "Professor Hill has never taken the pressure of the brain against the skull as a measure of the pressure in the arterioles." Dr. Hill's own words, as given in his lecture (May 28th, p. 767) were:

> "The pressure of the brain against the skull wall is due to the distension of the cerebral arterioles and capillaries by the heart, and my method, I believe, gave me a measure of the pressure in these vessels."

The method referred to was one for measuring the pressure of the brain against the skull.

My statement that the pressure in Schlemm's canal is less than that in the anterior chamber is not a mere assumption, but is based on the fact that the aqueous flows from the anterior chamber to Schlemm's canal, as shown by the experiment quoted by me in a previous letter (September 10th, p. 418) from the *Encyclopédie Française d'Ophthalmologie*, 1905, p. 139. There is no contradiction between my statement, based on the same experiment, that "the only veins into which there is a flow from Schlemm's canal are the anterior ciliary veins which lie outside the sclera," and Dr. Henderson's that "the anterior ciliary veins arise from the ciliary body and send afferent branches to Schlemm's canal before they have pierced the sclera, as well as in their passage through the sclera." When Dr. Henderson speaks of "afferent branches to Schlemm's canal" I take it that he means branches in which the flow is towards Schlemm's canal. The efferent branches from Schlemm's canal convey the blood to the parts of the anterior ciliary veins which lie outside the sclera. The simple inference from this is that the pressure in Schlemm's canal is less than that in the portions of the anterior ciliary veins which lie inside the sclera, and greater than that in the portions which lie outside it.

If Dr. Henderson holds that the pressure in all veins of the eye, and in all parts of each of them, is the same, those who are sufficiently impressed by the loftiness of the position from which he writes will accept his view. But when I find that another good authority—the one from which I have quoted above—gives data which afford a simple and reasonable explanation of how the aqueous is changed, without postulating anything that is contrary to the principles of hydrodynamics, then I prefer that other authority, even though it involves me in the unpleasantness of being in disagreement with Dr. Henderson.—I am, etc.,

Knock, Belfast, Sept. 26th. John R. Gillespie.

Sir,—The arrogance of Dr. Gillespie's method of conducting a scientific controversy is fortunately rare. My methods of measuring the capillary pressure have been demonstrated over and over again to my colleagues at the National Institute of Medical Research, to distinguished physiologists visiting that institute, such as Professors Einthoven, Simon Flexner, Hamburger, and Professor Krogh, the last eminent for his researches on the contractility of the capillaries, to members of the Physiological Society and other medical scientific societies at no less than five meetings. I also demonstrated to the Physiological Society Dr. James McQueen's method of measuring the capillary pressure in man. Opportunity has been given to all these scientific men to criticize my methods and refute my conclusions. So far such criticism has not arisen. If it does arise it will be backed by experimental evidence and knowledge of the literature of the subject, which will meet with my respect.

But Dr. Gillespie seeks to controvert me before the medical public at large, which has no intimate knowledge of the subject, using the common trick of the politician of confusing the issues. He asks for particulars of my methods; let him study my published papers. Not only arrogance but ignorance of these, of which I may justly complain, are strikingly illustrated in his last letter (British Medical Journal, September 24th), in which he asks me to study the pressure within a toy rubber balloon when distended within an air chamber in order that I may learn that the pressure within the balloon is greater than that within the chamber in which it is distended. The innuendo being that I am using a method without knowledge of a fact which is familiar to every demonstrator of physiology who teaches the function of the elasticity of the lungs.

Now, as it happens, some twenty-five years ago I pointed out in a paper on cerebral anaemia (*Transactions of the Royal Society*), in reference to certain experiments of the late Sir Victor Horsley concerning cerebral pressure, that when a rubber bag is introduced through a trephine hole and then distended within the cranial cavity, most of the pressure recorded by a manometer connected with the bag, is spent in distending the bag and does not reach the brain. As Dr. Gillespie's ideas concerning arteries are associated with garden hose pipes, and of capillaries with hypodermic needles and rubber toy balloons, I am convinced he has no intimate knowledge of the conditions which pertain through the living animal, and has, I shrewdly believe, never seen, much less studied, under the microscope the circulation in the capillaries. In contrast with the grossly mechanical concepts of Dr. Gillespie, I ask the reader to consider with me the capillaries in, say, a minute lobule of fat in the mesentery of a mouse. We need the high power of the microscope to see the red corpuscles passing in single file through the capillaries, and with this power we scarcely see the wall of the capillaries so great is its tenuity. We see the fat cells bounding and supporting this wall, and trace the capillaries to where they join a venule or branch from an arteriole. On the edge of the lobule we may see what may be called the main vessels of supply, minute capillary-sized arteries and veins, but with a relatively rapid flow and muscular walls. I ask the reader to realize that the capillary wall is formed of living cells, of a film of protoplasm containing some 80 per cent. of water, that inside the capillary is blood, and outside tissue lymph and fat cells formed of protoplasm and droplets of oil.

I bring the mesentery with the lobule of fat upon the dome of peritoneal membrane which covers my Roy and Graham Brown apparatus, so as to flatten down the dome. I wet it with warm Ringer's solution and then bring the glass cover down upon it. On now raising the pressure in the little chamber of the apparatus which is covered by the peritoneal membrane, the fat lobule becomes compressed between this membrane and the glass cover, and we see that a very slight increase of pressure begins to slow and then stops the flow in some of the capillaries. The pressure is equally transmitted by fluid to the lobule of fat, to the fat cells, tissue lymph, protoplasmic capillary wall, and blood within the capillary. We see the flow becomes confined to the more direct pathways between the arterioles and venules. If the pulse rate is slow enough—for example, in the frog—as the pressure is raised further the flow first becomes visibly pulsatile, and finally stops as the pressure in these vessels is in its turn overcome. The pressure in the arteriole has now risen to that within the tiny main artery at the edge of the lobule which is feeding the arterioles.

The lobule behaves just as the arm enclosed by the cuff of the sphygmomanometer, and direct measurements have shown that this sphygmomanometer accurately records the arterial systolic pressure. We now observe the capillary circulation when the blood flow is arrested by ligation of main vessels, excision, or stoppage of the heart, the capillaries do not empty themselves of blood. There is no evidence of tension due to their stretched wall, of that soap film action the basis of Dr. Gillespie's primary argument. We next raise the pressure slightly in the apparatus, and see that it produces a movement of blood in the capillaries, showing that it takes very little pressure to overcome the frictional resistance. There is, then, justification for the assumption that we can measure the capillary pressure by the Roy and Graham Brown apparatus.

Dr. Gillespie attacks this method, but it is the very method by which the generally accepted textbook measurements of 40–50 mm. Hg have been made, the measurements which he upholds. No other method has, so far, been devised, except that of Basle, of cutting the finger and measuring the pressure of the escaping blood. I leave it to Dr. James McQueen to uphold the correctness of Basle's method which Dr. Gillespie attacks. The Roy and Graham Brown method has been accepted as justly applicable, and used by a score or more of physiological researchers of repute. My especial contribution is the pointing out that the pressure which stops the flow in a capillary area is not, as it is generally assumed to be, the capillary pressure, but the pressure in the small artery which feeds the arterioles supplying the capillary area. The true capillary pressure is that which just begins to stop the flow in some of the capillaries, and confine it to the more direct pathways between the arterioles and venules. This pressure is normally a few millimetres of mercury, always, in my observation, excepting the eyeball, under ten, and often only two to three.

The lowness of the capillary pressure is confirmed, not only by Basle's method, but by the common experience of bleeding. How could the escape of blood be so easily controlled from a cut and why does it so gently ooze out if the capillary pressure were 40 to 50 mm. Hg? The onus of proof is on those who assert such a pressure, not on those who deny it. The lowness of the capillary pressure is also confirmed by the direct reading of venous pressure into which the capillaries drain, the slightest increase of which congests the capillaries. Dr. Gillespie has not refuted one of my arguments, but seeks to confuse the issues. I would ask the reader also to consider in the case of the eye which is the more reasonable view—to regard the capillaries in the wet protoplasmic film of the ciliary processes as having a pressure 30 mm. Hg above that of the aqueous fluid and filtering fluid through, or to recognize, as I do, that the cells of the ciliary processes secrete the fluid and so fix the pressure of the aqueous and tension of the eyeball, the capillary pressure adjusting itself so that it is just enough above that of the aqueous to maintain the flow of blood; the eye thus doing its own business, not depending for its tension on cardiac force. When the general arterial pressure rises, or the veins are obstructed, the capillary-venous pressure rises in the eye, and that of the aqueous rising with the vascular expansion balances this, the whole being enclosed in the rigid sclera. When the aqueous is let out, the blood vessels, no longer balanced by the aqueous, dilate; the iris visibly expands with this vascular dilatation, and the vessels burst when congested sufficiently by pressure put upon the abdomen. Dr. Gillespie denies the vascular dilatation of the iris, but a single experiment on a urethanized cat will show him that he is wrong. When Ringer's fluid is forced into the aqueous chamber and the outflow of venous blood from one of the venae vorticae observed, Martin Flack and I found that the flow ceases when the aqueous pressure just overtops that in the carotid artery. Under this condition the pressure in the capillaries rises up to the arterial pressure *pari passu* with the aqueous pressure, and the flow ceases when the arterial pressure is just overcome.

It is these considerations which lead me to conclude that the capillary pressure is *practically* the same as that of the aqueous, just as in the brain it is *practically* the same as that of the cerebro-spinal fluid. In the brain the pressure is set by the secretion of the choroidal fringes, and varies with vascular changes just as it does in the eye.

All recent researches, such as those of Hamburger on the glomerulus of the kidney, show that a selective physiological permeation or secretion, not filtration, takes place through living membranes. The mechanical view of a high capillary pressure and filtration must and will be given up.—I am, etc.,

Loughton, Sept. 29th. LEONARD HILL.

SIR,—This controversy was commenced by Dr. Gillespie drawing false analogies between soap bubble films and capillary walls. To support and make plausible these false analogies he made use of a simple equation, $p_1 - p_2 = 50$ mm. of Hg. These analogies were pricked in due course and collapsed like his soap bubbles, while his equation was legitimately used by me in two ways: (1) I for the moment, accepting Dr. Gillespie's false analogies, was driven to rewrite the equation ($p_1 - p_2 = -10$ mm. of Hg) as it must be rewritten if Dr. Gillespie had proved the wall of a capillary and the skin overlying a capillary area behaved as the wall of a soap bubble film. There is no need for Dr. Gillespie worrying over a failure on Dr. Hill's part to protest that such a result must be wrong. Considering the equation was written to suit Dr. Gillespie's soap bubble hypothesis, Dr. Gillespie appears to be somewhat ungrateful. (2) Then I offered Dr. Gillespie new values for the functions p_1 and p_2. Then $p_1 - p_2 = 0$. I said these values were in all probability the best available. But (3) to oblige Dr. Gillespie once more, I am quite willing to write $p_1 - p_2 = a$ positive quantity so small as to differ from o by the least conceivable quantity. Then, again, it is utterly useless to write such an equation.

Dr. Gillespie believes $p_1 - p_2 = 50$ mm. of Hg. I shall be very glad if he will kindly state his proof, and I feel safe in saying that neither p_1 nor p_2 will be determined by frothy rhetoric about soap-bubble films, garden hose pipes, hypodermic needles, and toy balloons.

I would not trouble myself to write on this controversy again did not Dr. Gillespie, in section 3 of his letter of September 24th, 1921, once more demonstrate his method. Dr. Gillespie makes use of statements that may be perfectly true in themselves, but are inapplicable to the problem with which he deals. Thus, quoting Dr. Gillespie, "when blood vessels are severed they both retract and contract." Quite true. "Owing to the contraction there is greater resistance to the flow of blood through them, so that the blood emerging is probably at a lower pressure than there was at the same point before severance." Quite true. "Owing to free anastomosis, when the flow of blood in one direction is impeded, it can get away by other channels, thus avoiding much piling up of pressure." Quite true.

Now your readers might think Dr. Gillespie has contributed a really valuable criticism of the method of Basle. Let me analyse the method in detail. When the finger is cut and clotting of blood is prevented, it is inserted into a suitable vessel connected with a manometer. The cut, however superficial, must open arterioles, capillaries, and venules. The blood as it flows out generates pressure in the vessel as recorded in the manometer. But this pressure compresses the finger. Every capillary field in the finger, that part of it which is inside the

vessel, is compressed *pari passu* with the rise of pressure recorded by the manometer. Consequently pressure rises in all capillary fields, including the capillary fields opened by the cut. Hence there are no other anastomotic channels where the blood flow is any easier than outside into the vessel itself. Accordingly, when the flow ceases and the manometer reads, say 10 mm. of Hg or less, the pressure recorded is the arteriole pressure, and the true capillary pressure must be lower.

A severed arteriole may have its lumen narrowed, but once the pressure rises in the manometer by the blood flowing out it will ultimately reach the full pressure in the arteriole. Because when the manometer reaches its final level of reading the flow ceases and the pressure in the arteriole above the narrowed exit can be communicated by continuity of fluid even through a narrowed arteriole lumen. Consequently there is nothing in Dr. Gillespie's argument other than air, precisely as in his soap bubbles. Might I say that if he will now leave his garden hose pipe and play with the water tap in his scullery he may come to realize his error?

Your readers will note that Dr. Gillespie employs a strange blend of statements, each of which, considered by itself, may be perfectly correct, but when blended into an argument fail to apply, because Dr. Gillespie only knows as much about the subject as he can gather from the work of others. Precisely as he employed the formula $p_1 - p_2 =$ 50 mm. of Hg without first making sure of the value of the functions p_1 and p_2, so here he offers criticism of the original work of another man without taking the trouble to experiment with the method.

Dr. Gillespie has been kind enough to refer to a sentence of mine as "nonsensical." I do not believe for one moment that your readers are impressed by this. That the energy of lateral pressure and the kinetic energy of flow of a liquid are mutually convertible is well known. That they can be summed, if desired, is shown in Bernoulli's theorem and also in Professor Starling's *Fluids of the Body*, p. 109, where the sum $\frac{1}{2}mv^2+P$ is given, where P is defined as the lateral pressure exercised by the fluid on the vessel wall. It is particularly illustrative of Dr. Gillespie's method, that he has spent considerable energy in denouncing the use of an equation which is utilized by that author whose views on capillary pressure Dr. Gillespie supports.—I am, etc.,

Halesowen, Sept 24th. JAMES M. MCQUEEN.

*** We cannot continue this correspondence, though we are prepared to receive from both sides final replies, from which we hope all personal implications may be omitted.

ON THE OPERATION OF PROSTATECTOMY.

SIR,—My note of appreciation of the late Sir Peter Freyer in your issue of September 17th has been partly responsible for the appearance in your current issue of an interesting and important account of some early work on prostatectomy by McGill at Leeds.

I count myself fortunate in stimulating the production, even at the price of an unexpected charge of arrogance on my part. I did not intend to discuss the question of Freyer's claim to priority in prostatectomy in that short obituary notice; and, on re-reading it, I cannot see anything that would suggest that I personally repudiated or endorsed that claim. I have, in fact, at all times stood aloof from the discussion of priority, and I do not wish to take sides in it at this late period.—I am, etc.,

London, W., Oct. 17th. J. W. THOMSON WALKER.

SODIUM BIBORATE IN EPILEPSY.

SIR,—May I make a small contribution to the interesting discussion on sodium biborate as a remedy for epilepsy?

On the walls of the consulting room of an old friend of mine, not now living—Dr. Willmer Phillips—there hung the photograph of a little boy, beneath which his parents had written, "Cured of epilepsy by Dr. Willmer Phillips." I asked the latter one day what method he had adopted, and he told me he chanced to make use of a casual reference to this treatment in the BRITISH MEDICAL JOURNAL, after having dosed the boy unsuccessfully with bromides for a long time.

I would add that in my own experience sodium biborate has often proved most helpful when bromides fail.—I am, etc.,

Southsea, Oct. 14th. W. ASTON KEY.

LIME-BEARING FOODS FOR CHILDREN.

SIR,—I have read with much pleasure the article on pericarditis by Dr. Poynton, and am glad he has come to the same conclusion expressed by me in your issue for January 22nd of this year on page 143: "The question on which I lay great stress is whether the children of the poor get sufficient lime-bearing foods, such as milk, eggs, or cheese." Dr. Poynton says: "I cannot help feeling that it is the result of the poor food during war time which has weakened the tissue resistance."

If we are right, then it seems to me full time that the national method of feeding children should be thoroughly overhauled, for the children of the poor get hardly any milk, and what they do get is poor. Unless the milk vendors improve their methods we shall have no option but to set up municipal milk dépôts. As member of the Swansea Borough Health Committee I have been the means of getting a deputation of the local milk vendors' association to meet our committee so that they may have every opportunity to put their house in order before we are compelled to proceed to the establishment of a municipal milk supply.—I am, etc.,

Swansea, Oct. 15th. G. ARBOUR STEPHENS.

NECESSARY ORGANS.

SIR,—The extent to which all the organs found in animals are really necessary to their well-being and survival is a question of great biological and physiological interest. In many cases a large part of a system can be removed. We know, for instance, that the spleen can be extirpated without disaster, even if it is renewed, as seems possible from a case recently reported in your pages, by the overgrowth of a splenculus. Eight, nine, or even ten feet of the small intestine can be ablated and the patient may recover, a fact which shows that there is a large margin of intestinal overgrowth. Colectomies are also done, frequently with the best results. In all these cases there is a large reserve. But what about the liver? So far as I am acquainted with physiological research I find it regarded as an absolutely necessary organ, the loss of which entails death. That this is a fact with many or most animals I have no doubt, but observations made years ago in Australia not only raised doubts as to its universal truth, but made it clear that a herbivorous animal such as the sheep can, in certain conditions, flourish perfectly without a liver.

It is well known that that destructive trematode the liver-fluke (*Fasciola hepatica*) is yearly responsible for the death of hundreds of thousands of sheep in Great Britain. In some districts of Australia it is also a pest to pastoralists, while in the Upper Murray district I found that every sheep killed had lost a portion of the liver parenchyma, sometimes to the amount of a whole lobe. These sheep die rapidly unless constantly supplied with salt, for which they are so eager that, although usually very wild, they will pursue those who pack it into the hills for them, and fight for it when placed in the troughs as eagerly as hungry pigs fight for food. These sheep, though reckoned fit for human consumption, even if the liver is rarely, or never, eaten in Australia, were seldom in really good condition, and naturally enough, as it seemed to me then, the more advanced the hepatic destruction the worse their state. I therefore assumed that the total or practical extirpation of the liver must result in death. It was a year later when I was in the more northerly and drier district known as the Back-Blocks of the Lachlan, that I killed a ewe and saw, greatly to my surprise, that the liver was wholly of a grey glaucous hue. On turning it over I found, however, that the thin edge of one lobe still contained something like half an ounce of liver substance, an amount I cannot consider highly important in itself. This particular sheep, instead of being thin and wretched in appearance, was fat, strong, and heavier than the average merino ewe. Fluke in these drier plains I knew to be rare, since they are without permanent water, and the prolonged dry heat of summer no doubt inhibits the spread of the snail (*Linnaeus truncatulus*) on which the life-cycle of the fluke depends. I came therefore to the conclusion that this particular animal had been imported when already infected. But the strange thing was that its general metabolism seemed in no way abnormal. Why was this? I can only assume that in certain conditions some herbivora can do without a liver, and, seeing

that sodium chloride usually helps sheep to live for a pastorally economic period, it seems to me now that the reason this animal did not die, or even show signs of illness, must have been due to the salinity, or other qualities, of the "salt-bush" and "cotton-bush," plants belonging to the order *Chenopodiaceae*, of the Lachlan plains.

I should be glad to hear the opinions of those better qualified than myself to judge such a case, but it certainly seems to show that in some mammals the glycogenic function of the liver is of little importance; that bile is by no means necessary for digestion; that the de-aminizing and oxidizing enzymes of the liver can be dispensed with; that in such animals, under certain unascertained conditions, the formation of urea due to the liver is superfluous; and, finally, that the protective function of the liver as regards the products of protein putrefaction (if there are such in these animals) can be replaced by glycuronic acid or some other product of metabolism.

It cannot, I think, be imagined that a like organic disaster could be endured by the carnivora. I find in Dr. Langdon Brown's *Physiological Principles in Treatment* the following passage: "Dogs in which an Eck's fistula . . . has been made showed toxic symptoms, especially after a meal of meat. In fact, the dogs recognized this effect of meat and avoided it, living on foods which contained very little protein."

It might possibly be interesting to know if similar observations to my own have been made in Australia or elsewhere.—I am, etc.,

London, Oct. 13th. Morley Roberts.

INFLUENZA (?) WITH ERYTHEMATOUS ERUPTION.

Sir,—Since writing the letter published in the Journal of October 8th another case of the same type came to my notice, but the rash, instead of disappearing like all the others, became definitely purpuric on the third day, and finally disappeared on the sixth without leaving a trace and without desquamation.

This man had very slight constitutional symptoms: headache and very slight sore throat, with 99° F. on first day only. There were no internal haemorrhages. The urine was loaded with urates; there was no albumin nor blood. This man had been already ten days in hospital for arthritis, which was treated with counter-irritants (blister), followed by the application of dilute picric acid dressings (3). It was suggested that his condition was a drug rash due to picric acid absorption. I shall be glad for references to such rashes.

—I am, etc.,

Curragh, Oct. 7th. J. E. H. Gatt.

MOTHER'S EYESIGHT v. CHILD'S LIFE.

Sir,—In the British Medical Journal of August 30th, 1919, p. 272, I reported a case of a woman who developed albuminuric retinitis during pregnancy. Her sight was fast failing, and premature labour was induced at seven months. The patient recovered from the albuminuria, the retinitis was arrested, and what remained of the eyesight was saved.

In July, 1921, as the left kidney appeared to be more movable and larger than the right, the patient was admitted into the Royal Victoria Infirmary, Newcastle-on-Tyne, under the care of Mr. Clay; an oblique incision was made in the left lumbar region and the kidney was exposed extraperitoneally. The whole kidney was covered with cysts, and, the diagnosis of congenital cystic kidney being made, the wound was closed.

The interesting point of this particular case was the fact that so long as the patient was not pregnant there was no albuminuria; but when the extra strain of the toxin from the foetus was added the kidneys became incapable of combating with the condition.—I am, etc.,

A. G. C. Pocock, M.B.Durh., M.R.C.S., L.R.C.P.

Shotley Bridge, Durham, Oct. 6th.

SENIOR MAJORS, R.A.M.C.

Sir,—May I venture to bring to your notice the unenviable position of senior majors in the R.A.M.C.? There has not been a single promotion from major to lieutenant-colonel since October, 1918. This means that officers who were promoted on that date, who were then six months senior to the next batch of majors below them, are now three years senior to the batch below, and are likely to become still more senior, as there seems little likelihood of any further promotions for some years to come. This may, perhaps, be unavoidable, but the hard part of it is that the promotion examination from the rank of major to lieutenant colonel has recently been reintroduced. This means that officers whose present service is twenty years and upwards, and whose average age may be taken to be about 46, now find themselves compelled to go up for this examination, which is of a very comprehensive nature, or else retire from the service on a maximum pension of £450 per annum. It is unreasonable to expect officers of 45 years of age and upwards to repeat their experiences of the examination hall of a quarter of a century ago.

These officers have practically all held lieutenant-colonel's appointments in the field during the great war, most of them have been mentioned in dispatches several times and have received decorations. Surely it would be simple enough to select officers for promotion to lieutenant-colonel on their war services alone without the necessity for this examination.

Their confrères in the I.M.S. have no examination from major to lieutenant-colonel, but are promoted to the latter rank after twenty years' service if their record is good. All R.A.M.C. majors have passed a very strenuous and searching examination before attaining that rank, besides an examination before being promoted captain.

Had it not been for the great war, when all R.A.M.C. officers were on active service and examinations were in abeyance, these senior majors could have worked for and sat for this examination six or seven years ago, while they still had some of the buoyancy of youth remaining. It is unfair to compel these war-worn veterans to submit to the rigours and often injustices of an examination and its preliminary extra work at their time of life.

Finally, I would point out that examinations in the combatant branches of the service, from major to lieutenant-colonel, have been entirely abolished.—I am, etc.,

September 21st. Member of Twenty Years' Standing.

A SCHEME FOR VOLUNTARY SUPPORT OF HOSPITALS.

Sir,—May I bring to notice a scheme which we are using in this little town—a town which is practically made up of the working class?

I do not think that anyone wants to see the old voluntary system of hospital support die out. When the London Hospital had to close down 100 beds some little while ago I wondered what was going to happen in a district like this, where we rely to such a big extent on hospitals, and 100 beds closed means, at the very least, that 2,000 patients are denied treatment at that hospital.

At that time I was fortunate enough to get an introduction to Mr. Allen of Forest Hill, the founder of a scheme which has been working in Lee, Lewisham, and Greenwich districts for over a year now, and by means of which they are raising over £100 a week for their local hospitals. I called on the other doctors in this town to get their support. Dr. MacDonald, our vicar (the Rev. H. S. Pelham), and myself, got a public meeting together, which was addressed by Mr. Allen, who described the working of his scheme.

To cut a long story short, we adopted his scheme; in our first month we collected £108, the next month £117, and last month—our third—£133. We have sent £100 to the London Hospital, and £50 to St. Bartholomew's, and £50 to the Poplar Hospital, and have £150 in hand for allocation at our next committee meeting. Our work is all voluntary, and every penny collected is for hospital support.

The scheme is this: First the district is split up into divisions. We have split this little town up into twelve divisions. At the head there is an organizing secretary and an inspector over each division, with, if necessary, subinspectors under that inspector, and then the collectors. We do not give them much to do; we aim at twenty houses to a collector, and that does not make it hard work. We start with the idea of getting 1d. a week from each house, and of course as much more as they like to put in the boxes. The boxes are opened once a month,

and in our case with the very gratifying result that I have shown above.

I am certain that if medical men in other parts took up this scheme to float it, the results would be so great that State aid and rate aid would not be necessary at all. Our only opposition has been from the extremists in the Labour party, who maintain that hospitals should be run by the State and come out of the rates.—I am, etc.,

Barking, Oct. 14th. G. O. Pierce, M.R.C.S., L.R.C.P.

PRESENTATION TO SIR J. HALLIDAY CROOM.

Sir,—May I, through the medium of the British Medical Journal, bring to the notice of Sir Halliday Croom's old residents and clinical assistants that it has been decided through a presentation to show our gratitude to him? Unfortunately the earlier records are incomplete, and as secretary of the committee which has been appointed I should be glad if those who were with him prior to 1890 and are willing to contribute would kindly send their names and addresses to me.—I am, etc.,

Douglas Miller.

50, Northumberland Street, Edinburgh, Oct. 17th.

Obituary.

W. DOMETT STONE, M.D.

Dr. Domett Stone, whose death took place on October 1st, was at one time well known in medical and literary circles in London. He was born in 1840, the younger son of Thomas Madden Stone, who was for many years a popular official at the College of Surgeons. William Domett Stone entered as a student at Middlesex Hospital, and in 1861 became M.R.C.S. and L.S.A. In the following year he took the M.D. at St. Andrews, and in 1865 the F.R.C.S. (by examination). In 1872 the Council of the College of Physicians of Sweden conferred the honorary membership of that body on him for his valuable services in instituting an inquiry into the hygienic condition of the mercantile navies of Great Britain, Sweden, Russia, and other countries. The results of his observations were published in the *Times*, and called forth many comments in that and other London and provincial daily and weekly papers. For many years Dr. Stone edited the *Half-yearly Abstract of the Medical Sciences*, a work which acquired under his editorship the highest reputation for the ability and industry with which the essence of medical literature was condensed into its pages. He was also the author of an *Epitome of Therapeutics*, and a frequent contributor to various journals on hygienic, sanitary, and kindred subjects. In 1865, when a commission was appointed to investigate the state of the workhouses and infirmaries, he called attention to the fact that, as a rule, the education and general status of the masters was below what their official position ought to demand. He urged that an alteration of the standard of requirements for the posts of master and matron should be the first step in workhouse reform. This suggestion was warmly supported by the medical press, to the ultimate benefit of the institutions concerned. In 1889 Dr. Stone was elected a corresponding member of the Italian Association Dei Benemériti, and awarded the gold medal for scientific, literary, and humanitarian work. He was at various times resident medical superintendent, Munster House Asylum, Fulham; surgeon superintendent, H.M. Government Emigration Service; prosector, Royal College of Surgeons. He had also held the appointments of honorary physician, Westminster General Dispensary, Western General Dispensary, and Finsbury Dispensary; and surgeon, St. Marylebone General Dispensary. In early life he travelled through the greater part of Europe, America, Canada, South Africa, the Eastern Coast of the then Dark Continent, Palestine, Turkey, Smyrna, and the Near East. Of late years, owing to failing health, he has lived in retirement, but still retained his interest in current events. Although predeceased by many of his contemporaries, there are still many who will regret to hear of the passing of an attractive and lovable personality.

GEORGE WILSON, M.D.,

Formerly M.O.H. Mid-Warwickshire.

We regret to record the death of Dr. George Wilson, which took place at his residence at Colwyn Bay on September 11th. He took the degree of M.A.Aberd. in 1860, graduated M.B., C.M. at the University of Edinburgh in 1863, took the degree of M.D. in 1872, and received the honorary degree of LL.D. from the university in 1894. He took the diploma of D.P.H.Camb. in 1891, and was a Fellow of the Royal Society of Edinburgh. He had been medical officer of health for the Mid-Warwickshire Combined Districts for over thirty years, when he retired, owing to ill health, in 1909.

He was the author of a *Handbook of Hygiene*, very well known to students a generation ago. Into the eighth edition, published in 1898, Dr. Wilson introduced his somewhat heterodox views on bacteriology and the causation of disease; the book ceased on that account to be of value as a textbook, and no further editions were called for. In his presidential address to the State Medicine Section at the annual meeting of the British Medical Association at Portsmouth in 1899 he gave expression to similar views, which were much criticized at the time. He was a member of the Royal Commission on Vivisection, 1906; he signed the main report, and declined to be regarded as a representative of the antivivisectionists, but appended a lengthy reservation memorandum to the final report issued in 1912.

After his retirement he travelled for some years in Italy and other countries, but finally settled in Colwyn Bay, where the climate seemed to suit him. He suffered from cataract, and in spite of an operation the comfort of his later years was seriously interfered with by dimness of vision.

We regret to record the death of Dr. Benjamin Pope Viret of Bradford, who died on September 16th in his 55th year. Dr. Viret was educated at St. Paul's School and at St. Bartholomew's Hospital. In 1890 he obtained the diplomas of L.R.C.P.Lond. and M.R.C.S.Eng., and in 1893 he graduated M.B.Lond. After holding an appointment as house-surgeon to Dorset County Hospital he entered into private practice in Bradford, where he remained for the last twenty-four years of his life. He was for many years a member of the British Medical Association and of the Bradford Medico-Chirurgical Society, and he held the appointment of one of the factory surgeons in the city. A cultured man of wide reading, he was devoted to his profession, and did not seek the public eye. His death occurred with tragic suddenness from septic pneumonia following an infected wound contracted while he was engaged in professional duties. He leaves a widow and three children.

Professor Oswald Schmiedeberg, one of the founders of modern pharmacology, and editor of *Archiv für Experimentelle Pathologie und Pharmacologie*, has recently died at the age of 83.

Universities and Colleges.

UNIVERSITY OF GLASGOW.

The following degrees were conferred on October 17th:

M.B., Ch.B.—*D. F. Cappell, †H. Murray, †J. Wilson, †J. G. Craik, †A. H. Rankin, Alice A. Alexander, Edith A. Allan, Mary Baird, Muriel C. S. Balfour, J. J. Black, A. L. Brough, G. Brown, M. Brown, Muriel J. Brown, D. S. Buchanan, A. J. G. Caporn, Christabel L. M. Charlesworth, A. Chisholm, Jessie D. Christie, J. Connal, D. F. Craig, Margaret B. C. Craig, Elizabeth M'V. J. Currie, J. S. Currie, A. C. Dewar, J. Dewar, Vina C. Mack, Donaldson, A. M'D. Douglas, M. Douglas, R. K. Duguid, J. A. Dunlop, A. Gibb, Margaret E. Gibson, Mary D. Gilmour, Christina Gray, A. H. Greig, Beryl Grieve, J. A. Hamilton, J. K. Holmes, B. Isaacs, Susan M. S. Jamieson, F. J. Kitt, F. B. C. Livingston, Elizabeth K. B. Lockie, J. M'Dougall, Edith M. F. M'Gill, Janet S. S. Mackay, W. B. M'Queen, A. Main, T. D. Marshall, D. Meikle, N. Meilamed, Hettie M. W. Miller, M. J. Miller, Edith M. Neilson, Margaret R. Oulton, Catherine A. B. Pettigrew, Annie G. Pollock, Annabella A. Reid, Enid A. Robertson, I. MacR. Sandilands, Jessie G. Service, Marion Smellie, A. Smith, C. M. Smith, Margaret Sproule, Janet F. Steel, D. Stewart, Jane W. Stocks, Helen Y. Stoddart, John M'L. Strang, Eva M. Sturrock, H. V. Sweeney, Dorothy B. Thomson, Edith I. Thornley, R. R. Waters, C. M. Whiteford, Janette R. Wilson, Elizabeth M. Wyllie, J. Young, J. Yule.*

James R. Learmouth, who graduated on July 18th, 1921, gains the Brunton Memorial Prize of £10, awarded to the most distinguished graduate in medicine of the year.

* With honours. † With commendation.

UNIVERSITY OF CAMBRIDGE.

The following candidates have been approved at the examinations indicated:

Diploma in Psychological Medicine.—*Part I:* M. A. Archdale, D. N. Hardcastle, S. Kelly, R. A. Noble, W. D. Wilkins.

Sanitary Science (*Both Parts*).—†W. Buchan, ‡Dagmar F. Curjel, M. L. Dhir, *†‡J. H. Fairweather, *‡R. French, W. S. Gross, B. C. Haller, W. J. G. Henderson, G. W. Mitchell, P. Parthasarathy, *§K. R. Rao, H. Roger, G. W. Shore, Isabel S. Thomson, A. Tirumalaiya, E. L. Warner, R. Welch, *W. L. Yell.

* Distinguished in Principles of Hygiene. † in Bacteriology. ‡ in Practical Chemistry. § in the application of Sanitary Science.

UNIVERSITY OF ST. ANDREWS.

The following candidates have been approved at the examination indicated:

Third M.B., Ch.B. (*Pathology*).—T. Christie, L. Farrell, L. R. Khan, Ena McA. Liddell, J. R. Murray, N. Nelson, J. Petrie, J. A. Robb, D. B. Smith.

UNIVERSITY OF LONDON.

St. Thomas's Hospital.

The following entrance scholarships at St. Thomas's Hospital Medical School have been awarded for the sessions 1921-22:

Entrance Scholarship in Arts, £25: R. A. Hill. Entrance Scholarship in Natural Science, £150: J. M. Ashton. Entrance University Scholarship, £100: divided between R. J. V. Pulvertaft and C. A. Lupton.

UNIVERSITY OF SHEFFIELD.

Mr. E. H. Eastwood, M.B., Ch.B. Liverpool, has been appointed Demonstrator in Pathology and Bacteriology in succession to Dr. N. E. Challenger, resigned.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

At the last meeting of the Council of the Royal College of Surgeons in Ireland the following appointments were made: Professor of Surgery, G. J. Johnston, M.B., R.U.I., F.R.C.S.I.; Professor of Pharmacology, R. J. Rowlette, M.D., F.R.C.P.I.; Professor of Materia Medica, J. W. Biggar, M.B., M.R.C.P.I.

CONJOINT BOARD IN SCOTLAND.

The following candidates have been approved at the examination indicated:

Final Examination.—*Medicine:* E. J. Allan, A. R. Lambie, A. S. Wickreme mghe, P. Madan. *Surgery:* A. M. Samarasinghe, Jemima M. McK Calder. *Midwifery:* A. M. Samarasinghe, E. J. Allan, A. R. Lambie, A. V. Berge, L. R. Bergson, P. Madan, S. Ghaleb, M. S. Hassen, Jemima M. McK. Calder, F. P. Lisboa-Pinto. *Medical Jurisprudence:* Lilian M. Williams, M. Burn, J. M. Crombie, A. A. Dewar, W. O. Rodrigo, J. A. McE. Evers, J. M. McInnes, J. J. Mann, I. Rostowsky, O. Popper, T. J. Muir, Elizabeth Clark, Isobel Reid.

The following candidates having passed the Final Examination have been admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:

V. P. Menon, J. B. Dobson, H. P. Samuel, H. Penn, G. J. Lamprecht, Grace O. D. Evans, J. I. Hagard, Pauline Figdor, J. K. Sen, H. W. Amyes, P. E. Malloch, L. Ee Liat, S. C. Alcock, F. Walwyn, W. Campbell, L. H. Peries, J. B. O'Neill, A. R. Bellum.

The Services.

TERRITORIAL DECORATION.

The Territorial Decoration has been conferred upon the following officers:

Territorial Army: Colonel John F. Haswell, C.I.E., M.D., V.D. (Hon. Lieutenant in Army. Army Medical Service. Colonel John Clay, C.B.E., Hon. Lieutenant in Army), Royal Army Medical Corps. Lieut.-Colonel Charles O. Parsons, 2nd Welsh Field Ambulance; Major John H. Hobling, 2nd South Midland Field Ambulance; Major George B. Robinson, D.A.D.M.S., Home Counties Divison.

Territorial Army Reserve, Royal Army Medical Corps. Lieut.-Colonel (Brevet Colonel) Charles J. Jacomb-Hood, attached 2nd Eastern General Hospital (ret.).

At the twenty-eighth meeting of the Italian Society of Surgery, which will be held in Naples from October 25th to 27th, at the same time as the meeting of the Italian Society of Internal Medicine, the treatment of empyema will be discussed at a conjoint meeting of the two societies, the surgical aspects of the subject being dealt with by Professor Schiassi. The other subjects for discussion will be the treatment of visceral ptosis, introduced by Professors Donati and Parlavecchio, and the treatment of renal tuberculosis, introduced by Professor Marogna. At the twelfth meeting of the Italian Society of Orthopaedics, which will be held concurrently at Naples next week, under the presidency of Professor Bastianelli, the following subjects will be discussed: Osteochondritis coxae juvenilis, introduced by Professor R. Galeazzi; treatment of spondylitis, introduced by Professor R. Dalla Vedova.

Medical News.

The new session of the Hunterian Society will open on Wednesday, October 26th, at 9 p.m., when Professor E. H. Starling will deliver the first Hunterian Society lecture, entitled "Some heart problems." The lecture will be given at the Sion College, Embankment, E.C.1 (close to Blackfriars Bridge). All members of the medical profession are cordially invited to be present.

Former residents and students of the Prince of Wales's Hospital who have not received a notice of the inaugural dinner to be held at the Trocadero Restaurant on Thursday next, can obtain particulars from Mr. H. W. Carson, 111, Harley Street, W.1.

A course of six lecture-demonstrations for a limited number of practitioners will be held in the X-Ray Department, Manchester Royal Infirmary, on Mondays, commencing Nov. 14th. The fee for the course will be £3 3s. Applications should be made to the Hon. Medical Officer, X-Ray Department.

McGill University, Montreal, on the occasion of the recent celebration, conferred the honorary degree of LL.D. on Mr. J. B. Lawford, consulting ophthalmic surgeon to St. Thomas's Hospital and to the Moorfields Hospital. Mr. Lawford, who received part of his medical education at McGill University, graduated M.D., C.M. in that University in 1879.

The Committee of the Yarrow Home for Convalescent Children, Broadstairs, is anxious that it should be generally known that the fees payable for admission of children are dependent in a measure on the means of the parents. The basis payment at present is 21s. a week, but this is subject to addition or deduction according to the means of the parents. It is hoped thus to get the maximum good and to permit those who can afford to pay more than 21s. to have the opportunity of so doing, and thus enable the institution to admit children whose parents are unable to pay the full amount. The institution is intended for children of refined and cultured parents. The secretary in London is Miss Chambers, 116, Victoria Street, S.W.

Dr. Samuel Gawn, on the occasion of his retirement after thirty years' practice in Antrim, has been presented by his friends with an address and a cheque as a token of their esteem and in appreciation of his valued services. Mrs. Gawn was included in the presentation.

The Alvarenga Prize of the College of Physicians of Philadelphia for 1921 has been awarded to Dr. John W. Churchman, of New York, for his essay on "Selective bacteriostasis of gentian violet." The next award will be made in July, and essays in competition, in English or with an English translation, must be received by the secretary of the college on or before May 1st, 1922. The prize is of the amount of 300 dollars and is given for an essay deemed to be of sufficient merit on any subject in medicine.

At the fifth examination of the Central Midwives Board for Ireland on October 4th, of the 70 candidates who entered 2 did not present themselves; of the remainder, 60 passed.

The Municipal Council of Paris has decided to establish a municipal institute of electrotherapy at a cost of 1,185,000 francs.

On the occasion of the recent retirement of Dr. N. H. Choksy, the *Times of India* reviewed at considerable length the work he did in Bombay during a momentous period in the medical history of that city. Dr. Choksy, who was educated at the Grant Medical College and qualified in 1884, was appointed to the small-pox hospital in 1888, and has since been in charge of it, first in Grant Road and afterwards in Arthur Road, Bombay. During the five epidemics of plague from 1896 to 1901, this hospital was, at first, the only public hospital in Bombay, so that the brunt of the work connected with these serious epidemics fell upon Dr. Choksy. The number of deaths from plague led to riots among the superstitious population in the neighbourhood of the hospital, and Dr. Choksy's work had to be carried on for a considerable period under the protection of troops. In subsequent years he had to fight successive epidemics of plague, relapsing fever, cholera, and small-pox, and was recognized, both in official circles and abroad, to have performed most valuable work. Dr. Choksy took a leading part in all public health questions; he was at one time president of the Bombay Medical Union, and since 1912 has been an elected member of the Bombay Medical Council. He is also an old member of the British Medical Association.

THE twenty first annual dinner of the Chelsea Clinical Society will be held on Tuesday, October 25th, at the Café Royal, Regent Street, W.1, at 7.30 p.m.

TWO extraordinary general meetings of the Medical Sickness Annuity and Life Assurance Society, Ltd., were held at its offices, Lincoln House, 300, High Holborn, W.C., on October 17th, under the chairmanship of Dr. W. K. Sibley, when the resolutions adopted at the meetings on September 26th (BRITISH MEDICAL JOURNAL, October 1st, p. 530) extending the scope of the company's work and also to alter the present article of association governing the directors' fees were confirmed.

THE annual general meeting of the National Baby Week Council will be held on Tuesday, October 25th, in the Armitage Hall, 224, Great Portland Street, at 3 p.m., under the presidency of the Viscount Astor, Chairman of the Council. The principal speaker will be Dr. Allen Daley, medical officer of health for Blackburn, whose subject will be, "The economic value of maternity and child welfare work." The address will be followed by a discussion. Tickets for the meeting may be obtained from the Secretary to the Council at 5, Tavistock Square, W.C.1.

MISS J. MELROSE, R.R.C., retired at the end of August from the post of matron of the Glasgow Royal Infirmary; she had been in the service of the hospital for thirty-five years, first as nurse and for the past fourteen years as matron.

THE *Nederlandsch Tijdscrift voor Geneeskunde* states that during August 928 deaths from plague occurred in Java.

AT the last meeting of the Glasgow University Court it was intimated that Sir John Ainsworth had presented to the university a portrait of the late Dr. John M. Pagan, who was professor of midwifery at Glasgow from 1840 to 1868.

THE *Weekly Bulletin* of the New York City Department of Health for September 10th states that the number of cases of venereal disease reported to the Health Department is too small to justify the drawing of any conclusions from the figures as to the prevalence of venereal disease in the city; it is noted that very few cases are reported by genito-urinary specialists. During the year 1920 the total number of venereal cases reported from all sources was 23,977, a decrease of 1,142 cases as compared with the total number reported in 1919.

THE report for the year 1920 of Dr. Barnardo's Homes—the fifty-fifth annual report—reflects in a very emphatic manner the magnitude of the work which this well-known charity is carrying on. On January 1st, 1920, there were 7,280 children under the care of the homes, and during 1920, 1,345 were permanently admitted to them, and 557 more were temporarily sheltered; the total number of children dealt with during the year, including those in Canada, was 20,279. Since 1866, 91,001 boys and girls have entered the homes. During the past year there were initiated departments for massage, electro-therapy, and physical remedial exercises at three branches of the homes, and it is reported that already much benefit has been received by the disabled crippled children there. Dr. G. Gushue-Taylor was during the year appointed chief medical officer in succession to Dr. Milne. The death rate for the year was only 8.45 per thousand.

THE annual dinner of the Surgical Instrument Manufacturers' Association (Incorporated) was held at the Royal Adelaide Galleries, Strand, on October 14th, under the presidency of Mr. Arthur W. Down. In proposing the toast of "The Surgical Instrument Manufacturers' Association," Dr. H. T. Maw said that the Association was flourishing, and that the annual report would give a very fair idea of what had been accomplished. With other bodies, it had taken effective action in regard to the Proprietary Medicines Bill, which, if passed, would have imposed unjustifiable restrictions on the sale of surgical appliances, and would have endowed the Minister of Health with autocratic powers in the granting of licences for sale. The question of the marking of all clinical thermometers, including those imported, with the letters N.P.L., which would have placed the British-made article at a disadvantage, was taken up with the Board of Trade. A bill which would have perpetuated the injustice was dropped, at least for the time. The Association had naturally taken the keenest and most active interest in the Safeguarding of Industries Bill, Dr. Maw expressing the opinion that the present position as to unemployment was due to inflated wages, combined with limitation of output. It was the workers themselves who suffered most, but, unfortunately, the Government had led them to believe that somewhere there was an unlimited fund from which wages could be supplemented, and they failed to realize that if the public declined to pay the prices asked there could be no trade, and consequently no wages. The Surgical Instrument Manufacturers' Association intended to fight for fair wages for a fair day's work.

AT the recent meeting at Droitwich of representatives of the British Spa Federation (Bath, Buxton, Cheltenham, Leamington, Droitwich, Harrogate, Llandrindod Wells, and Woodhall) Mr. J. H. Hollyer, director of the Droitwich Baths, referred to the fact that at some Continental resorts the doctors not only ordered a system of diet, but saw that the hotels provided it, while the hotel proprietors also arranged the hours of meals to suit the needs of those taking treatment. British hotels and other establishments were prone to view the matter in a commercial spirit, and fixed meals which were often inconvenient for invalids, and, moreover, resulted in great pressure at the bath-houses during certain times of the day. In fact, English spas were lacking in the co-ordination which had done much to popularize foreign resorts. He regretted the lack of knowledge of the value of the various English springs and of spa treatment generally amongst medical men other than those practising at the spas; this was largely because the study of spa treatment was not a part of the medical curriculum. Much might be done to improve matters by the establishment of chairs of hydrology in the University of London and elsewhere.

IT is announced from Geneva that a Jewish organization, the Red Shield of David, has been formed, which will be managed on the same lines as the Red Cross, and which intends to work in association with the League of Red Cross Societies and the Red Crescent. Several leading Jewish medical men and philanthropists are at the head of the movement.

THE twenty-sixth Dutch Congress of Public Health will be held on November 11th and 12th at Arnheim, when a discussion on the destruction of vermin will be opened by Drs. H. G. Ringeling and Wolff.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*, telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediseva, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

J. P. D. Applications by those entitled to war medals should be made to the Medals Branch, War Office, Pilgrim Street, London, E.C.4.

INCOME TAX.

"DUPLEX" asks for the grounds on which it has been stated that cash coming to hand after the practitioner has retired from work is not liable to income tax in his hands.

It is an established principle of income tax law that an assessment to tax can be made only in respect of an existing source of income. An assessment on professional earnings can therefore be made only so long as the professional work continues. The cash subsequently received differs in no real sense from the realization of a trader's assets when he has ceased to trade, and his book debts are no more liable to taxation than the value of his stock-in-trade when realized. While a medical practitioner is in professional work he is assessed to tax for his *full* income—measured for convenience on the (gross) basis of his cash receipts—and his liability

ceases as from the date of his retirement. Conversely, when a practitioner commences the Revenue officials decline to accept as a fair basis of assessment the gross receipts in cash, claiming, and rightly so, that in such a case the cash basis does not provide a fair measure of the value of the full earnings of the practice; it is surely clear that if a practitioner is thus called upon in the early years of his work to pay upon more than the cash receipts, he should not be held liable at the end of his work in that practice to account for tax on the then unrealized arrears of fees. It would be interesting to know whether in this case "Duplex's" successor is paying on a cash basis only; if so, he would seem to be assessed at less than his full earnings; if not, then a portion of the income of the practice is being charged to tax twice over.

"A. R." asks: Can a practitioner claim an allowance for depreciation of his car? If so, on what basis?

*** An allowance for depreciation is given by the statute only in the case of trades, manufactures and similar concerns; it does not apply to professions. [This injustice was represented to the recent Royal Commission by the Treasurer of the British Medical Association.] What a practitioner is entitled to is to regard the cost, as at the date when it was incurred, of replacing a car as a current professional expense.

"G. E. P." bought a second-hand car in 1919 for £170 and sold it in August, 1921, for £150, buying a new car for £500.

*** The cost of renewal is £*x*–£150, £*x* being the cost as at the date of purchase of the £500 car, of a car of similar power, quality, and condition to that purchased in 1919. Any expenditure over and above that amount represents capital laid out in improvements.

"C. G. R." bought a new 15 h.p. Studebaker (1917 pattern), laid it up during the war, and cannot now obtain spare parts or sell the car. Last year he bought a new Eric Campbell 10 h.p. car for £530. The inspector proposes that an allowance of £350 should be made, less £100 for the estimated selling price of the old car.

*** As regards the old Studebaker, if it is useless we suggest that our correspondent might get rid of it for what he can obtain and so have a definite basis of claim. The £350 figure may be right or not; the amount should be the 1920 cost of a new 15-h.p. Studebaker or a similar car.

"R. P. R." and his partner have taken over a practice and are being assessed on their bookings, less 20 per cent. for bad debts, instead of on the cash receipt basis. He asks if this is correct.

*** Yes; the assessment has to be made on the full income of the practice, and it is only when the practice has been worked for a year or two that the cash receipts will furnish a proper measure of that income.

ALLOWANCES FOR REPAIRS.

"J. D. D." inquires as to the recent extension of the allowances to owners for the cost of repairing property. He owns his own residence.

*** The law on the subject is contained in the following sections: Income Tax Act of 1918, Rule 8 of No. 5 Sch. A, Finance Act, 1919, §19, and the Finance Act, 1920, §29. Their combined effect is that a claim to repayment may be made on the excess of the average cost of upkeep for the five preceding years over the flat rate allowance made automatically in the form of the deduction of one-sixth from the gross rental. The expenses forming the subject of claim would include all those which would normally be incurred by a landlord letting a house on an annual tenancy, but excluding improvements, and would cover fire insurance.

LETTERS, NOTES, ETC.

A DISCLAIMER.

DR. J. R. BENTLEY (Limpsfield, Surrey) writes: There has recently appeared in the popular press an account of some cases of belladonna poisoning. My name was mentioned in connexion with them, but the account was published without my knowledge or consent.

FAITH OR FACT?

DR. HAYDN BROWN (London, W.) writes: It is reported in the BRITISH MEDICAL JOURNAL of October 15th, 1921, that Sir Frederick Mott, in his address on the occasion of the prize distribution at Charing Cross Hospital on October 5th, remarked that "if he had the opportunity of again teaching physiology he would, especially in the light of the experience of the last eight years, give a special attention to the influence of the mind on the body, and of the body on the mind. It had always seemed to him that doctors had neglected this branch of medicine too much, and the consequence had been Christian Science, faith healing, neuro-induction, and other modes of inspiring faith.". Thus he has so obviously classed neuro-induction with faith healing that I have had letters from medical men expressing a good deal more than astonishment. I am the author of nearly 1,000 pages on neuro-induction published for medical men, and there is studious avoidance of either mystery or faith healing from beginning to end. The technique directly forbids any blind confidence; it involves throughout the most perfect system of direct education for mentally disordered patients to be found in medical literature. Sir Frederick Mott's words are offensive to those medical men who know that neuro-induction is instinct with true and valuable science, and I sincerely trust that you will in all fairness give me space in the JOURNAL to refute his misleading reference to my work.

DEGREES AND DIPLOMAS.

"TRIPLE QUAL. 1883" writes: This is a very old grievance. Years ago I contributed much to this discussion. I suggested then, and now, one degree, M.D. for Great Britain, attainable by any legally qualified practitioner after, say, five years' practice. No university should be allowed to confer a degree higher than M.B. One British coalition of universities and colleges should examine for the only M.D. (Great Britain). Every physician and surgeon could then, in a reasonable time, get upon an equal footing, if so disposed. Until that time I advise all practitioners to call themselves Doctors, if they wish, as by courtesy they always are called.

"CONJOINT" writes: My working years are drawing to a close, and such success as I deserve—or perhaps more than I deserve—has been mine; so that the following remarks are not written during the aftermath of failure. The teaching and material for training the London medical student is second to none in the world. The possessor of the "Conjoint" qualification holds a high place in competitive examinations. Until a few years ago the College of Physicians of London did not permit its licentiates to use the title "Dr." A member of the Royal College of Surgeons has often not the time, money, or perhaps the mental capacity, to study for the Fellowship, and so goes elsewhere to get a similar sounding title. The general practitioner has to live, and public appointments are a certain form of income; these appointments are generally made by representative bodies, who naturally think more of a Bachelor of Medicine than a Licentiate, or of a Master of Surgery than a member of a college, the M.D. in their opinion is the acme of greatness, no matter where obtained. The Colleges of Physicians and Surgeons of London must insist on obtaining the power of conferring degrees. They must "wake up." They are eminently cultured and held in high esteem by the profession—two virtues liable to be non-creative. Parliament would not refuse the means of getting over legal difficulties, as it would be no cost to the State. Surely it is for our professional leaders to lead. My advice to those desirous of entering the medical profession is the following: "London will give you the best teaching and material and the worst professional label, so unless you have the capacity to take the M.D.Lond. and the F.R.C.S.Eng., go to a provincial school where you can get a better professional title; you can utilize London later." It is interesting to note the number of men holding the London University degree on the London hospital staffs; the majority hold provincial degrees. My protest is a hardy annual, and I fear the powers that be will let it remain so.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 32, 33, 34, 35, and 36 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30, 31, and 32.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
Each additional line	0 1 6
Whole single column (three columns to page)	7 10 0
Half single column	3 15 0
Half page	10 0 0
Whole page	20 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address

ON THE

CLINICAL TYPES OF CONVULSIVE SEIZURES IN VERY YOUNG BABIES.

WITH A SPECIAL CONSIDERATION OF THE SO-CALLED "IDIOPATHIC CONVULSIONS OF EARLY INFANCY," AND THEIR TREATMENT.

BY

JOHN THOMSON, M.D., F.R.C.P.EDIN.,

CONSULTING PHYSICIAN TO THE ROYAL EDINBURGH HOSPITAL FOR SICK CHILDREN.

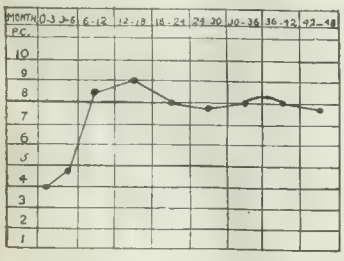
THERE are few clinical phenomena more familiar to us as medical practitioners than the convulsions of infancy, and very few which present more features of interest. We have learned many things about their causation and results, but there is still a great deal waiting for us to find out by careful clinical observation, as well as by the, to some extent, more exact methods of the laboratory. You will therefore, I hope, agree with me that they form a theme to which we may profitably turn our thoughts for a short time.

As the subject of infantile convulsions in general is rather large and many-sided to be considered adequately in one lecture, I propose to limit my remarks to a consideration of the causation, diagnosis, prognosis and treatment of those varieties of convulsive seizure which may be met with in very young children—those of three months old and under—and to draw your attention particularly to the clinical features, treatment and etiology of a type of so-called "idiopathic convulsions" in little babies which presents a number of points of especial interest.

One small detail regarding the incidence of fits in infants at this age may be noticed in passing—namely, that, in spite of the frequency of birth injury to the brain, which acts as a cause of convulsions mainly in the first week, and the occurrence of certain other forms of convulsions in young babies which are rarely present in later infancy, fits are less common in the early weeks of life than in older infants. Probably the main reason of this is that spasmophilia, which has such a strong effect in producing a convulsive tendency, is never seen before the third and only rarely before the fifth month.

The accompanying table and chart show the frequency with which first convulsions occurred at different age periods in 4,348 children under 4 who attended my out-patient clinic many years ago.

Percentage of Cases of Convulsions beginning in different Six-month Periods, among 4,348 Out-patients under Four Years old.



Age at time of first Convulsion					Percentage.
	Age Period.				
Birth to	3 months			...	3.5
3 mths. to	6 mths			...	4.2
6	,,	12	,,	...	7.8
12	,,	18	,,	...	8.8
18	,,	24	,,	...	7.3
24	,,	30	,,	...	7.1
30	,,	36	,,	...	7.5
36	,,	42	,,	...	7.6
42	,,	48	,,	...	7.2

It will be seen that the fits began during the first three months in only 3.5 per cent. of the cases, during the second six months in nearly 8 per cent., during the third six months in nearly 9 per cent., and during the later six-month periods in between 7.1 and 7.6 per cent. of the cases.

I have recently been studying the notes of 200 cases of convulsions in infants of 3 months and less. These have brought out some points of practical interest; and it is chiefly to the information derived from them that I wish to direct your attention now.

CAUSES OF CONVULSIONS.

The causes of convulsions in very young babies are numerous and of many kinds. These, so far as I have been able to diagnose them in my cases, may be divided into three groups.

A. *Local Injury or Disease of the Brain or its Membranes.*

1. Birth injury (intracranial haemorrhage, etc.)	37
2. Meningitis	7
3. Hydrocephalus	4
4. Other brain lesions (acquired and congenital)	5
5. Congenital idiocy from arrest of cerebral development (with *petit mal*)	18

B. *Cerebral Disturbance due to Acute Disease of Organs other than the Brain.*

1. Food disorders (functional and organic dyspepsia	46
2. Jaundice of various kinds	2
3. Genito-urinary (infection of the urinary tract with *Bacillus coli*, etc.)	5
4. Bronchitis and bronchopneumonia	8
5. Choroiditis, otitis, congenital heart disease ...	4
6. Unknown causes	7

C. *Cerebral Disturbance connected with Various Forms of General Infection and of Debility.*

1. General tuberculosis	7
2. Congenital syphilis	10
3. Debility	2
4. Whooping-cough	3
5. "Idiopathic convulsions"	35

The number of cases due to each of the various causes in this list cannot be held as representing accurately the relative frequency of the different causes as they occur in ordinary practice, for they have been taken almost only from hospital and consultation practice, in which the cases due to more serious and unusual causes necessarily bulk much more largely than those which are obviously the result of passing conditions, such as indigestion.

Let us consider these various causes one by one in detail.

A.—LOCAL INJURY OR DISEASE OF THE BRAIN OR ITS MEMBRANES.

1. *Birth Injury.*

Injury to the brain during labour, which is often accompanied by intracranial haemorrhage, is a frequent cause of death at or soon after birth. Although most of the children with such injuries are stillborn or die within a few hours, there are many who survive, and in later life a large proportion of these present physical or mental signs of severe and permanent brain lesions. Convulsions are among the earliest and most striking symptoms in these cases.

When convulsions arise from this cause they almost always begin within the first few days of life, and certainly a large majority of the babies who take fits before the end of the first week are suffering from some intracranial lesion of this sort.

Thirty-seven of my 200 cases of convulsions evidently belonged to this group. In more than three-quarters of these (29) the fits began on the first, second, or third day, and only in five were they deferred beyond the first week. Boys were much more often affected than girls (29 to 13).

The diagnosis of brain injury as a cause of convulsions in any case depends on the character of the labour—on whether it was premature, on the date of the onset of the symptoms, and on the child's condition at and soon after birth, especially on the occurrence of asphyxia, with difficulty in getting respiration established. The diagnosis is strongly confirmed if the fontanelle is found to be bulging soon after birth, or if the fluid obtained by lumbar puncture is blood-stained.

Much valuable light on the morbid anatomy and etiology of birth injuries to the brain may be obtained from such recent work as that of F. J. Browne[1] and Eardley Holland[2] on the causes of stillbirth. The subject is too large to be fully considered here, but I should like to draw your attention to some of the statistics in Dr. Browne's able and practical paper, and especially to his conclusions as to how the risk of such injuries may be lessened, or altogether prevented, by care on the part of the obstetrician.

In many circumstances the adventure of birth is inevitably a more or less perilous matter for the baby; but it seems certain that by forethought and patience, and by choosing, when possible, those methods of delivery which have been found to be safest for the child, a great deal can be done to lessen or prevent the risk of intracranial

* Delivered to the Manchester Medical Society on October 5th, 1921.

injury. Dr. Browne's conclusions seem to me of great practical value, and he has kindly allowed me to quote them here.

Cerebral haemorrhage was found in 29.5 per cent. of 200 cases of infants who were either stillborn or died soon after birth. The condition was ten times as common after breech as after vertex presentations. In vertex cases it was met with mainly in difficult forceps deliveries, but it was also apt to occur in ordinary easy forceps cases if the labour was hurried for any reason. It was never found in any case of full-time vertex presentation when the labour had been natural.

One of the commonest lesions found in stillborn children is tearing of the dura mater. This lesion was present in 37 per cent. of the 94 cases in which it was looked for; but in only 40 per cent. of these had it caused any haemorrhage. It was about sixteen times as liable to occur in breech as in vertex presentations; indeed, some damage to the dura mater was found in all breech cases, whether easy or difficult, full-time or premature. In vertex cases tentorial tears were found, mostly after difficult forceps deliveries, but they occurred sometimes in spontaneous deliveries, when the labour had been prolonged and moulding of the head had therefore been excessive. Tentorial tears were never found after normal vertex deliveries.

Prematurity appeared to be a serious cause of cerebral haemorrhage; and premature babies, especially those between 7 and 7½ months, seemed to be about sixteen times more likely than full-time infants to suffer from this lesion. In them the haemorrhage was not due to tears of the dural septa, but was probably to be accounted for by overfilling and bursting of the fragile cranial veins, along with decreased coagulability of the blood. It occurred about seven times as often in breech as in vertex cases. A haemorrhagic diathesis played, apparently, no important part in the causation of the bleeding.

Intraventricular haemorrhage occurred in 8.5 per cent. of the cases examined. It was found in premature cases only, and seemed to be due to the same conditions as have already been mentioned as accounting for other forms of intracranial haemorrhage in premature babies. No symptoms were noticed in these cases which could have given grounds for a diagnosis of the condition during life; and there was no reason to think that any of them could have been permanently cured by operation for removal of the clots.

It is significant that only two of Dr. Browne's cases were considered to have received adequate antenatal supervision. The points which Dr. Browne recommends to be kept in view for the prevention of cerebral haemorrhage during delivery are the following:

1. *Avoidance of breech deliveries*, by cephalic version of breech presentations at a period when this is always possible—namely, not later than the seventh or eighth month.

2. *Avoidance of Difficult Forceps Deliveries.*—This is only possible when there is careful antenatal supervision of every case.

3. *Avoidance of induction of premature labour*, certainly till after eight months; better still till after eight and a half months.

4. *Manual dilatation of the parturient canal* for the passage of the premature infant, and preservation of the membranes unruptured as long as possible.

5. Finally, after the study of a large number of cases, it was found impossible to avoid the conclusion that it was only by *adequate antenatal supervision of every pregnant woman* that the present high morbidity rate from cerebral haemorrhage could ever be seriously diminished.

Prognosis.—A serious prognosis must, of course, always be given when there is evidence of a severe birth injury to the brain having occurred. Many of these cases recover to a surprising degree; but the outlook is always anxious, even when the grave symptoms have apparently passed off completely. In several children who have seemed to make a satisfactory recovery, I have found some degree of mental defect or instability, or a tendency to epileptic seizures, in later childhood. Spastic rigidity of the limbs not infrequently develops, and this condition, even when it is very slight in degree, is likely to persist through life.

Treatment.—Early operation to remove the intracranial clots has been recommended by Cushing and other surgeons; but it is very doubtful whether this is often of permanent benefit. Certainly, in most cases, nothing can be done beyond careful attention to the general nutrition and treatment of any symptoms that may arise.

2. *Meningitis.*

In seven of my cases the fits were evidently due to this cause. In the last four of them meningococci were found in the cerebro-spinal fluid, and the others were probably due to the same cause. Six of the children died and one recovered with hydrocephalus.

3. *Hydrocephalus.*

In four other cases internal hydrocephalus of uncertain origin was present. Two of these died in infancy and the others survived to adolescence; one of them was feeble-minded and the other idiotic.

4. *Other Brain Lesions.*

Other brain lesions of a more or less obscure nature were found in five cases.

5. *Congenital Brain Defect with Petit Mal Attacks.*

One sees many cases of this type during the earlier part of the first year of life. Eighteen of my 200 cases in very young babies belonged to it. A large majority of the patients (13) were girls. In most of the children the attacks began very insidiously, and their grave significance was generally overlooked at first by the parents, who referred to them as "turns," or "faints," or "starts."

The seizure generally consists in a sudden momentary jerk forward of the head and shoulders, with the arms extended and somewhat adducted and pronated. The child loses consciousness for a few seconds, and on coming round often cries bitterly as if in pain. After the attacks have gone on recurring for a year or two they are apt to be accompanied or replaced by regular epileptic seizures. Sometimes, though by no means always, the parents have noticed from the first that the baby has not been as bright as she should have been. Always, as she grows older, she becomes less and less intelligent, the mental deterioration being much more rapid when the fits are numerous, and some slight improvement usually occurring, during the earlier stages of the case, when they are few in number or absent for any time. The child is very late in holding up her head, if she is ever able to do so; and the cranium remains far too small.

Etiology.—The causation and pathology of this condition is, so far as I know, quite unknown. The fits are probably connected with a congenital arrest of development of the brain cells. The mental defect is due mainly to the same cause, but it is always aggravated, as already mentioned, by continuance of the attacks.

The *prognosis* is extremely bad. The children all become quite idiotic, although they may live to adolescence or even to adult life.

The *treatment* also is most unsatisfactory. Bromides and chloral are rarely even of temporary advantage. Occasionally a tonic or some regulation of the diet may cause improvement in the symptoms for a time; and now and then a feverish illness, such as measles, may have a similar effect. I have also known a temporary lessening of the number of the attacks to follow a change of climate or more open air.

B.—Cerebral Disturbance due to Acute Disease in Organs other than the Brain.

1. *Digestive Causes.*

Indigestion of some kind accounted apparently for forty-six of my cases, and it is probable that a considerable majority of the cases of convulsions met with in young babies after the first fortnight is due to digestive derangements, either functional or organic. Fits are easily set up in infants who are debilitated by any kind of food disorder—especially by food intoxication with diarrhoea. When there is catarrh of the stomach with dilatation and retention of decomposing food, severe and repeated convulsions are common. This often occurs, for example, in cases of pyloric stenosis which are being unsuccessfully treated by medical measures.

In most cases of dyspepsia with convulsions the *treatment* consists in regulation of the diet—the "short cut" to recovery being the employment of a wet nurse.

In cases with gastric catarrh from prolonged retention of the stomach contents, washing out of the stomach at suitable intervals generally stops the fits at once.

2. *Jaundice.*

In two of my cases there was profound jaundice. In one of them its cause was obscure; the other was a case of congenital obliteration of the bile ducts.

3. *Genito-urinary Irritation.*

This is a frequent cause of severe nervous disturbance in babies, and sometimes gives rise to fits. If the urine is concentrated, highly acid and depositing uric acid crystals, as sometimes happens when a baby is taking too little fluid, high fever is not uncommon, and fits may occur. This was seen in two of my cases. In another the fits were apparently due to severe irritation from phimosis. In two cases the cause was genito-urinary infection with *Bacillus coli* (pyelitis or pyelonephritis). In infants over 6 months—especially in girls—this form of infection often causes rigors, and fits are rare. When the disease occurs in the early months of life, however, convulsions are much commoner than in older babies, and rigors rarely, if ever, occur.

4. *Acute Bronchitis or Bronchopneumonia.*

These accounted for six cases.

5. *Choroiditis; Otitis; Heart Disease.*

Choroiditis and otitis media seemed to be the causes in one case each, and congenital heart disease in two cases.

6. *Unknown.*

In seven cases no definite local lesion could be found, but there may probably have been some unrecognized source of reflex irritation.

C.—Cerebral Disturbance connected with Various Kinds of General Infection, or with Debility.

1. *General Tuberculosis.*

Fits are not uncommonly the chief symptom in the rare instances in which very young babies die of general tuberculosis. In these the infection often comes from a phthisical parent, and it usually starts in the respiratory tract. In three of my seven cases of this nature there were only a few convulsions. In the other four they were very numerous, and in this and in their other characters the symptoms somewhat closely resembled those met with in the "idiopathic" group. They were also usually checked for a time by the administration of chloral.

2. *Congenital Syphilis.*

In only 5 per cent. of the 200 cases did the children have evidence or a clinical history of syphilis. When we consider the large number of syphilitic babies seen in the early weeks of life and the frequency with which they are suffering from other causes of convulsions, such as severe dyspepsia and debility, it seems probable that a syphilitic taint has not in itself a very strong tendency to give rise to this symptom.

3. *Debility.*

In two of the cases nothing was found to account for the convulsions except extreme debility. They appeared as a terminal symptom.

4. *Whooping-cough.*

In the rare instances in which babies take whooping-cough in the early months of life fits are not infrequently met with. In these cases bromide has little or no effect, but the convulsions are generally stopped by the administration of chloral.

5. *The Idiopathic Convulsions of Early Infancy.*

The last type of convulsions to which I wish to direct your attention is one which has not received a special name, and for which no central, reflex, or other cause has as yet been discovered. We may therefore speak of these fits provisionally as "idiopathic convulsions." They generally occur during the early weeks of life; and they are not very common—for, in the last twenty-five years, I have only seen thirty-five cases in very young babies and two in rather older infants. They present, however, as we shall see, certain very interesting features, both in connexion with their treatment and with their possible etiology. Before dealing with the clinical features in more detail, the symptoms which occur in a typical case may be described shortly as follows:

Typical Case.—The patient, who is usually a boy, has been bottle-fed, and has hitherto seemed well in every respect. He has not suffered from any severe food disorder; there has been no reason to suspect the presence of a cerebral birth injury, and his mental condition has been normal. When two or three weeks old the child begins to have slight twitchings of the face and limbs, which recur at frequent intervals. These soon develop into regular convulsive seizures of short duration. After they have gone on for a day or two, the fits become very numerous—twenty to fifty in the day—and they may continue so for weeks, if the case is not successfully treated. During the short seizures the child is unconscious, and in the intervals he is usually drowsy.

The administration of bromide, even in full doses, has little or no effect in stopping the attacks; but if chloral is given cautiously and continuously in a sufficiently large amount, the fits not only cease rapidly, but do not return when the drug is discontinued; and the child grows up perfectly healthy in mind and body. There are reasons for suspecting that, if the treatment is not carried out effectively, the child's mental condition may be permanently damaged.

Details of the Clinical Features.

Sex.—A large majority of the patients were boys (25 : 10).

Family History.—In five of the cases there was a history of fits, or of great nervousness, in other members of the family. Three of the children were twins.

Character of the Labour.—Satisfactory details of the confinement were only obtained in a few instances, but, so far as could be ascertained from the mothers, the birth had been normal and non-instrumental in 19 of the cases. In 12 forceps had been used, but there had been little or no difficulty in any of these. The infant had shown signs of slight asphyxia at birth in three instances. Two of the births had been premature. In four cases no details were available.

Form of the Feeding.—In two of the cases this was not noted. In two others the children were on the breast, but it was almost certain that in both of these cow's milk had also been given. In the remaining 31 cow's milk, or some food made from it, was being regularly used. In no case had any connexion been noticed between a change of food and the beginning of the symptoms.

General Condition.—In two of the cases the child's general condition was not noted. One of the infants showed marked debility; in another the symptoms began during an attack of influenza. All the other patients (31) were said to have been in good health, and several of them were thought to have been above the average in vigour when the fits began.

Digestion.—In about half of the children there had been no indications of indigestion at all. In the others, slight dyspeptic symptoms, such as flatulence, occasional vomiting, loose motions, or constipation, were remembered by the mothers, but in no case had these been severe.

Onset of Symptoms.—The date of the first sign of the convulsions varied from the fifth day—in three instances—to the end of the twelfth week. (As I have already mentioned, I have seen two cases in which similar convulsions began later—in the sixth month in both instances. I shall not, however, include them here.)

Date of Onset of the Convulsions.

During 1st week in	6 cases	During 7th week in	3 cases
,, 2nd ,,	5 ,,	,, 8th ,,	2 ,,
,, 3rd ,,	7 ,,	,, 9th ,,	1 case
,, 4th ,,	4 ,,	,, 10th ,,	1 ,,
,, 5th ,,	2 ,,	,, 11th ,,	1 ,,
,, 6th ,,	2 ,,	,, 12th ,,	1 ,,

In most instances the earliest symptoms had consisted in a slight twitching of the face, arm, or leg, and this was usually unilateral at first; there was also some rigidity of the affected limbs in some of the children. These symptoms rapidly developed into regular short convulsions which soon became general, although they were often unilateral at first. After the first few days the character of the attacks remained the same, but their number increased

rapidly until there were often twenty to fifty, or even more, in the twenty-four hours. The period of unconsciousness accompanying the fits was very short, and the child was not noticeably cyanosed; but he generally remained somewhat drowsy during the intervals.

The *diagnosis* of this type of fits depends on the clinical features—short slight general convulsions, repeated at brief intervals, occurring in a child who has been born after a fairly natural labour, has seemed hitherto normal in body and mind, and has had no severe digestive derangement, and no other cause of reflex irritation sufficient to account for fits, and who makes a rapid and complete recovery under chloral.

Treatment.

Bromides, as already mentioned, are of no use. Chloral is very successful, provided it is given cautiously and in sufficient dose.

The chloral is administered by the mouth, and the best dose to begin with is one grain every two hours. This almost always lessens the number of the convulsions, and sometimes stops them altogether. If they still continue a grain and a half must be given, and the dose may have to be increased to two grains every two hours for a short time in children of more than a month old. This dose cannot usually, however, be given for more than a few hours, as it soon makes the child too drowsy to swallow. When the fits have ceased for a day or two days the chloral should be given at increasing intervals—three, four, and six hours—and then gradually stopped.

In the large majority of cases, if no complication occurs, the child gradually awakes, his appetite returns, and he has no more fits, though he sometimes remains more or less drowsy for weeks. In eight of the thirty-five cases, owing, apparently, to the amount of the chloral given not being sufficient, the fits returned when the drug was discontinued. Sometimes they began again at once, and sometimes not for a week or two. In all but one of these, however, when the chloral was resumed, the fits ceased and did not return.

Result of the Treatment.—This was almost always most satisfactory, provided the necessary precautions had been observed. Of the thirty-five cases, one was lost sight of at once, three died rapidly of pneumonia, and two a month or two after apparently successful treatment; in neither of these were details of the fatal symptoms obtainable. Two of the children became mentally defective. Of the remaining cases—twenty-seven in number—fifteen recovered, but after doing well for several months were lost sight of. Of the twelve others, whom I have recently seen, or of whom I have lately heard details, two died from acute infectious illness in later childhood; and ten—whose present ages vary from 13 months to 24 years—have remained quite well in body and mind. None of them, so far as I have been able to ascertain, have ever had any more fits, and none have shown any symptoms of asthma, or severe indigestion, or any sign of an idiosyncrasy to ordinary articles of diet.

Dangers of the Treatment.

There are two dangers connected with the treatment by chloral. One of these is the risk of *inhalation-pneumonia* being set up if the child is carelessly fed while deeply under the influence of the drug. While taking the doses necessary to stop the convulsions, the baby has usually some difficulty in swallowing his milk, and when the maximum doses are being given this becomes greater. Great care must therefore be used in the feeding. If the mother or nurse is warned about this the feeding can usually, without difficulty, be carried out in such a way that no harm results. If, however, little care or skill are used the choking and spluttering which occur are very apt to result in some of the milk finding its way into the lung and setting up pneumonia. This occurred in 3 of my 35 cases.

The other danger which must be guarded against is of quite a different kind, and arises when the chloral is given in too small amounts. When this is done the drug may only depress the child's vitality without preventing injury to the brain cells by the toxin of the disease, and the damage done may permanently injure the child's mental condition. It can scarcely be claimed that this is proved by the experience of the two following cases, but it is at least a probable theory to account for the mental deterioration which resulted in them.

One of these children, who was a typical and severe example of the disease, did well at first in the usual way on the usual doses, and the fits stopped. The medicine was then promptly discontinued, whereupon there was a return of the convulsions, and they again became very numerous. Full doses were again ordered, but the fits continued to recur frequently and severely, and before long it was evident that the child's mental condition was gravely affected. After this no improvement took place, and the infant rapidly became quite idiotic, and remained so till she died some years later. The failure of the treatment in this case may have been due simply to its having been one of unusual severity from the beginning. It was, however, discovered after it was too late that, at the most important stage of the case, the nurse, owing to some misunderstanding, had been giving less than a third of the dose of chloral that was ordered.

In another well marked case, which was not so severe as this one, it was suspected that the full amount of the medicine ordered had not been given. The convulsions, however, stopped after a time, and the baby was reported to have made a good recovery. When I saw him again, seven or eight years later, he was found to be an imbecile of a mild grade, and he is now in an institution for the mentally defective.

Etiology.

The causation of these cases is extremely obscure; but it certainly looks as if the convulsions were set up by the action on the brain cells of some sort of poison formed in the body. The most remarkable fact about the attacks is that in a large majority of the cases they are *permanently* stopped by a merely *temporary* chloralization of the patient. Any attempt to solve the problem of their causation must take this striking fact into consideration.

A search for some analogous phenomena which might possibly help to explain the action of the drug in these cases has only led to the discovery of one fact which seems to have a bearing on the question. This is the observation, described by C. Richet,[3] Besredka,[4] and others, that when a guinea-pig is put deeply under ether, alcohol, chloral, or certain other narcotics, before the second dose of a serum which is usually rapidly fatal, the expected anaphylactic shock is generally suppressed altogether, and after a period of unconsciousness the animal "awakes vaccinated," as Richet expresses it.

This phenomenon has been repeatedly observed by later workers, but I have not been able to find any printed statement as to how long the effect of the "vaccination" which follows has been found to continue. We must look to the laboratory workers to clear up the difficulties of the subject; certainly, as Besredka says, it seems to be "pregnant with possibilities."

There can be little doubt that the very interesting and as yet only partially understood process of anaphylaxis plays an essential part in the causation of some, and perhaps of many, morbid phenomena—especially in early life. There is, however, reason to suspect that too many symptoms are sometimes attributed to it. It therefore becomes those of us who have had no practical laboratory experience in such matters to speak of them with caution and diffidence. Perhaps, however, we may be allowed a little mild theorizing. The result of these experiments in guinea-pigs certainly suggests the question whether the clinical phenomena of this particular type of convulsions may not possibly be due to a peculiarly modified form of anaphylaxis, or some similar process, set up by the ingested cow's milk. While we do not as yet possess facts enough to enable us to answer this question in the affirmative, it may, I think, be fairly claimed that we have enough information to justify our saying that this is at least the most hopeful direction in which to look for an explanation of the facts.

Two somewhat different clinical types of severe acute poisoning from cow's milk, which apparently depend on anaphylaxis, may be met with in young infants, though fortunately they are both *extremely* rare. Of the most characteristic and least common of these, I have only had to do with one case.

CASE.*

The patient was a female infant whose mother and sister were subject to similar symptoms. The mother, though otherwise healthy, had frequently suffered during the four years

*I am indebted to Dr. R. A. J. Harper for the notes of this case.

before this baby's birth, from attacks of urticaria, local oedema, and hay fever after eating acid fruits or bananas, and had also once had severe asthmatic symptoms. One sister was subject to urticaria after eating bananas, and had had an attack of acute rheumatism. The other two sisters had shown no sign of idiosyncrasy to food of any kind.

During the first few months of life the baby, who was on the breast, had on several occasions had a meal of cow's milk without any bad effect. When seven months old she was given a little rice pudding with cow's milk, which was followed at once by urticaria and asthma. From that time on she had violent symptoms whenever she was given cow's or goat's milk in any form or raw white of egg. Half a teaspoonful of milk was sufficient to bring on an attack within a few minutes. The breathing became difficult and there was sneezing and coughing, with running of the eyes, rhonchi in the chest, and an urticarial rash. The baby seemed seriously ill and collapsed, and she remained so for two or three days. Once while she was on the breast she developed similar symptoms after her mother had eaten a banana, although the mother herself on that occasion was not affected. Cow's milk diluted in various ways, Glaxo, Cow and Gate milk, Nestlé's, Allenbury's, Benger's and other "infant foods," and also goat's milk, were all found to affect the child in a similar way. Peptonized milk did so also, but to a rather less severe degree. Raw white of egg caused the same symptoms, but the child could take boiled and fried eggs with impunity. With raw egg albumin she had also had diarrhoea and vomiting.

The baby was small but apparently healthy, and showed no physical signs of disease. She was fed, with some difficulty, on patent groats with water, boiled eggs, potatoes and other vegetables, fish, chicken, minced beef, gravy, and so on. When about eighteen months old she began to tolerate small quantities of cow's milk, and she has since, I understand, gradually improved.

The other type of case, though not often met with, is less uncommon, and many instances of it have been described.[5] The symptoms may set in within fifteen minutes, but are frequently delayed for one to five hours after the milk has been taken. They may be caused by even a few drops of it. The infant turns pale, drowsy, and uncomfortable, refuses food, vomits and has diarrhoea, with some degree of fever, or sometimes a subnormal temperature and collapse; and occasionally there is glycosuria or albuminuria. In these cases there is generally no sign of urticaria or of respiratory distress. The child rapidly recovers when put on breast milk only. Often the idiosyncrasy does not show itself for some weeks after birth; and in many cases it diminishes or ceases in the course of a few months, although in others it may last into later childhood. If the children are carefully looked after the condition is rarely fatal.

It is to be noted that none of my cases of "idiopathic convulsions," so far as I have been able to ascertain, has shown any subsequent tendency to convulsions, to food idiosyncrasy, to asthma, or to skin eruptions. Should it be shown that the above hypothetical explanation of these cases is possibly correct, the further question naturally arises as to whether, when symptoms of poisoning from cow's milk, white of egg, oatmeal, or other common foods occur in young children, they might not be stopped permanently if the patient were subjected to a thorough chloralization for some days, while continuing the offending diet; and even whether a tendency to asthma and eczema beginning in infancy might not be permanently arrested in a similar way.

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AN international congress for protection of mothers and infants will be held in Paris from July 6th to July 8th, 1922, when the following subjects will be discussed: (1) Protection of mothers before and during confinement; (2) protection of mothers during lactation; (3) protection of the infant separated from its mother; (4) assistance and instruction. Applications for membership should be made to La Ligue contre la Mortalité Infantile, 45, Rue de Miromesnil, Paris.

BILATERAL RIGIDITY IN MIDDLE MENINGEAL HAEMORRHAGE.

BY

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THE clinical picture presented by middle meningeal haemorrhage has received during the past forty years the attention of many skilled observers. Their labours have been so fruitful that in its most typical form the middle meningeal syndrome has the distinction of being one of the most clearly defined in the whole range of medicine. As is usually the case when the picture of a settled type of case becomes clear and easily recognized, the surgeon and the physician have an opportunity of noting with greater profit the variations from type which individual cases present. The frequency of the "free" or "lucid interval," the reasons for its absence, the occurrence and significance of ocular palsies and deviations, of paralyses of the limbs, of aphasia, and the incidence of Jacksonian fits, have all received their measure of investigation and have been allotted definite values.

Two cases recently under my observation presented certain features to which attention has not hitherto been specifically drawn in this connexion; in place of monoplegia or hemiplegia there was a very pronounced degree of general muscular rigidity. Here and there in the literature of middle meningeal haemorrhage a case is recorded in which it was noted that the limbs were rigid.

A bare half-dozen are to be found amongst Wiesmann's collection of 257 cases.[3] Further examples occur in Duret's comprehensive monograph,[4] but these include severe fractures of the skull, with cerebral laceration and intradural haemorrhage. These references are so incomplete that one gets only a hazy impression of the precise nature of the condition; the authors have simply recorded the fact in a few words without further comment.

In the histories which follow I have attempted to give a fuller account of the appearance and posture of the patient. The muscular fixation was seen to involve the trunk and all four limbs, and was such that passive alteration of position was difficult, and at times impossible, without the employment of considerable force. The clinical picture is so striking that, once seen, it is not likely to be forgotten. It seems to me to be important that attention should be directed to these generalized rigidities, and that the processes attending them should be accurately observed. Kinnier Wilson[1] has recently described a similar rigidity appearing in pathological circumstances other than those here described, so that one cannot say that the essential rigidity seen in my own two cases is in any way pathognomonic of middle meningeal haemorrhage. It is, nevertheless, important to note that hypertonicity and a peculiar attitude of body have been observed in these cases of meningeal haemorrhage no less than in the cases described by Wilson, since the one throws a ray of light, if an oblique one, upon the other.

CASE I.—*Fall on Head; Linear Fracture in Left Temporal Bone; Middle Meningeal Haemorrhage; Bilateral Rigidity of Trunk and Limbs; Operation; Death; Necropsy.*

On March 25th, 1921, J. D., male, aged 37, a window cleaner by trade, was at work cleaning some first story windows in a stone courtyard. He lost his balance and fell head foremost to the ground. Being temporarily stunned he lay for a minute or two and then got up and walked home, a distance of a couple of hundred yards. He sat down for a little while, telling his wife that he felt rather shaken, but soon declared that he would go and fetch his ladder and pail. This he did, but on arriving home a second time seemed decidedly worse, and went and laid himself down. He went to sleep, but when his wife tried to rouse him some little time later she found it impossible to awaken him. From this time (perhaps one and a half hours after the accident) onwards he remained unconscious. Later in the evening he was admitted to the Salford Royal Hospital under my colleague Mr. Garnett Wright, who kindly asked me to see the case. On admission he was unconscious, restless, moving arms and legs freely, and inclined to be noisy.

Symptoms and Physical Signs.

When seen by me, seven hours after the accident, the picture had changed. He lay flat upon his back, the arms rigid and extended by the sides. The hands were half-clenched and the forearms hyperpronated, so that the backs of the hands were facing the outer aspects of the thighs. The legs were stiffly extended and the toes pointed downwards, the ankles being

strongly plantar flexed and slightly inverted. The muscular rigidity was so great that considerable force was necessary to bend the limbs. Any attempt to alter the position in which the limbs lay seemed to bring on an excess of tonic rigidity, a fine tremor then appearing. The patient's head was turned sharply to the left, as were the eyes; the neck was rigid and the chin a little lifted, but no opisthotonos appeared. Cheyne-Stokes breathing was present, and at the height of the noisy, rattling respiration the tonus was exaggerated, the arms becoming even more pronated and the legs more rigid and adducted, the foot remaining in extreme plantar flexion. In the quiet periods of respiration the muscle tonus appeared slightly to diminish. There were no "tonic fits," only exaggeration of the already severe spasticity at the height of the Cheyne-Stokes breathing, and on moving a limb passively. The left pupil was widely dilated. It was practically impossible to test the tendon reflexes. Ankle clonus was present on both sides, but had a small amplitude and was exceedingly rapid. The plantar reflex gave rise to a sharp and very quick extension of the great toe on either side without flexion of the other toes. Oppenheim's, Gordon's, Craft's, and Chaddock's reflexes were absent. The abdominal muscles were rigid, but a slight response followed stroking on the right side, but not on the left. During the whole period of observation the patient made no voluntary movement of any kind. The pulse rate was 60.

Diagnosis.

In view of the characteristic history, the conjugate deviation of head and eyes to the left and the large immobile left pupil, together with the obvious signs of cerebral compression, there was no difficulty in diagnosing a left-sided haemorrhage.

Operation.

Operation was carried out forthwith. An intermuscular temporal exploration of the left meningeal field revealed a crack in the anterior part of the temporal fossa, and beneath this a huge extradural clot. The area of the clot was estimated at 12 cm. in diameter and nearly 4 cm. in depth at its thickest part. The clot lay over the left frontal lobe, and had extended forwards and upwards rather than backwards. The spurting middle meningeal artery was clearly seen, but was ligatured with some difficulty after extensive removal of bone. After the removal of the clot the brain failed to expand again although it pulsated freely, and when last seen only a slight elevation of the cortical surface had occurred. The dura was not opened. The wound was dried, drained, and sutured.

At the completion of the operation the rigidity was found to have disappeared, but the patient's general condition was desperate; the pulse had risen to 128 and the respiration was rapid and shallow. Death occurred three hours later.

Necropsy.

At autopsy no further point of any note was discovered. The brain was intact, no intracerebral haemorrhage was present, and indeed there was no trace of blood within the dura.

Case II.—*Fall on Head: Compound Depressed Fracture of Right Frontal Bone: Left Middle Meningeal Haemorrhage: Bilateral Extensor Rigidity of Trunk and Limbs: Operation: Death: Necropsy.*

On May 12th, 1921, J. F., aged 26, male, fell head foremost off a roof 60 ft. high to the ground. On admission to the Salford Royal Hospital, within an hour of the accident, he was conscious and related the particulars of his fall. His temperature was then 97.5°, and his pulse 68. There was no paralysis; he could move all his limbs, and turned over on to his back at request. He was bleeding from the nose and from both ears, and presented a contused wound over the right frontal bone some 8 cm. long. An hour later he became drowsy and vomited, and shortly afterwards had a tonic seizure, his breathing at the same time becoming noisy. He was seen by me three hours later.

Symptoms and Physical Signs.

He was then deeply unconscious; the pupils, of medium size, did not react to light. He presented bilateral extensor rigidity of both legs, which were strongly adducted. The feet were in full plantar flexion, inversion, and supination. Every three or four minutes the tonic contraction of the limb became more pronounced, so that the employment of moderate force was insufficient to separate the thighs. In the intervals between the attacks the limbs were considerably less rigid, so that the legs could be pulled apart and the knees bent, but at no time was there flaccidity, at no time was there an absence of resistance. The left arm during the spasmodic attack was extended stiffly by the side in slight abduction, the wrist was strongly flexed and adducted. The fist was nearly, but not quite, closed and the thumb adducted across the palm within the fingers. The right arm presented a slightly different picture. It was held rigidly bent at the elbow at an angle of 130 degrees the wrist fully flexed and the hand as on the other side. During the tonic seizures both arms rotated inwards into a position of hyper-pronation so that the backs of the hands were directed towards the thighs. On the right side this was largely accomplished by an internal rotation at the shoulder-joint, the elbow remaining in partial flexion. On the left side, where the whole arm was stiffly held by the side, there was extension and internal rotation of the shoulder aided by pronation in the fore arm. An attempt to interfere with the limbs during a tonic attack had little effect, and the muscular contraction was so strong that great force was necessary to restrain the movement or correct the position assumed by its agency. As in the other case, the tonic attacks were closely bound up with a change in the rate and amplitude of respiration. At the height of the attack respiration was rapid, noisy, and deep. As far as one could see, the sequence of events was, first, a change in respiration; next, twitching of the fingers on both sides, which ceased in a few moments to give place to an immobile rigidity; thirdly, there occurred flexion of the wrist and then inversion of the arms, the legs and trunk at the same time stiffening into extension. During a few of the seizures the patient arched his back in opisthotonos, affecting particularly the lower part of the spine. The head was not seen to retract nor to rotate. There was no incontinence. Ankle clonus was rapid and sustained; plantar stimulation led to a bilateral great toe extension, which was very rapid on the right and slower on the left.

Operation.

I operated upon the patient under local anaesthesia. The necessary shaving of the head had been accompanied by an almost constant state of tonic rigidity, and the introduction of the needle for novocain-adrenaline infiltration caused another attack. It seemed as if this condition of extreme muscle tonus was the only method that he had of responding to a stimulus, and took the place of defensive reflex movements. The frontal wound was excised and a large horizontal depressed fracture exposed, the bone being driven in and jammed. The depressed portion was rapidly elevated and removed, over an area some 8 cm. by 4 cm. up to the mid-line. At the inner end of the wound a small piece of dark clot was seen overlying the anterior end of the superior longitudinal sinus. A small piece of ribbon gauze was placed over this, the wound washed well with flavine and the dura widely incised as clinical signs of compression had been so severe. Exploration of the right meningeal field revealed no haemorrhage, but a search with a silver brain spatula over the right orbital plate disclosed comminution with loose bone fragments within the dura. The wound was loosely sutured up, with the intention of performing a secondary suture in three or four days when the acute stage was passing.

At the completion of the operation the patient was flaccid, phonating with expiration, and seemed better. His pulse, which had risen to 120 at the commencement of operation, fell to 70 after opening the dura. It remained afterwards steady at 76. The noisy and stertorous breathing had ceased and the tonic seizures had passed away.

He did well for an hour or two, but his pulse rose again later in the evening, and he died seven hours after operation without again exhibiting rigidity.

Necropsy.

At necropsy an extension of the fracture was found over the left frontal bone, which was very badly damaged. To my great chagrin a large middle meningeal haemorrhage was present on this side. It was anterior in position, and indeed extended so far forward that its anterior end had actually been seen in the wound. In size it approximated to that of a man's fist, and lay over the frontal pole of the left hemisphere. The right orbital plate was broken to pieces, and there was a superficial laceration of the under surface of the corresponding frontal lobe. There was no abnormality elsewhere in the brain and but little blood free within the dura.

It has been seen that the lesions responsible for the occurrence of the rigidity in these cases were in both left-sided extradural haemorrhages of considerable size occupying Kroenlein's position 1.[2] In one case there were serious associated injuries of the right frontal pole. Both patients were profoundly unconscious, were in a state of severe cerebral compression, and exhibited Cheyne-Stokes breathing at the height of which the muscular rigidities were brought out at highest pitch.

I have described the tonic conditions in these cases in detail because the question of generalized muscular rigidities has gained considerably in importance from Kinnier Wilson's valuable contribution to the subject. In my own cases, so closely corresponding in their clinical pictures to his, the rigidities must have been dependent on changes in the intracranial circulation produced by the extravasations or injury. It is inconceivable that the rigidity could have been the result of a local irritation of a neural mechanism by the action of the clot on the immediately underlying cortex. I am led to the belief that the clinical syndrome depends on a relative deficiency or the reverse of the blood supply to certain regions of the brain, and that this releases lower neuronic levels. The relationship between the crises of rigidity and those of Cheyne-Stokes breathing bears out the circulatory theory of their origin. And it is only by the mediation of some great common factor such as the quantity and quality of blood supply and the variations in this supply, local and general, occasioned by lesions of varied types, that we can correlate the several dissimilar intracranial maladies capable of producing bilateral rigidity.

The term "decerebrate rigidity," though convenient, is apt to suggest that the lesion producing it must be situate about the mid-brain—that the rigidity in man is the outcome of a pathological process which is the counterpart of an actual section at the colliculi in animals. These cases of mine demonstrate clearly that the level is a physiological rather than an anatomical one, and I have refrained from applying the term "decerebrate" to the rigidities in order that this significance should not be obscured.

Why generalized rigidities should make their appearance in one case and not in another of very similar gross pathology is a delicate question. It is probable that the syndrome in man depends on a very fine circulatory balance, on a relative anoxaemia sufficient to suppress cortical control but not great enough to render inactive the causal mechanism in mid- and hind-brains. Generalized rigidity may thus never have an opportunity of arising in one case; it may be but a phase in another (as Kinnier Wilson points out); whilst in a third, where the balance is maintained for a period, the rigidities may border on chronicity.

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METATARSUS VARUS.

BY

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Metatarsus varus is a deformity which has long been familiar clinically to orthopaedic surgeons, but it is not described even in textbooks of orthopaedic surgery, and its essential pathology has not yet, I think, been recognized.

Whitman,[1] it is true, makes passing reference to "metatarsus varus" as an incomplete form of clubfoot (congenital talipes equino-varus) or simple talipes varus, and the treatment recommended is the same as that for the varus part of congenital clubfoot.

But metatarsus varus belongs to quite a different category from clubfoot or talipes varus. It is not a contracture deformity at all. It is an anatomical deficiency deformity, and is due to congenital absence of the internal cuneiform bone. It should therefore be classed not with talipes or other congenital contractures, but with those conditions in which deformity is incidental to gross structural defect—for example, congenital absence or deficiency of the tibia, fibula, radius, ulnar, vertebrae, etc.

Clinically, the posterior part of the foot presents a normal appearance. There is no limitation of movement at the ankle or subastragaloid joints. There may even be some eversion (valgus) of the foot at the subastragaloid joint. The anterior part of the foot is sharply adducted at the tarso-metatarsal joint, but there is no inversion of the sole. The patient, therefore, stands with the sole of the foot flat on the ground, but while the posterior part of the foot is straight, the anterior part is directed inwards or forwards and inwards. The great toe is usually adducted more than the other toes (hallux varus). There is a sharp kink, which can be both seen and felt, in the inner border of the foot, just behind the base of the first metatarsal bone. The patient can walk, but his gait is awkward, and the deformity is unsightly. So far as I know, the condition is always bilateral.

It should be noted that the displacement of the anterior part of the foot is entirely abnormal—it is not even, as in talipes, an exaggeration of a normal displacement. Adduction without inversion is not a physiological movement of the foot.

Radiography shows the adduction of the anterior part of the foot, but it does not reveal the essential defect in young children, because the cuneiform bones are not ossified at the age at which these cases usually come under observation. I have not had the opportunity of examining a patient who has grown up with this deformity.

In six feet (of three patients) that I have examined at operation the internal cuneiform bone was absent and represented by a flat disc of fibro-cartilage between the base of the first metatarsal bone and the scaphoid. The tendon of the tibialis anticus divided into two distinct slips, one of which was inserted into the fibro-cartilage, and the other into the base of the first metatarsal. It was not possible at operation to make out the condition of the middle cuneiform bone. The first metatarsal was shorter than normal and strongly adducted. The scaphoid was normal. In one case the neck of the astragalus appeared to be unduly long, and the head was bent downwards.

Treatment.

From the nature of the deformity it is obvious that the treatment suitable for talipes varus or the varus part of talipes equino-varus is quite inappropriate for metatarsus varus, and the general experience of orthopaedic surgeons is that the results of such treatment are unsatisfactory. It is true that a considerable amount of apparent correction can be brought about by manipulation and fixing the foot in plaster. But the correction thus obtained is not permanent, and the deformity always relapses more or less completely.

Anatomically the inner border of the foot is too short, owing to absence of the internal cuneiform bone, while the outer border is relatively too long. Permanent correction, therefore, can only be obtained either by lengthening the inner border or by shortening the outer. Two procedures, therefore, suggest themselves: (1) Separation of the first metatarsal and scaphoid bones, and the insertion of a graft to keep them apart; and (2) excision of bone—for example, the cuboid—from the outer border of the foot.

I have tried both these operations with, in each case, immediate correction of the deformity, but they are too recent to speak yet of the ultimate results. Theoretically, to replace the missing bone by a graft, and thus to restore the inner border of the foot to its normal length, would appear to be the ideal method of correcting the deformity. But I doubt very much whether this can be attained in practice. In the first place, the results of bone grafting, excellent as they are in very many conditions, are notoriously uncertain in cases of congenital bone deficiency. In the second place, if a fixed graft is successfully inserted into the first metatarsal and the scaphoid, and perhaps also the astragalus, it is likely that the rigid foot produced will eventually prove to be a greater disability than the original deformity.

For these reasons I think that the better practice is to remove bone from the outer side of the foot—a practice, be it noted, that is absolutely contraindicated in cases of clubfoot in young children. By removal of the cuboid the outer border of the foot is shortened and the metatarsus is abducted and brought into line with the posterior part of the foot. This, so far as my observations go, gives the best correction of the deformity with the least disturbance of function.

Reference.

[1] Whitman, *Orthopaedic Surgery*, 1919.

TWO CASES OF PERNICIOUS ANAEMIA WITH INFECTIVE FOCI IN THE ALIMENTARY TRACT.

BY

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Much has been written on the etiology of pernicious anaemia, and the clinical evidence points to there being an invasion of some part of the alimentary tract by pathogenic organisms in a large percentage of cases. In the two following cases there appears to be very definite evidence of either past or present pathological changes in the alimentary tract.

Case I.

The first case was that of A. B., aged 38, a trained nurse, who came under our care on April 8th, 1921. The history of the illness was that in July, 1920, she felt very "run down," and had to give up nursing. About a month later she noticed that

[illegible] and mucous membranes were pale. Amenorrhœa lasted for two months during the summer of 1920. No treatment beyond rest was adopted at this time.

In March, 1921, she felt sufficiently well to begin nursing again, but became ill again after 'three weeks' work. There was nothing of any importance in the family history. She had an attack of colitis nine years previously. Most of her teeth had been extracted, but she had a good artificial set with a few sound teeth of her own. No glossitis was present. She was very weak and pale; she had no other abnormal signs or symptoms, but the temperature was 100.2°.

On April 12th the result of a blood count was: Erythrocytes 1,232,000; leucocytes 1,750; haemoglobin 20 per cent.; polymorphs 53 per cent., eosinophils 1 per cent., lymphocytes 45 per cent.; colour index 0.85.

Marked poikilocytosis and anisocytosis were present with a preponderance of microcytes. Moderate polychromatophilia and some basic stippling were observed. Two nucleated reds, both megaloblasts, were seen while counting two leucocyte films.

She was given novarsenobillon, 0.2 gram, intravenously, and the oral administration of beta naphthol, 5 grains twice daily, was commenced. Up to April 13th she had regular normal actions of the bowels, but after that date they were never open again except by enemata. The temperature rose, with morning remissions, until it was 104.4° on April 14th, falling by lysis until it reached 96.6° on April 21st. On April 14th cultures were sown from a catheter specimen of urine and a specimen of faeces. The former showed the *Staphylococcus albus* only, the latter *B. coli* only. On April 15th the patient became delirious and lay in a semi-conscious condition. On April 19th novarsenobillon, 0.1 gram, was given by intramuscular injection. On April 22nd her temperature was still subnormal, so half a pint of citrated blood from healthy and compatible donors was given intravenously. She recovered consciousness for about an hour, but her temperature again rose, and she died on April 25th, 1921.

The autopsy showed the following pathological changes. "Tabby-cat striation" was present on the columnae carneae of the heart. The liver showed fatty change, and excess of iron was present. The kidneys showed fatty degeneration, their surfaces were finely granular, and the capsules adherent.

The appendix was empty, with an apparently congenital occlusion of the lumen at its proximal end. About five feet above the ileo-caecal valve there was a sharp line of demarcation in the interior of the small intestine, but no constriction was present. Above this line the appearance was that of normal jejunum, below it normal ileum. The appearance at this place was as if an end-to-end anastomosis had been performed, but the patient had never undergone an abdominal operation. The line itself appeared to consist of a fine ring of small ulcers. Microscopic sections showed a simple ulceration of the mucous layer, the other layers being normal.

A section of the spleen showed slight fibrous change, with atrophy of the Malpighian tufts. Films of bone marrow showed some hyperplasia of the erythroblastic elements.

CASE II.

The second case was that of C. D., aged 58, a coachman. He came under our care on January 15th, 1921, with a history of diarrhoea and vomiting during the past seven weeks, accompanied by slight jaundice during the earlier part of that period. His past history was that he had two attacks of influenza about fifteen years previously, a severe attack of diarrhoea four years previously, followed by occasional milder attacks.

His appearance was cachectic and his mucous membranes were very pale. His teeth were dirty, but seemed sound otherwise. Emphysema of the lungs almost obliterated the cardiac dullness. Some scabbing was present in the right nostril, and a small polypus was found at the anterior end of the middle turbinal bone. This gave rise to a clear mucous discharge which was sterile. A blood count was taken on January 17th, with the following result: Erythrocytes 1,240,000; leucocytes 4,400; haemoglobin 35 per cent.; polymorphs 20 per cent., eosinophils 0, lymphocytes 80 per cent.; colour index 1.4. Marked poikilocytosis, extreme anisocytosis, and an abundance of macrocytes were observed. Seventeen nucleated reds, including five megaloblasts, were seen. Most of the reds showed nuclear remains. The patient was given haemoglobin and malt, 1 drachm thrice daily, also beta naphthol 5 grains twice daily. He started weekly intravenous doses of novarsenobillon 0.2 gram. The following pathological tests were made: Wassermann, negative; faecal examination, excess of fatty crystals; faecal culture, coliform bacilli and Gram-positive diplococci; urinary culture, a few sarcinae.

A blood count on February 3rd showed some improvement: Erythrocytes 1,528,000; haemoglobin 46 per cent. On February 16th the count was worse than the original one. This was attributed to a somewhat severe reaction after each dose of novarsenobillon. The dose was reduced to 0.1 gram, which produced no untoward symptoms, and has been gradually increased to 0.2 gram, which is being given at the present time. By April 8th he was again improving: erythrocytes 1,776,000. On April 4th an *x*-ray examination showed that the fangs of the lower lateral incisors were rather bulbous. These were extracted under a general anaesthetic with special antiseptic precautions, and yielded a pure growth of streptococci. A course of autogenous vaccine was given until June 13th, followed by a course of stock streptococcal vaccine. On June [illegible] count was as follows: Erythrocytes 3,216,000; leucocytes 5,600; haemoglobin 65 per cent.; polymorphs 22 per cent., eosinophils 2 per cent., lymphocytes 76 per cent.; colour index 1.0. Fairly marked poikilocytosis and polychromatophilia. Six normoblasts, no megaloblasts.

The patient now enjoys good health, having the novarsenobillon and vaccine weekly. Time alone will show whether this is genuine recovery or a remission.

The points which we wish to emphasize about these two cases are the history of colitis in the first case and of diarrhoea in the second. In the first case a definite ring of ulcers was found in the intestine, and in the second an infective focus in the teeth. Novarsenobillon seems to be a valuable drug in this disease; the value of the autogenous vaccine cannot be estimated as it was given concurrently with other treatment. Evidence of alimentary derangement was also present in a fatal case of pernicious anaemia following dysentery which we treated in 1920. There was a history of alimentary derangement in a case of aplastic anaemia and a case of pernicious anaemia which Dr. Rivaz Hunt has kindly allowed us to quote. The latter appears to be enjoying normal health under treatment with novarsenobillon.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF PHYSIOLOGY, PHARMACOLOGY, THERAPEUTICS, AND DIETETICS.

H. H. DALE, C.B.E., M.D., F.R.S., President.

BEFORE proceeding to the business of the Section, Dr. H. H. DALE and Professor A. V. HILL gave two eloquent appreciations of the work and character, both as a physiologist and as a man, of the late Professor J. A. Menzies, Vice-President of the Section, who died only a few days before the opening of the Annual Meeting of the Association. It was decided that a resolution expressing the "deep sense of the loss medical science has sustained by the death of Professor James Acworth Menzies, Professor of Physiology in this University, and Vice-President of this Section," should be conveyed to the University, and that in addition a message of respectful sympathy should be sent to Professor Menzies's widow.

THE USE OF THE HOT WIRE FOR INVESTIGATING THE TIME RELATIONS OF THE PULSE AND THE CHARACTERISTICS OF VOLUNTARY CONTRACTION IN MAN.

BY

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[*Abstract of Communication.*]

A VERY fine platinum wire (of diameter about one-hundredth of a millimetre) is mounted in a tube which is connected to a tambour or funnel placed upon the subject's artery. The wire is heated to just below redness by an electric current. The rise of temperature in the wire raises its electrical resistance, which, however, is lowered each time a pulse of air comes along the tube and cools the wire. The pulses of air caused by the movements of the artery, therefore, cause corresponding changes in the resistance of the wire, and a continuous record of the latter is therefore also a continuous record of the movements of the artery. The electrical resistance of the wire may be recorded in one of three ways:

1. By a Wheatstone's bridge arrangement and a string galvanometer. The hot wire is placed in the fourth arm of the bridge and the other resistances are so adjusted that no current passes through the string galvanometer, and therefore the string is not deflected. When the resistance of the hot wire changes, the balance is upset and

a current passes through the string, the deflection of which is recorded upon a moving photographic plate.

2. By having the hot wire in the primary circuit and the string galvanometer in the secondary of an electrical transformer. When the resistance of the hot wire changes there is an alteration in the intensity of current passing through the primary, and this causes an induced current through the galvanometer, which is recorded in the same way.

3. By a similar condensor arrangement.

The principal advantages of the instrument are that there is extraordinarily little time lag between events taking place at the artery and the corresponding movement of the string; that the time relations of the pulse can be very accurately measured, and that the records are not contaminated by artificial effects due to independent mechanical vibrations of the recording instrument itself. Vibrations of this kind can be detected in tracings, obtained by the usual mechanical methods, by comparing them with records obtained in this way. The velocity of the pulse wave can be measured very accurately by means of two hot-wire sphygmographs, one of which is placed on the carotid pulse, the other on the radial. If generally required for this purpose it would be possible to replace the costly string galvanometer by a much cheaper arrangement.

The same apparatus can be modified so as to record the movements of human muscles when contracted voluntarily. A convenient way to show the effect is to hold a tambour between the first and second fingers and to press on its surface with the thumb. Whether the tambour is pressed gently or vigorously the photographic records show oscillations varying from 40 to 50 per second. Different subjects give different frequencies of oscillation, but the same subject gives a frequency which is constant and independent of the particular instrument used. From these and other control experiments it is argued that the oscillations observed do not owe their origin to independent vibrations of the instrument itself. When the tongue is pressed against the tambour, oscillations of the same characteristic frequency are again observed. This eliminates the possibility that they may be caused by mechanical creaking at joints. The frequency of oscillation corresponds closely with the frequency of the electric change in voluntary contracting muscle observed by Piper.

The nature of these records, and of the Piper electromyograms, suggests tentatively an interesting property of the cells which constitute a centre in the nervous system. These must discharge their impulses at the same frequency and in the same phase as one another; otherwise the muscular contraction and the electrical variation would both inevitably be continuous instead of periodic. Moreover, according to the all-or-none law, when a muscle enters into moderate contraction a certain number of its fibres contract fully, whilst the remainder continues entirely passive. The absence of fatigue in a moderately contracting muscle suggests that if a moderate contraction is prolonged, the first group of active fibres is relieved by a second group which up till then have been passive. After a further interval the second group is in its turn relieved, and so on. Records obtained during health suggest that the transition from one group of fibres to another occurs quite smoothly, but that in old age, fatigue, and possibly in functional diseases of the nervous system, it cannot be accomplished so accurately, and tremors appear.

DISCUSSION.

Dr. Martin suggested that the application of the hot-wire sphygmograph to the investigation of cases of aneurysm would prove very fruitful.

Dr. G. A. Clark suggested that it might be possible by this method to follow the passage of the contraction wave down the auricle.

Dr. H. H. Dale reminded Dr. Clark that Lewis had already succeeded in doing this by attaching a set of hairs to the auricle. It would be well to reinvestigate by this method Sherrington's work on the relative strength of the muscular contraction induced (*a*) by direct stimulation, and (*b*) by reflex stimulation. He pointed out to Dr. Martin that many hospitals possessed an electrocardiographic instalment which could be easily modified to this purpose, and, further, that the method would be a very convenient one for the bedside.

Professor A. V. Hill pointed out, in reply to Dr. Martin, that variations of temperature in the rubber tube connecting the tambour to the hot wire had no appreciable effect upon the records, and that of the three methods described in the paper he had found the Wheatstone bridge most satisfactory. In reply to Dr. Dale, he considered that adventitious sounds in the room where observations were being made would not affect the records at all.

THE ETIOLOGY AND TREATMENT OF VARICOSE ULCERS.

BY

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AND

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Beit Memorial Research Fellow.

The causation of varicose ulcers is generally regarded as due to a local depression of tissue resistance in the region of the affected veins, dependent on a local nutritional deficiency. The treatment is usually purely local, consisting of such mechanical means as bandaging, or of the external application of stimulant lotions or ointments, in order to promote tissue growth and repair. In the series of cases under consideration a new aspect of the pathology of this condition is put forward, and also a means of procuring satisfactory results by treatment in a relatively short time. With one exception all the cases were varicose conditions, either ulcers or eczema; the remaining case was that of an old wound of the leg which had broken down and ulcerated.

In a previous paper, published in the *Journal of Physiology*,[1] it has been shown that the calcium of normal unclotted blood is present in two forms; of a total of 10.7 mg. p.c., roughly 4 mg. are present in a combined or non-ionized form, and 6.7 mg. are present in the ionic state. After clotting has taken place, the total ionized calcium was found to be 10.7 mg. p.c., so that normally all the calcium of the serum should be ionized. In all the present cases it was found that there was a deficiency in the ionized calcium, though the total calcium was not very markedly reduced. The inference to be drawn, therefore, is that some of the calcium which should be ionized has become combined with some unknown substance, formed at some stage of the pathological process in question. It suggests, further, that the ulceration may be due to this deficiency of the ionized calcium, and treatment was therefore directed towards supplying the deficiency.

The first form of treatment used was the intramuscular injection of calcium chloride dissolved in distilled water, 1 grain being injected once a week, or in some cases at shorter intervals. Details of this method of treatment will be found in a paper on the use of calcium salts in haemorrhage.[2] The results obtained were not satisfactory, and only one complete cure was obtained in these ulcer cases. A tolerance to the calcium injections appeared to become established, so that progress was only obtained by increasing the amount and frequency of the dose. Improvement or retrogression of the ulcer ran roughly parallel with the rise or fall of the ionized calcium content of the blood. To summarize, this form of treatment was beneficial up to a certain point, but required considerable time and patience, and even then its results were by no means certain.

The second form of treatment used was the combination of calcium injections with the oral administration of thyroid gland substance. This produced effects which were not markedly different from those obtained with the injections alone. It cannot be said that the thyroid had of itself any beneficial effect. In one or two cases calcium salts given by the mouth were substituted for the injections, but the effect was not only entirely negative in respect of improvement, but even harmful.

Parathyroid gland substance (Parke, Davis), gr. 1/10 by the mouth daily, was next used, and with this treatment an

immediate improvement seemed to take place. The ionized calcium of the serum rose rapidly to the normal figure, and the local condition showed early signs of healing; it was found unnecessary to continue the calcium injections. In cases treated with parathyroid alone seven to fourteen days seemed to be the period required for the drug to produce its maximal effect, though the time taken for complete healing to occur was of course dependent on the size of the ulcer. In putting this treatment into practice, gr. 1/10 of the parathyroid substance is given daily until healing has occurred, and then twice a week for three or four weeks. In this series of cases, and also in other cases, no signs of overdosage became evident, even though the patient was taking parathyroid for several weeks without intermission. When firm healing has occurred the patients are told to report at once any irritation round the site of the ulcer, and if the ionic calcium is again decreased a further short course of parathyroid may be prescribed.

The local treatment of the ulcers was of the simplest type, in order not to prejudice the action of the internal treatment. The ulcers were covered with plain gauze or boracic lotion, though in some cases no dressing at all was used. It must be remembered that the calcium deficiency is but one factor in the condition, and that for the maintenance of efficient tissue nutrition, and therefore healing, the circulation and drainage of the part must be assisted. It was for this reason found that the best results were obtained when the patient was kept in bed; if cases are allowed to go about their usual business healing is very much retarded, and as the parathyroid also relieves the pain and irritation of the affected part, the ulcers are neglected and may become grossly infected. Again, the best results are obtained with early cases of ulceration or varicose eczema rather than with long-standing ulcers, where local fibrosis has interfered with the blood supply to the ulcerated area. It was found that early cases treated with parathyroid and confined to bed healed up with quite remarkable rapidity.

The fact that parathyroid administration has so great an effect in causing these ulcers to heal seems to point to the possibility that a partial deficiency of the parathyroid secretion may play some part in their causation, and this supposition is strengthened by the fact that the parathyroids are recognized regulators of calcium metabolism. The true reason for this failure of parathyroid activity must be a matter of conjecture. It is possible that two factors play a part: first, that varicose ulcers commonly occur in middle-aged patients, especially females, at a time when degenerative changes are most apt to become evident; and, secondly, that the continued stagnation of the blood in a chronically varicose area may produce in time a general poisoning, as such blood must be overloaded with the products of tissue breakdown.

It may not, therefore, be unreasonable to suggest that varicose ulceration is another instance of the vicious circle in disease. The toxic agents produced by the varicose condition may be supposed to affect the parathyroid glands, and are also able to combine with some of the calcium of the blood which is normally ionized. The calcium balance of the blood is thus disturbed, and the damaged parathyroids are unable to readjust it. This deficiency of ionic calcium may cause a lowering of vitality of the tissues, so that chronic ulceration or eczema occurs at the point where nutrition is worst. Ulceration leads to a further absorption of toxic material, and so the circle is completed. The aim of treatment is to break it; calcium alone seems unable to do so, probably because it is only able to affect the particular symptom of calcium deficiency, and does not act upon the primary cause—an erring metabolism. Parathyroid, on the other hand, has apparently a more fundamental action: not only can it act specifically upon the calcium metabolism, but it may also produce an improvement in the general metabolism through the medium of the endocrine system as a whole.

It is not yet possible to state that all chronic non-malignant ulcerative processes are of the same type. It has, however, been found in the small number of cases examined that chronic gastric ulcer conforms to the same type of calcium deficiency. Further, such cases are undoubtedly improved by the administration of parathyroid substance, so that there are indications that two chronic ulcerative conditions, differing widely in locality and in the symptoms they produce, may yet have a common biochemical relationship.

Case 1.—Female, aged 45; varicose ulcer. Before treatment the ionized calcium content was 6.19 mg. p.c.; on the seventh day of treatment by injection of $CaCl_2$ gr. 1 it was 6.93 mg. p.c.; on the thirteenth day 7.23 mg. p.c.; and on the twenty-seventh day 10.58 mg. p.c. On the forty-first day the ulcer was completely healed. Four months later it was still healed; some irritation of ankle. Ionic calcium = 8.66 mg. p.c.

Case 2.—Female, aged 55; extensive ulcer encircling leg completely. The progress of the case is shown in the following table:

Day of Treatment.	Treatment.	Ca mg. p.c. Serum. Combined.	Ionic.	Total.	Progress.
0	Before treatment	—	4.83	—	
7	$CaCl_2$ inject. gr. 1	—	6.06	—	Improved.
14	,, ,,	—	5.38	—	Healing.
21	,, ,,	—	8.07	—	
29	,, ,,	—	6.06	—	
36	Injections stopped	—	7.74	—	
43	—	—	8.47	—	
50	—	—	7.74	—	
57	—	—	6.90	—	Enlarging.
81	$CaCl_2$ gr. x per os t.d.s.	—	7.2	—	Spreading.
88	Inject. recommenced	—	5.70	—	
92	—	—	6.33	—	
104	—	—	6.61	—	Slow improvement.
113	$CaCl_2$ per os stopped	—	6.01	—	Stationary.
123	$CaCl_2$ gr. 2 inject. (on 118th day)	—	6.93	—	
127	,, ,,	2.08	6.93	9.01	
135	,, ,,	3.01	6.01	9.02	
138	,, ,,	2.05	6.62	8.67	Eczema.
145	,, ,,	1.65	6.01	7.66	
153	,, ,,	2.37	6.62	9.01	
166	$CaCl_2$ gr. 2; and thyroid gr. 2½	2.47	6.62	9.09	
172	,, ,,	3.24	5.77	9.01	
179	,, ,,	3.26	5.77	9.03	
184	,, ,,	2.48	7.32	9.80	
194	,, ,,	2.08	7.70	9.78	Eczema gone.
201	$CaCl_2$ and parathyroid gr. 1/10	0.94	8.66	9.60	
208	Parathyroid only	—	10.1	10.1	Healing.
215	,, ,,	—	10.4	10.4	
223	,, ,,	—	10.4	10.4	

Completely healed on the 237th day.

Case 3.—Female, aged 42. Treatment and progress:

Day of Treatment.	Treatment.	Ca mg.p.c. Serum. Combined.	Ionic.	Total.	Progress.
0	Before treatment	3.44	6.01	9.45	
4	$CaCl_2$ inject. gr. 1	3.00	6.01	9.01	
11	$CaCl_2$ inject. gr. 2	1.68	7.35	9.03	Healing.
15	,, ,,	1.29	6.98	8.27	
22	,, ,,	0.48	9.45	9.93	
30	,, ,,	0.48	9.45	9.93	
43	,, ,,	—	9.92	10.10	
49	$CaCl_2$ and thyroid gr. 2½	1.00	8.66	9.66	Stationary.
56	,, ,,	1.78	7.70	9.48	
63	,, ,,	1.36	8.44	9.80	
71	,, ,,	1.39	7.61	9.00	
78	$CaCl_2$ and parathyroid gr. 1/10	2.06	7.70	9.76	Healing.
85	Parathyroid only	—	10.1	10.1	Healed.
109	,, ,,	—	10.4	10.4	

Case 4.—Male, aged 58. Treatment and progress:

Day of Treatment.	Treatment.	Ca mg. p.c. Serum. Combined.	Ionic.	Total.	Progress.
0	Before treatment	3.50	5.51	9.01	
7	$CaCl_2$ inject. gr. 1 and thyroid gr. 2½	3.08	6.01	9.09	
10	Ditto	2.28	6.35	8.63	Slow improvement.
21	Ditto	3.18	6.30	9.48	
28	Ditto	1.54	8.26	9.80	
35	Ditto	1.65	7.35	9.00	
41	Parathyroid only, gr.1/10	1.14	8.26	9.40	Stationary
49	,, ,,	—	10.1	10.1	Rapid improvement.
56	,, ,,	—	10.4	10.4	
64	,, ,,	—	10.4	10.4	

Case 5.—Male, aged 30; old wound of leg, broken down and ulcerated. Treatment and progress:

Day of Treatment.	Treatment.	Ca mg. p.c. Serum. Combined.	Ionic.	Total.	Progress.
0	Before treatment	2.89	5.75	8.64	
13	$CaCl_2$ inject. gr.1 and thyroid gr.2½	2.13	7.35	9.48	
18	Ditto	2.66	6.35	9.01	Improving.
25	Ditto	2.73	6.30	9.03	
32	Ditto	1.54	8.26	9.80	Stationary.
40	Ditto	1.59	8.26	9.78	
46	Parathyroid only, gr. 1/10, from 43rd day	1.14	8.66	9.80	
54		1.01	8.98	9.99	Improving.
61		—	10.4	10.4	
69		—	10.4	10.4	Healed.

Case 6.—Female, aged 30; varicose eczema. Before treatment the total calcium content was 10.77 mg. p.c. serum (combined, 2.69; ionic, 8.08). On the eighth day of treatment by parathyroid only, gr. 1/10, the combined calcium was 1.90; ionic, 8.00; total, 9.90 mg. p.c. serum. The irritation was lost after a week's treatment.

Case 7.—Male, aged 74; varicose ulcer of four years' standing. Before treatment the total calcium content was 9.70 mg. p.c. serum (combined 3.10; ionic, 6.61). On the eighth day of treatment by parathyroid only, gr. 1/10, the total calcium was 9.17 mg. p.c. serum (combined, 1.09; ionic, 8.08); on the fifteenth day the total was 9.32 mg. p.c. (combined, 0.66; ionic, 8.66). The ulcer was healing well, and the patient was up and at work.

Case 8.—Female, aged 64; three ulcers, each the size of a five-shilling piece; erysipelas and a thrombosed vein. Before treatment the total calcium content was 9.98 mg. p.c. serum (combined, 2.71; ionic, 7.27). On the fifteenth day of treatment by parathyroid only, gr. 1/10, the ionic calcium was 10.1 mg. p.c. serum. The patient was completely healed in ten days.

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[1] Vines, *Journ. of Physiol.*, 1921, [illegible]. 85. [illegible] and Vines, BRITISH MEDICAL JOURNAL, 1921.

DISCUSSION.

Dr. DALE asked whether any reasons were known why the calcium ion concentration of the blood was so closely related to ulceration. In reply Dr. GROVE said that he knew of none, but regretted the absence of Mr. Vines, who had been more connected than himself with the theoretical aspects of the work. Dr. DALE also asked whether any investigations of the effect of ulceration on the clotting time of the blood had been made. Dr. GROVE replied that none had been made. Dr. Dale further drew attention to the difficulty of obtaining parathyroids from sheep and oxen. This was confirmed by Dr. MARTIN.

Dr. CLARK asked whether similar changes in the calcium ion concentration of the blood took place in septic conditions. On this, again, no work had been done.

ANAPHYLATOXIN.

BY

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(*Abstract.*)

IT is generally agreed that anaphylaxis is due to the formation of an antibody which combines with reinjected antigen. One theory attributes the symptoms caused by the reinjection to the occurrence of this combination in the cells. According to this view antibody in the blood is protective. The other theory supposes that union of antigen and antibody in the blood causes the formation there of a toxic substance, anaphylatoxin. Many methods of imparting such toxicity to guinea-pig's serum have been found, most of them having little direct relation to anaphylaxis. Dale and Kellaway have examined the nature of the change taking place in serum when it is rendered toxic by incubation with starch agar, etc. They find no evidence of protein cleavage, nor any change of viscosity or surface tension corresponding to the appearance of the toxicity. "Anaphylatoxin" does not act directly on plain muscle, as it should in theory, but it acts by producing changes in the blood of the nature of the changes which precede clotting. An animal can be rendered immune to "anaphylatoxin" by a subfatal dose, and its serum will transmit this immunity to another guinea-pig; but this guinea-pig, if previously anaphylactic to an antigen, retains its sensitiveness unimpaired.

Excess of antibody added to the saline bath in which anaphylactic plain muscle is suspended will protect it from the antigen. The author regards the similarity of the symptoms produced by "anaphylatoxin" to those of the true anaphylactic reaction as superficial and misleading, and adheres to the theory which attributes anaphylaxis to antibody located in the cells.

OBSERVATIONS ON CERTAIN ELECTRICAL SIGNS OF THE HUMAN BODY.

(*Preliminary Note.*)

BY

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ON a former occasion [1] it has been shown that an E.M.F. amounting to 0.5 volt is developed when cane sugar is fermented through the action of yeast. As is well known, this reaction takes place in two stages: first the inversion of the cane sugar by means of invertase, and secondly the conversion of the glucose and laevulose into alcohol and CO_2. In both these reactions an E.M.F. is developed. In the inversion of the cane sugar the E.M.F. was 0.03 volt. It may be objected that the E.M.F. developed in the second stage is due to the bubbling of the CO_2 through the fermenting liquid. But no such objection can be raised in the case of the inversion of the cane sugar. Hence it follows that the E.M.F. developed during fermentation cannot entirely be due to bubbling.

If we consider the equation

$$\underset{\text{cane sugar}}{C_{12}H_{22}O_{11}} + H_2O = \underset{\text{glucose}}{C_6H_{12}O_6} + \underset{\text{laevulose}}{C_6H_{12}O_6}$$

from the point of view of energy, we find that the heat of combustion of the cane sugar is 1355 cal., while that of the glucose is 677.2 cal., and of the laevulose is 675.9 cal. The equation becomes

$$\underset{1355\text{ cal.}}{C_{12}H_{22}O_{11}} + H_2O = \underset{677.2\text{ cal.}}{C_6H_{12}O_6} + \underset{675.9\text{ cal.}}{C_6H_{12}O_6}$$

and it is seen that 1.9 cal. are liberated during the inversion of the cane sugar. The equation, however, is incomplete without a consideration of the electrical energy, and therefore should be written:

$$C_{12}H_{22}O_{11} + H_2O = C_6H_{12}O_6 + C_6H_{12}O_6 + 1.9\text{ cal.} + X\text{ (E.M.F.)}$$

where X is a constant at present undetermined. There is thus a liberation of both thermal and electrical energy.

It will be noticed that the action of the invertase is from a state of higher to one of lower potential—that is, it acts as a catalyst through the conversion of potential into kinetic energy. At present synthetic enzymes are unknown, and it would seem improbable that they exist, for if an enzyme were to act synthetically a supply of energy would be required for its operation.

Again, it is known that in the formation of a carbohydrate, during photosynthesis from CO_2 and H_2O, thermal energy is locked up and becomes latent, to be again liberated when the carbohydrate is broken down, as for instance, in respiration or muscular exercise. From the fact that E.M.F. is also liberated during the breaking down of carbohydrate, it must now be recognized that electric energy also becomes latent in the carbohydrate, and it follows that there are endo-electric and exo-electric reactions analogous to the endo-thermic and exo-thermic reactions.

Should this explanation prove correct it follows that all the variations of E.M.F. in the plant or animal are due to synthetic or catalytic reactions. The energy utilized in muscular contraction being principally derived from carbohydrate, it would seem that the E.M.F. developed during muscular contraction is proportional to the amount of carbohydrate utilized and further proportional to the work done.

It has been stated previously that the arterial and venous bloods possess a contrary electrical sign.[1] Unfortunately, in the experiments upon which this conclusion was based the air or carbonic acid was not passed through a strong electric field, so that further investigations are necessary before a definite conclusion can be reached on

this point. But, just as the CO_2 produced in alcoholic fermentations is ionized,[2] it is only natural to expect that the CO_2 liberated during muscular contraction is also ionized and that the ions are to be looked for in the venous blood. As there are both synthetic and catalytic reactions taking place in the human body, some experiments have been initiated to determine the E.M.F. of the human body and of the breath. In the method adopted the person under observation stands upon a platform, insulated by means of ebonite feet, and is connected with either a Laby-Burton string electrometer or a Wilson portable electroscope.

The Body.

The E.M.F. of the body has been found to be subject to great fluctuations in the same person, and further variations in E.M.F. exist between different individuals. Thus in a class of 29 students 10 exhibited a negative and 19 a positive reaction. In the same individual the E.M.F. has been found to vary from 10 volts negative to 3 volts positive with certain neutral points. At present it has not been found possible to construct a curve showing these variations.

The Breath.

The breath has been found to be negative in normal cases.

(*a*) When standing on the insulated platform and blowing through a glass tube, the drops of condensed breath were allowed to fall upon a wire connected to the electrometer. The electrometer then responded in the negative direction. An objection, however, can be raised to this method, as the capacity of the instrument would be changed.

(*b*) Upon a sheet of paper soaked in melted paraffin two similar pieces of tinfoil were pressed, opposite to each other, one on each side. One tinfoil plate was then breathed upon. The electrometer responded as these tinfoil plates were made to approach or recede from the electrometer. The one breathed upon indicated a negative and the other a positive reaction.

(*c*) A small glass tube, the edge coated with paraffin, the inside and outside coated with tinfoil, rested in the hollow of a block of paraffin. The inside tinfoil was connected to the electrometer. When breath was allowed to condense upon the outside, by blowing through a glass tube, the electrometer then moved in the positive direction.

The same effects can be observed when platinum is substituted for tinfoil. Experiments (*b*) and (*c*) show that small Leyden jars can be charged with the human breath. The E.M.F. of the breath measured in this manner is approximately 1 to 2 volts negative.

(*d*) A silk tassel, when electrified positively by being drawn through a sheet of rubber, is readily discharged by the breath; but when electrified negatively by rubbing with a glass rod it is not discharged by the breath.

Crowded Rooms.

Some attempts have been made to compare the electrical changes in crowded rooms. Thus an aerial of thin copper wire has been arranged in a lecture room and measurements taken of the electrical state of the air before, during, and after lecture to a crowded audience. As far as experiments have progressed it would appear that the air is electrified negatively by the expiration of those present in the room. May it be that electrons in the discharged breath are to be regarded as excreta?

REFERENCES.

[1] Electrical Effects accompanying the Decomposition of Organic Compounds, *Proc. Roy. Soc.*, B, vol. 84, 1911. [2] Electrical Effects accompanying the Decomposition of Organic Compounds: II. Ionization of the Gases produced during Fermentation, *Proc. Roy. Soc.*, A, vol. 91, 1915.

DISCUSSION.

Professor A. V. Hill suggested various control experiments to test the validity of Professor Potter's explanation of the electromotive forces he had observed in these enzyme reactions. For instance, in the case of the E.M.F. observed between yeast and glucose solution inside the porous pot and glucose solution outside, one ought also to inquire whether an E.M.F. was observed between yeast and a neutral solution (on which it does not react) inside and the same neutral solution outside. In regard to the observations upon the E.M.F. between the breath and the body, Professor Hill was sceptical as to how far these were not artificial effects due to the electric forces which are always present in a large town. He quoted instances of how his own work had been seriously interfered with by factors of this kind. He suggested that the observations should be repeated far out in the country so as to avoid such disturbances.

Professor Potter, in reply, expressed his gratitude for these criticisms and suggestions, some of which he had already carried out.

On Thursday afternoon Professor Potter gave a practical demonstration, in the Botanical Laboratory, of the experiments described in his paper. Several members of the Section attended the demonstration and were much interested in it.

THE POISON ORGANS AND VENOMS OF VENOMOUS FISH.

BY

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I beg to acknowledge the honour you do me in allowing me to address you on a subject which has interested me many years. Unfortunately our English textbooks on medicine contain little reference to the subject, and what they do contain is mostly incorrect. And even in such valuable textbooks as the *Cambridge Natural History* (1904) we find that the knowledge is not more advanced than can be obtained by reading Botard's work, published in 1889. Since that date much work has been undertaken, and among the most important communications on the subject are articles by Porta, Kobert, and the chapters on Poissons Venimeux in Calmette's work on Venoms. Experiments on fish venoms have been undertaken by Briot and others, yet an authority like Professor Ray Lankester published in 1910 an article on poison wounds, and stated that the evil effects of wounds inflicted by the sting-ray were due to the poisonous slime of the skin of the fish, and also that there was no definite poison sac in the weever fish.

From early times the question of true venoms in fish has been a disputed subject. Aristotle mentions several dangerous fish, notably Trygon, the sting-ray, and Scorpaena, but he was not explicit as regards the venomous nature of the sting, and he made no mention of the weever as a stinging fish. We first find precise information about fish with poison organs in the vast compilation of Pliny. He says Aranaeus (probably *Trachinus aranaeus*), a kind of weever found in the Mediterranean, "carries on its back a sting which is very dangerous, but there is nothing more terrible than the sting that arms the tail of Trygon, called Pastinaca by the Latins, which is five inches long. When driven into the root of a tree it causes it to wither. It can pierce armour like an arrow, it is strong as iron, yet possesses venomous properties." When we come to the Renaissance we find Belon, Rondelet, Salviani, and Gesner possessing exact ideas concerning Trygon, Trachinus, and Scorpaena. Speaking of Trygon, Pierre Belon describes the dart at the root of its tail, which is sometimes double and triple, with which it pricks those who touch it carelessly.

Rondelet describes the dart at length. Its margin is armed with teeth like the teeth of a saw, which enables the dart to enter easily, but tears the flesh as it is withdrawn by the backward slant of the teeth. Superstition and romance surrounded this dart with mysterious attributes. As Sir Thomas Browne quaintly remarks, it is conceived of special venom and virtues. If burnt, and the cinders applied to the wound in vinegar, it acts as an antidote. It relieves toothache, and helps cases of difficult dentition. If attached to the navel of a woman it causes her to have an easy childbirth, provided it be taken from a living ray, which is then thrown back into the sea. Aldrovander endeavoured to shake off the yoke of antiquity, and adopted the attitude of even modern writers. "I have searched," he says, "for a poison organ and have not found it; therefore, it does not exist," and proceeds to state: "These fish are dangerous only on account of the mechanical wounds they make and the depths to which their spines penetrate." More modern ichthyologists—Sonnini, Lacepede, and Cuvier—deny the presence of poison glands

in fish. Lacepede on every possible occasion denies the existence in the sting-ray, weever, scorpaena, plutosus, and muraena of any poison organ, and just as energetically Cuvier supports him, but allows that the pricks of certain fish are dangerous and produce acute pain. The opinion of these authors became almost a matter of dogma, and the works of ichthyology since their time have always denied the presence of a poison organ in fish.

Towards the middle of the last century Alman (1841) first described the gland at the root of the spine of the lesser weever, and his discoveries were widened and confirmed by Byerley, Gunther, Newton Parker, Bottard, and Schmidt. But even Bottard will not allow the sting-ray to possess a poison organ, and the *Cambridge Natural History* states that among the Elasmobranchs the eagle-rays and sting-rays have barbed serrated spines on the tail which inflict wounds far more severe than those caused by mere mechanical irritation, but except the mucus secreted by the gland cells of the skin, which may possess venomous properties, no special poison-forming gland is at present known. Porta a few years since described a poison gland in the sting-ray, but his description and plate does not convince me that he has yet correctly observed this very fleeting organ. I will, however, first show you the poison gland of the spiny dog-fish, which was first described by myself in February, 1920. I have reason to believe that a German investi-

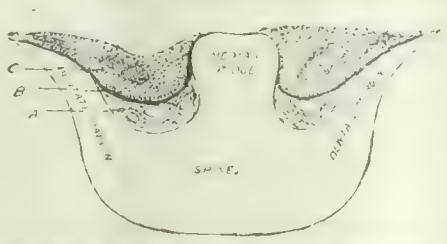


FIG. 1.—Section of spine of sting-ray (Diagrammatic). Each groove is lined with alveolar connective tissue, the pigment layer of epithelial layer, which consists of columnar and ovoid cells which secrete venom which is discharged out to the tip of the teeth.

gator has written on that subject, but in spite of many efforts I have been unable to get on the track of his paper, which was referred to by Robert as about to be published.

Fish inflict wounds by means of poison spines developed in connexion with their fins, usually the dorsal fin or with the gill cover or operculum. In certain Siluridae there is an axillary gland situated near the base of a pectoral spine, and in the plaice there is a spine situated ventrally which is reputed to be of a venomous nature. The spines at the root of the tail in sting-rays is in some cases developed apart from a fin, but there is reason to believe that in these cases it represents a fin, and, so to speak, takes its place. Bottard described three types of spines, but recent work brings the number up to six. Starting with the earliest type of fish, we have two kinds found among the Elasmobranchs.

Taking the spiny dogfish or spur-dog, we have a curved spine in relation to the anterior margin of its dorsal fins which is grooved on the posterior aspect extending a variable distance from the base. This groove contains a glandular structure, extracts of which can be proved to be venomous. The dart growing at the root of the tail in the sting and eagle rays is more or less flattened, and the lateral margins are serrated with teeth projecting towards the base. Facing the tail the spine has a central ridge, and a groove on either side exists between this ridge and the serrated margin. In these grooves lies a glandular structure.

In the bony fish the class Scorpaenidae contains several fish with poison glands, among which the weever is the best known type. Here we have the dorsal fin with spinous rays grooved anteriorly and posteriorly, and sheathed. At the bottom of this sheath is a definite poison gland. At the posterior margin of the gill cover is a more formidable spine deeply grooved above and below, and also surrounded by a sheath, which only exposes a small portion of the tip. At the base of the sheath lying partly in a bony, conical cavity, partly only surrounded by soft tissue, is a pear-shaped gland. In Synanceia the poison organ is still more developed. Each dorsal spine is in its terminal half provided with a deep groove on either side, at the lower end of which lies a pear-shaped bag containing milky poison, the sac of which is prolonged into a membranous duct lying in the groove and open at its point. Finally, we have the perfected organ of Thyllassophryne, in which the operculum and two dorsal spines are the weapons. The former is narrow and styliform, and perforated from its base to its extremity, like the venomous fang of a snake. A sac at the base of the spine discharges its contents through the apertures and the canal in the interior of the spine.

The injection into roach of filtered glycerin extract of the gland substance obtained by scraping the groove of a dog-fish's dorsal spine gave the following results: In most cases there was a period varying from ten to thirty minutes in which the fish lay quiescent, and during this period the respirations became very rapid, from 120 to 140 per minute. The general symptoms usually then subsided, but locally swelling and oedema occurred at the site of injection and the scales became erect over this area; no suppuration occurred. The fish, however, seemed ill, as it lost its pale colour and became dark and dull-looking, like fish allowed to remain too long in a live-bait can. In three fish I have observed definite symptoms of local paralysis of a spastic nature. The fish swam lying on the side of injection or else swam towards the inoculated side owing to the excursions of the tail taking place away from

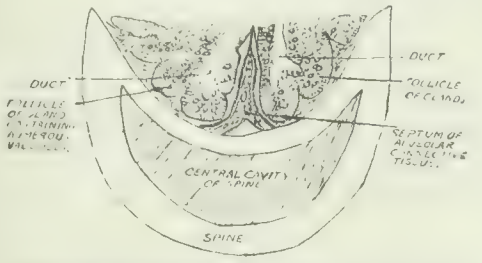


FIG. 2.—Section of spine of spur-dog or picked dogfish (diagrammatic).

the lesion. The fish were curved sharply towards the site of inoculation. In one fish I noted muscular spasms extending upwards from the tail and in another complete paralysis involving all the body to the level of the pectoral fins. Death appeared to be due to respiratory failure, and locally there was a pink oedema, but no haemorrhages, local or general.

Compare with these effects the action of weever venom on a goldfish as described in my paper in the BRITISH MEDICAL JOURNAL, 1906. It produces a local mortification of the tissues. When injected into the region of the lateral line, the fish is sharply bent away from the lesion on account of the predominant action of the lateral muscles of the opposite side. *Post-mortem* examination showed extravasated areas of blood at the site of inoculation, necrosis of muscle, and great congestion of the peritoneum. In mouse and guinea-pig inoculation under the skin of the back produced paralysis of the hind-quarters and similar local lesions. The haemolytic properties of this venom have been fully studied. It produces haemolysis without the addition of heated serum, but if it is mixed with glycerin and filtered through filter paper or through a porcelain candle, heated serum must be added to produce haemolysis.

In studying the paralytic effect of weever venom on white blood corpuscles or the leucotoxic effect I have modified Wright's method of determination of opsonin. In making these experiments I took a volume of washed corpuscles, *plus* serum, *plus* a bacterial emulsion of *Staphylococcus aureus*, and a volume of salt solution in one capillary tube, and in the other the washed corpuscles, serum, bacterial emulsion and salt solution containing a drop of venom. After incubating for a quarter of an hour, the white cells in the poisoned tube, when stained in a film by Jenner's stain, showed vacuolation, deficient staining, and a marked diminution in the phagocytic action, 25 per cent. fewer bacteria being present in the count. As the bacteria stained equally well in each film, there was no reason to assume that this was due to bacteriolysis and not to a paralytic effect on the white cells. Considering how frequently secondary septic inflammations result from

the sting of these fish, these experiments would show how readily the barrier of phagocytosis may be broken down and the pathogenic organism from the dirty skin may find an entry into the system.

Treatment.

The question of treatment is of considerable importance, and the various empirical methods recommended are worthy of study. The fallacies of empiricism are not limited to the lay public, and a superficial reasoning is responsible for some of the methods in vogue even by the profession. For example, the injury is called weever sting; the ant's sting is supposed to be due to formic acid—which is certainly open to doubt—therefore ammonia, being an alkali, will counteract the acid sting of both ant and weever. It is the natural tendency for a person when injured to look round for something handy to apply. Among the natives of Mauritius and Reunion, where a similar stinging fish, the Synancia, frequently injures the feet of the fishermen, the natives fly to the leaves and seeds of plants growing by the seashore, in the same way as a person stung by a nettle flies to a dock leaf. Thus we find a local specific in the root and leaves of the datura, belonging to the family of Solanacea used by these natives, not without effect, in soothing the pain, but probably in an entirely empirical fashion, as the datura grows in abundance on the dry sand of the shore.

Among the plants employed in an empirical way to cure the prick made by the fish the seeds of *Abrus precatorius* seems, according to Bottard, to have the virtue of a specific. We are familiar with abrus or jequirity seeds as a remedy for certain chronic eye diseases; a toxin, abrin, derived from it has been shown to possess the characters of the toxins of diphtheria and tetanus, to which are allied the toxins of snake and various other animal poisons. It dissolves red blood cells, and has also a neurotoxic effect. Why should one toxin be a cure for the symptoms produced by another toxin?

To investigate this point I made experiments on haemolysis with weever venom, using various strengths of a solution of abrin in the mixture of washed corpuscles and venom. I found a definite diminution of haemolysis in those tubes containing abrin which appeared to be due to its powerful agglutinative action. Some experiments on small laboratory animals were not encouraging, as the toxic effect of abrin overshadowed any neutralizing effect on the poison.

To come to the local methods of treatment. We find that the fishermen have acted on the line of heat. The most frequent remedy is to plunge the part into boiling vinegar; another plan is to hold the affected limb over the funnel of the boiler which, in a smack, drives the donkey engine. A third plan is to apply heat vicariously by throwing the offending weever on the fire, with what results I am unable to state. Sometimes they soak a piece of brown paper in vinegar, let it dry, and, wrapping the paper round the finger, apply a light and let the paper gradually smoulder until the heat becomes no longer bearable. The effect of heat, no doubt, would tend to destroy the venom. Another not infrequent treatment consists in cutting out the fish's liver and applying it to the wound. Here again we are approaching a scientific treatment by an empirical method. We have it recorded that serpent's bile appears to be an antidote to serpent's venom, and also that a preparation of snake's liver is of value in the treatment, not only of snake-bite, but also of some disease toxins, as of tetanus and diphtheria. It is probable the efficiency of the liver preparation is due to the cholesterin it contains. The British Medical Journal of 1906 records two cases of tetanus treated successfully with injections of cholesterin, and it has been established by Preston Kyes that cholesterin markedly inhibits haemolysis by cobra venoms and cobra venom lecithin. It also inhibits haemolysis by arachnolysin.

When we come to the best methods of destroying the active properties of venom we find that, as with snake venoms, potassium permanganate, chloride of lime, and chloride of gold destroy the venom rapidly, and I have suggested that all smacks and drifters should be provided with a Lauder Brunton snake-bite lancet (which at one end contains potassium permanganate crystals), so that a really efficient remedy may be at hand. Both practical and experimental treatment by this method have been shown to be accompanied with the best results.

The method I now employ with immediate success, both as regards relief of pain and toxic after-effects, is to inject several minims of a 5 per cent. solution of potassium permanganate (which I have kept in sterile ampoules, provided by Brady and Martin of Newcastle) into the punctured wound with a hypodermic syringe. In these days of rustless needles this method can also be recommended for fishermen; with such needles and the solution in ampoules there need be no more septic hands and amputated fingers, the result of injuries produced by fish venoms.

DISCUSSION.

Dr. H. H. Dale, in thanking Dr. Evans for his most interesting paper, congratulated him on the enthusiasm and energy which had enabled him to to find time, amidst the arduous duties of general practice, to carry out these most important researches. He also complimented Dr. Evans on the beautiful series of microphotographs which had been shown by the lantern. In particular, he expressed much curiosity as to why a meshwork of pigment was found in the cells where the secretion of poison takes place.

Dr. Hele asked for reasons why immediate relief from the sting of the eagle ray was obtained by local injection of potassium permanganate and formol.

Dr. Evans attributed it to the destruction of the toxalbumins (which are very labile) either by oxidation—in the case of potassium permanganate, or by reduction—in the case of formol.

PHYSIOLOGY OF ORAL HYGIENE.

BY

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To understand properly the physiology of oral hygiene it is necessary to refer briefly to the physiology of mastication, for, although the chief function of mastication is the preliminary preparation of food in order to facilitate its digestion, it has a secondary function in that when suitable foods are masticated it cleans the teeth and facilitates the action of the saliva in doing likewise. It should be noted, however, that many foodstuffs which are consumed at the present day are hardly subjected to the process of mastication at all. The food is simply taken into the mouth, receives a general squash between the teeth, or between the dorsum of the tongue and the hard palate, and is then swallowed. This method of mastication, if mastication it can be called, is as a rule adopted for custards, fine meal porridge, soft puddings, and soft non-fibrous foods generally.

When there is a certain amount of crisp, spongy, or fibrous matter in the foodstuff, then the process is essentially different, and mastication is performed in a more thorough manner. In this latter case the food is crushed and torn between, and heaped on to the masticating surfaces of the teeth by the muscular contractions of the tongue, cheeks, and lips, and by the motions of the lower jaw. During comminution between the teeth, the juices of the foodstuffs, the saliva which becomes incorporated, and the suspended non-fibrous part, are pressed out from the fibres and gradually collect during the process on the middle of the dorsum of the tongue, which is gradually hollowed out for the reception of such food, and this part is then swallowed. The fibrous part of the food, however, is subjected again and again to the crushing and disintegration between the teeth. The rubbing of the food on the teeth, the motions of the tongue, lips, cheeks, and mandible materially aid in the mechanical cleansing of the teeth and gums provided suitable food for this purpose is eaten. When for any reason mastication is not performed on one side of the mouth, the teeth on that side become coated with mucus, tartar, and food débris. It is evident, therefore, that mastication of fibrous food is conducive to dental hygiene.

Now let me direct attention more particularly to mucus and saliva in regard to oral hygiene. I shall do so at some length because the subject is not referred to in physiological textbooks. Physiologists hardly seem even

yet to realize that oral hygiene is a physiological process, and that all the glands opening into the mouth, together with their secretions, are specially adapted for the maintenance of oral hygiene, and that these secretions are scarcely, if at all, of importance for any other function.

Mucus.

From the point of view of the oral hygienist, the supposed function of the mucus for lubricating the bolus of food so as to facilitate its passage down the oesophagus is whimsical, for inasmuch as the function of mastication is to comminute the food, and reduce anything in the nature of a bolus to a liquid or semi liquid state before it passes to the back of the dorsum of the tongue, there is no bolus to lubricate. The mucus and saliva are thoroughly incorporated with the food, and consequently the semi-liquid food does not require lubrication. Just as the function of the mucus in the bronchial tubes is to keep these tubes clean, so the essential function of the oral mucus is to keep the mouth clean. Mucus is a liquid, tenacious and ropy in its nature, which under certain circumstances clings to hard substances. Chemically, perhaps, its best-known characteristic is that it forms a flocculent precipitate when treated with acids. These properties of mucus are well known. The following quotation from the work of Professor W. E. Gies and his collaborator, Dr. Lothrop, will indicate some further characteristics:

"Mucin occurs in saliva, and apparently also on dental surfaces, primarily as acid salts in concentrated colloidal solution. When viscid mucinous coatings are treated with basic material, such as carbonate of an alkali or an earthy element, the mucin mass becomes superficially more smeary and slippery by reason of the production of more soluble mucin salts at the surface. Complete mechanical removal of a mucin plaque from a tooth is facilitated by the addition of a basic material that renders the mucin superficially more viscous, but the slippery surface thus produced may make the application of considerable friction necessary for the detachment of the plaque. On the other hand, when a viscid mucinous deposit is treated with acid material, the mucin mass is completely disintegrated by a curdling or agglutinative process, the particles are devoid of adhesiveness to smooth surfaces, stickiness disappears because of the precipitation of caseous mucin itself, and the entire disorganized mass may be readily flushed away."

A consideration of these properties of mucus leads us to the conclusion that it is quite ingeniously suited for keeping the mouth free from the undue lodgement of food particles, when the foods are not converted by artificial means into some bland pap-like form which stultifies efficient mastication, negatives "considerable friction," and precludes the possibility of its being disintegrated so that it may be readily flushed away. It matters but little whether the chemical reaction of the food is neutral or alkaline, for during the mastication of food the saliva becomes alkaline if in its resting state it is acid, and the slippery state of the mucous coating on the teeth (and gums) is assured, while the ropiness of the mucus is left unimpaired.

On the other hand, if the food is more acid than can be neutralized by the copious flow of alkaline saliva, which it stimulates, the mucous films themselves are disintegrated and easily removed by the saliva and mucus after the acid has been swallowed. Thus, then, the mucus has not only the power of facilitating the removal of food particles and shreds which have been disintegrated by mastication, but it has also, under certain dietetic conditions, the property of being disintegrated and carrying its own disintegrated self away. Under unsatisfactory dietetic conditions—that is, when the food is habitually alkaline and so soft as not to stimulate mastication—the mucous coating on the teeth may remain too long, stagnate, and become infiltrated with the salts of the saliva; that is to say, tartar may be formed; or, if the food is of a carbohydrate nature and of a sticky character, it may be rapidly converted into lactic acid by bacteria, decalcification of the enamel may take place, and dental caries may be initiated. Should, however, the mucus not be saturated with carbohydrates of an impermeable and easily fermentable nature, the bacteria of the mouth slowly disintegrate the mucous coatings on the teeth and facilitate its removal on those surfaces of the teeth where it has not been removed by disintegration or considerable friction. It is quite possible, too, that the ptyalin in the saliva may digest the carbohydrate radical in the mucus, just as trypsin does. Why, otherwise, should we have a saliva rich in ptyalin poured out when sugar is taken in the mouth?

When we consider these facts we see that mucus is ingeniously devised for oral hygiene, and it is not devised for the lubrication of the bolus of food to facilitate its transmission to the stomach, nor is it devised, as has been suggested, to keep the numerous boluses of food in the stomach from the action of the hydrochloric acid, so that the ptyalin may have a chance of converting the starch in the boluses. Indeed, it seems much more probable that the thorough incorporation of food with mucus facilitates the penetration of the hydrochloric acid throughout the whole of the contents of the stomach after a meal, and possibly this is one of the reasons why a meal of such a physical consistency as demands mastication is more quickly and satisfactorily digested than a meal of a similar nature which has been reduced to a pap-like form before it is taken into the mouth.

Saliva.

It seems to me more than probable that physiologists will require to reconsider their teachings with regard to the function of the saliva. Hitherto they have looked upon it as the first of the digestive juices, and the salivary glands have been regarded as the first of the digestive glands. Some physiologists realize that the digestion of starch is not *the* function of the saliva; at least Professor Noël Paton considers that its more important function is mechanical (to facilitate speaking, eating, etc.). I shall try to indicate what the function of the saliva really is, but if we have not discovered the function of the saliva surely the sooner physiologists set about discovering it the better. For quite a number of years I have studied physiological problems because of their importance with regard to human welfare, and have come to the conclusion that to all intents and purposes the saliva is not a digestive juice, but that it is practically wholly for the purposes of oral hygiene. The older physiologists based their ideas on the fact that ptyalin has the power of converting cooked starch into achrodextrine and maltose. But many questions arise which would appear to throw considerable doubt upon regarding this as the chief function of saliva. That the digestion of uncooked starch is practically negligible is admitted by them; indeed, we are told that ptyalin does not digest uncooked starch (Halliburton, F. A. Bainbridge and J. Ackworth Menzies). If this be so, we may ask why ptyalin exists in the saliva of animals at all? Is it conceded that the saliva is not a digestive juice in animals? Again, it has never been contended that ptyalin digests sugar, but sugar stimulates a relatively violent flow of saliva rich in ptyalin. Why, too, should ptyalin exist in the saliva from birth, as we are told by some physiologists? Oral hygiene is no doubt necessary with a milk diet, but are we to believe that ptyalin is there to digest starch which normally is not present?

Again, why is starch, immediately it has been masticated and mixed with the saliva, transferred at once to the stomach, where the conditions are so frequently such that the digestion of starch by the ptyalin is immediately arrested, or if it is not immediately arrested, it soon becomes so? Physiologists have, of course, long recognized this supposed delinquency of Nature, and attempts have been made to explain how ptyalin may have some reasonable time to digest starch before the contents of the stomach become sufficiently acid to arrest the action of ptyalin. Thus, for example, some physiologists (Bainbridge and Menzies) say: "The food, after a meal is taken, forms a compact mass in the stomach, and the hydrochloric acid of the gastric juice penetrates comparatively slowly into this mass." It is only, of course, a pure supposition to say that the food forms a compact mass in the stomach; nevertheless, they evidently imagine not only that the food passes down the oesophagus in bolus form, but that the various boluses become one glorified bolus in the stomach.

It is significant that these physiologists never seem to refer to the fact that the contents of the stomach may be acid from the very beginning of a meal. A meal may commence with acid *hors d'oeuvre*, the bit of fish which follows may be served with lemon juice, meat may be eaten with salad well seasoned with vinegar, and stewed or raw fruit or both may complete the meal with a further supply of acid, while acid mineral or alcoholic beverages, which are sometimes supposed to stimulate digestion, may, and very frequently do, accompany the meal at various stages. Nevertheless, I do not know that we are told

that acids taken in these ways interfere with the digestion except among dyspeptics. Indeed, Professor Pavlov, speaking of the reaction of the food, says: "It is apparent that acidity enjoys a special preference in the human taste. . . . These facts are all physiologically comprehensible when we know that an acid reaction is not only necessary for an efficient action of the peptic ferment, but is at the same time the strongest excitant of the pancreatic gland."

Another point on which there seems to be confusion is with regard to the medium most suitable for the digestion of starch. According to Bainbridge and Menzies, "the digestive action of ptyalin on starch is most energetic in a neutral medium." According to Foster, "the action of saliva on starch is favoured by a slightly alkaline medium." It is curious how this is always referred to as if the slight difference in the reaction of the saliva were really of considerable importance in digestion. I have frequently tested the reaction of saliva between meals, but certainly am unable to draw the inference that the liquefaction of starch is at all influenced in any practical way by the reaction of such saliva. On the other hand, the fact that the saliva becomes very distinctly alkaline when food is eaten, and for some considerable time after it is swallowed, seems to the older physiologists unworthy of being mentioned.

To us who think that oral hygiene should be at least as common in man as it is in animals, all these apparently confusing and inexplicable facts have a simple explanation. The marked alkalinity of the saliva when food is taken has a significance in that it is important that it should have that reaction while the mucus is specially required for removing food particles from the mouth. If the saliva were sufficiently acid the mucus could not function in this way. Moreover, the acids which so commonly accompany foods might decalcify the teeth. On the other hand, the reaction of the saliva between meals is of practically no importance at all, because the conversion of starch in the mouth into soluble starch proceeds to all intents and purposes sufficiently satisfactorily, whether the saliva be neutral or faintly acid, or faintly alkaline to litmus. It has been the subject of much contention, possibly on account of its lack of importance, whether acidity or alkalinity of the saliva was the more unfavourable to the inception of dental caries. The slight acidity of the saliva between meals may be important because of its favouring the liquefying rather that the acid-forming bacteria, but the greater power of an alkaline saliva in neutralizing acid formed by bacteria may at least equally help to prevent caries. The point is not settled.

Towards the beginning of this paper I suggested a use for the ptyalin when sugar is taken into the mouth, and to those who appreciate why sugar is liable to cause dental caries the reason for a copious flow of saliva when sugar is eaten is obvious. Similarly, the desirability of a copious flow of alkaline saliva when acids are taken into the mouth is equally obvious if we value the preservation of the teeth; but why an alkaline saliva should be thought desirable for digestion if acid is "necessary for the efficient action of the peptic ferment, and at the same time the strongest excitant of the pancreatic gland," I fail to see.

While we are regaled with the importance of ptyalin for the digestion of starch, little is told us of the functions of the salts in the saliva, but they, too, are obviously of importance from the point of view of oral hygiene and the preservation of the teeth. Dr. Joseph Head made the important observation that when the superficial layer of enamel of the teeth has been slightly softened by acid this enamel can be rehardened by immersion in saliva, and thus it would appear that the salts in the saliva have an important restorative value as well as being prophylactic in function with regard to dental caries.

The saliva contains something more—amoeboid phagocytic cells, the so-called salivary corpuscles. They may be regarded as the scavengers of the mouth, and, as far as we can surmise, their function is simply oral hygiene. We are told that they are probably derived from the tonsils (Halliburton), and, although we might expect that lymphoid cells derived from the tonsils would pass down the throat rather than come forward and mix with the saliva, I at least have not seen reference to any experiment or observations to excuse the idea that they come forward into the mouth. The late Professor G. V. Black made a careful examination of the lymphatics surrounding the necks of the teeth, and refers to a portion of the connective tissue in immediate conjunction with the tooth, which is not covered by the epithelium, and says: "It seems to be through this space that the cells—the so-called salivary corpuscles found under the free border of the gingiva—pass." "These may be found at any time under the healthy gingivus, and their numbers are augmented with every irritation of the membrane."

It has always appeared to me that the only satisfactory method of controlling the bacteria in the sulcus between the gingival margin and the tooth is by means of these phagocytic corpuscles. If we admit that the salivary corpuscles exude primarily into this sulcus, we observe at once their importance in oral hygiene, and—in passing, it may be said—the value of masticating food of such a nature as will cause an irritation, or rather stimulation, of the periodontal membrane, and thus assure a sufficient supply of these scavengers and thereby prevent the onset of pyorrhoea.

All things considered, it appears that the function of the saliva is, *par excellence*, oral hygiene, and no matter whether the food passes into the mouth and down the oesophagus in the ordinary way or whether the food passes up from the stomach and out of the mouth, it may in general be said that the saliva is secreted in quality and quantity proportionate to the needs of the food, to expel the food as completely as possible from the mouth. I need hardly mention that although a copious flow of saliva is induced by vomiting, even physiologists of the old school could scarcely claim that under these circumstances the saliva was to be regarded as the first of the digestive juices.

I have put forward the preceding observations to induce physiologists to take up this subject, and to give an authoritative lead. For without this the rank and file of the medical profession cannot be expected to teach the public the new ideas with regard to oral hygiene consistently, and until the function of the saliva is properly taught the valuable work which has been and is being done by medical officers of health and health workers will have but little chance of achieving its beneficent results.

DISCUSSION.

Dr. DALE expressed his appreciation of the research which is being done by dentists upon the physiology of oral hygiene. Although physiologists (he continued) do not believe the zymolytic function of ptyalin as important as Dr. Sim Wallace supposes they do, yet in depriving ptyalin of any importance as an enzyme Dr. Sim Wallace leaves it with no definite function at all. In considering the origin of dental caries more importance should be attached to dietetic deficiencies in early life than to the cleansing action of saliva. Nor can the latter factor easily explain why some people never have to visit a dentist at all, whilst others, in spite of the utmost care, have to do so frequently.

Dr. CLARK remarked that if the function of the mucus in the saliva was only a cleansing one, it would be reasonable to expect that when sand was given to an animal instead of meat a higher proportion of mucus would be secreted in the saliva. Actually a more watery saliva is secreted. The same applies to the quality of saliva secreted in connexion with vomiting. It also contains more water instead of more mucus than normal saliva.

Dr. SIM WALLACE, in reply, said: My reason for not making reference to developmental deficiencies in my paper was that this has nothing to do with the physiology of oral hygiene. Moreover, oral hygiene is at least as important when there is hypoplasia of the enamel as when there is not. For other reasons the Mellanby experiments were hardly worth taking notice of. As far as I could gather the hypoplasia exhibited in these experiments must have been in existence before the special feeding of the puppies was commenced. The crown of a child's first permanent molar is formed five or six years before it erupts, and no doubt the crown of the corresponding tooth in a puppy is formed at least six months before eruption. If teeth show hypoplasia when they erupt, attention should be directed to conditions existing during the formation of

the crown, and not to the special feeding after the crowns are formed. The crown of a tooth does not grow after it erupts.

A relative lack of fat-soluble A in the food seems to have no effect whatever in causing dental caries. Thus it was found that during the war, when foods containing fat-soluble A—for example, cream, butter, milk, and meat—were very scarce or unprocurable, dental caries actually decreased. In Shropshire there was, indeed, a very remarkable decrease. Nor is there apparently any relationship between the prevalence of rickets and dental caries. In England about the same percentage of children have decayed teeth whether they have had rickets or not. In America and Australia, where rickets is extremely rare, dental caries is about as rampant as it is in England. There is no extraordinary difference in teeth with regard to resistance to dental caries. Any tooth, whether "good" or "bad," can easily be decalcified by lactic acid even when it is weaker than it frequently may be found under fermenting carbohydrates in the crevices of the teeth. The enamel, being lifeless, offers no active resistance whatever.

Often teeth with well-formed and thick enamel are specially liable to caries, simply because the thicker the enamel the deeper the crevices, and consequently the more liable to lodge carbohydrate. This is well exemplified in the upper later incisors, which never decay on the lingual aspect except when the enamel ridges are thick and form a pit or crevice on the lingual surface. Neither are there racial differences in resistance. The once excellent teeth of the Kaffirs have become about as bad as those of Europeans where they have been subjected to European food. Similarly with the Maoris and our own ancestors, both had excellent teeth.

The answer to the question of the use of the ptyalin is simply that it is there to liquefy any particles of starch which may become lodged in crevices or impacted between the teeth. When it has done this, so as to facilitate the flushing away of such starch, it has fulfilled its function of helping to secure oral hygiene. With regard to saliva being watery when sand is put into a dog's mouth, this does not run counter to anything I have said. If a watery saliva is effective in getting rid of the sand, there is no need for the saliva to contain much mucus.

THE CHEMOTHERAPY OF PYOGENIC INFECTIONS WITH SPECIAL REFERENCE TO THE ANTISEPTIC PROPERTIES OF ACRIDINE COMPOUNDS.

BY

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The effects of operative and mechanical intervention and of specific immunization in the treatment of pyogenic infections are not sufficiently successful to discourage the attempt to secure additional aid from the use of chemical compounds. These may act either by stimulating the tissues of the host or by depressing the virulence of the infective organisms. There is no certain evidence that elevation of resistance can be effected by chemical means; on the other hand, many substances damage the vitality of bacteria. Hence the search for suitable antiseptics appears to offer a prospect of success. It has long been known, however, that the antiseptics commonly employed have little influence on organisms in contact with the tissues, since they act as general protoplasmic poisons, and are as a rule more harmful to the host than to the bacteria. Accordingly it is necessary to search for compounds with more desirable properties. Incidentally there is the complex problem of determining what constitute desirable properties, as it is necessary to decide by relatively simple preliminary tests what substances should be subjected to therapeutic trial. It appears that one should aim at high antiseptic potency, especially under conditions as nearly as possible resembling those which may be met with in the body, together with low toxicity for mammalian tissues. Toxicity may be measured for the animal as a whole when the substance is injected subcutaneously or intravenously, and also for particular functions—for example, phagocytosis; and for special tissues—for example, epithelial membranes, such as the conjunctiva—by local application of the drug. These points may be illustrated by reference to the diamino-acridine compounds ("flavines"), which appear to be the most efficient antiseptics from the therapeutic standpoint so far investigated by us.

(We were indebted to Drs. Barger and Ewins of the Department of Biochemistry and Pharmacology of the Medical Research Committee for the preparation of acriflavine and proflavine.)

Antiseptic Potency.

The method usually adopted in defining the value of an antiseptic is to express its potency as the ratio of the reciprocals of the sterilizing concentrations of the substance in question and some standard compound, commonly phenol. In calculating this ratio the period of contact of the bacteria with the antiseptic is as a rule limited to a few minutes. Certain substances—for example, phenol and mercuric chloride—act rapidly; on the other hand, there are many powerfully antiseptic organic compounds, such as those of the diamino-acridine group and the di- and tri-aminotriphenylmethane derivatives (brilliant green, crystal violet, etc.), which cause death of organisms comparatively slowly; but, short of lethal action, they exert a powerful inhibitory or "bacteriostatic" effect. Hence it appeared that the antiseptic value of a substance intended for therapeutic purposes might be most suitably gauged by estimating its power of restraining growth and eventually causing death of the organisms, ample time being allowed for the latter result. Provided that the antiseptic is not neutralized in the tissues or that, if so, it can be frequently renewed, mere slowness of lethal action as determined *in vitro* matters little; the organisms will be controlled from the beginning.

Accordingly, fluid medium containing the antiseptic in varying concentration was inoculated with different types of bacteria, and after the mixtures had been kept for twenty-four to forty-eight hours at 37° C. the occurrence of proliferation was examined for by noting whether turbidity had developed in the inoculated tubes as compared with the sterile controls, and also the number of viable organisms present was ascertained with sufficient accuracy by subculturing a loopful on solid medium. Thus effects short of total sterilization can be estimated; whereas by subculturing in fluid medium it is impossible to detect any degree of action short of complete sterilization. In addition to a watery solution containing a small amount of bacteriological peptone (0.7 per cent.), sterile ox serum, previously heated for several hours at 56° C., in order to destroy normal bactericidal power as well as accidental contaminating organisms, was employed.

Serum may be regarded as a highly suitable test medium. In virtue of its content in protein it has a powerful action in reducing the bactericidal effect of most strong antiseptics (for example, the potency of mercuric chloride is reduced one hundred times); at the same time it is very constant in composition and reaction, and it represents the fluid constituent which antiseptics in contact with the tissues are exposed to; for instance, in a surgically treated wound.

The test organisms commonly used were *Staphylococcus aureus* and *B. coli*; they represent types whose behaviour toward antiseptics is liable to differ markedly, a character which suggests a far-reaching difference in their biology. Experiments have shown that within wide limits the efficiency of the antiseptic as tested by the method described is practically independent of the size of the inoculum—for example, from 0.000025 to 0.1 c.cm. of recent peptone water culture per 1 c.cm. of medium. But inoculation with very large numbers of organisms should be avoided, as these fail to maintain themselves in the medium even in the absence of any antiseptic. Under the conditions of the test the sterilizing concentration of

* The original work referred to here was mainly undertaken under the auspices of the Medical Research Council. The chemical portion of the investigation was carried out, in co-operation with Mr. R. Gaunt, in the Organic Chemical Laboratory, University of Leeds; the biological part was carried out in co-operation with Miss R. Gulbransen at the Bland-Sutton Institute, Middlesex Hospital, and the Pathological Department of the University and Western Infirmary, Glasgow; and special work was also done with Drs. W. Gilmour, E. L. Kennaway, and L. H. D. Thornton.

diamino-acridine methochloride ("acriflavine"), as determined by the modal value obtained in an extensive series of experiments, is for *Staphylococcus aureus*, in peptone water 1 in 100,000, in serum 1 in 200,000; for *B. coli*, in peptone water 1 in 20,000, in serum 1 in 100,000. The striking result therefore appears that this substance is not reduced in its antiseptic power by serum. As regards the bactericidal action in watery medium, relatively small differences in hydrogen-ion concentration produce marked alterations in the activity of the antiseptic (see also Graham-Smith and Davis). Thus by altering the P_H value of the medium from between 4 and 5 to 11 the sterilizing concentration for *B. coli* was lowered progressively from 1 in 2,000 to 1 in 200,000; the value for *Staphylococcus aureus* was affected similarly. As with other substances, so also in the case of the acridine compounds, organisms are met with which exhibit selective resistance—for example, certain atypical members of the *coli* group. It would appear, however, that such resistance is natural and not acquired, and that acquired resistance towards the dye, as recorded by Shiga in the case of *V. cholerae*, can only be slowly attained by staphylococcus or *B. coli*, and is not likely to be a serious factor in causing failure in treatment.

Methods of testing the antiseptic power of acriflavine by repeated inoculation of a mixture of dye and serum, and also by adding the antiseptic after growth of organisms (*B. coli*) had occurred in the medium, have shown that rapid exhaustion or deterioration of the antiseptic does not occur. The latter experiment resembles more closely than the others the condition met with in treating an infected wound. It has been found that a heavy growth of organisms is sterilized by the subsequent addition of the antiseptic with as great ease as are a few organisms added to the medium simultaneously with the antiseptic. A noteworthy fact is that in repeated tests carried out with a view to determining the sterilizing concentration, a certain amount of variability appears in the results. Similarly, irregularity in sterilizing action may occur in a series of tubes containing ascending doses of antiseptic. Thus occasionally concentrations of 1 in 130,000 and 1 in 40,000 may sterilize the mixture, while 1 in 100,000 fails. This observation corresponds with that recorded by Richet and Cardot on exaggerated variations in the amount of acid formed in different tubes of whey containing a constant concentration of certain antiseptics when all are inoculated similarly with a lactic organism. A possible explanation of such irregularity is that where lethal effects are slowly produced, as with the compounds here considered, there is a critical concentration in the vicinity of which the balance may be inclined in favour of the organism or of the antiseptic by factors which at present escape complete analysis. Diamino-acridine sulphate (proflavine) was found to be practically indistinguishable from the methochloride in antiseptic action. When red blood corpuscles, pus, or minced muscle (Fleming) are added to solutions of the dyes reduction in antiseptic power occurs; but Gay and Morrison have found that acriflavine is more actively bactericidal for streptococci when added *in vitro* to pus from experimental empyema in the rabbit than it is for the same organism in broth. In rabbits it is possible by means of intravenous injections of proflavine, which do not affect the health of the animal, to render the serum bactericidal for several hours when tested *in vitro* with *Staphylococcus aureus* and *B. coli*.

Toxicity.

When tested on the animal body as a whole, by subcutaneous injection, it is found that healthy mice of 20 grams weight will tolerate as a maximum dose 0.003 gram of proflavine (sulphate) and 0.0006 gram of acriflavine, whereas mercuric chloride is about ten times more toxic than the latter. In the case of rabbits 0.05 to 0.07 gram proflavine sulphate intravenously per kilo of body weight is well borne. As the result of an experiment on a monkey under an anaesthetic (A.C.E. mixture at first and later ether), for which we are indebted to Dr. Dale, it appeared that administration at a rate as great as 0.0025 gram per minute per kilogram of body weight caused some danger to the heart; under similar conditions this would mean that an average man weighing 60 kilograms should not receive an intravenous injection at a rate exceeding 50 c.cm. of a 1 in 330 solution per minute. (It is likely, however, that in the experiment the susceptibility of the heart was increased by the anaesthetic.) Doses of 0.33 gram of proflavine sulphate in physiological saline have been given intravenously at this rate to adult subjects without untoward effects beyond transient sickness. The skin becomes stained of a yellow tint, which, however, completely disappears in the course of twenty-four to forty-eight hours. The dye is excreted by the kidneys, and, as estimated from the absorption spectra by Dr. S. Russ, fully a third of the amount administered can be accounted for in the urine passed during the subsequent two days. There is also excretion of the substance by the bile in the monkey.

Proceeding now to the action on cells and tissues, phagocytic experiments showed that with mercuric chloride, phenol, iodine, chlorine water, hypochlorites (in the form of "eusol" and Dakin's solution) and chloramine-T, the concentration which sufficed to kill bacteria approached closely to that which *in vitro* interfered seriously with phagocytosis; on the other hand, with acriflavine and proflavine several hundred times the bactericidal concentration was required before phagocytosis was inhibited. In this connexion recently reported experiments of Gay and Morrison are of much interest; using leucocytes (obtained from the peritoneal cavity of guinea-pigs after injecting broth) along with streptococcus culture and antistreptococcus serum, all incubated for two hours in the presence of varying amounts of acriflavine, they found that there was a range of concentrations from 1 in 6,400 to 1 in 128,000 in which the antiseptic had apparently not inhibited phagocytosis and had also sterilized the mixture. In the controls, containing serum without dye, the organisms, although phagocytosed, were not killed. With respect to the action on connective tissue in the human subject, there has been no evidence of any deleterious effect when a few cubic centimetres of 1 in 1,000 solution were injected subcutaneously. By contact with the exposed tissues in a wound the progress of formation of granulation tissue may after a time be interfered with, thus producing an inert surface covered by a fibrinous pellicle, as was first noted by Drummond and McNee. But the evidence points to this result being brought about by some auxiliary factors not yet precisely defined, possibly evaporation leading to concentration of the dye, as suggested by Pilcher and Hull. From the reports it would appear that the procedures of different surgeons may vary in details which can hardly be appreciated from written descriptions, and yet which are of decisive effect as regards their influence on wound healing. Thus it is a fact that large wounds may be treated with acriflavine solution (1 in 1,000) for weeks without disturbance in the development of granulation tissue or interference with epithelial ingrowth; this has been noted by Pilcher and Hull, and has been again recently demonstrated to one of the authors in a series of cases by Dr. Charles Bennett.

The attempt to correlate antiseptic action with toxic effects on connective tissue by means of tissue cultures *in vitro* has been made by Lambert. Mueller tested in this way the flavine-compounds and a series of triphenylmethane dyes and found that the former were the only ones which did not require a greater concentration to inhibit streptococci than to inhibit tissue growth. It is noteworthy that in the case of brilliant green (tetraethyldiaminotriphenylmethane sulphate), which has not been credited with the property of inhibiting growth of granulation tissue by clinical observers, five times as high a concentration was required to inhibit streptococci as to inhibit the tissue culture. Hence, as Mueller concludes, "it is altogether probable that in the body a greater resistance is shown by the cells, while bacteria, on the other hand, may offer less, as a result of even a moderate protective action on the part of the body against invading organisms." In view of the application of antiseptics to delicate epithelial surfaces, such as that of the urethra, it appeared important to attempt to estimate irritating properties. With this object several drops of varying concentrations were applied to the conjunctivae of rabbits, so as to keep the surface bathed for three minutes. The result was that the flavines, in relation to their antiseptic power, were very much less irritating than any of the other antiseptics already mentioned (concentrations of 1 in 150 of acriflavine and 1 in 50 of proflavine being generally tolerated without causing irritation), whereas the tolerated concentration of mercuric chloride lay between 1 in 250 and 1 in 500.

It is noteworthy that in the examination of a considerable number of commercial preparations of acriflavine no appreciable differences in antiseptic power have been detected, but certain specimens were definitely more irritating than the average. This property may be of considerable importance in relation to the treatment of gonorrhoeal urethritis; there does not seem to be any method of determining it other than the biological test. Blood coagulation is markedly retarded *in vitro*, as noted by Fleming, and confirmed by one of us with proflavine, as well as acriflavine, but no deleterious effects which can be ascribed to such action have been met with in the treatment of wounds. Red blood corpuscles—for example, of man or ox—suspended in 0.85 per cent. sodium chloride solution are actively agglutinated by acriflavine and lysed by proflavine, but when serum is present to the extent of 50 per cent. by volume a concentration of 1 in 750 of these substances has no such action.

To summarize the results relating to antiseptic power and toxicity, it may be said that the diamino-acridine compounds possess much more powerful bacteriostatic and bactericidal action in comparison with their toxicity for mammalian tissues than any other substances hitherto investigated. In addition, they are stable, and do not become inactive through undergoing chemical changes in the tissues. These, and certain other compounds referred to later, are the only powerful antiseptics which are not reduced in their activity by protein solutions such as serum.

Therapeutic Tests.

In the case of certain trypanosome and spirochaete diseases chemotherapeutic agents of so high potency are available that a single injection will cure an animal already moribund. It may be said at once that nothing approaching this has yet been found for bacterial infections. But experiments have shown that it is possible by means of antiseptics, other than Morgenroth's optoquin, to prevent the development of septicaemia in mice previously inoculated intraperitoneally with many times the fatal dose of virulent pneumococci. When dealing with an infection so rapidly invasive in character it is not surprising that the antiseptic must be introduced into the peritoneal cavity within a short period after the organisms. Obviously, the conditions are not adapted for demonstrating the special properties of a bacteriostatic agent; thus cures were obtained with phenol and corrosive sublimate as well as proflavine. Successful results were obtained only in a proportion of the experiments; but any positive results of this nature are important in view of the opinion so widely held that antiseptics only act detrimentally on the infected animal.

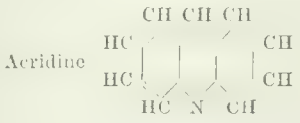
The fact that the antiseptic may prove effective without itself actually killing the organisms was seen in the case of an animal inoculated intraperitoneally with a mixture of proflavine and pneumococci; it survived and was examined after a month when a chronic peritonitis was found with abundant pneumococci on the surface of the liver. It seems reasonable to conclude that the antiseptic probably acts by reducing the numbers of viable organisms or their virulence, so as to adjust the balance in favour of the tissues. In the case of intraperitoneal infection with *V. cholerae* in guinea-pigs and mice, similar results have been obtained (Baumgarten). Many negative results have been recorded, as in the carefully planned experiments of Gay and Morrison, who failed to effect cure in streptococcal empyema of rabbits by intrapleural injections of acriflavine. It is to be remembered in this connexion that infections in animals seldom show the strictly localized character which is so common in the human subject; generalized infection is beyond the reach of a locally acting antiseptic, while, of course, toxaemia which has once developed cannot be influenced by purely antiseptic substances. However, an agent which fails to check generalized infection or to influence toxaemia is not therefore disqualified for use in local infections. But the estimates on which reliance must then be placed are mainly clinical, and these have shown an extreme divergence. Certain conclusions, however, may be drawn: (1) that in the hands of many surgeons the flavines when applied by relatively simple methods enable improved results to be obtained in the treatment of localized pyogenic infections; (2) that a similar value attaches to their use in acute gonorrhoea—Dr. David Watson reports (unpublished) that the statistical records of 8,000 cases support his original estimate of acriflavine (see also Davis and Harrell); (3) that the flavines are of particular value in the prophylaxis of infection—that is, to prevent the occurrence of inflammation and suppuration, when applied shortly after the organisms have gained access to the tissues. Thus, cases of war wounds after excision and the application of flavine could be transported, with the probability that, although untouched in the interval, they would arrive at their destination without manifestations of infection or suppuration. This useful prophylactic action has been variously styled "cold storage" or "pickling" of wounds—terms which are unfortunate, inasmuch as they may imply that the beneficial effect is limited to this stage. It is of interest that various clinical observers have agreed that acriflavine is superior to proflavine in overcoming infection. Laboratory tests have not so far explained this difference. As regards attempts to influence generalized infection, it is scarcely to be expected that the transient antiseptic property conferred on the blood serum by an intravenous injection can have any decisive effect.

Urinary Antisepsis.

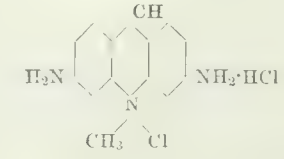
The fact that the flavines are excreted in the urine has led to investigation of their possible value as urinary antiseptics. It was found independently by Davis and White and by ourselves that these substances acted best when the reaction was alkaline, and that antiseptic urine was excreted after an intravenous injection. Out of over two hundred aniline dyes investigated by Davis, White, and Rosen, only the two flavines, in addition to chloromercury fluorescein, caused the secretion of antiseptic urine after intravenous injection. The effect of proflavine administered in this fashion was tested in cases of *B. coli* pyelitis in children by Dr. Leonard Findlay (unpublished), who found a very definite effect in the form of diminution of pus and organisms in the urine for twenty-four hours following the injection; also the bacilli became long and filamentous; but no permanent result was obtained. More recently Davis has found that the urine in the human subject, provided it is alkaline, becomes antiseptic after the administration of the flavines by the mouth; this is probably the first time that such an effect has been attained by a drug.

The Relation between Chemical Constitution and Antiseptic Action in the Acridine Group.

Diamino-acridine methochloride had been prepared by Benda for Ehrlich and was named "trypaflavin" on account of its powerful therapeutic properties in experimental trypanosome infections. We are not aware that its action on bacteria had been tested prior to our work, although Shiga published almost simultaneously results of his investigations on its action on *V. cholerae*. The parent substance is a compound of the following formula:



that is, a combination of two benzene rings and a pyridine. If the two side wings are removed, a pyridine nucleus remains; if only one wing is detached a quinoline nucleus results. It seemed possible that the antiseptic activity of acriflavine (diamino-acridine methochloride)



might reside either in the pyridine or quinoline nucleus reinforced by one or more amino groups; therefore, substances of this type were first prepared by one of us (J.B.C.). In addition, series of acridine derivatives were prepared and tested for their antiseptic power in order to determine if possible whether any law could be established relating chemical structure and antiseptic action within the group. Also, observations have been made upon phenazine compounds, on account of their close relationship to the acridine group.

Fragments of the Acridine Molecule.

The following were tested:

α-aminopyridine hydrochloride.
α-dimethyl-aminopyridine methiodide.
quinoline hydrochloride.
o- m- p- and α- aminoquinoline hydrochloride and methochloride.
8.hydroxyquinoline sulphate, methochloride and methopicrate.
tetrahydroquinoline hydrochloride.
methyltetrahydroquinoline methiodide.
α and β-naphthoquinoline hydrochloride and methosulphate.
tetrahydro- α and β-naphthoquinoline hydrochlorides.
diamino β-naphthoquinoline and its methochloride.
hydrochlorides of 1.4. and 1.5.naphtho-dipyridine.
1.1.dinaphthyl-2.2.imine.

The striking feature, in general, is the low grade of antiseptic power shown by these bodies. Thus, the hydrochlorides of quinoline, tetrahydroquinoline and the aminoquinolines, all failed to sterilize in dilutions exceeding 1 in 2,000, either in peptone water or in serum. The methochlorides of the aminoquinolines, except in the case of the ortho-compound, showed accentuation of antiseptic action in serum as compared with the hydrochlorides of the corresponding bases—a characteristic result which will be discussed when dealing with the acridine group. The hydrochlorides of α- and β-naphthoquinoline were slightly more active than those of the bases already mentioned. No striking difference could be established between these and their tetrahydro-derivatives. Diamino-β-naphthoquinoline also showed no enhanced efficiency. The methosulphates of both naphthoquinolines and of diaminoquinoline showed intensified action in serum. The sulphate of 8.hydroxyquinoline, long known as an antiseptic under the name of "chinosol," is extremely active for *Staphylococcus aureus* (1 in 400,000 sterilized in peptone water and 1 in 100,000 in serum); this contrasts with the slight effect of hydroxy-acridine and aminoquinoline compounds. On the other hand, it is remarkable that the methochloride and methopicrate of the base do not show enhanced action. 1.1. dinaphthyl-2.2.imine exhibits great discrepancy between its powerful action on staphylococcus and lack of effect on *B. coli*, which is similar to that exhibited by the triaminotriphenylmethane compounds, hexa-methyl and ethyl violet. But the most striking character of dinaphthylimine is the reduced effect in serum; thus 1 in 2,000,000 sterilized staphylococci in watery medium, but 1 in 1,000 failed to kill in serum. This is the most extreme reduction observed in the case of any substance, being twenty times greater than that effected by serum on mercuric chloride.

So far, therefore, it has not been possible to obtain fragments of the molecule which equal or even approximate closely to diaminoacridine in antiseptic properties.

Acridine Group.

The following were tested:

Hydrochlorides and methochlorides (or in some cases methosulphates) of acridine.
9.phenylacridine.
3.6.dimethylacridine.
2.7.diaminoacridine (also the sulphate of this base).
2.7.diamino-3.6.dimethylacridine.
2.7.diamino-3.6.dimethyl-9.phenylacridine.
2.amino-3.methyl-9.phenylnaphthacridine.
2.dimethylaminonaphthacridine.

The following general conclusions may be drawn from the results:

Action of the Amino Groups.

The introduction of amino-groups enhances the antiseptic potency both for *Staphylococcus aureus* and *B. coli*—for instance, acridine and diaminoacridine; dimethylacridine and diaminodimethylacridine. Thus the sterilizing concentrations of acridine hydrochloride for the two organisms respectively in peptone water are 1 in 2,000 and 1 in 1,000; in the case of diaminoacridine the figures are 1 in 200,000 and 1 in 20,000.

Effectiveness in Serum.

This is a characteristic of the compounds with unsubstituted amino-groups, and especially of the methochlorides of these bases. The further introduction into the diamino compounds of a phenyl group attached to the medial carbon atom, however, diminishes the action in serum; this is exhibited both in the case of 2.7.diamino-3.6.dimethylacridine and 2.amino-3.methylnaphthacridine. On the other hand, the methochloride of 9.phenylacridine is much more active than that of acridine.

Comparison of the Antiseptic Power of the Methochloride and the Hydrochloride of the same Base.

The methochloride (or methosulphate, or methonitrate) is never less potent than the hydrochloride in the presence of serum, and in some cases the increased effectiveness shown by the methochloride is very remarkable—for example, in the case of 2.7.tetraethyldiaminoacridine, 2.7.diamino-3.6.dimethyl-9.phenylacridine, 2.amino-3.methylnaphthacridine, and 2.dimethylaminonaphthacridine. Thus with the first of these bases 1 in 10,000 of the hydrochloride sterilizes staphylococci, while 1 in 400,000 is sufficient of the methochloride. In the case of the simplest member of the amino series, 2.7.diaminoacridine, and also where the substituents are directly attached to the outer rings, as in 2.7.diamino-3.6.dimethylacridine, the hydrochloride and the methochloride are practically equal in antiseptic power. It is noteworthy, however, that when the antiseptic power of diaminoacridine is diminished by substitution of ethyl radicals in the amino-groups, the enhanced action of the methochloride over the hydrochloride again becomes apparent. So far no rational explanation of the enhanced efficacy of the methochloride has suggested itself. The comparative effects of the hydrochloride and the methochloride of the same base in peptone water show a much less regular behaviour.

The hydrochlorides of certain of the compounds require the presence of a slight excess of hydrochloric acid in order to cause solution—for example, in the case of 9.phenylacridine and 2.amino-3.methylnaphthacridine; but the enhanced effect of the methochlorides over the respective hydrochlorides is not to be ascribed to the higher hydrogen ion concentration of the solution of the latter, since the addition of hydrochloric acid to the methochloride, so as to produce a solution of similar reaction, did not reduce the antiseptic power to that of the hydrochloride.

The Substitution of other Radicals for the Methyl Group in Diaminoacridine Methochloride.

The following were examined: Ethyl, propyl, n- and iso-butyl, iso-amyl, phenyl, benzyl, also the chloroacetate chloropropionate, and chloroacetanilide derivatives. The result was that within the limits of experimental variation these compounds are practically identical with the methochloride in their antiseptic power for both organisms.

The Substitution of Alkyls in the Amino Groups.

Tetramethyl- and tetraethyl-diaminoacridine were investigated. The tetramethyl hydrochloride, while practically equal to unsubstituted diaminoacridine in its action on *Staphylococcus aureus*, was distinctly inferior for *B. coli* both in peptone water and in serum. The tetraethyl compound was still weaker; thus with the latter the sterilizing concentration for *Staphylococcus aureus* in peptone water was 1 in 100,000 and in serum 1 in 10,000, while for *B. coli* a concentration not less than 1 in 1,000 was required. The methochloride and the methonitrate of the tetramethyl compound were practically equal to the hydrochloride; also, as in the case of the unsubstituted diaminoacridine, the effect in serum with the hydrochloride and the methochloride was practically equal. On the other hand, the methochloride and the methonitrate of the tetraethyl compound were much more active in serum than the hydrochloride.

Groups which Interfere with Antiseptic Action.

As has been seen, the introduction of methyl and ethyl groups into the amino radicals depresses rather than enhances the antiseptic potency, thus contrasting with the effect of similar substituents in the diamino- and the triamino-triphenyl-methane dyes. The substitution of one hydrogen atom in each of the amino groups by acetyl radicals practically abolishes the antiseptic action—for example, the sterilizing concentration of 2.7.diaminoacridine chloroacetate for *Staphylococcus aureus* in peptone water was 1 in 100,000 and in serum 1 in 200,000, and for *B. coli* in peptone water 1 in 20,000, and in serum 1 in 400,000: on the other hand, with the diacetylamino

derivative a concentration of 1 in 2,000 failed to sterilize. The carboxylic esters of 2.7.diamino-9 phenylacridine and of 2.7.tetramethyldiamino-9.phenylacridine were so weak as to indicate the marked depressing effect of the carboxyl group on the antiseptic property. The replacement of the amino groups by hydroxyls also led to practical abolition of antiseptic power, as is shown in the case of 2.7.dihydroxy-3.6.dimethylacridine, of which both the sodium salt and the methochloride were tested.

Comparative Efficiency for Staphylococcus aureus and B. coli.

Antiseptic potency for the two organisms does not invariably run parallel; thus the lethal concentration in serum for staphylococcus is 1 in 100,000, or higher in the case of 2.7.diaminoacridine hydrochloride (or sulphate) and methochloride and other analogous derivatives, 2.7.tetramethyldiaminoacridine hydrochloride and methochloride, 2.7.diamino-3.6.dimethylacridine hydrochloride and methochloride, 2.7.tetraethyldiaminoacridine methochloride, 2.7.diamino-3.6.dimethyl-9.phenylacridine methochloride, 2.amino-3.methylnaphthacridine methochloride. But in the case of *B. coli*, only the hydrochloride, methochloride and analogous derivatives of diaminoacridine and of diaminodimethylacridine and the methochloride of 2.amino-3.methylnaphthacridine reach this level of effectiveness.

Phenazine Series.

The following were tested:

Hydrochloride and methochloride [illegible] in the oldest of phenazine.
2.aminophenazine.
2.3.diaminophenazine.
2.dimethylamino 7.aminophenazine methochloride only.
2.dimethylamino-6.methylphenazine.
2.7.tetramethyldiamino phenazine (hydrochloride only).
2.aminonaphthophenazine.
Also the methochlorides of 2.dimethylamino 7.amino 6.methylphenazine.
2.7.diamino 6.methylphenazine.
2.7.diamino-3.6.dimethylphenazine.
2.aminonaphtho-7.amino 3.methylphenazine
2.methylamino 7.amino-3.6.dimethylphenazine and tetramethyltetrahydroquinoline-2.amino-3.methylphenazine.

The striking feature in this series is the relatively poor antiseptic power exhibited by the amino compounds in serum, especially for *B. coli*. The only compounds exactly comparable with the acridine series are those of the phenazine base, 2.7.tetramethyldiaminophenazine and 2.7.diamino-3.6.dimethylphenazine. The enhanced effect of the metho-compounds as compared with the hydrochlorides of the same bases is evident in the phenazine series; but is not so striking as with certain of the diaminoacridine derivatives. The relatively greater efficiency of the methochloride of 2.dimethylamino-7.amino-6.methylphenazine as compared with 2.dimethylamino-7.aminophenazine and of 2.7.diamino-3.6.dimethylphenazine as compared with 2.7.diamino-6.methylphenazine, suggests that methyl groups attached directly to the benzene rings may play a part in enhancing the antiseptic power in this series. For *Staphylococcus aureus* the methochlorides of 2.dimethylamino-7.amino-6.methylphenazine, 2.7.diamino-3.6.dimethylphenazine, and 2.aminonaphtho-7.amino-3.methylphenazine are powerful antiseptics, practically equal to the most potent of the acridine series; on the other hand, they are markedly inferior to the latter in their action on *B. coli*.

It cannot be said that the behaviour of the phenazine series throws any clear light on the antiseptic properties of the diaminoacridine group.

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SECTION OF OBSTETRICS AND GYNAECOLOGY.

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DISCUSSION ON THE NEURASTHENIC ELEMENT IN MIDWIFERY AND GYNAECOLOGY.

OPENING PAPERS.

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I HAVE no exact acquaintance with functional nervous disorders and would find difficulty in describing them, but I know that neurasthenia is defined as nerve exhaustion and that the disease is not limited to women. It is not difficult to recognize cases of acute neurasthenia, but they come under the care of the physician and not of the gynaecologist, though we may get a neurasthenic patient with some uterine trouble, and it may be that the uterine trouble is a factor in the production of the neurasthenia. These are not the cases that trouble us; it is the "neurotic" woman with gynaecological symptoms that is the problem, and that is the kind of case we have to discuss to-day. It is difficult to define the adjective "neurotic" as the cases vary greatly in degree, from the highly-strung woman who is entirely obsessed by her own ailments and who has only slight evidence of pelvic disorder, to the patient who has some definite lesion in the pelvis which causes more distress than it would in a woman with a healthy nervous system—or perhaps we may say more correctly, as one with a normal mental equilibrium.

As gynaecologists I think we see comparatively little of hysteria, although by its very name that is the disease which indicates uterine trouble. On the other hand, we see many neurotic women with gynaecological symptoms. In the early days of my professional life these cases seemed to be very common. I think that the methods of treatment were largely to blame. The patients were in the habit of paying frequent visits to the gynaecologist to have pessaries inserted and changed, to have speculums introduced, to have applications made to the interior of the uterus by means of probes, or to have the cervix treated by silver nitrate, or douched or swabbed with iodine or phenol. I think it is no exaggeration to say that many neurotics were manufactured in this way. At the present day, with different pathology and treatment, the number of cases which are neurotic is greatly diminished.

Women are generally thought to be specially liable to functional nervous troubles, but this is a point open to discussion. There are special periods when such troubles are most likely to be manifest: (1) during transition from girl to woman; (2) during menstruation; (3) in the course of pregnancy and parturition; and (4) at the menopause.

I have little to say about (1); it is the age of development, and emotional disturbance is not uncommon, but some of the special troubles at this time are due to failure of or faults in development. In the last three of the periods mentioned we certainly find disturbing influences from which males are free.

(2) The menstrual period in the average woman is not associated with any great nervous disturbance, although in some cases there may be a little instability of mind or temper manifest at that time.

(3) As regards pregnancy and parturition, it is a striking fact that most women are not much affected nervously by these conditions. During the war we have seen how the nervous strain inseparable from life in the danger zone affected many of our bravest men, yet the great majority of married women go through the trials and discomforts of repeated pregnancy and the pain and dangers of several confinements with the nervous system undisturbed. I believe that the neurasthenic element as a disturbing factor in parturition is negligible, but a difficult or badly managed confinement may result in chronic local diseases which may lead to secondary nervous symptoms. In pregnancy the nervous balance is sometimes disturbed, and many of the minor troubles, such as morning sickness,

frequent cough, salivation, etc., and even some of the serious diseases, such as pernicious vomiting, chorea, etc., may be due to this fact.

4. At the menopause there is a great physical change which may be gradual but is often more or less sudden, and in some this is associated with much nervous disturbance. The local changes are also responsible for symptoms which may be attributed to neurosis.

These special circumstances which I have just mentioned have to be considered when we try to arrive at a just conclusion in regard to the special liability of the female, as compared with the male, to neurasthenic troubles. A discussion on these grounds only would not be very profitable. It is better for practical purposes that we should try to fix what may be called the reasonable symptoms of any local ailment. It may be of advantage to consider first the symptoms, as apart from the physical signs, of gynaecological ailments. They may be divided into subjective and objective.

Subjective Symptoms.

(*a*) *Pain.*

Pain is a common symptom, but of course varies greatly with the individual. The neurotic patient as a rule complains most, but her pains are apt to be widely spread or variable in location, and often in a situation where they are difficult to explain on an organic basis. If we are to believe the textbooks, the most common kind of pain is *backache*, which is generally regarded as a real symptom of disease of the pelvic organs. Unfortunately, backache is one of the common symptoms (if I am not mistaken) of neurasthenia. From the gynaecological point of view I am inclined to rate backache very low in the scale of importance. It occurs in chronic pelvic peritonitis with thickened and adherent appendages; it is also, in my experience, the common symptom in chronic cervical catarrh; but it is rarely mentioned spontaneously by the patient who has a displacement (prolapse or retroversion of a heavy uterus) or endometritis (so called) or chronic metritis. And yet these are ailments from which the majority of the patients suffer who come for advice to the out-patient department or consulting room. In these cases, if the patient is asked whether she has any pain, and if so where, she will nearly always indicate the lower abdomen, sometimes one iliac region, sometimes both, sometimes, but not often, the hypogastric region. If the patient complains mainly of her back we should suspect a neurasthenic element.

It has generally been taught that *iliac pain* is due to ovarian trouble. I believe that the ovary is about the only thing in that region that never causes it. Many ovaries have been needlessly sacrificed on account of this teaching, and when the pain is on the right side the patient may be considered fortunate if her healthy appendix is not removed by some eager but not very observant surgeon. Every woman who has a heavy uterus which is prolapsed or retroverted or in a position of what may be called exaggerated anteversion will tell you of this iliac pain. I do not pretend to explain it, although it seems reasonable to suppose that it is due to a mechanical dragging on the broad ligament. The pain is never acute, and is sometimes only present just before or during the first day of menstruation.

Periodic pain is generally of the nature of *dysmenorrhoea*. I have noted that with the menstrual function there may be some nervous disturbance apart from any local disease, but these cases are not numerous and not very striking. The dysmenorrhoea of the neurotic is never very convincing; the pain is not definitely localized; it is never intense and it is very variable, and it generally lasts during the whole of the period. This is very different from the acute disabling pain that attacks some young women. This is definitely located in one or other iliac region. It occurs nearly always in the first few hours of menstruation and then disappears. Mid-menstrual pain is almost certainly due to some local trouble, but its cause has not yet been definitely ascertained.

(*b*) *Fatigue.*

Many of our patients complain of being very easily tired, or always tired. This symptom, of course, may be due to some constitutional trouble such as faults of digestion, or it may be a purely nervous symptom. But there seems good reason to believe that some cases are due to a sort of toxaemia. A striking example sometimes occurs in those cases of large fibroid tumour which diminish very rapidly after the menopause. This process is often attended by grave constitutional symptoms—rapid loss of flesh, changes in complexion, and digestive troubles. The results are often so striking that these cases may be diagnosed as malignant disease of the abdomen. I think this condition is produced in some way by the absorption of toxins from the rapidly disintegrating tumour. In fibroids in younger women the patient is often unduly tired, even when we allow for the weight of the large tumour and the effect of haemorrhage. The same symptom is common in cases in which the uterus is symmetrically enlarged by a chronic metritis. I think there are also conditions in the uterine mucosa and in the cervix which lead to a sort of toxaemia. It has often been stated that there is a relation between leucorrhoea and rheumatic troubles, and I have had cases which seem to prove that there is a distinct connexion between uterine catarrh and some skin eruptions.

(*c*) *Tenderness.*

When tenderness is caused by bimanual pressure on the uterus I think we may take it that there is some diseased condition of the uterus, if we can exclude a general hyperaesthesia of the skin. Cutaneous hyperasthesia is not a common symptom of gynaecological trouble. Even in acute pelvic peritonitis there is not generally the same marked tenderness and boarding that one gets in acute appendicitis.

Under this heading we may consider cases of dyspareunia or vaginal spasm. This varies very greatly in degree. The worst cases are undoubtedly in women of very neurotic temperament. But in others the trouble is associated with a definite local lesion. I have no belief in abrasions of the vaginal orifice or fissures in the hymen as common causes, and have always found that dissection operations and the subsequent introduction of dilators have failed to relieve, except in some minor cases which would probably have improved without treatment. On the other hand, I believe that a leucorrhoeal discharge from the cervix or uterine cavity is often associated with dyspareunia. When I have found this to be the case it is my practice to curette the uterus, and this treatment I have found to give much better results than any cutting or stretching operation; it also answers in cases where there is a tender retroverted uterus.

If we consider the symptoms which we have just mentioned I think there are certain indications as to those which are due to a purely neurotic cause and those which are the result of some organic trouble. We find the key to the problem in the relation of symptoms to physical signs. I think that backache, in the absence of cervical catarrh and hypertrophy, or of pelvic peritonitis with thickened and adherent appendages (or possibly of an enlarged and retroverted uterus), is generally a purely neurotic symptom.

If the patient suffers from iliac or hypogastric pain, and if we find on bimanual examination that there is an advanced stage of prolapse or a heavy and enlarged uterus, either anteverted or retroverted, and if the pain is aggravated or only present just before or on the first day of the period, we are justified in deciding that the pain has a definite local cause and in treating it accordingly.

In dysmenorrhoea, if we find that the pain is definitely located in one or other iliac region (or in the hypogastrium); that it is very intense, but only lasts for a few hours at the beginning of menstruation; that the patient also gives a history of prolonged periods or of metrorrhagia or leucorrhoea; and if with these symptoms we find an infantile type of cervix and an acute flexion (ante- or retro-) of the body, the case may be removed from the purely neurotic category.

Objective Symptoms.

There are some other symptoms, commonly met with, in which the question arises whether they are indicative of organic mischief, or purely nervous.

(*a*) *Bladder Troubles.*

1. *Incontinence.*—The incontinence of young women is met with as a purely neurotic symptom, or at least as a symptom in which we are unable to find any local changes. These cases are nearly always amenable to moral treatment; removal to a nursing home or to a hospital is nearly always all that is required to cure them. Another class of

case occurs in middle-aged or elderly women who complain of inability to control the bladder. Some of these cases are due to cystocele; as the bladder and vaginal wall are very thin and the bladder lies at its lower part unsupported, any little pressure from below is sufficient to cause the urine to be expelled involuntarily. These cases can be cured by operative treatment. It is not necessary to refer to the incontinence which is due to fistulae or to over-distension of the bladder.

2. *Retention of Urine.*—This occurs as a nervous symptom after operation, and it is sometimes met with as a symptom of hysteria. We have to remember its occurrence in cases of gravid retroversion, and of impacted tumour in the pouch of Douglas.

3. *Increased Frequency of Micturition.*—This may be due to nervous causes or to inflammation or other disease of the bladder. We have especially to bear in mind that infection by the *Bacillus coli* is a common cause of frequency of micturition. Irritable bladder is quite common in women who suffer from gynaecological ailments. It is sometimes a symptom of a bad tear in the cervix which has involved the lower part of the broad ligament. As a result of this tear and consequent inflammation we find a firm scar or band which obliterates the lateral fornix, and pulls the cervix towards the affected side. The presence of this scar seems to limit (reflexly or otherwise) the capacity of the bladder. Division of the scar and a plastic operation will relieve the trouble. Another cause of frequent micturition is found in elderly women who are suffering from atrophic changes in the vagina, associated with senile vaginitis and sometimes with cystocele. This symptom may be very troublesome, but a diagnostic point is that the trouble occurs chiefly during the day-time, and the patient is not disturbed much at night. The condition of the urine will distinguish between cystitis and what may be called reflex bladder irritability. In cases where there is actual cystocele an operation may be required, but in other cases I have found that when sedative lotions used as a douche fail to relieve, the condition may be cured by a very thorough disinfection of the vagina under an anaesthetic.

(*b*) *Irritation.*

A similar method of treatment is very successful in some cases of *pruritus vulvae.* As itching and burning are subjective symptoms it may seem that this disease should have been dealt with in an earlier part of this introduction, but the redness, swelling, and excoriation of the external parts are very definite signs. Apart from those cases which are due to diabetes or parasites or leucoplakia, pruritus vulvae is generally regarded as a nervous disease, and it has been recommended that the nerves underlying the affected area should be divided. I have never found this necessary. In elderly women a vigorous disinfection, such as is usually undertaken after the patient is anaesthetized in operations on the vagina, is all that is required. In younger women, and especially if there is any sign of leucorrhoea or cervical catarrh, it is advisable to curette as well as to disinfect.

(*c*) *Amenorrhoea.*

Amenorrhoea is quite frequently produced by nervous causes; any mental shock or great anxiety may cause it. Perhaps the most common instance is the case of the unmarried woman who fears she is pregnant. The intense longing for a child on the part of a married woman may also bring about amenorrhoea. There is also the well-recognized group of cases in which scanty menstruation or amenorrhoea seems to be caused by deficient thyroid secretion.

(*d*) *Phantom Tumour.*

Very great distension of the abdomen may be a purely hysterical affection, but this can rarely give rise to any difficulty in diagnosis. A more common form of distension is that which is known as pseudocyesis or spurious pregnancy. It may appear before the menopause and when the periods are normal or only slightly diminished, but it is generally met with in patients who are passing through the menopause. Although these cases are now attributed to the influence of the ductless glands I think there is little doubt that there is also a nervous factor in their production. I think the same may be said of many other troubles of the menopause when these are exaggerated.

(*e*) *Enteroptosis.*

I have left this condition or group of symptoms till the end, as although it is generally considered to be one of the most common causes of neurasthenia in women it is not confined to women, nor is it a gynaecological symptom. It is true that with the descent of the abdominal contents we may have associated a prolapse of the pelvic floor or uterus, or a retroversion, but these are not outstanding features in the general clinical picture. As to the cause of the condition, I think it is open to doubt whether the origin of the trouble lies in the descent of the organs, or in the neurasthenic element, or in a general toxaemia. An investigation into its causation would be out of place here, but I may state that I am no believer in the mechanical theory of disease. Most of the abdominal organs may be displaced to an extreme degree without anything more than some inconvenience to the patient. I have seen cases in which an umbilical hernia reached half-way down a patient's thigh, and of prolapse of the uterus with complete eversion of the vagina, and in these the only complaints were a somewhat disagreeable dragging and a difficulty of locomotion or of sitting.

Diagnosis.

I have little to add to what I have already said under the various divisions of the subject. I must emphasize again the point that the key to the problem as to how far the nervous element enters into a case is to be found in an accurate knowledge of the physical state of the pelvic organs. In the majority of cases this involves long practice in bimanual examination. Unless one is able to distinguish comparatively small differences in the size and general characteristics of the uterus and other pelvic organs, one is handicapped in coming to a decision.

What we have to decide in each case is: (1) Are the symptoms such as are generally found in a given lesion? (2) If the symptoms are exaggerated, is there reason to suppose that they will be relieved or removed by local treatment? or (3) Is the neurotic element so pronounced that local measures are likely to end in failure?

Treatment.

Because a patient is neurotic that is no reason why definite gynaecological troubles should not be treated. It may even be that the local trouble is the origin of the neurosis, or at least intensifies it.

1. *Palliative.*

Where palliative treatment alone is indicated, care must be taken that it is of a kind not liable to aggravate the nervous tendencies.

I think it would be well if treatment of patients in the out-patient room and consulting room were abolished. The passage of a speculum is unnecessary, except on the rarest of occasions, to anyone who has sufficiently developed the sense of touch. The uterine sound should never be used except during an operation. Applications to the cervix should be abandoned.

I have long ago regarded pessaries as nearly always useless and generally harmful. I know that there are women who think they cannot do without them, but I believe that nearly every case of this kind is merely an example of cure by faith. There are still some who seem to regard them as a panacea for all gynaecological troubles. If these cases be examined some curious conditions will be found. One finds them in cases of unreduced retroflexions, or of tumours or inflammatory swellings in the pouch of Douglas; Hodge pessaries where the uterus is anteverted; ring pessaries so small that they can do neither harm nor good, and pessaries in cases of senile vaginitis in which the patients have the feeling of prolapse but where no prolapse exists. Most of these patients have been educated into the habit, and I have found that most of them can be educated out of it. A woman who has a prolapse of a moderate degree is generally as comfortable without a pessary as with one.

Rest may be necessary where there is evidence of inflammatory trouble, or it may be advised as a general measure with overfeeding and massage for the neurasthenic condition, but many neurotic patients rest too much.

The use of a vaginal douche is advisable in some cases, such as those in which there is leucorrhoea accompanied by irritation; in these cases some sedative lotion may be

used, such as weak subacetate of lead. Hot douching every night is useful in cases of inflammatory exudation. Douching as a regular procedure where none of these conditions exists is probably harmful. The use of tampons, I think, has largely gone out, and I doubt whether they have any great curative effect.

Some gynaecologists get rid of responsibilities for a time by sending their patient to have a course of baths at some Continental or British spa. From a neurasthenic point of view this may be of some use; as regards the cure of any local pelvic ailment, except those which are due to some old inflammatory trouble, I think there is nothing to be said for it.

2. *Operative.*

The neurotic element must make us more guarded in our prognosis and more reluctant to operate. The objective symptoms of disease are a much safer guide here than subjective symptoms. In certain cases there can be no doubt as to the necessity for operation, however severe the neurotic element, such as in ovarian and most fibroid tumours, or pelvic inflammations. Where the local condition is one which is likely to affect the general health an operation is advisable. This will include cases of prolonged or profuse haemorrhage, of leucorrhoea, and cases in which a toxic element seems to be present. This class of case is fairly hopeful. The operations required for these conditions may be of a minor character, such as curetting, removal of a polypus, or excision of a catarrhal cervix, or they may involve an abdominal section with removal of ovaries and tubes or uterus. We may feel bound to give our patients the chance of better health in this way, but we must be prepared for a certain amount of disappointment.

The one class of case which I think is the least promising is that of a so-called displacement of the uterus—a case in which the uterus is retroverted but is not enlarged and in which there are no symptoms but backache. How many cases one has seen of women who have had this condition as part of a general enteroptosis, and who have had ventrofixation performed with no relief! I have known instances in which a kidney has been fixed, the uterus has been fixed, and, lastly, the colon has been fixed, and the last state of the patient was worse than the first.

A word must be said as to moral treatment. Many neurotics are amenable to the influence of a plain talk. Some of them have been frightened—or have been led to regard some slight ailment as a matter of great importance—and an emphatic reassurance may help a great deal. In very aggravated cases it may be necessary to explain to the patient that her troubles lie mainly in her own mind, or even to point out that she is wasting the best part of her life and is a burden to others, and that the cure rests with herself. It is not a pleasant duty or one which is likely to make the doctor popular with his patient—for the time at least—but I have known it to be effectual in some bad cases. It is especially successful in those in which an operation has been really advisable and has been performed. The period of convalescence is a favourable time to explain these things.

I have said nothing of psycho-analysis. I have my own impressions of this method of treatment, but have no experience of it. In any case it seems to be outside the sphere of the gynaecologist.

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Depression, insomnia, or disordered sleep, loss of energy loss of sense of proportion and of mental perspective indecision, irritability, or over-reaction to various forms of stimulation and restlessness, are the most important and most universal indications of the neurasthenic state.

But this picture of neurasthenia is far from being complete, and the canvas may exhibit features which by their prominence throw the common background into obscurity. The breakdown of organized control too frequently permits exuberant growth of certain elements in the patients' composition which have hitherto been kept in subjection, and which now manifest themselves in unmistakable fashion. Anxieties, fears, and obsessions, springing from foundations buried in the past, slowly or rapidly assume proportions which gain for them the credit or discredit of being the primary causes of ill health. Moreover, these secondary eruptions frequently exhibit a physical bias and are projected in the form of pain, discomfort, or disturbance of function on one or other organ or region of the body.

Herein lies the difficulty of the gynaecologist, the surgeon, or the physician. The last may be confronted only with a mental disorder in the shape of a phobia, and may be in no doubt as to the method of treatment he should adopt; the first may be asked to deal with a pain or disorder of function referred to a pelvic organ, and may find the greatest difficulty in deciding whether the symptoms are primarily mental or primarily structural in origin. The answer to this question is often of great importance and mistakes in treatment may be of lasting effect.

From the gynaecologist's point of view it is obvious that he must satisfy himself as to the presence or absence of any structural defect to which pain or disorder of function can legitimately be ascribed. In the absence of such, or in cases of doubt, the question of neurasthenia may be raised, and he must be in a position to assess the likelihood of its presence. In other words, a correct diagnosis must precede and guide his treatment.

It is not sufficient to rely on a general statement or history to the effect that the patient is or is not neurotic, or on the presence or absence of an obvious source of worry or anxiety. Some of the most difficult cases of neurasthenia are those in which the patient has earned the reputation for not having a care in the world and for possessing a most equable temperament.

To arrive at a decision it is imperative not only to be familiar with the symptoms of neurasthenia, but to have some knowledge of the causes underlying this condition and its secondary manifestations. Before considering these in detail may I remind my audience that more than one factor is always concerned in the production of any morbid condition? It is usual for a bruise to follow a blow, but there are blows so slight that they only produce bruises in one person out of ten. That person is said to bruise easily, words implying a causative factor which operates in addition to the blow and which belongs to the individual. If this simple example of cause and effect is complicated by more than one factor we must not be surprised if we find a very large number of factors concerned in the production of neurasthenia. Anybody who is satisfied with one cause for neurasthenia, whether it be psychic, septic, static, or endocrinic, must inevitably come to grief in diagnosis and in treatment.

The first point to be studied in considering the etiology of neurasthenia is the inherent factor. As doctors, in our attempts to classify and pigeon-hole our patients we are apt to overlook individual differences. Go to a girls' school with a hundred pupils and you will not be surprised to find that each girl differs from her neighbour in form and feature; indeed, you would be surprised to find any two so alike that you could not distinguish them after a very short interview. Let us remember that the mental form and feature of each girl is equally if not more characteristic, that each responds in her own way to a common environment, and that in each the relative influence exercised by primitive instincts and desires is materially different. Let us recognize, too, that each girl is not equipped with the same amount of nervous energy even when allowance is made for transient conditions of health.

An appreciation of this last fact enables us to understand some of the early neurasthenic states met with in schoolgirls, in view of the fact that they are all put through a régime suitable only for the most robust. How often have we heard from the lips of a woman that while at school she never knew what it was to be tired! But public opinion at the school denounced manifestations of fatigue as reprehensible, and it was up to the exhausted individual either to be branded as a slacker or to assume a cheerfulness and vivacity which was purely fictitious. A third alternative, in the form of some hysterical disability or disorder of function, might provide a line of defence against the discomfort entailed by either of the other two courses.

A consideration of these factors in gynaecological problems at the period of puberty and adolescence may afford a clue to diagnosis and treatment. From a neurological point of view such a combination of factors, associated with a strong primitive instinct of acquisitive or sexual

character, may lead to disorders of conduct which may have disastrous results on the patient's whole life should the underlying and temporary causes escape recognition.

While insisting on the importance of realizing the inherent differences between individuals, I have intimated that fatigue—in itself a variable quality in regard to the amount of energy expenditure required to produce it—is a predominant factor in many neurasthenic conditions. Modern psychology, from which we have gained such invaluable knowledge in regard to mental mechanisms, has perhaps underrated the influence of fatigue in bringing about disorders of mind, and of rest in their treatment. This neglect represents the swing of the pendulum from the fashion of treating all functional disorders on the Weir Mitchell system, and so disregarding their other component factors. There can be little doubt that when a breakdown occurs in the compromise between social ideals and primitive instincts as the result of fatigue, rest may be sufficient in some cases to restore the balance, and in most cases it forms a necessary part of successful treatment.

From the gynaecological outlook the influence of fatigue and rest has many bearings. The intricate question of pain is not the least of these, and we must recognize the principle that visceral sensations normally giving rise to little, if any, disturbance of consciousness, and without any disagreeable tone, may assume painful qualities when the higher sensory centres have lost their healthy influence and authority. This principle is one to which we admit our adherence in ordinary good health when we acknowledge the exaggeration of some chronic pain in the presence of fatigue. In my belief there is no such thing as imaginary pain, but sensations may acquire a painful aspect when the higher centres are out of gear.

Fatigue is also closely concerned with sexual functions, and in women may manifest itself in precisely opposite ways. In a woman with a feeble sexual instinct the effect of fatigue may abolish desire altogether, and so create another factor in the evolution of a neurasthenic state. In another woman with strong sexual instincts fatigue, by interfering with the authority normally exercised by higher centres, leads to sexual misconduct of a kind which is regarded by the same individual in a healthy condition with abhorrence. Restoration of normal control may often be effected in such patients by rest alone.

But when we are dealing with the results of fatigue it is essential to find out whether there is more than one leakage by way of which nervous energy is being drained. The most common result of such investigation is to discover two factors which the patient regards as antagonistic or antidotal, but which in effect are cumulative. These two factors may be roughly described as fear and flight. The patient is beset by a conflict which she finds insoluble, and which she dare not face. Refuge from this dread is sought in distraction, often in frivolity, which in itself is a potent additional source of fatigue. The greater the exhaustion the firmer hold does the conflict obtain. Sleep is interfered with, and a complete breakdown is the result.

Many such patients must seek help from the gynaecologist on account of some pain or disorder of function, which in a healthy individual he would easily and successfully deal with. His intervention, however, whether operative or otherwise, has not the desired result, and unless prolonged and adequate rest, both mental and physical, can be obtained the patient's condition becomes worse rather than better. General and gynaecological surgery would show more successful results if every patient, before being submitted to a non-imperative operation, were carefully scrutinized from this neurological standpoint. I confess to having little patience with the surgeon who prides himself on the rapidity with which he gets his patient up after operation, or with the obstetric physician who lays down a time limit for rest after confinement regardless of what has gone before.

In considering the etiological factors concerned with neurasthenia reference must be made to the influence of age. Much importance has naturally been attached to changes which take place in the reproductive organs of women at the age of puberty and at or about the climacteric, and speculation has been rife in regard to the effects of these changes in the production of mental instability.

The conclusions generally arrived at can hardly, in the present state of our knowledge, be accepted without reserve, and the habit of attributing in an offhand manner neurasthenic symptoms to the patient's age, as if there was nothing more to be said, is one to be deprecated. We must recollect that many individuals pass through the "dangerous ages" without exhibiting any signs of mental disturbance in spite of the change in their internal secretions, and we must not forget the psychic stress which so often operates at these periods of life. Reference has already been made to some of the difficulties which beset the schoolgirl, and these may be increased if the onset of puberty has found her unprepared by judicious education and enlightenment.

In my experience the large majority of adult women who exhibit symptoms of neurasthenia are between 35 and 45 years of age, and most of them have seen no signs of the approaching climacteric. It is at this period in a woman's life that mental stress is most apt to develop. Her energy is sapped by larger responsibilities, her place is being filled by younger women, and unless she is able to adapt herself to a new outlook on life she may find herself ill-equipped to face the years of declining power. The married and the single each have their own particular difficulties and anxieties, sufficient, as it seems to me, in most cases to account for the disorders of mental function which so often overtake them, without invoking the influence of glandular disturbances.

Civilized conventions have imposed on woman the necessity for greater repression than they have on man, with the result that we are often confronted with stories of many years of mental suffering quite unsuspected by friends or relatives. The strain of such years is apt to take its toll on the nervous system and to result in neurasthenic states which are quite unjustifiably ascribed to a physiological event.

It is more than likely that the menopause is a factor of some importance in a small proportion of patients, but I am not prepared to assess its value at the height it has attained in popular belief. Moreover, it has not been my experience to find a menopause artificially produced followed by neurasthenia in the absence of other more important factors.

The influence of age is so closely allied to that of the endocrine glands that a brief consideration of the latter, especially in relation to treatment, may not be out of place. I am hoping to hear in the course of this discussion the results of gynaecological and neurological experience in regard to the use of glandular preparations in the treatment of neurasthenia. They have been extensively used in men and women of all ages, and it would be interesting to discover the general opinion as to their efficacy. My own contribution to such a discussion can be stated very briefly. Beginning with an unfounded but enthusiastic bias in favour of their administration I have entirely failed to satisfy myself that they are of any therapeutic value in dealing with neurasthenia as such. There have, of course, been instances in which obvious thyroid inadequacy has been met successfully by the prescription of the appropriate gland, but I cannot recall a single case in which extracts of mammary, ovarian, or orchitic origin have indubitably exercised a curative effect. This statement must not be regarded as a condemnation of their use so much as a confession of ignorance as to how to use them.

Reverting to etiology, let me say a few words on what appears to be the most important factor in neurasthenia as it affects the patients of the obstetrician and gynaecologist. The instinct of self-preservation with its emotional counterpart of fear must certainly hold this place. Speaking generally, this instinct and this emotion are well developed in women from an early age, although they are not often brought into prominence in the everyday life of civilized communities. Moreover woman's fear of known dangers may not be more easily evoked than that of man. She is trained from an early age to repress fear in its relation to a number of more or less unknown contingencies. The fear of menstruation, the fear of sexual intercourse, the fear of child-bearing, the multiple fears associated with the responsibilities of maternity, and later on the fear of disease, of malignant disease, in connexion with the mammae and the pelvic organs. My experience amongst neurasthenic women leads me to believe that these fears, concealed from the eyes of the world, form a considerable part of the mental content of many so-called neurotic women, that they are based on unnecessary ignorance and lack of education, and that their dissipation would simplify to a large extent the work of the gynaecologist and

neurologist. Only recently I was consulted by an immaculate spinster of 47 years of age who had for months been nursing an agony of fear that she was about to give birth to a child, and on inquiry she was found to be entirely ignorant of the steps necessary before that fear could be realized. Such a story is hardly credible, but less improbable ignorance is constantly being exposed in consulting rooms.

But in proportion to the fears confessed, how many are never divulged except in the form of what one may term pelvic neurasthenia? It may justifiably be hoped that the emancipation and better education of women will result in the abolition of those phobiae which depend on ignorance of physiology, but the terror of malignant disease seems likely to remain a curse to the peace of woman's mind for years to come.

The influence of fear concerns the gynaecologist in another way, in that it induces the nervous patient to conceal the early signs of disorder of function lest they may be pronounced to be evidence of disease. Thus does the instinct of self-preservation, lacking the guide of knowledge, defeat its own ends.

DISCUSSION.

Dr. Bell (Humshaugh) considered that some, at all events, and probably many, of the morbid nervous states of married women, were due to the impressions made on the nervous system by the fear of the pain of childbirth and its unaccustomed and unpleasant concomitants, and to the recollection afterwards, this being more marked in reticent natures. This fear and recollection could be abolished entirely by the use of scopolamine-morphine narcosis. So much was this the case that in succeeding pregnancies there was no fear of this kind, whereas, if neither chloroform nor scopolamine-morphine had been used, there was often terrified anticipation of approaching labour which produced very disastrous effects on the whole nervous system both then and afterwards.

Dr. Wm. Robinson (Sunderland) looked forward to the day when neurasthenia would no longer be classed as a neurosis—to the time when the seat of the disease would be definitely located in some portion of the brain, just as paralysis agitans had been shown to be due to a visible progressive change in certain cells of the corpus striatum. At present most of the literature of neurasthenia was taken up with a medley of all sorts of weird symptoms referred to one or more organs of the body, due to loss or perversion of nerve control. It was not, however, to be expected that a marked change would be found in the nerve cells of the brain in a disease which might be temporary and curable; these changes might be abnormal biochemical reactions occurring, perhaps, as the result of the action of defective or excessive chemical messengers (hormones) carried to them in the blood stream from one or more of the ductless glands. It was impossible to imagine a function apart from a physical basis, and there was no system of the body in which function depended more upon structure than it did in the nervous system. Intelligence itself depended upon the number and development of the neurones in the four superficial layers (the plexiform and the three pyramidal cell layers) situated above the granular layer in the cortex of the brain, as was shown by their great development in man, and their late development in the individual and in the race. Instinct was a function of the three subgranular layers, and soon after birth these layers were developed to the extent of 82 per cent. (see Berry in British Medical Journal, July 16th, 1921, p. 72). The high development of the supragranular layers and the great size of the association areas surrounding the various special "centres" were the most prominent features of the human brain. Intelligence and fitness depended upon the number (and quality) of the neurones present at birth. Though they never multiplied, they and their connexions might be developed to a limited extent by education. Hysteria being an emotional disease, and its chief characteristic suggestibility (both as to cause and cure), was doubtless a disorder of these higher neurones; so was psychasthenia with its "phobiae" and its hereditary character; but neurasthenia, being a chronic depression of various general functions of the body, was most probably a disorder of those subcortical centres which regulate the general economy. Therburn classed ordinary acute shock (in which there was also an arrest of mental activity and volition) as acute neurasthenia; and chronic neurasthenia as a condition of chronic shock. The predominating part (Dr. Robinson continued) that the sexual functions play in the body and the mind, especially in persons with defective control, accounts for the frequency with which neurasthenia is met by the gynaecologist. To get and to beget are the two strongest passions. The easily developed fatigue and prostration of the disorder suggest a likeness to Addison's disease and the possibility of its being due to deficient action of the suprarenal glands, especially when we remember that the other two chief symptoms of Addison's disease—pigmentation and vomiting—have never been produced by experiments on that gland and are most likely due to implication of the solar plexus, since they occasionally occur in chronic tuberculous peritonitis. The frequent vasomotor symptoms in neurasthenia show its intimate connexion with the sympathetic nervous system. We know that that system, acting through the splanchnics, can immediately produce those defensive responses in an animal when suddenly attacked and in great danger, which later are brought about by a flow of adrenaline, after the suprarenals have had time to act (Cannon). This is not surprising when we recollect that developmentally the medulla of the suprarenal is an offshoot of the autonomic system. The "phobias" and "anxieties" suggest some hyperthyroidism, symptoms of which are those occurring in fear and fright; and fear and fright are potent causes of neurasthenia. That the treatment of neurasthenia by organic extracts has been disappointing may be due to our ignorance as to the gland or glands required and the dosage necessary. The treatment of neurasthenia demands, as Osler stated, (1) a strong personality in the doctor or nurse; (2) certain means to be employed—a hospital, a home, an electric battery, a dominating suggestion, the correction or cure of some local (for example, pelvic) trouble, etc.; and (3) faith on the part of the patient—"only believe."

Dr. Helen Boyle (Brighton) confessed that she felt in a maze. Neurasthenia was such a vague term. Dr. Farquhar Buzzard's definition, "A disorder of mind wherein normal activities of life are difficult or impossible," made it almost all-embracing. She was impressed by two things: (1) By the very marked influence of the monthly period upon nervous and mental patients, usually, though not always, for ill. This had been questioned, but in her experience was incontrovertible. In the early stages of such conditions it was not uncommon for patients to develop suicidal tendencies, which completely disappeared when the period was over. This was misleading, as a cure might be postulated and a recurrence of the symptoms occur at the next period. (2) By the effect of lactation on the nervous mechanism. It was her experience that the stopping of lactation before the usual term of eight to nine months was likely to promote, not to hinder, the development of nervous symptoms. She thought that, unless it was otherwise impossible, lactation should be encouraged, not checked, in patients showing signs of nervous instability. She would like to know whether members of the Section had found excessive sex feeling to follow abdominal operations, and whether in such cases, in the absence of other indications, it was wise to have the abdomen explored for adhesions.

Mr. R. J. Johnstone (Belfast) thought that neurasthenics might be divided into the hypochondriacs, who were usually people with too little to do, and the women who were suffering from the exhaustion produced by the bearing and rearing of a large family. He was in favour of ending the second stage of labour, especially in primiparae, as rapidly as possible, as many women after a long first confinement suffered from neurasthenia for a considerable time. He always impressed on patients after operation, especially after an abdominal operation, that they should not attempt to lead an ordinary working life for at least six months. He emphasized the importance of making certain, by operation if necessary, that no organic lesion existed which was really responsible for the symptoms of which the patient complained, and confessed that it was always with reluctance and a sense of failure that he finally arrived in any given case at a diagnosis of neurasthenia.

Dr. R. H. Paramore (Rugby) discussed the relation of the pressure within the abdomen to neurasthenia. He believed that neurasthenia was a condition affecting the

whole body. There was an enfeeblement of the brain (higher centres), of the systemic musculature, and of the viscera. The power of response of the brain depended on the nutritional state of the brain; and this nutritional state (apart from other factors) had resulted from the blood supply to the brain. The nutritional state of the brain was thus due, for one thing, to an adequately high aortic blood pressure—that was to say, to an adequate output of blood from the heart into the aorta per unit of time. But the output of blood per unit of time from the left ventricle depended on and varied with the supply of blood to the right auricle during the same time. Thus the nutritional state of the brain depended, for one thing, on the flow of blood *to* the heart. This blood reached the heart from three regions—from the skull, the limbs, and from the abdomen; but the skull was incompressible; the volume of the limbs varied but little from time to time; only in the abdomen did large variations in volume occur. If the musculature of the abdominal wall was persistently lax, as it often was in these cases, then disturbances in the vascular supply to the brain, and so of cerebration, were to be expected. The good effect of treatment by abdominal supports, rest, etc., the non-appearance of neurasthenia during pregnancy (indeed, the disappearance of neurasthenia in non-pregnant women when pregnancy ensued), and its easy rise in thin and worn-out people (especially its common occurrence in such women who had borne children), all indicated a relation between the intra-abdominal pressure and neurasthenia. Unlike Dr. Donald, Dr. Paramore believed many diseases were caused mechanically; and he believed that the mechanical failure of the abdominal wall and of the other associated musculatures to compress the abdominal visceral mass sufficiently was a cause, and he thought a potent cause, in the production of neurasthenia. The case referred to by Dr. Donald, in which a large fibroid gradually dwindled at the climacteric and the patient lost flesh and became neurasthenic, was, he thought, to be explained, at least in part, by the fall of intra-abdominal pressure rather than by the onset of a toxaemia induced by autolysis of the tumour, as Dr. Donald suggested.

Dr. Mary Sturge (Birmingham) urged the importance of restoring to their proper level in the body such displaced organs as the kidney and uterus, in order to eliminate an important factor in the cause and upkeep of neurasthenia. An experience of twenty-five years had profoundly impressed upon her mind the benefit that accrued to a nervous or even mental patient by relieving her of the strain produced by misplaced organs, if such existed. She related some typical illustrative cases. In one, a young woman who became excited and almost suicidal at each menstrual period, the fixation of a loose kidney in its place was followed by rapid and permanent cure. In another case puerperal melancholia showed no signs of improving until the heavy retroflexed uterus was replaced; permanent recovery rapidly followed. She advocated care in the early reposition of displaced organs as a preventive of neurasthenia.

The President (Dr. Ranken Lyle) said that the Committee of the Section had selected the subject for discussion because many patients suffering from exactly the same symptoms and physical signs received very different treatment, according to the way their cases were viewed by the practitioner or gynaecologist. He was not referring to cases of abdominal tumours, where the indication for operation was perfectly obvious and where little or no doubt could arise as to the proper method of treatment, but rather to a large class of cases where patients possessing some minor physical abnormality were at the same time suffering more or less from the general symptoms of neurasthenia. Twenty or thirty years ago all these cases fell into the hands of a person known as the gynaecological physician, who treated them by the insertion of various pessaries, and all sorts of minor treatment, such as applications to the cervix, tampons, douching, etc., and sometimes applications even to the interior of the uterus. This treatment resulted in the manufacture of a large number of chronic neurotics. A few years later, owing to steadily improving results obtained from operative treatment in general, this class of case gradually came under the notice of the operating surgeon or gynaecologist, who generally regarded the gynaecological physician with great contempt, and in some instances went so far as to call him a "pessary monger"; but the operating surgeon himself was even more to blame, for he generally spent his time doing innumerable operations, such as Alexander-Adams's operation, ventrofixation and suspension, Gilliam's operation, trachelorrhaphy, and operations for the repair of minor lacerations of the perineum—operations which could not benefit the patient in any way whatsoever; the pretext for performing them was the false assumption that the minor physical abnormality found was the cause of the numerous neurasthenic symptoms of which the patient complained. What the Committee was anxious to ascertain was not so much the treatment of such cases, but the differential diagnosis and the relation, if any, between the mental or neurasthenic symptoms and the physical signs, so that patients of a typically neurasthenic character would not be subjected to unnecessary operations, and that the operative part of gynaecology would be reserved, as far as possible, only for those cases in which the benefit to the patient would be obvious and definite, and not of a purely speculative character. All, he thought, would agree that Dr. Donald had treated the subject in a masterly way, and had indicated many symptoms which were essentially of a neurasthenic character—some that might be either neurasthenic or have a physical basis, and others entirely due to physical causes. A point on which Dr. Lyle wished to insist was the great necessity for disbelieving all the objective symptoms complained of by a patient until they were verified by a careful examination. Patients often complained of all sorts of discharges, especially purulent discharges, when on examination nothing abnormal could be found. Other patients complained of uterine prolapse or displacements, or other conditions which had no existence in fact; the only explanation of these cases was a mental fear or dread lest they might perhaps develop. Dr. Buzzard's paper illustrated this fact—that many of the symptoms complained of by patients were due primarily to fear and dread, and he thus showed the absolute necessity of a thorough investigation in each case to determine the origin of such symptoms, whether due to fear or some departure from the mental or nervous equilibrium, or due to physical signs. Dr. Paramore mentioned increased intra-abdominal pressure, but this condition, apart from abdominal tumours, was essentially due to neurasthenia, and was associated with the neurotic bad habit known as "bearing down." This was the actual cause of the descent of the pelvic floor, producing such conditions as prolapse, procidentia, cystocele, and rectocele; the unsatisfactory results from operations in such conditions was due to the fact that their origin was more mental than physical.

Dr. Farquhar Buzzard, in replying, thanked the members of the Section for their reception of his paper. He was sure that Dr. W. H. Paramore would have felt a glow of satisfaction if it could be asserted that pregnancy was never complicated by neurasthenia. This, unfortunately, was not the case, and if Dr. Paramore's theory were followed to its logical conclusion every woman after bearing a child should become neurasthenic and in the case twins become insane!

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

EXTRACTION OF PIN FROM RIGHT BRONCHUS IN A CHILD.

A girl aged 3 was referred to me by Dr. Jeffrey Ramsay of Blackburn, with the history that in the evening of May 18th, 1921, she had told her mother that she had swallowed a pin. She had been holding some pins between her teeth and one of these had slipped down her throat. There was no cough or difficulty in breathing, but *x*-ray examination was advised by Dr. Jeffrey Ramsay. Dr. F. W. Taylor reported the same evening that the radiogram showed a pin in the right bronchus, obliquely placed with the point on a level with the sixth costo-vertebral articulation and the head between the seventh and eighth ribs, about ¾ in. from the spine.

The following day, under chloroform anaesthesia at the Blackburn and East Lancashire Royal Infirmary, a 6 mm. Brünings' tube was passed into the right bronchus. This was replaced by an 8 mm. tube, as the smaller size did not give

a satisfactory view of the parts in so young a patient. Spasm met with when attempting to pass the tube between the vocal cords was overcome by painting the interior of the larynx with a weak solution of cocaine 5 per cent. used sparingly, and then waiting a few minutes, when the procedure was easy: trauma of the larynx was thus avoided. After a considerable time—about thirty minutes spent in searching the walls of the right bronchus, the point of the pin was found projecting from the posterior wall at a distance of 11 in. (from the teeth to the end of the extension tube of the bronchoscope). The distance of the foreign body from the teeth in so young a patient, the position and direction of the pin point, and the required backward tilting of the end of the bronchoscope to engage the point of the pin in the lumen of the metal tube all suggested that the head and at least the greater part of the body of the pin were in a posterior secondary bronchus, although the small diameter of the bronchi prevented one from being certain about this point.

After location extraction was easy, the removal being effected through the lumen of the bronchoscope with an angled variety of Brüning's forceps. There was no difficulty with the anaesthetic and the breathing during the operation. The recovery was uneventful, except for a slight hoarseness which disappeared within two days.

Although removal of foreign bodies from the lungs is of frequent occurrence nowadays, this case is recorded for the following reasons:

1. The patient presented no symptoms of irritation of the air passages, not even the "asthmatoid wheeze" described by Chevalier Jackson, although this, it is true, is to be expected more when the foreign body is of sufficient size to act as a ball valve in the air passages. In spite of this fact, the proper method of approach was taken in this case. No doubt if left alone foreign bodies in the air passages may lie quiescent for years, or may be coughed up later, but too often a fatal result ensues.

2. Early diagnosis and treatment in this case, with bronchial irritation absent, no doubt had much to do with the fact that tracheotomy was not necessary to relieve respiration either before, during, or after the operation. For a similar reason low tracheotomy with introduction of the bronchoscope through the tracheal wound was not required.

3. The pin was extracted through the lumen of the bronchoscope because the point could be brought into the lumen before using forceps. When a pin lies with its axis across the end of the bronchoscope, removal of the forceps, pin and bronchoscope *en masse* may be necessary.

W. Barrie Brownlie, M.D.Glasg., F.R.C.S.Edin.,
Ophthalmic and Aural Surgeon, Blackburn and East Lancashire Royal Infirmary.

ADRENAL AND PANCREATIC HAEMORRHAGES FOLLOWING OPERATION.

A healthy breast-fed baby, aged three weeks, was admitted to the Queen's Hospital, Bethnal Green, for hare-lip. A short operation was performed under open anaesthesia by equal parts of chloroform and ether. Five hours later, without any warning symptom, the temperature rose to 109.8° F.; the pulse became of low tension and its rate increased to over 160. Later, convulsions occurred three times, and death ensued twelve hours after operation.

Post mortem most of the organs showed evidence of haemorrhages and congestion. The pancreas was largely replaced by a haemorrhagic necrotic mass, but there was no surrounding fat necrosis. The suprarenal bodies were full of blood. The pons and medulla on section showed pin-head petechial haemorrhages. Other organs showing petechiae and congestion were the kidneys, the thymus, and the lungs. The liver, though enlarged, did not share in the above changes. I am indebted to Mr. Norman Lake, under whom the infant was admitted, for permission to report this case.

Charles J. Lewis, M.B.

A new centre for the medical examination for civil aviators is to be opened at Bordeaux under the direction of Dr. Cruchet, professor in the Faculty of Medicine in that city. Hitherto the only such centre for medical examination has been at Le Bourget, near Paris. It is proposed to set up a third centre at Montpellier.

The commission of inquiry which President Harding sent to the Philippine Islands has reported that there are about 5,000 lepers in the islands, but that a lack of funds is preventing the treatment of more than 500 of these with chaulmoogra oil; the remaining lepers are stated to be practically without treatment.

Reports of Societies.

THE MODERN TREATMENT OF DIABETES.

A discussion on "the modern treatment of diabetes" took place at the meeting of the Medical Society of London on October 24th.

Sir Archibald Garrod, in introducing the subject, said that there was every reason to be proud of the achievements of Englishmen like Thomas Willis, Matthew Dobson, Rollo, and many others in the study of diabetes. During recent years there had been great advances in the knowledge of the subject, partly due to the ease with which the sugar in the blood might be estimated, so that the attention needed no longer to be confined to the urine. It had been possible to see the effect of the administration of a dose of glucose upon the blood sugar, and thus to isolate different diseases included under the name diabetes, and to show that the prognosis was not so uniformly gloomy as had been supposed. The important part played by acetoacetic acid, which many thought was the poison producing diabetic coma, was becoming better understood; and altogether the position had been cleared for facing the problems of treatment. It was Rollo who initiated the dietetic treatment of diabetes. His book, published at the end of the eighteenth century, should be read by all who were interested in the subject. Rollo started on the assumption that the stomach was the beginning of the condition, but, as had often happened in medicine, on a wrong assumption he got on to a fairly right line of treatment. He put his patient on, for breakfast, 1½ pints of milk with an equal quantity of lime water; for lunch, puddings made exclusively of blood and suet, and for dinner, game or old meats which had been long kept, and, as the stomach would bear it, fats such as rancid pork. If the disease did not disappear he left off the milk and substituted beef-tea. Subsequently Rollo's protein-fat diet was improved upon to a certain extent, but students of forty years ago would still remember the huge meals which diabetics were given, of protein mainly, with a certain amount of fat. The modern treatment, as expounded by Allen in America and George Graham in this country, consisted of regulated fasting and graduated dieting. Both these methods of treatment rested on the fact that by starving the patient his damaged metabolic process was given a chance of recovery. Personally, the prolonged hunger days of Allen did not appeal to him so much as the shorter periods favoured in this country. There was no routine treatment of diabetes which could be carried out in a rigid manner. Every case had to be treated on its merits, and the hand must be always upon the tiller. The result of the modern treatment was enormously to increase the comfort of the patient and prolong his expectation of life. In hospital wards nowadays it was difficult to get a specimen of sugar in the urine for examination—a glowing tribute to the efficacy of the modern treatment. It was now understood that in the diet of the diabetic the proteins and fats might be deleterious as well as the carbohydrates, and that the patient was better off on a scanty diet, with rather a low calorie value all round. But while much could be done for the diabetic patient, he feared we were as far away as ever from the cure of diabetes.

Sir W. H. Willcox said that the first step in the treatment of diabetes should be the detection and removal of the cause. The true cause was damage to the pancreas by some toxic agent, and in the resulting degeneration no doubt bacterial toxins played a most important part. He had seen very severe glycosuria in a case of carbuncle in which, after successful treatment of the septic lesion, carbohydrate assimilation again became normal. In such a case it appeared that the toxins absorbed caused temporary arrest of the special pancreatic function. In mumps glycosuria was well known, and numerous cases of glycosuria in syphilis had been recorded. Some cases of severe diabetes under his care at St. Mary's had been bacteriologically investigated in the laboratory, and showed abnormal intestinal infections. In one case the stools had a large excess of pathogenic streptococci, and also an infection with the non-lactose-fermenting Morgan's bacillus. The importance of the removal of possible toxic causes acting on the pancreas had not been sufficiently realized; in every case it was necessary to

make a careful examination of the mouth, tonsils, and nasopharynx. The prevention of diabetes would be brought about by the early removal of toxic conditions of various kinds which had harmful effects on the pancreas, and the recognition of such effects could only be obtained by periodical examinations of the urine, a form of medical supervision which had not yet received the recognition it deserved in preventive medicine. As for dietetic treatment, the speaker said that during the last two and a half years all the cases under his care at St. Mary's had been treated on the lines laid down by Allen and Joslin; without exception it had been possible to remove the glycosuria, and a marked improvement had occurred in all but one patient, who in addition to diabetes had advanced phthisis. During a patient's stay in hospital his carbohydrate, protein, and fat tolerance was determined and alternative diets were drawn up for him which were well below the limits of tolerance. In severe cases with very low carbohydrate tolerance 30 c.cm. of alcohol, corresponding to 2 oz. of whisky, might be given, but, in view of its toxic effect on the liver, alcohol should not be given on fasting days, and was best avoided altogether in milder cases. The modern dietetic treatment of diabetes could not be said to be curative when permanent extensive damage to the essential cells of the pancreas had occurred; on the other hand, it might be safely foretold that a neglect to follow the modern dietetic treatment meant a progress from bad to worse. He had found rectal administration of glucose in severe diabetes to be of value in treatment, especially in cases where acidosis was threatened.

Dr. O. Leyton agreed with the last speaker as to the extraordinary sensitivity of the metabolism of the diabetic to any toxin. On one occasion a practitioner attempted to immunize a patient against influenza while she was undergoing observation to find the optimum diet. She had reached only about a quarter of the amount she could tolerate without increase of sugar in the blood, but the injection led to a return of the sugar in the blood for several days. He remembered a small child who had been sugar-free for a year returning to the hospital a second time with quite a fair amount of sugar in the urine, yet the dieting had been strictly maintained. On inquiry he found that the child's sister had been suffering from chicken-pox, and his surmise proved correct that this child had been infected by the chicken-pox organism. It was out of the question to find the optimum diet of the diabetic while there was any focus from which poison was being disseminated. The treatment of diabetes mellitus failed in tuberculous patients; every now and then there was an exception in which it succeeded, but such exceptions were rare. Undoubtedly there was no cure for the true diabetic. The tolerance of some people could be greatly increased; he had seen cases in which the carbohydrate tolerance had been increased three- or four-fold what it was at the beginning, without any increase of sugar in the blood. But that was a slow process, and it was not possible to predict in which cases it would occur.

Dr. W. Langdon Brown thought it would be generally agreed that true diabetes was characterized by an exaggerated metabolism involving not only the carbohydrates but the fats and proteins, and even to some extent the inorganic salts. It was possible that rather too much had been attributed to the part played by the pancreas; the sympathetic nervous system was the mechanism through which the glycosuria was produced, though he would not go so far as to affirm that it was solely produced in this way. He emphasized the guidance to be obtained in the selection of appropriate treatment by the investigation of the blood-sugar curve in glycosuria, and he showed a large number of curves illustrating different conditions. Some of these related to intermittent or transitory glycosuria, the condition only appearing when the patient was overworked or subjected to some special strain. In these cases he did not insist on alimentary rest; he had to deal with the rapid influx of sugar into the blood, and he cut the sugar out and left the starch in. He also gave some of the starch cooked in fat so as to delay its entrance into the blood stream.

Dr. Edmund Spriggs addressed himself to the question of the education of the patient. The real difficulty in the treatment of the diabetic was not in hospital—it was in the patient's own home, and the solution was to teach him so to control his diet that he would be enabled to "carry on." The preliminary examination carried out in the hospital with the blood-sugar and other tests must be done first to determine what class of case it was, but after this the success of the dieting depended upon the instruction which the patient received. The patient should be taught diabetic cookery, also something about foodstuffs and the arithmetic necessary for carrying out his diet day by day. He should be instructed in the collection and measurement of urine. In the speaker's own private hospital a course of instruction was given monthly, with cookery and laboratory classes, and two or three lectures by doctors to explain the reason for and the method of treatment. On visiting the hospitals in the United States where Allen and Joslin worked he was impressed by the classes of patients to whom such lectures were being given. The speaker also produced some samples of home-made diabetic bread. The breads of the Callard and Protene Companies were always found on analysis to be what they were represented to be, and, of course, were very widely used, but one disadvantage of the ordinary diabetic breads was their richness in fat and the variability of their fat content compared with their protein content. His own bread was a casein bread, made from separated milk according to the following recipe, devised by Dr. Spriggs and made by Mr. Leigh the chemist, and Miss Ledingham the diet sister, at Duff House.

Duff House Home-made Diabetic Bread.

One gallon of separated milk (cost about 6d.) is placed in an enamel dish and warmed, with stirring, to 100° F. A mixture of 45 c.cm. (1½ fluid ounces) of glacial acetic acid and 450 c.cm. water (about ¾ pint) is prepared and poured into the milk at 100° F.), with constant stirring. The caseinogen separates as a white clot. The mixture is left to stand for about five minutes, and then poured through muslin placed on a fine sieve for about two minutes, meanwhile working the caseinogen with the hand so that most of the other milk products and acid may be washed away. The muslin containing the precipitate is taken from the sieve, pressed, placed in a bowl of cold water, and kneaded for about five minutes. The water is replaced by fresh six times, and the kneading repeated five minutes at each to ensure that all traces of milk sugar are removed. The washings were tested with Fehling's solution.

The muslin containing the white material, henceforth called "casein," is squeezed to remove as much liquid as possible, the muslin opened out, placed on a sieve, and left on the kitchen shelf for a few hours to dry. The casein is now rubbed through the sieve on to the muslin and put back on to the shelf overnight or until it is dry to the touch.

About 160 grams (5½ oz.) of the casein in this condition should be obtained from one gallon of separated milk.

To prepare the bread, beat up the whites of two eggs to a stiff froth, add 50 grams of the above casein (nearly 2 oz.), a pinch of salt, and 2 grams each of cream of tartar and sodium bicarbonate (that is, a teaspoonful of each powder, levelled off but not pressed down). Mix lightly together, form into cake or cakes, and bake in a moderate hot oven for 15 to 20 minutes.

The tin on which the bread is baked should be greased with liquid paraffin. This gives an unpleasant smell in the oven, but the bread has no taste of it.

The casein can be prepared at any time and in any quantity at the convenience of the housewife. It is best kept in a dry place in open vessels. The bread itself is made in a few minutes by whipping up the casein with the egg white, salt and baking powder. Sweet cakes can easily be made from it by putting in a little liquid saccharin and some desiccated cocoanut or other flavouring. When freshly baked the well-known and objectional cheesy taste of diabetic bread is less marked in this bread than in those on the market, but it is important that it should be made and eaten fresh. The taste develops if the bread is kept long. As the making and baking take only a very short time, it is easy by keeping a supply of casein powder to make bread fresh once a day or more than once a day.

The analysis of the bread as served gave:

Protein (nitrogen × 6.25)	52.5 %
Carbohydrate (starch and sugar)	*nil*
Fat (ether extract)	0.2 %

Twenty grams of it gives, therefore, approximately 10 grams of protein. In addition to its general use as a not unpleasant and inexpensive home-made bread substitute, rolls of about 20 grams are specially valuable when it is desired to increase the protein daily after fasting, without adding fat or carbohydrate.

With eggs at 3s. 9d. a dozen the cost works out at a little under 3d. for each 20 gram roll. The yolks of the eggs are, of course, included in the price, but could be used for some other purpose, such as for custard.

Dr. E. P. Poulton had tried to work out a plan for the instruction of hospital patients. His object was to keep the protein down to, roughly, 1 gram per kilo body weight. One ounce of meat or fish might be taken as equivalent to 6 grams of protein, so that if a man's weight was 60 kilos he would be allowed 10 oz. of meat, an egg being taken as equal to 1 oz. In the treatment of coma, which was comparatively rare, the important thing was

to get the aceto acetic acid excreted, and for this purpose it was very desirable that the patient should take fluid, which was often difficult with such a patient. He had given fluid to a patient with coma by means of a tube, and had found useful results in increase of urine.

Dr. George Graham laid stress on the importance of teaching the patient concerning the collection of urine, which should not be taken immediately on rising in the morning, but preferably after the principal meal of the day, or after a meal in which the patient had taken a fair amount of the carbohydrates allowed him. It was very important also to keep early and severe cases in bed; the practice at St. Bartholomew's was to keep them in bed as long as possible, certainly until it had been established how much they were able to take. The speaker touched on some differences between Allen's method and his own. The general principle was the same in both namely, under-nutrition. Allen made the point that the patient should order his life according to the size of his pancreas; he (the speaker) would rather put it that the governing consideration should be the number and working order of the islands of Langerhans. After an initial fast-day and two Van Noorden egg and vegetable days, his own method was to start increasing the proteins, leaving the carbohydrates to come afterwards; Allen, on the other hand, increased the carbohydrates first, not the proteins. The amount of protein which the speaker gave was always much smaller than that which Allen recommended his patients to take.

Dr. P. J. Cammidge said that he had kept in touch with 143 cases treated by the modern or fasting treatment of diabetes, and of these fifty-two had died. In spite of the remarkable immediate effects of the fasting treatment in many instances, there were cases in which it gave rise to disquieting and even dangerous symptoms from an early stage. He had met with nervous disturbances, ataxia, and tetanic convulsions, which necessitated the abandonment of the treatment. The treatment was not a panacea. He must regard it as an empirical treatment until some new method of testing the correctness of the hypothesis on which it rested might be discovered. He believed, however, that there was such a method of testing available—a method which depended upon the determinations of the difference between the percentage of sugar and the percentage of total carbohydrate in a series of specimens of blood taken at hourly intervals before and after a test breakfast. This method of difference-value (which he elaborated) had furnished him with a means of ascertaining whether diabetes was or was not invariably due to disease of the pancreas. His conclusion from some 150 cases examined was the high probability that clinical diabetes was not a single simple pathological entity, but a symptom-complex which might develop along at least three lines, of which disturbance of the pancreas was one. This might account for the varying symptoms and widely different progress of the disease in different individuals, and why no one method of treatment had yet been found to give uniformly satisfactory results. The fasting treatment had most nearly attained this end because it was not merely a means of securing physiological rest for the pancreas, but also tended to relieve the liver from overstrain and gave other organs an opportunity for rest and repair.

Dr. F. J. Poynton described six cases of children under 8 years of age who had been under his care during the last two years. The treatment was carried out on the lines of which they had heard so much that evening. Most of the children had about 3 or 5 per cent. of sugar, and he was invariably successful in getting the sugar out; and with great care and caution he gradually increased the diet. The mothers of these children were most careful persons, and the children themselves remarkably brave. The little patients went out sugar-free, and some of them had kept sugar-free for months, returning, not on account of dietary lapses, but perhaps because of some change in the weather. Each time they returned it was more difficult to get the sugar out. In spite of infinite care, four of these children were dead, one might die at any time, and the other was still getting sugar. He confessed that he was looking much further than this elaborate dieting for a real cure of diabetes.

Sir Archibald Garrod said that the discussion, although full of interest, had not been of a kind which involved any point of contention, or called for any reply from him as opener.

BIRTH CONTROL.

The first meeting of the Medical Women's Federation was held on Tuesday, October 18th, at the Elizabeth Garrett Anderson Hospital. Dr. Louisa Martindale was unanimously elected president for the coming year.

Dr. Martindale gave an address in which she discussed the question of birth control. She pointed out that the birth control movement in England dated from the year 1877, when the Bradlaugh-Besant trial took place. In Germany the movement started later, but, once started, the birth rate fell as much in twelve years as it had done in seventy years in France. The fall in birth rate was, however, accompanied by a corresponding fall in infant death rate, so that up till now the natural increase in population had been little affected. Statistics showed, further, that both birth rate and infant mortality rate were lower in the more thoughtful and educated classes, and that it was among these classes that methods of birth control were chiefly used. Methods of controlling birth might be classified as :

1. *Natural.* Either celibacy or voluntary abstinence, which might be total or during the most fertile part of the woman's monthly cycle.

2. *Methods used by Husband.* *a* Withdrawal, or coitus interruptus, *b* the use of sheath or French letter; *c* a dose of x rays.

3. *Methods used by the Wife.* *a* Quinine pessaries; *b* douching; *c* introduction of rubber cap.

Of these methods it was agreed that coitus interruptus was bad for the nervous system of both husband and wife. The French letter was the most efficacious; douching and the Dutch cap were not entirely satisfactory. Dr. Martindale then gave a summary of the views of the English and Roman Catholic Churches and of the Jews on the ethics of the matter, and then summed up the reasons for and against birth control. Relative poverty, illness during pregnancy or confinement, the possibility of enforced separation should a baby arrive (as amongst Anglo-Indians), disease such as tuberculosis, inherited insanity, etc., were the chief reasons given in favour of birth control, while the risk of encouraging sexual excess and the possibility of eventual sterility were the main reasons against the practice. The aim of the movement was undoubtedly to better the conditions of women's lives. Dr. Martindale pointed out that, in her opinion, there were other worthier ways of attaining this end—as, for instance, by an efficient scheme of employment, and by improved housing, as well as by educative methods which would help to decrease rather than increase sex excitation.

An animated discussion took place, and it was decided to consider the question further at a subsequent meeting.

Reviews.

EARLY CHEMISTRY IN OXFORD.

In the active interest taken in the history of science at Oxford, as shown in the *Studies in the History and Method of Science*, edited by Dr. Charles Singer, and recently reviewed in our columns (p. 323, August 27th, 1921), the influence of the late Sir William Osler played a most stimulating part. Further evidence of the late Regius Professor's contagious enthusiasm may be traced in the projected scheme of *Early Science in Oxford*, of which the first part is that on *Chemistry*,[1] by Mr. R. T. Gunther, Fellow and Tutor of Magdalen College, who, it may be remembered, organized the collection of scientific instruments of historical interest from Oxford colleges exhibited when, on May 16th, 1919, Sir William Osler delivered his presidential address to the Classical Association on "the Old Humanities and the New Science," an address published in our columns shortly afterwards.

The present instalment of the new venture will be followed by Part II on *Mathematics*, but Part III on *Astronomy* and later parts must, we are warned, wait until the subscription list is sufficiently long. Had it not been for the war this story of early chemistry in Oxford would have

[1] *Early Science in Oxford. Part I. Chemistry.* By R. T. Gunther. Printed for sale at the Oxford Science Lecture-rooms, by Hazell, Watson and Viney, Ltd., London and Aylesbury. 1921. (Demy 8vo, pp. 95; 19 illustrations. 12s. 6d. net.)

been printed in 1914, when the seven hundredth anniversary of Roger Bacon's birth occurred. It is therefore appropriate that the initial chapter should touch on the life of him who first insisted that the only true method of scientific advance is by experiment, and that the study of chemistry is essential in medical education. This is followed by an account of the apothecaries and spiceria, or the place where spices, seeds, and roots were sold, in mediaeval Oxford. The story of Robert Boyle's chemical researches in Oxford in the middle of the seventeenth century is fully told and is illustrated by a successful reproduction of his charming features. He brought "the noted chimist and Rosicrucian Peter Sthael of Strasburgh in Royal Prussia" as the first regular teacher of practical chemistry to Oxford, where, among other distinguished pupils, he had John Locke of Christ Church, "a man of turbulent spirit, clamorous, and never contented." The frontispiece is a portrait of Johannes Mayou (1640–1679), physiologist and perhaps the greatest chemist ever produced by Oxford, who grasped the essential facts about the formation of acids and oxides more than a century before Lavoisier.

The first university chemical laboratory was founded in 1683 by Elias Ashmole, astrologer, alchemist, virtuoso and curioso, who had amassed a raree-show of a miscellaneous character, and is now almost exclusively known in connexion with the Ashmolean museum of archaeology. The records of chemical studies in Oxford during the eighteenth century are disappointing, and show that the spirit of inquiry had become largely dormant, though Dr. Martin Wall, who must be distinguished from Dr. John Wall, the founder of the Worcester china factory, was an attractive figure as a lecturer. In 1803 Dr. G. Aldrich founded a professorship of chemistry, held by John Kidd until 1822, when he became Regius Professor of Medicine, and then until 1854 by Dr. C. Daubeny, whose modern outlook makes it doubtful if he should be considered in relation to *early* science in Oxford.

THERAPEUTICS.

The Principles of Therapeutics, by Professor OLIVER T. OSBORNE,[2] of Yale University, is intended for senior students and practitioners, and though based on the United States pharmacopoeia, will give British readers much information in an easily assimilable form. Of the constituent fifteen parts, the last, on medical ethics, describing the principles of medical ethics of the American Medical Association and giving suggestions to young practitioners on this subject, is a useful though rather novel section in a work on therapeutics. In the remarks on the art of prescribing it is pointed out that the old hobby of letting Nature cure the patient has been ridden too long, for Nature is a good mother not only to the patient, but also to invading micro-organisms, and consequently neglect will not bring about a cure. Medical men, Professor Osborne thinks, could play a part in breaking down the deeply embedded belief in the mystery of the treatment of disease, by writing prescriptions in simple English instead of in Latin which may not always be correct.

The author gives a therapeutic classification of drugs into two great divisions—for local use and for systemic action respectively—each with sub-divisions; in each subdivision the subject is fully treated, and the action and use of the most important drugs described; thus there is a subdivision for drugs and preparations esteemed specific, such as antitetanic, antidiphtherial, and antimeningococcic serums, arsphenamine (salvarsan) and mercury in syphilis, calcium in tetany, oranges and lemons in scurvy, quinine in malaria, serums in haemorrhage, and thyroid extract in myxoedema and cretinism; this is followed by a section on drugs used as specifics—namely, colchicum in acute gout, and salicylic acid in acute rheumatism. In the section on organotherapy the preparations of the endocrine glands are divided into (*a*) those of recognized value—namely, thyroid, parathyroid, pituitary, adrenal, and corpus luteum; (*b*) those with less therapeutic value, and hence not generally accepted—namely, ovary, placenta, mamma, testis, thymus, and pineal; and (*c*) glandular tissues with important functions, but extracts of which have not been proved to have therapeutic value other than that of food or aids to digestion—pancreas, spleen, secretin, liver, kidneys, parotid, prostate, lymphatic glands, brain. After a full discussion of the therapeutics of corpus luteum and ovary, and reference to their relationship to the thyroid, the conclusion is reached that ovarian insufficiency is probably very common in older girls and young women, but that whether this deficiency is most satisfactorily met by stimulating the thyroid by iodine, by giving ovarian extract or small doses of corpus luteum or ovarian residue, must be decided by clinicians and by clinical observations. After a section on practical therapeutic measures, such as inhalation, enemas, aspiration of the chest and transfusion of blood, there is a clear summary of vaccine and serum therapy. The subject of food is next considered, and an account of vitamins follows. General physical measures, such as Bier's hyperaemia, heliotherapy, electricity, radium, massage, and hydrotherapy, are reviewed; and in the description of chronic drug poisoning the influence of prohibition in developing some other excessive habits is discussed; it is interesting to learn that before the war the consumption of tobacco per head of the American population was 5.57 lb., or more than double that in this country. The work, as a whole, conveys accurate information on many subjects in clear language.

[2] *The Principles of Therapeutics.* By Oliver T. Osborne, M.A., M.D. Philadelphia and London: W. B. Saunders Co. 1921. (Roy. 8vo, pp. 881. 35s. net.)

COLLOIDAL STATE OF LIVING MATTER.

M. A. LUMIÈRE, in his small book on colloids in living matter,[3] although he claims to enunciate an entirely new theory, has reached a general conclusion the possibility of which probably no one in this country would deny—namely, that the colloid state is a condition of life and that flocculation determines disease and death. It is now well recognized that the colloidal state is one of the absolutely essential conditions of cellular activity, but until more information is available as to the methods by which the colloidal state is attained, maintained, and controlled, the fact must remain of little practical value from the practitioner's point of view.

In this little book, which is very interesting and often very suggestive, M. Lumière first briefly discusses the nature of the colloidal state and then goes on to show its bearing in vital processes, such as growth, nutrition, etc. He emphasizes the point that the colloidal state differs in different cells. The next subject with which he deals is anaphylaxis, and to it he devotes the major portion of his book; he gives a very interesting account of the phenomenon and asserts that anaphylactic shock is due simply to the formation of a precipitate in the circulation. He concludes that there is some close connexion between anaphylaxis and chronic disease. He suggests that as age advances the intestinal mucosa is no longer so healthy, and that, as a result, small amounts of protein can be absorbed unchanged, which develops a condition akin to anaphylactic flocculation; he, however, omits any reference to the work of Waymouth Reid, Voit, and others, who have definitely shown that even under normal conditions unchanged protein may be absorbed from the intestine. He holds, too, that acute infections are explicable along the same chain of reasoning: that in this case the pathogenic organisms bring about a flocculation without previous treatment. He contends that the only correct line of attack on the problem from the curative aspect is to determine the adequate methods of desensitization. Incidentally he devotes some space to showing that plants, like animals, are subject to anaphylactic shock. The book is provided with a particularly full and useful bibliography, 622 references to anaphylaxis, 67 to Brownian movement, and no fewer than 1,007 to the colloidal state. It is illustrated with over twenty plates, seven of which are well executed in colour.

[3] *Rôle des colloïdes chez les êtres vivants.* Par Auguste Lumière. Paris: Masson et Cie. 1921. (Imp. 16mo, pp. 319; 14 plates, 19 figures. Fr. 16.)

EUCALYPTUS TREES AND OILS.

THE *magnum opus* of Messrs. R. T. BAKER and H. G. SMITH on *The Eucalypts and their Essential Oils*,[4] now in its second edition, contains a vast amount of information about the botany and pharmacological products of the genus *Eucalyptus* and the numerous species it contains.

[4] *Research on the Eucalypts, especially in Regard to the Essential Oils.* By R. T. Baker and H. G. Smith, F.C.S. Second edition. Published by authority of the Government of New South Wales. Sydney; W. Applegate Gullick. 1920. (Double roy. 8vo, pp. 468; illustrated.)

Mr. Baker is the curator and economic botanist, and Mr. Smith assistant curator and economic chemist, at the Technological Museum, Sydney, and the book is of the nature of a report to the Department of Education of New South Wales. It forms No. 24 of the Technical Education Series.

The book is divided into three parts. The first of these is short, and describes the systematic classification, nomenclature, and distribution in Australia of the 178 species of the genus *Eucalyptus* the two authors have studied. They are inclined to deny the reputed great variability of individual *Eucalyptus* species; botanically speaking, this view may be justifiable, but it is found that a single species will always give an oil of fairly uniform chemical composition. Part II, forming the bulk of the volume, contains an account of the botany and chemistry of each of the 178 individual species of eucalypts investigated.

Part III is given to technological and chemical considerations. It appears that about forty distinct chemical constituents have been isolated from eucalyptus oils; more than half of these have been first isolated by the authors themselves, the actual oils being obtained by the distillation of the leaves and terminal branchlets of the trees. There is little to show which of these various constituents is really the most valuable part of eucalyptus oil from the medicinal point of view. The United States *Pharmacopoeia* demands that eucalyptus oil shall contain at least 70 per cent. of cineol, $C_{10}H_{18}O$, whereas the *British Pharmacopoeia's* standard is described as more reasonable, seeing that it only asks for 55 per cent. of cineol. It is clear that there is room for investigation here. Commercially speaking, eucalyptus oils are also used for mineral separation; again, several of the pleasant-scented constituents of eucalyptus oil are used extensively in perfumery and for scenting soaps.

The book is well arranged and admirably illustrated both by plates, many of them coloured, and by drawings in the text. The authors in their preface state that they are both approaching the age limit for retirement, and take the opportunity of placing on record their appreciation of the far-sighted policy of the New South Wales Department of Education, which has encouraged them in their research work and enabled them to take a share in bringing to light for the "benefit of pure and applied science some of the hidden mysteries of Australia's unique and wonderful flora." We congratulate the authors on the success they have attained in the present volume.

MEDICAL TREATMENT OF THROAT AND EAR DISEASES.

Dr. de Parrel has presented a comprehensive study of forms of medical treatment applicable to diseases of the ear and throat in a book which he calls a *Précis* of medical therapeutics in oto-rhino-laryngology.[5] The word *précis* seems scarcely applicable to a volume of this size, and, indeed, we feel that the information it contains might have been contained in a book of less bulk, since any discussion of surgical treatment has been excluded. If, however, the author has not risked clarity to obtain condensation, he has succeeded in giving a singularly complete account of the subject. Not only are matters strictly related to this special branch of medicine included, but cognate subjects which are not usually discussed in the ordinary textbooks are here assembled and fully described; this perhaps constitutes the chief value of the book as a work of reference. For example, a full account may be found of pharmacology, of the teaching of lip-reading, voice-production, and the treatment of neuroses, and of electro-therapeutics, besides other topics on the borderland of otology and laryngology.

Towards the end of the book eighty-five pages are devoted to the description of the various health resorts in which France is so rich. The author remarks that many medical men, especially the juniors, are insufficiently informed on this subject, and are apt to expose their lack of knowledge on being unexpectedly questioned by a patient. The characters of each of the mineral stations are here fully described and the type of maladies for which they are best suited are noted. In this section Dr. de Parrel has had the assistance of several colleagues.

One of the most interesting sections of the book is that which deals with vaccine-therapy. It is written by Dr. Cohendy of the Pasteur Institute, who is an outspoken advocate of sensitized vaccines, having found them successful when the ordinary vaccines have failed. Here again the subject is dealt with fully; the mode of preparation and exact methods of administration are described in detail. In addition there is a systematic account of the treatment of diseases of the ear, accessory sinuses, pharynx, and larynx. Only the indications for surgical treatment are described, but whilst the author has taken medical treatment as his theme, he has avoided any misleading tendency to insist upon it to the exclusion of surgery where the latter is indicated. The account given under this category is helpful, reliable, and full of suggestions.

Looking at the work as a whole, the author appears to have included some methods of treatment of doubtful utility, possibly in the effort to do justice to the medical aspect of his subject. It would, perhaps, have been wiser if in some instances he had been more restrained, but the work has a special value at the present time in view of the tendency of surgery to overshadow other methods of treatment, and it should be particularly helpful to the practitioner as a book of reference.

THE CARE OF INFANTS AND CHILDREN.

We have received still another edition of Dr. Holt's little book on *The Care and Feeding of Children*,[6] which now requires little introduction and brief commendation. In the form of a catechism, it conveys to nurses and young mothers useful facts concerning the healthy growth and upbringing of infants. The questions and answers are drawn up in the simplest and clearest language, and deal with the really important questions of infant hygiene and physiology—the care of the skin, the clothing, the bath, the nursery, and, above all, the feeding of infants. If these things were understood and carried out in all our nurseries and homes, there would surely be an immense gain in lives saved and good health preserved; and this little manual has already proved, both in America and Great Britain, a valuable weapon in the campaign of education. It is written by a master of the subject, and yet it is written so plainly that anyone who can read will be able to understand. The book is divided into three sections, the first dealing with infant hygiene, the second giving careful instruction in all the details of artificial feeding, and concluding with a useful list of food formulas. The third section is chiefly concerned with the symptoms and management of miscellaneous minor ailments in infants and young children.

REPRESSED EMOTIONS.

If the claims which Dr. Isador H. Coriat makes on behalf of psycho analysis, in his volume on *Repressed Emotions*,[7] were even partially substantiated it would indeed be a discovery of great benefit to mankind. In his opinion apparently there are no limits to its possibilities, and the whole atmosphere of this volume is one of adulation which tends to become wearisome. The book is filled with sentences beginning: "Psycho analysis has shown . . .," "Psycho-analysis has demonstrated . . .," "Freud has demonstrated . . .," etc.; and, unfortunately, many of the theories which Dr. Coriat regards as definitely proved by psycho-analysis relate to some of the most obscure and difficult problems which psychiatrists have endeavoured to solve. Thus the writer states, on page 177, that the character traits of the individual are not inherited, but are determined by repressions in childhood. Surely this is a most misleading statement. It would be most satisfactory if it were true, but unfortunately the influence of inherent reacting tendencies cannot be dismissed in this dogmatic way. In discussing the possibility of psycho-analytic therapy in the psychoses, Dr. Coriat states that the view that dementia praecox is a psychogenetic and not an organic disorder is now gaining credence among *all psychiatrists*. It is difficult to understand how a writer with Dr. Coriat's wide knowledge of the literature

[5] *Précis de Therapeutique Médicale Oto-Rhino-Laryngologique*. Par G. de Parrel. Preface du Dr. Pierre Sebileau. Paris: A. Maloine et Fils. 1921. Demy 8vo, pp. 681. Fr. 28.)

[6] *The Care and Feeding of Children*. By L. Emmett Holt, M.D., LL.D., Professor of Diseases of Children, Columbia University. Ninth edition. London: D. Appleton and Company. 1921. (Sup. roy. 16mo, pp. 149. 4s. net.)

[7] *Repressed Emotions*. By Isador H. Coriat, M.D. London: George Allen and Unwin, Ltd. 1921. (Cr. 8vo, pp. 215. 7s. 6d. net.)

of psychiatry can commit himself to such an incorrect statement. If the author had confined himself to his own views on a subject such as this they would, no doubt, have proved of interest and value, but it would only be fair that he should state that many of the most eminent psychiatrists have expressed entirely contrary views.

Dr. Coriat has a number of interesting things to say in his book, but the note of exuberant enthusiasm is more suited to the advocate of a new religion than to a scientific writer who is endeavouring to understand and explain to his readers those problems which have perplexed mankind from time immemorial. Most of his readers will feel that Dr. Coriat allows his enthusiasm to run away with him when he writes, "Psycho-analysis is beginning to found a new ethics as well as a new psychology, a new neurology, and a new school of literary criticism." Can it really be that our ethical teachers, our psychologists, neurologists, and literary critics were so unilluminated before the advent of Freud as these phrases would seem to imply?

NOTES ON BOOKS.

Dr. Dutton's little pamphlet on *Obesity: its Treatment*[8] gives a short but practical account of the dietetic treatment of the condition. The book is one for medical practitioners, and may be recommended to their attention.

The Pharmacopœia of the Manchester Children's Hospital[9] contains a list of the stock medicines employed in the hospital, and in addition a useful posological table. The book is of convenient size and neatly turned out.

Italian Technical Words and Phrases,[10] an English-Italian and Italian-English dictionary, by E. F. Paventa, is the third of E. Marlborough and Co.'s foreign technical manuals, the other two dealing in the same way with French and German. It contains technical terms and phrases used in business, the professions, arts and sciences, and an appendix of tables giving the equivalents of weights, measures, and money. Medical terminology receives attention in due proportion; thus there are six pages giving the commoner medical synonyms in each division of the work, and there is a special medical section of weights and measures. This little volume is specially adapted for the traveller's convenience by going easily into the pocket, and, further, is provided with a few spare pages for the additional memoranda that so often seem desirable.

[8] *Obesity: its Treatment.* By T. Dutton, M.D. Second edition, entirely rewritten. London: H. Kimpton. 1921. (Cr. 8vo, pp. 48, 2s. 6d. net.)

[9] *The Pharmacopœia of the Manchester Children's Hospital, 1920.* Manchester: Chas. Sever. 1920. (Roy. 32mo, pp. 58.)

[10] *Italian Technical Words and Phrases: An English-Italian and Italian-English Dictionary.* By E. F. Paventa. London: E. Marlborough and Co. 1921. (16mo, pp. 308. 6s. net.)

THE MEDICAL DEFENCE UNION.

The annual meeting of the Medical Defence Union, Limited, was held at the rooms of the Medical Society of London on October 20th. The President, Sir Charles Ballance, who was in the chair, in moving the adoption of the report of the council for the year 1920–21, congratulated the members on its satisfactory nature. It was a record of steady progress and of useful and successful work on behalf of the members and the profession generally. He had been very much impressed by the great variety of the subjects coming under the purview of the council, as well as by the efficient and business-like manner in which the various matters were dealt with. The meetings of the council were well attended and the administrative work of the office was satisfactorily performed, invaluable service having been rendered during the year by the general secretary and by the solicitor. There had been a large increase in membership, a substantial sum of money had been invested, and no call had been made—nor so far as he could judge, was ever likely to be made—upon the guarantee fund, which now amounted to over £12,500. Until he became president of the union he had scarcely realized how essential it was for everyone engaged in medical practice to belong to such an organization; but after his experience on the council during the last twelve months he was at a loss to understand how any medical practitioner could fail to take advantage of the protection and security afforded by membership of the union. The report of the council and the financial statement for the year 1920 were adopted unanimously.

In the annual report it is stated that the number of new members, 576, elected during the year exceeded the removals by death and resignation, with the result that the total membership is now greater than it has ever been previously. The statement on assets and liabilities of the Union on December 31st, 1920, shows an excess of £9,574 of assets over liabilities, or, after taking into account the sum guaranteed by members, a surplus of £19,876. The council is satisfied that the new arrangement by which the premium for the indemnity insurance is included in the increased annual subscription now payable by every member, is very generally appreciated. The single payment of £1 per annum now provides what is practically a complete cover against all pecuniary risk.

The solicitors report that during 1920 the number of cases of which they had the actual conduct amounted to 90, which is fewer than the number so conducted by them in the previous years. The explanation given of this decrease was that many more cases were dealt with in conjunction with the general secretary, who conveyed the views and advice of the solicitors to the members concerned, instead of their dealing with such members direct as had been the practice in the past. Of the 90 cases actually dealt with by the solicitors, 25 involved allegations of negligence or malapraxis, from which it would appear that actions for malapraxis are on the increase; this term, however, includes not only cases instituted against the practitioner by a patient claiming damages for alleged negligence, but also cases in which members have had recourse to legal proceedings for the recovery of fees, and a defence of negligence has then been set up. During the year no action which went to court has been lost, though in two cases where allegations of malapraxis had been made, the members concerned, as an act of grace, having regard to the circumstances of the patient, agreed to reduce their fees.

Attention was called to a letter from the secretary of the Union, which was published in th British Medical Journal, in which he invited members who received from the local water company a demand for extra water rate for water used in dispensing to repudiate liability for such extra water rate, and to communicate the facts at once to the Medical Defence Union. The solicitors' chief reasons for forming the opinion that the extra water rate demanded was illegal were that the use of water by a medical man, either for the dilution of drugs or for the washing of bottles, was a domestic use within the meaning of the Water Company's Act, as distinct from the use of water for professional or business purposes, as the practitioner in question was merely doing collectively what the patients were entitled to do individually; and that the water in question, in so far as its mixture with drugs for medicinal purposes was concerned, was for the domestic purpose of drinking.

A scheme was developed last year by the Union by which every member obtains indemnity, in all cases undertaken in his behalf by the Medical Defence Union, against costs and damages of the other side to the extent of £2,500. This scheme, which came into force on January 1st, 1921, involves an additional optional payment of a premium of 7s. 6d. to the insurance company with whom it was negotiated. Cases arising out of the National Insurance Acts had been fewer than in previous years, owing, in the solicitors' opinion, to the fact that the Insurance Acts and the numerous rules made under them are now more fully understood and are dealt with in a more liberal manner than in the past. Both the Acts and the rules, they state, are very lengthy and complicated, and the wording of such a character that the meaning of many clauses was difficult to understand; many of these difficulties have now been cleared up by decisions of the courts of law and others by the decisions of the Insurance Commissioners. It is believed that there has been a better disposition upon the part of the Insurance Committees towards medical practitioners, and that it is recognized that it is the desire of every member of the profession to do his best for his patients.

The Union has incurred heavy expenditure in the prosecution of unqualified practitioners, but it believes that this practice, although costly, is most desirable in the interests of the profession in general and is the only way to prevent the penal clauses of the Medical Acts becoming a dead letter. The General Medical Council has no power to institute proceedings in the case of practice by unregistered persons, and as in the last twenty years no fewer than 282 unqualified practitioners have been prosecuted or otherwise dealt with by the Union, it is evident that the number of these unscrupulous persons would have been much larger but for the activities of the Union.

British Medical Journal.

SATURDAY, OCTOBER 29TH, 1921.

INSURANCE MEDICAL REMUNERATION.

The Minister of Health has maintained his uncompromising attitude and has reiterated his intention to reduce the capitation fee for insurance practitioners from 11s. a year to 9s. 6d. The Annual Conference of Local Medical and Panel Committees has acquiesced in this reduction on patriotic grounds. The Minister has agreed that this rate shall continue in force for a period of two years, and has announced that the mileage payment shall remain as at present. Such, in brief, is the outcome of the deliberations of the Panel Conference and of the second deputation of the Insurance Acts Committee to Sir Alfred Mond, both of which are reported fully in this week's Supplement. It will be remembered that the capitation fee of 11s. per annum was fixed by an independent board of arbitrators on March 5th, 1920, and has been in operation since the beginning of last year. The special mileage fund of £300,000 for England and Wales was granted early in 1920 by Dr. Addison, in order to compensate for the greater work and outlay of the rural practitioners. The additional uniform capitation fee of 2s. a year for those doctors who supply drugs and appliances remains also unchanged.

So that there may be no misapprehension as to who has spoken on behalf of the insurance practitioners of the country in this matter, it may be well to state shortly the position and duties of the Panel Conference and the Insurance Acts Committee. The Conference of Local Medical and Panel Committees, arranged by the British Medical Association, constitutes the central representative body of the insurance practitioners of Great Britain; it meets annually, or more often, to determine the policy of insurance practitioners in insurance matters. The Insurance Acts Committee of the British Medical Association is the authorized executive of the Panel Conference. It is the executive committee of a representative conference and its course of action is laid down by the decisions of the Conference. Within its sphere of responsibility the Committee's duty is to deal with all matters arising under the Insurance Acts, to watch the interests of the medical profession in relation to these Acts, and to report and make recommendations to the Council of the British Medical Association and to the Conference. Its constitution has been evolved to meet the special needs of the circumstances in which it carries out its functions. Thus, while the officers of the Association are members *ex officio* of this as of all other committees of the Association, and there are six members elected by the Representative Body of the Association, together with certain representatives of other medical bodies and interests, the Insurance Acts Committee contains a majority of members (who need not be members of the Association) selected by the Local Medical and Panel Committees of the country, and chosen, as far as possible, on a territorial basis. The Committee now numbers thirty-two, of whom eighteen members are direct representatives of Local Medical and Panel Committees, and one is *ex officio* a member because of his position as chairman of the Conference.

The status of the Panel Conference as the accredited chamber of deputies of medical practitioners working under the Insurance Acts has never, we believe, been seriously questioned. In times past there have been attempts by other bodies to convene subsidiary meetings of the same kind on their own account, but their failure has only emphasized the right of the official Conference to speak in the name of the insurance practitioners of Great Britain, and to shape policy on their behalf. On the other hand, year by year determined efforts have been made by a small minority to discredit the Insurance Acts Committee and to displace it as the recognized executive of the Conference and its mouthpiece for central negotiation. The failure of these attempts is a matter of history. An overwhelming majority of representatives of panel practitioners has always returned a vote of confidence in the Insurance Acts Committee, and has deprecated the setting up of new bodies as tending to weaken the forces of the profession. Some of the old arguments were heard again during last week's Conference, and the usual vote was taken with the usual result, but the old spirit of faction was less patent. We prefer to regard this as a sign of growing unity rather than as an admission of defeat by the agents of disruption.

The first move in the proceedings that led up to the present situation was made on September 27th last, when the Secretary of the Ministry of Health informed the Insurance Acts Committee that the Minister had come to the conclusion that a reduction ought to be made in the capitation fee paid to insurance practitioners after December 31st next. The Medical Secretary replied asking the reasons which had led the Minister to propose to set aside the decision of the arbitrators. Sir Alfred Mond then invited a deputation of the Insurance Acts Committee to meet him, and on October 11th announced to them his intention, acting on the Government's decision, to reduce the fee to 9s. 6d. He expressed his regret at reopening the matter so soon after the arbitrators' award, but in the present state of the finances of the country he considered the proposed fee reasonable and generous, and one which he could confidently ask the profession to accept. The Chairman of the Committee told the Minister that while the profession might, for patriotic reasons, be prepared to consider a reduction, it must feel assured that there was no risk of any deterioration in the efficiency of the service. Sir Alfred Mond, however, declined to reconsider the amount named, and subsequently, in reply to a further communication from the Committee asking him to modify his offer to one of 10s., he said he had fixed upon the figure of 9s. 6d. as one that was fair and reasonable in all the circumstances. He added the hope that the Conference, taking a wide view of their responsibility not only to their own profession but to the community at large, would appreciate the reasonableness of his proposal. These matters were duly reported by the Committee to the Conference on October 20th. After full discussion, in the course of which, as will be seen from our report, all shades of opinion were heard, the Conference reaffirmed its view that a proper capitation fee was 13s. 6d., and that patriotic grounds and reasons of public economy could alone justify any request that the profession should take less than the 11s. awarded by independent arbitrators in March, 1920. Recognizing the force of the appeal to citizenship made by the Minister of Health "to make some sacrifice for the common good in a great financial crisis," the Conference declared its willingness to accept 10s. on these grounds, and these grounds alone. It instructed the Insurance Acts Committee

with three other members of the Conference to see the Minister and ask him to revise his offer to one of 10s. in order to secure the co-operation of the profession. The deputation could not persuade Sir Alfred Mond to improve his offer, but obtained from him a guarantee that the fee should remain fixed for two years, and a promise to discuss various matters of detail with the Insurance Acts Committee if his offer were accepted. The Conference, having heard the report of the deputation, agreed by a large majority to accept the Minister's offer.

The position is not an agreeable one, but we believe that the profession at large will be of opinion that the Panel Conference and its Committee have acted wisely in circumstances of great difficulty. Whatever may be thought of his method or his manner, it is clear that from first to last the Minister made his appeal on grounds of patriotism. The Conference appreciated the force of the appeal to citizenship, although as Dr. J. A. Macdonald remarked, it was another question whether this was a just patriotic appeal or not; one of the difficulties was to estimate a fair reduction on patriotic grounds. The principle being admitted—namely, that the appeal should be responded to—those negotiating on behalf of insurance practitioners were faced with this difficulty, that the amount of the sacrifice became a matter of detail because no guiding principle stood out. The main argument against so large a reduction as 1s. 6d. was that this might endanger the satisfactory nature of the service, if, indeed, it did not overstep the financial line that separates efficiency from inefficiency. Even this argument, valid as we know it to be, contains a certain ambiguity in that the term "satisfactory service" may be taken to imply either that the service is satisfactory to the patient or that the doctors who render it are satisfied. The representatives of insurance practitioners have agreed to accept a capitation fee of 9s. 6d. This means that the practitioners undertake to give a service satisfactory to their patients. The public must not, however, suppose that the medical profession in accepting it is satisfied with this figure as a fair and proper rate of payment for the work and the responsibility. It is not.

OUR DAILY BREAD.

THE Ministry of Health has added to the series of reports on public health and medical subjects one by Dr. J. M. Hamill on diet in relation to normal nutrition.[1] The report is valuable, and its publication at this time opportune. We say this advisedly, although one at least of our lay contemporaries has dismissed it as containing nothing of sufficient importance to warrant its publication at the cost of the taxpayer. We could wish that the daily newspapers had given attention to the report, for, though the information it contains may not be agreeable, it must, sooner or later, find its way into the public mind, and by reading it now the taxpayer might save much expenditure and unhappiness later on. It is much easier to write sprightly paragraphs upon vitamins than to grapple with such prosaic details as the energy value of a diet or the number of calories to be had for a penny.

To the plain man the question of providing day by day his daily bread, although not lending itself to epigrammatic description, is sufficiently important. At the present moment, according to the Prime Minister, the economic position of the working classes is more serious than it has been for a century; hundreds of thousands of people in this country are now face to face, not with famine in the Russian sense, but with the certainty that only the most intelligent utilization of dwindling resources can save them from under-nutrition. Yet there is hardly any subject respecting which the people are less well informed than the simple physiology of dietetics. A great many people believe that the physiological value of a foodstuff varies as its market price, others are still impressed by advertisements of the "ox in a teacup" class. The number of persons whose health has been injured by confidence in the powers of medicated wines to "build up" the "constitution" is probably not less than the number of those who have fallen victims to the Spanish Prisoner. Against the latter the police are some protection; our only defence against traders upon popular ignorance of physiology is popular education.

In his report Dr. Hamill has set out the basal facts upon which all physiologists are agreed. He defines the limits of energy needs which have been set partly by direct experiment, partly by observation of diets actually used in different classes. As he says, "divergencies are noticeable in the amount of protein and also in the proportion of carbohydrates and fats, and, in the table in which Atwater's conclusions are given, no attempt is made to differentiate between carbohydrates and fats so long as sufficient is supplied to ensure the daily energy requirements. In point of fact, the proportions of the proximate principles in a diet in individual cases may and do differ appreciably from these standards without affecting the nutritional value of the diet, if the total energy supplied is adequate."

Dr. Hamill next deals with the amount of protein needed; he summarizes the various contentions and expresses a conservative opinion, pointing out that numerous recent investigations have "shown that the body can preserve health and vigour on a diet containing less protein than the standards of Voit, Rubner, and Atwater. In some cases amounts as low as 40 grams of protein a day appear to be sufficient to meet protein requirements." "Although such small amounts of protein," he observes, "seemed to be adequate to preserve health and even vigour in the cases under investigation, many competent observers regard it as undesirable to reduce the protein supply to such low limits on the ground that the margin of safety is too small to enable the organism to cope satisfactorily with the various adverse circumstances in which it may find itself placed from time to time. It is considered that one of the remote consequences of a diet extremely low in protein might be a lowered resistance to disease and general diminution in physical tone; furthermore, that persons accustomed to a very low protein intake would be unable to assimilate an increased amount when necessary, as in convalescence from wasting disease."

Dr. Hamill remarks that it is wise to be cautious in condemning a diet as inadequate merely because its yield in protein is below the conventional standard. He accepts, with certain reservations relating to the quality of the protein, the aphorism "take care of the calories and the protein will take care of itself" as a sound practical rule. In dealing with the differing biological values of protein from various sources he lays emphasis on the claims of milk; "the high biological value of the protein of milk makes it a food eminently suitable for the young when growth is rapid and the demands of the tissues for a supply of appropriate protein is urgent." The unsolved problem

[1] Diet in Relation to Normal Nutrition. By J. M. Hamill, O.B.E., M.D., D.Sc. 1921. H.M. Stationery Office. To be obtained through any bookseller, price 3d.

of the equivalence or non-equivalence of fat and carbohydrate in the normal diet is mentioned, and attention is directed to the recent work of Krogh and Linhard which suggests that the body performs work more economically when using carbohydrate as the fuel than upon fat.

After a brief statement of the mineral requirements of the body, the accessory food factors are discussed. Dr. Hamill provides a very clear summary of the facts which will be of great value to the intelligent layman. In the next section the salient physiological characteristics of some staple foodstuffs—bread, margarine, milk—are described. The report ends with some generalities which the man in the street might profitably get by heart. We may quote the concluding paragraph: "It is probable that much of what has been said in this report may need modification in the light of future discoveries. Knowledge of the principles underlying nutrition has been greatly extended as a result of recent research, but it is evident that much yet remains to be done. Progress in this work of nationa limportance can be attained only by unremitting observational and experimental inquiry. The problems awaiting investigation are amongst the most difficult which can be proposed for solution, and their elucidation may entail much labour and patient research. It was in this country, in the University of Cambridge, that the work which led to the two great dietetic conceptions—vitamins and the biological value of protein—largely had its origin; and it is only fitting that this country should continue to maintain its position in the world-wide search which is being vigorously prosecuted into the principles upon which sound nutrition and a rational system of dietetics can alone be based."

We are pessimistic enough to urge the same plea for less spiritual reasons. The people of this country depend for their daily bread upon the export of manufactured goods; many of their customers are temporarily, perhaps permanently, ruined; others can obtain the goods they need elsewhere. To enable us to live of our own, the population would have to be reduced by many millions. Hence the problem which may have to be solved is to reduce the population by emigration or to reduce its needs by economy. Clearly the largest item of expenditure is upon food; it has been estimated that 60 per cent. of working-class outgoings are spent on food. It may be possible, without lowering the standard of life in the popular sense, to reduce this expenditure. Numerous experiments have made it probable that under certain conditions the metabolic level, not only of protein consumption but of energy transformation, can be changed. The work of Benedict, Miles, Roth, and Smith[2] is an illustration. But, on the faith of these limited experiments, to prescribe for all classes a diet of appreciably lower energy yield than the ordinary standards would not be rational. We must ascertain by similar experiments on a much larger scale and under conditions more closely approximating to those of ordinary life whether the results are typical. This will need time and self-sacrifice on the part of members of the middle and upper classes. The most effective popular argument against prohibition is that, in America, the poor man is prevented from drinking, but the rich man may drink what he pleases. One can foresee what would be the fate of a propaganda for food economy conducted on similar lines. Those who are (at present) well above the poverty line must first demonstrate the practicability of maintaining health and efficiency upon such a diet as used by Benedict's subjects before any very large measure of economy of consumption can be expected. Such experimentation is a work of years, not of months, and should be planned forthwith.

[2] *Human Vitality and Efficiency under Prolonged Restricted Diet.* Carnegie Institute, Washington, 1919.

THE VICTOR HORSLEY MEMORIAL.

A MEETING of the Executive Committee of the subscribers to the "Victor Horsley Memorial Fund" was held at 1, Wimpole Street on Thursday, October 20th, with Sir Charles Ballance, K.C.M.G., F.R.C.S., in the chair. Sir Frederick Mott (honorary treasurer) reported that the amount of subscriptions promised was £1,025, of which £875 had been paid into the bank. There was little doubt that the whole amount promised would shortly be received, and it was probable that the interest on the deposit would be sufficient to defray the cost of printing and postage. The number of subscribers, exclusive of groups, was 229. The following recommendations from the Executive Subcommittee were received, and the chairman proposed that they should be adopted: (1) That the "Victor Horsley Memorial Fund" be invested in the names of a board of trustees consisting of the President of the Royal Society, the President of the Royal College of Surgeons of England, the President of the British Medical Association, the Senior Physician of the National Hospital for the Paralysed and Epileptic, Queen Square, the Senior Surgeon of University College Hospital, in virtue of their office, together with Mr. Edward Robinson (the son-in-law of Sir Victor Horsley) and Mr. Edward J. Domville, one of the honorary secretaries of the fund, the vacancies caused by the resignation or death of either or both of these last named not to be filled up. (2) That the trustees shall triennially appoint a lecturer to deliver a lecture in London, under the title of "The Victor Horsley Memorial Lecture." (3) That no limitation be placed on the trustees as to the country or profession from which the lecturer should be appointed, nor on the subject of the lecture to be delivered. The resolution for the adoption of the recommendations was seconded by Sir William Arbuthnot Lane, supported by Dr. George Murray, Dr. Mary Sturge, Mr. W. G. Spencer, and carried unanimously. A vote of thanks to Mr. Domville for his services as honorary secretary was carried by acclamation. It was resolved to close the list of subscriptions on December 31st.

TROPICAL MEDICINE IN THE EAST.

THE progress of tropical medicine in the East owes a good deal to the Far Eastern Association of Tropical Medicine It was founded in 1908 at a meeting held in the Philippine Medical School, Manila, and has as its object the promotion of the science and art of tropical medicine and of friendly international intercourse between physicians and scientists. It endeavours to raise the standard of medical education in the East, to enlighten and direct public opinion in regard to the problems of hygiene, to form habits conducing to the prevention of disease among the native populations, and to present to the world the results of scientific investigations. Meetings of the association are, as a rule, held biennially; thus the first congress was held at Manila in 1910, the second congress at Hong Kong in 1912, and the third congress at Saigon. The outbreak of war in 1914 prevented the holding of the meeting which it had been proposed should take place in Java in that year, and it was not until 1920 that preparations could be made to hold a congress at Weltervreden, Java. This, the fourth congress of the association, was officially opened at the Governor General's Palace, Weltervreden, on August 6th, 1921; delegates attended from the Straits Settlements and the Federated Malay States, the Philippines, Formosa, British India, Japan, Macao, Australia, and Siam, as well as from Java itself. Representatives also attended from the Malayan and the Queensland Branches of the British Medical Association, the Japanese Army Medical Corps,

the Kitasato Institute, the Dutch Society of Indian Practitioners, the Dutch-Indian Society for Veterinary Medicine, and the Society for the Advancement of Medicine in the Dutch Indies. At a series of meetings held in the Medical School at Batavia over seventy original papers were read and discussed, dealing with subjects, it is interesting to note, connected both with medical and veterinary science; the proceedings, including summaries of the papers, have now been published.[1] The final meeting of the medical congress took place on August 13th, when it was proposed to hold the next congress at Singapore in 1922. This proposal was carried unanimously, and Dr. A. E. Horn, of Singapore, was elected president, with Dr. O. Deggeler as secretary and treasurer. The following were elected vice-presidents and representatives of the Far Eastern Association of Tropical Medicine in the different areas: the Straits Settlements, Dr. Hoops and Dr. Scharff; the Federated Malay States, Drs. Dowden and Scharff; British India, Lieut.-Colonel W. F. Harvey, I.M.S., and Major S. R. Christophers, I.M.S.; Japan, Professor S. Hata and Dr. Nakyama; Saigon, Dr. Bridger; Siam, Prince Thawara and Dr. Phra Sakda; the Philippines, Drs. Rozario and Wade; Hong Kong, Dr. Johnson; Indo-China, Dr. Montel; and Java, Dr. Van Lonkhuyzen.

PAST AND PRESENT.

The address on "Past and Present: 1745–1900," which Dr. William Russell, Professor Emeritus of Clinical Medicine in Edinburgh, delivered last July as President of the Caledonian Medical Society, was a dissertation on the thesis that the thoughts of the men of one generation, their political and religious institutions, and the physical conditions under which they live, rest on the modes of thought and manner of life of their predecessors. It is very well to be reminded of this, for though no one will seriously dispute its truth, even the most sober-minded of us are a little apt to be carried away by some enthusiastic orator who talks of a new world or a new era. Professor Russell briefly described some of the material changes which came over Scotland during the period with which he was concerned. During this time the depopulation of the rural districts advanced at a great rate, owing in part to the commercialization of agricultural methods, and in part to the attractions of manufacturing towns and of countries with more genial climates and less antiquated land laws. In 1745 Inverness, the capital of the Highlands, consisted mainly of thatched hovels built of stone and turf; the country habitations, too, both north and south of the Grampians, were all, or nearly all, of this type. To the people who left their farms and crofts the habitations they found in Edinburgh and Glasgow, and in English towns, built of stone and roofed with tiles or slates, seemed comparatively luxurious; yet within half a century they were looked at askance and were condemned by the first medical officers of health as unfit for human habitation. Again, that women should carry peats to the peat stack for the winter's fuel, and that the young people should help in all work on the croft, did not shock the public sense of what was right; but when woman and child labour became massed in mills and in coal-pits Parliament was moved to pass Acts regulating their employment, and sanitary legislation grew up. Medical men who have entered public life will have all this in mind; and Professor Russell recognized that an educated profession, trained to observe correctly and to make reasonable deductions, would have a wide influence on public bodies if its members informed themselves on current matters of controversy. "If," he said, "the medical profession adopted as an intellectual pastime the study of history and of economics, as these subjects are now intelligibly taught, the definite entry of the profession into public life might be fraught with much good, and the reconstruction of which we have had so much flamboyant rhetoric, might be really furthered." As textbooks Professor Russell suggested *The Revival of Marxism*, by Professor Shield Nicholson, the *New Fallacies of Midas*, by Cyril Robinson, and *Liberalism and Industry*, by Professor Ramsay Muir. He quotes from the latter the statement that "all genuine human progress must arise out of the past, and preserve and build upon whatever good has been brought out by our predecessors; it must be guided by loyalty to facts, not by a credulous, excited trust in the mushroom and evanescent theories of the moment, although it may draw inspiration even from them." "It is," Professor Russell said in ending this part of his address, "this guidance of knowledge and of principles we seek, not the makeshifts of opportunism." In the concluding paragraphs of his address he said something of the history of medicine during the period with which he was dealing, insisting upon the reversion in recent years to the earlier doctrine, to be found in Forbes's English translation (1838) of Laënnec's *Mediate Auscultation* (1819) that "the disturbance of the functions is in fact, properly speaking, disease." A review of the medical history of the nineteenth century would, Professor Russell said, make it evident that the recognition of the beginnings of disease and the intelligent recognition of established disease required accurate knowledge of the institutes of medicine defined by Allison (1833) as "the information collected and generalized with regard to the functions of the living human body as performed during health, as altered by disease, and as influenced by remedies." Accurate observation by the individual was necessary, and it was by improvements in the means of observation that the field of medicine had mainly been extended since Cullen wrote in 1783. Finally, a medical practitioner must possess the judicial faculty, and for its proper exercise must have a knowledge of normal functions; otherwise "aberration of function will not be recognized, and aberration of function may be the first step of what we call disease."

SYMBIOSIS AND DISEASE.

In a Chadwick Lecture on plant diseases, given in the Lecture Room of the Chelsea Physic Garden by Dr. V. H. Blackman, F.R.S., professor of plant physiology and pathology in the Imperial College of Science, the very wide range in the degree of association of the host and the parasitic organisms among plants was insisted on. At the one extreme, Professor Blackman said, was the condition in which the fungus was almost purely superficial and the injurious effect mainly indirect; at the other were associations which appeared to have passed altogether out of the realm of disease, for both organisms benefited. Between the two extremes were all degrees of association; for example, the fungus *Botrytis cinerea* produced an enzyme which dissolved the cells of the host, killing them in advance of the branches of the invading organism, which thus lived actually upon dead tissue. The rust fungi which attacked cereals lived at first in symbiosis with the host, which was not injured; there was in fact an association to mutual advantage, the fungus was nourished and the cells of the host plant stimulated to active growth and division. Later on the fungus gained the upper hand and the tissues of the host were destroyed. These cereal rusts were to be looked upon as the most highly evolved conditions of true disease. Above this were symbiotic associations, such as the root tubercles of the leguminosae, in which the host plant was the dominant partner throughout. No case of disease in plants was known in which immunity to further attacks was produced; cells once penetrated were nearly always killed. Plants generally depended for freedom from disease on their capacity to keep the parasite out or to surround it and render it harmless by enclosing it with layers of cork. The immunity of certain wheats to rust

[1] Batavia: Java-sche Boekhandel and Drukkerij, 1921.

disease had, however, been shown to be due to the "hypersensitiveness" of the tissues, which succumb so rapidly to the attack of the fungus that the parasite was starved. It was only in cases of symbiotic association that there had been observed any digestion of the invading organism—that is, of a process comparable at all to phagocytosis in animals; in the orchids also there was evidence that plants once infected were immune to further attack. No production by the attacked plant of lethal substances comparable with antitoxins, bacteriolysins, etc., had been observed. Even if it occurred the absence in plants of any reservoir comparable with the animal blood stream would make their detection very difficult. The artificial immunization of plants by the use of vaccines or serums would seem to be very unlikely. Apart from the difficulty of distributing such vaccines to the various organs, there was the difficulty that the growing plant was continually producing new organs. Thus to be effective the acquired immunity would have to be transmitted to what was in many ways comparable with a new generation. Professor Blackman concluded by saying that since disease is abnormal physiology—the resultant of the interaction of the physiological processes of the host and the parasite—it was not to be expected that much progress in the elucidation of the nature of disease could be made without further knowledge of the normal physiological processes of the associated organisms.

VIENNESE CHILDREN.

IT is a little difficult, from the account he has published in the *Glasgow Medical Journal*, to get a distinct impression of what Dr. Leonard Findlay found when he went to Vienna last Easter in connexion with the work on rickets which is being done in Glasgow under the auspices of the Medical Research Council. He found the streets filled with elegantly dressed men and women, magnificent motor cars rolled by, cafés were full of people eating and drinking, and the opera house was packed to see performances magnificently staged. On the other hand, the furnishings of the cafés were shabby, the tramcars wanted painting, the streets needed repair, and Austrians declared that the people who were spending money lavishly were not Austrians; there could be no doubt that the value of the krone had decreased enormously, so that Austrian currency was one-hundredth of its pre-war value—2,500 kronen or more being obtainable for the £1, instead of 25. Wages, on the other hand, had risen, and the working man was earning from 300 to 500 kronen a day—equal to about 2s. to 4s. at the present rate of exchange. The salaries of clerks and teachers had increased, as had also pensions, but the increases had been so small that the incomes received bore no sort of relation to the increase in prices. The conditions for pensioners, and for black-coated folk generally, were almost incredibly bad, and the scale on which relief in such cases is given by the English and American missions would seem to be quite inadequate. On the other hand, Dr. Findlay tells us that he was impressed by the apparent good health of the children he saw in the different parts of the town; playing in the open spaces they looked perfectly happy, had a good colour, seemed plump, and had straight legs. It is to be remembered that for the preceding eighteen months all children and young persons up to the age of 18 years had been receiving rations equal to one-third of their needs from British, American, and Dutch charitable agencies. The amounts of food given were based on Pirquet's nem system, a full account of which was given in our issue of October 30th, 1920, p. 666. Dr. Findlay observes that the important point about the system is that the needs of the body are estimated, not according to the surface area, but to the absorptive surface of the intestine as gauged by the length of the trunk, or the "sitting height." He seems to think that the method is a success and better than the older plan, which implied that food is given to make up for heat loss from the body surface, and not to supply fuel for the engines of the body. After visiting many child welfare clinics and children's hospitals, Dr. Findlay came to the conclusion that, if anything, rickets was, last Easter, less prevalent in Vienna than in Glasgow. He discounts the accuracy of many statements made by medical men in Vienna, as, for instance, that of Spitzy, the orthopaedic surgeon, that rickets is a thousand times more frequent than it was. He recalls that Kassowitz in 1910 estimated that 89 per cent. of the children attending his polyclinic in Vienna were rickety. Much of the medical writing in Vienna, Dr. Findlay says, has at the present moment a political purpose; in order to justify the existence of foreign help, and to demonstrate the benefit accruing from such help, the Health Office of Vienna invited medical men to state the condition of the children before and after, and said that as rickets is a nutritional disease it would form a good and striking index. The Health Office writer added that at first difficulty was experienced in getting medical men to send in returns, but that afterwards they appreciated the political value of such statistics and supplied full figures. As Dr. Findlay does not hold the view that rickets is a nutritional disease he is not much impressed, and got no unanimous answer in Vienna to this etiological question. Pirquet thinks that rickets may be of the nature of an infection; Luger considers that it is due to disease of a ductless gland. Pirquet considers fat is unnecessary as a constituent of the diet for children, and, owing to the scarcity of milk and the high cost of fat, "many of his children were being fed on a diet which, according to our ideas, is poor in fat and unduly rich in carbohydrate." Dr. Findlay refers to the investigations of Dr. Chick and her colleagues, which at the time of his visit were not completed. "I did not," he goes on, "gain any evidence specially incriminating diet as the etiological factor in rickets." He describes the housing conditions of the working classes in Vienna, even in modern model dwellings, as very bad, and he thinks that the crowding which existed before the war may have been increased during and since the war. While he could not convince himself that rickets in infancy and early childhood was more prevalent now than before the war, or even as common as it is in Glasgow, he has no doubt as to the increased frequency in Vienna of late rickets, understanding by that the disease commencing after the fourth year, and even as late as puberty. Prior to the war, he says, this was a very rare condition and seldom did any one observer see more than three or four examples during a decade. When he was in Vienna he found in most clinics evidence from *x*-ray photographs of 6 to 10 cases occurring during a period of eighteen months; some of the cases might be questionable, but some were quite definite. With regard to osteomalacia, Dr. Findlay thought that all who were concerned with adult medicine were convinced that they were in the presence of a new form of epidemic disease, characterized by pain in the limbs, head, and ribs, difficulty in walking, and atrophy and diminished density of the bone, as evidenced by *x*-ray photographs. Spontaneous fractures occurred, but not such deformities as are present in puerperal osteomalacia, so that the similarity of the condition to senile osteomalacia or osteoporosis was very apparent. It made its first appearance in Vienna in 1918, the year following the epidemic of hunger oedema, and is generally spoken of as hunger osteomalacia. Schlesinger considers it to be due to the absence of some vitamin, but other writers blame deficient albumin in the diet. Inspection of many bedridden old women, in whom the diagnosis of osteomalacia had been made, sent Dr. Findlay away with the impression that any patient complaining of pains in the ribs and limbs would be diagnosed as an example of osteomalacia, much in the same way as in this country a

diagnosis of chronic rheumatism would be made. Indeed, the diagnosis of rheumatism instead of osteomalacia was, for political reasons, made in at least one institution in Vienna. Clearly, then, the practised observer with unusual opportunities may find it difficult to interpret what is to be observed in Vienna. Dr. Findlay, however, definitely expresses the opinion that the descriptions of the state of matters prevailing in Vienna given by the Save the Children Fund "are nothing short of gross exaggerations, and can only in the end bring discredit and distrust on the organization and its supporters. Matters, in truth, are quite bad enough without exaggerating them."

THE DEFENCE OF RESEARCH.

The October number of *The Fight Against Disease*, the quarterly journal of the Research Defence Society, contains the address in defence of the directly experimental method upon animals which Dr. H. H. Dale delivered at the annual meeting of the society last June, a full report of which was published in our issue of July 9th (p. 40). Dr. Dale, it will be remembered, referred at length to the work which is being carried on at the National Institute for Medical Research, instancing that on bacteriological media, on tetanus and silicosis, and on disseminated sclerosis. Another important branch of work which a department of the National Institute is performing is the control, in order to ensure their activity and freedom from dangerous toxicity, of such modern potent remedies as salvarsan and its analogues, which cannot be guaranteed safe for use in human therapeutics by any known chemical test. These remedies were, of course, discovered by means of experiments on animals, and there is a large and growing class of them which could, not be used with confidence and safety for the patient if they were not tested, regularly and systematically by experiment on animals. The duty of research workers, Dr. Dale pointed out, is to devote their time and attention to investigation and not to controversy with ignorance; he therefore warmly welcomed the efforts of the society to develop a sane and informed public opinion. This issue of *The Fight Against Disease* contains also an article on the outbreak of small-pox in Glasgow in 1920, in the course of which attention is called to notes of a recent sermon published by the Vicar of St. Jude's, Hampstead Garden Suburb, containing the mischievous suggestion that medical officers of health recommend vaccination and inoculations as a panacea for the ills caused by overcrowding and imperfect sanitation, which, he said, they accepted as necessary evils. On the contrary, as is here pointed out, every medical officer in the land is working hard for the very reforms of which the Vicar of Hampstead Garden Suburb is only talking. The Research Defence Society has naturally lost many members since 1914, when it was 5,000 strong, and it should appeal in a special degree to the medical profession, which can fully understand its aims. The annual subscription is 10s., which may be paid to the secretary at 11, Chandos Street, W.1.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The annual meeting of the Society of Medical Officers of Health was held on October 21st, when the new President, Dr. W. J. Howarth, M.O.H. for the City of London, gave his introductory address on "Some Reflections on Public Health Problems." Discussing the treatment work now undertaken by local authorities, he pointed out three objections: it tended to place the local authority in competition with the general practitioner and the Poor Law; it led to the creation of clinical appointments offering no substantial inducement to the holders to regard them as permanent; and it lowered the skill of general practitioners by limiting their opportunities for acquiring certain kinds of experience. Thus it came about that two groups of practitioners were working along lines that were not parallel. The preventive practitioner devoted his chief energies, so far as the individual members of the community were concerned, to conditions discovered mainly below the age of 14. The curative practitioner exercised his skill mainly on persons over the age of 16, and in circumstances which did not tend to fill him with enthusiasm for preventive work. The two branches of practice should no longer be separated by watertight compartments. The annual dinner of the society was held on the same evening at the Café Royal, with the President in the chair. The toast of "Prosperity to the Society of Medical Officers of Health" was proposed, in the absence of the Minister of Health, by Mr. J. W. Pratt, M.P., Vice-President of the Scottish Board of Health, who described the society as the general staff of the army fighting against disease. The President prefaced his reply by reading a message from Sir Alfred Mond, conveying high appreciation of the work of the medical officers of health, and expressing the hope that the present need for stringent financial economy might not unduly discourage them in their work. The toast of "Pulpit, Parliament, and the Public Health," submitted in a brief but telling speech by Sir George Newman, was responded to by the Bishop of London, who spoke of his long and close association with the medical profession; and by Sir Philip Magnus, M.P. for the University of London, who has been elected an Honorary Fellow of the Society in recognition of his exertions in obtaining security of tenure for medical officers of health. The health of "The Visitors" was proposed by Dr. F. E. Fremantle, M.P., who made special mention of the presence of Sir Aston Webb, P.R.A., Sir Anthony Bowlby, P.R.C.S., Sir Arthur Robinson, Secretary of the Ministry of Health, and Dr. T. W. H. Garstang, Chairman of the Public Health Committee of the British Medical Association. The toast was replied to by Professor C. S. Sherrington, M.D., President of the Royal Society, who spoke of the scientific work of the medical officer of health, the close connexion between natural knowledge and national health, and the artificiality of the distinction drawn between pure and applied science.

INTERNATIONAL ASSOCIATION OF THE HISTORY OF MEDICINE.

An International Association of the History of Medicine was founded at a meeting held at the Faculty of Medicine, Paris, on October 8th. The International Congress of the History of Medicine met for the first time in Antwerp in 1920; it met again in Paris last July, when a committee was appointed to draw up a constitution for an International Association of the History of Medicine, the object of which should be to institute bibliographical and other inquiries in preparation for discussion at future international congresses, and to suggest subjects for research and investigation so as to ensure continuity. At the meeting on October 8th, at which Professor Jeanselme of Paris took the chair, Professor Laignel-Lavastine, General Secretary of the Faculty of Medicine of Paris, submitted a draft constitution, and it was decided that the permanent committee of the association should consist of a president, vice-presidents, secretary and treasurer, and delegates from each country. Dr. Tricot-Royer (Antwerp) was elected president, Dr. Charles Singer (Great Britain) and Professors Giordano (Italy) and Menetrier and Jeanselme (France) were chosen vice-presidents; Dr. Fosseyeux was appointed archivist and secretary, and Dr. Boulanger, treasurer, of the permanent committee. Dr. Singer, speaking in the name of the Section of the History of Medicine of the Royal Society of Medicine, invited the International Congress to hold its third meeting in London next year; the invitation was cordially accepted, and the date provisionally fixed for July 24th to July 29th. The subjects suggested for discussion at the congress were: The principal seats of endemic and epidemic diseases in the classical Orient during the Middle Ages; the history of anatomy; and the

revival of medical knowledge during the sixteenth century. The draft by-laws of the association will be submitted to the permanent committee at a meeting which it is expected will be held in December next.

The social evenings of the Royal Society of Medicine will be resumed on Monday next, October 31st, when Fellows and their friends will be received by the president, Sir John Bland-Sutton, and Lady Bland-Sutton, at 8.30 p.m. The library will be open, various objects of interest will be exhibited, and at 9 p.m. the president will deliver a short address on choroid plexuses and psammomas. There will be music, light refreshments, and smoking. Fellows may themselves invite friends of either sex; tickets are not required.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

National Insurance Acts.

Sir E. Nicholl asked, on October 24th, whether, in view of the dissatisfaction with the working of the National Insurance Acts, the Minister of Health would consider the advisability of their early removal from the statute book. Sir Alfred Mond replied that he was aware that there was periodical criticism of certain aspects of the scheme embodied in the Insurance Acts, but, on the whole, all the evidence tended to show that National Insurance had been most beneficial in its operation. While he was considering the advisability of inquiring what improvement could be effected in its working there could be no question of repeal. Mr. Hayward asked the Minister what were the total contributions of the State, employers, and employed respectively, under the Insurance Acts for the last complete financial year; and what were the total administrative and working expenses under all heads for the same period, apart from payment made in respect of medical attendance, drugs and other benefits. Sir A. Mond said the totals were (in round figures) for the year 1920, as respects England and Wales, as follows:

	£
Total contributions	
By State	8,800,000
By employers	9,800,000
By employed	10,300,000
Total administrative and working expenses under all heads	£4,500,000

Milk Grant to be Continued. Viscountess Astor asked if the Minister of Health had received protests against his decision to reduce the Government financial aid to local authorities for the provision of milk to infants and mothers; and whether he could reconsider the matter so as to give once again half the cost in cases where the medical officer of the local authority issues a certificate of need or where some other suitable safeguard against unnecessary expenditure was provided. Mr. Myers and Captain Coote also put questions. Sir A. Mond replied that the very great increase in this service by local authorities had caused the estimate of the Government grant during the financial year already to be exceeded, and on strictly financial grounds severe reduction was entirely justified, but in view of the commitments of local authorities during this financial year and the distress existing from the extent of unemployment, he had decided that the 50 per cent. grant for milk supplied free, or at less than cost price, under the conditions laid down in Circular 185, should be continued until the end of the financial year.

Guardianship of Infants Bill.—In reply to Lady Astor, on October 20th, Mr. Lloyd George expressed regret that it would be impossible to deal with this bill during the present session, as only unemployment legislation was being taken.

Appointment of Medical Referees. Sir Walter de Frece asked, on October 20th, whether the Minister of Health would undertake to give preference to all candidates applying for the post of medical referee who had served in the war, even if their absence from home in the service of the State naturally gave them a shorter record of home service in the district. Sir A. Mond said preference was given to men who had served in the war, other things being equal, but with due regard to the fact that many practitioners who did not serve in the armed forces had applied for such service and been kept at home by the decision of the competent authorities that their services were indispensable for the needs of the civil population.

Children's Health.—In answer to Mr. Lyle, on October 20th, Sir A. Mond could not say from information at his disposal that there had been an increase of sickness among children as a result of short time and unemployment.

England and Wales.

Liverpool Medical Institution.

The inauguration of the eighty-third session of the Liverpool Medical Institution took place on October 20th, when there was a large attendance of members and associates, and the president, Dr. John E. Gemmell, delivered an address on the subject of "Books and some of the treasures of the Institution library." Quoting John Milton in praise of books, and alluding to the quaint views of older authors and writers on the value of books and the happiness they bring with them, he said that it was by no means universal that a first edition was most valued, as, apart from the author, much depended on the publisher, the time, and the place of the work, and in medicine the position occupied by the author among the fathers of medicine. The library of the Medical Institution now contained 15,100 books, but from 1914 to 1920, during the great war, practically no additions were made. Mascagni's *Anatomical Atlas* had the place of honour of being the largest book, and the *Aphorisms* of Hippocrates the smallest in the collection. Jenner's work on variola, published in 1798, was one of its most treasured books, dealing as it did with the origin of vaccination. The library possessed Harvey's *De Motu Cordis*, 1654, and works by Cheselden, Vesalius, Hunter, and Eustachius. The last work was the first to be illustrated with copper engravings of the anatomy of the human body.

The President hoped that the endowment fund of the library which had been started a year ago would commend itself to the members, and that always the library would continue to be the chief attraction, as, indeed, it was the foundation of the Liverpool Medical Institution. The address was much appreciated, and a vote of thanks, proposed by Dr. Richard Caton and seconded by Mr. W. Thelwall Thomas, was carried with acclamation.

Annual Medical Service at Liverpool.

The annual medical service was held at St. Luke's Church, Liverpool, on October 23rd, when there was a large attendance of the medical profession, and it was worthy of note that academic dress was worn by many more than on previous occasions. The Lord Mayor of the city, accompanied by the Lady Mayoress, attended in state, and the church was filled. The Very Rev. Dean Inge, of St. Paul's Cathedral, preached the sermon, the Bishop of Liverpool read the lesson, and the Rev. A. J. Macdonald, vicar of St. Luke's, conducted the service. The Dean took his text from Matt. ix. 12, and based a striking sermon on the twofold aspect of Jesus being a bodily as well as a spiritual healer. He pleaded for a closer understanding between and combined effort of medical and theological healers. He cited how in medical works aberration of conduct was referred to degeneration and morbid states of the nervous system and in religious manuals sin, repentance, and conversion were also regarded as states of spiritual phases. Moral and physical sickness should not be kept apart in our treatment, and theological conceptions might well be advanced in clarity were the psychology of temptation discussed in a thoroughly scientific spirit by truly religious minds. In conclusion, the Dean alluded to the fallacies of spiritual healing and its claim to work cures which science pronounced to be impossible. He regarded this fashionable tendency to dabble in supernaturalism as a regression to the barbarous Middle Ages, which would bring deep discredit on any religious body that tried to exploit it. The offertory was made on behalf of the Royal Medical Fund for the Liverpool district. As many medical men were prevented from contributing, it may be stated that the Fund is not closed yet, and the Medical Service Committee will be very grateful if they would forward their donations to the local treasurer, Dr. J. Ernest Nevins, 32, Prince's Avenue, Liverpool.

Newcastle-on-Tyne: Opening of the Session.

The course of post-graduate lectures and demonstrations for the Michaelmas term commenced on Thursday, October 13th. The classes which have been arranged are as follows: Clinical Medicine, Dr. W. E. Hume, C.M.G., and Dr. A. Parkin; Diseases of the Throat, Nose and Ear

Mr. S. S. Whillis and Mr. W. F. Wilson; Clinical Pathology, Professor Stuart McDonald and Dr. F. Bernard Shaw; X-Ray and Electrical Treatment, Dr. W. D. Arnison; Midwifery and Gynaecology, Professor R. P. Ranken Lyle; Neurology, Dr. George Hall. Thirty-six practitioners have entered for the various classes, which will meet every Thursday up to and including December 15th.

The Newcastle-upon-Tyne and Northern Counties Medical Society held its first meeting of the new session in the Royal Victoria Infirmary on October 13th. The president, Mr. S. S. Whillis, was in the chair. Various cases were shown by Dr. Beattie (polycythaemia), Dr. Horsley Drummond, and Dr. Hume; Mr. Leech and Mr. Johnston showed cases illustrating sarcoma.

Bristol Royal Infirmary.

At the half-yearly Board of Governors of the Bristol Royal Infirmary, held on October 13th, the announcement of the resignation of the president, Mr. H. H. Wills, was received with the greatest regret. Ill health has compelled Mr. Wills to take this course. During his tenure of office his interest and energy on behalf of the institution have been invaluable, whilst his generous gift of £100,000 in the early part of this year has made a substantial difference to the financial difficulties with which the infirmary, like all other voluntary hospitals, was faced.

Mr. Henry Arthur Siepmann has founded at the Bristol Royal Infirmary an annual prize of the value of £50 to perpetuate the memory of his sister, Miss Phyllis Siepmann, who died in 1920 from septicaemia contracted whilst discharging her duties as a surgical dresser at the infirmary. The prize will be awarded annually to that student who, in the third year of attendance at the Royal Infirmary, shall do best in an examination in medicine and surgery with special reference to diseases of children.

Frenchay Sanatorium, Bristol.

On October 5th Sir William Treloar performed the opening ceremony of Frenchay Park Sanatorium. He was supported by the Lord Mayor of Bristol (Mr. G. B. Britton) and many representative citizens. In his speech, which was full of wise and witty remarks, Sir William gave a short account of the initial difficulties and ultimate success of the homes he founded at Alton and Hayling Island for crippled children. His record of 90 per cent. of successfully treated cases evoked great enthusiasm and will undoubtedly act as an incentive and encouragement to the Bristol Health Committee to press on with the completion of their scheme for dealing with tuberculosis in the city. When the economic situation permits the construction at Frenchay of the open-air wards for 100 children and the linking up with Alton as contemplated, Bristol will have sound reason for satisfaction and pride in having begun seriously to grapple with one of the most urgent problems of public health. The present cautious policy as regards expenditure is not due to lack of belief in its own scheme, but has been forced upon the town council by the parlous state of public finance and the restraining hand of the Ministry of Health.

Ireland.

Professor Lindsay of Belfast.

On his retirement from the active visiting staff of the Royal Victoria Hospital, Belfast, his brethren on the visiting staff presented Professor James A. Lindsay, M.D., F.R.C.P.Lond., with a beautiful silver Irish dish ring. Dish rings were originally used as stands on which the wooden bowls containing potatoes were served at table, and after dinner, in the same way, for the punch-bowl. The ring presented to Professor Lindsay is a very beautiful modern reproduction. He was entertained to dinner on October 13th, when Mr. Mitchell, F.R.C.S.I., senior member of the staff, in the unavoidable absence of the chairman, Professor Sinclair, C.B., F.R.C.S.Eng., presided. After the customary loyal toast, he proposed the health of the guest of the evening in a happy and feeling speech: whether for his learning and culture, his clinical teaching, his ability at the bedside, or his uprightness and personal claims, all, Mr. Mitchell said, had learnt to esteem their guest and hold him in their affection. Dr. Lindsay thanked all for their kindness, both for the gift and also for the sentiments and wishes. He remarked on the advances made by medicine since he was a student, and said that the times gave promise of still further progress.

At the invitation of the medical staff, and with the consent of the Board of Management, Professor Lindsay will give fortnightly clinical lectures or demonstrations at the Royal Victoria Hospital this winter.

Correspondence.

NATIONAL PROVIDENT SCHEME FOR HOSPITAL AND ADDITIONAL MEDICAL SERVICES.

Sir,—It would not be within my province to defend the British Medical Journal against the attack made upon it by Dr. Muir Smith in his letter in the Supplement of October 22nd (p. 155), but as his attack is also directed against the National Provident Scheme, and as he appears to have experienced some difficulty in obtaining precise information, perhaps it might clear the ground if, as honorary secretary to the committee, I might be allowed to state a few actual facts.

The National Provident Scheme for Hospital and Additional Medical Services owes its inception to a conference of the chairmen, house governors, and secretaries of the principal London hospitals, which was convened by Sir Arthur Stanley at St. Thomas's Hospital on January 25th, 1921, to consider certain proposals with regard to a provident organization in London. After considerable discussion these proposals were submitted to the British Medical Association, and referred to the Metropolitan Branch Council. As the result of its consideration at two meetings of the General Purposes Committee of the Branch Council the matter was referred to a special committee appointed for the purpose, consisting of consultants and general practitioners in equal numbers. After making certain amendments this special committee recommended the scheme to the Branch Council, who approved it, and printed and circulated it to all of their Divisions, and to all the London hospitals.

It is greatly to be deplored that they had not the help and advice of country practitioners in taking this step, but, after all, it was London which was mainly concerned, and perhaps the excuse suggested by Dr. Muir Smith himself for the Organizing Committee, "that exigencies of their objective" might "justify the urgency of their action," could be also pleaded by the Metropolitan Branch Council.

Meantime an Organizing and Executive Committee was formed with the object in view of helping to establish the scheme on similar lines, and with mutual reciprocity, in any areas of the country which desired it, and a Medical Consultative Committee was also formed, of which at least half the members are also members of the Council of the British Medical Association. The principle upon which the Organizing and Executive Committee of the scheme have always acted, and will continue to act, is that no step of importance shall be taken until the medical profession has been consulted about it.

I will not trespass upon your space by replying in full to Dr. Muir Smith's letter, which is best answered by the details of the scheme itself, but one paragraph might perhaps be quoted as an example of the rest. It runs as follows:

> "Stripped of its sentimental embellishments this scheme is nothing more or less than a glorified form of club practice, masquerading in the guise of hospital philanthropy, and is potential of perpetuating and intensifying all the abuses inherent in every form of capitation practice."

The author of this portentous paragraph very truly goes on to say "that this aspect of the question has apparently been overlooked." His fears will disappear when he learns that the Provident Scheme does not provide ordinary—that is, general practitioner—treatment, that it is from the first consultative, and that its services can only be obtained through a member's own doctor. In fact, it does not provide any of the services of a club practice, and few, if any, of the services which it does provide were ever undertaken by the doctor of a club.

The first tidings of any happening are proverbially

inaccurate, but it is pleasant to learn that rumours about the National Provident Scheme are penetrating into various parts of the country, and the committee of the scheme may perhaps be justified in hoping that when Dr. Muir Smith has been more fully informed they may look to a man of his influence and eminence in the profession for help and sympathetic advice in their effort to solve a very difficult problem.—I am, etc.,

Lincoln's Inn Fields, W.C.2, Oct. 24th. J. F. Gordon Dill.

Sir,—I have read with astonishment a letter in the Supplement to the British Medical Journal of October 22nd, headed "National Provident Hospital Organization," and signed by Wm. Muir Smith, Hon. Sec. and representative A.R.M., Eastbourne Division, and although I will not attempt to argue against the criticisms of the National Provident Scheme which are contained in the letter—Dr. Muir Smith has as much right to his own opinion as anyone else—I would crave for a little space to correct some gross misstatements as far as Sussex is concerned.

The name "*Sussex* Provident Scheme" was adopted (1) because it was intended from the first to embrace all the voluntary hospitals in Sussex who were willing to join; (2) because the Royal Sussex County Hospital, which draws its patients from all parts of the county, was the first to adopt it; and (3) because the membership was limited to bona fide residents in Sussex.

A start had to be made somewhere, but as soon as the scheme had been successfully launched in the Brighton district, an invitation was sent to every hospital of repute in the county that we could hear of to co-operate with us. I much regret to learn that the "Eastbourne Ear, Nose and Throat Hospital" and the "Eastbourne Eye Hospital" were not included in the invitation. The omission was not intentional, but none of the committee knew of the existence of these institutions, nor were they mentioned in the copy of the *Medical Directory* from which the list was taken.

The proposals were submitted to five separate meetings of various sections of the profession in the district called especially to consider them, and after being amended in several directions were approved by them all, and yet we are told that "the scheme is unacceptable to the local profession." The reasons given for this are:

(*a*) That "it is controlled by a small section of class practitioners—a Brighton caucus—which is in no way representative of the profession in the county."

There is not a word of truth in this. The committee at present consists entirely of lay members, although a distinguished consulting physician has within the last few days been invited to join it.

(*b*) That it "is comprised of nine co-operating hospitals, all situated in Brighton, Hove, and Preston, whereby the centre of gravity for such services will always be Brighton."

This will obviously be the case as long as the other hospitals in the county stand aloof.

(*c*) That it "contains no provision for utilizing the resources of any other hospital hereafter willing to co-operate."

This is not true, inasmuch as all the other hospitals in the county are invited to co-operate as from January 1st, 1922, when the financial arrangements will be re-settled.

(*d*) That "being avowedly designed 'for the benefit of those who, being bona fide residents in Sussex, irrespective of class of occupation, are in a financial position which makes them eligible for election as members,' ostentatiously seeks to attract and annex to its membership two classes of persons who, with incomes of £400 and £500 as respectively described under Grades II and III of the prospectus, have hitherto been able to afford the private fee usually charged for such services and whose claims to semi-charitable consideration have neither been demanded, urged, or established."

This paragraph is wholly misleading. In the first place Grades II and III do not describe individual members. These are represented in Grade I, which is for single members with an income limit of £260. Grade II represents a man and his wife, or a widow or widower with one child, who cannot become members separately, but whose joint income does not exceed £400. Grade III applies to families, who also must all become members together, and whose collective income does not exceed £500.

Incidentally these income limits were suggested by the Brighton Panel Committee, and were agreed to at all the meetings which were held. The scheme is intended for those people who now use the hospitals, and who are at present being charged for part of the cost of their maintenance. It is true that it opens the door to a section of the new poor and of the black-coated class who have hitherto been too proud to use the hospitals; but these people are often far more needy than the industrial workers, and in any case members cannot receive any of the services offered by the scheme except through the agency of their private doctor, nor does the scheme provide its members with any ordinary (general practitioner) treatment.

(*e*) That "in thus creating a new and superior type of hospital beneficiary there is a grave danger that the treatment of these members demanded under a definite contract will, sooner or later, only be effected to the exclusion of those impecunious cases for whose benefit voluntary hospitals were originally founded."

This danger is purely imaginary. The members of the scheme have only such privilege of priority as the hospitals can give them without interfering with their routine and without detriment to more urgent cases, and there is a rule to the effect that when the limit of capacity of the hospitals has been reached the list of members will be closed.

(*f*) That it "will jeopardize the maintenance of voluntary hospitals on a charitable basis."

The provident scheme is hardly applicable to those hospitals who continue to administer an indiscriminate charity, and the maintenance of voluntary hospitals upon this completely charitable basis had already been proved impossible in the majority of cases.

(*g*) That "the inducement printed at the bottom of the prospectus, that 'the first ten thousand members will receive an "original member's" card, and that their subscriptions will not be raised while they continue members,' very much savours of astute commercial enterprise, which form of advertising is foreign to the best traditions of the profession and inconsistent with the ethical canons of professional conduct."

The Provident Scheme is not a commercial enterprise. Sixpence in the pound covers the cost of administration, and the remaining 19s. 6d. goes to the hospitals and to the medical profession for the services rendered. If advertisement there be—and there would be a great deal more if the money were forthcoming—it is not the medical profession which is being advertised nor the hospitals (although the latter are used to it and live on it), but the advantages to be gained under the scheme.

The best answer to the remainder of your correspondent's long letter will be found in the details of the scheme, which you have already published in full, and those of your readers who care to study them will, no doubt, share my amazement that a policy designed with a view to the best interests of the hospitals, of the medical profession, and of the hospital public, can have been so ingeniously misunderstood and misrepresented.—I am, etc.,

Selby,
4, St. George's Place, Brighton, Oct. 24th. Honorary Secretary.

Sir,—Dr. Muir Smith's letter in your issue of October 22nd (Supplement, p. 155) deals with two distinct issues, namely: (1) the merits of the above-named scheme, and (2) the relations of the British Medical Association to the proposals. With the former discussion I am not for the moment directly concerned, though I perhaps may be allowed to say in passing that with Dr. Muir Smith's criticisms I find myself in substantial agreement, and that, at least in my judgement, he has done good service in stating them.

On the second topic raised in the letter there is, I think, need for plain speech, for undoubtedly—presumably as the result of misunderstanding—there are quarters in which the British Medical Association is quoted, entirely without warrant, as in full support of the Hospital Provident Scheme. Within the last few weeks I myself have listened to an address in which one of the promoters of the scheme told his audience that the proposals had the support of a "committee appointed by the British Medical Association"; I have read an official record which declared that at a certain professional discussion there was present a gentleman "representing a committee of the British Medical Association"; and I have been presented with what purported to be a draft of a "Suggested organization for London," bearing

without qualification the address "429, Strand, W.C." On the other side is the hard fact that neither in the Representative Body nor in the Council has the Association even considered the scheme, much less endorsed it. All that has happened is that, on the recommendation of an *ad hoc* committee a majority of the Metropolitan Counties Branch Council has approved the proposals and ordered the circulation of them in a limited constituency. The Branch itself has not been consulted nor—with, I believe, two or three exceptions—have its constituent Divisions. How it has come about that on so slender a basis there has been erected the suggestion that the enterprise enjoys the countenance of the Association would make an interesting inquiry, and may, perhaps, some day be profitably pursued. Even Dr. Muir Smith himself has been so misled as to credit the Marylebone Division with support of the scheme, whereas, as a matter of fact, the Division has not yet discussed it.

One other possible misconception may be noted. The "Provident Scheme" now issued in a printed form by a privately constituted "Organizing and Executive Committee" is not in all points identical with the draft that secured the suffrages of a majority of the Metropolitan Counties Branch Council. Hence not even this local and limited organ of British Medical Association activity can be quoted as affording unqualified support to the proposals. And at the best, as already stated, it is not the Branch but merely the Council of the Branch that has recorded a majority vote.

It would seem from Dr. Muir Smith's letter that, even as three voices from Tooley Street once professed to speak for "the people of England," a similar benefit of vicarious representation has been conferred on the county of Sussex. How far these ambitions reach it may be difficult to say, but as, beyond question, the name of the Association is being quoted without authority in the present discussions on hospital policy in London it is well to have the facts plainly on record.—I am, etc.,

London, W., Oct. 24th. C. O. HAWTHORNE.

SUPPRESSION OF TRINITROTOLUENE POISONING DURING THE WAR.

SIR,—In a note in your issue of October 22nd you give an interesting account of an address by Dr. Addison on "Medical men and public life," and with most there recorded of what was said I am in entire agreement. But there are certain aspects in regard to medical research and its control by Governmental departments which require some consideration.

Dr. Addison states that investigations he asked the Medical Research Council to make into trinitrotoluene poisoning, at a cost of two or three thousand pounds, led to a saving of millions of public money.

Now this awakens a chain of memories in my brain. I seem to remember that, along with my colleagues Wyon and Webster, I went down to a munitions factory in a county "somewhere in England," where girls were dying of T.N.T. poisoning, and that there we studied the subject for several weeks; that we rubbed the poisonous substance into our own skins, and suffered from the poisonous effects; that we worked as operators in the factory, and were assisted by many willing helpers. Finally, we discovered that only a certain percentage of persons were acutely susceptible to the poison, and these were persons who readily let it in through their skins. We tracked out how such susceptible persons could be detected and sent on to other work, and we reported accordingly.

For weeks and months no action was taken, and we were prevented by the censorship from making our discoveries known, and deaths kept on occurring till there was almost a stampede of labour. In one factory alone illness due to T.N.T. was costing over a thousand pounds week.

It was only when I threatened to stump round the munition centres and explain to the workers upon T.N.T. what was the root of the evil that executive action was taken, and within two or three weeks there was not another case of fatal T.N.T. poisoning throughout the whole country. This is now acclaimed as a great triumph for science and medicine, and the late Minister of Munitions tells us that by the expenditure of a very few thousand pounds upon research many millions of pounds were saved to the country. But there might surely be a few words of appreciation for the scientists who solved the problem, not so much after all because the scientists need such words, but because they might make a true orientation in the public mind as to what science stands for.

This is really why this communication is written—namely, to point out the need for perfect freedom in all research.

Bureaucrats cannot tell us how to conduct research, we scarcely know how we do it ourselves, and it is iniquitous when a dawning idea is there to have to explain it to someone in Whitehall. Playwrights complain of censors, but with scientists it is somewhat worse; before they produce their play they have to explain what it is all going to be about. As a result inspiration often succumbs and there is a stillbirth.—I am, etc.,

Oxford, Oct. 25th. BENJAMIN MOORE.

*** In justice to Dr. Addison, we should point out that our brief account of his address to a medical audience was not a verbatim report.

PRINCIPLES OF BIOCHEMISTRY.

SIR,—I desire to draw the attention of your readers to several regrettable inaccuracies in Professor W. D. Halliburton's review of my *Principles of Biochemistry* which appeared in your issue of July 23rd.

Professor Halliburton complains that, although I am a British subject and, after a stay in American universities, have returned to a British Commonwealth, I have "not returned to English spelling." Professor Halliburton could not, of course, be aware that my manuscript, as forwarded to the publishers, was spelt in strict conformity with English custom. In the proofs I discovered that all my English spellings had been altered to the corresponding American spellings. In answer to my protest the publishers replied that inasmuch as they are an American firm their publications must conform to the literary custom of America. Since this was a matter strictly within their jurisdiction I had no alternative but to submit to their decision. In the same way I imagine that an English publisher or editor might very properly insist that material submitted to him for publication should conform to the literary custom of England.

Professor Halliburton credits me with the statements, which he regards as contradictory, that the vitamins are substances allied to betaine, and "on another page" that they are allied to the purines. I have made neither of the statements attributed to me, but have quoted impartially the various conjectures and experimental findings of Funk, Williams, Seidell, and others. My own opinion concerning the vitamin B is stated on page 193 in the following words:

"The instability of the curative substances and the minute proportions in which they are present in antineuritic foodstuffs render the attainment of any definite conclusions a matter of exceptional difficulty."

Professor Halliburton is mystified, as he says, by my denial of the title of vitamin to the antiscorbutic substance, while admitting it to the category of accessory foodstuffs. Had Professor Halliburton read the whole of my remarks on this subject he would have ascertained my reasons. At the time that the book was written Drummond's suggestion that the known accessory foodstuffs be hereafter designated vitamin A, B and C respectively had not been formulated. For my own part I have felt, and have urged in my book, that the application of the term vitamin indiscriminately to all classes of accessory foodstuffs may ultimately lead to confusion, for when we eventually ascertain their chemical composition and structure we will almost inevitably find that the different classes of accessory belong to very different classes of chemical compound. For this reason I would prefer retaining the descriptive and non-committal terminology originated by Gowland Hopkins, retaining the term "vitamin" to designate one class only of accessory foodstuff—namely, the accessory which cures avian polyneuritis. I have therefore not only denied the antiscorbutic accessory the title of vitamin, but also the fat-soluble accessory, and my reasons for so doing are explained on page 193 of my book. It may be that the consensus of opinion will disagree with me in this matter, and I am perfectly ready to fall in with any consistent policy which may be agreed upon by the majority of

writers, but I still consider that the terminology which I have proposed has many arguments to recommend it.

According to Professor Halliburton, when I state that the hormone of the posterior lobe of the pituitary body is allied to ergamine (β-iminazolylethylamine) I am speaking "without authority." My "authorities" were T. B. Aldrich and M. Guggenheim. The following, however, is a citation from Barger's *Simpler Natural Bases:*

"The fact that the bases from a pituitary extract give the Pauly reaction suggests a connexion with histidine, and, moreover, β-iminazolylethylamine, which is obtained from histidine by decarboxylation, also causes powerful contractions of the uterus. Possibly, therefore, the pituitary active principle is a polypeptide-like derivative of histidine."

The recent work of Koessler had not appeared when my book was written.

Professor Halliburton states that my use of the word "amnesia" as equivalent to forgetfulness will be "somewhat of a shock to neurologists." While I do not profess to be a neurologist and am unaware what may be their peculiar view of this matter, the psychologist, who, after all, is the proper authority in such a question, does use the word "amnesia" in precisely the sense that I have used it. I would refer, for example, to William James's *Principles of Psychology*, vol. i, page 384.—I am, etc.,

Adelaide, Sept. 2nd. T. Brailsford Robertson.

We referred this letter to Professor Halliburton, who writes:

I am much obliged to you for letting me see an advance proof of Professor Brailsford Robertson's letter about my "regrettable inaccuracies." I will take his five points one by one.

1. *Spelling.*—I now withdraw my *criticism* and will substitute *commiseration* for the penalty he has had to pay in entrusting his book to an American firm of publishers.

2. *Vitamins: Contradictory Statements.*—The two I referred to are as follow: "The recent work of Williams indicates that the curative principles may be substances having a betaine structure" (p. 189). "The vitamines appear to be nitrogenous substances closely related to the purines" (p. 489). In neither is there anything to show that the author disagrees, and the second sentence (with its context) contains no indication that it is not his own view. One can imagine the bewilderment of a student when these two statements are placed before him. To these two is now added a third quoted in the above letter about "definite conclusions being difficult." An author's duty is to guide students, and the responsibility of choosing which of three views is correct should not be left to the reader.

3. *Vitamin Nomenclature.*—I have now once more read the whole of Professor Brailsford Robertson's remarks in his book amplified by his recent letter. I am still mystified, though I can heartily endorse what he says in his letter: "It may be that the consensus of opinion will disagree with me in this matter."

4. *Pituitrin.*—The statement that pituitrin is allied to ergamine occurs on pages 200 and 381. In neither place does the author point out that this is not his own view. He now tells us that his authorities are Aldrich and Guggenheim, with whose immature and much-criticized work I am well acquainted. There are authorities and authorities. What I complain of in Robertson's statements is that they are undigested and uncritical. He cannot, or does not, distinguish between those who speak with real authority and the remainder who merely "write as the scribes." Professor Barger, whom he now quotes, is a real authority, and shows his wisdom by the use of the adverb "possibly." In one place Robertson says "probably"; in the other he omits any qualification.

5. *Amnesia.*—This point is a small one, and I can safely leave to neurologists a defence of their "peculiar" views, that is if they think it worth while to quibble about words. My little remark was perfectly harmless, and has the merit, like the preceding (2, 3, 4), of being correct.

WHITEHEAD'S OPERATION FOR HAEMORRHOIDS.

Sir,—Early this year, on more than one occasion, I had the opportunity of seeing Sir John O'Conor of Buenos Aires perform his modification of this operation. As it will be weeks before Sir J. O'Conor can write, if he does, on Sir C. Gordon-Watson and others' condemnation of this operation at Newcastle, reported in your issue of October 15th, I would like to state that in his hands it was anything but a severe operation, involved no great loss of blood, and the after-treatment was practically nil, with no prolonged stay in hospital.

I questioned Sir J. O'Conor fairly closely, and he assured me he had never seen an operation case of his again. If he should write I hope he will state his average time over the operation; I remember it was short. From the number of cases on ordinary operating days at the Buenos Aires Hospital it would appear as if haemorrhoids were common in the Argentine, whether due to large meat eating, cocktails, or horse riding I know not. All the cases I saw were males.—I am, etc.,

Leeds, I W., Oct. 22nd. Edmund S. Hall.

THE PHYSIOLOGICAL COST OF MUSCULAR WORK.

Sir,—The discussion continued in your columns this week by Professor Waller and Miss De Decker raises issues of such importance if, as I believe, the task of feeding the industrial populations of Western Europe is likely to become more difficult every year, that we must try to avoid confusion of thought. I think some readers of Professor Waller and Miss De Decker's paper may be confused by the use of the term "error" in two different senses, which is almost inevitable in any brief statement.

For the sake of clearness, let me begin with a very much simpler problem—that of measuring the stature of adults. The first stage is the actual measurement of a sample of adults, and each measurement is subject to a greater or lesser margin of uncertainty or "error" dependent upon the precision of the instrument of measurement and the expertness of the operator. This may be called the "error" of observation. The next stage is, having decided within what limits the recorded results are accurate (for instance, by choosing a suitably coarse unit of grouping), to estimate the probability that *another* sample, recorded with the *same* measure of material accuracy, will yield an average differing from that of the first by such or such an amount. Both these operations involve a statistical process of reasoning, but they must not be confused.

Statisticians have grown rather weary of contradicting the statement that a "mathematician" believes the average of 1,000 careless measurements to be more reliable than the average of 100, or 10, careful measurements. What he does assert is that, however exact the measurements, the probable error of sampling must be determined and its magnitude must affect any generalization from the sample to the "universe."

Now it seems to me that the argument of Professor Waller and Miss De Decker in the second paragraph of p. 628 does tend to confuse these points. Their opponents assert (whether rightly or wrongly I shall not here discuss) that Professor Waller's method of measurement is faulty, that it does not accurately record the characteristics *of the sample.* No comparison of the averages of samples such as attempted in the table on p. 628 is an answer to this criticism. We have not here seven measurements of the same sample but seven measurements of different samples, and the error of observation, *not* the error of sampling, which is the point in dispute between Professor Waller and his critics, requires to be investigated on other lines.

That the error of observation of a CO_2 determination is less than that of a determination of the Respiratory Quotient is, I think, quite certain. A preliminary discussion of the point will be found on pp. 68–71 of a paper by Mrs. Hodson, Dr. Tebb, and myself (*Proc. Roy. Soc.*, B, xci, 1919). Since there is a negative error-correlation between the CO_2 and O_2 determinations, the calculation is somewhat intricate and the number of paired analyses at our disposal far too small to give reliable results. But if a CO_2 reading standing alone does not adequately measure the rate of metabolism, the fact that such a reading can be made with a less observational error than a complete determination of the Respiratory Quotient is not an answer to criticism. No amount of arithmetic applied to the published data can settle the point. In my opinion, even the comparison proposed in Professor Waller and Miss De Decker's postscript is insufficient. We should compare the results of indirect calorimetry by the Haldane-Douglas and the Waller method with those of the direct method, and

must make a long series of comparisons. As things stand, there is unlimited scope for circular reasoning. A method is condemned by one side because it gives unexpected results, and the other side uses this very fact as evidence in its favour. Before we discuss the errors of random sampling let us clear up the question of errors of observation.—I am, etc.,

Loughton, Oct. 22nd. MAJOR GREENWOOD.

THE OPERATION OF PROSTATECTOMY.

SIR,—May I be allowed to make one or two comments in support of the view so ably enunciated by Mr. Littlewood and Sir Clifford Allbutt in the BRITISH MEDICAL JOURNAL of October 15th, p. 614, as to the claims of Mr. A. F. McGill to have initiated the operation of prostatectomy suprapubically and by enucleation?

I was present at the meeting at Leeds in August, 1889, when Mr. McGill read his paper on the subject. It met with a very warm and appreciative reception, and the impressive and clear way in which the details of the operation were described was greatly enhanced by the exhibition in the adjoining lobby of the patients who had been so successfully relieved of their troubles. A subsequent speaker referring to this demonstration spoke of "the astounding and unique spectacle of seven or eight old men sitting on a bench with their prostates in bottles on their knees!" Each patient had attached to him a card setting out briefly the clinical history of the case.

Mr. McGill laid great stress on the fact that the mucous membrane was incised with scissors and the enucleation carried out with the finger.

I was so impressed with the eminently satisfactory results of this procedure—so much more deeply than would have been the case if I had merely read of it instead of hearing and seeing for myself—that soon after my return home I enucleated by McGill's method an enormously hypertrophied prostate in a patient who had been under my care for retention of urine for many years. The operation presented no great difficulty, though I was a novice at bladder surgery.—I am, etc.,

Salisbury, Oct. 19th. R. LEWIS WILLCOX.

THE HARVEIAN ORATION.

SIR,—Owing to an unfortunate printer's error (for which you are not responsible) in your issue of October 22nd, page 625, Malpighi is credited with the authorship of *De sedibus et causis morborum*; it should, of course, be Morgagni. May I take this opportunity of asking those Fellows who have received uncorrected copies of the oration kindly to correct the error, which occurs at page 32, line 1.—I am, etc.,

London, W., Oct. 27th. HERBERT R. SPENCER.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a Congregation held on October 21st the degree of Bachelor of Medicine was conferred on W. E. Hayes and C. L. Wells.

UNIVERSITY OF CAMBRIDGE.

THE voting on the question of the relationship of women to the University took place in the Senate House on October 20th. Grace I, the "compromise" proposal to admit women to limited membership of the University, was defeated by 908 to 694 votes. Grace II, proposing to confer the titles of degrees by diploma on qualified women, but excluding them from membership of the University, was carried by 1,012 to 370 votes.

The War List.

The *War List of the University of Cambridge, 1914-1918*, which will be published early in December, is based on the work undertaken by the executive committee of the *Cambridge Review* during the war. The material compiled by Mr. J. Auston Labb has been revised and arranged to suit the editorship of Major G. V. Carey. The list does not include the names of those who only became members of the University after their war service; it contains nearly 14,000 names. The book is arranged by colleges, the names under each college being in alphabetical order and the date of matriculation being given with each entry. The particulars of service recorded are rank and regiment, number of times wounded, distinctions; in the case of the fallen the date, and, when known, the place of death; in the case of those who obtained the V.C. the account from the *London Gazette* of the act for which it was awarded.

UNIVERSITY OF LONDON.

DR. W. B. TUCK, D.Sc.Lond., previously lecturer, has been appointed to the university chair of chemistry tenable at Middlesex Hospital Medical School.

Dr. Charles Bolton, C.B.E., M.D., D.Sc., F.R.C.P., F.R.S., physician to University College Hospital, has been awarded the William Julius Mickle Fellowship of £200 in recognition of the important work in experimental medicine which he has carried out during the past five years.

Mr. H. J. Waring, C.B.E., M.S., F.R.C.S., has been appointed to represent the University of London at the seventh Centenary Celebrations of the Faculty of Medicine of the University of Montpellier on November 5th.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

The Entrance Scholarship in Anatomy and Physiology has been divided equally between C. E. Newman (Magdalene College, Cambridge) and P. B. Wilkinson (King's College, London).

ST. MARY'S HOSPITAL.

The following appointments have been made in connexion with the Medical Unit established at St. Mary's Hospital Medical School:—Director: Professor F. Langmead, M.D., F.R.C.P. First Assistant: C. M. Wilson, M.C., M.D., B.S., F.R.C.P. Second Assistant: Cecil Alport, M.D., M.R.C.P. Third Assistant: E. G. B. Calvert, M.D., D.P.H.

UNIVERSITY OF MANCHESTER.

DR. R. A. WEBB has been appointed demonstrator of pathology. The Junior Research Fellowship in Public Health has been awarded to Dr. William Stott.

UNIVERSITY OF EDINBURGH.

AT the graduation ceremony on October 22nd the degrees of M.B., B.Ch. were conferred upon William N. J. Chapman, and the diploma in Psychiatry upon Rachel M. Barclay.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT the meeting of the Royal College of Surgeons of Edinburgh held on October 19th Sir David Wallace, C.M.G., was elected president for the ensuing year, Dr. George Mackay vice-president, and Mr. Alexander Miles, F.R.C.S.E., secretary and treasurer.

The Liston Victoria Jubilee prize of £100 has been awarded to Mr. John Smith Fraser, F.R.C.S.E., in recognition of his work on the pathology of the internal ear and its bearing on the surgical treatment of that organ.

The following, having passed the requisite examinations, have been admitted Fellows:

Catherine E. Anderson, P. Chatterice, P. A. B. Clark, J. McM. Cole, P. C. Davie, T. A. J. Duff, E. C. Dunlop, H. H. Elliot, G. D. Fairley, A. T. Gibb, A. H. Gummer, J. J. Kearney, O. F. Lamb, G. B. Lowe, H. E. McColl, J. R. MacNeill, G. Nicholson, F. C. Ormerod, G. R. B. Purce, J. M. Rakshit, C. G. Richardson, W. S. Robertson, J. Scott, G. I. Strachan.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the annual meeting of the College on October 18th the following officers were elected: President, Sir James Craig; Vice-President, Dr. N. M. Falkiner; Censors, Drs. N. M. Falkiner, J. A. Matson, W. G. Harvey, and R. A. MacLaverty. The following were elected Fellows of the College: Dr. Victor Millington Synge and Dr. Robert Marshall.

In the evening the annual St. Luke's Day dinner was held in the College Hall. Before the company sat down to dinner the President admitted the Right Hon. and Most Rev. the Provost of Trinity College, Dublin, to the honorary fellowship of the College.

The Services.

TREATMENT AND TRAINING FOR PENSIONED OFFICERS.

THE Ministry of Pensions announces that the rules governing admission of disabled ex-officers and nurses to concurrent treatment and training have been reviewed in the light of the recently published decision of the Ministry of Labour relating to training. Applications for admission to concurrent treatment and training under the Ministry of Pensions must reach the Commissioners of Medical Services of the various regions not later than October 31st, 1921. Concurrent treatment and training is normally intended for those who can afterwards pass to the Ministry of Labour to complete their training. These arrangements do not for the present apply to officers and nurses suffering from tuberculosis and in consequence requiring treatment combined with training.

HONOURS.

THE King has given permission to the following medical men to wear the Cross of Chevalier of the Legion of Honour conferred by the President of the French Republic in recognition of valuable services rendered during the war:

Sir W. Arbuthnot Lane, Bt., C.B., Sir A. W. Mayo Robson, K.B.E., C.B., C.V.O., Sir St. Clair Thomson, Sir Sydney Beauchamp, Dr. J. W. Ginner, Dr. H. J. M. Playfair, Dr. G. C. L. Vintras, Mr. Dudley d'Auvergne Wright.

DEATHS IN THE SERVICES.

Brigade-surgeon Lieutenant-colonel Arthur Bowen Richard Myers, Bengal (late Guards), retired, died in London on August 6th, aged 82. He was the son of John Bowen Myers, of Ivy Tower, Leeds, was educated at St. Mary's Hospital, London, took the diplomas of M.R.C.S. and L.S.A. in 1859, and joined the Coldstream Guards as assistant surgeon on September 26th of that year. He was promoted surgeon-major in the Scots Guards on March 14th, 1883, and to brigade-surgeon of the Guards' Brigade on May 13th, 1888, and retired on November 4th, 1891. He served with his regiment in the Soudan in 1885, in the Suakin campaign, and received the medal with a clasp and the Khedive's bronze star. In 1870 he received the Alexander prize and gold medal for an essay on diseases of the heart and of soldiers, and contributed an article on exercise to Quain's *Dictionary of Medicine*; he was the author also of *Life with the Hamran Arabs*, an account of a sporting tour of some Guards' officers in the Sudan during the winter of 1874–75. After his retirement he did much public work; he was chairman of the training ship *Exmouth*, chairman of the St. George's, Hanover Square, Committee of the Charity Organization Society, and served on the board of guardians for the same district.

Lieut.-Colonel Edmund Arthur Roberts, Indian Medical Service, was drowned while bathing at Elliot's Beach, near Madras, on September 5th, aged 42. He was born on January 16th, 1879, educated at King's College, London, and took the M.R.C.S. and L.R.C.P.Lond. in 1903. Entering the I.M.S. as lieutenant on January 30th, 1904, he became major on July 1st, 1915, and received a brevet lieutenant-colonelcy on January 1st, 1919. He received the D.S.O. on the same date while serving in Mesopotamia. Since the war he had been in civil employ in the Madras Presidency, where he held the post of district and sanitary officer of the Nilgiri Hills. He was a brother of Charles Roberts, M.P., late Under Secretary for India.

Surgeon Captain Alfred John Pickthorn, R.N. (retired), died at Dover on September 26th, aged 57. He took the L.S.A. in 1885 and the M.R.C.S. in 1886, became fleet surgeon on February 11th, 1902, and surgeon captain on the retired list on November 17th, 1918.

Obituary.

LIEUTENANT-COLONEL E. M. WILSON, C.B., C.M.G., R.A.M.C.

Lieut.-Colonel Edmond Munkhouse Wilson, C.B., C.M.G., D.S.O., R.A.M.C. (retired), died in Queen Alexandra's Military Hospital, Millbank, on October 9th, aged 66. He was born at Oundle, Northampton, on October 4th, 1855, and educated at St. George's Hospital, taking the M.R.C.S. in 1877, the L.R.C.P.London in 1878, and the D.P.H. at Cambridge in 1892. After filling the post of house-surgeon at the West London Hospital in 1877–78 he entered the R.A.M.C. as surgeon on July 30th, 1881, becoming lieutenant-colonel after twenty years' service, and retiring on September 28th, 1904. He had a long list of war service. He served as a civil surgeon in the Zulu war of 1879, receiving the medal with a clasp, and afterwards in the R.A.M.C. in the Sudan campaign of 1884–85, with the Nile column, medal and Khedive's bronze star; in the Sudan frontier campaign of 1885–86; in the Gambia campaign of 1891–92; in the Ashanti campaign of 1895–96, in command of the base hospital, mentioned in dispatches, Ashanti star, and C.M.G.; and in the Nile campaign of 1898, when he was present at the battle of Khartum, was mentioned in dispatches, and received the D.S.O., as well as the medal and Egyptian medal. In this campaign he was secretary to the surgeon-general. From 1899 to 1904 he was Deputy Assistant Director-General at the War Office. After retirement he was employed at the military prison, Aldershot, in 1904–5, and from 1904 to 1913 as assistant officer in charge of R.A.M.C. records at Aldershot. He rejoined in 1914 for service during the war.

He received the C.M.G. in 1896, the D.S.O. in 1898, and the civil C.B. in 1902. For several years he was the representative of the Army Medical Service on the Central Council of the British Medical Association. In 1918–19 he was President of the West London Medico-Chirurgical Society. He was also secretary of the R.A.M.C. Fund and Benevolent Society.

Lieut.-Colonel Frederic Puisent Maynard, Bengal Medical Service (retired), died of double pneumonia at Audlem, Cheshire, on September 30th. He was born on March 10th, 1864, the son of Thomas Maynard of Preston, and educated at St. Bartholomew's Hospital and at Durham University, where he graduated M.B. with honours in 1885; he took also the M.R.C.S. and L.R.C.P.Lond. in the same year, and the F.R.C.S. in 1900. He entered the I.M.S. as surgeon on October 1st, 1887, became lieutenant-colonel after twenty years' service, and retired with an extra pension on March 11th, 1919. His first six years were spent on military duty, and during this time he served on the North-West Frontier of India in the Hazara campaign of 1891, receiving the Frontier medal with a clasp. In 1893–94 he served as medical officer of the Baluchistan-Afghanistan Boundary Commission, and in 1896 published a report on the botany of the tracts traversed. On his return from the Commission he was posted to civil employ in Bengal, and in 1905 was appointed ophthalmic surgeon to the Medical College Hospital, Calcutta, and professor of ophthalmic surgery in the College. That appointment he held till his retirement, except for a short period in February and March, 1907, when he was sent on special duty to Kabul. Besides his work on frontier botany he was the author of a *Manual of Ophthalmic Operations*, 1908, and *Manual of Ophthalmic Practice*, 1920, and edited the *Indian Medical Gazette* in 1898, during the absence on furlough of the permanent editor, Lieut.-Colonel (now Sir) W. J. Buchanan.

Dr. Trevor Fowler, who died at Redhill on October 13th, belonged to an old Irish family; he was born in 1845 and received his medical education in Dublin, where he qualified with the diplomas of L.R.C.S.I. in 1865 and L.R.C.P.I. in 1867. Thereafter he came to England and settled at Epping, Essex, where he practised for some forty-eight years. He took a special interest in all matters relating to public health, on which he contributed more than one article to the British Medical Journal, and in 1890 he obtained the diploma of D.P.H.Camb. He was medical officer of health for the Epping rural and urban districts, medical superintendent of the infectious diseases hospital, and district medical officer to the board of guardians for many years. He was a very old member of the British Medical Association. Like so many Irishmen, he was devoted to horses, and in his younger days he was an active member of the West Essex Polo Club and was very fond of a day with the hounds. He retired from practice in 1914, having been in indifferent health for some years. Dr. Fowler was twice married, and is survived by two sons and five daughters.

We regret to record the death of Dr. William Percival Nelson, M.C., after a short illness, in his 28th year. He received his medical education at Birmingham University, and took the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond. in 1917. Immediately after qualification he joined the R.A.M.C. Special Reserve and went to France. He won the Military Cross in October, 1918, for his gallantry and devotion to duty in attending the wounded under a very severe bombardment. After having held the posts of house-surgeon and house-physician and resident medical officer at Birmingham General Hospital, he went into general practice at Coalville, Leicestershire; but his health, which had been undermined in the war, broke down, and he died at Carnarvon. He leaves a widow and one son.

Dr. W. Arthur Loxton, who died while bathing at Budleigh Salterton, Devon, was educated at Birmingham and took the diplomas of M.R.C.S., L.R.C.P. in 1887 and F.R.C.S.Edin. in 1896, and graduated M.B., Ch.B.Birm. in 1904. He was surgeon to the Birmingham and Midland Hospital for Skin and Urinary Diseases and medical officer to the Birmingham Venereal Clinic. He was an ex-president of the Midland Medical Society. He contributed a paper on the treatment of chronic gonorrhoea by antigonococcal vaccine to these columns in 1909.

We regret to record the death of Dr. Arthur Jukes Johnson, of Toronto, Canada, at the age of 73. He graduated M.D.Toronto in 1870; subsequently he spent a year at St. Thomas's Hospital, London, and obtained the diploma of M.R.C.S.Eng. In his early boyhood and student days he was closely associated with Sir William Osler, and as medical students they both used the same microscope. Dr. Johnson was pathologist to the Toronto General Hospital for some time, and was for many years recognized as the leading medico-legal expert in Ontario.

Medical News.

The annual meeting of Fellows and Members of the Royal College of Surgeons of England will be held at the College, Lincoln's Inn Fields, W.C., on Thursday, November 17th, at 3 p.m.

Sir George T. Beatson was presented on October 21st with his portrait in oils on the occasion of his retirement from active duties in connexion with the Scottish Branch of the British Red Cross Society, of which he was Chairman of Council and of the Executive Committee, performing valuable work, particularly during the war.

The annual dinner of the medical staff of the Central London Throat and Ear Hospital will take place at the Trocadero Restaurant, on Thursday, November 3rd, Dr. Wylie presiding.

A post-graduate course on the diagnosis and practical treatment of medical and surgical tuberculosis will be conducted from November 21st to December 11th at the Hospital for Sick Children and the Hospital Necker, Paris, by Professors Broca and Rénon. The fee is 150 francs, and further information may be obtained at the Faculty of Medicine, Paris.

After thirty-five years' existence as a weekly newspaper *The Hospital*, established and conducted by the late Sir Henry Burdett, has become a monthly journal under the title of *The Hospital and Health Review*. The first number of the new series was published on October 21st.

A holiday hostel for nurses and V.A.D. members will be opened at Folkestone on November 1st. It has been given and equipped by the Joint Council of the British Red Cross and Order of St. John for the benefit of those who have worked in the nursing services. In this work the Joint Council acts in conjunction with the United Services Fund, and together they administer funds remaining in the hands of the Navy and Army Canteen Board at the end of the war.

Founders' Day will be celebrated at the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., on Wednesday, November 2nd. A bazaar will be opened in the out-patient department at 3 o'clock by Countess Beauchamp, wife of the president of the hospital, and the wards will be open for inspection.

The annual meeting of the Women's Service Bureau was held at Liverpool on October 10th. This bureau works in co-operation with the Public Health Department, and provides outfits for expectant mothers unable to make such provision for themselves, and also provides helps to go daily to homes where the mother is temporarily laid aside; clothing is provided by it for necessitous children, and a workroom has been opened to provide a centre where garments can be made to be distributed among the children of the famine areas in Central Europe. Dr. Mary Scharlieb, who proposed the adoption of the annual report, paid a tribute to the pioneer work of the bureau, and especially congratulated it upon the idea of providing home helps. The honorary treasurer, Mrs. Graham, made an urgent appeal for subscriptions, and Dr. E. W. Hope, M.O.H. for Liverpool, also commended the work of the bureau.

Dr. Alexander Marmorek proposes to begin on November 21st, at the Institut Océanographique (195, Rue St.-Jacques), a course of sixteen lectures in English on experimental medicine and therapeutics. The first lecture will deal with the main lines of actual experimental therapeutics. Among other subjects will be the biological replacement of organs, and problems concerned with cancer, syphilis, tuberculosis, goitre, and diabetes. The last three lectures will deal with vaccines and serums, immunity, and predisposition in infectious diseases. Full details can be obtained on application to Dr. Marmorek at the above address.

Professor Ernesto Pestalozza has been elected president of the medical faculty of Rome.

The annual dinner of the past and present students of the Manchester University Medical School will be held at the Midland Hotel, Manchester, on Wednesday, November 9th, at 7 p.m. The President will be Dr. F. Craven Moore, and the Vice-Presidents Dr. D. Dougal, Dr. J. F. O'Grady, and Mr. J. Morley. Tickets, price 15s. 6d., can be obtained before November 5th from the honorary secretary, Mr. W. Geraghty, at the Medical School.

Dr. J. W. Edwards, Member of Parliament for Frontenac, has been given Cabinet rank with the new portfolio of Minister of Health, Immigration, and Colonization in the Federal Government of Canada.

Dr. S. A. Francisco has changed his surname by deed poll to Francis.

The 168th session of the Royal Society of Arts will be opened on Wednesday, November 2nd, at 8 p.m., when the Chairman of the Council, Mr. Alan A. Campbell Swinton, will give an address, illustrated by experiments, on wireless telegraphy. At a later date a paper on the work of the Industrial Fatigue Research Board will be read by Mr. D. R. Wilson, its secretary.

A Chadwick Lecture on dry rot of wood and sanitation will be given by Professor Percy Groom on Thursday, November 3rd, at 8 p.m., at the Royal Institute of British Architects, 9, Conduit Street. Admission is free.

The London County Council has written to the Senate of the University of London expressing the hope that the Senate and the Board of Education will consider the possibilities of the site at Holland Park before further action is taken to establish the headquarters of the University on ground north of the British Museum. The County Council pointed out that when the decision to go to Bloomsbury was taken it was not known that the site at Holland Park would be available, and that as the educational and town planning authority for London it is deeply interested in the matter. At its meeting on October 24th the Senate replied that the question could not, on its initiative, be reopened with the Government, but that if the Government wished to consider the Holland Park or any other site the Senate would be prepared to co-operate. The Senate, however, points out that the Bloomsbury property was conveyed to the Commissioners of the Office of Works on March 23rd last, and that a portion of the site is already occupied by a university building, the Institute of Historical Research, which has been presented to the University at a cost of about £20,000.

It has been decided that the gift of £20,000, recently made by Sir Edward Brotherton to the University of Leeds, shall be applied to the foundation of a Brotherton chair of bacteriology.

Professor Oskar Frankl, of Vienna, has been invited by the Royal Academy of Medicine of Dublin to deliver three lectures on gynaecology.

The Marcel Benoist prize, amounting to 20,000 francs, is awarded annually by the Swiss Government to the scientist of Swiss nationality or domicile who, during the preceding year, has made the most valuable contribution to science, particularly with reference to human life. This year the prize has been presented to M. Arthus, a French scientist domiciled in Switzerland, professor of physiology at the University of Lausanne, for his original work on anaphylaxis and immunity.

M. Picqué has been appointed to the chair of anatomy in the Faculty of Medicine of Bordeaux.

The Chartered Society of Massage and Medical Gymnastics, which came into existence in June, 1920, by the granting of a Royal Charter to the Incorporated Society of Trained Masseuses in amalgamation with the Institute of Massage and Remedial Gymnastics (Manchester), has issued its register of masseurs and masseuses to the date July 15th, 1921. The register includes those persons who hold the certificates recognized by the Chartered Society, and also those who hold the recognized certificates in medical gymnastics and medical electricity. The register gives, in addition to the names and addresses of those recognized, any additional qualifications which they may have registered, and includes not only masseurs and masseuses in Great Britain and Ireland, but a list of those who hold the recognized certificates in the British dominions and colonies and in foreign countries.

We are informed that a "Society for Constructive Birth Control and Racial Progress" has been constituted, with Dr. Marie Stopes as president; among the vice-presidents are Sir James Barr, M.D., Sir Arbuthnot Lane, Bt., F.R.C.S., and Sir Archdall Reid, K.B.E., M.D. It has a medical research council, of which Dr. Jane L. Hawthorne, Dr. George Jones, and Mr. E. B. Turner, F.R.C.S., are members. The objects of the society are stated to be: "(*a*) To bring home to all the fundamental nature of the reforms involved in conscious and constructive control of conception and the illumination of sex life as a basis of racial progress; (*b*) to consider the individual, national, international, racial, political, economic, scientific, spiritual, and other aspects of the theme, for which purpose meetings will be held, publications issued, research committees, commissions of inquiry, and other activities will be organized from time to time as circumstances require and facilities offer; (*c*) to supply all who still need it with the full knowledge of sound physiological methods of control."

The annual Venison Dinner was held at Kingston-on-Thames on October 19th, when a distinguished company assembled on the invitation of the Mayor (Dr. W. E. St.L. Finny). Sir Charles Burge presented to the Mayor and Mayoress a silver cradle in commemoration of the birth of a daughter during their year of office. The Mayor, in expressing thanks for the gift, recalled that the last occasion on which such a presentation had been made was in 1876, and both the baby of forty-five years ago, and the son of Lord Midleton, who had made the former presentation, were present on that evening.

Sir John Arthur Godwin, merchant, of Grassington, Yorks, who died in April last, has bequeathed £500 to the Bradford Joint Hospital Fund. The Bradford Royal Infirmary is to receive 20 per cent. of the ultimate residue, amounting to between £70,000 and £80,000, provided that this institution shall not have been taken over by the Bradford Corporation or maintained out of public funds. The Bradford Royal Eye and Ear Hospital, the Bradford Children's Hospital, and the Bradford Cancer Home are each to receive 6 per cent. of the residue.

Letters, Notes, and Answers.

As, owing to printing difficulties, the Journal *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

Original articles and letters *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal.

The postal address of the British Medical Association and British Medical Journal is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the British Medical Journal, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscra, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

Dentifrices.

R. W. M.—The reaction of a dentifrice, whether alkaline or acid, does not seem to be a matter of importance. A weak free acid or alkaline dentifrice does no harm; it is food debris, constantly in contact with the tooth, and acid owing to decomposition that does the initial harm. The object of using a dentifrice is to cleanse the teeth more effectively; for this purpose soap is probably better than anything, and is the basis of many tooth powders and dentifrices.

Fleas.

"A. B. S." writes: I am engaged in a large industrial practice, and fleas are very numerous in the beds of my patients and on the floor mats, etc. They get on to my person to the number of two to three a day. This, I am afraid, is unavoidable; but when they begin to bite, each bite mark soon rises up into a wheal (like urticaria) about half an inch in diameter, roughly circular and intensely itchy. The wheal persists from twenty-four to forty-eight hours and then subsides. I wish to know whether there is a method of immunizing myself against such a reaction from a flea bite? But as prevention is better than cure, perhaps some of your readers might be able to help with ideas to prevent the fleas getting access to the skin, or at least prevent them biting and driving them off the body again. Of course, wearing breeches or some similar dress would do, for I am convinced that most of the fleas gain access to my skin through the bottoms of my trousers. But such a dress I do not care to adopt in my professional work. Nor do I wish to envelop or pervade myself with some aromatic smelling substance alleged to keep the pests at bay.

*** There is a belief that the regular ingestion of sulphur by the mouth keeps away both mosquitos and fleas. This belief, Dr. Castellani tells us, exists among planters in Ceylon; but in his experience, it is not well founded. Of external applications camphor and menthol are probably the best.

Income Tax.

"A." takes a practice, selling one-third share, and asks how his liability is calculated.

The net profits *of the practice* should first be ascertained for each of the three previous years. The new firm is assessable on that amount, and "A.'s" personal liability is the tax attributable to two-thirds of the gross assessment.

"Practitioner" inquires as to the deductions to be claimed for a maid-servant and for motor expenses. The inspector of taxes objects to allowing the full cost of one maid-servant, and wishes to deduct £50 from car expenses for private use.

*** It is impossible to lay down any rule for determining the proportions applicable to private use; it must clearly depend on individual circumstances. In the case of the maid-servant, the cost of the cleaning the surgery and waiting rooms and of attending to the door are obviously professional expenses, but in so far as the maid's time is spent on "making her master's bed and attending to the requirements of the bedroom" and laying and waiting at the table, she is doing "private" work. But whether that would fairly represent "one-half" of her total duties cannot be stated.

LETTERS, NOTES, ETC.

The Degree of M.D. Brux.

Dr. Arthur Haydon (41, Buckland Crescent, N.W.3), Honorary Secretary of the Brussels Medical Graduates' Association, has received the following letter from the Foreign Office, dated October 10th, 1921: "I am directed by the Marquess Curzon of Kedleston to inform you that His Majesty's Ambassador at Brussels has received a note from the Minister for Foreign Affairs stating that no privilege has been withdrawn from British and Colonial students who have obtained a degree of M.D. at the Free University of Brussels. As regards the future, the university authorities have decided, in order to promote the relations of the university with foreign countries, that all foreign students should be called upon to fulfil the same regulations, and that they therefore cannot concede special privileges to British and Colonial students. The latter may still enter their names at the university under the conditions laid down on page 13 of the *Règlement Organique*, and on page 2 of the *Règlement pour la Collation des Grades Scientifiques*." This appears to mean that the regulations regarding the entrance examination in elementary subjects and the period of residence at the university are to be adhered to, but Dr. Haydon hopes shortly to be in a position to supply further particulars.

"Another Cure for Consumption."

"R. B. G." writes: Under the above heading (July 23rd) a Punjab correspondent wrote that eating monkey's flesh was believed in India to cure consumption by causing vomiting, etc. In Scotland a popular belief prevailed that the mere act of vomiting would cure the disease, and I remember a mother of a phthisical son telling me, a number of years ago, that she took her son "for a sail down the watter," and as the weather was rough she noticed him "gang near the side o' the boat, and was rale proud to see him spewin'." Poor fellow, needless to say the operation did not have the desired effect, as he died not long after, his end probably accelerated by the "cure" his well-intentioned mother had provided for him.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 27, 30, 31, 32, 33, and 34 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 28, 29, and 30.

The appointments of certifying factory surgeons at Eyam (Derby) and Rufford (Lancaster) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£ s. d.
Six lines and under	0 9 0
Each additional line	0 1 6
Whole single column (three ... ns to page)	7 10 0
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Whole page	20 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safe-guarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTY-NINTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Newcastle-on-Tyne, July, 1921.

SECTION OF OPHTHALMOLOGY.
Professor J. D. Wardale, M.B., B.S., President.

DISCUSSION ON THE CAUSES AND PREVENTION OF BLINDNESS.

OPENING PAPER
BY
N. BISHOP HARMAN, M.A., M.B.Cantab., F.R.C.S.Eng.,
Ophthalmic Surgeon to the West London Hospital, the Belgrave Hospital for Children, and the National Institute for the Blind.

THE CAUSES AND PREVENTION OF BLINDNESS:
Based on an Analysis of 4,238 Cases.

We need a sound knowledge of the causes of blindness else we cannot take effective steps to prevent blindness. We need to prevent blindness because of the cruel hardships it entails upon the blind person, and because a blind person is directly or indirectly a heavy charge upon the resources of the community. To present a true picture of the causes of blindness we should need a recurring census of the blind taken by expert practitioners. Failing that, I present figures which will, I think, give such a fair impression of the causes as to allow of just deductions as to the measures for prevention. My figures come from three sources: (1) A home for blind infants; (2) the schools for the blind and partly blind of the London Education Committee; and (3) private case-books. They relate to 4,288 persons in all.

1. Blind Infants.

The home for the blind infants is under the care of the National Institute for the Blind. It has only been recently opened. So far there have been presented for examination sixty-three babies. They come from all parts of the country, all are quite young, mostly babies in arms. The causes of blindness found may be grouped under: I. Surface inflammations; II, inflammations within the eyes; III, congenital defects.

Group I.—*Surface Inflammations of the Eyes.*

This group contains 36 cases. Of these, 31 are due to ophthalmia neonatorum, and 5 to purulent conjunctivitis of later months. Of the 5 latter cases, one lost the sight during the third week of life; the cause is not known, but from the history I should judge that there had been a streptococcal infection and a particularly destructive inflammation. Scarlet fever, diphtheria and measles accounted for one each, and one was due to an unknown cause.

Group II.—*Inflammations Within the Eyes.*

This group contains 7 cases. Two were due to iridocyclitis of great severity—one to cerebro-spinal meningitis, and the other probably to the same disease. Five were due to optic atrophy or defect—one followed meningitis; another probably arose from the same cause, for there is now hydrocephalus; two appear due to intracranial defect, and one to a cause unknown.

Group III.—*Congenital Defects.*

The cases number 19; the conditions are as follows:

Anophthalmia	2
Microphthalmia	4
Microphthalmia with congenital cataract	3
Congenital cataract	3
Albinism	1
Nystagmus	1
Buphthalmia	1
High myopia	1
Malignant disease (glioma)	2
Defect of the cornea	1

The cataracts have been operated upon, but at best vision will be very poor. The case of high myopia is of interest; in the right eye myopia is 12 D., left 5 D., there is rapid nystagmus, fixation is doubtful; the myopia was found to exist at the age of nine months.

There is one case of blindness due to accident, the child was burned, and both eyes were lost.

Table of Blindness.

Cause.	Number.	Percentage.
Purulent conjunctivitis (36):		
Ophthalmia neonatorum	31	49.2
Of later months	5	7.94
Inflammations within the eye	7	11.11
Congenital defects	19	30.14
Accident	1	1.6
Total	63	100

2. Blind or Partly Sighted School Children.

For the past seventeen years I have had oversight of a number of London schools for the blind. There are six day centres for the blind accommodating 211 children and two resident schools for the older children accommodating 116. There is a large and growing provision of "myope classes" for the partially sighted in thirty-three centres, accommodating 660 children. Prior to the admission of a defective child the state of the eyes and the body of the child is ascertained and recorded. During the period of attendance at school the eyes are examined periodically, so that there is ample opportunity for the revision or confirmation of the diagnosis. The total number of blind and partially sighted children brought into this inquiry is 3,300. The conditions responsible for their state may be placed in four groups:

I. Injury or destruction of the cornea consequent on surface inflammations.
II. Inflammation within the eyeball or optic nerve.
III. Congenital defects of the eyes.
IV. Myopia.

Group I.—*Surface Inflammations.*

This group contains 699 children, and the causes of blindness are as follows:

	Blind.	Partially Sighted.	Total.
(*a*) Ophthalmia neonatorum	299	68	367
(*b*) Purulent conjunctivitis of later years	69	21	90
(*c*) Phlyctenular keratitis	66	176	242
			699

(*a*) Ophthalmia neonatorum is responsible for by far the greater number of cases of blindness, and in particular for cases of total blindness.

(*b*) The cases of purulent conjunctivitis occurring in later months or years of child life were due to a great variety of causes, as follows:

Causes unknown—that is, date of origin known, but actual cause not ascertainable—	30
Eczema and streptococcal infections	7
Scarlet fever	8
Measles	18
German measles	1
Meningitis	6
Diphtheria	3
Erysipelas	1
Pneumonia	2
Gonorrhoea	2
Small-pox	4
Chicken-pox	1
Whooping-cough	2
Trachoma	4

The two cases of gonorrhoeal conjunctivitis demonstrate the danger to other members of the community of babies suffering from ophthalmia neonatorum. One is a girl whose motherliness was exercised towards an affected baby; she caught the disease, the corneae ulcerated, and she is blind for life; the baby died. The other is a member of a family of three girls; the youngest, a baby,

had the disease, the whole family contracted it, besides suffering from vaginitis; the eyes of one of the children were damaged sufficiently to necessitate her being educated in a blind school.

(*c*) Amongst the cases of phlyctenular keratitis were 60 showing active nose, ear, or throat trouble, and 8 with tuberculous lesions.

GROUP II.—*Inflammation Within the Eyeball.*

This group contains a great variety of cases—inflammations of the cornea, of the iris, of the choroid, and of the optic nerve—but it is convenient to place them in two categories, according as the inflammation affected (*a*) the anterior half of the eye, or (*b*) the posterior half of the eye. The distinction is arbitrary but convenient.

(*a*) Those affecting the front half of the eye total 413 cases, of which 284 were blind and 129 partially sighted. By far the greater number are due to interstitial keratitis of congenital syphilitic origin; there are a few only of iritis or irido-cyclitis.

Interstitial keratitis—	
Due to congenital syphilis	362
Evidence of syphilis not certain	24
Due to tubercle, etc.	13
Iritis or iridocyclitis—	
Due to congenital syphilis	7
Evidence of syphilis not certain	5
Due to cerebro-spinal fever	2
	413

(*b*) Of those inflammations affecting the posterior half of the eye by far the greater number were due to a form of choroiditis known as "disseminated." This condition cannot be said to be diagnostic of syphilis, for other diseases are capable of causing the same or very similar conditions, but all the evidence goes to prove that these cases in children are overwhelmingly syphilitic in origin. With the choroiditis there is always more or less atrophy of the retina, and of the optic nerve, so that vision is gravely impaired. Closely associated with these cases are many cases of total optic atrophy.

This group includes 349 cases, of which 294 were blind and 55 partially sighted. Of these, 210 were definitely the subjects of congenital syphilis.

1. Disseminated choroiditis with or without optic atrophy:	
Of syphilitic origin	210
Syphilis not certain	19
2. Disseminated choroiditis or optic atrophy of which the cause was assigned to other effects than syphilis, or of which the cause was indeterminate:	
Optic atrophy without choroiditis, cause unknown	39
Ditto, post-febrile (scarlet fever 1, measles 1, diphtheria 1, influenza 1, unknown 12)	16
Ditto, following head injuries	4
Ditto, following meningitis	20
Ditto, following cerebro-spinal meningitis	6
Ditto, with grave mental defect	13
Optic atrophy, familial	7
Choroiditis, familial	4

(*c*) There is a small group of 157 cases which falls more or less into this main second group.

Injuries		43
Blind from sympathetic ophthalmitis	29	
Partially sighted—one eye lost, other defective	14	
Buphthalmia or congenital glaucoma		17
Blind	11	
Partially sighted	3	
Honeycombed teeth	1	
Hutchinsonian teeth	2	
Macular defects		37
Blind	32	
Partially sighted	5	
Congenital colobomata	11	
Deficiency	13	
Day blind	12	
Some evidence of syphilis	5	
Congenital nystagmus not including those with myopia)		58
Blind	17	
Partially sighted	41	
Double detachment of retina, cause unknown		2
Retinitis pigmentosa		39
Blind	34	
Partially sighted	5	
Sporadic cases	23	
Familial cases	14	
Sole child cases	2	
Evidence of syphilis	3	
Deaf mute	1	

GROUP III.—*Congenital Defects.*

This group contains 408 cases of great variety and interest. For the most part it is not possible to discover to what primary causes these congenital defects are due. Some few are hereditary—that is to say, the same defect is found repeated in the same family for two or more generations. This is particularly true of certain forms of cataract. Numerous pedigrees of this order have been published. The majority of these defects are, however, sporadic; they may appear in families whose other members are quite normal. In some instances there is a definite history of illness on the part of the parents, particularly of the mother before or during pregnancy; in some there is evidence of a syphilitic infection. Some few parents who are abnormal from one form of physical defect have produced children who suffer from another form of physical defect—for example, a father and mother both deaf and dumb but with good eyes have a family of five, of whom two are partially sighted by reason of congenital dislocation of the lenses.

(*a*) Albinism (blind 36; partially sighted 33)		69
Familial cases (syphilis 1)	22	
Sporadic cases (syphilis 2)	47	
(*b*) Defects of the crystalline lenses (blind 170; partially sighted 78)		248
Microphthalmia and cataract (syphilis 2)	18	
Ditto, hereditary	9	
Microcephaly and cataract (syphilis 2)	10	
Posterior-polar cataract (syphilis 4)	22	
Congenital cataract, varied types (syphilis 13)	101	
Lamellar cataract, post-natal (syphilis 3)	57	
Dislocated lenses, congenital (syphilis 1)	31	
(*c*) Varied defects of the globes and the accessory organs of vision (blind 66; partially sighted 25)		91
Aniridia	10	
Coloboma of iris and/or choroid	27	
Microphthalmia	25	
Congenital anophthalmia	3	
Glioma retinae	3	
Defective muscles	2	
Defective muscles and face	3	
Extreme hypermetropia	4	
Oxycephaly	11	
Conical cornea	2	
Hereditary corneal opacities	1	

(No evidence of syphilis in this subgroup.)

GROUP IV.—*Myopia.*

The degree of myopia cited is the mean of the four meridians of the two eyes—for example, — 10 D. sphere with — 3 D. cylinder in one eye, with — 8 D. sphere and — 6 D. cylinder in the other, give a mean of 11 D.; this is the only convenient way of summarizing such cases, although the method has the disadvantage of not showing the additional defect of vision caused by a high degree of astigmatism.

Cases of High Myopia.

Complicated cases producing blindness more or less severe	34
Myopia with nystagmus, vision very bad	20
Myopia 5 to 10 dioptres	509
Myopia 10 to 15 dioptres	592
Myopia 15 dioptres and over	80
Total	1,235

No evidence of syphilis in the group; there are a number of cases of myopia with interstitial keratitis and disseminated choroiditis of syphilitic origin; these are counted with the latter diseases.

Summary of School Cases.

The provision of myope classes, and the knowledge of their provision by the extended school medical service and by the hospital surgeons, has led to the report of many cases of defect which in earlier years would never have come under review. The new conditions prevent the comparison of this return with my previous statistics[1] in the gross, some adjustment is needed to bring them into reasonable relation. I propose, therefore, to adjust these latest returns so as to put them into as nearly the same position as those of former years, and in doing this to take into particular account the future prospects of the children.

In the table that follows, the words in brackets (all) or (bad) which succeed the name of the condition or disease producing blindness indicate whether the total number of

those so affected are included in the count or only the worst cases, such as myopes who could not be dealt with in a myope class because of the gravity of their defect.

Tabular Statement of Causes of School Blindness, with Comparison between 1913 and 1920.

Disease.	Number.	Percentage 1920.	Percentage 1913.	Gonorrhoea.	Syphilis.	Syphilis not Certain.
Ophthalmia neonatorum (all)	367	19.79	14.17	367	—	—
Purulent conjunctivitis of later years (all)	90	4.85	4.57	2	—	—
Phlyctenular keratitis (bad)	66	3.56	3.45	—	—	—
Interstitial keratitis (all) ...	399	21.51	19.18	—	359	24
Iridocyclitis (all)	14	0.76	0.54	—	7	5
Optic atrophy with or without disseminated choroiditis (all)	349	18 81	20.18	—	212	19
Buphthalmia (all)	17	0.92	1.54	—	5	2
Sympathetic (all)	29	1 56	1.45	—	—	—
Macular defects (all) with congenital nystagmus (bad)	55	2.91	2.09	—	5	—
Retinitis pigmentosa (all) ...	39	2.10	1 81	—	3	—
Detached retina of both eyes, cause unknown	2	0 10	—	—	—	—
Albinism (bad)	36	1.94	2.25	—	2	—
Lens defects (all)	248	13.37	12.90	—	25	—
Other congenital defects (all)	91	4.90	4.51	—	—	—
Myopia (bad)	54	2.91	1.18	—	—	—
Totals	1,855	100.00		369	618	50
Percentages				19.89	33.31	2.69

1913 and 1920.—The difference between the returns of these two periods is clear when the percentages of the four main classes are set out.

Disease.	1913.	1920.	Rise.	Fall.
Congenital defects	25 06	27.13	2.07	—
Ophthalmia neonatorum ...	24.17	19.79	—	4.38
Syphilitic inflammation ...	29.70	31.43	1 73	—
Miscellaneous	20.47	21.65	1.18	—

It would appear that the fall in the percentage of cases of ophthalmia neonatorum is a real fall, and that the apparent small increases of the three other groups are merely proportionate increases due to the fall in the second factor.

3. Blindness in 925 Persons of All Ages as Ascertained in Private Practice.

The desirability of securing data of blind persons of all ages led me to investigate a series of my own private cases. Some 5,000 were examined seriatim. The patients were of all classes—well-to-do, middle class, and some artisan, with an inclusion of a certain number of persons, mainly of the working classes, referred for examination and report by the National Institute for the Blind. This inclusion perhaps swells the number of the blind beyond the usual for private practice. The patients were of all ages, and, as may be expected, adults were in the majority; 925, or about one fifth of all these patients, were blind or partly blind in one or both eyes; 603, or about one-eighth, were blind or partly blind in both eyes.

In the following table the degree of defect of the sight is noted in five columns, as follows: 1, One eye defective. 2, One eye blind. 3, Both eyes defective. 4, One blind, one defective. 5, Both blind. In taking the totals and percentage only those in the last three categories are included. Categories 1 and 2 are given for purposes of comparison, but are not included in the count.

Disease.	1.	2.	3.	4.	5.	Total Cases.	Per Cent.
Congenital defects						34	5.64
Dermoid of cornea	—	1	—		—		
Coloboma of uvea	—	—	—	1	—		
Albinism	—	—	—		1		
Nystagmus, macular defects	—	—	3	2	2		
Microphthalmia	—		—		2		
Dislocated lenses		—	1	1	3		
Lenticonus		—	1	—	—		
Cataract, various	1	4	4	4	6		
Cataract, lamellar	—	—	4	1			
Accidents						20	3.32
Casual in civil life (birth 7) ...	5	39	—	4	6		
War	—	6	—		1		
Industrial	3	15	2	4	3		
Purulent conjunctivitis						34	5.64
Ophthalmia neonatorum ...		3	1	3	10		
Later years (gonorrhoeal) ...	—	6	2	—	9		
Trachoma	—	—	8	—	—		
Essential shrinking					1		
Corneal diseases						51	8.46
Conical cornea	4		6	1	2		
Superficial keratitis	2	6	6	2	1		
Hypopyon keratitis		2	—	2			
Interstitial, syphilitic ...	—	4	3	11	10		
Interstitial, tubercle	1	—	—	2	1		
Interstitial, leprosy			—	1	—		
Sclerosing keratitis		1	—		3		
Cataract, senile	4	6	44	28	17		
Cataract, diabetic	—		1	1	3	94	15.09
Iritis and iridocyclitis						56	9.29
Syphilitic	1	5	1	3	11		
Various (with tubercle 6, gonorrhoea 5, cerebrospinal 2)	2	22	11	17	13		
Vascular diseases						49	8.12
Vitreous haemorrhages ...	—	1	—	—	1		
Embolism, thrombosis ...	—	6	—	1	1		
Retinitis, renal	2	4	3	5	11		
Retinitis, diabetic		—	3	3	7		
Retinitis pigmentosa ...			5	2			
Detached retina (10 with myopia less than 10 D.)		11	—	6	8	14	2.32
Choroiditis						77	12.77
At macula	1	13	3	3	6		
Central senile	2	4	17	9	13		
Disseminated, syphilitic ...	2	2	1	2	12		
Disseminated, other causes		1	2	1	8		
Optic atrophy						38	6.3
Various causes (syphilis 6)		7	5	2	11		
Leber's	—	—	—	—	2		
Tabes			1	2	8		
Pituitary disease	—	3	2		—		
Hemianopia			4		1		
Glaucoma						55	9.12
Buphthalmia	—			1	2		
Chronic glaucoma	3	3	13	12	12		
Acute glaucoma	1	5	2	4	6		
Malignant	—	2			2	2	0.35
Myopia over 10 D. (detachment of retina in 11 cases)	6	1	35	30	19	84	13.93
Squint, one eye amblyopic		55	—	—	—		
Tobacco amblyopia (not counted in total)			7				
Total						603	100.00

Some notes may be added on the several categories of disease or injury causing blindness.

Accidents.—It is noteworthy that casual accidents, occurring in civilians in their ordinary life and unconnected with their occupation, accounted for just twice as many cases of damaged sight as did industrial accidents (casual 54, industrial 27). For the most part the casual accidents destroyed one eye only, the other remaining healthy, so that most of the patients were able to carry on with their usual occupation. The severe cases followed by blindness numbered 10, nearly the same as the industrial, 9. There were 3 cases of sympathetic ophthalmitis after casual accidents and the same number after industrial. War cases were few in number, probably owing to the special arrangements made for blinded soldiers. Injuries at birth head the list of individual cases of casual blindness and number 7. In children missiles, whether thrown by hand or discharged from some form of toy gun or catapult, were the most prolific cause of loss. In later years amateur wood-chopping accounted for more cases than any other single cause. The variety of other causes responsible for loss was very wide. There were two cases of lost eyes from injury by broken spectacles;

one boy ran into a gatepost in a fog, and one woman stooped in a dark room and struck against a chair-back; in each case a spectacle lens was broken and driven into the eye. Considering the large number of persons of all ages who habitually wear glasses, these accidents are remarkably few, and they are probably more than counterbalanced by the cases where spectacles have saved eyes from direct injury. The causes of industrial accidents were also very varied:

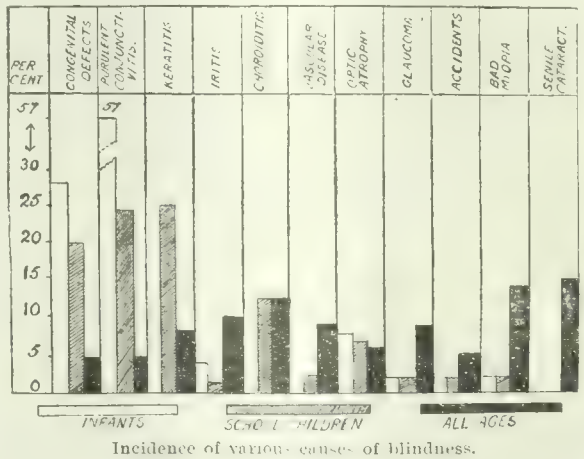
Decarbonizing motor cylinder, 1; waiter injured by soda water bottle cap, 1; engine gauge burst, 1; blow lamp burst, 1; driving belt break, 1; stonemasons, 2; caustic splashes, 2; acid splashes in process block making, 3; laboratory worker acid splash, 1; borax scale in brazing, 1; rivet, 1; tin strip, 1; grindstone burst, 1; steel splinters in lathe workers, 4; explosion in cartridge factory, 1; coal miner, 1; thorns in gardening, 3; septic tooth (dentist extracting tooth), 1.

Of these 27 cases at least 10 belong to the preventable order—that is, the stonemasons, process workers, steel workers, and cartridge maker; the last named accident was caused by a direct breach of the factory rules.

Conjunctivitis.—Only one case of direct infection of the eyes by gonorrhoeal discharge in an adult was found; the rarity of this severe affection compared with the frequency of urethral gonorrhoea is remarkable. The trachoma cases were mostly old cases where the disease was arrested but the sight badly damaged.

Corneal Diseases.—Of all forms of diseases of the cornea responsible for blindness, interstitial keratitis, with or without iritis, and due to congenital syphilis, heads the list, accounting for 28 cases in 72.

Senile Cataract. — Senile cataract accounted for more blindness in this collection than any other disease. No doubt many of the cases would be susceptible of amelioration if and when operation could be performed, but at the time they were industrially blind. The seventeen blind in both eyes include several who had been operated upon successfully by myself or other surgeons, but who were found after operation to suffer from central senile choroiditis; operation secured for them some freedom of movement, but owing to degeneration of the retina they could not see definite objects or read. These cases are very disappointing to the surgeon and to the patient, and perhaps do more to discredit operation in the popular mind than the less frequent cases of operative failure or post-operative inflammation. Unfortunately the condition cannot be foreseen.



Incidence of various causes of blindness.

Iritis and Iridocyclitis.—Of known causes of iritis syphilis heads the list. Syphilitic iritis produced total blindness nearly as frequently as all the other causes together. Cases classed "various" include a great variety of approximate causes, such as those arising from septic states within the body, tubercle, gonorrhoea, rheumatism, gout, pyorrhoea, colon disease, and bladder infection in nearly equal proportions. There were several in which no cause could be assigned with any certainty.

Vascular Diseases.—Blindness due to vascular diseases, such as kidney disease and diabetes, was not frequent when the incidence of these general diseases is considered.

One of the cases in this group illustrates the danger of the "one-eyed" man. A man with one eye practically blind from old squint lost the other completely by embolism of the central retinal artery. (Two other cases of one eyed men in the return lost the remaining eye, one by accident, the other by disease.)

Detachment of the Retina.—In this group are 25 cases, of which 14 were blind.

The causes of the detachment were many. Ten occurred in subjects of myopia of less than 10 D.; other cases were due to the effects of antecedent inflammation of the eye causing vitreous changes; some to alleged but unproven injury; several to attacks of inflammation secondary to vascular or septic disease; and in some no cause could be found. Besides these there were 11 other cases of detachment in the myope group and one double detachment due to accident. So that there were in all 37 cases of detachment.

Choroiditis.—The frequency of senile decay of the retina and choroid at the macula was remarkable. There were 45 of these cases in a total of 109. The condition is irremediable, and probably unpreventable, but the subjects of it are not so hapless as those blind from other causes, for they can move about by sight with comparative freedom, even though the sight of definite objects and of reading is lost to them. I had one patient, a parson, who did his full duty; his parishioners did not know of his blindness, a good memory enabled him to "read" lessons and prayers, whilst his keen observation enabled him to recognize his parishioners by gait or tricks of manner.

Optic Atrophy.—Syphilis headed the list of primary causes of optic atrophy, being responsible for nearly one half of the cases, including 6 cases of simple atrophy and 11 of tabes dorsalis.

Glaucoma.—It is noteworthy how much more common was the chronic form of glaucoma than the acute, and how much more dangerous were its effects. Even after successful operation gradual decline of vision was common.

Malignant Disease.—Malignant disease was a rare cause of blindness. Of the two totally blind, one was a child with double glioma of the retina, the other a man with sarcoma in one eye; his other eye had been lost earlier by embolism of the retinal artery.

Myopia.—In this group only those with myopia of 10 dioptres or more were included. They numbered 99. Of these, 8 had good vision, 6 defect of one eye, and one blind of one eye; 84 had more or less bad vision, and were blind for industrial purposes. High myopia, therefore, comes second on the list, as a cause of blindness, after senile cataract, and unlike the latter its effects are irremediable. The causes of the failure of vision were mainly three: vitreous degeneration and opacities, detachment of the retina, and choroidal degeneration. Of the three, the last was the most frequent. The changes seen were patches of gross degeneration, or much more frequently finer degenerative changes more nearly like a coarse form of central senile choroiditis. Not infrequently the final loss of central vision was due to a haemorrhage into the threadbare tissue of the macula. These figures of the high incidence of blindness amongst high myopes form a strong plea for the increase of preventive educational methods, such as the myope class amongst children, so that they may learn to use their eyes with discretion; and also for care in the selection of suitable work for them when they leave school; too many of these persons with high degrees of myopia and blindness had been occupied in clerking.

Squint.—The risk of the "one-eyed" has been commented upon. The loss of central vision from squint can be prevented in many cases if they are treated early. There is still a belief abroad that children "grow out of squint," but they do so with the loss of an eye. They become ineligible for the services, for many forms of industrial employment, and there is an added risk from accident.

Tobacco Amblyopia.—The number of cases of chronic poisoning and loss of vision from the excessive use of tobacco was small. The disease is remediable; those seen were referred by other doctors, and since they were not seen a second time it is assumed that they were cured by treatment.

The Incidence of Venereal Disease.—Cases of ophthalmia neonatorum numbered 17; assuming these severe cases to have been gonorrhoeal, they make with the one case of gonorrhoeal conjunctivitis in an adult 18, or 1.95 per cent. of the gross total of 925; including the 5 cases of gonorrhoeal iritis the total percentage equals 2.48.

Cases of disease due to syphilis—keratitis, iridocyclitis, choroiditis, optic atrophy, and tabes—numbered 85, or 9.19 per cent. of the gross total. These syphilitic cases form the largest group of preventable disease in this all-age selection of blind persons.

4. Causes and Prevention.

1. The difference in the incidence of the various causes of blindness in these three sets of cases under examination is clearly shown in the accompanying chart.

(*a*) In infancy the causes of blindness are few, so the

percentage of these causes is high. Congenital defects and purulent conjunctivitis account for nearly all, other causes are few and the number of cases insignificant.

(*b*) Amongst school children other conditions come into account. First, the death rate of infancy will have reduced the number of cases of blindness in infants. Secondly, other causes of blindness will show their effects, particularly those arising from constitutional disorders. So that the startlingly high percentage due to ophthalmia neonatorum is reduced, and takes second place to the larger number of blind cases due to congenital syphilis.

(*c*) In the third group of persons of all ages, infants, children and adults, there are again two facts that modify the conditions found for infants alone, or children alone. The age proportion of the population comes into full play, the greater number of adults reduces the infant population to its correct position, and correspondingly the incidence of the several causes of blindness. But other causes of blindness which affect mainly or only adults—accidents, vascular disease, glaucoma, gross myopia, and senile cataract—swell the total blindness and correspondingly diminish the proportion of blindness of infancy or childhood.

I suggest that the return of the third set of evidence presented, from all ages, gives a fair picture of the causes of blindness occurring in the population of this country generally. Minor differences may appear in different areas due to special industrial conditions, but these will hardly be likely to affect the main proportions.

2. Examination of popular literature indicates that wholly erroneous beliefs are held as to the causes of blindness owing to the laxity with which statistics are quoted. Looking at my returns one would be justified in stating that 50 per cent. of the blindness of *infancy* is due to the preventable disease ophthalmia neonatorum, but wholly wrong in stating that 50 per cent. of blindness was due to this cause. Again, it would be correct to state that 50 per cent. of the blindness in *school children* is due to parental venereal disease, but not that 50 per cent. of blindness is due to venereal disease; yet I have seen this statement in print, based on an incorrect quotation of my 1913 returns. The true figures for "all ages" are seen to be blindness from gonorrhoeal disease 2.5 per cent., from syphilis, 9 per cent.

3. Prevention. If we examine the tale of the causes of blindness we shall see that there are certain causes over which we can have little influence, and others which are well within our power of prevention, possibly of extinction.

(*a*) *Congenital Defects.* Too little is known of the primary causes of sporadic cases to permit of useful suggestion. A small number are hereditary: where the defect is serious marriage and parenthood is undesirable.

(*b*) *Ophthalmia Neonatorum.*—Prevention of the disease can be secured by the treatment of the vaginal disease of the expectant mother; this is the one and only certain means of prevention. And it is within our power to accomplish this desirable end. Measures to check the effect of the infection in infants have reached a high measure of success. Prophylaxis and notification have done much to this end. Short of a stiffening up of the procedure in certain districts of the country these measures have accomplished all that they can. What is now needed is the establishment of such medical arrangements that diagnosis and treatment can be made as swiftly as the fire brigade can be brought in when there is an outbreak of fire in our homes. I would like to see established in the centre of every convenient area an ophthalmia neonatorum unit. There should be a small hospital to which affected mothers and infants could be transferred for treatment. To this there should be attached a mobile diagnostic unit—a motor car fitted with a small laboratory equipment with an expert ophthalmic surgeon and nurse; the unit should be available for immediate attendance at any home where a suspected case occurs. Midwife or doctor in attendance should notify the initial symptoms of any case, so that the mobile unit could proceed to its investigation without delay. If the surgeon should find the diagnosis proven it should be possible to remove the mother and infant to the hospital for treatment forthwith. The benefits of prompt removal of affected cases has been demonstrated in Liverpool. A similar hospital has been established in London, but its benefits have been almost nullified owing to the lateness of the transfer of cases. I believe doctors would welcome the possibilities of prompt assistance in diagnosis, for cases are not numerous, and accurate diagnosis is only possible where there is constant handling of these cases. The costs would be little compared with the benefits in the reduction of blindness.

(*c*) *Purulent Conjunctivitis in Later Years.*—The number of cases is so small and the variety of primary causes so large that it would appear that we have here something like an irreducible minimum. It is remarkable that trachoma is almost negligible as a cause of blindness in this country.

(*d*) *Phlyctenular Keratitis.*—The number of bad cases arising therefrom is small, but the number of damaged eyes is large. These cases are most certainly preventable. They are primary, due to social conditions—poverty, poor food, dirt. They are scarcely known amongst well-cared-for children. Treatment of relapsing cases cannot be effectively carried out unless there is a long period of efficient treatment in a high and dry country district. Recently arrangements have been made in London for the removal of cases occurring in school children to the Swanley Ophthalmia Schools in Kent, and we may expect good results from these measures.

(*e*) *Syphilis* is one of the great causes of blindness. It is certainly preventable. It rests with the success of the centres for the treatment of venereal diseases. If parents were effectively treated before procreation, cases of blind children from this cause would be extinct. There is no reason why we should not attain this success.

(*f*) *Industrial Accidents.*—Blindness from this cause is likely to show variation in different parts of the country. It will be high in industrial areas. Prevention is to be obtained by the better safeguarding of machinery and the use of goggles in all work where flying fragments are common. There is at present a prejudice amongst workers against goggles. A large part of this is, I believe, due to the atrociously bad fit of the common run of these protectors. Difficulties from sweat and steam there will be always, but if to these there be added a fit so uncomfortable that the face is hurt and vision obscured it is no wonder that goggles are objected to. Well-fitting goggles suited to the particular industry, and the extension of the propaganda of the "Safety First" Association, will go far to popularize their use and reduce accidents. Introduction of a bonus scheme into workshops whereby workers gained by the reduction of accidents would go far to stimulate healthy views on the desirability of workers protecting themselves. In some work, such as in coal mines, where accidents are common and sepsis therefrom dangerous, protectors are impossible of use; in such cases first-aid stations, where foreign bodies can be promptly removed and risks of infection averted by irrigation, are needed urgently.

(*g*) *Myopia.*—This is no place to discuss rival theories of the causes of myopia. Purely by way of convenience we are accustomed to speak of two divisions—a "school" or "acquired" myopia, and a "congenital" or "pernicious" myopia. School myopia is of low degree and does not figure in this return. This low degree myopia is probably due to many causes acting singly, consecutively, or conjointly in this or that case. A hereditary softness of the coat of the eye, softness of the body due to illness, difficulty in seeing owing to astigmatism, habitual close work under bad conditions of light, position, and health, are each and all undoubtedly causes severally or jointly in the production of myopia of low degree. Of all of these the last, the conditions of work (duration of close work, lighting at work, position at work, and the state of health whilst at work, for child and adult) is the one factor that is in our power to influence. For that reason it is wise to concentrate on the possible. But the cases of myopia in the return of this paper are not these. The children of the myope classes are high myopes, and some are found at such an early age that environment cannot be responsible for their onset. The figures show that the maximum incidence ranges between 10 and 15 dioptres of myopia—a very high figure. It is obvious to the least observant that even when provided with suitable glasses these children see with difficulty both distant and near objects. Further, there is evidence that these stretched eyeballs are frail, and that there is an ever-present risk of damage or degeneration of the retina, and that this risk is increased by strain. The myope classes are established to meet these two difficulties; to provide these handicapped children with a scheme of education which can be undertaken with least strain to the eyes, and to teach them such methods of work as may, by becoming habitual, even after school years, help to prevent the dangers that threaten. This influence is made conspicuous when the child leaves school by assisting arrangements for obtaining suitable work, a matter of especial moment when we note

how high a proportion of adults with high myopia and retinal degeneration have been employed as clerks. The scheme of the myope class is very simple. It is a reversion to the times when the teacher was supreme in the class and not books and paper.[2] There are thirty-three of these classes in London; classes have been established in Bolton, Birmingham, Bradford, Leicester, Leeds, Liverpool, Stoke-on-Trent, Nottingham, Exeter, Brighton, Bristol, Sheffield, Walthamstow, in some towns of Scotland, in several of the United States of America, and a special committee has reported in favour of establishing them in Canada. There is room for the establishment of more of these classes particularly in urban areas; it would be a genuine measure for the prevention of blindness.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, August 29th, 1914. [2] The curriculum of the myope class was detailed by the writer in a paper, "Sight-saving Schools," *School Hygiene*, February, 1919.

DISCUSSION.

Dr. J. ALEXANDER WILSON, O.B.E. (Glasgow) said: The paper read by Mr. Bishop Harman represents much hard work, and embodies a large amount of information. Mr. Harman's sources of information, however, are not adequate for a correct estimate of the prevalence of blindness. We require full knowledge of its prevalence at all ages. His second and largest division is composed of 3,300 school children, and among these there are 1,235 cases of myopia, with from 5 dioptres upwards. This is an extraordinary importation into a paper on blindness. If moderate and fairly high degrees of myopia fail to respond to the appropriate correction, then we suspect the presence of some condition other than myopia. A small percentage of myopia is due to keratitis and the remainder to heredity. In my opinion school work does not produce myopia. Hypermetropia is much more prevalent among scholars, and these should be considered together.

Before the passing of the Blind Persons Act, 1920, the Local Government Board for Scotland endeavoured, in 1918, to compile registers of blind persons in Scotland. The definition of blindness adopted by the Local Government Board was "Too blind to perform work for which eyesight is essential"; but their form of inquiry distinguished between the following classes: (*a*) total blindness, (*b*) can distinguish light, (*c*) prevents performance of work for which eyesight is usually considered necessary. An advisory committee reported that there are in Scotland 4,528 blind persons, and that of these the larger half are over 50 years of age. The number of blind children is only 377.

We need some unification of standards before we proceed to classification. The table of blindness published many years ago by Fuchs in his Prize Essay contains interesting groupings, somewhat out of date, perhaps, but still full of interest. Venereal disease was then and still is the chief cause of blindness.

Mr. E. H. E. STACK (Bristol) said: Mr. Bishop Harman has put together a most useful paper which gives an excellent basis for discussion. The sad note in it is the high percentage of defective vision and blindness due to venereal disease. I would like to ask him whether when he is publishing his paper he could emphasize this by a table which could be quoted in publicity work and would be a guide to general practitioners—I mean a statement giving an estimate of the percentage of venereal disease cases in schools and private practice. As I gather it from his figures he could say that, apart from refractions, 1 in 3 of all school cases of defective vision is venereal, and 1 in 12 of private cases.

May I say a word about amblyopia ex anopsia? Mr. Bishop Harman says many of these cases could be prevented if they were treated early. To have this done all children should have a routine examination at 4 years to see that both eyes are working together, even when there is no squint. The family doctor and the public should be taught this necessity, as it is but little use later on. With regard to myopia, the schools to which I have had the pleasure of going with the opener of this discussion are doing good work, but in boys and girls in private schools I never stop their education but insist on two points: (1) That they only use their eyes for what has to be done for school and not extra reading of story books; (2) the parents are advised to look out for a hobby and develop it early, such as gardening or poultry. Dr. Symes recently in Bristol drew attention to the high percentage of cases of phlyctenular ophthalmia in erythema nodosum. As this is rare it is not of great importance, but it may help in the etiology of this difficult subject.

Finally, I find the cases which give most anxiety, and which perhaps stimulate our sympathies more than any other disease, are those of recurrent iridocyclitis. In spite of all our care some of these cases simply go from bad to worse; some do well with tuberculin, but we do not yet know which are going to be those which it will benefit.

Mr. A. S. PERCIVAL (Newcastle-on-Tyne) pointed out that the steaming of glasses could be entirely prevented by rubbing the spectacles or goggles with dry soap, then wiping it off and polishing the glasses. It would be found that breathing on lenses so treated fails to dim them. Laundry women could do their work in hot steaming washhouses without any trouble arising from their glasses getting dimmed if they adopted this simple precaution. Mr. Harman had said that there seemed to be no method of discovering a central choroiditis or a macular haemorrhage if a patient first came for advice with advanced cataract. He himself advocated the use of his light sense discs in such cases. He had found, even in advanced cataract cases, that if the light difference sense were found to be considerably greater than the light minimum sense one could be confident that something was at fault with the retina or choroid. If the light difference sense were the more defective something was wrong with the conducting mechanism—the optic nerve.

Dr. HAROLD SCURFIELD (M.O.H. Sheffield) asked if Mr. Harman thought the routine treatment of the eyes of every infant at birth with an appropriate silver salt would prevent ophthalmia neonatorum, and if he thought early treatment by an ophthalmic surgeon would, practically speaking, abolish loss of sight in such cases as did occur? He agreed that early skilled treatment at present was not obtained often enough. The midwife washed the baby and saw the condition of the eyes, and was bound to let the M.O.H. know of "any inflammation of, or discharge from, the eyes, however slight." The M.O.H. could then arrange for an ophthalmic surgeon to attend. If the birth was attended by a doctor the baby was washed probably by an untrained woman, and the beginning of the trouble might not be noticed so soon. The occurrence of a case of ophthalmia neonatorum in a doctor's practice was a comparatively rare event, and he did not always see the "red light" at once. He agreed with Mr. Harman that they needed to treat these cases with "fire-brigade" promptitude. His own belief was that early treatment of every case of ophthalmia neonatorum by an ophthalmic surgeon would save seven-eighths at least of the eyes at present lost or damaged.

Dr. GEORGE FOGGIN (Newcastle-on-Tyne) said that he had had the oversight of a school for the blind for some fifteen years, and during that period he had made an annual return of the causes and conditions of blindness. His experience suggested that it would be very desirable that there should be a standard scheme for the classification of the conditions found, so that comparisons between different areas might be facilitated. He strongly supported the formation of more "myope classes," as these classes provided a most useful means of educating children who were not blind enough for the blind school and too poorly sighted for the ordinary school. He knew of children who were being educated in blind schools who ought not to be there, but in the absence of a myope class there was no other provision for them.

Mr. INGLIS POLLOCK (Glasgow) said that he had seen a number of patients blind with glaucoma who thought that the blindness was due to cataract, and expected that an operation would give them back their sight. They always said that someone had told them that it was cataract. Other cases came blinded by glaucoma which had been treated by their doctors as iritis and given atropine until the eyesight had been completely and finally lost. It was impossible for any one who had not specially studied eye diseases to diagnose glaucoma in the early stages, and therefore no practitioner should make a diagnosis of

cataract, or even iritis, in a patient over 40 years of age until it had been confirmed by a specialist. It might be said that the diagnosis of cataract was easy in the advanced stage, but there might be present diseases of the fundus which could only be discovered before the pupil had been completely closed by the cataract. The effect of mistakes in diagnosis of glaucoma was so disastrous, and operation could only do good in the early stages, that it was important that every patient of over 40 years of age should be sent to an eye surgeon for diagnosis, either in hospital or elsewhere.

Mr. J. V. Paterson (Edinburgh) spoke of the difference between private and hospital work with regard to the frequency of such conditions as interstitial keratitis, ophthalmia neonatorum, phlyctenular keratitis, and hypopyon ulcer. He found that these conditions were extremely rare in private practice, where the social and economic condition of the patient was on a higher level than that of the class which sought hospital advice. It did not seem, therefore, too much to hope that in a few decades the number of cases of blindness or semi-blindness from these diseases would be very greatly diminished. He thought that the people of this country did not realize sufficiently that the loss of sight in early youth was not merely a life tragedy for the individual but also a great economic loss to the community. He agreed thoroughly with Mr. Bishop Harman in his appeal for the utmost promptitude in dealing with cases of ophthalmia neonatorum. With regard to the education of myopes, Mr. Paterson said that in his private work he had never found it necessary to remove a child from school for any considerable length of time, and he did not think high myopes should constantly have before them the idea that they were going blind. He thought the health of the children and the wearing of correcting glasses all-important. He did not believe that excessive near work was the essential factor in the production of high myopia.

Dr. Marion Gilchrist (Glasgow) thanked Mr. Bishop Harman for his extremely interesting paper. In regard to the causes of blindness, Mr. Harman mentioned trachoma, and said this was rare in London. It was, however, not so in Glasgow, and she had seen a great many cases there almost blind from trachoma, probably because of the number of Polish Jews who are there. The question of myopia was a very serious one. She was disappointed that Mr. Harman did not put more emphasis on the great value of extremely careful refraction work. Far more importance should be attached to this than to any other factor such as the provision of special schools for myopes. She had often been forced to question the value of special schools. Many children were brought to her at the dispensary who were attending a special school for myopes, and were kept with their pupils dilated by atropine, their refraction not corrected, suffering from headaches—especially the astigmatic ones. After careful correction of refraction errors these children had been able to go to the ordinary schools, and their mothers had told her that they were going on very well, with no headaches, and that their education was progressing well. With regard to the treatment of ophthalmia neonatorum, we fail most in not teaching the parents or nurse how to carry out the treatment. Dr. Reid of Glasgow used to teach that the one thing needful was to use plain water or normal saline or boric solution, but to use it often enough and thoroughly enough both day and night. Often harm was done by using strong solutions, and by rough handling of the eye.

Mr. Herbert Caiger (Sheffield) said that venereal disease was responsible for much blindness, especially that due to ophthalmia neonatorum. Poverty was responsible, to some extent, for phlyctenular cases. Alcohol was a most prolific source of venereal disease and poverty. It would be interesting to see when sufficient time had elapsed the effect of prohibition on the statistics of these cases in the United States of America.

Mr. Bishop Harman, in reply, said that the criticism advanced by Dr. Alexander Wilson on the inclusion of numerous cases of high myopia with the blind did not arise, for examination of the tables of statistics would show that no case of myopia was included in the final count and in the percentages, unless the myopia was of such a nature that sight was almost or wholly lost. He agreed with Mr. Stack that it was of the highest importance that they should make it clear how high a proportion of blindness in children was due to parental venereal disease: once that was recognized antenatal treatment might be expected to reduce this blindness to small dimensions. He agreed with Dr. Scurfield that an ophthalmic surgeon was a necessary part of the staff of every lying-in hospital. The difference in the incidence of trachoma in Glasgow as shown by Dr. Marion Gilchrist, and in London as shown by his own returns, was striking; it was even more striking when it was known that of two schools formerly fully occupied by trachoma and allied cases from the London Poor Law schools, one was closed and diverted to other uses, and the other half diverted to other cases. He thought there must be some special reason for the difference. Dr. Marion Gilchrist intimated that the number of trachoma cases in Glasgow was due to a Polish enclave. He considered that septic ulcers due to infection of the eyes of coal miners might be largely prevented if there were first-aid stations where foreign bodies might be removed speedily and the eye thoroughly irrigated. Goggles were quite useless for miners, but irrigation of an infected eye of great value and readily arranged.

On a motion by Dr. Harold Scurfield, seconded by Dr. Harries-Jones (Northampton), it was unanimously resolved:

> That with a view to the prevention and adequate treatment of ophthalmia neonatorum in lying-in hospitals each such hospital should have upon its active staff an ophthalmic surgeon.

The resolution was directed to be forwarded to the Council of the Association.

THE ADVISABILITY OF EARLY OPERATION IN STRABISMUS CONVERGENS.

BY

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Extra Surgeon, Glasgow Eye Infirmary; Ophthalmic Surgeon, Ayr County Hospital.

There have been a number of discussions recently upon the question of the proper treatment of strabismus convergens, and various statistics have been published of the results of the different methods of treatment. There have been great differences of opinion on many points, but a practical unanimity is present in regard to the question of the amblyopia ex anopsia. Almost all writers, since the publication of the careful work of Mr. Claud Worth,[1] are agreed that the amblyopia follows the squint and is the result of it. The older view in which we were all trained, that the amblyopia produced the squint, or was accidentally present in the squinting eye, has therefore been given up. Experience has shown that the earlier the squint begins, and the longer it continues, the greater is the amount of amblyopia in the squinting eye, if the onset is before the age of 7.

If the squint is alternating there is no amblyopia, because both eyes are used alternately by the child. The amblyopia develops simply because the child does not use the squinting eye; if it used both eyes it would see double; it unconsciously suppresses the image from the squinting eye, and the earlier that it does so the greater the amount of amblyopia which develops in the eye. After the age of 7 amblyopia may begin, but I have never known of a case in adult life, even after a period of prolonged bandaging, or by the presence of traumatic cataract, but traumatic cataract in an infant almost invariably causes amblyopia should the cataract persist. I have been much struck by the frequent failure of glasses to cure squint, while even when the squint appeared cured, how often is the squinting eye left practically blind or amblyopic.

After trying medical methods of treatment, including training of the squinting eye, I have come to the conclusion that early operation is the best preventive of amblyopia ex anopsia. In a recent paper[2] I quoted the results of early operation in five cases where the visual acuity had been carefully tested several times before and after operation. Each case shows a distinct improvement

in the vision of the squinting eye after operation. In three of the cases the treatment had been aided by occlusion of the good eye for two or three hours daily during several months, but in two of the cases there was no occlusion of the good eye at all.

I have now operated upon over 300 individual patients, and in most of them the earlier the operation has been done the greater the improvement in the vision of the squinting eye. It is difficult, however, to quote statistics, because of the records having been lost, or never been taken, of the visual acuity before the operation. During the war it was almost impossible to take any visual acuity in hospital because the rush of work was so severe.

With regard to the question of glasses, when a child has astigmatism or refractive errors then I advise him to have glasses, but experience has shown that when we give a child a pair of glasses the parents are satisfied and simply trust to the glasses, or the child loses them, and nothing further is done, and when they come back in three or four years the squinting eye is amblyopic. It is much wiser to advise operation, because if the eye is put straight it can be used, and the amblyopia will gradually disappear. The operation must be carefully done, because if there is only a partial success then there is no cure for the amblyopia. When the eye is the slightest degree off the straight then the child still suppresses the image from the squinting eye. To obtain success it is necessary to get the eye perfectly straight, and in many cases it is advisable to occlude the good eye for three hours daily, or use other methods of orthoptic training.

REFERENCES.

1 Claud Worth: *Squint, its Causes, Pathology, and Treatment*, 9th edition; Bailliere, Tindall, and Cox, London, 1921. 2 W. B. Inglis Pollock: Squint, the Question of Early Operation, *Lancet*, 1921, i. p. 1296.

DISCUSSION.

Dr. E. H. HARRIES-JONES (Northampton) asked what kind of operation Mr. Inglis Pollock performed in very young children, and whether advancement *plus* tenotomy was as necessary then as it was later.

Dr. E. H. E. STACK (Bristol) said that cases of squint fell into two categories: those in which vision could be improved, and those in which it could not. The parents should be told whether one hoped to improve vision or merely appearance. Occlusion of some kind should be used first, and one could always tell within a month whether there was going to be an improvement. If there was none, then operation was needed for aesthetic purposes. This was a very important point, as squint was a great handicap to getting a job. If, on the other hand, improvement did take place after occlusion, then glasses and occlusion for six months at least should be tried. He himself did not operate on patients under 5 years of age.

Mr. HERBERT CAIGER (Sheffield) said that a small practical point in regard to occlusion of the sound eye was the need to tell the parents to do it for an hour three times a day, and to do this at meal times, when the child's attention was diverted from its eyes. It was important to make it quite clear to the parents that operation might not improve the vision of the squinting eye; unless this was clear, disappointment would be felt.

Mr. INGLIS POLLOCK, in reply, said that the age at which a squint operation should be undertaken was as soon after the discovery of the squint as it was reasonably possible to do it. We knew that the amblyopia was caused by the squint, and the longer the operation was delayed the worse the amblyopia became. The amblyopia had already commenced in all probability before the parents had discovered the strabismus, as in most cases the squint was intermittent at the beginning. He had operated upon a patient of 2 years of age, and a number at 3 years of age. The first thing was to measure the refraction under atropine, and to decide whether glasses were required or not. If they were required, he liked to have them ready for the child immediately after the operation was done, to put on when the bandages were taken off. He operated by advancement of the external rectus. The important element in the operation was that the stitches should take a grip of the scleral tissue, and they must not be allowed to penetrate the eyeball, as eyes had been lost after such an accident. Another point was that both eyes should be bandaged for a fortnight, to give time for firm union to the sclera. Sometimes a case required a modified tenotomy. Probably every case of strabismus convergens was a case of exaggerated esophoria, and therefore the normal position of such eyes was convergence, which showed that there must be real shortening of the muscle on the side of the squint. No glasses could be expected to shorten the length of the external rectus, or to lengthen the internal muscle. With regard to prognosis, it was important to tell the parents of the child the reason for the operation being done early; and to point out that a second operation might be required in cases of over 25 or 30 degrees of convergence. Most cases came right with one operation, but some required two.

DISCUSSION ON THE TREATMENT OF CORNEAL ULCERS.

OPENING PAPER

BY

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IN this brief introductory paper I do not propose to attempt to deal with the measures which have been used for the treatment of corneal ulcers at different times, but rather to discuss the mode of application and the effectiveness of various methods of treatment which I have employed, or have frequently seen employed by colleagues. It seems to me to be quite futile to discuss methods with which one is not perfectly familiar, and the results of which one has not judged by a fairly wide experience. Very many of you, coming from huge industrial centres, have no doubt a much wider experience of corneal ulcer than I have, and, with wider experience, probably greater success in treatment, but my paper may serve some useful purpose if it merely prompts you to join in the discussion, and, freely criticizing what I have said, to give the meeting the benefit of your experience.

Before tackling the question of the treatment of corneal ulcer, there are two questions that seem to me to require a brief consideration. These are (1) Why is the cornea so liable to disastrous ulceration? and (2) Why is the occurrence of ulceration not even more frequent and more disastrous in its results?

As to (1) the main cause of the vulnerability of the cornea is, of course, the lack of blood supply. Ulceration of the vascular conjunctiva is less frequent than ulceration of the skin, and an ulcer starting on the cornea ceases to spread when it reaches the peripheral vascular zone. As an additional cause, I would adduce the tension of the eyeball, which keeps the corneal tissue tense and unyielding, thus rendering it more liable to trivial punctures and abrasions, so often the starting point of ulceration. From another point of view the infection of the conjunctiva with virulent germs, especially from the tear passages, is of paramount importance as providing the exciting causative factor in ulcer formation.

The whole question of how the cornea is adequately nourished without a blood supply is one of great interest and importance, not only to the anatomist and physiologist, but to the clinician, and has been much studied. In my student days, if my memory does not play me false, I saw wonderfully planned diagrams showing how the nourishing lymph streamed unceasingly through a network of corneal canals. The newer conception of the corneal nutrition hangs mainly on the work of Leber, who, as you know, made the subject of the nutrition of the eye a life-study. Leber denies the existence of any stream of lymph circulating in open channels through the cornea.

It has to be remembered that for the tissues of the eye which are non-vascular and have a purely optical function—that is to say, cornea, lens, and vitreous—the amount of nutriment required must be extraordinarily small. The function of such tissues is static, not dynamic, and the focusing of the rays needs no supply of energy, while the functions of growth and cell reproduction in these tissues, at any rate in adult life and under normal conditions, cannot be at all active. In foetal life, when growth and development are most active, we know that

these tissues have a blood supply. How the cornea and lens manage to grow as rapidly as they do in early childhood has always seemed to me rather difficult to understand.

With regard to the source of the nutriment required by the corneal tissues, one experiment quoted by Leber seems to me to be of great interest—namely, that if the anterior chamber is filled with air which may take several days to absorb, the cornea does not seem to suffer at all. The aqueous apparently has not a great deal to do with corneal nutrition, but Leber thinks its oxygen content may be of value. The cornea lies between two receptacles of fluid, or fluid-containing cavities, the aqueous and the conjunctival sac, but is prevented from absorbing fluid too freely by the stratified epithelium in front and the endothelium behind. The cornea of an eye kept in an indifferent watery solution will long remain unchanged, but if the corneal epithelium is removed the cornea will rapidly swell by imbibition of water. On the other hand, the epithelium guards against drying of the corneal surface, and excessive dryness stimulates the nerves which influence the secretion of tears. The normal water content of the cornea is given by Leber as 76 per cent. We are all familiar with the function of the posterior endothelium in preventing imbibition of fluid from the aqueous into the corneal tissues with loss of transparency. The main supply of nutriment for the corneal tissues probably comes by diffusion processes from the vascular zone at its margin, and the leucocytes, which invade the cornea in all severe inflammatory processes, have, for the most part, the same source of origin.

We all know that an ordinary corneal ulcer ceases to spread when it reaches the vascular peripheral zone, and in all ordinary severe forms of keratitis, if sufficient time be granted, Nature will soon construct a system of blood vessels to carry the means of defence and repair into the inflamed area. Unfortunately, in the severe types of corneal ulceration Nature is not able to bring her reserve defence forces into action so promptly as to avert disaster. Repair is attended by scarring, and we know too well how seriously vision may be impaired by trivial loss of corneal transparency or by irregularity of surface.

(2) The relative immunity of the cornea from ulceration depends on many factors. Among these I might mention the position of the eye in the orbit; the protection of the lids and their quick reflex movements; the cleansing action of the tears, and, finally, the power of resistance to germ invasion provided by the intact corneal epithelium and Bowman's membrane. In all ordinary types of acute conjunctivitis of microbic origin there is practically no risk of corneal complications, except in the purulent conjunctivitis due to the gonococcus. In this disease the invasion of the corneal substance by the germ probably follows the necrosis and shedding of epithelium.

Passing, after these few preliminary and straggling remarks, to the real question of the treatment of corneal ulcer, I propose to consider the treatment of a few typical forms of corneal ulcer. To further simplify what I have to say, I would divide the ulcers into two classes: (*a*) Those in which the causative agent, or influence causing the ulcer, comes from without; (*b*) ulcers in which the state of the patient's health is the main causative agent. It is, of course, understood that in all cases of corneal ulcer the general health factor and the external factor—for instance, a micro-organism—require to be considered.

(*a*) *Ulcers in which the Causative Agent comes from without.*

As an example of this class I shall, of course, cite the ulcus serpens or hypopyon ulcer. Here we have a direct invasion of the cornea by a micro-organism, the pneumococcus in nearly all typical cases. How are we to check this dangerous invasion in the most effective fashion—in the way that will leave the best vision after the ulcer has healed? I have been accustomed to attach special importance to the following principles, most important of all being the necessity for early treatment. The cases, as soon as recognized, must be put promptly under skilled supervision in a hospital. Under the Compensation Act the men are seldom at fault in visiting their doctor whenever this condition threatens—for instance, on the day following a slight injury to the eye sustained at their work. If the eye is reddened and painful, and there is any definite sign of an infiltrate forming at the site of the abrasion, then I think the doctor is at fault if he does not at once send the man to the nearest ophthalmic hospital. Treatment in the man's house is, in my experience, almost always quite futile, and valuable time should not be lost by attempting home treatment.

As in the treatment of so many eye conditions, it is not here so much a question of prescribing suitable remedies as of having them properly applied and having their effect carefully watched. In this type of corneal ulcer, too, the condition of the tear passages always requires careful investigation by an expert, and the state of the intra-ocular tension is often of great importance, especially in elderly patients. As far as I can judge, the doctors in the mining districts, from which our cases of hypopyon are mainly drawn, have become more alive to the necessity of prompt hospital treatment for these cases, but still we have a good many cases coming to hospital with ulcers a week or so old and a large part of the visual area of the cornea already involved. Our worst cases are often in women outside the Compensation Act, in whom the injury which started the ulcer was sustained at their domestic duties. In non-industrial, outlying districts doctors have usually little experience of acute eye conditions, and may allow corneal ulcers to get into a hopeless state before they send the patients to hospital as a last resort. When a case is seen early a cure can almost always be attained with a minimum of scarring and no great damage to the usefulness of the eye, while in cases admitted with a wide involvement of the cornea great and permanent damage to the sight of the eye is inevitable, however successful the subsequent treatment. When we consider how this condition mainly affects highly paid workers, often in the prime of life; how it leads to diminished, or even total loss of, visual working capacity; how the pecuniary loss to the community is swollen by compensation paid to the affected workman for long periods, and often also by expensive litigation, we realize that the question of the prompt treatment of these cases is important from a national or economic as well as from a sentimental point of view.

In the treatment of these early cases one is often successful with the simplest régime. We use frequent neutral saline bathing, atropine drops twice a day, and usually, in addition, a silver salt such as argyrol, 20 per cent., thrice a day. The condition of the tear passages is always carefully investigated and any tear sac trouble treated. The eye is never covered with any sort of dressing or shade at this stage, but a little sterile vaseline is applied to the lid margins. In many early cases treated in this way the ulcer or infiltrate never spreads, the threatening signs disappear in a few days, and the eye soon gets well with very little scarring. If at the end of twenty-four to forty-eight hours the ulcer is found to be progressing, it is touched with pure carbolic. We apply the carbolic on the sharpened end of a wooden match and rub the carbolic well into the spreading margin, where there is usually some undermining. If the spread looks severe and threatening, I personally prefer the cautery even at this stage, and I generally use merely the hand cautery, as it seems to cause less destruction of tissue and can be applied very accurately. (I always use a Zeiss × 3 stereoscopic magnifier when making any application to an ulcer.) In the vast majority of cases one can count on checking the spread of an ulcer at this stage with either of these agents. Sometimes one finds a small part of the margin of an ulcer continues to spread, and a second application may be necessary. Of the rarer cases, in which these agents have signally failed, I will speak later.

For cases seen in a rather more advanced stage, if the ulcer does not look very active, one may with advantage wait twenty-four hours at least and note if there is any spread. Some of these cases get well on the ordinary routine treatment with argyrol and atropine. If the ulcer appears to be very actively spreading I approve of the cautery as being the most certain and effective remedy. In the cases where the ulcer is large—say 4 mm. or more in diameter—and actively spreading, there is usually a considerable or large hypopyon. In these cases I use the cautery first and then puncture the anterior chamber from below, evacuating the hypopyon by pressing back the posterior lip of the little wound.

The Saemisch's section is, I consider, a very valuable method of treatment in very severe cases where the cautery has failed to check the spread of the ulcer. I have also found it very effective in cases of smallish

ulcers with a very purulent infiltration extending deeply into the corneal substance. In this last type, which is rare, I prefer it to the cautery, as the section need not cause any iris entanglement, and there is not the same destruction of tissue as caused by free, deep cauterization.

In cases with obvious dacryocystitis, I believe that the best thing to do is to excise the tear sac as a preliminary to treatment of the ulcer. As the patient has suffered a good deal, and is often dejected and miserable, this treatment may appear too drastic, and one may be content to pass a probe and wash the sac out regularly. I do not think that reinfection is very common after the use of the cautery. It is also very extraordinary how one can incise an eye with acute ulcus serpens and evacuate a hypopyon without fear of a general infection of the eyeball, while to have freely opened the same eye before the ulcer started would probably have had most disastrous results.

With regard to alternative methods of treatment by other powerful physical or chemical agents, I am familiar only with two, ionization and heat, applied either with the cautery not actually in contact with the cornea, or with a special instrument. Dr. Traquair tried ionization extensively before the war, and this method appeared to give very good results. He will describe the method he adopted and discuss its suitability for different types of ulcer.

With regard to heat, I have recently often combined the method of actual cauterization with holding the cautery very close to less infiltrated areas of the ulcer. Dr. Sinclair has used a special thermophore of American design, and reports favourably on its use. I have not given the optochin treatment a sufficient trial to express any opinion of its relative value as a method of treatment. Some day the serum treatment may prove to be the ideal treatment.

In Edinburgh we have always found a small proportion of ulcers which resist treatment and prove very difficult to check. One type, which is specially troublesome, is when a patient, often well up in years and somewhat feeble, is admitted with a large, but not very active, ulcer of perhaps a fortnight's duration. The cautery is used, and next day the eye is much worse, with a freshly chemotic conjunctiva, and the ulcer showing a fresh yellow margin of active corneal invasion round a large part of its circumference and increased hypopyon. Further cauterization with evacuation of the hypopyon may be tried, but, on the whole, I prefer the Saemisch section, though this method also may fail.

In the clinic here, as already indicated, we have always been accustomed to leave eyes uncovered until the ulcer had cleared and reinfection was hardly to be feared. I have then found a pressure bandage useful, especially in cases of perforation with leakage from the anterior chamber. The chief complication we have had to deal with, and one which has caused the loss of many eyes, is increased tension and staphyloma in cases where there has been widespread corneal destruction. Iridectomy is only of moderate value in reducing the tension in these cases, but trephining has given us better results.

In cases of ulcer with hypopyon in children I have never used the cautery or carbolic. Nearly all these cases get well quickly with atropine and the good hygiene and diet of a hospital ward. This type of ulcer tends to perforate rather than spread widely. In some cases it seems advantageous to anticipate perforation by puncture of the floor of the ulcer. In the ulceration of gonorrhoeal ophthalmia, whether in children or adults, I have never used the cautery or any strong chemical agent, because I am afraid to reduce further the resistance of the tissue in the presence of so virulent a germ.

With regard to the marginal ulcer of the cornea, this type of ulcer is not very common in Edinburgh, so my experience is limited. I have seldom used the cautery in these cases, but several times employed paracentesis with good effect. For many years I have not used eserine in corneal ulcers for such a purpose as preventing iris prolapse, and I do not think its use for this purpose is in any way effective.

(b) Ulcers depending mainly on the State of the Patient's Health.

Strumous ulcer of the cornea: In my experience this form of corneal trouble was much commoner and more severe twenty years ago than it is now. This I attribute to several factors, among which I may mention the general improvement of social conditions amongst the poorest classes and some better understanding of the diet and treatment of children; the more thorough surgical treatment of tuberculous glands and tuberculous diseases generally amongst children; and, finally, the medical inspection of school children combined with medical treatment in the school clinics and the feeding of necessitous children. Only a small fraction of these cases as we see them now are of a really severe type. In the treatment we are much handicapped by having so few children's beds available. In the cases with extreme photophobia efficient treatment can seldom be carried out at home, and there can be no adequate supervision of the diet and hygiene.

I am accustomed to treat these cases in the ward on the simplest lines. If the symptoms are acute the children are kept in bed, are given a simple purgative, and next day are put on small doses of grey powder or calomel. In many of the cases the chief error of diet seems to be an excess of starchy foods, the mothers constantly giving the children sweets and sweet biscuits to keep them quiet. Locally atropine is used, and I am one of those who believe that it does a great deal of good. When the condition has passed the very acute stage the atropine is combined with yellow oxide of mercury ointment, one-half to one per cent. A great proportion of the cases do so well on this simple régime that I have seldom been tempted to vary it much or to have recourse to tuberculin or other vaccine treatment, though in obstinate cases I have found this form of treatment of considerable value. Very many of the children require surgical treatment for tonsils and adenoids and for tuberculous glands.

What is needed in Edinburgh, and I fancy in many other places, is some sort of convalescent home or sanatorium where those children with recurrent strumous ulcers could be sent for a considerable time, so as to have their health thoroughly established.

The disease appears to me to be much neglected and badly treated by the men practising in poor-class districts, where it is common. Finding themselves unable to cope with the factors which lead to bad hygiene in the home and bad feeding of the children, they prescribe tonics, malt extracts, patent foods, etc., without real benefit.

Herpetic ulcer of the cornea: I have been accustomed to see this condition in two forms. In the first form there is a large exfoliation of epithelium, and the fluorescin stain shows a large irregular area denuded of epithelium. Left to themselves, these cases make very slow progress and the affected individual has much discomfort and is unfit for work. I believe in treating the affected area by the application of absolute alcohol. I apply the alcohol on cotton-wool wrapped round the edge of a match or probe, and apply it not only to the denuded area, but to any neighbouring epithelium loosened or diseased. I then put in a drop of atropine and apply a bandage. Very rapid improvement usually results from this form of treatment, and I have often seen cases, which had lasted for weeks, make a very rapid recovery. Sometimes there is recovery over a large part of the affected area, but at another point the healing is unsatisfactory, and a second or third application of alcohol may be used.

The second type of herpetic ulcer, and one which we see more commonly, is the typical dendriform ulcer. I am accustomed to treat this ulcer also by the application of alcohol, and have found this treatment, on the whole, very satisfactory. We seemed to have a great many cases after the severe epidemic of influenza, and some of these cases proved obstinate, though eventually healing without much scarring. In my experience the application of alcohol to these herpetic ulcers should always be made in a fairly drastic fashion, otherwise it is ineffective. With regard to Mooren's ulcer, I have failed in several cases to check the ulcer with any form of application. In one case which appeared to show this type of ulcer in the early stage the application of alcohol achieved a rapid and lasting cure.

There is one other form of ulcer which I would like briefly to mention, and it is one which is seen fairly frequently in Edinburgh—namely, the superficial recurring ulcer associated with rosacea of the face. Even with the co-operation of the physicians of the skin department I have found these cases very difficult to treat effectively, and I should like to hear the experience of others with regard to the treatment of this tiresome form of ulcer.

DISCUSSION.

Dr. H. M. Traquair (Edinburgh) referred briefly to the results which he had obtained in the treatment of hypopyon ulcer of the cornea by ionization with zinc. The method was efficient for that form of ulcer except in the more severe cases, in which more experience was required. In the cases treated the duration in hospital was below the average and the visual results were better than those following treatment by other methods.

Mr. N. B. B. Flemming (London) said he was introduced to the treatment of corneal ulcers by magnesium sulphate by Colonel Kirkpatrick in Madras, and in subsequent experience had found it very valuable. He used a saturated solution in an eye-bath, and kept it in contact with the open eye for five minutes every two or four hours. The action was osmotic and bactericidal, and was most efficient in chemotic conditions of both cornea and conjunctiva, such as large corneal ulcers and abscesses, and in gonorrhoeal ophthalmia in adults. Another method of treatment valuable in severe marginal ulcers was the subconjunctival injection of colloidal iodine in doses of 2 to 3 minims twice a week; this was a treatment which he had found of most striking value in slight wound infection with iritis following an operation such as cataract extraction, but he considered it worthy of mention for application in corneal conditions also. He saw a large number of cases of keratomalacia in marasmic infants in India whose malnutrition was due to prolonged breast feeding—two to three and a half years—by semi-starved mothers. In these cases there was no true laceration, but the cornea degenerated and eventually sloughed off. When seen sufficiently early, treatment with good milk, cod-liver oil, and fruit juice proved very satisfactory. Concomitant degeneration of the lens was not observed in these cases. It interested him to find in a few cases of cholera that a crop of corneal ulcers occurred early in convalescence, very similar to what was found in measles, and no doubt due to the lowered condition of the patient's health rather than to the infection. Early carbolization of these ulcers was invariably successful.

Mr. T. L. de Courcy (Liverpool) said that in the Liverpool Eye and Ear Infirmary they had been using vaccines largely in the treatment of strumous children. Dr. Cronin Lowe, their bacteriologist, took swabs from most of these children and prepared stock vaccines to suit the type of ulcer, and these were given weekly after suitable treatment to the nose and throat, such as removing tonsils, adenoids, nasal polypi, etc. It was difficult to be dogmatic as to the results, but on the whole recurrence seemed to be less frequent and the ulcers cleared up more quickly.

As regards hypopyon ulcers, they had also been using chauffage largely and with very good results. The points of the electro-cautery were used from a multostat, and were brought as near as possible to the ulcer without touching it; this was done daily till improvement took place, following, when necessary, Saemisch's section or paracentesis. He frequently used dionine associated with atropine. The use of dionine was debatable, but if used in strong enough solutions—5 per cent.—and provided a good reaction was set up, it seemed to be useful. Subconjunctival injections of oxycyanate of mercury were also useful, particularly in ulcers near the margin of the cornea.

Mr. Bishop Harman (London) said that he had given up the use of the actual or electric cautery for hypopyon ulcers for some time. However delicately it was used it appeared to him to extend the resultant scar, and he did not find that it checked the spread of the ulcer better than less drastic measures. He advocated free irrigation, the use of hydrogen peroxide, and leeching. He commented upon the recommendation of Dr. Paterson—that these eyes should not be covered but treated by the open method. That certainly seemed good in the face of the fact of infection, but an infected cornea was a frail tissue and seemed to be aided by warmth, for which reason he preferred constant fomentation. The caustic substance he found of greatest service was known as pheno-camphor, a mixture of pure carbolic acid and camphor; the two solids were placed together in a bottle and liquefied each other. The liquid was very penetrating, a most efficient antiseptic, and singularly free from destructive effects. He applied it with a pointed match, stubbing the fluid into the edge of the ulcer, deep into the epithelium. Although he did not use the actual cautery for hypopyon ulcers, he did use it for the chronic vascular ulcers of children—the so-called strumous ulcer. If each of the vessels entering into such an ulcer was just touched by the point of the cautery a short distance on the conjunctival side of the limbus, the effect of the stoppage of the abnormal blood supply was magical in its curative effects.

Dr. John Hern (Ophthalmic Surgeon, Darlington Hospital) said that in regard to hypopyon ulcer he always used argyrol 25 per cent. with uniformly good result. The acid treatment had usually failed in his hands. He was doing the Saemisch section in severe cases only; but always through the ulcer, as often one saw escape a piece of tissue which appeared to him to be too dead to remain and too living to be easily thrown off; this released, at once the case improved. It was important to have as little of the cornea affected as possible, so as to have a thin scar; this could only be done by getting the cases early, and treating them carefully. In the very chronic ulcer of middle-aged people a stitching of the lids together for fourteen days had often given him most encouraging results.

Professor Wardale considered that argyrol was of very little use as a germicide, and that a 2 per cent. solution was as good as one of 25 per cent., and cheaper; but it was of great value in that it was dirty stuff, and as long as there was a trace of it in an eye the patient saw queerly; if an adult, he would not be happy until he had washed it away, or those parents who took any interest in their children would not be content until the eye was washed clean. In pneumococcic ulcer he had tried vaccine treatment, and used the vaccine both locally and hypodermically, but got no useful result. He had used a broad flat cautery to scorch the ulcer, and when that failed he cauterized the ulcer directly. Celluloid shields were a great danger to ulcerated eyes; they were worn over one eye until the lid became oedematous and fissure formed. It was better to bandage the good eye, so as to compel the child to open the bad one. Dionine, in full strength, was of service.

Dr. E. H. E. Stack (Bristol) considered, when argyrol was used for the treatment of an ulcer, if staining of the base of the ulcer ensued there appeared to be a better prospect of recovery. Hypopyon ulcer cases fell into two categories: those which improved very much in the first twenty-four hours with atropine, and those which did not, the latter cases being those which required the use of the cautery. Over-lactation was a very common cause of corneal ulcers in the mother; usually they were started by some slight injury.

Mr. Inglis Pollock (Glasgow) supported the speakers who applied moist heat in these severe hypopyon ulcers. It was best applied, he considered, by means of hot fomentations, repeated four times daily. The cautery should not be applied directly to the cornea; it might be brought close, but not allowed to touch the tissue. Paracentesis was a valuable aid in such cases. There was often increased tension, and the reduction of pressure aided the natural circulation of fluid in the cornea. Sometimes it was well to reopen the corneal wound on the following day. This might require to be repeated several times. The teeth of these patients should be examined and the dentist called in if necessary; their general health was also important. Many of these patients were tired and exhausted when they came into hospital. Strychnine and iron was frequently beneficial, and it was well not to forget calomel and magnesium sulphate internally.

Mr. A. S. Percival (Newcastle-on-Tyne) said that he always used quinine with the atropine drops (quin. hydrchlor. gr. viii to the ounce of ¼ per cent. or ½ per cent. atrop. sulph.). In the simple cases of a non-perforating ulcer with hypopyon (presumably sterile pus), he had found that the hypopyon disappeared in two or three days. If the quinine were stopped and the atropine continued the hypopyon reappeared; on repeating the quinine the hypopyon disappeared. He had done this three times in succession. For this reason he had always ordered the quinine drops to be used for a week after the disappearance

of the hypopyon. He had first been advised to use quinine externally and internally by Dr. Edgar Stevenson of Liverpool many years ago. With regard to paracentesis, he was always afraid of meddling in this way with a sterile hypopyon. Of course, he used a keratome if the hypopyon rose too near the level of the pupil. After the paracentesis the hypopyon was always septic. If the hypopyon were septic when first seen there need be no hesitation in doing a paracentesis whenever it was called for.

Dr. H. P. Bennett (Newcastle-on-Tyne) said for routine treatment he preferred hot bathing every hour or two, the use of atropine with argyrol and magnesium sulphate lotions. Paracentesis was beneficial if the tension of the eye was at all increased after cauterization. For ulcers associated with rosacea of the face magnesium sulphate lotion 4 per cent. seemed to give the best results.

Dr. D. Matheson Mackay (Ophthalmic Surgeon, Hull Royal Infirmary) said he regretted that no new treatment of corneal ulcers seemed better than the old treatment. He was treating hypopyon ulcers as Mr. J. V. Paterson was, but he thought often that he ought to be more rather than less drastic in his applications, and not seldom regretted that he had not incised an ulcer earlier, whereas he never felt that he had incised one too early. He was in the habit of cauterizing with liquefied carbolic acid, applying it on a minute wool swab, and was not concerned if it ran over the healthy cornea, for he found that no permanent marking remained, the scar being limited to the ulcer. He had, earlier, used atropine and quinine drops, but did not think them better than atropine drops alone. However, after Mr. Percival's testimony, he intended to try them again. Lately he had been using magnesium sulphate lotion up to the strength of saturation, and patients seldom complained of pain from it. He believed it was an old method of treatment resuscitated, and that it was distinctly encouraging in its effect upon such ulcers. On the whole, unless rest in bed and instillation of atropine caused improvement, he noticed that in spite of more drastic treatment the eyes often did badly.

In his reply Mr. J. V. Paterson said he was very pleased that there had been free criticism of his remarks and so many suggestions offered. He agreed with Mr. Mackay that it was often difficult to make up one's mind what to do in obstinate and severe cases, but he adhered to his statement that the Saemisch section saved certain eyes when even the cautery had failed. He meant to try Mr. Bishop Harman's method of cauterizing the leash of vessels which passed over the cornea in certain types of severe recurring phlyctenular keratitis. He would also try the magnesium sulphate solution which several of those present had advocated. He fully agreed as to the great importance of nose and throat treatment in many of these children. He agreed also with Mr. Pollock as to the value of paracentesis in hypopyon ulcer, but in the severe cases he thought it advisable to cauterize the ulcer just before tapping the anterior chamber.

AUTOTOXAEMIA IN OPHTHALMOLOGY.

BY

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It is established that occasionally there is some connexion between septic foci and eye diseases. We know that microbes, without causing much general disturbance, may be transported in the blood stream to any part of the body and there produce disease. We also know that toxaemias —microbic, metabolic, and chemical—affect the eyes in various ways; they lessen the natural defences, they cause disorder or disability of function, and they cause degeneration of tissues. Further, we cannot ignore the statement of Sir William Arbuthnot Lane[1] that in intestinal stasis "the eyes are always affected and that they afford a delicate indication of the degree of auto-intoxication." Many ophthalmic surgeons believe that toxins, without the presence of microbes in the eye, may produce active inflammation of a more or less destructive nature, such as [illegible] cases of iridocyclitis, some cases of post-operative infection, etc. Other diseases—for instance, arthritis and pericarditis—are occasionally found to be microbe-free, and it is accepted that the inflammation in these cases is caused by toxins.[2]

Perhaps one or two additional observations drawn from general surgery may not be without interest on account of their associations. During the war we often saw the dry, plastic wounds associated with septicaemia, and they reminded us that a bacteriaemia or a toxaemia may completely alter the character of a wound and inhibit the healing process. The unhealthy condition of the wound was always contemporaneous with the bacteriaemia. In septic and infective conditions the synovial membranes, the serous membranes, the conjunctiva, ciliary body, and iris, are specially liable to suffer from disorder or secondary infection. These secreting structures become excreting structures, and their excretions contain microbes or their toxins. We can regard the conjunctiva and ciliary body as structures allied to synovial and serous membranes. The following case may serve as an illustration:

The injured foot of a soldier became swollen and septic. Three weeks later the knee-joint on the same side became distended and had to be opened. Two weeks later still the other knee-joint also became distended and had to be opened. The fluid from the first joint was "sterile," that from the second contained *Staphylococcus aureus*. All through the illness the man suffered from acute bilateral conjunctivitis with some involvement of the deeper eye structures. Lotions, atropine, etc., had but little effect on the condition of the eyes. They recovered contemporaneously with the joints.

Long ago Mr. Sydney Stephenson suggested[3] excretion of toxins by the ciliary body as a good working hypothesis to explain the production of iritis and cyclitis. We have also to remember that endogenous toxins may act on the eyes over a long period of time. Soluble substances pass easily and quickly through the cornea, and while there may be microbes yet we do not associate toxins with a healthy conjunctival sac.

Some years ago I operated for cataract on a rather stout old lady, who had been living an ordinary but rather sedentary domestic life. As her urine was muddy from the presence of urates she was sent on holiday, urged to take exercise, and to regulate her diet. After some weeks she was admitted to hospital. The usual precautions were taken and the cataract removed. She made a good recovery and was sent home. Two months thereafter she got her glasses and with these she could see to read the newspaper. A few days later the eye became irritable and red. One of my colleagues examined the eye with me, but we did not discover any defect or flaw in the operative procedure. There was no prolapse of iris. The inflammation went from bad to worse and the eye ultimately became blind. At a later stage it was removed. About two years from the date of the operation the cataract was removed from the other eye by another ophthalmic surgeon, who a few months thereafter informed me, "for my comfort," that the second eye had gone the same way as the first.

There can be little doubt that the cause of the destructive, non-suppurative inflammation in this case was endogenous. Probably Lane and his fellow workers would say that the cataract itself was due to the same autogenous quantity.

A focus of quiescent microbes, or it may be a focus only of lessened resistance due to operative or accidental trauma, may have its quiescence interrupted and converted into active inflammation, or into that form of iridocyclitis that leads to sympathetic ophthalmia. Of all the intraocular structures the ciliary body and iris are most liable to be affected by microbes and toxins, and when affected their resistance to treatment may be due to our inability to recognize the toxin or its source. Superficial diseases of the eye are in many cases but the expression of local resistance to microbes and toxins. Gouty conjunctivitis is an example of metabolic toxaemia. Occasionally in gouty people, or people who eat too freely, we get a dry, slightly painful condition of the conjunctiva, or it may be small cutting particles under the upper eyelid. We may suspect that a foreign body, unknown to the person, has got into the eye, but these particles are probably composed of sodium urate.

A busy business man, who spent most of his time in his office and who took little exercise, came to me complaining of conjunctivitis. He also had a patch of eczema on the lower part of his face, and his breath was offensive. His treatment was low diet, uncooked vegetables, laxatives, and vigorous exercise in the garden. Within a week all his disorders had disappeared.

Lane states[4] that auto-intoxication produces "degenerative processes in the lens and loss of power in the ciliary muscle." Mr. Treacher Collins has demonstrated[5] the relationship between parathyroid deficiency and lamellar

cataract, and McCarrison the relationship between the thyroid and toxaemia. In the etiology of lamellar and senile cataracts we may yet observe converging lines. Toxaemia may also supply a working hypothesis to explain obscure cases of primary optic atrophy and other diseases of the eye.

Is there any causal relationship between toxaemia and ocular discomfort, with or without error of refraction? The loss of accommodation in toxaemia is admitted. Some people get relief by having small errors of refraction corrected, errors that at one time caused no trouble and may again cause no trouble when the correction is withdrawn. Similar errors in other people cause no discomfort. In many cases relief is not obtained, even when small errors are corrected. Some ocular defects are hysterical and some discomforts are neurasthenic. There is a nervous or sensitive temperament, and there is the antithesis of this; but there still remains a toxic group, and these are not relieved by correction of refractive errors alone. These cases require dieting, laxatives, exercise, and change to coast or country.

As a guide to the presence of toxaemia the examination of the blood, urine, and faeces may yet become more helpful in difficult cases. The odour of the breath is not without significance as an index of the condition of the blood. In uraemia and diabetes the odour is characteristic. Offensiveness in itself, unless the teeth are very dirty, is suggestive of toxaemia. The following case may be apropos:

During the war a soldier fell from his horse, and in falling struck his abdomen. Three days later he was admitted to hospital complaining of abdominal pain. No abdominal swelling or fluctuation was made out. Occasionally he vomited, and his temperature fluctuated from 100° to 102°. His breath had a particular offensive odour. It was not the same as that from a gangrenous lung, yet it had a penetrating odour not unlike it. After being under observation for some days the abdomen was opened, when it was discovered that his spleen was ruptured and that there was much blood clot behind the stomach. Here the absorption of stale blood from the peritoneal cavity polluted the blood stream and rendered the breath offensive.

In dealing with toxic cases, or cases that might become toxic, it is well to keep McCarrison's work in mind. He informs us that the thyroid gland "has antitoxic action and defends against autotoxin and against disease producing microbes and injury by their products."[6] Also that in hypothyroidism "toxins have free play to exercise their deleterious action on the various organs and tissues."[7] The importance of the accessory food factors or vitamins also calls for consideration. Keratomalacia is one of the consequences of this deficiency and the remedy is cod-liver oil. "Vitamin deficiency renders the body liable to be overrun by the rank growth of bacteria,"[8] and leads to degeneration of every tissue in the body. I suggest that toxaemias—microbic, metabolic, and chemical—in the onset of some forms of ophthalmia play a larger part than is generally accepted. If iridocyclitis or other disease of the eye is due to a remote source of toxaemia, or is but a manifestation of another disorder, one may ask if the ophthalmic surgeon is the person best qualified to deal with it. I commend Dr. Batten's suggestion[9] that we should have on the staff of our hospitals an ophthalmic physician. Co-operation, as expressed by that agricultural term team-work, is required if we are to make satisfactory progress in ophthalmology. Much of our disease is a discredit rather than a misfortune. Perhaps when we are able to give more consideration to the etiology, beginnings, and prevention of disease we may reduce the number of patients with more or less hopelessly damaged eyes that to-day haunt the outdoor departments of our hospitals.

References.

[1] Lane, *Lancet*, December 20th, 1919, p. 1121. [2] Willcox, British Medical Journal, June 4th, 1921, p. 815. [3] *Ophthalmoscope*, October, 1907, p. 575. [4] Lane, *Lancet*, December 2nd, 1919, p. 1121. [5] Collins, *Transactions Ophthalmological Society*, vol. xl. p. 406. [6] McCarrison, *The Thyroid* (Cassell and Co. and Baillière). [7] Ibid. [8] *Lancet*, July 12th, 1919, p. 75. [9] Batten, *Lancet*, November 29th, 1919, p. 952.

DISCUSSION.

Dr. Moore (Gateshead) stated that he had known and treated a case of iridocyclitis which did not react to ordinary methods of treatment over a prolonged period. History revealed the fact that the patient had had previously an ordinary gonorrhoea; the appropriate vaccine was administered over a period of seven weeks without other treatment, and was followed by complete recovery.

Mr. Inglis Pollock (Glasgow) mentioned the case of an old schoolmaster with tobacco amblyopia who cured himself, on his son's suggestion, by having all his teeth replaced with artificial sets. He refused to give up his tobacco. The cure was apparently due to the improved mastication and nutrition.

Dr. John Hern (Darlington), referring to the subject of autointoxication, said that certainly cases did occur, especially in septic conditions of the mouth and teeth. He had charge of a venereal diseases department for four and a half years, and although he watched carefully in gonorrhoea for affection of the eye he found none; but in syphilis he was much impressed with the frequency of affections of the eye.

Mr. A. S. Percival (Newcastle-on-Tyne) gave a striking instance of recurrent iridocyclitis which was not due to oral sepsis, but recovered almost completely three days after an internal ureterotomy by Mr. R. J. Willan, to whom he had sent the patient as he gave some symptoms of an old stricture. He asked whether any of the members present had tried radiant heat. In cases of old iridocyclitis in which an iridectomy was urgently called for such an application was usually unsuccessful, as the iridectomy wound was filled up with plastic exudation, which perhaps left the eye in a worse state than before. He had tried a preliminary course of radiant heat in some of these cases, which appeared to be invaluable in determining the presence of occluded sepsis. When there was no persistent irritation after the radiant heat one might reasonably expect that the operation could be done with much less fear of subsequent inflammation. He had had much better results than he had expected after using this method.

Dr. D. Matheson Mackay (Hull) said he thought that all ophthalmic surgeons would agree with the thesis propounded in the paper, and that all were treating their patients on the assumption that many eye affections were due to autointoxication—notably toxins from dental caries, gonorrhoea, and rheumatism.

NODULAR KERATITIS OF SOUTH ARABIA.

BY

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The disease I have called, for want of a better name, nodular keratis of South Arabia, is one which in its commoner forms is a peculiar and striking condition. A patient, usually middle-aged, comes complaining of dimness of vision which is less marked at night. On examination he is found to have a group of nodules occupying an area in or below the equator, and usually including the centre of the cornea. In most cases the condition is present in both eyes, though the position of the lesion may not be the same in each.

These nodules in typical cases are perfectly transparent and are covered by normal epithelium. They are often closely grouped together; I have counted as many as twenty-five in an area of 4 by 2 mm. On the other hand, there may be only a single nodule present. There may be no opacity of the cornea, no suggestion of leucoma, and nothing to indicate that there has been any previous ulceration. The cornea is not vascularized, the sclera looks perfectly normal, there are no enlarged vessels at the corneo-sclerotic margin and no injection of the conjunctiva. The iris reacts to light and shows no sign of previous inflammation, and if it is dilated to enable one to examine the fundus, that also proves to be perfectly healthy. The only abnormality is this little group of glassy nodules of various sizes, the largest having a diameter of somewhere about 1 mm. and projecting about the same distance from the surface of the cornea. Examined with a lens from the side, they look like a group of round-topped mountains on a raised map or the mounds that an active mole might make on a smooth lawn.

When one examines a series of cases other points arise. The nodules are not always transparent, some or all may be slightly white and opaque; while the cornea between and around them may not be clear but may show leucomatous change, or may even stain in parts with fluorescin, indicating the presence of active ulceration. As a rule the ulceration present is of a superficial nature, but in one patient who was admitted to hospital for a hypopyon ulcer of moderate severity it was noted after the ulcer had healed that one nodule was present in the cicatrix.

The grouping and position of the nodules also varies. The cases of which I have notes number 16, and of these both eyes were affected in 9 cases, giving a total of twenty-five eyes. In twenty of these twenty-five eyes the pupillary area was affected by the disease. The lesions were roughly circular or oval in 20 cases; in the one following the hypopyon ulcer there was only one nodule; in two others the outline was quite irregular, while in two it was linear. One of these latter was a very striking case—five nodules were present in a straight line right across the equator, one being almost central with two nodules on either side. The area affected was not always covered with nodules, as in the case I have described as typical. In several cases the nodules formed a rough circle or ellipse, with either clear cornea or a patch of leucoma occupying the interior of the area.

With regard to concurrent disease of the eye, slight pterygium (a very common condition in these parts) was present in six of the cases. One patient had trachoma and trichiasis, also common diseases. One had signs of old iritis, while another was completely blind. He had posterior synechiae and cataract, and was probably syphilitic. None of these diseases had apparently any causal connexion with the corneal condition.

The disease is much more common in males; of these 16 patients only one was a woman. Eight of the 16 were Arabs, 7 were Somalis, 1 was a Soudani. In reference to occupation, a noteworthy fact is the high proportion—50 per cent. of the cases—of men working by or upon the sea. One was the captain of a dhow, one was a pearl fisher, another a quarantine worker at Perim who spent much of his time on the sea, while five were fishermen. All the others, with possibly one exception, were dwellers near the coast. As a large proportion of our other patients came from the hills of the interior, the fact that all of the cases of this disease of which I have notes came from the coast or the plains, suggests that something in the conditions of life in the low-lying regions may be an etiological factor. The coast of South Arabia in the Aden region is mostly desert, covered with dry, salt-impregnated sand, which during the monsoon months is constantly being blown about. Day after day for hours at a time one lives in a constant cloud of dust. From time to time the monotony is varied by a real sandstorm, when the sand which the daily winds have blown inland is returned with interest by a hurricane blowing towards the shore with such intensity that the sand is carried miles out to sea, and ships enveloped in it may be as helpless as in the fogs of more northern latitudes. In the hills these conditions do not exist. There are large areas of cultivation; there is a considerable rainfall, while that at the coast is almost negligible; instead of sandstorms there are thunderstorms; and if, in a dry season, the dust is raised by the wind, it is ordinary dust and not the salt-laden dust of the plains. My theory may be quite wrong, but I put it forward as a suggestion—that exposure to the salt-laden dust is a factor in the causation of the disease.

With regard to the age of the patients, the disease is chiefly one of middle and late life. None of the patients were under 30 and only four under 50. Ten were between 50 and 65. I have no note of the ages of the other two, but both were adults.

In reference to the frequency of the disease, I regret that it is impossible for me now to give accurate figures. In three months of 1913 I have notes of 7 cases of the disease. In that year I operated on 60 cases of cataract, probably about 15 of them during the three months in question, so that one might roughly say that operable cases of cataract were twice as numerous as cases of this disease. Our hospital, the Keith Falconer Mission Hospital at Sheikh Othman near Aden, was a general hospital at which about 10,000 new patients were seen each year, and of these probably some 1,500 were eye cases. These figures are subject to correction, but I imagine I am not far wrong in saying that of every 200 cases of eye diseases seen not more than one or two would be of this form of keratitis.

The effect of the disease on the patient's vision varies with the position of the nodules. When they involve the centre of the cornea the effect is of course very great, the irregular surface breaking up and distorting the entering rays of light and making the patient as blind as would a dense patch of leucoma in that area. These cases always state that their vision is worse by day than at night, the reason of course being that the pupils are wider at night and allow some rays of light to get through unaffected portions of the cornea.

With reference to the differential diagnosis, there are several known diseases in which nodules are found in the cornea:

1. *Keratitis punctata superficialis* has some points in common with this disease. But it is usually a disease of young people, while my patients were mostly old; the spots gradually disappear after some months, while in the disease I have described the nodules had often been in existence for years and had every sign of permanence; and in the descriptions I have seen of keratitis punctata superficialis there is no suggestion that the spots are limited, as in my cases, to the lower half of the cornea. The nodules in keratitis punctata are described as dull, owing to the epithelium being raised over the grey spots, while in many of my cases the striking feature was the transparent glassy character of the nodules.

2. In *nodular opacity of the cornea*, which is associated with the name of Groenouw, there are larger spots in the centre and smaller in the periphery of the cornea, while between the spots there is a faint uniform cloudiness. Both are points of difference from the nodular keratitis I have described.

3. *Dystrophia epithelialis corneae* is also quite a different disease. It consists of a diffuse opacity, most intense in the pupillary area and fading off into normal cornea towards the periphery, simulating a glaucomatous opacity. The nodules are vesicular elevations which stand out as black spots on the opacity.

4. Finally, there is *dendritic keratitis*, a form of *herpes corneae febrilis*, in which, as the name indicates, there is a superficial ulceration of the cornea, branching in a tree-like manner, often with nodules at the extremities of the branches. This is frequently associated with, if not due to, malaria, a factor which is always possible in South Arabia. But the descriptions of dendritic keratitis do not at all correspond with the Arabian disease.

In regard to the origin and course of the disease I have little to offer but theory. In three of my cases some superficial active ulceration of the cornea was present; two had a history of injury; one patient gave a history of attacks of pain in the eye over a period of six or seven years; while the position of the lesions, on and below the equator of the eye, corresponding to the usual sites of corneal ulceration, suggests that the disease may begin as a superficial ulceration. Further, the fact that where there was a dense leucoma present the nodules were usually on the periphery of the scar suggests that if the hypothesis of an original ulceration in every case is correct, for some reason or other the nodules only form in parts where the ulceration is of a very superficial nature. Whether they are the result of the embedding in the superficial layers of microscopic particles of salt or sand which act as an irritant and stimulate the cornea to envelop them, somewhat on the analogy of the grain of sand which is said to be the origin of the pearl in the oyster, must be left to the future to determine.

ACCORDING to the *Japan Medical World* the plague epidemic which had prevailed in Manchuria for nine months from September, 1920, caused a total of nearly 8,000 deaths. The preventive organization which is credited with having brought the epidemic to an end in this comparatively short time was dissolved on July 15th. A quarantine blockade was instituted between north and south Manchuria, with a staff of Japanese and Chinese medical examiners and bacteriologists; trains were inspected and travel of all kinds between the two parts of the country was strictly supervised.

ERYTHEMA NODOSUM: AN ACUTE SPECIFIC FEVER.*

BY

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I PROPOSE briefly to review the evidence that can be adduced in favour of regarding erythema nodosum as an acute specific infectious fever comparable in every way to the zymotic fevers.

The matter is one of very great importance from a national point of view on account of the varied theories that have been held with regard to the nature and causation of the disease. Briefly, these theories are:

1. That erythema nodosum is a manifestation of acute rheumatism.
2. That it is a cutaneous manifestation of a general intoxication due to several widely different causes.
3. That it is tuberculous in origin, a septicaemia due to attenuated tubercle bacilli.
4. That it is a manifestation of syphilis.

Obviously, if erythema nodosum could be proved to be an early manifestation of tuberculosis or of acute rheumatism, it would enable us to take precautionary measures in the case of persons who have suffered from it, and possibly so to avert later attacks of phthisis or carditis—two conditions which levy so heavy a toll upon the young adult life of the community.

It is not my present purpose to criticize these theories, but it is necessary to make a few brief remarks in regard to them.

The cases of erythema nodosum associated with syphilis have been reported chiefly in German and French journals, and these have been published with the view of showing that the disease is of syphilitic origin without considering the possibility of a symbiosis. Altogether the evidence is far from convincing.

The rheumatic origin of erythema nodosum is still taught in English textbooks, but the evidence brought forward in its support is not very satisfactory. In the following table I briefly summarize the chief differences between erythema nodosum and acute rheumatic fever:

Erythema Nodosum.	Acute rheumatic Fever.
Age incidence: Second and third decades	5–10 years.
Seasonal incidence: Second and last quarters	Third quarter.
Some evidence of infectivity and epidemic occurrence	Very little.
Relapses and recurrences rare	Frequent.
Endocarditis rare	Frequent.
No relief of fever or arthritis from salicylates	Relief.
Phlyctenulae in about one-third of the cases	None.

In a series of 48 cases seen at the Bristol General Hospital down to 1907, there was the possibility of a rheumatic connexion in 22.9 per cent. if one took into account a family or personal history of rheumatic fever, chorea, and growing pains, and regarded all cardiac bruits, of whatever nature, as due to a rheumatic carditis.

From 1907 to 1920 I made the closest inquiries and the most careful examination as to the existence of rheumatic symptoms in 50 consecutive cases of erythema nodosum seen in hospital and private practice. In this series the result is much the same—that is to say, 25 per cent. gave either a family history or a personal history of acute rheumatism, or had a cardiac bruit whilst under observation. In the majority of these cases a note was made of the fact that the bruit was probably haemic. Amongst practising physicians the view that erythema nodosum is a rheumatic disease is fast disappearing. It is kept alive only by the medical textbooks which copy the statement from one to the other.†

The question of the association of erythema nodosum and tubercle cannot be dismissed so easily. The French school led by Poncet and Landouzy, and to a lesser degree the Germans, maintain the tuberculous origin of the disease; but in this country the view more commonly held is that erythema nodosum is more likely to develop in tuberculous subjects, or that an attack of erythema nodosum (just like an attack of measles) may light up afresh a latent tuberculous focus.

In April, 1914, I published in the BRITISH MEDICAL JOURNAL an account of 6 cases of erythema nodosum associated with tuberculosis; since that date, in other 30 cases tuberculous lesions have been found in 2 only; both were cases of tuberculous glands in children. In private practice I have followed cases of erythema nodosum for four, ten, and fourteen years, and no signs of tuberculosis have arisen. I have not succeeded in exciting or re-exciting the lesions of erythema nodosum by the intradermic injection of tuberculin, nor have I found von Pirquet's reaction invariably positive in children with erythema nodosum. Inquiries made at tuberculosis sanatoriums do not show that cases of erythema nodosum are of frequent occurrence. Of especial value is the reply of Sir Henry Gauvain, medical superintendent of the Treloar Homes for Crippled Children, who writes to me: "As far as my memory serves me, I have not seen more than half a dozen cases of erythema nodosum out of 2,500 children treated here during the last twelve years."

Time will not permit me to go further into the discussion of this matter, but it is one of great interest and would well repay further investigation. I wish to confine myself strictly to discussing, "What facts are there supporting the view that erythema nodosum is a definite infective disease?"

If erythema nodosum be a specific infectious fever we should expect it to present definite epidemiological and clinical features, namely:

1. Communicability from person to person.
2. Occurrence in epidemic outbreaks.
3. A seasonal incidence.
4. A constant age incidence.
5. A definite and orderly sequence of events during the illness—for example, a period of incubation, of prodromal illness, of febrile reaction, rash, and convalescence. Relapses.
6. Conferment of immunity.
7. To a lesser extent, we should look for alterations in the leucocyte count, a fall of the blood pressure, and the presence of organisms in blood, urine, or tissues.

Some infectious diseases present those characteristics better than others. For instance, there is a wide difference between a group of diseases such as measles, scarlet fever, and chicken-pox, and a group such as influenza, anterior poliomyelitis, and encephalitis lethargica; and erythema nodosum could be classified best with the latter group.

Infectivity.

With regard to the infectivity of the disease, I have records of three instances in which two cases of erythema nodosum have occurred in the same house within three days of one another. Whilst such incidents lend support to the view that they were the result of a common infection, it might equally be true that both cases arose from some toxic source shared in common.

In 1907 I saw a boy with erythema nodosum, his sister having suffered from the same disease three weeks previously. On July 12th we discharged a boy from the Bristol General Hospital convalescent from erythema nodosum, and admitted his sister suffering from the same disease on August 31st. The rash was well developed. An interesting series of cases occurred at the Bristol General Hospital last year. Two ladies (sisters) developed the rash of erythema nodosum—one, a medical student, on March 20th, and the other on March 22nd. There can be no doubt that they were infected from some common source, for the medical student had been suffering from an attack of measles from March 3rd to March 17th, and had been separated from her sister. The medical student first returned to her hospital work about March 27th—long before her nodes had disappeared.

On April 8th a nurse in the ward in which this student was working developed pains in the limbs with fever, and the erythema nodosum rash appeared on April 12th. The night nurse of the same ward had a sore throat about April 15th, and after a period of indefinite malaise developed fever and arthritis on May 2nd and erythema

* Abstract of a Presidential address delivered before the Branch, June, 1921.

† I discussed this matter more fully in an article contributed to the *Lancet*, January 25th, 1907; and in the *Practitioner* for August, 1913, Gosse contributed a most convincing paper controverting the rheumatic view.

nodosum rash on May 8th. The interval between the date of the lady medical student's return and the first appearance of symptoms in the nurses was twelve and nineteen days. If these nurses were infected from the student, then the incubation and prodromal periods must have been very brief. I am inclined to think that the prodromal period in this disease may very occasionally be limited to one or two days only.

Multiple cases have been noted by other observers, amongst whom I may mention Lendon and Gosse. Unfortunately they do not enable us to fix with any degree of accuracy the incubation period of the disease, because erythema nodosum is frequently characterized by a long prodromal period with or without fever. This prodromal stage may last from one to three weeks before the rash appears, and is often so ill-defined that it is impossible to say when the illness began. Taking all these difficulties into account, it seems probable that the incubation period is about fourteen days.

Epidemicity.

Small outbreaks of erythema nodosum are reported from time to time in the medical papers, and tend to confirm the view that the disease is infective in character. Joynt[1] reported 9 cases of erythema nodosum which occurred amongst 300 convalescent cases of measles. His report, however, might equally well be quoted in support of the view that the disease is a general toxaemia excited by measles or other malady.

A more convincing report was that of Langford Symes,[2] physician to the Orthopaedic Hospital of Ireland. In a home of 100 young girls he saw 12 cases of erythema nodosum between May 14th and June 14th. There was no antecedent zymotic illness. The incubation period appears to have been about fourteen days.

Recently a very large outbreak of erythema nodosum has come under my notice. It has not been reported in the medical press, and I am indebted to Dr. R. E. Roberts, M.O.H. of the Mynyddislwyn Urban District Council, for the following particulars. In that urban district about 50 cases were observed during a period of five weeks in August and September, 1920. The majority occurred in a small area comprising two or three streets. There was febrile disturbance and the characteristic rash on legs, face, and neck. No case of erythema nodosum had occurred in these same streets in Dr. Roberts's recollection for fifteen years. The majority of the patients were between the ages of 12 and 20 years, and both sexes were equally affected. No two cases arose in the same house. One case, in which the rash took on the characters of erythema multiforme, was of a serious nature, but ultimately recovered.

I have plotted curves from a number of cases of erythema nodosum seen year by year in the skin department of the Bristol General Hospital from 1899 to 1914, and also from the yearly number of cases seen by me from 1908 to 1914. The number of cases seen is so small that the value of the curves is not great, but they seem to show that erythema nodosum tends to recur in epidemic form every three or four years, and both curves agree in showing an exceptionally large number of cases in 1913. Such variations are the rule in other infectious diseases, as, for instance, measles and whooping-cough.

Seasonal Incidence.

In Bristol the seasonal incidence of the disease is very constant. The second quarter of the year is the period in which the largest number of cases occur, and there is another rise of lesser degree during the last quarter. The curve somewhat resembles that of measles—a disease with which erythema nodosum is not uncommonly associated. Gosse found that in London the disease was most common in the months of March, April, and May, with a rise again in July, September, and October. Hebra, Hegler, and other Continental writers also gave April, May, and October as the months of greatest prevalence.

Age Incidence.

The age incidence is even more definite, the majority of cases occurring in the second and third decades of life, chiefly during youth and adolescence. Thus, of the cases up to 1907, 63.2 per cent. occurred during the second and third decades of life, and of cases subsequent to 1907, 65 per cent. The youngest patient was aged 3 and the oldest 63 years.

Sex Incidence.

The sex incidence of this disease is a stumbling-block to the infective theory. The disease attacks females three times as frequently as males.

Lendon says that before puberty (which he fixes at 15 years) this difference is not very obvious. My own figures support this statement, and I have confirmation of his views from Dr. Kenneth Wills, who has looked up the age and sex of 53 consecutive cases attending his skin clinic. Ten of them were males, and all of these were under 15 years; of 43 females, 22 were under 15 years. It is obvious that erythema nodosum is of rare occurrence in males after puberty.

I know of only one other infective disease in which there is a marked difference in the incidence upon the two sexes—namely, chorea. In chorea, which is a cerebral form of rheumatic fever, the incidence on girls is more than twice as great as that on boys, and, like erythema nodosum, it is rarely seen in males after the age of puberty.

Goodall and Washbourne state that in scarlet fever more females are attacked than males at all ages, and C. B. Ker says that after 10 years of age diphtheria is more common amongst females, but in neither disease is the difference very considerable.

The overwhelming preponderance of attacks in females at the higher ages is an argument against both the rheumatic and the tuberculous theories of causation. It supports the views of those who regard erythema nodosum as an evidence of general blood dyscrasia, more particularly as the highest incidence is at or about puberty.

A Definite and Orderly Sequence of Events.

The definite sequence noted clinically in erythema nodosum is much more suggestive of a specific fever than of a toxaemia due to one or more causes. The incubation period is from ten to fourteen days. (Dr. Lendon writes me that in his experience the average is about eleven days.) This is followed by a lengthened prodromal period (one to three weeks), and then by a period of fever lasting for from one to three weeks. It is generally during the first week of the fever that the characteristic rash appears. The rash is confined to the arms, legs, and head, comes out in successive crops, chiefly on the extensor surfaces, and goes through definite stages of fading and desquamation. Occasionally cases occur in which the characteristic nodes are followed or accompanied by the papules and vesicles of erythema multiforme, and this can fairly be advanced as an argument against the specific nature of the disease. Time will not permit me to discuss this theory of the relation of erythema nodosum to erythema multiforme, but I may say that one never sees greater variations in the rash than one is accustomed to see in other specific fevers, as, for instance, between that of a mild case of small-pox and that of the malignant form of the disease.

Angina is so common an early symptom as to suggest that the specific infective agent gains entry by the tonsils.

Although the malaise of the febrile period is less than in other fevers, convalescence is generally prolonged. Relapses are not uncommon, especially if the patient be allowed up too soon. Arthritis is rather more frequent than in other acute fevers, and the only distinctive sign—other than the rash—is the presence of phlyctenules in the conjunctiva.

The blood pressure is low, as in fevers generally, and there is slight leucocytosis; the average white cell count in the present series was 11,000 per c.mm. The increase is greater amongst the lymphocytes than the polymorphonuclear cells. This leucocytosis is a point in favour of a bacterial origin, but my many attempts to grow an organism from the blood, cerebro-spinal fluid, affected tissues, and from the urine, have failed, both in aerobic and anaerobic media.

Immunity.

The degree of immunity conferred by an attack of erythema nodosum is not high. In the present series of fifty cases, one patient—a girl of 18 years—stated that she had suffered from a similar attack just twelve months previously. Another patient had two well marked attacks, both when under my care, the first in 1915, and the second

in 1920. I saw the sister of this patient in a severe attack in March, 1920, and in February, 1921, she had a still more serious attack, in which some of the nodules became vesicated and ulcerated. The mother of the two girls had erythema nodosum in 1886, and her oldest daughter died in 1889 during an attack of tonsillitis and erythema nodosum with endocarditis and pericarditis. There was a strong rheumatic family history, and several members of the family had suffered from multiple attacks of scarlet fever, measles, and diphtheria, so their case might be used equally well as an argument for or against the theory of infection.

Certainly second attacks are more common in this disease than in scarlet fever, but they are not of such frequent occurrence as to support the view that the disease is a blood dyscrasia due to rheumatism, tuberculosis, or other chronic constitutional weakness. I have not heard of a person suffering from more than two attacks.

Conclusion.

I do not regard the evidence I have been able to bring forward as conclusive. The strong points in favour of the theory that erythema nodosum is an infectious fever are the proof that it may be transferred from person to person and may occur in small localized outbreaks and in epidemic waves. Equally convincing is the evidence of a definite seasonal incidence and constant age incidence. The systematic distribution of the rash, the evidence of relapses, and conferment of immunity are also favourable to this view. On the other hand, one has to explain the constant association of erythema nodosum with other diseases, such as tuberculosis, measles, and minor conditions of ill health.

The heavy incidence of the disease on girls at and about the age of puberty is difficult to explain on any ground of infection, and we also have to decide whether erythema nodosum and erythema multiforme are but two phases of the same disease, or whether they are two clear and distinct entities.

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MOUNTAIN CLIMATES IN HEALTH AND DISEASE.

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The object of this note is to set out, briefly and concisely, the principal physiological and therapeutic effects of high altitudes upon the organism. As one ascends to a higher altitude the barometric pressure falls, there is a lower tension of oxygen in the air, and at the same time there is a fall in temperature. There is also increasing dryness of the air, which becomes more marked the higher one goes. As a result of the absence of moisture in the air the radiant power of the sun increases, and this is helped by the freedom from smoke and (in winter, at any rate) from dust. During the winter, when the snow is down, the radio-active power of the sun appears to be even greater than during the summer. Much interesting information may be obtained on this subject from the classical work, *The Therapeutics of Climate*, by the late Dr. W. R. Huggard of Davos.

Upon the healthy person the general effects of altitude are as follows: The tissue changes go on more rapidly, the respirations and pulse are quickened, and the body temperature tends to be slightly higher than at sea level; one is living at a greater rate, so to speak, in the mountains. Another important point is that at sea level the normal red blood count is approximately five million corpuscles per cubic millimetre, and the percentage of haemoglobin about 90; at an altitude of, say, 5,000 ft., the blood, in order to compensate for the diminished tension of oxygen in the air, becomes richer both in red cells and in haemoglobin, the ordinary estimation of a healthy person at this altitude being seven million red cells per cubic millimetre, and about 100 per cent., or even more, of haemoglobin. The essential facts here appear to be the change in the percentage of haemoglobin, and this is directly proportional to the altitude, and thus, of course, to the diminished oxygen tension of the air. The highest percentage of haemoglobin ever recorded is, I believe, 150 per cent., which was reached by one observer at a height of 12,000 ft. There is, however, another factor to be considered in regard to the process of "acclimatization." Under the lowered pressure of a high place, and, of course, proportional to the height, the internal pressure of the body gases is altered, and is always tending to equalize with the external pressure, and until this is accommodated there is increased internal pressure, which may help in producing many of the sensations experienced at first, even at a moderate height—say, 5,000 ft. This process of acclimatization takes from a week to a fortnight to accomplish itself, however, and as a result on first going to a high altitude people often feel uncomfortable and short of breath on slight exertion, and may experience cardiac palpitations and sleeplessness, with lassitude and malaise.*

At high altitude persons breathe deeper, and there is a tendency to expand the lung more than at sea level. The vital capacity also is increased. This feature is valuable in the treatment of chronic pleurisies with adhesions, and in pulmonary disease of the fibrotic type generally; also in adenoids.

From this brief summary of the chief physiological effects of altitude, it is plain that we have here a valuable and powerful therapeutic aid, if applied with care and common sense and to the correct type of case. My remarks are based upon observations made at an average height of 5,000 ft. above sea level, which, taking it all round, appears to be the most advantageous altitude as a therapeutic agent. The modern tendency of treatment is to try to increase the reactive power of the patient, rather than to attempt a direct attack on the disease itself, and this is clearly the line of procedure to take up in such a disease as pulmonary tuberculosis, where direct attack is often impossible. Since the increased metabolism at high altitudes must tend to heighten the reactive power and power of resistance, this therapeutic agent offers the best means at present available for the treatment of pulmonary tuberculosis in properly selected cases. I will first endeavour, therefore, to sketch out the types of case most likely to benefit from a stay in the mountains, and then will enumerate certain cases which should never under any circumstances be sent there.

Healthy people may thus derive great benefit from a holiday in a mountain station, and perhaps the three weeks that many spend at Christmas time in some of the Alpine resorts give the greatest possible value, as regards a holiday, that can be obtained, especially to the hard-worked professional man.

Tuberculosis: Indications and Contraindications.

Tuberculosis is, perhaps, the condition most closely associated with mountain treatment, and it is certain that there must be some good reason for the great reputation which the mountains have won for the cure of tubercle, more especially tubercle of the lungs. First, it is clear from what has already been said, that the main general principle the physician should bear in mind when deciding whether a particular patient is a suitable type of case for a high altitude must be his reactive power. And this is where the judgement of the doctor must be carefully exercised, but the following few remarks may serve as a guide in forming an opinion.

To begin with, there is no doubt that the best type of pulmonary tuberculosis to treat in the mountains is an early case in a young or middle-aged subject, if of a good general constitution, and with sufficient resistance and vitality to react properly to the increased rate of metabolic activity which occurs at an altitude. But later cases of a chronic and partially arrested type undoubtedly do very well in the mountains, especially those in which the disease appears to have come to a standstill and the patient is "sticking"; the mountain climate seems to give this type of case just the necessary amount of stimulus or "kick" to enable him (or her) to improve.

The patients who should never be sent are those in the

* An interesting account of mountain sickness and the sensations experienced at great altitudes—for example, 8,000 to 20,000 ft.—will be found in *Travels amongst the Great Andes of the Equator*, by Edward Whymper, where the effects of very high altitudes (and consequently low pressures) are carefully analysed as regards pulse, body temperature, breathing capacity, fatigue, and general sensations, etc.

advanced third stage of the disease, emaciated by toxaemia and fever, and enfeebled by the strain of prolonged and active disease. All that the mountains do to such cases is to hasten the inevitable end; the invalid, worn out by disease and with resistance gone, cannot react to the altered conditions. Unfortunately, only too often is this kind of case sent out, generally as a sort of last hope at the patient's own wish, for treatment at a mountain resort, the tendency in England, I fear, being to keep the slighter cases at home and deny them the advantages of altitude treatment, until they are too far gone for cure. If the mountains are to do their best for a patient he should be sent as soon as the diagnosis has been definitely made.

Patients with acute inflammatory conditions, severe secondary infections, or those with large septic cavities, do not, as a rule, do well in the mountains. On the other hand, the bronchial and bronchiectatic cases often derive much benefit, the catarrh and the amount of sputum sometimes diminishing greatly. Patients who have had attacks of haemoptysis are often told that they should not go to a high altitude; this is true for those with cavities and a tendency to big haemorrhages, especially where the blood pressure is raised, but it does not at all apply to the blood spitting of early or relapsing cases of phthisis; these generally do remarkably well.

The same may be said of laryngitis. Patients with this complication are often discouraged from trying a mountain climate. Here again one must distinguish between the advanced destructive tuberculous laryngitis of the third-stage case and the ordinary and very common complication of laryngitis in the earlier stages. I have often been struck with the way in which these latter cases heal up and resolve, the whole process becoming quiescent and the patient regaining almost full strength of voice. This is especially striking in those common cases where the laryngitis is really a chronic catarrhal condition associated with the pulmonary tuberculosis, and not a true tuberculous laryngitis.

Again, it is often said of patients that "So-and-so could not possibly come to a high altitude, as he (or she) is suffering from a weak heart." In my experience, practically the only kinds of weak heart that should never be sent are cases of organic valvular disease which is extensive and not properly compensated, and cases of endocarditis which tend to be acute and are likely to relapse. The myocardial type of case may gain great benefit from a mountain climate, under careful observation. I have had many patients under my care who arrived in a most apprehensive state of mind as to whether they would be able to stand the height owing to their cardiac condition, but found in a short time, when they became acclimatized, that they were more comfortable, felt better, and could do more than they ever did at home.

I have been told over and over again by patients that they were dissuaded from trying Switzerland as a health resort because they had been told that it was much better to be cured in the country and climate in which they were ultimately going to live, and that if the cure was effected in the Swiss mountains they would have to live there always, and would relapse on returning to England. This, of course, is mere rubbish, and it is not right to discourage early cases should these patients wish to try what the Alps will do for them. By such discouraging and deterring "proverbs" many early cases, which are most suitable for the Alpine climatic treatment, and would probably gain great benefit therefrom, are prevented from coming until too late, with the result that we tend to get in Switzerland many advancing and severe second and third stage cases, which can, at the best, only hope for a "patch up"; even these often regain a certain measure of health and strength, and learn to rely upon the mountains for the winter. We see these people coming out year after year for the worst of the English months, knowing that it is during these months that the Alpine climate is at its very best.

Cases of chronic pleurisy with thickening and adhesions, and consequent poor expansion of the lungs, are likely to be much benefited, owing to the deeper breathing required by the lower tension of oxygen in the air.

Cases of surgical tuberculosis are very suitable for treatment in the mountains owing to the greater amount of sunshine and increased radio-active power of the sun, especially during the winter months.

Conditions other than tuberculosis which may be greatly benefited by the Alpine climate are anaemia, bronchitis and emphysema, asthma, and neurasthenia due to overwork or business worries. Predisposed ("subtuberculous") children are enormously improved in their health by the open air and sun treatment; in certain resorts open-air schools exist. Enlarged tonsils and adenoids in children, associated with general maldevelopment and backwardness, do very well in the Alps, as also does debility during convalescence from acute illnesses. The mountains are contraindicated when there is great general enfeeblement due to a long-standing chronic disease, and the resistance and reactive power are much reduced. Cases of uncompensated valvular heart disease should not be sent to a mountain climate, nor should those with an abnormally high blood pressure. The high mountains are also, as a rule, unsuitable for chronic kidney disease and rheumatism, especially chronic muscular rheumatism.

Heliotherapy.

For certain cases the sun is a most valuable therapeutic agent, and this is a fact which nobody who has had any experience of its effects will ever gainsay, especially as regards the treatment of localized or so-called surgical tuberculosis, and as a prophylactic in predisposed children. The high altitudes are essentially favourable for the sun cure. In low-lying places the sun has to filter through the whole thickness of the atmosphere, with its attendant moisture, smoke, dust, and micro-organisms, which form a sort of veil, preventing much of the sun's power from penetrating. In the high altitudes this is not so, and here, especially when the snow is on the ground, the sun is astonishingly powerful, even in mid-winter. Sun-bathing consists in slowly and methodically training the body to become accustomed to the direct rays of the sun; as a rule, the treatment should be commenced with the lower extremities, then extended to the legs and abdomen, and finally to the back and chest, until the whole body is inured to the effects of the sun. This tolerance is attained only by deep pigmentation of the skin. The sun appears to have the following actions: first, it exerts an analgesic effect, and pain gradually decreases and finally disappears; it also has an absorbent effect on local tuberculous lesions, such as enlarged glands, chronic peritonitis, and foci in the bones and joints; it seems also, in some way, to cause absorption of adhesions; we find movement being restored in old ankylosed joints. Cold abscesses even, if not too big, are sometimes absorbed under the sun treatment, without having to be aspirated. The general condition of the patient is improved under a course of sun baths, the muscles keep their tone and do not waste, the appetite improves, and the general vitality is much increased.

Besides tubercle, excellent results are obtained by sun treatment in cases of burns, ulcers, old wounds, chronic inflammatory conditions, fistulae, and similar lesions. The sun cure is contraindicated where the temperature tends to be over 100° F. at night. In those individuals who do not pigment it is impossible to carry out the sun cure. As a rule, the greater and deeper the pigmentation the better the result. Very fair or red-haired people do not stand the sun as well as darker types. Whilst heliotherapy is of such great value in local tuberculous or simple inflammatory conditions, it is unsuited for cases of tuberculosis of the lungs, and, in particular, must never be applied if there is any tendency to active disease. Exposure to the sun in these cases is almost certainly followed by congestion of the tuberculous foci, with consequent rise of temperature, increased sputum, probably haemoptysis, and may be the means of lighting up the whole disease. It is, however, conceivable that a modified sun treatment could be worked out in certain of the more chronic types of pulmonary tuberculosis—those which approximate to a local or surgical lesion, such as chronic pleurisies or local fibrotic patches; even then it will probably be found impossible to expose either the chest or the head to the direct rays. At an altitude where the radio-active power of the sun is so great pulmonary cases should always be warned not to sit about in the sun but always to keep in the shade, and especially guard against the direct sun upon the head or chest. Many new-comers with pulmonary lesions fall into this mistake and sit out in the sun, thinking it will do them good, and are surprised to find that the reverse is the case.

The following table shows the sort of way in which the sun treatment is begun and developed:

First day: Ten minutes on feet to ankles.
Second day: Ten minutes on legs to the knees and twenty minutes on feet to ankles.
Third day: Ten minutes on legs to the hips and twenty minutes on feet and legs to knee.
Fourth day: Ten minutes on back of legs to the hips and twenty minutes on the front of legs.
Fifth day: Ten minutes on the lower trunk and fifteen minutes each back and front of legs.
Sixth day: Increase a little the exposure of the trunk for ten minutes and twenty minutes each back and front of legs.
Seventh day: Ten minutes' exposure of the back and the rest of the body as for the sixth day.
Succeeding days: Increase gradually the amount and length of times of exposure until the whole trunk, except the head and neck, is exposed for about two and a half hours' total time.

Before deciding on any particular climate for a patient two factors must be carefully considered: the demand for tissue change made by the climate and the individual patient's power of responding to this demand. A young robust person with sound digestion, heart, etc., and with much reactive power and resistance, needs a wholly different type of climate from the elderly and feeble patient, with poor digestion, indifferent kidneys, and weak circulation. These are two extreme types, but I wish to urge the great importance of considering these points before recommending a climate, whether at a high altitude or otherwise, for any particular case. In mountain climates, where there is a demand for an increased and higher rate of metabolism, people who do best are naturally those able to respond and react to this increased call upon the constitution. Thus it is that the early cases in young and middle-aged people are those which do best in the mountains; and next in order comes the more advanced or partially arrested case, where, however, the general constitution is still good and the patient can respond satisfactorily to the demands of the mountains. The second group often derive great benefit from the extra stimulation and "flip," caused by the climatic conditions of a mountain resort.

Another important point to be thought of is the mental side of the question; patients who have to lead the sedentary quiet life necessary to the treatment of this unhappy disease will be more cheerful and in better spirits in the bright sun and clear blue skies of an Alpine climate, especially in the winter months, than in the average weather conditions prevailing at that period in our own island.

ELEVEN THOUSAND CASES OF SPINAL ANALGESIA.

BY

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During the past ten years I have performed 11,000 surgical operations under stovaine spinal anaesthesia. As this is probably as large a number as any individual British surgeon has done, I desire briefly to place on record my experiences. The methods which I now employ represent an evolution which gradually, during the past three or four years, crystallized itself into the following procedure:

I use a platinum needle about 2½ inches long, and not much stouter than an ordinary hypodermic needle. I prefer the patient seated, with the back arched, on the operating table, when that position is possible. I select whatever intervertebral space is indicated, and insert the needle in the middle line immediately above the lower spinous process of the space. Generally one feels and hears the penetration of the membranes, and the cerebro-spinal liquid should flow in a jet, or at least in rapid drops. I remove a quantity of fluid equal to the volume of the solution to be injected.

The solution used is made up in ampoules furnished by the Maison Clin of Paris, containing about 7½ c.cm.; to that I add an ampoule containing ½ mm. or 1 mm. of strychnine. The full dose of 7½ c.cm. suffices for a prolonged operation (such as a double hernia, a double hydrocele, with, perhaps, a ventral hernia in addition). That dose produces complete insensibility for at least one hour, and no operation should last longer than that.

I find that this method is employed by me in 97 per cent. of all operations performed. The exceptions are made up of operations on the head and neck, for which spinal analgesia is neither easy nor efficient. Many operations on the head and neck are done under local anaesthesia, and a very small minority under chloroform or ether. Spinal analgesia I use for all abdominal operations—hysterectomy, ovariotomy, appendectomy, nephrectomy, splenectomy, liver abscess—and for thoracic operations, such as empyema, thoracostomy, necrosis of ribs or clavicle.

With regard to dosage the following figures may be taken as a rough guide; at the same time, old or feeble patients should have a little less, and children of, say, 5 or 6 years about one-third of the dose (with upward gradation according to age): Hernia (double), 7½ to 7 c.cm.; abdominal and thoracic operations, 7 c.cm.; hydrocele, 6½ c.cm.; bladder (tumours, stones), 6 c.cm.; leg (amputations, fracture setting), 6 c.cm.; rectum (haemorrhoids, fistula), 5 c.cm. Let me here say that if indications of an overdose are manifest, such as pallor, anxiety, nausea, the best treatment is 2 tablespoonfuls of brandy by the mouth and 20 cg. of camphor oil by the skin, with artificial respiration in extreme cases.

Advantages.

1. Rapidity. By the time that the patient's skin has been painted with iodine and the surgeon has put on his gloves—say, three minutes—the patient is ready.

2. No anaesthetist is necessary. For those 11,000 operations I have been my own anaesthetist.

3. Relaxation of the parts. A surgeon who relies on a general anaesthetic has no conception of the facility and simplification of procedure wherewith a splenectomy, a nephrectomy, a hernia, or even a haemorrhoids operation can be performed under spinal analgesia.

4. Absence of vomiting and of shock. Frequently a patient returned to the ward after a nephrectomy will smoke a cigarette immediately.

5. Safety from serious sequelae. In septic operations, such as gangrenous or purulent appendicitis, and in septic wounds necessitating intervention, a general anaesthetic gives rise to acetone and other forms of fatal poisoning, to heart failure, and often, I am sure, to endocarditis with dangers immediate and remote. I desire to emphasize this, for they are factors of the most serious import often unconsidered and denied by surgeons.

Disadvantages.

I know of only one real disadvantage, and that is persistent headache. I have been unable to eliminate entirely that drawback. At the same time it occurs chiefly after minor operations, such as haemorrhoids and uterine curettage, and is largely due to the fact that the patients will sit up and jump about in bed. If they will rest quietly in the recumbent position, not only is there assured absence of real headache, but the rapid and complete success of all operations is thereby enhanced.

Let me state the fancied objections in order to refute them. One is told of the horror of being awake while an operation is going on. I have never found any one worry about that during the operation. Occasionally a patient will raise objections which, as afterwards confessed, were inspired by a medical man ignorant of the technique of the procedure. Among my patients Europeans of every nationality and, above all, native Egyptians clamour for its use.

The method of spinal anaesthesia, like the administration of all anaesthetics, has to be learned; failures of all kinds diminish as experience increases. Chloroform can always be administered if the stovaine should fail. But failures will be few. In remote districts especially, it is of priceless value. With its aid I should not hesitate to remove a gangrenous appendix and so save a life, even had I no one to help me except an intelligent nurse.

In conclusion, I should be indeed ungrateful if I did not acknowledge the great help, in counsel and in deed, that I have received in strenuous hospital labours from my principal assistant and colleague, Dr. Iatrou, and from past assistants in Dr. Schlesinger and Dr. Kaim.

During the period 1913–1916 tuberculosis in Germany increased by 26.2 per 100,000 inhabitants in the urban population and by 16.2 in the rural population; in 1916–17 by 62.6 and 31.9 respectively; in 1917–18 by 32.7 and 16.6, and in 1918–19 by 14 and 16.1 respectively. The highest mortality was between the ages 15 and 30, then between 30 and 60, and lowest between 1 and 15.

THE ACTION OF "BAYER 205" ON TRYPANOSOMA EQUIPERDUM IN EXPERIMENTALLY INFECTED MICE.

BY

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THOUGH many drugs have been tried in the treatment of trypanosomiasis in man and animals, it is generally admitted that none of them is entirely satisfactory, although cases of the human disease have undoubtedly recovered after their prolonged use. In experimentally inoculated small animals, such as mice, it is usually possible, by means of a single dose of a drug, to bring about the disappearance of the trypanosomes from the peripheral blood, but almost invariably relapses occur in a comparatively short time and the animals die of the infection.

Haendel and Joetten[1] (1920) and Mayer and Zeiss[2] (1920) published accounts of the trypanosomicidal action of a drug which they referred to as "Bayer 205." They reached the conclusion that the preparation possessed trypanosomicidal powers on various pathogenic trypanosomes in small laboratory animals.

In small doses it cured mice, rats, guinea pigs and rabbits infected with *T. brucei*, *T. equiperdum*, *T. equinum*, *T. gambiense* and *T. rhodesiense*. The animals which had been cured were for a considerable time immune to further inoculations. A dose of 0.00006 gram (about 0.0024 gram per kilo) would cure mice of their infections, and the animals were not reinoculable for a period of three months. Administered prophylactically before inoculation the drug prevented infection. The drug was then tried by Pfeiler[3] (1920) in natural dourine in horses. The results in 200 horses thus treated were highly successful, and it is concluded that "Bayer 205" is efficient in the treatment and prophylaxis of dourine, and that it will be found to be equally successful in the treatment of sleeping sickness and other trypanosome diseases. Miessner and Berge[4] (1920) and Ellinger[5] (1920) confirmed Pfeiler's results. In small animals the German workers employed the subcutaneous or intraperitoneal methods of injection.

Dr. C. R. Hennings gave a sample of the drug to Sir David Bruce, who handed it to me for trial. It was tested on a very virulent strain of *T. equiperdum* in mice.

The animals were inoculated intraperitoneally from another heavily infected animal. In forty-eight hours the blood showed very heavy infections, and if left untreated the animals died on this or the following day. In all cases the drug was given forty-eight hours after inoculation by the intravenous route when trypanosomes were swarming in the blood.

It was found that a dose of 0.0025 gram per kilogram of body weight would cause the trypanosomes to disappear, but that relapse occurred in about one week, the animals then dying of very heavy infections two or three days later. A dose of 0.005 gram per kilogram of body weight, however, has not been followed by any relapse during ten weeks' observation. The mice are quite healthy, and from what I know of the action of other trypanosomicidal drugs if relapse is to occur, as is practically always the case, it does so in mice within ten days. It may fairly safely be assumed that the minimal dose required to produce this apparent *sterilisans magna* in mice lies between 0.0025 and 0.005 gram per kilogram of body weight if the drug is administered intravenously.

These doses do not indicate the limit to which one can go. It is possible to give a mouse with a heavy infection as much as 0.5 gram per kilo of body weight. With this high dose there is, however, a definite and immediate reaction, and some of the animals succumb to its toxic effects within twenty-four hours. With half this dose (0.25 gram) the reaction is slight. The German workers pointed out that the ratio of the minimal therapeutic dose required to bring about a permanent cure to the maximal tolerated dose was 1 to 60, and the experiments just detailed bear this out. Employing the subcutaneous method, their maximal tolerated dose was higher than that obtained here by the intravenous method. The action of the drug is not immediate. The trypanosomes disappear gradually from the blood during the forty-eight hours following the injection. In the case of tartar emetic all trypanosomes may have disappeared in half an hour.

"Bayer 205" thus has a remarkable action on the trypanosomes, in that in every instance (over 50 mice) a single injection of a suitable dose has apparently brought about a *sterilisans magna*, and this in a dose which is considerably lower than that which can be given without killing the animals. There seems every reason to suppose that this drug, whatever may be its constitution—and this has not yet been made public—will be found to be a more efficient remedy than those hitherto used in cases of human and animal trypanosomiasis, if not in other diseases, such as kala-azar. I have tried in animals most of the remedies which have previously been employed for the treatment of trypanosome diseases, and in no case has a permanent cure been obtained with single doses. The animals have invariably relapsed and have died of their infections. Thus, in the case of sodium antimony tartrate it is necessary to give mice intravenously a dose of 0.015 gram per kilo to cause the trypanosomes to disappear in twenty-four hours, while a dose of 0.05 will kill the animal in less than two days. The toxic dose is thus barely four times as great as the therapeutic dose. If a man of 70 kilograms is to receive the same proportionate dose he should be given $0.015 \times 70 = 1.05$ grams. In practice man is rarely given as much as 0.2 gram as a single dose, and this is often followed by marked reaction. The usual dose for a man is 0.1 gram (10 c.cm. of 1 per cent. solution), which, as will be seen, is about one-tenth of that required by the calculation based on mouse dosage. In the case of neo-salvarsan and its allies 0.02 gram per kilo of body weight may be taken as the minimal therapeutic dose for mice, while a dose of 0.3 gram per kilo of body weight may be tolerated. A man of 70 kilograms should then have a dose of $0.02 \times 70 = 1.4$, but in practice he is only given about half this amount, as larger doses produce severe reactions. In the case of these drugs, however, the therapeutic dose in mice does not effect a cure, but only brings about a temporary disappearance of trypanosomes. If the minimal therapeutic dose of "Bayer 205" is 0.005 gram per kilo of body-weight for mice the corresponding dose for man would be $0.005 \times 70 = 0.35$ gram. If the doses of sodium antimony tartrate and neo-salvarsan which can be tolerated by mice and man bear any relation to the doses of "Bayer 205" which can be given to mice and man, then there is every prospect that human beings will be able to tolerate a dose of 0.35 gram or even more, which is well up to the therapeutic dose required to bring about a permanent cure in animals. The dosage of "Bayer 205" for man, however, has to be determined by direct trial, as calculations based on animal dosage are full of fallacies. It is understood that this is now being done. It is also possible that different samples of the same drug may vary in their action, and the statements made here refer, of course, only to that particular one used by me.

The claims made for this drug by the German investigators, and which have been confirmed by the results detailed above, demonstrate that in experimental animals it has a remarkable trypanosomicidal action. There can be no doubt that the drug should be given a trial in naturally occurring cases of human and animal trypanosomiasis with a view to discovering if it will have in these as definite an action as it apparently has in that produced experimentally in small animals.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

GLYCOSURIA OF MALARIAL ORIGIN.

IT may be of interest to record the fact, of which I became aware at the cost of a mistaken diagnosis, that transient glycosuria may occur during a malarial paroxysm.

The patient was a man of 30, suffering from bilateral apical subacute pulmonary tuberculosis, and confined to bed with mild intermittent pyrexia, the evening temperature being from 99° to 100° F. Tubercle bacilli were present in the sputum, and the urine was free from albumin or sugar. He had been under treatment in hospital for three weeks with this condition when, at 10 o'clock one morning, I found him confused, complaining of severe headache, and with a temperature of 104.2° F. There was no history of rigor. Having in mind the possibility of meningitis I sought for further physical signs, but, apart from the above condition, the only sign suggesting meningitis was the presence of sugar in the urine. According to Frew and Garrod,[1] glycosuria occurs

[1] *Lancet*, 1913, vol. i, p. 15.

in more than a third of all cases of tuberculous meningitis, although usually during the last two days of life.

During the course of the day the temperature fell. On the second day it remained under 100 F., and there was no sugar in the urine. On the morning of the third day the temperature was 104° F. and malarial parasites were found in the blood. Sugar was no longer present. The patient was put on quinine, and although the urine was examined at intervals for some weeks afterwards, sugar never reappeared. On the only occasion when sugar was present the result of the Fehling test was confirmed by the fermentation test. It occurs to me either that this occurrence is very rare, or, as is more probable, that the urine is rarely examined for sugar during malarial paroxysms. At any rate, the standard textbooks do not refer to this occurrence.

London, W. HALLIDAY SUTHERLAND.

ADVANTAGE OF IMMEDIATE OPERATION IN PENETRATING WOUNDS OF THE ABDOMEN.

ABOUT 4.10 p.m., on October 17th, 1921, G. E. K., aged 18½, an inmate of this institution, sustained a stab wound of the abdomen by accidentally colliding with another inmate who was holding a long sharp bread-knife. When I saw him, some twelve minutes after the accident, although he was pale and in great pain his pulse was good. The wound, which was about two inches long, was situated in the left inguinal region, and through it protruded some coils of small intestine. There was a cut about three-quarters of an inch long in the transverse axis of the small intestine opening the lumen of the gut.

Dr. Newton of Feltham was immediately called to give an anaesthetic, and by 4.35 p.m.—that is to say, within half an hour of the accident—the patient was under chloroform. I sutured the intestinal wound, and on returning the bowel into the peritoneal cavity I found the deep epigastric artery bleeding freely. This was ligatured, and after sponging dry the peritoneum the abdomen was closed in the usual manner. The patient made an uneventful recovery.

It must be very rare for an injury of this nature to have received such prompt attention. I attribute the happy result to the absence of delay and to the fact that the operation was performed in a room practically adjoining that in which the accident occurred, as I cannot claim any practical experience in abdominal surgery.

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POLYTHELIA WITH FUNCTIONING ACCESSORY NIPPLE.

THE condition of polymastia is not uncommon, and is usually regarded as an atavistic reversion. It has been said that in numerous cases an apparent hereditary influence can be traced. Williams (Baltimore), in writing of the condition, says: "One in every few hundred women has one or more accessory breasts," and Goldberger makes mention of 262 such cases. Polythelia is the rarer condition, and when it occurs the accessory nipple is usually functionless. The following case of a functioning accessory nipple seems sufficiently rare as to be worthy of record:

Mrs. D., aged 23, a primipara, first remembered noticing the accessory nipple on her breast in early childhood, and regarded it as a fleshy mole.

The accessory nipple, which is about the size of a shilling, is situated close to the left mammillary line in the inferior half of and towards the periphery of the left breast, and resembles the normal nipple in everything but size; even Montgomery's secondary areola is faithfully reproduced. There is no macroscopical evidence of a supernumerary breast. The right and left breasts are symmetrical except for the small accessory nipple, and no demarcation of the gland tissue could be distinguished by inspection or by palpation. She stated that she was confined two years ago, and that after the milk flow had become established she experienced considerable discomfort from the free secretion of milk from the accessory nipple, the doctor then attending her having dissuaded her from nursing the child.

There is no evidence of any hereditary influence. The woman is one of a family of eleven, and is the only one possessing this abnormality. It has caused her no discomfort except on the occasion mentioned.

R. DOUGLAS HOWAT,
Denholm, Hawick. L.R.C.P.and S.Edin., L.R.F.P.S.Glasg.

Reports of Societies.

MEDICAL ASPECTS OF URINARY DISEASE.

AT the meeting of the Section of Urology of the Royal Society of Medicine on October 27th Sir THOMAS HORDER delivered his address from the chair on "The medical aspects of some urinary diseases." There was no doubt whatever, he said, that many of the problems met with in urogenital diseases were of joint medical and surgical interest, requiring the combined efforts of surgeons, physicians, and workers in laboratories for their proper elucidation. Here was a field for more than one type of man and more than one kind of training. At first sight it might seem that the diagnosis and treatment of simple prostatic enlargement with its mechanical disabilities, to which their first president (the late Sir Peter Freyer) had made so valuable a contribution, was a purely surgical affair if ever there was one. No doubt in a large number of cases the medical interest was reduced to a minimum. Yet the mortality in prostatectomy even to-day was by no means negligible. Elderly patients were sometimes subject to latent diseases which were only discovered by a complete overhaul. Recently, during a routine examination of a candidate for prostatectomy, he found the case to be one of chronic lymphatic leukaemia. When sent to him the patient was short of breath, and this symptom was thought to be of cardiac origin. Treatment led to an improvement, and he stood the operation very well. Most careful surgeons liked their prostate patients to be examined methodically before a final decision was given with regard to excision. Mr. John Pardoe spoke to him recently about those cases—very grave but fortunately uncommon — in which late haemorrhage followed prostatectomy, and confessed himself puzzled as to their meaning. An obvious suggestion was that the underlying cause was sepsis, but that appeared by no means certain, and this was another problem in the elucidation of which physicians and surgeons were both concerned.

Speaking of nephrolithiasis, the president said that it was true that their studies in metabolism did not as yet give any very definite lead in the direction of preventing uratic and oxalic deposits in the kidney and renal pelvis, but at least the main principles of prevention were understood. It was fairly certain that a large number of patients were kept in a safe position with regard to the re-formation of calculi when once they had been frightened into obedience by the experience of a nephrotomy or a nephrectomy. One of the most interesting of the conjoint problems was the type of case in which calculi were known to be present, perhaps in both kidneys, but the condition was largely latent as regards pain or haematuria. In such cases it was important to assess, as nearly as possible, the future history of the patient in respect of his trouble. His renal adequacy and the question of the subinfection of the urinary tract were points needing investigation. Perhaps the large and important question of infection provided the chief meeting ground for physicians and surgeons. The fact that so-called primary infections of the urinary tract were still very largely dealt with by surgeons was a survival of the old doctrine which taught that all infections were "ascending" in nature. Practitioners were still to be found who visualized a stone in the bladder or some other gross lesion as soon as a case of acute pyelitis presented itself. It was only fair to suggest that another reason why surgeons still held a lien over many of these cases was that they had been more in the van of progress than had physicians in the matter of working out problems connected with the subject. All the same, it was in the interest of patients generally that the chief centre of interest should shift to the medical side. With regard to lavage of the pelvis of the kidney, he himself had an open mind. He did not think he had ever met with a case in which really careful and detailed management failed to cure and in which the pelvic lavage did cure.

In the brief discussion following the address Mr. THOMSON WALKER said that physicians had not always been as interested in urogenital problems as they were to-day, but he agreed that the combination of physician and surgeon was very important. Mr. FRANK KIDD said

that with regard to late haemorrhage following prostatectomy, this came on about the ninth or tenth day, and the cause appeared to be sepsis. It would be absurd to pretend that these wounds in the bladder could be kept free from sepsis, but they might learn to control the sepsis to a greater degree. The secondary haemorrhage was very alarming to the patient's friends, but not necessarily dangerous; it could easily be stopped. With regard to renal lavage, he had definitely given up trying to wash out acute cases of pyelitis, for it seemed only to make the patient worse. He had never claimed that washing out of the kidney cured the patient entirely, but he had had many cases in which obedient patients were well able to go about their work and to enjoy life. Dr. DES VOEUX thought that the general practitioner might have loomed more largely in the President's review.

Sir THOMAS HORDER, in reply, said that, with regard to renal lavage, to wash out the pelvis just to get over a temporary difficulty would not carry them very far. With regard to milk diet, while he had excluded both raw milk and boiled milk, with good results, he allowed certain valuable constituents of milk, and did not exclude cream or junket. The general practitioner had, of course, figured by implication in his remarks.

PHYSIOLOGICAL ASPECTS OF HEART PROBLEMS.

THE Hunterian Society Lecture was delivered at Sion College on October 26th by Professor E. H. STARLING, who took for his subject some heart problems, which, he said, had interested him ever since he was house-surgeon at Guy's. Although he could not pretend to have solved half the problems which were in his mind in those days, nor a quarter of those which were in his mind now, at any rate he would like to bring the discussion before a body of clinicians, because a study such as this needed for its completion the investigation at the bedside no less than in the laboratory. Disease was like one of the players in a game of chess, the other player being the organism. The moves had a wonderful number of permutations and combinations, but they could only proceed according to the rules of the game. Thus a pawn could not be moved in the same way as a bishop. All that the physiologists could do was to point out the rules, and even when these were elucidated they were still a long way from understanding the game or predicting its result.

Every organ of the body, the heart included, had a margin of perhaps 1,000 per cent.; it could be worked when occasion demanded at ten times its normal energy or capacity. But if the heart were capable of only working at five times the normal, that might be sufficient for the quiet lives which many people led. When the potential surplus dropped lower than this it was time to begin to speak of heart disease—in its broadest sense, the failure of the heart to discharge its functions. Cardiac inadequacy might mean merely a diminution of the normal margin, and the person thus affected might be able to live so sheltered a life as to carry on his work for months and years, and only under conditions of stress would the inadequacy become apparent.

The function of the heart was to pump and to maintain arterial pressure—a head of pressure sufficient to supply the various organs of the body in proportion to their needs. All the organs of the body had to go short, if necessary, except the brain, the master-tissue, which must be supplied at all costs. Until death was actually approaching the brain would always have its normal arterial pressure. At first sight it was not easy to understand how the output of the heart could be diminished and yet arterial pressure be maintained. Some clearer idea might be forthcoming if the heart were taken out of its complex relationships in the body—the nervous and circulatory systems—and were made to send blood through an arrangement of rubber tubes (such as he illustrated) which could be regulated exactly and instantly. Under these conditions the wonderful adaptability of the organ became evident. When it was given more work to do the rate of necessary chemical change was adjusted accordingly and the work was done. This adaptability of the heart was simply a function of the length of muscle fibre. Within physiological limits, the more the muscle fibre was lengthened the more strongly the heart contracted and the more energy it gave out. The tone of the heart could be measured by the amount of energy it could evoke for a given length of muscle fibre. In the athlete about to run a race, while he was still toeing the line there was a certain amount of preparation for the effort in the shape of quickened pulse-beat and respiration; and in running, the movements of the muscle immediately increased the inflow of the blood into the heart (for it must be remembered that the return of blood from the periphery was due to the muscles; every vein on account of its valve was truly a heart, but a heart with a motor power which was outside, in the muscle). In running, the heart was flooded with blood, and the output for each beat was increased, but with greater dilatation there was a certain rise of pressure on the venous side, and along with this a reflex quickening of the heart. Thus there were two factors at work: the distension gave rise to a bigger output for each beat, and, owing to this venous reflex, the beat was quickened and the heart more rapidly emptied. The output of the heart in hard exercise was increased to six, seven, or even ten times the normal. But there was a limit to this process. After a time the heart tired and became less efficient, and to do its work it had to distend still further. The limit of this distension in the healthy individual was the pericardium, and in the tired man the heart came up against the non-distensible pericardium, with resulting fatigue. In the experimental heart the pericardium could be slit, whereupon the heart would take a greater distension, but at the cost of numerous small haemorrhages in all parts of its structure.

The next thing that happened after a diminished output was a fall in arterial pressure. But at once the nervous system stepped in, requiring its blood supply, and first one and then another vascular area was cut off, until finally the main output went into the carotid arteries and only a trickle of blood through other parts of the body. The failing blood supply to the alimentary canal caused defective nutrition; to the kidneys, defective excretion; to the lungs, defective oxygenation, and all these secondary effects reacted upon the heart and worsened the condition. It would therefore be realized that the primary factor in treatment for a heart with a diminished margin was rest; also the value of oxygen was learned, and the improvement likely to be obtained, at any rate temporarily, by bleeding, this depletion of the venous system giving time for the other remedial measures to take effect. A study of the coronary circulation also enabled one to appreciate what a serious thing it was when the adaptability of the coronary arteries to increased work was prevented by an organic change in their walls. In conclusion, Professor Starling reminded his audience that he had not mentioned all the factors involved; physiologists were not in contact with ordinary cases often enough ever to deal with the subject save in its broadest and most schematic outline. In his lecture he had only tried to play elementary chess; it depended on the condition of each case to expand and refine the story of the game. It was for the clinician with his experience of one kind of game after another to say in any given case which of the players, the organism or the disease, had the strategical advantage.

In replying to a vote of thanks, proposed by Sir RUSSELL WELLS and seconded by Dr. LANGDON BROWN, Professor STARLING said that he did not need to warn the members of the Hunterian Society—as he always warned his students—of the dangers of the physiologist in medicine! The danger arose out of the fact that the method of physiology was, of course, largely analytical; the functions of the body were split up into their several parts and the conditions of each of these were studied, while the synthesis, which was much more difficult, was often forgotten. It was necessary to synthesize, taking into account not only the factors he had mentioned in that lecture, but a host of others. The physiologist in medicine played only with his pawn or his knight or his queen, whereas the clinician had got all the pieces in his hands. It was necessary for the physician to complete the work of the physiologist. While it was true that any advance of medicine on other than physiological lines would be chimerical, it must not be imagined that because they knew physiology they were aware of all the moves along all the files and ranks and diagonals of the chequered board.

ANALYSIS OF NECROPSIES.

At a meeting of the Sheffield Medico-Chirurgical Society, held on October 13th in the Medical Library of the University, Sheffield, Dr. Godfrey Carter, lecturer and examiner on forensic medicine, Sheffield University, devoted his presidential address to observations on an analysis of his last 100 *post-mortem* examinations. The analysis was as follows:

Cause of Death.	No. of Cases.	Cause of Death.	No. of Cases.
Nephritis (chronic) ...	18	Aspiration of food into air passages (infants) ...	2
Asphyxia	17	Hydatid of liver	2
Pneumonia	12	Uræmia and convulsions ...	2
Atheroma	11	Cholecystitis	1
Phthisis (acute)	4	Papilloma of larynx ...	1
Aortic aneurysm (rupture)	4	Meningitis (acute	1
Myocarditis (chronic) ...	4	Endocarditis (ulcerative) ...	1
Syphilitic aortitis (acute) ...	4	Sepsis from acute eczema (infant)	1
Endocarditis (chronic) ...	3	Rickets (acute)	1
Pyæmia	3	Ruptured duodenal and gastric ulcer	2
Status lymphaticus	2		
Enteritis (acute)	2		
Cirrhosis of liver	2		—
			100

Dr. Carter drew attention to the frequency with which pleuritic adhesions were found in cases of death from chronic nephritis—namely, 39 per cent. When there was an absence of any signs of old-standing general peritonitis the association of chronic perihepatitis, perisplenitis, and perinephritis, usually spelt one of two things, syphilis or Bright's disease. The large total of deaths from asphyxia represented in great part cases of so-called overlying of infants, and therefore deaths which should not have occurred. Attention was drawn to the advisability of the careful examination of the coronary arteries in all cases beyond middle age; the atheromatous narrowing of the lumen of the vessels was most frequently found about half an inch beyond the origin in the aorta and therefore invisible from that point. After detailing at some length the technique of *post-mortem* examinations, special attention was paid to the widespread disease of the lymphatic tissues of the body which exists in all cases in which death from "status lymphaticus" can fairly be said to have occurred.

Definition of "Live Birth."

But it was to the unsatisfactory nature of the legal definition of "live birth" that the especial attention of the society was directed. A medical man could not have a more disappointing type of case to deal with than one that involved the giving of evidence in a case of the murder of a newly born child. The crux of the whole matter lay in the legal interpretation of the phrase "live birth." Judges had come to accept the ruling that to constitute "live birth," every portion of the child must have been clear of the mother's parts when the alleged violence was inflicted upon it. These murders of unwanted children were not carried out in the presence of witnesses, they were done in secret; therefore how could a medical man go into the witness box and swear that, when such an injury as was found in some particular case was inflicted, every portion of the child was fully delivered? It might be urged that the child was full term and healthy, that respiration had been fully established, that no natural cause of death existed, and only violence was found, but it was no use. "You are up against a brick wall forensically, and must abandon the quest. The charge is therefore almost invariably reduced to one of concealment of birth, and a light punishment inflicted. The English law presupposes that in criminal charges every child is born dead unless proof be forthcoming to the contrary." Dr. Carter asked if the converse should not hold good, "that every full-term child is presumed to be born alive unless proof be forthcoming that it was not." The Scottish law already took that view, although requiring evidence of the establishment of respiration. But that surely was unnecessary, as even the English law admitted that a twitch of a muscle, the flicker of an eyelid, or the detection of a heart beat, without respiration, established live birth once the child be fully extruded. An alteration of the law was urgently required in the interests of the State, and Dr. Carter suggested that the law should enact "that a child delivered at full term, and found upon medical examination to be healthy and free from any ascertainable cause of natural death, should be deemed to have been born alive failing proof to the contrary."

The first meeting of the new session of the West Kent Medico-Chirurgical Society was held at the Miller General Hospital, Greenwich, on October 14th. Dr. C. T. T. Comber was elected President, and mentioned, on taking the chair, that the society was the oldest local medical society in London, being instituted in October, 1856. Mr. Cecil A. Joll showed a patient of 79 from whom he had removed part of the stomach, also a case in which he had removed half of the tongue for carcinoma. Dr. H. Nockolds showed a patient with bony tumours all over the body, which had been present since childhood. Dr. Montague Hine showed two cases of glaucoma, a case of complete ophthalmoplegia, and an injury to the retina caused by shrapnel wound of the cheek. Mr. Hugh Davies showed part of a stomach removed from an old lady aged 75, very similar to the case of Mr. Joll. Dr. E. P. Cumberbatch showed a patient from whom he had removed a bony growth of the heel by caustic potash and ionization.

A meeting of the South-Western Ophthalmological Society was held on October 24th at the Bristol Eye Hospital. After an exhibition of interesting cases Mr. Ransom Pickard opened a discussion on the development of normal and abnormal disc cups, drawing particular attention to the need for systematic record of the dimensions of the disc cup in a form available for future reference and comparison in the event of subsequent morbid developments within the eye, and he brought forward a method of charting these data. After the meeting the members dined together at the Grand Hotel. An invitation to meet the Midland Ophthalmological Society next April in Birmingham was received from its president, Mr. Bernard Cridland, and accepted.

Rebiews.

THE SPLEEN.

Sir Berkeley Moynihan has rarely touched a subject without conferring some elements of distinction upon it. In his work on abdominal surgery he has always endeavoured to widen the outlook, to make us see further than the diseased appendix or duodenum, to search for some underlying cause. In his book on *The Spleen*,[1] which contains the material upon which the Bradshaw Lecture he delivered before the Royal College of Surgeons of England last year was based, Sir Berkeley Moynihan casts his eyes upon those last strongholds of the physician within the abdomen—the spleen and the cirrhotic liver. It is not surprising to find him travelling from the spleen to the liver, impressed by the fact that the whole of the splenic venous blood passes through the liver. It is possible that this should lead us to look for the cause of cirrhosis and other hepatic disorders in the spleen. It is equally possible that the spleen merely transmits—with but little alteration, if any—poisons formed in other parts of the body. But the former view opens an interesting vista on the inter-relationships of the spleen and liver.

Chapter XIII of this book is dedicated to this discussion, and should be closely read by all surgeons who deal frequently with diseases of the biliary passages. It may be that what is actually known of splenic disease, particularly of primary splenic disease, is insufficient to pad out a pamphlet, still less a book. Sir Berkeley Moynihan has made this slim volume an airing ground for what experimental knowledge we have gained. The chief fault of the work is the absence of a definite central theme, and this makes the book difficult at times to read. On the other hand, nothing but good can come of the statement given here of the inter-relationships of the haemopoietic and other systems. If not a new subject, the spleen has kept her secrets closely guarded, and is not likely to give them up at once. Too much attention has been paid to the spleen alone, in isolation, and the very happy diagrams with which this book is illustrated broaden the outlook. It is probable that many will disagree with some of the statements here made, and the discussion and criticism of the points raised will be all for good. The author relies largely on the results of operation at the Mayo clinic, and makes but passing reference to cases of his own. The

[1] *The Spleen and some of its Diseases.* By Sir Berkeley Moynihan. Bristol: John Wright and Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1921. (Sup. roy. 8vo. pp. 139; 13 plates. 21s. net.)

technique of splenectomy is not described, and, after all, would be out of place in a book of this kind, which is rather a provocative essay than a textbook of splenic medicine and surgery.

A DICTIONARY OF PRACTICAL MEDICINE.

MEDICAL practitioners will be grateful for the appearance of the large three-volume *Dictionary of Practical Medicine*,[1] edited by Sir MALCOLM MORRIS, who originated the work and charges himself with the subject of dermatology, Professor LANGMEAD, and Dr. GORDON HOLMES who is responsible for the sections on neurology. The editors have enlisted as contributors to the *Dictionary* over 120 physicians, surgeons, and specialists already well known in Great Britain as writers on the subjects with which they deal, most of them living within the London area.

The headings in the *Dictionary* consist of the names of diseases, symptoms, and special methods of treatment or diagnosis, for the most part, and seem sufficiently complete to fulfil all the requirements of the practitioner. Perusal of the articles themselves shows that while etiology and pathology as a rule receive adequate but short exposition, the greatest amount of space is devoted to such practical things as symptoms, diagnosis, prognosis, and treatment. The chief subjects omitted by the editors for want of space are those of fractures, dislocations, and labour; minor operations are described with needful detail, but major operations, barring their indications, have been left out. The subject of tropical medicine is fully dealt with, a fact that will be found to add considerably to the value of these volumes now that the facilities for travel abroad have made the occurrence of tropical diseases in Great Britain not uncommon. Forensic medicine receives due attention in all three volumes; and, while it is perhaps invidious to mention special articles by name when dealing with a work showing so high a standard of excellence as this, those on the use of *x* rays in diagnosis, on tuberculosis from the standpoint of preventive medicine, on the examination of the eye, on poisons and poisoning, and on immunity, to mention but a few out of many, will be found of the greatest practical interest.

The *Dictionary* is well turned out, and contains a number of excellent figures and coloured plates. It is, as it professes to be, a thoroughly practical work, and it should be of great service to the general practitioner of medicine, to whom it may be cordially recommended.

UROLOGY.

THE tenth and eleventh volumes of the *Transactions of the American Urological Association*[2] contain much of more than passing interest. The American Urological Association was formed in 1902, and has grown steadily since, so that at the present date it counts amongst its members all the best known genito-urinary surgeons. Whilst the general level of the contributions is undoubtedly high, it must be confessed that a few of the papers included might well have been dispensed with. However, in a publication such as this it is but natural that the value of the different contributions should vary considerably.

Amongst the most interesting articles in Volume XI are those contributed by Alexander Randall and by Hugh H. Young and H. L. Cecil on the symptoms, pathology, and treatment of median bars of the prostate. Randall gives an accurate account of the condition of the prostate in some 300 autopsies. As he justly remarks, the term median prostatic bar is very vague, and includes a number of different conditions. He has definitely divided such cases into four types. The first consists of an "abrupt bar or dam stretched across the posterior lip of the vesicle orifice. It is formed of dense sclerotic tissue whose edge is sharp and narrow, and whose lateral terminations form an abrupt angle with the lateral walls of the vesicle outlet." The microscopic section of this type has shown that it is of the nature of an inflammatory sclerosis. In the author's opinion the fibrous type of median bar is "the outward visible sign of an underlying infective process, a chronic prostatitis." The second type is also fibrous in nature, but the bar has a tendency to project upwards towards the bladder, encroaching upon the vesical trigone rather than on the urethral surface. The microscopic appearance of this sub-variety of fibrous bar is similar to that of the first type. The third type is definitely glandular in nature, the hypertrophy being confined to the gland acini of the posterior prostatic commissure. It raises the posterior vesicle lip into a thick, broad, heavy obstructing bar. It is undoubtedly prostatic in origin. The fourth type is also glandular, and is caused by the isolated hypertrophy of Albarran's subcervical glands. This type rarely develops as a definite bar, but rather as a rounded lobe with deep lateral clefts. The microscopic section shows a proliferation of gland acini. Age has not been a differentiating point in any series or type. The youngest of the cases classified as bars of the fibrous type was 55 years of age and the oldest 79. In the glandular types the youngest was 46 and the oldest 73.

Drs. Young and Cecil's article furnishes an analysis of 156 cases of prostatic obstruction of the bar variety treated by the punch operation, and forms a useful addendum to the preceding contribution. They claim for the operation that it is without mortality, that it has been attended by no serious complications, and that convalescence is shorter than with any other. The results they have obtained make it the ideal operation for obstruction of the prostatic orifice not associated with prostatic hypertrophy. It must be used with great discretion, and a careful examination made of the prostate to ensure that obstruction is due to the existence of a prostatic bar, and not to the presence of general enlargement.

Dr. Irving Simons reports favourably on renal lavage as a treatment for pyelitis. After noting that the results obtained do not appear to be dependent upon the solution used for lavage, the author decides in preference of strong solutions of silver nitrate up to as high as 2½ per cent. At the conclusion of his article he gives an excellent bibliography dealing with pyelitis and its treatment.

In Volume X Gilbert Thomas contributes an interesting paper, illustrated by radiograms, on bladder diverticula. In discussing the etiology of the conditions, he arrives at the conclusion that acquired factors are necessary for the development of diverticula of sufficient importance to give rise to clinical symptoms. The commonest factor was obstruction; it occurred in 86 per cent. of his cases. The average age of onset was 43 years. Surgery is the best method of treatment, the choice of operation depending on the location and size of the diverticulum. When resection is possible the mortality is almost negligible. In complicated cases the mortality is higher on account of the danger of renal and vesical infections.

Dr. F. R. Charlton describes as a distinct clinical entity a condition found in old women, which he terms "cystitis senilis feminarum." He correlates the condition with similar degenerative age changes found in other mucous membranes, such as the conjunctiva. The cystoscopic appearance varies, but frequently has the character of a bullous oedema. He regards pure liquid guaiacol given internally as a remedy almost specific in its action.

Dr. Thomas discusses vaso-puncture and instillations of 5 per cent. collargol into the vesicle as a method of dealing with chronic vesiculitis. Vaso-puncture, in his opinion, offers an important aid to the treatment of vesiculitis; in his experience 40 per cent. of cases have been cured by this proceeding and 50 per cent. definitely improved.

The volume concludes with an excellent series of articles on the subject of tuberculosis, contributed by J. H. Cunningham, George Dock, Edward L. Young, W. E. Lower, and H. L. Kretschmer. These articles cover a great deal of ground and deal with every aspect of the subject. Taken together, they furnish an excellent epitome of the attitude of American urologists towards the interesting and difficult subject of the treatment of genito-urinary tuberculosis.

[1] *The Dictionary of Practical Medicine.* In three volumes. Edited by Sir M. Morris, K.C.V.O., F. Langmead, M.D., F.R.C.P.Lond., and G. M. Holmes, C.M.G., C.B.E., M.D.Dubl., F.R.C.P.Lond. Vol. i, Abderhalden Reaction to Headache. Vol. ii, Head Injuries to Pregnancy, Mosaic. Vol. iii, Pregnancy, Pernicious Vomiting of, to Zona. London and New York: Cassell and Co., Ltd. 1921. (Cr. 4to. Vol. i, pp. xv + 987, 50 figures, 12 plates. Vol. ii, pp. viii + 623; 55 figures, 12 plates. Vol. iii, pp. viii + 582; 26 figures, 22 plates. £6 6s. per set.)

[2] *Transactions of the American Urological Association.* Fifteenth Annual Meeting, St. Louis, Missouri. Vol. x. Pp. 298; and Sixteenth Annual Meeting, Chicago, Illinois. Vol. xi. Pp. 385. Brookline, Mass.: Riverdale Press. (Med. 8vo, illustrated.)

LOCAL ANAESTHESIA IN DENTAL SURGERY.

Mr. Norman Black, of Dundee, has put into *Local Anaesthesia*[1] the gist of some lectures delivered by him to dental students of the University of St. Andrews. He deals with both the theory and practical application of what is known on the subject of local anaesthesia in relation to dental surgery, and puts his points very clearly. Briefly summed up, his view would appear to be that when used with full knowledge and a reasonable amount of manipulative skill the induction of local anaesthesia is to be regarded as the method of choice, general anaesthesia being in the case of most if not all dental operations a relatively clumsy means of producing the desired result—which is the avoidance of pain. All methods of producing local anaesthesia receive attention in this book, but naturally the considerations attaching to the use of anaesthetics of the cocaine order occupy much the greater part of it. The author is notably fair in his review of the claims of different drugs of this class, but the reader will be disposed to conclude that in his own work he chiefly uses freshly prepared sterile solutions (about 0.8 per cent.) of cocaine, minimizing their escape into the general circulation by the addition of adrenaline, injecting them very slowly and exactly at the spot where they will most easily reach the nerve ends that it is desired to stun, and observing throughout the strictest attention to the rules by which in general surgery asepsis is obtained. All these points are considered in detail, as also the right use and right occasion for local infiltration, submucous anaesthesia, and regional anaesthesia respectively; and chapters are added on the treatment of toxic effects, and post-operative sequelae should either of these troubles ever be encountered.

The book, in short, is thoroughly practical and its due comprehension is facilitated by about a dozen wood blocks and reproductions of photographs. It may therefore be commended to all those who ever have to perform any of the operations of dentistry.

A TEXTBOOK OF BOTANY.

Professor Small's *Textbook of Botany*[5] for medical and pharmaceutical students provides a full and first-rate account of the elements of the subject, taking the term "elements" in its widest sense. The book is full of detail, but the detail is not crowded, and the text gains much from the freedom with which it is illustrated. The book is divided into two parts: the first of these covers over 400 pages, and is divided into thirty chapters on the various parts of plants and on the functions discharged thereby. Part II deals with the classification of plants, and gives an account of the different divisions or phyla and their main characters. The book ends with three short appendices included for the benefit of pharmacists and an unusually full index. Professor Small writes clearly and dogmatically, and has exercised a wise choice in treating much of his subject with a greater breadth and fullness than is called for by the syllabuses of the examinations that have to be passed by his readers. We could wish that the words "chemosynthesis," "chemotaxis," and "chemotropism" were spelt "chemio-" rather than "chemo-" in this volume; it is true that Pfeiffer first used the spelling "chemotaxis" when he invented the term, but it is also true that he presently amended it to "chemiotaxis." The prefix "chemo" properly implies "swelling," as in the word "chemosis"; the word "chemistry" is derived from the Greek χημεία, and the root of χημεία is "chemi-," not "chemo-." We can strongly recommend this volume to all readers in search of an elementary textbook of botany.

NOTES ON BOOKS.

Under the title of *Medical Electricity for Students*,[6] Miss Browne, a teacher at the Western Infirmary, Glasgow, presents a textbook intended for the use of students preparing for the examination in medical electricity of the Chartered Society of Massage and Medical Gymnastics, and has been made to keep within the limits of the syllabus of this examination. The subject is discussed in three main divisions: (1) Electricity and magnetism; (2) medical apparatus; (3) electrical treatment. In the first the general principles of electricity are dealt with in simple language, magnetism and electro-magnetic induction are explained, and the section concludes with a comparison of different electrical currents. In the second part the various instruments, batteries, switchboards, earth-free apparatus, and many accessories are illustrated and their structure made clear. The final part discusses the effects of electricity upon the body, ionic medication and its application, radiant heat and light, and static electricity, and concludes with a chapter on diseases and treatment. A syllabus of what is required for the examination of the Chartered Society and copies of a few of the examination papers on medical electricity are added. The author has succeeded in writing a book which should serve the purpose of the students for whom it is intended, and be useful also as a textbook for a beginner in this work. The illustrations and diagrams are well chosen and a considerable help to the text, and the general arrangement is good.

Dr. J. C. Thresh's *Domestic and Personal Hygiene*,[7] one of the useful little books issued with the stamp of the St. John Ambulance Association, provides the general reader with an up-to-date account of the relation of dirt to disease, and gives instruction in the gospel of cleanliness as applied to the house and the person. The book is practical and should enjoy a wide popularity. It is arranged according to the revised syllabus of the St. John Ambulance Association.

The chief feature of Dr. Fantozzi's essay on haemorrhages due to gunshot wounds in war[8] is the extensive use made of the literature dealing with this well-worn subject. His bibliography extends over 116 large pages, and his text bristles with the names of the authorities he quotes. The book should be of service to those interested in the history and treatment of haemorrhages in general.

Kühnemann's differential diagnosis of internal diseases, stated on its title-page[9] to be in its sixth and seventh editions simultaneously, gives a compressed and often tabular account of the symptoms and physical signs met with in internal diseases. Given the disorder from which a patient is suffering, the medical man can here find the physical signs that should be present. The book contains a great deal of information which appears to be up to date.

[1] *Local Anaesthesia: Its Theory and Practice in Dental Surgery.* A Handbook for Practitioners and Students. By N. Black, L.D.S.Eng. London: J. Bale, Sons, and Danielsson, Ltd. 1921. (Cr. 8vo, pp 75; 10 illustrations. 5s. net.)

[5] *A Textbook of Botany for Medical and Pharmaceutical Students.* By J. Small, D.Sc.Lond., Ph C., F.L.S. London: J. and A. Churchill. 1921. (Demy 8vo, pp. 688; 1,350 figures. 25s. net.)

[6] *Medical Electricity for Students.* By A. R. I. Browne. Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1921. (Cr. 8vo, pp. 245; 82 figures. 12s. 6d. net.)

[7] *Domestic and Personal Hygiene, or the Gospel of Cleanliness.* By J. C. Thresh, M.D., D.Sc. London: St. John's Gate, Clerkenwell, E.C.1. 1920. (Demy 16mo, pp. 266; 27 figures. 2s. 6d. net; by post, 2s. 8½d.)

[8] *Le Emorragie nelle ferite d'arma da fuoco in Guerra.* Dott. G. Fantozzi. Pescia: Benedetti and Niccolai. 1920. (6½ × 9½, pp. cxvi + 385.)

[9] *Differential-Diagnostik der Inneren Krankheiten.* Von Dr. G. Kühnemann. Sixth and seventh editions. Leipzig: J. B. Barth. 1921. (Med. 8vo, pp. 250. M. 25.)

APPLIANCES AND PREPARATIONS.

Some Test Preparations.

Some recent preparations produced and supplied by Burroughs, Wellcome and Co. at their Physiological Research Laboratories are: (1) the Wellcome brand of diphtheria toxin for performing the Schick test to determine whether an individual is susceptible or immune to diphtheria; (2) the Wellcome brand of diphtheria prophylactic toxin-antitoxin mixture for active immunization; and (3) the Wellcome brand of Sachs-Georgi antigen, a modification of that recommended by Sachs and Georgi for the diagnosis of syphilis.

A Modified Midwifery Forceps.

Dr. L. E. Green de Woolfson (Birmingham) writes: To avoid the delay, difficulty, and trouble of putting a patient in position over the edge of the bed, so as to introduce the upper blade of forceps, I had a set made for me by Messrs. Phillips, Harris, and Co., Ltd., of Edmund Street, Birmingham, with shortened shafts between the blade and lock, and with the handle of the upper blade to unscrew below the wing. These forceps can be used easily with the patient in any part of the bed.

An Improved Surgical Needle.

Mr. C. Hamilton Whiteford (Plymouth) writes: Many surgeons will recognize an old acquaintance in the needle, with hollow end and single thread, described by Mr. H. S. Souttar in the British Medical Journal of July 30th. The periodical resurrection of this form of needle appears to be based on the theory that the ordinary sewing needle with its doubled thread catches badly in the tissues, and that sutures, inserted by the usual method in the walls of hollow viscera, are likely to cause leakage. Clinical experience has proved the "catch" to be negligible and the risk of leakage imaginary.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE DOCTORS' MOTOR SHOW.

For the first time since the outbreak of war it may be written that a motor show for medical men is being held in London. The exhibition opened yesterday at Olympia, Kensington, and the White City, Shepherd's Bush, by the Society of Motor Manufacturers and Traders under the patronage of the King, reveals complete reversion of policy on the part of the world's motor car manufacturers. Instead of striving to discover how costly they can design their machines, practically all the leading houses in the world have devoted their enterprise to the production of moderate priced cars. Some have actually developed their schemes to include vehicles of sensationally low price, yet of sound design and construction. There is no longer any need for the young doctor to put up with a motor bicycle and side-car; the long-looked-for link vehicle between the motor cycle and the car has arrived in the guise of the 8-h.p. twin-cylinder Rover car, which I prophesied two years ago would be developed to this stage. It is now introduced at the rock-bottom price of £220—which has been arrived at by estimated reductions in the cost of labour as well as the new scale of raw material prices—as a vehicle developed in the light of experience in the hands of users. It is very much better than any previous example of the type that was introduced two years ago at £350, put on the market at the last show at £300, reduced late in the summer to 250 guineas, further reduced this autumn to 230 guineas, and now brought down to £220. If other firms could do anything like as much in the way of cutting costs we should be well on the road to creating a big demand for new style motoring. But the problem is so intricate that very few members of the industry have the brains, the daring, and the resources to solve it. The essence of the thing is never to lose sight of the fact that the public is ever demanding a better vehicle. That this achievement is possible may be illustrated briefly by pointing out that the new body fitted to the 8-h.p. Rover model has curved panels more on the lines of those on the 12-h.p. four-cylinder type. This new 8-h.p. body is stronger than the one it supersedes. The cushions are better sprung. To allow more room for getting out when the hood is up, the running boards have been fitted nearer the ground, and valances have been furnished to improve the appearance. The hood is also better, alike in regard to detail and finish. The steering wheel has been covered with celluloid, making it warmer and more comfortable to the hand.

Access may now be had to the magneto without moving the bonnet or radiator. The boot at the back of the car has been made deeper, and the spare wheel is fitted to the side of the car. A mud shield is furnished on the front axle, serving to keep all mud and dirt off the engine. The silencers have been improved and strengthened. In regard to mechanical features, valve clearance gauges are now supplied in all tool kits. These clearances being very important, it will be appreciated that it is a great advantage to have gauges whereby adjustment can be checked and, if necessary, effected quickly and with exactitude. Oil and petrol strainers are now fitted in suitable positions. In short, we are dealing with both a proved and an improved proposition, as well as one supplied complete at a sensationally reduced price, yet selling at a profit—a point which it is necessary to stress in that at this period so much material is on the motor market which is out of date in design; whereas Rover plans for creating the era of cheap motoring by car are only beginning to ripen.

The Vogue of Quarter-Elliptic and of Cantilever Suspension.

We could not call this a cycle-car proposition. Its outstanding merit is that it is a motor car proper with refinements, complete body work, quarter-elliptic suspension fore and aft, a single-plate clutch—such as is used now even on the luxurious 12-cylinder Fiat car—a gearbox giving three speeds forward, and a worm-driven back axle. The development is interesting not merely as a text for illustrating motor progress of service to medical men, but also because it has had a tremendous effect on the 1922 programme of the industry in general. The idea of using four quarter elliptic springs in such a manner as to make the weight of all the springs themselves sprung weight was not originated by the Rover Company. It was exploited by Vickers in the Stellite car designed in the pre-war days by the Wolseley Company, which has in turn developed that principle into the post-war series of four-cylinder Wolseley cars. It is widely copied to-day, without, however, the use of the safety plate, which is the distinguishing Wolseley principle, though I note that the new small 8-h.p. Standard car is specified as employing the safety-plate scheme. The great point about this form of suspension is that it makes for economy as well as luxury, because it keeps the tyres on the ground, therefore they are not scraped away. On the other hand, it is impossible to get a jar, though the car may plunge if the road surface is very bad. All the firms associated with racing held hitherto that it was quite an impossible suspension for the larger sorts of cars. The successful introduction of the 15-h.p. Wolseley car, a refined, high-grade vehicle capable of accommodating all sorts of coachwork, has proved this contention to be absolutely wrong as far as standard vehicle practice for road service is concerned. I have driven such a car on bad surfaces in Cornwall at 53½ miles an hour, and it held the road well. On the other hand, of course, any firm attempting to race with that particular design of springing against competitors of equal efficiency using hard, half-elliptic springs, would be at a disadvantage. This indeed clearly illustrates one of the features in which we do not learn lessons from racing, though it nevertheless enables us to evolve valuable other features for standard cars. Suffice it to point out, among significant developments at this period, that a firm associated with racing so prominently as Darracq, whose chief designer is now Mr. Louis Coatalen, still of the Sunbeam Company, introduces an 8 h.p. four-cylinder overhead-valve engine small car with quarter-elliptic springs fore and aft, a model which is also to be made to the same design by Talbot. Moreover, a 10-h.p. Wolseley has beaten any car of equal engine size by doing three hours at 78.30 m.p.h. at Brooklands; and also by travelling 250 miles there at 78.67 m.p.h. with Blic ignition.

Beating down the Barriers of Prejudice.

The first Talbot of that type was taken by Mr. Malcolm Campbell, the racing driver, for a test at Brooklands. The 7-cwt. chassis was found to ride quite comfortably on that very solid surface at 56½ miles an hour with the engine quite indifferently tuned up because there was no question of racing against competitors. It was merely a matter of the manufacturers satisfying themselves how the type of chassis rode. The driver was astonished at the ease of riding furnished. There was never a jar. The incident is interesting as showing that now we have awakened folk of racing experience to the advantages of this particular form of design for standard car work, just as, at last, we have got the Continental manufacturers in general, and a number of firms hitherto prominently associated with racing in this country, to take to the full cantilever spring for the rear suspension of the larger classes of vehicle, as instance the current Hotchkiss, Berliet, Renault, Panhard, and other Continental models, and the new 14-h.p. Sunbeam, the new 14-h.p. Vauxhall, the new 14-h.p. Talbot, and the new 12-h.p. 1½ litre Talbot-Darracq. The use of quarter-elliptic springs fore and aft at this stage by other than firms making small cars is not advisable in that nobody else has spent the time and the money on investigation that has enabled the Wolseley to evolve this form of suspension as an entirely specialized device suitable in their practice for middle-size cars as well, as is proved beyond question in the case of their 15-h.p. vehicle.

A big movement to be observed this year is the introduction by some of the largest houses of small cars with quarter-elliptic suspension fore and aft, as instance notably, in addition to the established 10-h.p. four-cylinder overhead valve Wolseley and 8-h.p. two-cylinder Rover, the bringing forward of an 8-h.p. four-cylinder, overhead valve, water-cooled Standard car with this form of suspension; the already mentioned 8-h.p. four-cylinder overhead valve Talbot-Darracq and Talbot types; the B.S.A. 90-degree twin-engined, air-cooled model; the Belsize-Bradshaw twin-engined air-*cum*-oil-cooled car; and the new G.W.K., among many others that might be cited. In some cases,

such as the last named, the rear pair of springs are set at a tangent in relation to the side members of the frame, the idea being to damp out rolling tendencies. In the Wolseley system, which is the most highly developed of all, some of the patents employed damp out rolling tendency despite the fact that the springs are parallel with the side members of the frame. Of course, one of the difficulties of copying a development of this sort is the fact that the builder has to go warily or he will find himself falling foul of the pioneer's patents.

"THE BATTLE OF THE CYLINDERS" STARTS AFRESH.

Inasmuch as the outstanding novelties of the Paris show were dealt with in the JOURNAL of October 15th (p. 611 et seq.), this is not the occasion to touch on those matters afresh, save to point out that the most important of these novelties are to be seen at Kensington to-day; in this connexion particular attention should be paid to the new small Panhard, Delaunay-Belleville, Chenard-Walcker, Renault, Delahaye, Delage, Voisin, Ballot, Minerva, Citroen, Bugatti, Vinot, Zedel, Salmson, and such-like types. A study of the chassis details of these vehicles will particularly repay attention. Nor must one overlook the types standardized for a year or more but now brought forward at much lower prices, as instance, notably, the post-war-designed 10-h.p. and 15-h.p. Fiat from Italy. I am, of course, dealing with middle and small-size vehicles, in which connexion it will be observed that the average Continental constructors use the four-cylinder water-cooled engine, which is even employed for the 5-h.p. Citroen and the new 7-h.p. Mathis, which latter will, I am afraid, not be shown at Olympia. At least, that was the situation at the time of going to press. By contrast, in this country, owing to the great success achieved by the air-cooled Rover, it will be seen that a large number of makers, including B.S.A., Belsize, Short (the aeroplane builders) Ashby, and so on, are using the air-cooled engine and are reverting to the two-cylinder type, of which we find examples in, among others, the horizontal, flat, opposed, 7-h.p., water-cooled, side-valve engine Wolseley, which is another novelty. Apparently many constructors imagine that the only possible way "to go after the Rover market," as the trade styles it, is to have some form of two-cylinder engine. It can be made with a much better balance than when it was designed as a horizontal type in the very early days. For example, the 90 degrees and 60 degrees can be designed to give quite a good balance; and the horizontally opposed type has really an excellent balance. But the surprise sprung on the exponents of these schemes by other members of the British industry has been reserved until the last moment and is something in the nature of a dramatic coup—as instance, the introduction of the miniature four-cylinder engine with overhead valves of the 8-h.p. rating by Standard, Talbot-Darracq, and Talbot.

THE CAMPAIGN OF PRICE REDUCTION.

Of course it is impossible on the mere ground of costs for these vehicles to rival the air-cooled Rover. But the astonishing point is that they run at least neck and neck with the average of other two-cylinder cars on the market. Some of the Continental four-cylinder overhead valve types will be sold in this country at prices that will certainly compete. For example, the price of the B.S.A. two-cylinder air-cooled overhead valve Hotchkiss engine car is £340, whereas the Talbot-Darracq four-cylinder overhead valve water-cooled proposition is £325. The former engine gives about 18-b.h.p. at 2,600 r.p.m., and the latter 20-h.p. on the break, it being set in a chassis that weighs 7 cwt. These last-moment developments—the Talbot-Darracq was not announced until just before the opening of the show—are confirmation of the forecast I made when last writing on the subject to the effect that the two-cylinder air-cooled engine's chief sphere is that, wherein it is possible to produce it to sell cheaper than any rival product with four cylinders, whether air- or water-cooled, or with side or overhead valves It is only necessary to consider the prices of the Belsize-Bradshaw £275, Crouch £285, B.S.A. £340, two-cylinder side-valve water-cooled Wolseley £310, and so on, to realize that the more expensive types of two-cylinder engines do not constitute serious rivals, on the grounds of price, to the cheaper four-cylinder vertical engine propositions, such as the 8 h.p. Standard £325 and the 8-h.p. Talbot-Darracq £325. On the other hand, neither the Talbot-Darracq nor the Standard compete with the Rover at £220. It must be had in mind that for every 10 per cent. that can be taken off the price of a vehicle between the £200 and £350 range, the public to which it appeals is multiplied manyfold. It appears that most of the designers of new style two-cylinder vehicles had no notion, on the one hand, of what large saving it is possible to effect in cost when, the period of experimenting being over, orders can be placed for raw materials in vast quantities, as for the 8-h.p. air-cooled Rover car, and, on the other, at what low prices certain firms are able to produce four-cylinder water-cooled engine vehicles. In addition to British enterprise in the latter direction, we must note the Continental work of Bugatti, Mathis, Peugeot, and Citroen.

The first message this show has for the medical man is that there is no need for him to indulge in experiment by buying cycle-cars. Nor, for that matter, need he buy unproved products, since the best proved ones are those available at the cheapest prices. But among some of the new style vehicles introduced there are some which, undoubtedly, will make a big reputation during the next twelve months. Therefore, if the individual medical man is not too much pressed for time, and has a talent for amateur mechanics, he may get good service out of some of the entirely new models introduced this year.

SPHERE OF THE AIR-COOLED ENGINE.

We are far removed from the early days of the cycle-car, when the motor-cycle V-twin engine was mounted on a four-wheeled chassis to which it imparted an uncomfortable degree of vibration and through which it transmitted power by very crude and elementary mechanism. Yet, even in present practice, a certain design of 90 degrees twin air-cooled engine has gained a name rather for performance than for silent running, a point that applies in lesser degree to the horizontally opposed twin type. The strength of the Rover offer rests on the fact that it sacrifices performance to a degree that is not material to the average user in order to achieve quietness of operation to a degree that is most notable and desirable. It would appear that, on technical grounds, the noise developed by the working of most air-cooled engines in small cars, is due to the ringing of the cylinders and to the poor design of valve gear details. The "clothed" cylinder type of engine, wherein the crank case extends above the cylinder walls, should do away with much of such annoying resonance. Doubtless, in the fullness of time, power and silence will be combined in one design. But at the moment quite sufficient power is available, and silence has been obtained to a reasonable degree in the one outstanding example. It could be exploited by all the manufacturers who have introduced two-cylinder air-cooled vehicles, for which, however, I do not predict a great future unless they can be produced to sell at prices that cannot be matched by any four-cylinder type. Of course, at this period some buyers will favour certain types of two-cylinder vehicles that give pronounced speed performance with the inevitable noises. That sort of machine, however, is not to be recommended for the medical man; one reason is that the effect on the nerves is very trying if the driver has to sit behind an engine of that sort week after week, year in and year out. Refinement of working is a very important point in the prevention of fatigue. Further, too many of the small machines put on the market with various sorts of engine that give spirited performance are distinguished by cramped body accommodation, a fault that applies incidentally to most of France's popular car productions.

FOR THE COUNTRY DOCTOR'S USE.

Medical men should always look very carefully at the body scheme, and see that it is such as not to involve a quarter or a third of the driver's body being exposed to the wind owing to the narrowness of the wind-screen, the clipping of the scuttle scheme to achieve streamline form on a miniature body, and so on. Meantime the principle of air-cooling may be accepted as satisfactory for engines of the capacity and type we have been considering, for it has been shown on hills in Devonshire and elsewhere that some of these engines can stand hill-climbing within reason. If my district were mountainous I do

not know that I should buy an air-cooled engine for service year in and year out; but where it is a case of anything like average country, including hilly districts, I should have no hesitation in acquiring an example of really proved practice. It must be had in mind that these types are proportionately powerful for the weight they have to move. For example, the Rover engine develops quite 14-h.p., so that there is 1½-h.p. per cwt. of vehicle. Again, the A.B.C. air-cooled car, which has been on the market for over a year, can be taken from the West End of London right through the crowded thoroughfares of the City, and back again, for a couple of hours, crawling behind omnibuses, and so on, yet it will not become overheated. An air-cooled engine has to be made well by experts, for its shortcomings as a type, and without reference to any particular manufacturer, include unreliability due to poor workmanship and material; excessive oil consumption; insufficient attention to detail; general lack of refinement; and relatively unsatisfactory balance. As usual, it is a case of commercial competition. The firm with the best headwork, going about the business determined to make a success of it, will launch nothing without due preparation, and will succeed in getting the business because its product will give reliable if not showy service. But for every one that so succeeds at least a dozen would-be successful concerns are destined to failure because they have not taken the essential preliminary precautions.

The Coming Vogue of 1½ and 2 Litre Engines.

Having dealt with machines that come within the £350 and lesser price class, I now turn to a consideration of developments in the direction of nominal 10-h.p. to 14-h.p. machines. It is, however, necessary to point out first that the movement for providing greater horse-power for a given vehicle weight is general in British practice—at least, as far as machines up to the £16 tax are concerned. The tendency of the year's introductions of new models is, at last, to give attention, not to that minority of motorists who brag about speed attained on the flat, but to the vast majority of users who never want to go at excessive speeds along the level, but who wish to climb hills without effort, and like a car to accelerate in a manner which gives pleasure to the rider. From the moment engines were made more efficient and flexible it was possible to do this. But designers were conservative. Now, however, they have learned their lesson, with the result that we have small engines that have an excellently even torque, which is to say they develop good power practically throughout their range of crankshaft revolutions. This evenness of torque, combined with proportionately much lower gearing and lighter vehicle construction, enables a car to pick up in a way which has not been possible hitherto in the case of the middle and smaller classes of machines. We are at the opposite extreme of the early days of motoring, when every engine was overloaded and every car geared too high. Now we keep the power plant functioning well within its powers of performance.

It is plain that a new classification for motor engines may be expected in a very short time. One of the first of these is the two-litre size, which has been decided on by the French Automobile Club for the large car race for the Grand Prix next year. I remember being ridiculed in the technical press when, in 1914, I suggested that the small car class should be brought down to two litres at most, and that the large car class should be reduced to three litres. The latter was the size for the race this year. Now it is to be abandoned as being too large. Nowadays 130-h.p. can be got out of a three-litre engine, and proportionately good power out of a two-litre one. As to standard practice, there is introduced at the show the famous Ballot two-litre car, this being the only notable recruit to the industry of car building on the Continent this year.

European versus American Policy.

It occurs to me while writing these notes that it is remarkable no mention can be made of American contributions to these developments. The plain fact is that I know from technical developments in the United States that many new points are introduced to U.S.A. chassis this year for buyers in the States. But those new points are not illustrated at the current exhibition, and vehicles embodying them are not available for purchase in this country. Nor is this the only reason why I am bereft of material under this head. The American industry in general has decided, in the present conditions governing manufacturing operations in that country, that it is not possible to follow the lead of the foremost European houses in evolving these new-style small engines. Such engines require to be made to very close engineering limits: American builders do not think that a commercial proposition. That is fortunate for bankrupt Europe. It is precisely what our best motor engineers can achieve. Any visitor to the present show would be well advised to look at the design and the quality of the workmanship. The two-litre engine is illustrated by the introduction of a two-litre engined Minerva from Belgium; and, again, by a nominal 14-h.p. two-litre engine Sunbeam, and a similar type of Talbot car, both designed by Mr. Louis Coatalen. Round about this category there are many others, including the six-cylinder Singer F.A.C. types. Another size of engine which will certainly be adopted increasingly as a type—in face of the resumption by the Royal Automobile Club of racing in the Isle of Man with 1,500 c.cm. engine cars next year—is the 1½-litre engine. That was the limit for the 200 miles race at Brooklands recently, and, at an earlier date, for the French Voiturette Grand Prix race, and, earlier still, for the Italian Grand Prix race. The last named event was won by Bugatti cars at seventy-two miles an hour on a flat and straight course; the French Voiturette race at Le Mans was won by Talbot-Darracq at the same speed, though the course abounded in curves and varying gradients; therefore, by contrast to the Italian circuit, in France it was necessary to apply the brakes and to accelerate very often. The Brooklands 200 miles event was also won by Talbot-Darracq at 88.89 miles an hour, all which should be supplemented by the information that it is possible to-day, given fine weather as well as sound tyres, to travel 100 miles inside an hour on the track at Weybridge with a car of this engine volume. Before the war we should have thought it too small for a cycle car.

New Cars of Note.

As far as standard practice is concerned, we have at this exhibition, not a racing machine but an overhead valve engine 1½ litre, nominal 12-h.p. Talbot-Darracq which has half-elliptic rear springs, therefore its suspension is plangent and has nothing to do with the solid non-resilient type of springing needed for racing. Again, the car has a plate clutch, therefore the gear changing is rendered easy. Other examples could be cited, though, apparently, in face of the tardiness of the European industry to resume races after the war, designers have wobbled very badly and have not built their engines quite closely to these limits. Thus we get some going in for approximately 1¼ litre engines, others for about 1⅓ litre. But the generality are not at all "tidy" in their choice of volumes. In this connexion it would be far better if developments aimed always at certain definite volumes, since it is possible by these means to promote that healthy form of competition between manufacturers, even if they do not go in for racing, which makes for the maximum rate of progress in the minimum of time by gaining the greatest amount of interchangeable experience at the least cost. Nevertheless, under the heading of complete novelties in the relatively small car classes, I would advise the visitor to make a note to inspect the following, though not all of them are necessarily suitable for medical men. The point is that it will take but a few moments to glance at them, and by doing so the least technical visitor will begin to observe points (too numerous to be set out here), which will give him a basis for judging more accurately those designs which will be of service to him. All the cars mentioned in the following list are absolutely new models; it is not possible to give the prices in all cases at the time of going to press:

£18 tax, six-cylinder, overhead valve, Armstrong-Siddeley, £575 chassis.

£9 tax, 90 degrees twin-cylinder, air cooled, Belsize-Bradshaw, two-three seater, £275.

£10 tax, overhead valve engine 90 degrees twin-cylinder, air-cooled, B.S.A., with electric engine-starter, two-three seater, £340.

£16 tax, six-cylinder A.C., 1,990 c.cm., with three forward speed gear-box embodied in the overhead worm-driven back axle; two-seater, £683.

£8 tax, 5 h.p., four cylinder, water cooled Citroen; two seater.

£8 tax, 7.9-h.p., V-twin, four-wheeled Coventry-Premier; two-three seater, £250.

£9 tax, 60 degrees twin-cylinder water-cooled engine Crouch with quarter-elliptic springs fore and aft, the front pair on a super-imposed principle, and original steering design; two-three seater, £285.

£20 tax, double sleeve valve engined, four-cylinder Daimler; chassis, £700.

£13 tax, four-cylinder, four-speed Delage, with four wheel brakes.

£12 tax, overhead valve engine Hotchkiss.

£14 tax, four-cylinder, double sleeve valve engined Minerva, with cantilever rear springs; chassis, £670; five-seater, £895.

£10 tax, four-cylinder, French-built Sa'mson, with three speeds forward, quarter-elliptic fore-and-aft springing; two seater, £285, with lighting set.

£13 tax, 14-h.p., four-cylinder, push-rod operated overhead valve, aluminium engine Sunbeam, with battery ignition and cantilever rear springs; chassis, £575; four-seater, complete, £725.

£16 tax, 15-20-h.p., four-cylinder Straker-Squire, with four-speed gear-box; four-seater, £725.

£12 tax, 11-h.p. Star, with single-plate clutch, central gate change; chassis £395; two-seater £495.

£10 tax, four-cylinder Singer, with quarter-elliptic springs fore and aft, and three forward speed gear-box; two-three seater, £395.

£16 tax, 15-h.p., six-cylinder Singer, with three forward speeds and cantilever rear springs; four-seater, £675.

£8 tax, four-cylinder Short-Ashby friction-driven two-seater, with central epicyclic gear control, cantilever rear springs, transverse front spring; complete £275.

£11 tax, 1½ litre 12-h.p. overhead valve four-cylinder engine Talbot-Darracq, with Delco ignition and electric starter, a single-plate clutch, three speeds forward, gear-box bolted to engine, spiral bevel final drive, cantilever rear springs: chassis £545; complete car, £596.

£11 tax, 10.5-h.p., four-cylinder Calcott, with three speeds forward, spiral-driven back axle; two-seater, £350.

£14 tax, 14-h.p. Vauxhall, with aluminium alloy pistons, engine starter housed at rear of crank-case casting and dynamo at front, three forward speeds, spiral bevel-driven back axle, cantilever rear springs; four-seater open car, £750.

£9 tax, 7-h.p. horizontally-opposed twin water-cooled cylinder Wolseley, with aluminium pistons, Blic battery, and coil ignition, three speeds forward, quarter-elliptic springs fore and aft; two-seater car, complete with electric engine starter, £310; without starter £295.

£21 tax Vulcan, with split single-sleeve valve Howard four-cylinder engine and overhead worm-driven back axle; five-seater, £1,050.

£8 tax, 8-h.p., 970 c.cm., four-cylinder water-cooled overhead valve engine Talbot-Darracq, with Delco electrical apparatus, single-plate clutch, three-speed gear-box, spiral-driven back axle, quarter-elliptic fore and aft springs; two-seater, complete, £325.

£14 tax, 2 litre, four-cylinder, 16 overhead-valves engine Ballot.

£9 tax, 10-h.p., four-cylinder monobloc Knight double sleeve-valve engine Panhard with reversed quarter-elliptic rear springs: four-seater, £615.

£9 tax, four-cylinder double sleeve-valve engine Voisin.

£13 tax, 12-h.p. Delaunay Belleville, with four-speed gear-box, pressed steel welded back axle; four-seater, £760.

£13 tax, 12.1-h.p., four-cylinder Delahaye; chassis £480.

£12 tax, 11.8-h.p., Vinot, with overhead-valve engine; chassis, £550.

£13 tax, 12.1-h.p., Chenard-Walcker with overhead valve engine.

£10 tax, 1,496 c.cm., overhead valve Dorman engine, four forward speeds, spiral bevel gear driven Seabrook with fabric disc joints at either end of the propeller shaft; two-four seater, £475.

£10 tax, 8-h.p., four-cylinder overhead valve water-cooled engine 11 cwt. Standard three-speed car; chassis, £275; two-seater, complete, £320.

£13 tax, 14-h.p. two-litre four-cylinder overhead valve aluminium engine Talbot with three forward speeds and cantilever rear springs; four-seater touring car, £725 complete.

£12 tax, 14 cwt., four-cylinder Wolverhampton-built Turner petrol car with four speeds forward, worm-driven back axle, quarter-elliptic rear springs; four-seater, complete, £550.

Proved and Improved Designs.

In addition to these novelties, attention should, of course, be given to the progress made by those manufacturers who introduced new style cars at the two previous post-war shows in London. This is particularly needful at the moment, in that there have been great reductions in prices. I am not referring to those vehicles that are a drug on the market, but to designs that are really up to date. These changes have been rendered possible by the more settled state of engineering labour, and by obtaining raw materials at lower cost. Under this head may be instanced the proved overhead valve engine, wholly post-war practice, 10-h.p. and 15-h.p. Wolseley cars, now available in considerably improved form at much lower prices. These are the sort of vehicles that have been copied by many of those who are introducing new schemes this year. Again, we have the four-cylinder side-valve engine 12-h.p. Rover, introduced in improved form as to detail, and at a very much lower price—namely, £650 complete. It is the cheapest of the 2½ litre engine cars of British construction by a house of repute at this exhibition. Again, I have not included in the foregoing list of new models the 3 litre overhead valve engined 16-h.p. Sunbeam car, the power plant of which develops 60 h.p., and which is capable of a mile a minute, though its taxation rating is low. Of course it is a big departure for this pioneer Wolverhampton firm to have turned over entirely to overhead valve engines for all its models, including the 24-h.p. 6-cylinder type. The chassis of the 16-h.p. is merely developed in detail to accommodate the much more powerful plant now furnished to them for the same taxation rating. The complete vehicles, too, are put on at low prices, particularly when one examines the details of the design and production of the overhead valve gear employed. This is not what may be called the cheaper commercial type with push rod and rocker mechanism, but, like the Wolseley, it is an expensive design. Both are quite distinctive. The two larger Sunbeam models have four valves per cylinder. Than these no firms have more experience of the overhead valve engine. But where there are scores of new style cars it is impracticable to deal with each in detail. Instead, I would give passing attention to a few general tendencies.

All-weather Bodywork.

Apart from this being a year of cars that are cheaper, power for power, accommodation for accommodation, the cars are cheaper to run, and they are furnished in more complete fashion, as witness, notably, the Humber, Rover, Swift, Standard, Wolseley and such-like vehicles standardized complete with entirely original hood schemes that embrace, between them, some important points for the medical man. In short, we have arrived at a big forward stage in the development of the all-weather body without involving the production of an appreciably heavier, or a more complicated, vehicle, than the type that has formerly been equipped merely with what used to be styled a Cape cart hood. As to hood gear in general, it will be observed that a number of these types—for instance, the Rover—have the extension arms spring loaded. In other words, these arms might be spoken of as compensated, because practically no muscular effort is needed to raise, or lower, the particular hood. Independent of this hood gear, but designed in conformity with the scheme of it, the front and back doors are provided with windows fashioned some of aluminium, others of specially stiffened fabric, the opaque portions being generally of celluloid, whereby in stormy weather the vehicle can be turned in a few moments into a completely weatherproof machine enclosed as much as a saloon. Of course the cheapness and lightness of the innovation is notable. Nor is this all. These new "dummy" windows, which are made to open and close with the doors, are quite independent of the hood scheme, and can be kept up in fine weather when the hood is down. Therefore they are made to serve as wind or dust screens for the occupants of the front and of the back seats. Another development in this direction is illustrated admirably in the standard Humber bodies, wherein a form of wind-screen for the occupants of the back seat—quite different from the clumsy contraptions we have had in the past—is incorporated to fold out of sight when not in use, yet it is immediately accessible and takes but a moment to put into place, and does not interfere with easy access to the doors.

The Achievement of Greater Comfort.

The combined rear scuttle and screen will well repay the study of the medical man, in that the Humber arrangement completely protects the occupants of the back seat, just as the occupants of the front seats in cars with scuttle dashes are protected. The whole thing is very neat and light, striking a new note in coachwork details. Wolseley, Singer, G.W.K., and Swift are also doing good work in this connexion. It is far better to fit

devices of this sort than to place on the instrument board of a car the unnecessary clock, which seldom functions reliably. Hence its welcome disappearance from a number of specifications of standard cars. Another point is that the central gear change control tends to fall out of favour. This is natural, because it fouls ladies' dresses, and so on, especially in cars with front seat accommodation clipped to achieve streamline effects. But weight and material are being saved by the use of banjo type back axles such as were originated by Maudslay at a period when its production was expensive. Afterwards the principle was taken up in America, so that it is now one of the cheapest types, its only rival being the back axle fashioned out of two pressings bolted together, which is certainly quite the cheapest and also one of the strongest forms possible. The system saves weight. It is really a principle evolved by Lanchester years ago. In nearly all cases where new designs are employed manufacturers appreciate post-war driving, and see to it that the foot-operated brakes do not act on the countershaft and through the transmission gear, but on the back wheels.

Mechanical Tendencies.

The British industry lags behind the French one in the adoption of front wheel brakes, the ultimate coming of which into general use is now assured in that M. Henri Perrot's diagonal principle is supplemented by a really notable invention, by a French artillery officer named Hallot, wherein centrifugal force is so employed that, as the wheel slows, the braking effort becomes less until, the moment the wheel stops, the brakes are withdrawn automatically. Thus, should a wheel become locked during the application of the brakes, that wheel is forthwith released immediately and completely, so that skidding is impossible on that score. The single plate clutch and the spiral bevel-driven back axle all gain adherents. The worm drive retains its partisans, but does not gain any. The popularity of the bevel drive wanes. One interesting feature in connexion with the worm drive is the use of it by Lanchester to drive the magneto, a very notable refinement of which more may be seen. As for the magneto itself, it loses adherents, while dynamo-battery ignition gains a number. Carburation is now arranged much more generally with devices to control the mixture under varying conditions of service. Aluminium is much more used for making lighter parts; but the industry in general hesitates to use it for pistons. Horstmann of Bath shows a machine with foot-operated mechanical engine starter, and the new 8-h.p. Standard can be started either by crank in the ordinary way or by a lever beside the driver. The three-speed gear-box gains greatly in popularity here, though not so much on the Continent.

Valves, Gear-boxes, and Suspension.

There is a tendency for British constructors to build neat gear-boxes, bolted on the front ends of the torque tubes, though Singer has changed its practice in this connexion, and puts the gear-box in conventional position, instead of incorporating it in the back axle of the small car. As to taking the drive, the spring method is falling gradually out of popularity, for even on the new 18-h.p. six-cylinder Hotchkiss car, with a very original overhead valve operation mechanism to ensure silence, the drive is no longer taken through the springs but through a torque tube to the midmost frame transverse member. Other original valve gear is to be found on the Vulcan car already mentioned and on the Voisin machines. Wiring installations in connexion with electrical gear are very much improved. As to the growing use of the cantilever spring, it is noteworthy that very few of the Continental manufacturers trust it entirely for the rear suspension; French and Italian makers prefer to supplement it with devices for damping out oscillations when travelling at speed along the road. On one model Renault sets the rear springs at an angle to the side members of the frame, in place of parallel with them. Generally, in smaller constructions the gear-box is bolted up with the engine. "Straight-eight" engines are exploited only by the larger firms, with the solitary exception of Bugatti, who makes a 3-litre model of this sort. All the British makers introduce smaller cars than their previous models, with the exception of Singer and A.C., who introduce six-cylinder types, but as they are rated at only 15-h.p. each it will be appreciated that they are not large cars. For the small constructions fabric disc universal joints are increasing in use, Citroen being among those employing them. The straight-sided tyre has not materialized to the extent we were promised. But this is probably due more to extraneous circumstances, such as trade depression, than to normal mechanical tendencies. Therefore visitors to the show would do well to study the interesting exhibits in the tyre section by the leading manufacturers. When trying cars medical men may be advised to pay little heed to the registering of the speedometers on them; to form poor opinions of vehicles that have to be rushed at rises to climb them promptly; and to remember that a car that is noisy, ill-sprung, or given to vibrate will deceive the passenger as to the speed at which it is travelling, because it will give the impression of going faster than is actually the case. On the other hand, the more refined a vehicle the more likely it is that one will underestimate its speed.

Medico-Legal.

Frauds on Medical Men.

At Greenwich police court on October 11th a man named Edward Thomas Johnson, described as an insurance broker of Forest Hill, was charged on remand with fraudulently converting to his own use the proceeds of a cheque for £15, of which he was bailee, the property of Dr. Denys Hallett. A clerk, W. H. Tomlin, was charged with being concerned with Johnson in obtaining the £15; also with obtaining other sums from other persons by false pretences. According to a report in the *Woolwich Herald* (October 14th), Mr. Lewis, for the Public Prosecutor, said that the prisoners had made statements admitting the offences, and Johnson had given a list of the doctors from whom he had obtained money. It appeared that Johnson wrote a letter to Dr. Hallett, in which he said it was necessary for him to arrange with a doctor in his district to examine candidates for life and accident insurance; that the fees would be one guinea for life insurance and 10s. 6d. for accident; and that he would be guaranteed 60 guineas in the year. The medical man accepted the position, and at Johnson's request agreed to effect an insurance on his own life, paying Johnson £15. This sum Johnson converted to his own use. The man Tomlin and a youth named Morris were sent to Dr. Hallett for examination, false addresses being given. In the other cases a similar procedure was adopted by the prisoners. Both prisoners pleaded guilty and expressed regret. The magistrate, Mr. Disney, committed Johnson for twelve months' hard labour, and Tomlin for six months.

The report of these proceedings in the Greenwich police court comes opportunely. As lately as September 17th we published in the Supplement a Current Note headed "Insurance Policies: A Warning," reminding medical men once more to be on their guard against making payment to persons calling upon them and representing themselves to be insurance brokers. The warning was prompted by a particular case brought to the notice of the British Medical Association, in which a person representing himself as an insurance agent offered a doctor medical examinations for various insurance offices on the understanding that he took out a policy through his agency. We understand that the Medical Defence Union has received several complaints against the man Johnson and his accomplice, and had already put before the Public Prosecutor the facts of two cases of a similar character, although neither of these formed the subject of charges at the Greenwich police court.

The Society for Cinematographic Instruction, New York, has devoted the past eighteen months to experimental work in hospitals and laboratories in order to ascertain the applicability of the cinematograph to the study of medicine, surgery, and dentistry; it is stated to be possible to record accurately and permanently every detail of any minor or major surgical operation. The society intends to establish a central cinematographic library in New York, and members and institutions will be able to rent or purchase at a nominal charge copies of the films. An exchange arrangement, we are informed, is also being negotiated with the medical profession in a number of European countries. Dr. James S. Edlin, New York, is president of the society.

Figures compiled by the Department of Public Welfare of the City of New York show that in 1918 there were 116 drug "addicts" under the care of the city hospitals, 339 in 1919, and 493 in 1920; for the first six months of the present year there were 337. The number of cases of alcoholism under the care of the city hospitals in 1919 was 1,145, in 1920 it was 1,024, and during the first six months of 1921 there were 567 cases.

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SATURDAY, NOVEMBER 5TH, 1921.

THE SCOPE OF SURGERY IN GENITO-URINARY TUBERCULOSIS.

THE four papers on renal tuberculosis published in the tenth volume of the *Transactions of the American Association of Genito-Urinary Surgeons*, and the article on the radical cure of tuberculosis of the seminal tract, contributed to the thirteenth volume of the same publication by Dr. H. Hampton Young, together constitute a valuable contribution to the discussion of the subject of genito-urinary tuberculosis. In it are reflected the views of American urologists on a topic of great practical interest. The first paper deals with the possibility of spontaneous recovery in renal tuberculosis. Tuberculous lesions elsewhere in the body may, under favourable circumstances, become shut off by surrounding fibrosis, absorbed, and finally entirely replaced by scar tissue. The question is whether the same can happen in the case of a lesion in the kidneys. An answer to such a question may rest either on clinical observations or on *post-mortem* observations. Great care must, however, be exercised in accepting evidence of spontaneous recovery from renal tuberculosis when that evidence rests only on clinical history. How easy it is to assume healing without sufficient proof is shown by three cases of Keyes, quoted by Dr. Edward L. Young. In these an entire remission of symptoms occurred, and in one instance the relief lasted seventeen years. Nevertheless, in all three cases a subsequent nephrectomy or necropsy revealed the fact that in spite of the absence of symptoms no true healing of the renal lesion had actually occurred.

Nor is the evidence in favour of the spontaneous healing of renal tuberculosis any stronger when it rests on *post-mortem* observations. It is true that a few pathologists have reported the presence of cortical scars which they believed to represent healed tuberculous lesions. It is also true that Harbitz and Delbet include amongst these healed lesions certain cases in which encapsulation rather than true healing has taken place. Responsible pathological opinion is, however, all in favour of the view that such occurrences are rare. On this account dependence upon general measures of treatment when renal tuberculosis has once been diagnosed is obviously dangerous. The only hope of dealing successfully with a lesion in the kidney is nephrectomy. Wildbolz, recognizing that a marked improvement in general condition follows the use of tuberculin in many cases, gave it a trial in four patients previous to operation. Although the general health of these patients materially improved, when he came to do nephrectomy later on he found no evidence of healing in the kidney. He concluded, therefore, that although medical treatment may improve the general condition of the patient, it does not in the least help the local lesions. This being the experience of practically all genito-urinary surgeons, nephrectomy is now recognized as the only possible means of a radical cure in the case of renal tuberculosis.

With regard to the details of operation, surgeons differ considerably: some undertake very extensive dissections of the ureter and fatty capsules in the hope of removing as much of the infected tissues as possible, whilst others are content merely to remove the kidney and to trust to the patient's resistance to overcome any infection left behind; as a result of these differences considerable variations in mortality are found in different clinics. Even when the lesions of the genito-urinary tract are extensive the beneficial results of the nephrectomy are usually very obvious. Indeed, Cabot and Crabtree have noted that very early cases with small multiple foci in the kidney often do not recover as well as those cases in which there is a larger localized abscess. In other words, according to these authors, the results of nephrectomy in cases of later tuberculosis are more dramatic than those obtained at an early stage of the disease.

Whilst little doubt can be felt that excision offers the best hope of cure in dealing with tuberculosis of the urinary tract, the same cannot be said of the treatment of genital tuberculosis. Here a marked divergence of opinion amongst authorities exists. The subject is rendered more difficult by the fact that the pathology of genital tuberculosis is in dispute; opinion is still divided as to whether the spread is from the epididymis to the prostate and vesicles or in the contrary direction. Until this question is settled the surgery of genital tuberculosis rests on uncertain ground. The subject is fully dealt with by Dr. Hugh H. Young, who advocates extensive operations. He shows that such operations as orchectomy and epididymectomy have conspicuously failed, the disease reappearing at a later date in the testicle of the opposite side. The reason of this is that the prostate and vesicles are almost invariably infected as well as the epididymis. The removal of a testicle can afford little hope of saving the organ on the opposite side if these central prostatic and vesicular lesions are left behind. The only logical method of dealing with the condition surgically is to remove the vesicular lesions as well as those in the testicle, and it is in support of such a proceeding that Dr. Young has written his paper on the radical cure of tuberculosis of the seminal tract. In order to show that his advocacy of these somewhat severe surgical measures rests on sound pathology, he reviews the evidence in favour of this centrifugal spread of the tubercle from the prostate and vesicles. He quotes in particular the work of Mr. Kenneth M. Walker on this subject, as showing conclusively how futile it is to hope completely to eradicate tubercle of the genital tract by epididymectomy or castration alone. According to Mr. Kenneth Walker's observations, the path along which infection of the epididymis travels is precisely the same in tubercle as in gonorrhoea. The infection is descending and for this reason the earliest portion of the testicle to be attacked is the lower pole of the epididymis. By inoculating the urethrae of animals with various easily identified organisms and subsequently searching for them in various portions of the genital tract, Walker showed that tubercle bacilli can reach the testicles from the posterior urethra along the lymphatics of the vas, even although this is against the direction of the lymph flow. In his opinion, Baumgarten's failure to produce a descending tuberculosis in rabbits was due, not to any inability of the tubercle bacillus to reach the testis from the posterior urethra, but to the fact that the soil had not been prepared for its activity by, say, a previous injury. If before inoculating the posterior urethra with tubercle bacilli the testicle was damaged descending tuberculosis ensued.

If the truth of this be granted—and Dr. Young's clinical observations are entirely in harmony with

Mr. Kenneth Walker's pathological investigations—excision of the seminal vesicles and prostate is the only possible method of eradicating seminal tuberculosis by surgical means. Dr. Young gives a full description of the technique and the results obtained from such methods. The first stages of the operation are similar to those of a perineal prostatectomy. The infected vas is removed after division at the point at which it crosses the ureter by traction through a small incision made over the external ring. Although it is a severe operation, there has only been one death amongst the fifteen cases operated upon by the author, and that occurred a year after operation. Many of the patients were in an advanced stage of the disease and suffered in addition from pulmonary lesions. In all the cases excellent local results were obtained and there was a marked improvement of general health.

Although in the hands of certain skilled surgeons such a formidable proceeding as excision of the vesicles and prostate appears to have given excellent results, it is greatly to be doubted whether the operation of epididymo-vesiculectomy will be accepted as the appropriate treatment for tubercle of the genital tract in the same way that nephrectomy has been recognized as the only justifiable treatment for tubercle of the urinary tract.

Fortunately, genital tuberculosis differs materially in character from urinary tuberculosis. The processes of repair that we have found to be lacking in tubercle of the kidney are much in evidence in tubercle of the genitalia. Every surgeon has seen cases of genital tuberculosis in which, after the disease has run a long course and affected both testicles, repair and cicatrization have finally triumphed, the patient, to all intents and purposes, recovering from his genital lesions. Although excision of the genital tract may not come into general favour, yet it is undoubtedly a procedure which has a very definite place in the treatment of certain selected cases, and for this reason, if for no other, Dr. Hugh H. Young has done valuable work in perfecting the technique of the operation and in bringing the results he has obtained to the notice of the profession.

MORTALITY IN THE EIGHTEENTH CENTURY.

Our knowledge of the rates of mortality in Europe before the middle of the nineteenth century is very slight. Sweden is the only country in which accurate census enumerations and substantially correct returns of deaths have been compiled continuously since 1750. Our own Government so long ago as 1753 introduced a bill "for taking and registering an annual account of the total number of the people, and of the total number of Marriages, Births and Deaths, and also of the total number of the poor receiving alms from every parish and extra-parochial place in Great Britain." But the measure had to encounter considerable opposition; one honourable member "did not believe that there was any set of men, or, indeed, any individual of the human species so presumptuous and so abandoned as to make the proposal we have just heard," and held the project to be "totally subversive of the last remains of English liberty." Another remarked that his constituents "looked on the proposal as ominous, and feared lest some public misfortune or an epidemical distemper should follow the numbering." These arguments seem not to have prevailed against those of the Government whips in the Lower House, but, as was noted recently, the Peers rejected the bill on second reading; nothing more was done for nearly fifty years, and enough was not done then to carry out the programme we have quoted. Farr was able to make a fairly accurate comparison between the rates of mortality in London at different periods; he estimated the crude death rate in 1629–35 as 50 per 1,000, in 1728–57 as 52 per 1,000, and in 1831–35 as 32 per 1,000, but for the rest of the country we have hardly any data.

In the current number of the *Zeitschrift für Hygiene und Infektionskrankheiten*[1] Kisskalt publishes an interesting study of death rates in the eighteenth century, largely based upon the archives of the city of Königsberg. He has been able to determine the populations, numbers of deaths, and, to some extent, the causes of death during the last thirty years of the eighteenth century. The following are among the more striking results of his comparison between the end of the eighteenth century and the last twenty years before the war:

In the first year of life the rate of mortality was not very different at the two epochs, at least in Königsberg. The rates per 1,000 births were 217 in the eighteenth century, 258 from 1894–1903, and 186 from 1904–13. A noteworthy point is the fact that, although the infant mortality in Königsberg in our time shows the familiar summer elevation, there is no trace of this in the eighteenth-century records. The obvious explanation, that breast feeding was commoner in those days, may, Kisskalt thinks, be the true explanation, since the mortality of children in the second year of life did have a summer maximum. But, as he observes, it is hard to tell whether breast feeding was really more common, and he quotes an illustration of the fact that the habit of scolding mothers for their neglect, which some may have imagined to be peculiar to public spirited spinsters of the modern upper classes, was in full working order in 1784.

Mortality at ages 2 to 10 was far higher in the eighteenth century than now. In the second year of life it was 106 per 1,000 (average of the years 1774 to 1803); an important component was small-pox, to which Kisskalt devotes special attention. Taking the mortality at all ages, the average was 2.32 per 1,000, the maximum 8.58, the minimum 0.11. In one year more than 20 per cent. of the gross mortality was due to small-pox, and in nine years (out of thirty-one) more than 10 per cent. The second year of life was the most dangerous age. Kisskalt reckons that of every 100 born 11.4 died of small-pox before attaining the age of ten, a result in agreement with that of an eighteenth-century writer, Lange. Vaccination was introduced into Königsberg in 1803, but at first made very little progress, partly because of the unfavourable opinion of its effects entertained by the great intellectual lion of the city, Kant, whose biographer unkindly attributed the sage's utterances on the matter to the effect of "strange opinions and theories sporting with extremely moderate powers of observation conjoined to a once penetrating intellect." However this may be, the epidemic of 1803 was a severe one. But the epidemics of 1806 and 1809 were much milder, and thereafter small-pox ceased to be a formidable scourge.

Measles in the eighteenth century was a greater cause of mortality than in our time, but Kisskalt does not find any difference in the epidemiological succession; his data are not, however, suitable for an exact study. Scarlet fever, unlike measles, was not more fatal at the end of the eighteenth century than now, while Kisskalt can find no indication of any epidemics of diphtheria.

[1] Vol. xciii, pp. 438 512.

Two pandemics of influenza fell within the period studied. That of 1782 produced a mortality comparable with the influenza of 1890—about 1.3 per 1,000; the influenza of 1800 seems to have been rather more severe. Kisskalt's memoir, to which he has appended an excellent bibliography, is a valuable contribution to the literature of medical statistics.

THE CURE OF SLEEPING SICKNESS.

As was mentioned in a recent issue of this JOURNAL,[1] the Colonial Office is supporting the Tropical Disease Prevention Association in sending out to Africa a special mission under the senior medical officer in Uganda, Dr. Claude H. Marshall, to investigate the serum treatment of trypanosomiasis in man and animals; we understand that an outlay of £50,000 is contemplated. The treatment of sleeping sickness has always left much to be desired from the point of view of efficacy, and it is possible that the most promising results hitherto obtained have been those recorded by Dr. Marshall himself and detailed in recent issues of the BRITISH MEDICAL JOURNAL.[2] The method of treatment employed consists in the intravenous injection of salvarsan or neo-kharsivan, followed three hours later by the withdrawal of 2 oz. of blood from the patient; a quantity of the salvarsanized serum obtained therefrom is then injected into the patient's spinal theca. It is claimed that this method of treatment may be regarded as a "cure" for trypanosomiasis—fatal to the parasite, which is notoriously capable of lurking for months or years inactive within the human organism, but not fatal to the host. We have received from Dr. Warrington Yorke a critical review he has published[3] of recent work on the treatment of sleeping sickness, in which he casts doubt upon the efficacy of Dr. Marshall's method of combined intravenous and intrathecal treatment; the record of his experimental results is criticized also. The intrathecal method of treatment with salvarsanized serum was tried by Van Someren,[4] with results that were not encouraging, in 1910, and again in 1914 by Reichenow without success. According to Dr. Yorke, two fundamental assumptions underlie the work of Dr. Marshall and his collaborator, Dr. Vassallo. The first assumption is that although the administration of one dose of salvarsan, neo-salvarsan, or atoxyl, is sufficient to sterilize the blood stream, symptoms reappear within a variable period, averaging about four months, and the disease progresses to a fatal termination; Dr. Yorke produces evidence to show that a large percentage of the patients treated by one or more intravenous arsenical injections may survive for at least three to seven years or more. The second assumption is that in trypanosomiasis the parasites appear to gain an impregnable position in the central nervous system, whence they are later able to reinfect the blood stream. Dr. Yorke shows reason to believe that relapses after treatment occur in cases in which the cerebro-spinal fluid is sterile; that in the absence of intrathecal treatment an infected cerebro-spinal fluid may become sterile; and that patients may live for prolonged periods, and possibly even recover, after the cerebro-spinal fluid is invaded. He argues that Dr. Marshall and Dr. Vassallo have brought forward no evidence to show that an intrathecal injection of salvarsanized serum produces sterilization of the cerebro-spinal fluid. Dr. Yorke has examined the literature of the subject and tabulated the results of various kinds of treatment therein recorded, and also of the duration of the disease in untreated patients. His main criticisms may be summarized by saying that the method of treatment employed by Dr. Marshall is not new and has already failed in other hands; that no satisfactory evidence is produced to show that intrathecal injections of salvarsanized serum are able to sterilize infected cerebro-spinal fluids; and that the results so far published fail to substantiate the claim that the treatment gives better results than any hitherto obtained by other methods. Dr. Yorke's criticisms are so well documented and so ably put forward as to give the reader pause. There can be no doubt, on Dr. Yorke's showing, that the present treatment of the disease is in urgent need of improvement, and, no less, of further investigation and experiment. But is it equally certain that the serum treatment employed by Dr. Marshall is deserving of the full confidence placed in it by its employer and his supporters? It would seem that the *therapia sterilisans magna* of trypanosomiasis is still to seek, and that the special mission sent out to Africa by the Colonial Office will find itself with more to do than merely to practise the method of treatment already employed by Dr. Marshall, with results open to the severe criticism they have received from Dr. Yorke.

[1] BRITISH MEDICAL JOURNAL, September 10th, 1921, p. 415.
[2] Ibid., May 22nd, 1920, p. 702; May 28th, 1921, pp. 773, 777; and August 20th, 1921, p. 284.
[3] *Tropical Diseases Bulletin*, London, 1921, xviii, 155.
[4] BRITISH MEDICAL JOURNAL, 1910, i, 195.

PRESENTATION OF THE JENNER MEDAL.

THE Jenner medal for distinction in epidemiological research was presented to Sir Shirley Murphy, K.B.E., F.R.C.S., late medical officer of health of the Administrative County of London, at a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on October 28th. Dr. A. K. Chalmers, the President of the Section, in making the presentation, said that the Jenner medal was instituted twenty-five years ago by the Epidemiological Society, which at a later date was merged into the Royal Society of Medicine. The object of the medal was to confer distinction on those whose work had been prominent in the prevention and control of epidemic disease, and so jealously guarded was this honour that there had been only three previous recipients. It was the unanimous decision of the Council of the Section that Sir Shirley Murphy's name should be added to this short and brilliant list. As first medical officer of health to the London County Council, Sir Shirley Murphy had had wide opportunities for research along administrative lines, and one result was a series of annual reports, extending over almost a quarter of a century, and embracing almost every relationship between disease and environmental conditions. On the formation of the London County Council the whole problem of the central sanitary administration of London had to be considered and developed. One of the most urgent problems was the clearance of insanitary areas, and to this task Sir Shirley Murphy devoted himself with conspicuous zeal. The metropolitan water supply had to be considered, and it fell to Sir Shirley Murphy's lot to advise the Council with regard to the pollution of the Thames and the Lea. The question of scavenging was taken in hand with much energy, with the consequence that London became one of the best scavenged cities in the world. Sir Shirley Murphy had done a great work in countering the spread of scarlet fever and diphtheria among the children of the elementary schools. London was also one of the first authorities to make cerebro-spinal fever, poliomyelitis, and ophthalmia neonatorum notifiable. Quite early in his career, as Medical Officer of Health for St. Pancras, Sir Shirley Murphy had demonstrated the association of an outbreak of enteric fever with milk distribution. In the course of his official career he had served on several Royal Commissions and prepared many memoirs on important public health questions. In that Section also they recalled his terms of office as secretary and as president of the Epidemiological Society. Sir Shirley Murphy, on receiving the medal, said that he knew that this bronze emblem was valued in the highest degree by every student in epidemiology. He valued it all the more because the Section of Epidemiology at the present moment contained an unusual number of men who

had themselves done the most brilliant work in epidemiological inquiry. He concluded with an affectionate tribute to the officials of the London County Council who were his more immediate colleagues, and especially to Dr. Hamer, his successor, whose services to him, not least as critic, he could never forget.

CENTENARY OF THE CITY OF LONDON MEDICAL BOOK SOCIETY.

The annual dinner of the City of London Medical Book Society, held at the Abercorn Rooms on October 25th, celebrated the centenary of the society, which was founded by twenty general practitioners in a house in Frederick's Place, Old Jewry, in May, 1821, "for the circulating of books on medical, surgical, and philosophical subjects." In 1824 membership was limited to practitioners in the City, from Temple Bar to St. Mary Axe and from Finsbury Square to the Thames. The society is apparently the oldest medical book society in the kingdom which has remained since its foundation strictly a book club for the circulation of medical works among its members, without holding any meetings for discussions except an annual dinner. It was appropriate that Dr. Arthur Davies should be in the chair at the centenary dinner, for there has been a Dr. Davies in the City of London for over a hundred years, his father and grandfather preceding him there. Dr. W. Langdon Brown proposed the toast of the Society, referring to the important part played by the chairman's grandfather, Dr. Thomas Davies, in the development of medical science in England a century ago by having been the first to introduce Laënnec's early stethoscope into this country. Dr. Arthur Davies, in his reply, described the conditions of medical practice in the City a hundred years ago. The whole of the Finsbury district was then extremely charming, and beautiful country was almost at the door; many medical practitioners there must have had country as well as city practices. The woods and groves might perhaps have inspired Keats, who was born at 28, Finsbury Pavement, and, as a licentiate of the Society of Apothecaries, practised medicine to a certain extent from 1810 to 1817. New Broad Street, and later, Finsbury Square and Finsbury Circus, were the favourite localities for doctors in those days. The most outstanding figure of the time was Sir Astley Cooper, who practised at the corner of Bishopsgate Church Yard. The first minute book of the society was on exhibition at the dinner. It was lost for forty years, and recovered some years ago by the exertions of Dr. Jossé Johnson and Dr. Buxton Shillitoe. The number of members has always been limited to twenty, and the subscription was at first one guinea; later this was replaced by "a liability to a call when the funds rendered it necessary," the income of the society coming mainly from fines for retaining books and for absence from the annual dinner, and from the annual auction of books after the dinner. A number of old members of the society were present at the centenary dinner, and in addition to Dr. Wingrave, who proposed the health of the guests, the speakers included Dr. Appleford, who was secretary from 1885 to 1891, and Dr. H. Jossé Johnson, who was secretary from 1899 to 1902, and wrote the history of the society.

INQUESTS INADEQUATE THROUGH LACK OF NECROPSY.

One of the reasons why the result of so many coroners' inquests is unsatisfactory, and in many cases even quite useless, is that the medical evidence is incomplete. In not a few instances this want of completeness is due to the fact that the coroner has not directed a *post-mortem* examination to be held. All this has been explained and the evil results pointed out again and again, during the last thirty or forty years in our columns, in letters from correspondents and in editorial articles. It is interesting to have these criticisms confirmed by a county court judge, who was looking at the matter from a particular point of view. In the course of an arbitration under the Workmen's Compensation Act, held at the Chester County Court on October 18th (reported fully in the *Chester Observer* of October 22nd), it was stated that a blacksmith was employed in putting an iron tyre on a wheel; after striking the tyre he walked away, collapsed suddenly, and died. He had never been attended by a doctor. Dr. Carlyle Sutton, who was called, stated in evidence that he found the man lying dead. The primary cause of death was, in his opinion, syncope, accelerated by the strain of laborious work and the excessive heat. It was submitted by counsel for his employers that the workman died from natural causes, and that there was no evidence of unusual strain. Dr. William Lees, of Chester, said in evidence that as there had been no *post-mortem* examination it was not possible with absolute certainty to state the cause of death. Coroners' inquests, he added, were often valueless, because the doctor was not directed to make a *post-mortem* examination. Security to human life was very much diminished by the absence of these precautions. If there had been a *post-mortem* examination in this case there would have been a much better chance of ascertaining definitely the cause of death. From what he had heard in court he thought that the workman had a high blood pressure and a dilated heart and that he had died of syncope; he had not heard that the man was subjected to any unusual strain on the day he died. With the intense heat prevalent in the first days of July a man in that physical condition would be liable to die suddenly while walking or working. His Honour Judge Parsons gave his award in favour of the respondents, the workman's employers. He was inclined to the opinion, he said, that a serious injustice might have been done in this case, because a *post-mortem* examination was not held. He hoped that those who were responsible for the conduct of coroners' inquests would in future bear in mind the grave importance of a *post-mortem* examination in a case like this, where the cause of death was not obvious from the surface indications, and where serious interests might be involved.

PITCAIRN ISLAND.

Those who have read the story of the mutineers of the *Bounty* will remember that Pitcairn is a small and lonely island that rises abruptly in the Pacific Ocean. Just over 130 years ago nine of the twenty-five mutineers, who had set their captain adrift in the launch, made their way to Pitcairn Island, together with six Polynesian men and twelve Polynesian women, and burned the ship. Ten years later all but one of the men were dead; the survivor, John Adams, became the patriarch of the little community. At long intervals the island colony was visited by passing ships. About the middle of last century the whole population—less than 200 in all—moved to Norfolk Island, but some of them soon found their way back. Through the courtesy of Dr. H. W. Mann, surgeon to ss. *Ionic*, we have been able to see his medical report on Pitcairn and its inhabitants, submitted by him to the High Commissioner for the Western Pacific, within whose jurisdiction the island lies. The visit was paid by boat last June in company with two passengers, Dr. Colquhoun of Dunedin, and Dr. Frank Nyulasy of Melbourne. It coincided with an accident to three of the islanders, whose boat had been dashed against the rocks in a rough sea. Owing to high seas the usual anchorage could not be used, and the three medical men landed on a rocky shelf in a small cove on the western side of the island; though that side was comparatively sheltered, the surf made disembarkation a trying and risky business. Led by guides, they toiled up an almost precipitous slope to a knife-edge rocky ridge; the contrast between the arid sun-scorched rock on the north and the dazzling tropic beauty on the southern and eastern sides

was an unforgettable experience. Two of the injured islanders were already dead; the third was much bruised and crushed, and had sustained a fracture of the right femur. After consultation it was decided that his removal to the ship for care and treatment was out of the question in view of the rough weather prevailing, the distance, the bad roads, and the indifferent transport available. He was therefore made as comfortable as possible, written instructions were left with his relatives, and a further supply of comforts and dressings was procured from the ship's surgery. Apart from this unhappy accident there was no sickness on the island, and no one needed medical care. On inquiry Dr. Mann was told that the influenza pandemic of 1918–19 reached Pitcairn, and caused only five deaths, which he considered a small mortality compared with the enormous toll taken of other native communities. "While having many positive qualities," he writes, "such as clear fresh air, sunshine, fruit in abundance all the year round, yet in other respects Pitcairn may be termed a land of negatives. No house rent, rates, or taxes, no drink, almost no tobacco, no money, no poverty, no riches, no disease, no toil, no city smoke, and, though emphatically an inbred race, no evidence of degeneracy. I saw one fair-haired blue-eyed boy, but the bulk of the people are Polynesian in type, oval faces, olive complexion, lithe, active, and having easy springy movements, and a fine erect carriage." The islanders go barefooted from their earliest days, and so can walk firmly and confidently over bare rocky slopes; not merely the great toe, but all the toes seem to have acquired a prehensile power, the result of this early education in hill climbing. Surnames are few and reminiscent of the *Bounty*—Adams, Young, Christian, McCoy, Warren. The men and young people have no head covering, but the women wear hats made by themselves from the leaf of the Pandanus. The water supply is got from springs in the hillside, and is abundant and apparently good. Sanitation is carried out on a modified latrine system. Fruit and cocoanuts abound, and Dr. Mann notes his pleasure at seeing and smelling English roses in the gardens. Two things impressed him most: the radiant beauty of the prospect from the "Divide" on the top of the northern rocks, and the fine fortitude of the people under the crushing misfortune of a sudden loss of two breadwinners out of a small community of 176. The islanders are proud of their British nationality and speak the English language; they have a deep love for their island and do not wish to leave its primitive communal life in the midst of the blue Pacific. The report ends with a practical suggestion that in view of accidents two native women of suitable age, disposition, and intelligence, should be chosen for training in hospital nursing and maternity work in an Australasian or English hospital, and that a supply of first-aid appliances be maintained for the use of the people of the island.

THE RADIOLOGICAL ASSOCIATION.

At the annual general meeting of the British Association for the Advancement of Radiology and Physiotherapy (B.A.R.P.) the President, Dr. Robert Knox, in reviewing the work accomplished since its foundation four years ago, said that the initial steps towards the institution of the Cambridge diploma in medical radiology and electrology had been taken by the Association, which approached the Senate of the University on the matter; though it had, of course, acted quite independently, the University had consistently sought the advice of the B.A.R.P., and had recognised the course of instruction organized by it in London as qualifying for admission to the examination for the diploma. At the same time as the negotiations were going on with Cambridge, a special subcommittee, formed in conjunction with the Institution of Electrical Engineers, was engaged in considering the training and organization of lay assistants in *x*-ray and electrical departments; as a result the Society of Radiographers was formed with a council of eighteen members, of whom six are appointed by the B.A.R.P. and six by the Institution of Electrical Engineers, the remaining six being elected by the members; the constitution was approved by the Board of Trade and the General Medical Council. Its diploma of membership (M.S.R.) is obtainable by examination only, and members undertake not to accept any patients for diagnosis or treatment except under the direction of a qualified medical man. Recently the association had initiated the policy of issuing authoritative statements on medical subjects to the daily papers. There were objections to the frequent appearance of individual names in the public press, yet at times the need of enlightening the public on technical matters was urgent. The issue of manifestos approved by the council, but otherwise unsigned, was held to fulfil the joint requirement of being authoritative and at the same time free from any suggestion of personal bias. The B.A.R.P., in addition to standing business, educational, editorial, and technical committees, had a Medico-Political Committee, which had, however, not felt in a position to take up a firm stand in dealings with Government departments and municipal bodies until a certificate of incorporation had been obtained. The business had imposed much labour on the secretaries, Dr. Alastair MacGregor and Dr. Hernaman-Johnson, and had been somewhat costly, but was now concluded and the certificate of incorporation issued. Besides giving the association a definite legal standing, it enabled it to hold property, receive legacies, and originate petitions to Parliament. Dr. Knox went on to say that he hoped some day to see in London an institute of radiology and physiotherapy housed in a building worthy of the extent and importance of these subjects, having its own museum and library, and perhaps having its own clinic, so that every possible facility for teaching and research in radiology and allied subjects might exist in the capital of the empire. These ideals could be realized only if the B.A.R.P. were supported by all medical men throughout the country who were interested in electrical subjects, no matter whether they specialized exclusively in them or not. The affairs of an organization such as the B.A.R.P. must of necessity be run largely by a council, and the council meetings would naturally be attended most often by members living within a hundred miles of London. He thought that the best way of safeguarding the interests of the provinces would be the formation of branches of the B.A.R.P. A Wessex branch had already been formed, and he hoped to see others in the near future. The branch organization desirable for scientific meetings was vital in medico-political matters. It would be extremely difficult for the central organization to support a provincial member in a local dispute unless a district branch had prepared the ground.

THE TENTH INTERNATIONAL CONGRESS OF OTOLOGY.

There has been no International Congress of Otology since the meeting in Boston in 1912. The various national committees then appointed have been canvassed and have selected Paris for the tenth Congress. The date first selected was July 26th–30th next year, but, when it was pointed out to our French colleagues that this date would clash with the meeting of the British Medical Association in Glasgow, they most courteously altered the date to July 19th–21st. Their cordiality and goodwill towards this country has been further marked by a special visit of their Secretary-General, Dr. A. Hautant, to attend the annual dinner of the Section of Otology of the Royal Society of Medicine, under the chairmanship of Sir Charles Ballance, and to join in the first meeting of the Section on October 21st, when the new president, Dr. Logan Turner, occupied the chair. Dr. Hautant extended to otologists in this country a most cordial invitation to the Congress next summer, and to this invitation a wide response is assured. A committee of organization for Great Britain and Ireland

has been appointed, with Professor Urban Pritchard as president, Sir StClair Thomson as chairman, and Mr. Lionel Colledge and Mr. J. S. Fraser as honorary secretaries. Over a hundred otologists have already sent in their adhesion to the committee, and all who are interested are invited to apply to one or other of the honorary secretaries. Those who do so will be kept informed of all the arrangements for the Congress as they develop. The office-bearers in Paris are Professor P. Sébileau (President), Dr. Georges Laurens (Treasurer), and Dr. A. Hautant, 28, Rue Marbeuf (Secretary-General). Although the Congress remains in name purely otological, it is intended to embrace both rhinology and laryngology. Professor Sébileau is known not only as an otologist, but as a leading exponent of the surgery of the nose, throat, and neck. We are glad to hear that the executive of the Congress has resolved not to encourage the reading of papers written to order, but to give the meeting a thoroughly practical character. The mornings will be devoted to visits to clinics, operating theatres, and museums.

CAROTINAEMIA.

During the war there occurred a considerable number of cases of picric acid jaundice with the following picture: a yellow tint of the skin and conjunctivae, yellow blood serum, and a pomegranate-coloured urine due to picramic acid and not to bile pigment; epidemics of this condition among malingerers were recorded. In Germany, when war conditions necessitated a more vegetarian diet, a number of healthy children showed yellow pigmentation of the skin, but not of the conjunctivae, due to carotin—the pigment contained in carrots. The term "carotinaemia" was employed in 1919 in America by Hess and Myers, and quite recently Drs. G. D. Head and R. A. Johnson[1] have reviewed the subject and recorded an adult case in a diabetic who was on a diet rich in carrots. This condition had previously been noted in diabetics, and von Noorden's fifteen cases of "xanthosis diabetica" appear to have been of this nature. In carotinaemia the skin, especially of the palms and soles, the forearms, naso-labial folds, cheeks, and forehead, takes on a colour varying from a lemon-yellow to a rich orange, which can be easily distinguished from true jaundice by the absence of any conjunctival change. The blood serum shows the presence of carotin chemically and spectroscopically, and when carrots are excluded from the diet the colour gradually fades. The cutaneous pigmentation may annoy the individual, as in Drs. Head and Johnson's diabetic patient, but otherwise there are not any bad effects. The yellow pigment carotin is not confined to carrots; together with xanthophylls, it is included in the carotinoids, which are widely distributed in nature; the yellow colour of fats, corpus luteum, yolk of egg, and milk is due to the carotinoids, often called "liprochromes" or "lutein"; and Professor Leroy Palmer, who examined the blood in Head and Johnson's case, points out that carotin is normally present in the blood. The interest of obvious carotinaemia is its dietetic origin and the possibility of its confusion with morbid conditions.

The agreeable custom of holding occasional social evenings was resumed on October 31st by the Royal Society of Medicine. There was a large attendance of Fellows and their friends, who were received in the library at No. 1, Wimpole Street, by the President, Sir John Bland-Sutton and Lady Bland-Sutton. The proceedings were quite informal. Some of the treasures of the library were on view and light music was played by a string orchestra. At 9 o'clock a short discourse was given in the Barnes Hall by the President, who applied his gift of clear language to the task of making choroid plexuses and psammomata interesting to a large audience, partly medical and partly lay. The success of the evening's entertainment leads us to hope that further informal soirées will be arranged during this and future sessions of the Society. The opportunities for social intercourse might well be increased in the medical circles of the metropolis.

[1] G. D. Head and R. A. Johnson: *Arch. Int. Med.*, Chicago, 1921, xxviii, 268-272.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

Voluntary Hospital Committees.

Mr. James Wilson asked, on October 26th, what steps, if any, had been taken to secure the representation of industrial workers as representative of the class largely using the hospitals, on the Voluntary Hospital Committees which were being set up in connexion with the Hospitals Commission appointed to distribute the parliamentary grant to voluntary hospitals; whether officials of the Ministry of Health associated with the administration of the Poor Law had been asked to supply the names of persons for nomination to these committees; and if so, why the Hospitals Commission, or the Ministry of Health, had relied upon Poor Law officers to secure nominations.

Sir A. Mond said his information was that the object of the Hospitals Commission was to secure that the local Hospital Committees should include all types of experience able to contribute towards the solution of the financial and administrative problems with which these committees have to deal. Members were appointed by county councils, county borough councils, the hospitals, the medical profession, and the Commission. The members of these committees appointed by the Commission were intended to be selected for their personal qualifications and not as representing any particular interests. Suggestions had been invited from various sources, including the General Inspectors of the Ministry; and the Commission would be glad to consider any suggestions from representative labour organizations, or any similar sources.

Voluntary Hospitals Grant.

Mr. Lyle asked, on October 31st, if the Government still adhered to its promise arising out of the Cave Committee's Report to allocate £500,000 to the voluntary hospitals; what steps in that case had been taken towards the allocation of the fund; within what period it was intended to be allocated; and whether in each case a stipulation was to be attached to the effect that before a hospital could receive a grant it must put up a sum equal to the grant to be made up of new money.

Sir A. Mond said that the grant of £500,000 towards the liquidation of the voluntary hospital deficit was voted by the House last August. The Voluntary Hospitals Commission were taking steps to establish Local Hospitals Committees on the lines recommended in Lord Cave's report, and it was hoped that the personnel of a number of these committees would be complete within the next few weeks. King Edward's Fund, which acted as the local committee for London, had made considerable progress with its work, and emergency grants would be distributed at an early date to the most necessitous of the metropolitan hospitals. He was informed that it was not anticipated that the full amount of the grant would be spent during the current financial year, and an estimate would be submitted to the House next session for a re-vote of the unexpended balance. As regards the conditions attaching to the grant, the Minister referred Mr. Lyle to the White Paper (Cmd. 1402) circulated in July.

Insurance Medical Records.

Sir J. D. Rees asked, on October 27th, whether the decision that doctors under the National Insurance Act should keep elaborate records had been cancelled, and if not, whether it would now be cancelled in view of the cost of maintaining such records and to the objection generally entertained to bureaucratic registration and to the possible disclosure of incidents in the private life of patients concerned. Sir A. Mond replied that keeping records was one of the original conditions of the Insurance Medical Service; the present system was recommended in 1920 by a special committee, mainly consisting of medical men, among whom insurance practitioners were strongly represented. The initial cost had already been met, and the cost of maintenance was small. Resolutions were passed

respectively by the Annual Conferences of Panel Committees and of Insurance Committees as recently as a week ago in favour of the keeping of the records. In these circumstances he saw no reason for reversing the decision that records should be kept.

Regional Medical Officers.

Mr. Sugden asked, on October 27th, how many cases examined by regional medical officers had been referred to them by panel doctors for consultative reasons, and how many by friendly or approved societies, or by doctors for the purpose of deciding the fitness of patients to return to work. Sir A. Mond stated that the provision at present made in regard to the duties of the regional medical staff did not include the routine examination of cases of the kind referred to in the first part of the question. Approved societies and doctors were notified, when the service began in November, 1920, that for an experimental period incapacity references only would be accepted. The aggregate number of references from approved societies, doctors, and Insurance Committees on questions of doubt as to incapacity for work was 50,318 for the period November 1st, 1920, to October 1st, 1921.

In answer to Mr. Sugden, Sir A. Mond gave the following particulars of the cost of the regional medical service:

	£	s.	d.
Salaries:			
Full time medical officers	41,918	6	3
Fees to part time officers	58	16	0
Travelling expenses:			
Officers and clerks	4,572	13	5
Insured persons	645	12	5
Rent:			
Offices	2,001	0	0
Part time examination centres and women attendants	2,202	9	4
Clerical assistance	7,689	0	0
Incidental expenses (equipments, etc.) ...	879	18	6
	£59,508	15	11

Scottish Nurses' Registration.

Lieut.-Colonel Henderson, on October 25th, moved an address to His Majesty for modification of the draft rules of the General Nursing Council for Scotland. The object of the several changes he proposed was to abolish the distinction under which nurses trained for dealing with persons suffering from infectious diseases are placed in a supplementary list instead of being included in the general list. After debate the motion was negatived.

National Insurance: Preservation of Benefits to Unemployed.—Sir Alfred Mond, on October 28th, moved the second reading of the bill which he said he had introduced to meet the case of a large number of persons who had been in the ambit of the National Health Insurance benefit for several years, but who, owing to prolonged unemployment, would fall out unless special provision were made. Sir A. Warren, on behalf of the approved friendly societies, hoped that the measure would have speedy passage. There were, he said, men under national insurance who had been paying contributions for anything up to nine years, who had had practically no benefit, and who, unless some provision were made for them, would forfeit all they had paid during that period by falling into such a state of arrear as not to be qualified for benefit. The bill was read a second time.

Tuberculosis Cases: Pensions Appeals.—Colonel Gibbs, on October 26th, informed Mr. J. Guest that the Pensions Appeal Tribunals do not keep any record of the disabilities from which appellants suffer, and therefore could not say how many cases of appeal by ex-service men had been dealt with by the Lords' Tribunal.

Holloway and Brixton Prisons.—Mr. Shortt, on question by Sir S. Hoare on October 27th, stated that the Voluntary Nursing Board for Holloway Prison consisted of the Medical Commissioner (chairman), Dame Sarah Swift, Miss Hogg Matron of Guy's Hospital), Miss McIntosh (Matron of St. Bartholomew's Hospital), Jessie Lady Camoys, Dr. Mary Scharlieb, Miss Edith Blunt, the Governor of Holloway Prison, and the Hospital Lady Superintendent of Holloway Prison. It was not the case that a wardress with no nursing experience had been placed in charge of the hospital at Holloway for persons convicted. The officer selected had had much nursing experience, having been engaged in hospital duties for seventeen years, and since 1913 she had been wholly employed on hospital work; she was reported by the medical officers to be fully qualified and very capable. The Voluntary Nursing Board had not been consulted on the appointment, nor had they made any representation in regard to it.

Ophthalmia Neonatorum.—In answer to a question, on October 26th, Sir Alfred Mond said he was aware that loss of eyesight had resulted from neglect of ophthalmia neonatorum. The disease was made compulsorily notifiable throughout England and Wales from April 1st, 1914. Skilled treatment for notified cases was now very generally provided in connexion with schemes for maternity and child welfare, and he was advised that the damage to sight caused by the disease was generally admitted to have been much reduced.

Infantile Mortality.—In reply to Dr. Addison, on October 26th, Sir Alfred Mond gave the following returns of the Registrar-General for each quarter of the present year to the end of September of the comparative numbers of deaths of infants:

Deaths under 1 per 1,000 Births (provl.):

	London.	England and Wales.
First quarter	85	101
Second quarter	59	67
Third quarter	93	83

The excess of the London rate over the rate for England and Wales in the third quarter was, he stated, mainly due to infantile diarrhœa, which had of course a heavier incidence in towns than in the country as a whole.

Venereal Diseases Treatment.—Mr. Allen Parkinson asked, on October 27th, whether the Minister of Health had received repeated complaints from the Metropolitan Asylums Board with reference to the home at Sheffield Street for the cure of venereal disease; whether, at the request of the Board, he promised that a conference should be held last September; and what action he proposed to take. Sir A. Mond said that the answer to the first part of the question was in the negative. Last August he received a report from the Metropolitan Asylums Board drawing attention to certain difficulties which had been experienced in connexion with this institution, and requesting that arrangements should be made for a conference on the subject. It was hoped that this conference would take place in September, but this was found impracticable, and arrangements had now been made for it to be held early next month.

Post Office Medical Appointments.—Sir Walter de Frece, on October 19th, asked if, in making any appointment of a medical officer to the Post Office, the Postmaster-General would ensure that preference was given in every case to applicants who had served in the war; and in how many cases of recent appointments this had not been done. Mr. Kellaway replied that regard was paid to service with the forces, but consideration had also to be given to other factors, such as professional qualifications and the length of residence in the district. No records were available to enable a reply to the second part of the question.

Aged Workers' Health Insurance.—In reply to Mr. David Davies, on October 20th, the Minister of Health said that insured persons who remained in employment up to or after the age of 70 were already entitled to medical benefit for the rest of their lives. The extension of the right to sickness and disablement benefits to persons over 70 would require an increase of the weekly contributions, and would present serious administrative difficulties to approved societies in the application of the test of incapacity to work. In view of these considerations, and of the provisions of the Old Age Pensions Acts, legislation such as was suggested was not contemplated.

Clinical Thermometers.—Mr. Kiley asked, on October 24th, whether in the case of a person purchasing a clinical thermometer, and not being content with the maker's guarantee and desiring to have the instrument tested, it was possible for it to be taken to the National Laboratory at Kew and tested at a small cost. Mr. Baldwin replied that single clinical thermometers could be tested at the National Physical Laboratory at a fee of 1s. 6d.; the fee when large quantities were submitted was 3d. per instrument. This arrangement had been in existence for several years. Mr. Hailwood asked whether the President of the Board of Trade was aware of the inaccuracy of a large percentage of clinical thermometers, and whether he would take steps to introduce some method of test and certificate of correctness. Mr. Baldwin replied that the matter could be dealt with only by legislation, and he hoped to reintroduce a bill next session. He was glad that in the meantime most British manufacturers were voluntarily having their products tested at the National Physical Laboratory.

Registration of Herbalists.—Sir A. Mond answered in the negative an inquiry by Lieut. Commander Kenworthy, on October 27th, whether the Government contemplated any step for the better regulation and registration of herbalists on the lines of the recent Dentists Act.

Swine Fever Serum.—Dr. Murray asked, on October 31st, whether a quantity of serum urgently required for the treatment of swine fever arrived in England on September 13th, but owing to the effect of the Reparations Act was not obtainable until October 21st, and whether consequently serious loss had occurred. Sir Robert Horne was unaware of the alleged occurrence, but promised to make further inquiries.

Answers in Brief.

The consumption of beer in standard barrels and of spirits in proof gallons for the year ended March 31st, 1919-20-21, was as follows:

	1919.	1920.	1921.
Beer—standard barrels ...	12,721,000	24,757,000	26,284,000
Spirits—proof gallons	15,591,000	24,267,000	20,162,000

The Chancellor of the Exchequer proposes to declare Tuesday, December 27th, this year, a bank holiday for England and Wales.

THE PEKING UNION MEDICAL COLLEGE.

Opening of the New Rockefeller Building.

Among the countries which have benefited by Mr. Rockefeller's munificence China is one of the chief. The China Medical Board of the Foundation has concentrated its main efforts on the splendid new College which was opened on September 19th by Mr. J. D. Rockefeller, junr., who was accompanied by a number of leading American and European medical educationalists, including Sir William Smyly of Dublin, Dr. R. T. Leiper of the London School of Tropical Medicine, and Dr. T. Cochrane, formerly Principal of the Union Medical College, Peking, Drs. W. H. Welch, G. E. de Schweinitz, J. G. Clark, S. S. Goldwater and R. T. Pearce from America, Professor Tuffier from France, Drs. S. Hata, Shiga, and Nugoya from Japan, Professor Kenelm Digby from Hong Kong, and Dr. de Waart from Java.

Advantage was taken of the occasion to hold a medical conference and to invite the Chinese authorities and foreign public to visit the college and realize the completeness of the buildings and equipment. The Chinese Government was represented at the opening ceremony by the Minister of Foreign Affairs and by members of the Ministries of the Interior and of Education; among others present were Dr. S. P. Chen, President of the Central Hospital, and Mr. Roger S. Green, resident director of the China Medical Board.

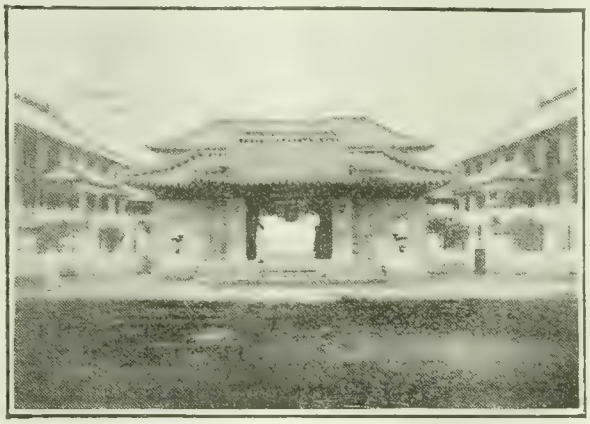


Fig. 1.—Entrance Gateway.

China is far behind every other civilized country in the regard paid to public health. In the disturbed political conditions now prevailing throughout the country the lack of education (over 90 per cent. of the people being neither able to read or write), a depleted Treasury and many other pressing problems, the prospects for the development of public health work on a large scale are far from encouraging. A second difficulty lies in the fact that confidence in scientific medicine is not sufficiently widespread to ensure the co-operation on the part of the people that would be necessary for the most effective work. Furthermore, it is clear that while much of preventive medicine as it is known in the West could immediately be applied to China, the conditions to be dealt with, whether biological, social, or economic, are so different from those in the West that it is important that any large effort in public health work should be preceded by a period of careful study of local conditions in order that the measures undertaken may be adapted to them.

The problem of medical education was therefore indicated as that which first demanded attention, and the China Medical Board has accordingly settled on the following lines of activity:

1. Pre-medical education: A three years' course of preparation in physics, chemistry, biology, English, and Chinese; also either French or German.

2. Medical education: A five years' course, including one year of interne service or special work in the laboratories.

3. Facilities for graduate study to Chinese and foreign doctors.

4. Medical research, especially with reference to problems of the Far East.

5. Diffusion among the Chinese people of a knowledge of modern medicine and public health.

6. A training school for nurses, offering a four years' course in nursing to women students and facilities for graduate study.

The most important undertaking of the China Medical Board (which has now been at work for seven years) has been the reorganization of the Peking Union Medical College; this has included the gathering together of a large staff of teachers, nurses, and administrative officers, recruited from America, England, and Canada, from medical missions in China, and from foreign-trained Chinese. The staff now includes 15 pre-medical teachers, 57 teachers in the medical school, 31 nurses, and 48 administrative and technical officers. Of these, 123 are foreigners and 23 Chinese educated abroad. During the past year there were thirteen regular students in the medical school and fifty-nine in the pre-medical school.

Special post-graduate courses have been inaugurated for foreign and Chinese doctors, and during the year twelve Chinese and ten foreign doctors and seven Chinese and eleven foreign special students attended post-graduate courses in the medical school for various periods.

Worthy of note in the work of the college is the nurses' training school, which hopes to give to Chinese young women an education in nursing comparable to that offered in the best hospitals at home and in America. Middle school graduation, or its equivalent, and a working knowledge of English are required for admission to the four-year course. The first year is devoted to work in the classroom and laboratory, and includes science courses in the pre-medical school. In the remaining years practical work in the wards is combined with instruction in theory. The aim is to turn out nurses who will be prepared to take positions of responsibility in teaching and in other hospitals on an equality with nurses trained abroad. The nurses' school has hitherto been used chiefly for training men, but will in future be closed to them. The teaching arrangements provide for twenty-five nurse pupils.

While devoting its energies and its resources mainly to



Fig. 2.—Main Courtyard, showing Anatomy and Chemistry Buildings.



Fig. 3.—Covered curved corridor connecting Anatomy and Chemistry Buildings.

the Peking school, the Board has been much interested also in the development of other institutions. In particular, grants have been made to the Hunan Yale College of Medicine and to Shantung Christian University. Small grants have also been made to the Pennsylvania Medical School of St. John's University, Shanghai, and to the National Medical College and Government school in Peking. In many cases the China Medical Board has given fellowships to teachers in medical schools other than the Peking College in order to enable them to carry on systematic study in their respective departments during their furlough years. In addition the Board has distributed contributions to over thirty mission hospitals in support of additional staff, general maintenance expenses, and improvements in buildings and equipment. The policy has been to aid first those hospitals near the principal medical schools to improve the relationship between them and the schools.

Such, in brief, are the main outlines of the work of the Rockefeller Foundation during recent years in China. It has set itself out to foster a high standard of medical education and professional ethics, and there is every prospect, when regard is paid to the thorough way in which each step forward has hitherto been accomplished, that the cause of scientific medicine in this country will receive from now onwards a very considerable impetus, and that we can look forward with confidence to the establishment in China of a medical profession on modern Western lines.

That the China Medical Board has not closed its doors against the admission of British graduates as teachers is shown by the fact that the staff already appointed includes six English and Canadian professors and associate professors. It is to be hoped that in future British teaching representation may be in yet greater proportion. There are ninety Americans and fifteen foreign-trained Chinese in the Faculty Board of the college.



FIG. 1.—Porch of Chemistry Building.



FIG. 4.—Staircase leading to Chemistry Building.

The College and Hospital.

The main buildings of the college—the departments of chemistry, anatomy, and physiology—are grouped on three sides of a courtyard and are linked at the back by curved open corridors. The buildings are of grey stone with green tiled roofs, and the courtyard is entered by an ornate gateway. A tribute to the *genius loci* is paid in the design of the staircases leading up to the physiology and chemistry departments; as will be seen, the centre of the staircase is filled by ornate carving to deter spirits from mounting, and should they still persist in the attempt to enter the building they are again baffled by the fact that the doorway is in the middle. The courtyard has polished marble paths, the whole effect of the exterior of the college is brilliant, and even dazzling, and the details of the ornamentation in Chinese style are very elaborate; but the laboratory accommodation and the interior is of the ordinary simple European type. As will be seen from one of the illustrations the porch of this building, as is that of the physiological department, is lavishly carved and painted.

Behind the college is the hospital, consisting of surgical and medical blocks, an out-patient department, wards for private patients, an administrative block, and a nurses' home. The hospital contains 235 beds. The department of pathology is on the same site and is connected with the out-patient department and the medical block.

Separated from the college and hospital by the Japanese club, school, and hospital is the pre-medical school for chemistry, physics, biology, and languages; there is a hostel for students on this site and at a short distance are two compounds containing villages in the English style, providing quarters for the staff. Facing the main entrance to the college is an auditorium and chapel.

The general style of the building may be judged from a photograph of the private block hospital which is reproduced.



FIG. 5.—Interior of Physiological Laboratory.

The Physical Plant.

It may be interesting, in order to give some idea of the completeness and modernness of the physical setting of this institution, to give a few facts concerning the plant.

The mechanical installation consists of four 250-h.p. Babcock and Wilcox boilers, equivalent to 1,000 h.p.,

which supply steam power and heat throughout the college and hospital. The electric generators, furnishing light and power, have a capacity of 375 kilowatts.

Pure distilled iced drinking water is available all through the buildings, and hot and cold water is furnished directly from the engine room. Refrigeration and electrically-controlled hot rooms are distributed throughout, and each laboratory is supplied with hot and cold water, coal gas, compressed air, low and medium pressure steam, 110-volt direct current, 220-volt direct current, and 4-volt experimental currents. The institution has its own private telephone exchange, with 200 telephones and ten trunk lines connected with the outside switchboard. The hospital buildings are ventilated by means of electrically driven exhaust fans, which completely change the air in each of the rooms from three to five times an hour. The main out-patient building is also supplied with water-filtered air.

Adequate sewage systems are provided. Sewage is pumped from the third section of the septic tank to the main city sewers by automatically controlled pumps. Garbage and refuse is disposed of through an incinerator. There is a modern laundry where at present 3,000 pieces are washed daily by rotary electrically driven washing machines. After passing through the soap-mixing tank and being washed, the clothes are passed through an extractor, which by its centrifugal motion at 947 revolutions a minute forces all water out of the clothes.



Fig. 7. Hospital Private Pavilion.

In the industrial group adjacent to the power house is located the coal-gas plant, which is at present supplying 20,000 cubic feet of gas per day. In addition to the carpentry and paint houses there is a precision machine shop and a complete electro-plating shop in this group.

The nitrous oxide plant has a capacity adequate to meet the demands for operating-room use. Nitrous oxide and oxygen are pumped direct to the main operating rooms.

The average daily consumption of coal in the power house is 25 tons. The emergency fire pump has a capacity of 1,000 gallons per minute. The hot water circulating pump can supply 30,000 gallons per day at a temperature of 153° F., and the boiler feed water pump furnishes hot water to the boilers at a rate of 1,600 gallons per hour. The ammonia compressors have a capacity of 16 tons of refrigeration each. A brine circulating pump of a capacity of 150 gallons per minute supplies refrigeration to 61 ice boxes, and can also make 9,000 lb. of ice (from distilled water) in sixty hours.

In the floors (comprising cement, terazzo, vitreous tile, marble and wood floors), window glass and tiled walls, the grand total area of surface to be cleaned is 530,654 square feet.

The Danger of Extravagant Expenditure.

Up to the present time the Foundation has spent over 10,000,000 dols. on the college and hospital, and the annual upkeep is estimated to cost 1,000,000 dols. or more. The responsibilities involved in such a great undertaking as this, where new soil has to be broken at every turn, are many, and advantage has therefore been taken of the occasion of the official opening to hold daily meetings of the Board of Trustees of the Foundation, who, headed by Mr. J. D. Rockefeller, junr., have visited Peking specially to see for themselves the practical outcome of their scheme and to discuss questions of financing and general policy on the spot. At the dedication ceremony Mr. Rockefeller spoke of the aims and aspirations of the Foundation, and threw out a word of caution, showing that the great expense entailed in an elaborate modern installation in such palatial buildings had not been passed unnoticed. He said, "In order that one of the foremost objects of the China Medical Board in building up the Peking Union Medical College may be attained, namely, that the College may serve to stimulate the development by the Chinese people of similar institutions, it is essential that the current cost of operating should always be kept on a conservative level. If a policy other than this is followed, and a school set up here more expensive to maintain than comparable institutions in America and Europe, not only will a disservice have been rendered to the cause of medical education and hospital development throughout the world, but the Chinese people will not be so ready to undertake the creation and maintenance of similar institutions in other parts of the Chinese Republic."

In some quarters this point has been regarded with some misgiving, as it has been felt that the college has placed itself on too high a pedestal. This is a matter which will, no doubt, right itself in time.

The Chinese authorities of the Central Government, as well as the Ministers of the Diplomatic Corps and various public bodies, have vied with each other to show the visitors every courtesy, and the President of the Republic, His Excellency Hsu Shih Chang, gave a reception, at which he spoke in laudatory terms of the much needed benefits that China would receive in the impetus given to modern scientific medicine and public health reform as a result of Mr. Rockefeller's great generosity.

England and Wales.

Post Graduate Courses in Wiltshire.

There has just been concluded at Trowbridge, Wiltshire, the first course of post-graduate lectures arranged there by Bristol University, and a similar course is now being conducted at Swindon for the northern portion of the county. The attendance at the Trowbridge course was good and the lectures were greatly appreciated by the medical practitioners of the district. The subjects chosen were admirably suited to the needs of general practitioners, and included demonstrations on fractures of the lower limbs, general principles and non-operative methods, by Mr. E. W. Hey Groves; modern methods of treatment of fractures of the jaw and upper limb, by Mr. A. Rendle Short; vaccine therapy and the use of curative vaccines, by Professor Walker Hall (two lectures); the etiology of cardiac diseases and disorders, by Dr. Carey Coombs; and the physiology of the heart beat and cardiac disorders, by Dr. C. E. K. Herapath. The courses are intended to be the first of a regular series that may, as time goes on, be developed in different directions; it has been suggested, for instance, that in the next course medical practitioners should bring cases for the lecturer to demonstrate on.

Cambridge Tuberculosis Course.

A short course of lectures, demonstrations, and practical work on the pathology, diagnosis, and treatment of tuberculosis, with special reference to administrative measures for dealing with the disease, will be held at the Cambridge Medical School and at the Papworth Colony from November 14th to December 17th, should a sufficient number of names be received. The classes will be given as follows: Bacteriology of tuberculosis, Dr. Louis Cobbett; Morbid anatomy and histology, Sir G. S. Woodhead and Dr. Strangeways; Surgical tuberculosis, Mr. Joseph Griffiths; Psychology of tuberculosis: working capacity, fatigue, effect of environment, Dr. W. H. R. Rivers, F.R.S.; Pulmonary tuberculosis: (*a*) diagnosis, treatment, and prognosis, (*b*) administrative and clinical work at Papworth; Dr. Varrier-Jones and Dr. Paton Philip. The matriculation fee is £1 15s.; the fee for the course, including one week's

board and lodging at Papworth, is £15 15s. Further particulars may be had from Dr. P. C. Varrier-Jones, Papworth, Cambs.

Payments by Hospital Patients.

The almoner's report presented to the half-yearly meeting of the Board of the Bristol Royal Infirmary on October 13th contains some observations well worthy of consideration by those who are promoting what is commonly spoken of as the Sussex Provident Scheme. The almoner reports that of all the patients admitted to the institution only one in five was able to pay the very modest contribution for maintenance which is asked for. Upon this the *Bristol Medico-Chirurgical Journal* makes the following comments:

"From this observation, based on most careful inquiry by an experienced officer well qualified to judge, but one conclusion can be drawn—namely, that the payments by patients will not materially reduce the expenses of the infirmary so long as it continues to provide for the wants of the really necessitous persons for whom the charity was founded and for whom it has hitherto been maintained. The governors are now confronted with the serious question whether sufficient voluntary contributions will be forthcoming from the more affluent members of the community, or whether they will be compelled to close their beds to the poor and divert the institution from its original purpose, admitting principally or solely those who can pay for admission. It would be intolerable if 'ability to pay' should be the passport into our voluntary hospitals. The public, we venture to think, is unaware of the amount of distress in our midst. There is an impression abroad that wages are high and that all classes enjoy a fair measure of prosperity, so that the claims of charity are less pressing. The report shows how erroneous this impression is. Funds are urgently needed, and no scheme for payment by patients is going to solve the difficulty of those who through ill health have fallen into poverty. Unless voluntary contributions are more freely forthcoming the hospitals of our city will not be able to continue their mission for those whose needs are greatest. Hard times are at hand, when it becomes the more incumbent on us to show unwearied mercifulness touching the care of the poor. We must each and all unlock the treasury of our charity to its fullest extent, so that after the example of generations past we may discharge our just debts of benevolence."

Somerset Panel Practitioners.

On October 14th a large number of doctors practising in the county of Somerset attended a complimentary luncheon at Weston-super-Mare in honour of two of their colleagues. As chairman and honorary secretary respectively of the Somerset Panel Committee Dr. John Wallace, O.B.E. (M.O.H. for Weston), and Mr. C. P. Crouch, F.R.C.S., have earned the gratitude and won the esteem of all the panel practitioners in Somerset. This complimentary luncheon was given by their colleagues, past and present, on the Somerset Panel Committee. The chair was taken by Dr. H. C. Bristowe (Wrington), while among the guests were Mr. A. Imber (chairman of the Somerset Insurance Committee), Mr. S. W. Robbins (clerk to the Committee), and Dr. Bertram Rogers (regional medical officer). Apart from the opportunities the luncheon offered for the expression of deep regret that Dr. Wallace and Mr. Crouch were retiring from their offices as chairman and secretary of the Somerset Panel Committee, warm tributes were paid to the ability with which they had helped to make the Insurance Act run smoothly in the county. The success which has attended their labours was fully demonstrated by the presence of the chairman and clerk of the Insurance Committee, and by the cordial tone of their speeches. From Mr. Crouch's remarks it is evident that the Insurance Act has worked well in "the straggling, rather awkward, difficult of access, beautiful county of Somerset," and, moreover, has done something to bring the medical profession together in mutual agreement and friendship.

Warneford Hospital, Leamington.

Princess Helena Victoria opened, on October 26th, the new out-patient department of the Warneford and South Warwickshire General Hospital, Leamington Spa, which has been erected at a cost of £25,000. Dr. Bernard Rice stated that last year there were 37,000 attendances in the out-patient department, but like most other hospitals the expenses exceeded the income; they were losing about £2,000 a year. The committee, however, felt it desirable to maintain the hospital in a position it had held for ninety years as a voluntary hospital. Princess Helena, in declaring the new building open, expressed the real pleasure it gave her to be present on the occasion, and she wished the hospital every success. At a subsequent reception purses containing gifts to the reconstruction fund amounting to £2,500 were received.

Birmingham University Medical Society.

Past members of the Birmingham Medical School will be interested to hear of the vigorous revival of the Birmingham University Medical Society, which now incorporates the former Queen's College Medical Society. The forty-first annual meeting was held in the Founder's Room of the University Club on October 26th, and was attended by a large number of graduate and undergraduate members. The following officers were elected for the ensuing year: President, Dr. Laurence Ball; Vice-President, Dr. Leonard Parsons; Honorary Treasurers, Mr. Leather and Mr. Lowe; Honorary Secretaries, Dr. Abrahams and Mr. F. Stammers. The following members of the Council were appointed: Graduates, Drs. K. D. Wilkinson, A. P. Thomson, and E. W. Jones; Undergraduates, Messrs. Ainscow, Beckenn, Carr, Gould, Prior, and Savage. The retiring President, Mr. Seymour Barling, C.M.G., F.R.C.S., delivered his valedictory address on "The early days of surgery." The address was a most interesting exposition of the evolution of surgery from its earliest days. It was pointed with wit and wisdom, and was received with well-merited enthusiasm. The meeting closed with a special vote of thanks to Mr. J. A. Ainscow for his energetic work on behalf of the society during the past session.

Scotland.

Centenary of Edinburgh Medico-Chirurgical Society.

The centenary dinner of the Medico-Chirurgical Society of Edinburgh was held on October 28th, in the hall of the Royal College of Surgeons, when a distinguished company, numbering over a hundred, assembled under the presidency of Emeritus Professor Caird, President of the Society. After the loyal toasts had been proposed and duly honoured, Sir John Bland-Sutton proposed the toast of "The Medico-Chirurgical Society of Edinburgh." He read a congratulatory message from the Royal Society of Medicine—of which he is President—and said that he knew well the excellent work the Edinburgh Medico-Chirurgical Society had done, as for the last thirty years he had been a regular reader of its *Transactions*. He referred to the great progress that had been made in medicine and surgery during the last hundred years. Many of the specialities which now abounded in medicine—for there were no fewer than twenty-five sections of the Royal Society of Medicine—had been due to the invention of clever and cunning instruments. To his mind there was less difficulty in establishing a speciality than in mapping out its sphere of influence. In regard to the alimentary canal, for instance, there was a certain class of surgeons who devoted their attention to the mouth, but their position was contested by the dentists, who called themselves odontologists. Then, when a new instrument had been invented for investigating the oesophagus, specialists in this subject formed a society and were now running a periodical. In spite of all these clever instruments eminence in science, or even ordinary success in surgery, would remain in the future as in the past, based on a sound clinical experience on the rock of pathology. Emeritus Professor Caird, in reply, said that the society was founded by a certain Robert Hamilton, who sent a round robin to the medical profession in Edinburgh, which testified approval of the objects of the Medico-Chirurgical Society in London and willingness to co-operate in the formation of a similar society in Edinburgh. This link between the south and the north would never be broken. From south of the Tweed Edinburgh had received honoured men like Laycock, William Turner, Greenfield, and Byrom Bramwell; but the greatest of all these was Lister. The first president of the society was Andrew Duncan, senr., the second was Sir James Young Simpson, and the third was the immortal Lister. During the last hundred years the meetings of the society had proved a mirror of the events passing in the world around them. Dr. George Mackay, in proposing the toast of "Sister Societies," said that he

had found that the Royal Society of Edinburgh dated from 1783, the Royal Medico-Chirurgical Society of Glasgow celebrated its centenary in 1914, while the Royal Medical Society was founded in 1737, and obtained its charter in 1778. It was with a feeling of gratitude towards these societies, which had been leaders in the cause of science, that he proposed this toast. Professor Bower, President of the Royal Society of Edinburgh, said, in reply, that the foundation of the society to whose hospitality they were indebted followed shortly after the Napoleonic disturbances, and the interesting question arose what new societies would arise in the near future after the gigantic disturbances they had just gone through. Dr. W. K. Hunter responded on behalf of the Royal Medico-Chirurgical Society of Glasgow, and Dr. Davidson, Senior President of the Royal Medical Society of Edinburgh, also replied. Dr. Freeland Fergus (Glasgow) proposed the toast of "The President," paying a high tribute to the Edinburgh medical school, and the Chairman made a suitable response.

Foreign Service Club.

The third annual meeting of the West of Scotland Foreign Service Medical Club was held in the Grosvenor Restaurant, Glasgow, on the evening of October 28th. The reports submitted were eminently satisfactory, the membership having increased since last year to 210, and the credit balance in hand to £121. Office-bearers were appointed as follows:—President: James Livingstone Loudon, M.D., T.D.; Vice-President: F. V. Adams, F.R.F.P.S.G., T.D.; Honorary Secretary and Treasurer: David Shannon, M.B. Thereafter the members dined together, the company numbering 134. The President, Mr. Thomas Kay, D.S.O., M.B., T.D., occupied the chair, and, as guests of the club, there were present Major-General Sir Philip R. Robertson, K.C.B., General Officer Commanding the 52nd (Lowland) Division; Colonel R. J. Blackham, C.B., C.M.G., Dublin; Dr. Charles E. Douglas, President of the corresponding society in the East of Scotland, and also its Secretary, Dr. James Young, D.S.O. The gathering was a very representative one, and its enthusiasm augured well for the continued success of the club.

The Glasgow Southern Medical Society.

The Glasgow Southern Medical Society held its opening meeting on October 13th, 1921, when there was a large attendance, and the President, Dr. John Paton, delivered an address in which he dealt in a very interesting and racy manner with his experiences at home and abroad during the great war. He touched upon a large variety of topics including the psychological reactions of the community to war conditions, the evolution of the treatment of wounds, and the after-results of the war as they appear to the general practitioner.

Royal Faculty of Physicians and Surgeons, Glasgow.

The annual dinner of this Faculty—the first since 1914—was held in the Faculty Hall, Glasgow, on the evening of October 21st. The chair was taken by the President, Dr. A. Freeland Fergus. The company numbered about 70, and a number of representative guests were present, amongst them being Principal Sir Donald MacAlister, K.C.B., and Professor E. P. Cathcart, M.D., from Glasgow University; Bailie John Smith, and Lord Dean of Guild Sir John Reid, K.B.E., from Glasgow Corporation; Dr. George Mackay, Dr. Harry Rainy, and Mr. Alex. Miles from the sister colleges in Edinburgh; Sheriff A. O. M. MacKenzie, and Colonel R. J. Blackham, C.B., C.M.G., A.M.S. A most enjoyable evening was spent, the after-dinner speaking, as is usual on such occasons, attaining a high standard of excellence.

Dr. John Macpherson.

Dr. John Macpherson has recently retired from the post of Medical Commissioner of the Board of Control for Scotland. Dr. Macpherson was educated at Edinburgh University, where he graduated M.B., C.M. in 1882, and was awarded a gold medal for his M.D. thesis in 1896. After being an assistant at the Royal Edinburgh Asylum, under Sir Thomas Clouston, he was in 1889 appointed medical superintendent of Stirling District Asylum at Larbert; he reorganized that institution, establishing a modern hospital block and a pathological department and laboratories for research. He published in 1899 a well known textbook on mental affections, and for many years he lectured in mental diseases in the School of Medicine of the Royal Colleges at Edinburgh; he is a Fellow of the Royal College of Physicians of Edinburgh, and represents that body on the Board of the Edinburgh Royal Infirmary. He was appointed Commissioner in Lunacy in 1899, and established a high reputation alike with public officials and the medical profession. In 1910 he was president of the Medico-Psychological Association of Great Britain and Ireland.

Memorial to Dr. T. F. McFarlane.

An Aberdeen granite pedestal with a cast bronze panel, erected by his patients and friends over the grave of Dr. Thomas Fraser McFarlane in the Western Cemetery, Dundee, was unveiled on October 13th. In addition to the monument, a cot has been endowed in the Dundee Royal Infirmary and in the Children's Hospital, Broughty, to perpetuate Dr. McFarlane's memory.

Correspondence.

PERNICIOUS ANAEMIA AND TOXIC ANAEMIA.

Sir,—In the interesting and important report of two cases of "pernicious anaemia" in the British Medical Journal of October 29th (p. 685) by Drs. Maynard and Sturton there is a distinct difference between Cases I and II. The first case showed a low colour index, and at autopsy only "some hyperplasia of the erythroblastic elements" of the marrow was observed in films. Is this case to be regarded as a true variety of the Addison-Biermer disease or should one not prefer to regard it as a secondary anaemia?

The second case, with marked poikilocytosis, extreme anisocytosis, and numerous megalocytes, is, apparently, a case of the disease as usually understood.

It would have been interesting to have a report on the condition of the cancellous bone of the medullary cavities of the long bones in the first case; the presence of active absorptive processes as described in detail by Marchand[1] can be regarded as excellent collateral evidence of the presence of pernicious anaemia.

I would venture to call the attention of the authors to the recent important experimental work on the etiology of pernicious anaemia by Winifred Ashby,[2] and would ask whether they would not make a distinction between true pernicious anaemia and toxic anaemia. It appears to me that neither of the cases as reported in your pages are identical with the pictures given by Combe or Addison, either from the clinical or the haematological aspect, and more recent work has only served to add sharpness to the descriptions of the older observers.—I am, etc.,

Birmingham, Oct. 29th. Alfred Piney, M.R.C.P.Lond.

"THE NEURASTHENIC ELEMENT IN MIDWIFERY AND GYNAECOLOGY."

Sir,—Dr. Farquhar Buzzard's parting shot at my conception at the Newcastle meeting (reported in the Journal of October 29th) needs, as my (unknown) neighbour at the meeting stated, a reply. In my remarks I had put forward the view that neurasthenia depends to some extent—and I think to a large extent—on a depressed intra-abdominal pressure. The discussion was closed by Dr. Buzzard, who in his last sentences said that I should no doubt feel a glow of satisfaction if he were to say that neurasthenia did not occur in pregnancy. But he was not going to say anything of the kind; on the contrary, if my view were correct, then every woman after childbirth—he stated—should become neurasthenic, and every woman who had twins, insane!

I do not know whether this repartee is the considered opinion of Dr. Buzzard; but I trust not, since a little examination will show how invalid is this criticism. But it is very plausible; and, since it may easily mislead, it

[1] Marchand, F.: Ueber Halisterese der Knochenbalkchen bei perniciöser Anaemie. *Atti del I. Congresso del Patologi*, 1912, p. 283.
[2] Ashby, W.: Blood Destruction in Pernicious Anaemia, *Journ. of Exper. Med.*, 1921, vol. xxxiv, p. 147.

requires examination. Although many women become fanciful and erratic during pregnancy, this peculiar state, I believe, is for the most part limited to the first three months of pregnancy. On the other hand, we have the very common assertion, made by women, that they never feel better than when they are pregnant—a statement which refers to mid and late pregnancy. That neurasthenia in women is most often found in the non-pregnant state, and especially in women who have suffered from repeated parturitions and are physically weak, will, I think, be admitted. Further, we have, as your readers and Dr. Buzzard know very well, the association of pregnancy and the puerperal state with insanity. The interesting part is that (according to authorities—for instance, Savage, quoted by Dakin[1]) when insanity attacks a pregnant woman it does so during the first three months of pregnancy. We must therefore believe that when a neuropathic element is present the woman during the last six months of pregnancy is relatively immune from insanity.

Now, as I have shown elsewhere,[2] these two periods of pregnancy, in so far as the intra-abdominal pressure is concerned, are very different from each other. Whilst during the first three months there is reason for believing that the pressure within the abdomen may be actually less than in the normal non-pregnant, during the last six months of pregnancy (during the period in which the abdominal wall is stretched) the pressure can readily be shown to be greater. It is further to be noticed that even when insanity does occur during pregnancy it is always associated with a state of exhaustion and anaemia, and that tonics, not sedatives, afford the best treatment. But though insanity occurs during pregnancy, it is (according to the authority referred to) much more common in the puerperium—that is to say, when the intra-abdominal pressure becomes, or tends to become, greatly reduced as the result of emptying the uterus. In these cases, also, weakness and anaemia (the result of bleeding) seem necessary concomitants. Although sepsis, at least a mild sepsis, is sometimes or often present, this apparently as a rule is not the cause of the insanity, and from the etiological point of view can be excluded.

Coming now to the question as to why the healthy pregnant woman does not become neurasthenic or insane as the result of parturition, what do we find? Apart from the very common practice of midwives and nurses of fixing a binder tightly around the abdomen, which must tend to keep up the intra-abdominal pressure, we find that changes in the abdominal wall rapidly ensue. The stretched flank muscles begin to retract at once after birth, their fibres get shorter immediately, and continue to do so until an equilibrium is attained. Similarly, the separation of the recti, so conspicuous a result of pregnancy, immediately begins in women under advantageous conditions to get less; and this process goes on until the separation has quite disappeared. It is only in poorly nourished women, who cannot afford the necessary rest in bed, and are impelled to return to arduous household duties too soon, that this involution of the abdominal wall—at least as important as any other change common to the puerperium—does not occur, or remains incomplete. Such women are consequently left weak; and it is in them that neurasthenic changes most frequently appear. For a similar reason, one sees that when the pelvic floor musculature is seriously damaged by childbirth, even when a satisfactory involution of the abdominal wall has occurred (the result of the rest in bed), a weakness, at first physical but later mental, may show itself with the return to activity. The pelvic floor, being now unable to resist the pressures produced in the abdomen, leads the patient to desist from such movements as cause such pressures. Thus a lower pressure than normal comes to reign; and that sequence ensues by which in my remarks I explained the genesis of neurasthenia.—I am, etc.,

Rugby, Oct. 30th. R. H. PARAMORE, F.R.C.S.Eng.

METHODS OF ANAESTHESIA.

SIR,—I have just read with much interest the paper by Mr. H. E. G. Boyle, published in your issue of October 15th, 1921, on "Anaesthesia for nose, throat and abdominal surgery by the nitrous oxide–oxygen–C.E. combination." There are several points in it worthy of consideration, both by surgeon and anaesthetist.

First, Mr. Boyle's remarks on the preparation of the patient are most important. The "drastic treatment" "meted out" to so many patients prior to operation is little short of a surgical catastrophe, and must have weighed heavily in the balance against them.

Secondly, Mr. Boyle points out that every form of anaesthesia should aim at being "as little toxic as possible." This aim is frequently lost sight of; the provision of a safe and adequate anaesthesia too often bounds the anaesthetist's horizon, and toxic after-effects are apt to be accepted as inevitable in certain cases. In this connexion the work of Cotton, Mackenzie Wallis and Hewer mark one of the most important advances made in the science of anaesthesia. The preparation of ethanesal by Dr. Wallis is an attempt to produce by scientific methods a non-toxic inhalation anaesthetic, and though it may not quite come up to the ideal it is immeasurably ahead of anything we have had before. Future progress lies along this line of research, rather than in the devising of new ways and apparatus to give the older drugs.

Thirdly, Mr. Boyle uses as a relaxant with nitrous oxide and oxygen a mixture of equal parts chloroform and ethanesal. Here I join issue with him. That a relaxant is at times necessary in abdominal work under nitrous oxide and oxygen anyone with much experience will readily admit, but only in exceptional cases is chloroform necessary. Ether, or better, ethanesal, is all that is required to give adequate relaxation in these cases, provided the anaesthetist possesses the necessary skill and experience to avoid the asphyxial element. This being so, why introduce a toxic drug like chloroform as a routine? The same applies to throat and nose cases.

In my own practice I use simply air to which is added the vapour of ether or ethanesal, and have found it in every way adequate for maintaining anaesthesia in these cases. In very exceptional circumstances a little chloroform vapour may be added.

Mr. Boyle uses nitrous oxide and oxygen *plus* ether *plus* chloroform as a routine. My contention is that, save in exceptional cases, the chloroform is unnecessary: its use runs counter to the second of Mr. Boyle's postulates. In diathermy the conditions are quite different; here the ether is potentially more dangerous than the chloroform.

One final suggestion—if it is necessary to use chloroform and ether as a relaxant do not mix them; keep them in separate containers. A simple arrangement of taps will allow the anaesthetist to add any proportion of each he wishes to his nitrous oxide and oxygen or air stream.—I am, etc.,

Clifton, Bristol, Oct. 26th. STUART V. STOCK.

NATIONAL PROVIDENT HOSPITAL ORGANIZATION.

SIR,—It is now announced in the daily press that there is a great middle-class rush to enrol in the above scheme, through which hospital doctors are to be had for £1 a year. Four general hospitals in London are named as having joined in the scheme. As regards one of them—the Hampstead General and North-West London Hospital—it may be of interest to state that the Medical Committee, after careful consideration of the working arrangements (circular dated September, 1921) have informed the Board of Management of their unanimous decision that the members of the honorary medical and surgical staff are not prepared to take any part in the working of the scheme. A majority of the medical committees of the London general hospitals seem to have acted in the same way and to have been supported in their action by their governing boards. It is difficult to see how the medical staff of any hospital can retain the title of honorary and at the same time become the paid servants of a commercial insurance company which buys their time and services.—I am, etc.,

G. A. SUTHERLAND,
Senior Physician to the Hampstead General and North-West London Hospital.

October 30th.

SIR,—I have been instructed to make the position of the Brighton Division clear so far as it is referred to by Dr. Muir Smith under the above heading in the issue of the SUPPLEMENT for October 22nd. The Sussex Provident

[1] Dakin. *A Handbook of Midwifery*, 1897, p. 555.
[2] Paramore. "The Intra-abdominal Pressure in Pregnancy," *Journ. Obstet. and Gynaec. Brit. Emp.*, August and September, 1913; also *Proc. Roy. Soc. Med.*, Obstet. and Gyn. Sec., 1913.

Scheme has not been organized, nor was it promoted by the Division, nor has this Division any representative on its Organizing and Executive Committee. That committee is not a medical committee. This Division was asked whether it approved the original scheme, and after certain vital amendments had been made therein it did do so. It was decided to bring the scheme to the notice of the Representative Body, and in order to do this a competent resolution was placed on the agenda. (By an unfortunate error on my part, in this resolution the words "by Sussex" were sent up instead of "for Sussex.") This Division is in no way to be held responsible for the name selected for the scheme, nor for the bringing it into operation at the present date, nor for any circulars issued, nor for any action or want of action of its promoters in the past or in the future.—I am, etc.,

L. A. Parry,
October 29th. Honorary Secretary, Brighton Division.

Sir,—I venture to traverse some of the statements contained in Dr. Muir Smith's letter in the Supplement of October 22nd, in regard to what has been called "The Sussex Provident Scheme for Hospital and Specialized Medical Services." Incidentally the name "Sussex" as applied to the scheme arose in London and not in Brighton.

The following statements are not correct—namely, that the scheme "was framed by a few Brighton consultants," "is controlled by a small section of class practitioners—a Brighton caucus—."

Further, probably most people will disagree with Dr. Muir Smith when he states that a married couple with £400 a year, and a married couple and children with £500 a year, can afford the fees usually asked for such things as a bismuth meal, *x*-ray diagnosis, preparation of vaccines, *x*-ray treatment of recurrent nodules of carcinoma, laparotomies, or other major operations necessitating three weeks in a nursing home; nor is he correct in saying that some scheme to lighten these heavy expenses has never been urged or demanded.

The scheme, as must be evident to any one who will read its provisions and rules, is altruistic in origin and intention; and whether or no it will bring financial help to the hospitals, it will certainly not benefit the consultants; they are the only people who stand to lose by supporting it.

I have personally had no part in originating or working the scheme, though I have viewed it with interest.—I am, etc.,

Brighton, Oct. 27th, Robert Sandilson.

SANATORIUM BENEFIT.

Sir,—To Dr. J. D. Macfie's fourth question (October 22nd, p. 670): Should we adopt the army method of diagnosing tuberculosis by the presence of tubercle bacilli in the sputum? I would, as a general practitioner, return a qualified negative. The examination for the bacillus may occasionally settle the diagnosis in doubtful cases, but it is the abuse of the method that is to be deprecated. This has led in late years to an unscientific and even cowardly backing behind the finding of the bacteriologist at the expense of proper estimation of symptoms and physical signs. I see from time to time cases presenting these latter in such degree as to justify the diagnosis of phthisis, but not so called because the bacillus is absent when sought for.

Quite lately a case of chronic fibroid phthisis came to me in which I was able to locate two cavities; but it was labelled chronic bronchitis because the bacillus had not been found. She had attended a tuberculosis dispensary for two years, and had obtained treatment there (malt and oil) which, it is not much exaggeration to say, might as well have been carried out by the local grocer.

Again, it leads to one practitioner ousting another when the first expresses an adverse opinion. People do not like the diagnosis of tuberculosis, and often meet the opinion with "there is nothing of that sort about our family." The second practitioner is then called in and finds there is no "T.B.," thus vindicating the family pride.

Further, it leads to a mischievous waiting if the case is to be decided by the ultimate presence of the bacillus, when it is too late; the damage is done and valuable time has been lost. Finally, it tends to a neglect of physical signs, not to mention symptoms, when these unfortunately present themselves.—I am, etc.,

London, N.W., Oct. 31st. Hope Grant, F.R.C.S.Ed.

THE MEDICAL DEFENCE UNION.

Sir,—May I be allowed to correct a slight error in your otherwise admirable note in your last issue (p. 711) on the annual report of the Medical Defence Union?

The indemnity insurance scheme, which came into force on January 1st, 1921, does not involve an additional optional payment of a premium of 7s. 6d. to the insurance company, as stated by you. That was the case under the former arrangement when the annual subscription to the Union was 10s., but the indemnity insurance premium is now included in the increased annual subscription to the Union of £1, payable by every member.—I am, etc.,

James Neal,
General Secretary.

4, Trafalgar Square, London, W.C., Nov. 2nd.

Obituary.

F. A. BAINBRIDGE, M.A., M.D.Cantab., D.Sc.Lond., F.R.C.P., F.R.S.,

University Professor of Physiology, St. Bartholomew's Hospital.

It is with much regret that we learn of the death, on October 27th, after a short illness, of Professor F. A. Bainbridge.

Francis Arthur Bainbridge was born at Stockton-on-Tees in 1874. He was educated at the Leys School, Cambridge, and entered Trinity College in 1892. He took the first part of the Science Tripos in 1895 and the second part in 1896, obtaining a first class in each part, and was elected to a major scholarship at Trinity in 1896. He then proceeded to St. Bartholomew's Hospital, where, after holding the senior resident appointments, he was appointed junior demonstrator of physiology in 1900. In 1901 he took the M.B.Camb. and the M.R.C.P.Lond. while he was holding the posts of pathologist and bacteriologist at Great Ormond Street Hospital, and of junior demonstrator of pathology at St. Bartholomew's. In 1902 he was elected to a research scholarship of the British Medical Association. For two years before this he had employed all his spare time in carrying out research in the Physiological Laboratory of University College, devoting his attention specially to the physiology of lymph formation and of pancreatic secretion. In 1903 he was appointed casualty physician at St. Bartholomew's Hospital, an appointment which naturally diminished his opportunities of laboratory work, but he found time to take the Cambridge M.D. and the London D.Sc., being awarded the Horton-Smith prize for the thesis which he sent up for the former degree. In 1904 he held the post of demonstrator in pharmacology at St. Bartholomew's, continuing his experimental work at University College. In 1905 he was appointed Gordon lecturer on pathology at Guy's Hospital, a post which he held for two years, proceeding in 1907 to the Lister Institute, first as Jenner memorial student and later as assistant bacteriologist. During this time (1909) he was elected to the Fellowship of the Royal College of Physicians.

Although Bainbridge was a competent bacteriologist and carried out some valuable work on the influence of bacteria on proteins and on the paratyphoid group of bacteria—the subject which he chose for his Milroy lectures in 1912—his main interest was always in experimental physiology. He therefore welcomed the opportunity to return to experimental work afforded by the offer of the post of Professor of Physiology in Durham University at the Newcastle School of Medicine, the duties of which he took up in 1911. Here he entered with zest on the organization of his department and of the medical school, and found time to continue the work on the kidneys which he had begun while Gordon lecturer at Guy's Hospital. On the outbreak of war in 1914, he at once offered his services and received a temporary commission in the R.A.M.C., and was given charge of patients in a military hospital at Newcastle-on-Tyne. In 1915, however, he was appointed University Professor of Physiology at his old school, and for the following year

carried on the teaching at St. Bartholomew's, while at the same time working as captain, R.A.M.C., in the gas defence department, employing his time partly in researches into the action of toxic gases at Millbank, partly in travelling about the country to the various cadet training schools, giving instruction in the methods of defence against poison gases. The stress of work at the hospital and medical school made it necessary for him to resign his commission, and from that time until his death he was actively engaged in research and teaching at his school, In 1919 he was elected a Fellow of the Royal Society.

Bainbridge was a man of small stature, and of poor physique and indifferent health. It was always a wonder to his friends how he contrived to get through so much work in the course of the day—teaching, experimenting, writing his books and papers, and examining, a duty which often involved much travelling. Of a quiet, reserved manner, he was nevertheless an excellent conversationalist, and his general interest in men and things outside his immediate work rendered him an entertaining companion. He was constantly struggling against ill health, but managed to carry on by dint of taking long holidays. An enthusiastic researcher, he was modest and self-deprecatory as to the results he had actually achieved. There were, however, few men to equal him as an experimenter, and he never seemed happier than when trying to introduce a cannula into a hardly visible frog's ureter. His was a mind which sought to make order in any jumble of facts with which he was confronted, and it was this power of making the crooked straight which distinguished his researches and at the same time rendered him an excellent teacher and expounder of his subject. He was nothing if not lucid, and the combined grasp of his subject and clarity of expression distinguished alike his teaching by lecture and by the printed page. The small work he wrote with the late Professor Menzies on the *Essentials of Physiology* enjoys an increasing success among all classes of students. In his monograph on the physiology of bodily exercise (1920) he has succeeded in giving a synthesis of a vast material, so that much which before was disconnected and meaningless has been brought into the working fabric of the science of physiology.

It is not necessary to give here a full list of Bainbridge's published work. As with all other scientific workers, many papers represent merely steps on the road to some discovery published in full in a later paper, while others may record excursions along a false track and steps which had to be retraced. But a very large proportion of Bainbridge's work consists of important additions to knowledge which have found a permanent place in the record of scientific discovery. In pathology his most important work was in the differentiation of the different types of paratyphoid bacilli, a study which has been carried very far in later years. It was, however, on the physiological side that his work was of most importance. In his researches on lymph formation, he took up the question of the tissue lymph, and defined for the first time the part played in lymph formation by the metabolism of cells. Working on the submaxillary gland and the liver, he pointed out the defects in the secretory theory and showed that all the results obtained might be explained as due to the production of metabolites in the cells and the consequent rise of osmotic tension in the tissue fluid, which had the effect of attracting fluid from the blood vessels and adding to the lymph flow from the part. The question of the mechanism of urinary secretion was one which occupied him frequently through his scientific career. His earliest work, carried out with Beddard, consisted in a repetition of Nussbaum's experiments, avoiding many of the sources of fallacy which they contained. At first he was inclined to ascribe a secretory function both to glomeruli and to tubules, but later, in experiments carried out at Newcastle, he was led to adopt Cushny's view, in support of which he brought forward many new and ingenious experiments. His work with Evans, on the functions of the mammalian kidney fed with blood from a heart-lung preparation, was, unfortunately, only in the nature of a preliminary communication, but the method promises to be of considerable value for the elucidation of many problems connected with urinary secretion. His work with Dale on the movements and innervation of the gall bladder was a useful contribution to a department of physiology in which knowledge is very deficient. Most interest, however, attaches to his latest investigations on the circulation, and especially to the discovery of the relationship which holds between the pressure on the venous side of the heart and the rate of the heart beat. Many attempts had been made to explain the acceleration of the pulse which occurs in exercise. The "pace-maker" itself is unaffected by the pressure in the auricular cavity, though a quickening of the pulse is one of the methods adopted by the organism for enabling the heart to deal with the greater inflow of blood into this organ which accompanies muscular exercise. Bainbridge showed that any rise of pressure on the venous side of the heart caused a quickening of the beat, partly by inhibition of the vagal tone, partly by reflex excitation of the accelerator mechanism. This condition is the converse of that which is expressed as Marey's law, a rise of pressure on the ventricular side tending to cause reflex slowing of the heart, and it is therefore sometimes described as "Bainbridge's law." The review of the whole subject of the physiology of exercise, which he undertook in writing his monograph on the subject, suggested many new problems for work on the circulation, and he was making plans to attack these problems—partly alone, partly in conjunction with other physiologists—when his work was brought to a sudden and premature close. But he was happy in his work and in the planning of new researches, and he would be content that others should build on the foundations which he has so well laid down.

Bainbridge married in 1905 Hilda Winifred, daughter of the Rev. Thornton Smith. In his wife he found a companion keenly interested in his work, who, by her constant co-operation and care, enabled him to utilize his talents to the full, in spite of the disability of ill health from which he so frequently suffered. His wife and a daughter survive him.

E. H. STARLING.

E. O. DALY, M.D., M.R.C.P.,

Consulting Physician, Hull Royal Infirmary.

WE regret to record the death of Dr. Edward Owen Daly, which took place at his residence in Hull on October 18th. He was the elder son of Dr. Owen Daly, consulting physician to the Hull Royal Infirmary, and was educated at Cheltenham, University College Oxford, and St. George's Hospital. He took the diploma of L.S.A. in 1880 and graduated M.A., M.B.Oxon. in 1882, and M.D.Oxon., in 1885; in 1884 he became M.R.C.P. Lond. After having held the posts of house-physician and assistant medical registrar at St. George's Hospital, he was in 1885 elected honorary physician to Hull Royal Infirmary, becoming consulting physician twenty years later. Dr. Daly was for many years a very active member of the British Medical Association. He contributed largely to discussions and wrote many papers in this and other medical journals. In 1890 he was president of the East Yorkshire and North Lincolnshire Branch, of which his father had been president in 1864 and again in 1882. In 1902 he was elected President of the Hull Medical Society. In medical questions his opinion was widely sought, and he took a great interest in public affairs, but being of a retiring disposition took little active part in them. He was greatly respected as a man of the highest character and of sound judgement. A family bereavement some two years ago



(Photo. taken by Turner and Drinkwater, Hull.)

affected him severely, and latterly his health had been failing. Dr. Daly is survived by his widow, who is a daughter of the late Vice-Admiral von Donop, and by two sons, both of whom have made the army their profession.

J. WICKHAM LEGG, M.D., F.R.C.P., HON. D.LITT.OXON.,
Formerly Assistant Physician, St Bartholomew's Hospital.

MANY old students of St. Bartholomew's Hospital will have heard with regret of the death of Dr. Wickham Legg, formerly assistant physician to that hospital, whose interest in life is, however, best expressed by the fact, which he placed first in the notice published in *Who's Who*, that he was for ten years chairman of the council of the Henry Bradshaw Society for editing rare liturgical texts. He was born in 1843, retired from the staff of St. Bartholomew's Hospital in 1887, and had resided in Oxford since the death of his wife in 1908. He graduated M.D.Lond. in 1868, and had previously, for a couple of years, been tutor to the late Duke of Albany. He was appointed demonstrator of morbid anatomy at St. Bartholomew's Hospital in 1874, and became lecturer on pathological anatomy and assistant physician to the hospital in 1878. For some years he took an active share in the medical life of London, and in 1883 he delivered the Bradshaw Lecture on cardiac aneurysms before the Royal College of Physicians of London, of which he had become a Fellow in 1876. He published a treatise on haemophilia, and another on bile, jaundice, and bilious disorders. Suddenly, and to those who were not in his confidence rather unexpectedly, he retired from St. Bartholomew's Hospital in 1887, the motive partly being a breakdown in health following a severe attack of rheumatic fever; but a strong reason was no doubt his great interest in the study of liturgical subjects. He was one of the founders of the Henry Bradshaw Society, and edited for it in 1888 the Quignon Missal, and in 1916 the Sarum Missal; in 1914 he published a book on *English Church Life* from 1660 to 1833, and in 1917 an essay on *Church Ornaments and their Civil Antecedents*, as well as a volume of collected essays on liturgical and historical subjects. He leaves one son, who is a Fellow and modern history tutor of New College, Oxford.

THE LATE LIEUT.-COLONEL E. M. WILSON, C.B., C.M.G., D.S.O.—Colonel P. Broome Giles, C.B., writes: In your obituary notice of the late Colonel E. M. Wilson, C.B., C.M.G., etc., there is no mention of the great work he did in connexion with the Volunteer and Territorial Medical Services. Colonel Wilson and his chief, the D.G.A.M.S., were not only sympathetic with, but thoroughly understood, the enthusiasm and difficulties of the Volunteer medical officer. At that time, with the exception of a few R.A.M.C.V. units and certain bearer companies, the system was entirely regimental and opposed to a service. In 1899, when D.D.G., Colonel Wilson speedily realized that the attenuated R.A.M.C. personnel was quite inadequate to cope with the demand created by the Boer war. The Militia R.A.M.C. was practically non-existent, so his only hope of immediate assistance was what could be supplied by the Volunteers. He had frequently visited our Volunteer Ambulance School of Instruction, and so appealed to us and to other sources; we never missed any month to send him a quota of trained men for home or foreign service. Again in 1904, as the technical adviser to Lord Raglan at a deputation of senior medical officers, his intimate knowledge of the value of Volunteers enabled him to present our claim to the D.G.A.M.S., and we had nearly all we asked granted. Lastly, in 1907, as chairman of a committee of Volunteer medical officers nominated by the British Medical Association, his tact, knowledge, and good temper formulated the report which was the basis of Sir Alfred Keogh's Territorial medical scheme. Colonel Wilson did good service in co-ordinating the R.A.M.C. and the R.A.M.C.T. The excellent result the late war proved.

DR. PIERRE HENRI SOULLIER, honorary professor of the Lyons Medical Faculty and corresponding member of the Académie de Médecine, has recently died at the age of 88.

DR. ERNEST DUPRÉ, professor of clinical mental diseases in the Faculty of Medicine of the University of Paris, died recently at Deauville, at the age of 59.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE first and second examinations for medical and surgical degrees will begin on Monday, December 12th. Part I of the third examination (surgery and midwifery) will begin on December 13th; Part II (principles and practice of physic, pathology and pharmacology) on December 14th. The M.Ch. examination will be held on December 13th, 16th, and 17th. The certificates of candidates, with their postal addresses, must be sent to the Registrary for Parts I and II of the third M.B., and for the M.Ch. examination by November 12th; certificates for the first and second M.B. by December 2nd.

At a Congregation held on October 28th the following medical degrees were conferred:

M.B., B.CH.—L. W. Jones.
M.B.—L. P. Garrod, H. H. Brown.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia of the Royal College of Physicians of London was held on Thursday, October 27th, at 5 p.m., with the President, Sir Norman Moore, Bt., in the chair.

The President announced that Mr. Ronald Henry Knight had been elected the twenty-ninth Jenks Scholar.

Dr. A. J. Cleveland and Dr. F. H. Jacob, elected to the Fellowship at a previous comitia, were admitted as Fellows.

The following gentlemen were admitted as Members:

James Ridell Bell, M.D.Melb., William Harris Best, L.R.C.P., Robert Edward Collins, M.B.Edin., L.R.C.P., Geoffry Challen Linder, M.D.Lond., L.R.C.P., Arthur Griffith Maitland-Jones, M.B.Lond., L.R.C.P., Wathen Ernest Waller, M.B.Oxf., Philip Hewer Wells, L.R.C.P.

Licences were granted to the following seventy-seven candidates who had passed the required examinations:

M. T. Ahmed, S. Anneche, Helen R. Ashton, T. J. D. Atteridge, Mary J. Avrton, A. H. Bean, I. H. Blair, J. G. B. Brass, H. F. Brice-Smith, E. E. L. Burmer, Linda Catmur, W. E. R. Coad, W. L. Coly, Nancy M. Coutts, P. G. Cumming, E. C. Curwen, P. T. Davidson, *Edith M. P. Davies, *Muriel A. M. Davies, A. H. Douthwaite, H. S. Drabble, C. T. J. N. Drabig, H. O. Eksteen, A. H. El-Ramli, E. W. Evans, V. Feldman, L. R. Fifield, E. C. H. Foreman, E. Gallop, J. E. Gardner, C. M. Gwillim, C. B. Hawthorne, Margaret Haywood, *Marjorie B. Hubert, J. W. Hunt, E. R. Jaeger, A. V. Johnston, Eva M. Johnson, D. L. Jones, D. M. Jones, *Gladys H. E. H. Jones, R. O. Jones, E. J. L. Jones Evans, G. Kinneir, F. C. Lewis, W. E. Lloyd, I. B. McCann, Elisabeth E. McCulloch, A. Maude, E. O. Morrison, J. B. G. Muir, H. W. L. Nichols, F. A. Pickworth, *Enid M. Powell, F. W. M. Pratt, J. A. Prichard, *Philippa P. Pughe, W. G. Roberts, A. T. Rogers, I. Rosenberg, J. J. Rowlands, A. R. Rutnam, Elaine M. K. Salmond, L. Segal, A. I. Solberg, A. E. Strawbaun, R. O. Swaine, D. R. Thompson, Helen C. Tompson, Nellie Vaus, C. E. Whitting, A. B. Whytock, B. W. Williams, W. H. Williams, *Beryl Wiseham, J. R. Wright, *Greta I. Yeoman.

Under the Medical Act, 1876.

The President nominated Dr. Sidney P. Phillips and Dr. G. F. Still to serve on a committee being constituted by the College of Preceptors in regard to the physical education of girls.

Dr. M. R. Robertson was granted permission to resign his Membership of the College. A letter from Dr. J. J. MacWhirter (Dunbar) asking that the Membership which he resigned in 1881 may now be restored to him was read for a second time.

Professor C. S. Gibson was appointed an Examiner in Chemistry, vice Dr. Le Sueur, deceased.

The President announced the names of the Fellows he had appointed to serve on the Committee appointed to consider changes in the Curriculum and Examination for the Conjoint Diplomas—namely: The President and Registrar (*ex officio*), Sir W. Hale-White, Sir H. D. Rolleston, Sir James Galloway, Dr. H. M. Fletcher, Dr. G. F. Blacker, and Sir John Broadbent.

Sir William Hale-White was re-elected a member of the Committee of Management.

After some formal College business the President dissolved the Comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT the annual general meeting of Fellows and Members of the Royal College of Surgeons of England, to be held on Thursday, November 17th, at 3 p.m., the following resolutions will be moved on behalf of the Society of Members of the Royal College of Surgeons of England:

1. That this thirty-fourth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which (as now constituted) only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.
2. That as the Royal College of Surgeons is composed of about 18,000 persons, of whom over 16,000 are engaged in general practice, this annual meeting requests the President and Council to nominate *at least* two Members in general practice to represent the interests of general practitioners in the management of College affairs.
3. That this meeting of Fellows and Members earnestly request the President of the College to make a detailed statement *here and now* as to all the reasons, legal and otherwise, for the Council persisting with a refusal to allow representation on the Council of the Members in general practice; and to state definitely whether legal advice has been taken as to any possible means of overcoming any difficulties in the way of carrying out our wishes: and, if so, to declare what that advice was.

Medical News.

A Royal proclamation, dated September 27th, 1921, has formally ordered the disembodiment of the Territorial Force, in pursuance of the Territorial and Reserve Forces Act, 1907.

The centenary of the birth of Virchow, referred to in an article in our issue of October 8th, was celebrated on October 13th by a congress of medical societies at Berlin.

The eighteenth congress of the Italian society of oto-rhino-laryngology was held at Ravenna, under the presidency of Professor Biaggi, on October 13th to 15th, when the physiopathology of the nasal cavities was discussed.

The opening lecture for this winter of the Old Glasgow Club was given, on October 27th, by Sir George T. Beatson, on "An epoch-making event in the history of the Glasgow Royal Infirmary"—the introduction of antiseptic surgery by Lister.

A meeting of the Medico-Legal Society will be held at 11, Chandos Street, W.1, on Tuesday, November 15th, at 8.30 p.m., when Dr. Thomas Good, of Littlemore Mental Hospital, Oxford, will read a paper on "Nature *versus* Law," with special reference to the development of psychotherapy and its problematical use in the treatment of feeble-minded persons and criminals. The annual dinner will be held on Wednesday, December 14th, instead of Friday, December 16th, as previously announced.

At the meeting of the Association of Economic Biologists to be held on Friday, November 18th, at 3 p.m., in the Botanical Lecture Theatre of the Imperial College of Science, South Kensington, S.W.7, Dr. E. J. Butler, Director of the Imperial Bureau of Mycology, will open a discussion on "Meteorological conditions and disease."

The first National Congress of Italian Medical Women was held at Salsomaggiore from October 14th to 16th.

A meeting of the Central Midwives Board for England and Wales was held on October 13th, Sir Francis Champneys presiding. In reply to a letter from an inspector of midwives it was pointed out that the question of the ownership of a midwife's register of cases is one to be decided by a court of law and not by the Board. An inquiry by a medical officer of health regarding compensation to a midwife suspended from practice in order to prevent the spread of an infection was answered to the effect that if she were suspended by a local authority the question of compensation was one to be decided by the local authority concerned, but if suspended by the Board the question would be decided by the Board.

Dr. T. P. Stewart, of Newport, Fife, who has been absent from his practice for some months owing to ill health, has received a complimentary letter bearing the names of 600 friends and patients and accompanied by a silver salver, and a cheque for £1,400, "in inadequate recognition of a long-continued indebtedness."

The American Public Health Association announces that on the occasion of its fiftieth annual meeting a Health Fortnight will be held, extending from November 8th to 19th. This celebration will include three main divisions: a health institute, from November 8th to 11th; a health exhibition, the largest of its kind ever held in New York, from November 14th to 19th; and the annual meeting of the association, between the same dates. November 13th will be observed as Health Sunday in many churches, and the week will be observed by numerous business and social organizations.

Professor W. E. Dixon, F.R.S., will read a paper on the Drug Habit at the first evening meeting of the Pharmaceutical Society, 17, Bloomsbury Square, W.C., on Wednesday, November 9th, at 8 p.m.

On October 20th, at Ladywell Sanatorium, Salford, there was presented to Dr. John W. Mullen, superintendent of the sanatorium, an illuminated address which, in appreciating his long tenure of service, recorded a resolution passed by the health committee of the borough congratulating Dr. Mullen on the completion of forty years' service to the borough of Salford. Since the commencement of his work in Salford upwards of 50,000 cases of infectious disease had passed through Dr. Mullen's hands, and he has himself suffered from almost every infectious disease, including typhus fever, during the course of his duties.

Dr. J. Schoemaker, a well-known surgeon at the Hague, has been made an honorary Fellow of the American College of Surgeons.

The fifth Congress of the German Urological Society was held at Vienna on September 29th, when over 100 papers were read.

The annual dinner of past and present students of the Royal Dental Hospital of London will be held at the Hotel Victoria on Saturday, November 26th, when Dr. H. Austen will take the chair at 7 p.m.

The annual autumnal general meeting of the Irish Medical Schools' and Graduates' Association will be held on Thursday, November 17th, at Pagani's Restaurant, Great Portland Street, the President, Major-General Wallace Kenny, C.B., A.M.S., in the chair. It will be followed by a banquet.

The Aberdeen University Club, London, will hold its sixty-sixth biennial dinner at Gatti's Restaurant, Strand, on Thursday, November 17th, at 7.30 p.m. Graduates of either sex desirous of attending the dinner, or of becoming members of the club, should write to Dr. Milligan, 11, Upper Brook Street, W.1.

It is announced this week that the well known London firms of Messrs. John Bell and Croyden, Ltd., dispensing chemists, of Wigmore Street, and Messrs. Arnold and Sons, surgical instrument manufacturers, of Giltspur Street, have been amalgamated. The amalgamated firms will in future be known as "John Bell and Croyden, Ltd., incorporating Arnold and Sons."

The annual dinner of the Chelsea Clinical Society was held in the Café Royal on October 25th. Sixty-five members and guests were present. In proposing the health of the Chelsea Clinical Society, the President of the Medical Society of London (Mr. James Berry, F.R.C.S.) congratulated the Society on attaining its majority that evening, and on the good work done at its meetings. Dr. D. M. Barcroft (President) replied, and later proposed the health of the guests. Replies were given by the President of the West London Medico-Chirurgical Society (Sir Lenthal Cheatle) and the President of the Hunterian Society (Mr. Russell Howard). The President of the Harveian Society (Dr. G. de Bec Turtle) proposed the health of the President of the Chelsea Clinical Society, and Dr. Barcroft responded.

Lieut.-Colonel J. H. Dudgeon, V.D., J.P., of Stainburn, near Workington, has been appointed Deputy-Lieutenant for the County of Cumberland.

The American Ophthalmological Society, the Section of Ophthalmology of the American Medical Association, and the American Academy of Ophthalmology and Oto-Laryngology have arranged to hold an international congress of ophthalmology at Washington from April 25th to 28th, 1922.

The fifth National Medical Congress of Cuba, which takes place every five years, will be held from December 11th to 17th, under the presidency of Professor J. A. Presno, founder and director of the *Revista de Medicina y Cirugia*, of Havana.

Dr. F. G. Crookshank, F.R.C.P., will deliver the Revilliod-Julliard lecture before the Geneva Medical Society on Thursday, November 10th. His subject is: "The Traditions and Development of British Medicine."

The annual old students' dinner of St. Thomas's Hospital was held on October 28th, at the Wharncliffe Rooms, Hotel Great Central, with Dr. Hector Mackenzie, consulting physician to the hospital, in the chair. The company, which numbered 170, included Sir Anthony Bowlby, P.R.C.S., Sir Robert Hill, Medical Director R.N., Sir George Makins, Sir Wilmot Herringham, Sir Seymour Sharkey, Sir Charles Ballance, and Sir William Macpherson. The Chairman, in proposing "Prosperity to St. Thomas's Hospital and Medical School," gave a brief outline of the history of the institution from its remote origin in mediaeval times up to the opening of the new buildings on the present site fifty years ago by Queen Victoria. The Treasurer, Sir Arthur Stanley, who replied on behalf of the hospital, in his reference to financial difficulties, said that payment by patients was still voluntary at St. Thomas's, though all were urged to pay according to their means. The recent coal strike had been a trying time and had induced the governors to replace coal by oil fuel at half the cost. He mentioned also the participation of St. Thomas's in the national provident scheme, "whereby the 98 per cent. of people who are well pay for the 2 per cent. who are ill." Sir Cuthbert Wallace, the Dean of the Medical School and Director of the Surgical Unit, replied on behalf of the School, and gave a sketch of the year's doings. He said that the number of students was now as large as it had ever been. Discussing new ideas and ideals in medical education, Sir Cuthbert Wallace distinguished between the system which aimed at providing teaching and that which aimed at giving the student an opportunity to learn for himself. The health of the Chairman, proposed by Dr. R. Percy Smith, was received with acclamation, and Dr. Mackenzie briefly replied.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London:* telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediscera, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"T. McC." sold an Austro-Daimler car in 1920 for £560 and bought a Standard 8.5 for that amount. The full replacement cost of the original car would have been £900.

Although the full replacement cost is the measure of the full allowance, the claim for deduction must not exceed the out-of-pocket expense incurred. In this case that expense is *nil*, and no deduction is made. Our correspondent, however, should record the facts for future use. For example, if he at some future time sells the Standard for £200 and buys an A.-D. or similar car for, say, £750, he will be entitled, on the whole of the facts, to an allowance of £550, whereas the maximum (apart from the original car transaction) would have been £560 – £200 = £360.

"DUPLEX," referring to a previous question and answer (October 22nd, p. 677), explains that the tax assessed on the basis of the cash receipts of the firm from which he retired was divided between the continuing partners and himself on the basis of the money received by each.

*** We advise that his super-tax return for the following year should be made on the basis that his income from the practice for the year 1920–21 was one-quarter of his share for the year—that is, his share which terminated outright as at June 30th, 1921. That appears to be the correct apportionment of the income tax assessment, and "Duplex" does not seem to be prejudiced by the fact that he accepted a larger share for income-tax purposes as between himself and his partners.

INCOME TAX: SUPERANNUATION.

"J. J. Mc." inquires as to the proper method of allowing deductions for contributions under the Asylum Officers' Superannuation Act of 1909.

*** These deductions are dealt with as if they were payments in respect of life assurance policies on the contributor's life, and under the Income Tax Act of 1918 the rate of the deduction is limited to 3s. in the £ if the total income is less than £1,000.

FLEAS.

DR. T. G. PARROTT (Aylesbury) writes: In reply to "A. B. S.'s" query in the JOURNAL of October 29th my plan of prevention, which has proved successful, is to fix a small square of camphor in a muslin bag inside each trouser leg about 3 or 4 in. from the lower edge; the bags can be fastened with a safety-pin to the inner seam of the trousers.

LETTERS, NOTES, ETC.

INTRAVENOUS USE OF CALCIUM ACETO-SALICYLATE.

MR. W. HARRISON MARTINDALE, Ph.D., etc., manufacturing chemist (London, W.), writes: In your issue of July 9th last, p. 37, Dr. A. Cambell, medical officer in charge venereal clinic, Royal Portsmouth Hospital, communicated a paper on the intravenous administration of tylcalsin (calcium aceto-salicylate) prepared by my firm. Numerous medical men have since tried the method with somewhat different results. In some cases there has been a lack of toleration and no alleviation of pain; on the other hand, in several cases the reports have been most gratifying—that is, there has been relief of pain, reduction of temperature, and no ill effects. In Dr. Cambell's paper it was suggested that the solution of tylcalsin should be boiled (to sterilize it). It is, however, preferable not to boil the solution; otherwise hydrolysis of the compound will occur. There would be no great risk in preparing the injection using normal saline with the addition of ½ per cent. phenol in the cold. It is true there would remain the chance of infection with the bacteriologist's bugbear, spores, but the chance is negligible, and this chance would remain also after boiling. Experiments to determine whether or no an injection so made under the conditions which would prevail have been conducted, and the solutions have been found sterile. The assumption is that in general they would be so. Tylcalsin in tablet form, unless kept under ideal conditions, is prone to a certain amount of hydrolysis, and it will in future be preferable to supply it in cachets wrapped in tinfoil, or in sealed glass ampoules. In this form the compound will keep unaffected by atmospheric moisture. The substance dissolves quite readily by merely shaking up for a few seconds in a glass bottle. The information I have as to the appropriate dosage indicates that the practitioner should proceed with caution, starting with, say, 0.25 gram initially and gradually increasing the dose, and the injection should naturally be given slowly. (I have a note from one medical man who has given 1.5 grams; this may be regarded as a strong dose and an evidence of toleration.) Dr. Cambell is giving 1 gram doses with uniformly successful results. This letter is written with his approval.

PROFESSIONAL AMENITIES.

MAJOR V. T. CARRUTHERS, R.A.M.C., sends a letter, in the course of which he makes the following observations: The recent references to "surgical dabblers" reported in the JOURNAL may possibly be held as an outsider's excuse for raising his trembling quill to give an impression of the relations between consultants and general practitioners as they appear to one who is neither. It is a great pity that one can seldom attend a meeting where specialists are engaging in discussion with general practitioners without being reminded of Milton's immortal lines:

> Sporting the lion rampel, and in his paw
> Dandled the kid.

To the outsider it appears that medicine would be better served if the specialist either chased the practitioner, roaring, round the floor, so to speak, or else discussed things amicably with him as lion to lion or lamb to lamb. The present common attitude of indulgent superiority is much to be deplored, though it has its comic side. Anybody who takes the trouble to read the controversies of a hundred years ago will agree that medical men have advanced greatly in kindness since then; let us take another step forward, if possible, and allow such words as "dabbler," "bug hunter," "old wife," to follow "butcher," "charlatan," and "criminal" to the pot-house and hustings, where they are welcomed.

SALE OF PRACTICES.

F. P. writes: Although there has been a recent reduction in the capitation fee, one cannot fail to notice that the majority of practices now advertised for sale are offered on the basis of last year's receipts. I wonder, if there had been a further increase in the panel fees, say to 13s. 6d., how it would have reacted upon the vendors? Anyhow, owing to the amount of commercialism in the sale of house property and the premiums asked, comparatively few practices are being sold, as but a limited number of demobilized men are prepared to purchase a house and practice right off, particularly as the lean days are now upon us. At the same time, no one will deny that vendors are entitled to a fair price and reasonable compensation on the sale of their practice.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 44, 45, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 42, 43, and 44.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

The Fellowship Address

ON THE

NEED FOR CO-OPERATIVE THOUGHT IN SURGICAL ORGANIZATION.

DELIVERED AT

THE CONVOCATION OF THE AMERICAN COLLEGE OF SURGEONS, PHILADELPHIA, OCTOBER 28TH, 1921,

BY

SIR HAROLD J. STILES, K.B.E., M.B., F.R.C.S.,

REGIUS PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF EDINBURGH.

My first duty is to thank the President and Regents of the College for so kindly inviting me to take part in the Clinic Congress. For three years in succession I had received an invitation, and gladly would I have accepted, but in view of my recent appointment to the chair of Clinical Surgery in the University of Edinburgh I did not feel justified in applying to the University Court for leave of absence. It so happened this year that the Congress of the Universities of the British Empire was holding its meetings in Great Britain when I received your invitation to be a guest at the Congress. One of the speakers, Professor T. J. Wilson of Cambridge, declared that professors should not merely be given leave of absence but should rather be hunted out of their chairs for the health of their own souls and of those committed to their care. Those words so emboldened me that I accepted your invitation on my own initiative without waiting for the permission which the university granted me later.

America has already been more than generous in making me an honorary member of the American Medical Association and of her three chief Surgical Associations. To occupy a place on the roll of Honorary Fellows of the College of Surgeons of America is an honour of which I am intensely and genuinely proud, and it is one which I and my descendants will treasure for all time as a crowning reward for my surgical endeavours. I am only too conscious that the honour is out of all proportion to my very humble achievements; rather do I regard it as a gracious compliment to the famous university to which I have the honour to belong, and as a generous recognition of the great traditions of the surgical school from which I have descended. I am particularly proud that the honour you have just conferred on me should have been received in the city of Philadelphia, the birthplace not only of the oldest medical school in the United States, but also of that one which I believe has more Edinburgh blood in its veins than can be traced in the pedigree even of Columbia and Harvard.

The war of the Revolution was the making of Morgan and Shippen, two of the greatest pioneer surgeons of the eighteenth century, both Philadelphians and both Edinburgh graduates. Physick, who was professor of surgery in the University of Philadelphia in the early part of last century, and who has often been spoken of as the father of American surgery, was also educated in Edinburgh. Then, again, we have Samuel Gross, said by some to be the father of modern American surgery. He played the same part in Philadelphia that Syme did in Edinburgh. They had much in common: both were good anatomists and pathologists as well as great surgeons; both were great diagnosticians and great teachers, and both had the art of inspiring and of retaining the affection of their pupils. Although Gross was not an Edinburgh graduate, he visited Edinburgh when Syme and Simpson were at the height of their fame.

Gross has always occupied a warm place in my heart, particularly on account of his admiration for the work of Sir Astley Cooper. Dr. Finney, in one of his admirable addresses, says: "Teachers in medical schools should not only instruct their pupils but should instil into them by precept and example the right spirit towards their profession and the right attitude towards their patients"—and this Sir Astley Cooper surely did. My grandfather, who lived to the age of 96, wrote of his great master, Cooper:

> "It would be an act of ingratitude did I omit to pay a tribute of respect to the memory of my distinguished anatomical and surgical teacher, Sir Astley Cooper. He did not owe his distinction to exalted rank or to privileges attached to high birth but rose by the honourable exertion of his native energies, and ultimately attained the most exalted pre-eminence; indeed became one of the most illustrious surgeons that ever adorned the science he professed. To Sir Astley Cooper I am indebted, more than to any other man that ever lived, not only for the greater share of anatomic and surgical knowledge I possess, but for the privilege of witnessing in him the enthusiasm which filled his soul with an ardour and love of his profession, which incited in me a noble emulation to imitate his praiseworthy example. He stimulated me to exertion—stimulated me in the acquirement of knowledge."

Incidentally, I may say that it was through the references in my grandfather's autobiography to Sir Astley Cooper that I myself became fired with the ambition to become a surgeon. Gross, in his autobiography, said:

> "I learned my first lessons in surgery from Sir Astley Cooper's lectures, reprinted in Philadelphia soon after I began the study of medicine. Every student should read them, for they abound in good sense and sound practical knowledge."

The same remark would apply to Syme's *Principles of Surgery*. On visiting St. Paul's Cathedral Gross expressed his delight at seeing there a statue to Sir Astley Cooper, but took the occasion to deplore the absence of similar memorials in America to inspire youth with ambition—a grievance which the American Surgical Association so widely and generously removed after the death of Gross by erecting in Washington a statue to his memory. Syme, Lister, Gross, Keen, Murphy, and many others have had the same inspiring influence as Cooper over their pupils.

THE EDINBURGH SCHOOL OF SURGERY.

The Edinburgh School of Surgery, to which you have paid a tribute in honouring one of its teachers, dates back to 1505, when the Town Council granted the Corporation of Surgeons and Barbers permission to dissect the body of one condemned man in the year. The English Company of Barber-Surgeons did not receive their charter until thirty-five years later. The oldest minute-book in the possession of the Edinburgh College of Surgeons contains, on its first page, a prayer by the famous Scottish reformer, John Knox, and I will quote it, as it has since been read by the Secretary at the opening of every meeting of the College:

> *"O eternal God, and our loving and mercifull Father in Christ Jesus, seeing we are convened heir to treat upon thes thinges that concernis our calling, we beseik thee, O Lord, deal mercifull to us, and give us grace to proceid thereintill without malice, grudge, or partialitie; sua that the things we may do may tend to the glorie of God, the weill of our vocatioun, and comfort of every member of the samen; throw Jesus Christ, our only Lord and Saviour; Amen."*

The next step in the evolution of the Edinburgh School consisted in the creation of the museum of the college, which is one of the finest collections in Europe. In 1703 the Incorporation of Surgeons erected an anatomical theatre, and two years later Robert Eliot was appointed first professor of anatomy in the Town's College, which had received its charter from James VI in 1582.

John Monro, a Fellow of the College of Surgeons, whose ambition it was to found a medical school in Edinburgh, sent his son, Alexander Monro, to study anatomy and surgery in London, Paris, and Leyden. In 1720 Alexander Monro was appointed to the chair of anatomy; a few years later (1725) he transferred his teaching to the University, and the following year saw the establishment of a Medical Faculty. Of Alexander Monro primus it can truly be said that he was "the father of the Edinburgh Medical School," and, although he was more anatomist than surgeon, Edinburgh surgery owes him an everlasting debt of gratitude for being the moving spirit, along with Lord Provost Drummond, in founding the Royal Infirmary, which soon developed into one of the most famous schools of clinical teaching in the world.

Previous to the establishment of a Faculty of Medicine in the University of Edinburgh anatomy had been taught

by private lecturers belonging to the Incorporation of Surgeons. These men were really the pioneers of the Edinburgh Extra-mural School.

What is now known as the Old Royal Infirmary, where Lizars, Fergusson, Liston, Syme and Lister did their epoch-making work, was opened in 1741. It contained 228 beds, and a single operating theatre accommodating 200 students.

Before 1833, when Syme became Professor of Clinical Surgery in the University, the Edinburgh School of Surgery was rendered famous by Benjamin Bell, whose *System of Surgery*, in six volumes, was translated into French and German, and by the brothers John and Charles Bell, the former a great surgeon-anatomist, and the latter also an epoch-making physiologist, his discovery of the functions of the spinal nerve roots entitling him to rank second only to Harvey. Charles Bell migrated to London, to return to Edinburgh later as Professor of Systematic Surgery. While in London he taught anatomy at the well-known Great Windmill Street School, where he accumulated a number of valuable specimens, now in the Museum of the College of Surgeons of Edinburgh. Both he and his brother John were endowed with great artistic talent, and Sir Charles Bell's water-colour drawings of gunshot wounds, the result of his experience at Waterloo, are classical.

The fame of the Edinburgh School of Surgery in the first half of the last century was largely due to the surgeon-anatomists of the extra-mural school. Principal Sir Alexander Grant, in his historical volume entitled *The Story of the University*, gives full credit to the important part played by the extra-mural lecturers in the evolution of the Edinburgh Medical School, and remarks that

"One of its greatest advantages has been that the University has continued to be surrounded by extra-mural rivals who have kept its professors up to the mark and sometimes eclipsed them, and who have always been in training to fill up the ranks of the University whenever vacancies occurred."

My colleague, Mr. Miles, in his admirable little book on *The Edinburgh School of Surgery before Lister*, makes the further observation that—

"In another direction, the extra-mural teachers have played an important part in guiding the destinies of the medical school. Free from the bonds of statutes and ordinances, they have always been able to lead the way into developing instruction in special branches of knowledge, and many of the specialists that are now represented within the University originated in the extra-mural school."

The chair of Clinical Surgery, which I have now the honour to occupy, was founded by George III in 1803. The first occupant was James Russell, who enjoyed the intimate friendship of Sir Walter Scott. On his resignation Liston and Syme contested the vacancy. The latter was appointed, and became the greatest teacher of his generation. He died in 1870, shortly after his son-in-law, the immortal Lister, who succeeded him, had initiated the new era in surgery.

A few years later Robert Liston accepted the chair of Clinical Surgery at University College Hospital, London. He was perhaps the most famous of all the anatomical surgeons in the Edinburgh school. Before he was appointed to the staff of the Edinburgh Royal Infirmary he was performing, with the assistance of Syme, operations more formidable than those which were undertaken in the Infirmary. He is well known to us all as the introducer of the transfixion method of amputation, and as being the surgeon who performed the first major operation in London under ether, in 1846; it was an amputation through the thigh. There was a dispute between the time-keepers as to whether it took twenty-five or twenty-eight seconds to remove the limb. The patient was in the operating theatre only five minutes. Liston's remark as the patient was leaving the theatre was, "This Yankee dodge, gentlemen, beats mesmerism hollow."

Lizars, who was appointed professor of surgery in the College of Surgeons of Edinburgh in 1831, is well known in America as being the first surgeon in Great Britain to perform the operation of ovariotomy, which had been introduced by MacDowell. MacDowell had sent a copy of his first paper to his old teacher, John Bell of Edinburgh, who was then ending his days in Italy. The paper came into the hands of Lizars, who was also a pupil of Bell's.

Of all my predecessors, however, the immortal Lister stands out pre-eminent, and I refer to him with the deepest humility, as I am only too conscious of my inability to maintain the great traditions which he created in the Edinburgh School. The very Rev. Dr. Wallace Williamson, Dean of the Thistle and minister of the historic Cathedral of St. Giles in Edinburgh, has contributed to the history of medicine a most beautiful and life-like word portraiture of Lister, and I rejoice to think that it will become immortalized by Garrison in his splendid work on the *History of Medicine*, a volume of immeasurable educational value and one which should occupy a foremost place in the library of every member of our profession. Williamson said:

"Of Joseph Lister's winsome personality, those speak most warmly who knew him best. It was his gentleness, above all, that made him great. His very presence was a spiritual force. Clear-eyed and pure of soul, he cherished from earliest days that love of truth which guided him to the end. His noble passion for humanity extinguished all thoughts of self and personal fame, impelling him along that path which he steadfastly pursued till he found the greatest secret of his search and bestowed on the world probably the greatest boon which science has been able to win for the physical life of mankind. Yet greater than his greatest achievement was the man himself, and the final secret of his greatness was that serene simplicity which was his most distinguished characteristic. . . . His was the grave and thoughtful courtesy which bespoke the Christian gentleman and the earnest lover of his kind. Hence we are not surprised to learn how he stirred enthusiasm and moved men to reverence, how he gained such love and affection as rarely falls to a scientific teacher. Behind his acknowledged mastery of his science, his grave and noble face, marked by soft lines of tranquil thought, revealed a soul of singular beauty and sweetness, of high integrity and stainless honour. That such a man, dowered with God's gift of genius, should rise to the lofty heights and achieve great things was inevitable."[1]

Although the last century saw the end of the purely anatomical era of surgery, I have no hesitation in bringing into the foreground the prominent part which the great surgeon-anatomists of my school have taken in the evolution of surgery. The medical curriculum is now so overcrowded that the medical student, while he may be more spoon-fed with anatomical details, does not acquire the same dissecting-room knowledge of anatomy that was possessed by the student of my day. The dissecting room is the surgeon-probationer's basic laboratory. My advice to all my house-surgeons who wish to take up surgery as their life-work is to go back to the dissecting room and teach practical anatomy for at least one year. This is not only good for himself, for surgery, and for his patients, but it is an advantage also to the dissecting room, as it supplies it with demonstrators who can appreciate and point out the bearing of anatomical details and topographical relations on the practice of surgery.

It has been said that a weak point in the training of the young American surgeon of the present generation is his deficient knowledge of morbid anatomy and morbid histology, and that he too often feels the need of a pathologist at his elbow in the operating theatre. Personally, I am always grateful that early in my career I devoted time to the study of surgical pathology. For two years following my house-surgeonship I was a whole-time demonstrator of anatomy, and for the succeeding nine years, during which I taught surgical anatomy, I had charge of the pathological laboratory in connexion with the chair of systematic surgery then occupied by Professor Chiene. In this capacity it was my duty to give demonstrations in surgical pathology to his class, and to examine and report upon all material derived from his wards. The surgeon of to-day cannot be regarded as fully trained unless he himself is pathologist enough to be able to assess the significance of the naked-eye and histological appearances of the tissues and organs with which he has to deal. Only exceptionally should it be necessary for the surgeon to have to interrupt his operation until the pathologist has made a lightning histological examination on the "while-you-wait" system.

The last half-century has begun a new epoch characterized by an ever closer alliance between the basic sciences of physics and chemistry with physiology and pathology, and the closer application of all of them to the practice of

[1] Rev. Wallace Williamson, BRITISH MEDICAL JOURNAL, 1912, vol. i, p. 444.

surgery. The chief pioneers of this new era were Kocher and Horsley, and for the present stage of its evolution we are indebted to the brilliant researches of such men as Cushing, of Carrel, of Crile, and of Plummer and Kendall of the Mayo clinic—in short, to the American school of surgery.

The problem before surgeons to-day is, "How is this more scientific and enlightened conception of surgery to be encouraged and promoted?" The question is of the greatest importance from the academic point of view. In the first place we must not merely rearrange the time-table of the curriculum; we must also reform and co-ordinate the teaching in such a manner that the student may be shown how to apply his knowledge of the basic sciences to the investigation and treatment of disease—in other words, to his clinical work.

In Edinburgh, in addition to the senior Professor of Chemistry, we have a second Professor of Chemistry in its relation to medicine, whose teaching is specially adapted to their future requirements, and the same applies to the teaching of physics to the medical students. Botany and zoology must of necessity be taught in the Faculty of Science as separate sciences; it is, however, to be hoped that in the near future the medical student will be given a combined course of animal and vegetable biology, and that the syllabus will be drawn up on such broad and fundamental lines as to ensure that the course will provide him with the best possible foundation for his future studies. It is quite possible that the ideal professor for such a purpose does not exist, and that he will require to be created and specially trained for the purpose. It is a man of the type of the late Professor Huxley that is wanted. It is to be hoped that the teaching of physics and chemistry in the secondary schools will soon reach such a high standard that these subjects may be relegated to the university entrance examination; otherwise the medical curriculum will have to be still further extended.

Edinburgh now as in years past holds the record for undergraduate medical education. While her machinery is specially constructed for this purpose, her 1,800 medical students seriously handicap her in providing facilities for post-graduate clinical work.

It is lack of funds which is sadly crippling us in respect of facilities for original research, and unless the money is forthcoming for the institute we hope to erect as a memorial to Lister, and for which we are at present making an appeal, I am afraid Edinburgh will not be able to pull her full weight. The existing University laboratories are already heavily taxed with the work necessary to keep up the high standard of undergraduate teaching.

The American College of Surgeons.

The constitution of the American College of Surgeons shows that the best surgeons of America intend to translate their ideals, their vast energies, their intellect and wisdom into terms of united action for the good both of the guild and of the community. The destiny of the College is in the hands of men who are known throughout the surgical world, men who have travelled and made themselves familiar with the organization of the ancient surgical corporations and the surgical schools of Europe. They start with a clean slate, unhampered by tradition. True, we have undertaken a gigantic task, such as only Americans would have the courage to venture upon, but when I read the names of the Governors and Regents I am confident that their efforts will be crowned with success. No one can sign the pledge of your College without a sense of responsibility being aroused within him. I feel sure, however, that every honest and conscientious surgeon must admit that, in signing it, he is pledging himself to do no more than is his duty to himself, to his profession and to the community.

A point which specially arrested my attention on reading the by-laws was the "interchange of opinion" and "attendance on the important societies and clinics." Surgeons of the individualistic type, who are content to confine themselves to the knowledge gained by their own exclusive experience, can only reach a certain standard of efficiency, and, while it must be admitted that a few reach a high standard, it is safe to say they have done so in spite of their self-sufficiency, and not because of it. That they would have ranked still higher in the surgical world had they been willing to learn from others, everyone will, I think, admit.

Perhaps the most striking clause in the laws of the College is the admission to your Fellowship without examination. This departure from precedent was not only justifiable, but, in the circumstances, necessary. Experienced examiners on my own side of the Atlantic have for long felt that the admission of candidates to our Fellowship by the methods of examination at present in vogue is open to serious criticism. It by no means follows that because the candidate has passed the examination he is competent to perform major operations. It is to be hoped that the bold, enlightened, and sagacious step which your College has taken will encourage our own colleges to take further, and possibly similar, precautions to see that candidates who obtain our Fellowship are worthy of this distinction. Whether you obtain sufficient evidence that your successful candidate possesses an adequate knowledge of anatomy and pathology is the only criticism I would venture with regard to your present system.

The first impression one might gain after reading the Constitution and By-laws of the American College of Surgeons is that they have been framed in such a way that the governing body is vested with an authority and with disciplinary powers which might be said to interfere somewhat with the liberty of the subject. Even if we admit that there is a certain amount of truth in this impression, it must be remembered that the profession has a duty, both individually and collectively, not only to its own guild but to the community it serves. It may safely be asserted that in no walk of life, in no other profession, and in no other branch of our profession is the life of the subject so much at the mercy of his fellow-man as when he places himself in the hands of the surgeon. It is only right and proper, therefore, that the profession itself should see to it that a trust so sacred and a weapon so powerful for good or evil, should be placed in the hands of men who have shown that they are morally as well as intellectually and technically capable of fulfilling the trust. In America these powers have been vested in a Council of Regents and an Executive consisting of men of the highest integrity, of great experience, and of powerful intellect—men who combine great foresight and sagacity with sound judgement, men who can think as able administrators as well as function as great surgeons. Such combined effort is calculated to secure a fine and accurate adjustment of the activities and functions of the surgical profession.

It was the war—a war of science—which brought very forcibly before us what may be accomplished by properly combined and co-ordinated effort fortified by authority and discipline. The peace which has followed has created the opportunity and the necessity for breaking away from tradition, for readjustment, and for reconstruction. The phenomenal progress which surgery has made during the present generation and the added knowledge gained through the war has made it all the more imperative that surgery should set its house in order. The surgical world is grateful to America that she has taken the initiative in combining and co-ordinating her surgical forces with the object of raising the general standard of surgery not only in its academic centres but in the hospitals throughout the States. What is needed is co-operative thought transformed into co-operative action. These basic aims have evidently been in the minds of those who drew up the Constitution and By-laws of your College. By vesting the general management of your corporation in a board of fifty governors who shall select fifteen of their number, along with the president for the year, to form a Board of Regents in whom shall be vested the details of management, and by choosing from the Board of Regents an executive committee consisting of the president, the secretary, the treasurer, and five other Regents, the College has created a powerful "thought-organization" capable of originating and carrying out an enlightened and far-reaching policy.

The moulding, the development, and the improvement of the standard of hospitals is one of the most important pieces of organization and propaganda work that your College could undertake. By placing your expert knowledge and experience at the service of the American Hospital Association you secure a unity of thought and purpose which cannot fail to have great influence upon

public opinion and ensure the co-operation and sympathy of the municipal authorities as well as open the purse-strings of well-to-do citizens. It is important that the lay public be made to see that, after all, the hospital is the surgeon's schoolroom, and the better it is equipped the better will be the training of the surgeon and the better the treatment of the citizen.

Hospital Organization in Britain and America.

The systems of hospital organization in Great Britain and America differ very materially. In my own country all the large teaching hospitals—indeed, the large hospitals generally—are supported almost entirely by voluntary contributions, so that each hospital has its own organization and method of administration. There is no attempt at combined effort with a view to standardization, and it cannot be said that we have done anything to encourage architects to specialize in hospital construction or to create a body of expert hospital superintendents.

Our own hospital system has recently been the subject of a parliamentary inquiry. The Committee has reported in favour of a continuance of the voluntary system, but it is doubtful how long this system will survive under the present burden of taxation. The municipal authorities will certainly be against placing our large hospitals on the rates. While our hospital system is excellent from the point of view of the working classes, it does not meet the requirements of the middle-class population in the way that the American system does; that, however, may I venture to suggest, has two defects which I feel sure the American Hospital Association will be able to remedy without calling in the aid of the State, or, I should say, without the interference of the State. I refer, firstly, to the rotation system of a three or four months' service of general practitioners on the staff of the surgical side of hospitals; and, secondly, to the system whereby facilities are given to practitioners of little or no surgical experience for operating on their private patients in public or semi public hospitals. These two customs may in great measure be responsible not only for the relatively larger amount of surgery done by general practitioners in America, but also for a tendency to the commercialization of surgery.

In my own country we are inclined to go to the other extreme. The want of proper hospital accommodation for our middle classes sometimes compels us to operate on patients in their own homes or in imperfectly equipped nursing institutions. While it may occasionally be necessary for a good surgeon to operate under unfavourable conditions, his conscience ought to dictate that he should only give the patient his second best when it is impossible to do otherwise.

Specialization in surgery should not be discouraged provided it is preceded by a good general training in surgery. It encourages intensive work in those with special aptitudes; the work itself is better done, and an added zest for it is created. A fine adjustment of task to individual aptitude is an economy of effort and applies not only to modern surgery but to modern education generally.

I think I am correct in stating that it is just forty years since the Harvard Medical School instituted a department of orthopaedic surgery, and I am sure my American brethren will be surprised to hear that no such department exists in the Edinburgh Royal Infirmary. Thanks to the genius and magnetic influence of Sir Robert Jones, assisted by a band of orthopaedic experts from America, this branch of surgery did outstanding work during the war; indeed, it furnished, perhaps, the best example of what may be achieved by able generalship, good organization, and co-ordination of combined effort and team work.

It is to be hoped that the lesson to be learned from the orthopaedic experience and achievements during the war will bear fruit, and that, by the establishment and proper equipment of an orthopaedic department in our teaching centres, the standard of the surgery of the extremities will rapidly improve. We envy America her public spirited citizens who subscribe with such open-handed generosity to every kind of educational institution. The Edinburgh Royal Infirmary, with its 900 beds, which serves not only a national but an imperial purpose from an educational point of view, and draws its patients not only from Edinburgh and district, but from a large part of Scotland as well as from the north of England, has recently issued an appeal for £250,000 with the object of meeting the requirements for the teaching and practice of modern medical science. So far the Edinburgh appeal has brought in only £63,000, all of which will be required to improve and maintain the existing departments. Unfortunately, Scotland is only a small and relatively poor country, with no millionaires, and I am sorry to say the chairman of the Finance Committee, who is fully alive to the necessity of establishing a Chair of Orthopaedics in our great medical school, tells me that it cannot be done—unless some Scotsman who has amassed wealth overseas can be persuaded to come to the rescue.

Already America has done pioneer work in establishing a proper system of preserving and cataloguing case-records. In this way an analysis and review of immediate statistics can from time to time be obtained, and, if the College of Surgeons can help to establish a definite and more standardized follow-up system, such as exists in Boston, Rochester, Baltimore, Cleveland, and elsewhere, statistics of real value will be obtained. In the Edinburgh Royal Infirmary, while the cases are well "taken," each unit retains its own records, and I regret to say there is no central bureau where they are subsequently stored and indexed, so that, up to the present, no attempt has been made to make use of them for statistical purposes. This is a serious defect in an institution which has taken such a prominent part in medical education for more than three centuries.

The possibilities which your College affords for organization and prosecuting a systematic, collective investigation, not only into immediate and end result of operations but also into the value of various other measures employed in surgical therapeutics, are very great. Think, for example, of the benefit which would accrue from a collective investigation into the value of radium and *x* rays as therapeutic agents in the treatment of malignant disease. With the machinery for organization which your College possesses, the untold wealth of material at its disposal, and the reliable observations which could be guaranteed, I am convinced that in this line of investigation America would again lead the world. Science is ever becoming more and more international. America has taken more advantage of this cosmopolitan spirit than we Britishers, and in my judgement this is the main reason why the sceptre of surgery is to-day wielded by America.

British surgeons will, I feel confident, rejoice that you have taken Canada into partnership with you in founding your College. The next step, I trust, will be a closer alliance with British surgery. I am thankful to say that at last we have formed an Association of Surgeons of Great Britain and Ireland, having the same ideals and aims as the American Surgical Association, and it is to be hoped that these two bodies will form the beginning of an intimate English-speaking surgical brotherhood which will help to promote every object calculated to advance the progress of the science, the art, and the teaching of surgery, and the relief of human suffering. Science, and especially medical science, recognizes no frontiers; it is the most powerful agent we possess for welding together our two nations—a union which would go far to ensure the peace, happiness, and prosperity of the world.

I cannot do better than conclude with the words used by Sir Berkeley Moynihan, an Honorary Fellow of your College, who, as you all know, is not only a great surgeon, but is also an inspiring writer and orator: "In presenting you with the mace I see before me," he said, "we pray God may regard it as a symbol of our union in the harsh days of trial, as a pledge of unfaltering and unchanging hope that the members of our profession in the two lands shall be joined in brotherhood for ever in the service of mankind."

THE new buildings of the medical school of the University of Alberta, Canada, have been completed and the equipment transferred to them.

AN Eyesight Conservation Council of America has been incorporated, with headquarters at the Times Building, New York; its objects are to arouse public interest to a proper appreciation of eye hygiene, especially as it pertains to defective vision and protection in hazardous occupations.

THE SCIENCE COMMITTEE

OF THE

British Medical Association.

AN INVESTIGATION INTO THE CIRCULATION THROUGH THE LUNGS.

BY

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(Preliminary Report.

Introduction.

The importance of the pulmonary circulation is seen in the serious effects which ensue when it is interfered with in any way: this interference may be a consequence of disease of some part of the blood vascular system itself, or may result from conditions which are present locally in the lungs or pleural cavities, thus directly affecting the pulmonary system. In the first group may be cited pulmonary embolism; in the second, pneumonia, pleural effusions, etc.

It was thought that the adaptability of the pulmonary circulation could be tested by imitating in animals, as far as is possible, the condition of embolism of one main branch of the pulmonary artery as it occurs in man. Any conclusions reached might throw a new light on the circulation in the lungs during collapse or consolidation.

In man a large pulmonary embolus frequently causes sudden death, apparently from cardiac failure; or the symptoms may be prolonged for some hours before death ensues; or finally recovery may occur. Apart from the heart failure, the symptoms are ascribed to insufficient oxygenation of the blood, with its consequent effects on the central nervous system and the heart itself.

Part I.—Ligature of One Main Pulmonary Branch in Animals.

This condition of a large embolus was imitated, as far as possible, by ligature of one pulmonary artery.

The animals used were cats: in some ether was the anaesthetic throughout; in others the preliminary operative procedures were done under ether, and later urethane was substituted for it. Usually the chest was opened in the mid line, both pleural cavities being exposed; the pericardium was also slit up. In some of the later experiments, however, in which the chest was closed again, only the left pleura was opened by cutting through a few costal cartilages on this side; the left pulmonary artery was then reached by a small incision through the pericardium over it.

The carotid blood pressure was recorded in the usual way, and the pulmonary by means of the four-way cannula introduced by Sir E. Sharpey Schafer. This is inserted into the right ventricle and tied in by a purse-string suture. The cannula proper projects through the pulmonary valves into the stem of the pulmonary artery. The whole instrument and its connexions are filled with a 3½ per cent. sodium citrate solution, and the pressure recorded by a manometer containing the same fluid. If a piston recorder is connected to the top of the manometer tubing the pressure can be recorded graphically.

Natural respirations were recorded by a thread from the upper abdominal wall to a lever writing on the drum, and artificial ventilations by means of a bellows recorder, connected to a by-pass on the tube between the pump and the tracheal cannula.

In the experiments on cardiac output a glass cardiometer was used, connected with a piston recorder. The saturation of the blood with oxygen was estimated in a 1 c.cm. Barcroft differential blood-gas apparatus. The left branch of the pulmonary artery was that ligatured as it is the more superficial and can be easily reached.

A.

The general effects of ligature of the left pulmonary artery were studied in animals with the chest open under artificial ventilation.

The immediate effects are surprisingly few. There is no alteration in the carotid blood pressure (except sometimes an oscillation from mechanical interference with the heart when the ligature is pulled taut). There is no alteration in the rate of the heart, in its output, nor in its state of dilatation. The only noteworthy result is a rise in the pulmonary blood pressure; this is immediate and varies in amount in each case from 25 to 60 per cent.—usually about 40 per cent.—of the original pressure in the pulmonary artery.

The later effects depend partly on the amount of ventilation the animal is receiving. A slow rise in the carotid blood pressure indicates deficient oxygenation, and can be compensated by increasing the ventilation; thereafter the pressure remains steady or shows a continuous fall as the experiment proceeds.

The pulmonary blood pressure remains at about the same level for a varying time (25 to 40 minutes); it then shows a gradual fall, which is usually not so marked as the accompanying fall in the carotid blood pressure; sometimes, however, the pulmonary falls more than the carotid pressure (relatively). It is possible this signifies a further dilatation of the pulmonary arterioles.

If the ventilation is insufficient, the initial rise of pulmonary blood pressure may be followed by a further rise together with the rise in carotid pressure, both then falling when the ventilation is increased.

Experiment A.—*Cat: Ether; Chest Open; Artificial Ventilation. Ligature of Left Pulmonary Artery; its Effect on Carotid and Pulmonary Blood Pressures.*

Time.	Remarks.	Carotid Blood Pressure in mm. Hg.	Pulmonary Blood Pressure in mm. Hg.*
p.m. 3.0	—	73	18.5
	Left pulmonary artery ligated	72	26.0
3.1	Ventilation increased to 1½ times	74	27.0
3.2	Increase in ventilation only 1¼ times	67	25.0
3.11	Ventilation doubled	60	23.5
3.34	—	64	21.0
3.47	—	64	20.5
3.48	Ligature unloosed. Ventilation reduced to normal	62	18.5
3.51	—	70	17.0

* To nearest 0.5 mm.

Experiments were performed to control all the above results. The output of the heart, which was unaltered when the ligature was applied, increased markedly to an injection of gum saline intravenously, as did its state of dilatation; at the same time the rate of beat increased.

Experiment B. *Cat: Ether; Chest Open; Artificial Ventilation; Heart in Cardiometer. Ligature of Left Pulmonary Artery; its Effect on the Output of the Heart.*

(The ventilation was the same throughout.)

Time.	Remarks.	Output of Left Ventricle per Beat in c.cm.	Carotid Blood Pressure in mm. Hg.	Pulse Rate per Minute.
p.m. 12.51	—	1.5	92	192
12.52	Left pulmonary artery ligated	1.5	92	192
12.53	—	1.5	88	192
12.55	—	1.5	86	192
12.58	—	1.4	86	192
	25 c.cm. gum saline injected intravenously; heart dilated	1.85	92	210
12.59	—	1.8	84	210

The effects of alterations in ventilation on the circulation were carefully studied. It was found that increasing or decreasing the ventilation, within normal limits, had no effect on the rate of the heart, or its output, and very little effect on either the carotid or the pulmonary blood pressure.

EXPERIMENT C.—*Cat: Ether: Chest Open: Artificial Ventilation: Heart in Cardiometer: Effect of Alterations in Ventilation on Pulse Rate and Carotid Blood Pressure.*

(The output remained constant throughout.)

Ventilation.	Pulse Rate per Minute.	Carotid Blood Pressure in mm. Hg.
Normal...	192	87
Increased · 2	192	80
Diminished to ½	186	85
Diminished to ¼	186	86

On the other hand, excessive ventilation had a mechanical effect in causing a small rise in pulmonary pressure and a fall in carotid pressure, while the reverse occurred to diminished ventilation. Apart from the mechanical effect, the result of alterations in ventilation depended on the previous amount of ventilation; when the latter was normal there was (within limits) no change of blood pressure; but if the ventilation had been insufficient and the pressures were rising, increasing it led to a coincident fall in both. It was shown that the increase in ventilation in experiments with the left pulmonary artery tied, necessary to keep the carotid blood pressure steady, was within the normal limits, and had only a trifling effect on the blood pressures in a control experiment.

EXPERIMENT D.—*Cat: Ether: Chest Open: Artificial Ventilation: Effect of Alterations of Ventilation on Carotid and Pulmonary Blood Pressures.*

Time.	Ventilation.	Carotid Blood Pressure in mm. Hg.	Pulmonary Blood Pressure in mm. Hg.*
	Normal	69	17.0
Zero	Increased by 1½ times		
1 min.	,, ,,	65	16.5
	Increased by 1½ times		
2 min.	,, ,,	62	15.0
3 ,,	,, ,,	60	14.0
4 ,,	Normal	60	14.0
4½ ,,	Normal	65	15.0
5½ ,,	Normal	66	15.5
	Diminished to ⅔		
6 min.	,, ,,	69	16.5
	Diminished to ½		
6½ ,,	,, ,,	73	17.0
	Normal		
10 min.	Normal	73	18.5

* To nearest 0.5 mm.

Occasionally the carotid blood pressure showed a fall on ligature of the left pulmonary artery; this was only seen in animals in poor condition, and indicated that the heart was unequal to the strain put upon it.

It is obvious from these results that the healthy right ventricle can send out the same quantity of blood in a given time through one lung only as it was sending out previously through both, and thus maintains the carotid blood pressure at the same level. The increase in pressure in the pulmonary artery was never more than 60 per cent. of the original pressure; hence there must be a dilatation of the right pulmonary arterioles and capillaries at the same time as the rise in pressure, if twice the original volume of blood is to flow through the one lung in a given time. The velocity of blood flow will therefore be increased but not doubled.

It was of interest to investigate the saturation of the blood with oxygen under these conditions. It was found that it was quite possible for the blood to be 90 to 95 per cent. saturated, provided sufficient ventilation was being given. If the blood was more unsaturated than this, increasing the ventilation would improve its saturation. The increase necessary was within the normal limits—that is, it caused not more than a trifling alteration of carotid blood pressure.

The fact of the pulse rate remaining unaltered on ligature of the left pulmonary artery, although the pulmonary pressure rose, suggests that the right ventricle is not provided with a mechanism comparable to that on the left side, which causes slowing of the heart with rise of blood pressure. At any rate, it is clear that the healthy heart shows no difficulty in meeting the extra strain put upon it.

In some experiments the ligature was released after a variable time; the carotid blood pressure was generally unaffected by this procedure unless there was mechanical interference with the heart. In a few cases, when the ligature was taut for a short time only, the reverse effect to that seen on tying was observed. In the case of the pulmonary blood pressure, however, there was always a fall; which was usually to the same, or nearly the same, figure as obtained before the ligature was tied. If, however, while the ligature was on the pulmonary blood pressure had fallen, there was still a further fall on its removal. This fall was smaller relatively than the rise on ligation (see Experiment A above).

The blood saturation improved somewhat when the ligature was removed, but not so much as might have been expected. The saturation was 80 per cent. to 90 per cent. (with normal, not increased, ventilation). This presumably indicates damage to the left lung, or deterioration of the animal during the course of the experiment.

B.

A further series of experiments was performed, in which, after the left pulmonary branch had been ligated, the chest was closed and the artificial ventilation withdrawn, the animal being allowed to breathe naturally.

The effect of closure of the chest on the blood pressures was first determined in a case with an intact pulmonary system. It was found that both were slightly lower with the animal breathing naturally than they had been under artificial ventilation with the chest open: if now with the chest closed, artificial ventilation was put on, the pulmonary blood pressure showed a small rise, and on opening the chest again there was a further rise in this, accompanied by a rise in carotid blood pressure. These effects can be explained as due to the pressure inside the chest: with natural respiration this is negative, leading to dilatation of pulmonary arterioles, and possibly other blood vessels; with positive artificial ventilation these arterioles are compressed, causing a small rise of pressure.

EXPERIMENT E.—*Cat: Ether: Effect of Closure of Chest on Blood Pressures.*

Remarks.	Carotid Blood Pressure in mm. Hg.	Pulmonary Blood Pressure in mm. Hg.
Chest open: artificial ventilation ...	82	13.7
Chest shut: natural respiration ...	75	10.7
Later	80	11.1
Chest shut: artificial ventilation ...	80	13.3
Chest opened: artificial ventilation	90	14.4

When the left pulmonary branch has been tied and the chest closed, the blood pressures may remain steady, or show a small fall (probably due to the operative procedures). This fall tends to be recovered from, and often there is a very distinct improvement in the animal's condition after time has been allowed it to settle down.

At present the most satisfactory results have been obtained in animals which have only had a minimum of operative interference, such as the ligature of the left pulmonary artery through an opening in the left chest, by cutting through four rib cartilages, without opening the right pleural cavity at all, or the pericardium more than is necessary to enable the ligature to be put round the artery. If, on the other hand, the chest has been widely opened and a pulmonary cannula also inserted, it has so far been found that the animal is unable to breathe properly when the chest has been closed. In the earlier experiments it was ascertained directly that there was a

negative pressure in the thorax after closure of the chest, by means of a cannula communicating with the pleural cavity and connected to a water manometer. In later experiments this has been dispensed with; the lungs are blown out before the last suture is drawn taut, and, when the animal is breathing naturally, the chest is auscultated to see that air is entering the lungs.

In cases which survive the respiratory rate is quicker than normal, usually about double, but the respirations have a tendency to be shallow. Sometimes, however, they are normal in rate and depth.

Animals can be kept alive for at least six hours after closure of the chest, and with the left pulmonary artery ligatured, in perfectly good condition, with a blood pressure of 90 to 100 mm. Hg or more. The pulse rate remains fairly constant throughout or may show a slight retardation after the chest is closed.

It is of considerable interest to compare the oxygen saturation of the blood under these conditions with the results found (and previously mentioned) as obtaining in cases where the chest has not been closed and the animal has been artificially ventilated throughout. A considerably lower degree of saturation has been found, when the animal is breathing naturally; the blood is usually only 70 per cent. to 75 per cent. saturated, in spite of the increase in the respiration rate.

Investigation into this question is, however, still proceeding.

EXPERIMENT F 1. *Cat: Ether; Ligature of Left Pulmonary Artery through a Small Incision through Left Thoracic Wall near Mid-line, and Closure of Chest again.*

Time.	Remarks.	Carotid Blood Pressure in mm. Hg.	Pulse Rate per Min.	Respiration Rate per Min.
a.m. 11.40	Control observations	100	198	32
p.m. 12.3	Chest open: artificial ventilation	100	—	—
	Left pulmonary artery ligated	—	—	—
12.7	—	108	—	—
12.24	Chest now closed: natural respiration	85	152	48*
12.45		75	120	37†
1.25	—	95	—	34
2.3	—	120	144	26
3.15	—	120	210	34
	Killed by asphyxiation			

* Depth to ½ normal. † Depth normal.

EXPERIMENT F 2.—*Cat: Ether and Urethane.**

(*Experimental procedures and observations similar to F 1.)

Time.	Remarks.	Carotid Blood Pressure in mm. Hg.	Pulse Rate per Min.	Respiration Rate per Min.
a.m. 11.30	Control observations	78	216	48
12.0	Chest open; artificial ventilation	72	216	—
p.m. 12.3	Left pulmonary artery ligatured	64 rising to 74 in ½ min.	—	—
12.12	Chest closed; natural respirations	88	216	94
1.23	—	85	—	56
2.0	—	90	216	96
3.15	—	95	192	72
4.3	—	90	204	72
5.42	—	82	192	66
5.45	Both vagi cut	55	—	28
5.50	—	88	—	12
	(Killed)			

* Atropine 0.016 grain given hypodermically at commencement.

C.—*The Condition of the Lungs.*

Post-mortem examinations of the lungs were always made, and frequently pieces taken between ligatures for section, both during the course of the experiment and at the end.

All cases showed very similar appearances. After ligature of the left pulmonary artery, and while the chest is still open (artificial ventilation), the left lung is obviously paler than the right, and also paler than it was before the ligation. Microscopic sections show an almost complete absence of blood in the capillaries and arteries, although some can still be seen in the veins. At the same time the right lung contains more blood than normal, since twice the usual quantity is flowing through it in a given time. In the case of the left lung the squeezing effect of the positive inflation, together with the stopping of the blood flow, is sufficient to force the greater part of the blood out of it.

If, now, the ligature is removed, the circulation is re-established through the left lung, but at the same time oedema occurs in the alveoli, showing that damage has been done by the stoppage of the blood flow.

When the chest has been closed and the animal has breathed naturally—the pulmonary capillaries thus being exposed to a negative intrathoracic pressure—the appearance, *post mortem*, of the right lung is not greatly altered from that previously described, but the left lung presents a very different picture, being full of blood and frequently congested.

Since the ligature has always been taut, *post mortem*, there are only two possible sources for this blood—the bronchial arteries or the pulmonary (and bronchial) veins. It was thought that under a negative pressure, and with expansion of the left lung to the respiratory movements, blood might be sucked back from the left auricle into the lung, producing a stagnant collection of blood and so impairing the general condition.

Experiments were performed to determine between these two possibilities. If the left pulmonary veins are ligatured just before they enter the left auricle, after the left pulmonary artery has been tied, and the chest closed in the usual manner, the left lung is found intensely congested after death. Microscopically, a condition of engorgement is found, such as has been seen in no other cases; it is obvious, therefore, that a considerable circulation exists from the bronchial arteries, and that the blood they bring to the lung is unable to return in its entirety through the bronchial veins, a great part of it being returned normally via the pulmonary veins.

On the other hand, if all the structures going to a lobe of the left lung are tied except the veins and bronchus, that lobe remains fairly free of blood compared to the other lobe, even although the latter has its pulmonary artery ligated.

Presumably, therefore, the blood found in the left lung *post mortem* after the left pulmonary artery has been tied, comes from the bronchial arteries. In most experiments there seems to be more blood in the left than in the right lung, but in a few the reverse is the case. Since the communication between the bronchial arteries and pulmonary system is one of capillaries only, the blood which is not returned via the bronchial veins filters through into the pulmonary capillaries under a very low pressure, which is not sufficient to force it onwards into the veins in any quantity, thus leading to congestion.

All the lungs show mucus in the bronchi to a greater or less degree, even after a previous injection of atropine subcutaneously. The right lung has shown no oedema, except in the case of an animal which has lived for about six hours; the amount present then is, however, small and insufficient to cause death. As a matter of fact, this animal appeared in quite good condition when it was killed. This oedema of slow development is probably due to the fact that double the normal amount of blood is flowing through the right lung in a given time (under a pressure slightly higher than the normal).

PART II.—EXPERIMENTS WITH RIGHT BRONCHUS OBSTRUCTED.

In the second series of experiments the right bronchus was clamped or tied, and a similar set of observations made to those reported in the first series.

Ligature of Right Bronchus.

The experiment was performed with the chest open and under artificial ventilation. There was no immediate effect on the carotid blood pressure (unless there had been mechanical interference with the heart during the operative procedures, when there was a fall); during the next few minutes, however, it showed a slow rise, which was undoubtedly anoxaemic in origin, and was usually stopped by increasing the ventilation. Sometimes, in spite of full ventilation, the rise was maintained. At other times the carotid pressure was maintained steady, but the effects of the anoxaemia were seen in the fall of pulse rate and increase in the pulse pressure, increasing the ventilation then bringing about the reverse changes.

The pulmonary blood pressure showed a small immediate rise, which might not be maintained, or was merged in a further late rise, accompanying the carotid pressure rise; like the latter, an increase in the ventilation now caused a fall. Sometimes the pulmonary pressure rose independently of the carotid. The saturation of the blood was under 90 per cent. in these experiments, in spite of the fact that the ventilation had been increased. The small rise in pulmonary blood pressure suggests that some circulation is still occurring through the right lung, and this is confirmed by the low blood saturation.

Investigations on the effects of ligature of a bronchus on the pulmonary blood pressure and blood saturation are still proceeding.

Summary and Conclusions.

1. Ligature of the left pulmonary artery in cats (with the chest open and under artificial ventilation) causes a rise of pulmonary blood pressure of from 25 per cent. to 60 per cent.—usually about 40 per cent. There is no effect on the carotid blood pressure, pulse rate, output of the heart, or its state of dilatation.

2. The healthy heart therefore can accommodate itself without difficulty to sending the same volume of blood through one lung only in a given time, as it previously sent through both.

3. No mechanism producing slowing of the heart from rise of pulmonary blood pressure was demonstrated in these experiments.

4. If the chest is closed after the artery has been ligatured, the animal remains in good condition—in fact, frequently its condition is improved. Its respiratory rate is usually faster than normal, frequently about double, but the depth tends to be shallow.

5. The saturation of the blood after ligature is about 75 per cent.; if the artificial ventilation is increased (within normal limits), complete saturation can be obtained. This has not been the case, however, with animals in which the chest has been closed and the artificial ventilation discontinued; in these the saturation remains at about 70 per cent.

6. Examination of the lungs shows an increased quantity of blood in the right lung, due to twice the normal volume flowing through it in a given time. The left lung after ligature of the left pulmonary artery, under artificial ventilation, contains almost no blood, except a little in the veins; on the other hand, after the chest has been closed and the animal allowed to breathe naturally, it contains usually more blood than the right lung, exhibiting a varying degree of congestion. This blood comes from the bronchial arteries and stagnates in the pulmonary capillaries.

7. Ligature of the right bronchus (in cats with the chest open and under artificial ventilation) causes a small immediate rise in pulmonary blood pressure without affecting the carotid pressure.

8. The saturation of the blood has always been under 90 per cent., even when the artificial ventilation has been increased.

9. There is, therefore, presumably still a certain amount of circulation through the right lung under these conditions.

Investigation is still proceeding on the following points:

(*a*) The degree of saturation of the blood, after the left pulmonary artery has been tied and the chest closed.

(*b*) The effects of ligature of a bronchus on the pulmonary blood pressure and the blood saturation, since the observations in this series are as yet few.

I wish to thank Professor F. A. Bainbridge for continuous help and advice during the course of these experiments.

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A NOTE ON THE EARLY RECOGNITION AND CORRECTIVE TREATMENT OF OCCIPITO-POSTERIOR PRESENTATIONS.

BY

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It does not seem to be generally known that for those who have the opportunity to see a case of occipito posterior presentation in the week before delivery or very early in labour, it is possible to make an exact diagnosis by external palpation and to correct it by external methods. In the application of the routine four hand-grips in palpation the bilateral grip shows the lateral lie of the trunk, and, in addition, the extra facility with which the limbs may be felt may awaken the suspicion of possibly posterior occiput. The exact recognition is then frequently practicable by a modification of the two-handed pelvic grip. The symmetrically laid hands sink directly backwards from the line of the pubic bones, and from the relatively greater sink on one side the oblique diameter in which the head tends to lie may be defined. When the diameter and the side on which the trunk lies are the same, both right or both left, the posteriority is definite. In the next step the hands are again symmetrically placed, but, instead of sinking back from the pubic level, they are withdrawn upwards. The attitude of the head, the extent of its flexion, is shown by the inclination, to the horizontal line of the pubic brim, of the line in which the hands cease to feel the head, the occipito-mental base.

The external treatment is simple and usually successful. A binder is laid under the patient and two towel pads are prepared. The first is rolled to about the thickness of a forearm, the second is folded to a flat pad 6 or 7 inches square. The rolled pad is pinned to the binder in such a position that when the binder is firmly secured the pad will lie close in front of the anterior superior iliac spine behind and parallel to the trunk. The flat pad is pinned so as to lie on the limbs, pressing them backwards. It is sometimes useful to roll the patient to the side opposite the trunk and by hand bring the trunk as far as may be over to that side. The binder is then pulled firmly home. If the patient is actually in labour nothing more may be needed, but if she is still on foot the binder should be steadied by thigh-bands and the correctness of its position frequently supervised. When in bed the patient should be encouraged to lie on the side opposite to the trunk, but her comfort is a prior consideration.

The success I have experienced from this method of treatment is so high that the usually described method of correction by manual reposition from the vagina is now rarely needed. The actual manipulations in this latter replacement are perhaps not personally familiar to some of the writers who describe it. In a very recently issued diagram the operator is shown using his right hand internally and, with obvious gaucherie, the left hand externally in a right occipito-posterior presentation. The correct method of standing on the patient's left side and using the left hand internally is shown by Munro Kerr in *Operative Midwifery*. For a left occipito-posterior case the stand should be on the right and the right hand used internally, when the patient is in the dorsal position.

According to the *Deutsche medizinische Wochenschrift* the venereal disease clinics in Berlin were attended by 6,454 persons in 1918, by 22,338 in 1919, and by 23,819 in 1920. The venereal disease clinics throughout Germany were attended by 27,000 persons in 1918, and by 95,000 in 1919.

In December, 1921, the Société de Médecine de Paris will award the Duparcque Prize of 3,000 francs to the author of the best essay in French on the methods of determining the functional activity of the liver, and their applications to medicine, surgery, and obstetrics. The Guillon Prize of 300 francs will be awarded by the same society for the best essay on diseases of the urinary tract.

PULMONARY TUBERCULOSIS IN AN INFANT.

BY

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THE following case presents points of interest both from the distribution of the lesions and the knowledge of the source of the infection.

The mother of the baby developed a cough in the fifth month of pregnancy, and the diagnosis of pulmonary tuberculosis was made. The child was born at full term on February 27th, 1921, and was immediately taken away to be looked after by the mother's sister, who lived in a different house; it was taken to the mother nearly every day, but remained in the room with the mother for about ten minutes at each visit. The mother took the baby in her arms, but was careful not to kiss him on the lips. She died from pulmonary tuberculosis on April 19th, 1921.

The baby was at first fed on diluted cow's milk, but as he did not thrive he was given condensed milk diluted to a suitable strength. Wasting became more marked, and signs were detected in the lungs by Dr. Brown, assistant M.O.H. of Barking. The baby was admitted to the East London Hospital for Children, under the care of Dr. Clive Riviere, on May 6th, 1921, when aged 9 weeks.

Condition on Admission.—Wasting was marked; the weight was 6lb. 4oz. The stools were loose and offensive. In the left lung there was a small area of impairment of the percussion note below the inferior angle of the left scapula; the breath sounds were higher pitched over this area, but no added sounds were heard.

Subsequent History.—At the end of a fortnight the weight was 5lb. 14oz. The temperature varied between 97° and 99° F., the pulse rate between 110 and 140, and the respiration rate between 40 and 50. Otherwise its condition was little changed. Diarrhœa and vomiting set in and the child died on May 23rd, 1921. The temperature was above 101° F. on two occasions before death; the pulse gradually became rapid, weak, and imperceptible; the respiration rate remained at 40.

Post-mortem Examination.—The body was very wasted. As regards the brain, there was nothing to note. In the heart a probe passed through a valvular foramen ovale. In the right lung a few areas of partial collapse were present posteriorly. In the left lung there was an area 1 cm. square of tuberculous consolidation, partly caseous at its centre, situated on the exterior and posterior surface of the left lower lobe, near the apex of the lobe. From the consolidated area miliary tubercles extended. By palpation and section the caseous mass could be traced into caseous glands, of a size up to 1 cm. in diameter, in the hilum of the left lung. The right paravertebral glands and angular glands were enlarged up to 3 mm. in diameter. Parenchymatous degeneration was present in the liver. Several doubtful tubercles were found under the capsule of the spleen. In the kidneys parenchymatous degeneration was present. Thin buff grey contents were found throughout the intestines; a score of shallow erosions 1 mm. in diameter extended along the line of the mesenteric attachment of the lower ileum; the mesenteric glands were 0.5 cm. in diameter.

Family History.—The mother's father died from "pneumonia" of fourteen weeks' duration in 1915. One of her brothers died from tuberculosis in 1908. Her sister and other brother are alive and well. The mother had one miscarriage two years before this baby was born.

I am indebted to Dr. Clive Riviere, under whose care the case was, and to Dr. R. Donald, pathologist to the East London Hospital, for permission to publish these notes.

The source of the infection was undoubtedly the mother, and mere proximity of the baby to the mother every day was sufficient opportunity for infection to occur, although it is to be noted that the child came of a tuberculous family. The tubercle bacilli gained entrance to the respiratory tract, presumably by inhalation, and gave rise to a cascating pulmonary tuberculosis, without general dissemination. Signs in the left lung were detected at the early age of two months, and death occurred from an intercurrent disease at three months.

THE Kenya *Agricultural Census* for the year ending June 30th, 1920, is the first report in respect of the agricultural, dairying, and pastoral industries of that colony and protectorate. Some six million acres have been set aside for the occupation of Europeans, including half a million acres allotted for the settlement of discharged soldiers; about half this was occupied when the census was taken; the area under actual cultivation was over 176,000 acres; much of the remainder was devoted solely to stock raising. The *Census* shows that the colony is progressing favourably in spite of the hard times from which all countries are suffering as a result of the war; with settlement of the local currency question a further improvement in the outlook for Kenya Colony may be expected.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Newcastle-on-Tyne, July, 1921.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Professor MATTHEW J. STEWART, M.B., M.R.C.P., President.

DISCUSSION ON HAEMOCHROMATOSIS.

OPENING PAPERS.

I.—JOHN SHAW DUNN, M.D.Glas.,

Professor of Pathology, University of Birmingham.

THE term haemochromatosis has come to be applied to a peculiar morbid condition, characterized by accumulation of free iron-containing pigment in certain parenchymatous organs and in the skin, associated with interstitial fibrosis of the liver and pancreas; in a certain number of cases glycosuria develops. A discussion of the pathology of the condition may best be introduced by a description of the morbid appearances in a well marked case. The skin, especially of the exposed parts of the body, exhibits a brownish or greyish-brown pigmentation. The liver is more or less cirrhotic, but is usually not much, if at all, diminished in size. Ascites may be present if the cirrhosis is advanced. The liver has a peculiar rusty colour, which may be fairly homogeneous, or may be paler in small rounded nodules which represent hyperplastic liver tissue. When tested for the presence of free iron by immersion in a mixture of potassium ferrocyanide and hydrochloric acid the liver tissue gives an intense Prussian-blue reaction. The pancreas shows a rusty colour similar to that of the liver, though less marked, and also gives an intense reaction for free iron. The retroperitoneal lymphatic glands in the upper part of the abdomen are even more intensely rusty in colour than the liver, and are laden with iron pigment. Most of the other organs, even although they may not be obviously pigmented, give the iron reaction on testing. The spleen reacts intensely; the heart, lungs, stomach, and thyroid may show a fairly deep coloration; the kidneys usually react rather faintly, as do the intestines and the skin. The peripheral lymphatic glands in the neck, axillae, and groins usually show little or no coloration. In cases where the bone marrow is examined it is usually observed that there is no special overgrowth of red marrow, the condition being in marked contrast to that observed in pernicious anaemia and other haemolytic conditions in which free iron is deposited in the viscera.

Histological examination of the organs reveals the presence of brown granular pigment in proportion to the strength of the iron reaction seen on testing macroscopically. In the cirrhotic liver large amounts are seen in the hepatic cells in fine separate granules, and larger masses are present in great abundance in the overgrown fibrous tissue of the portal tracts. If sections are treated with the iron-testing reagents the pigment granules give the iron reaction, but it is observed that if cold hydrochloric acid is employed it is only the granules in the liver cells which give an intense blue colour, the pigment in the fibrous tissue colouring only a greenish-brown. If hot hydrochloric acid is used all the pigment gives an intensely blue colour, showing that all of it is highly ferruginous, but that that in the portal tracts is less accessible to chemical reagents than the rest. In the retroperitoneal glands the pigment, which occurs in great excess in phagocytic cells in the lymph sinuses, reacts feebly with cold acid but intensely with hot acid. It would therefore appear that the iron moiety of the pigment is more free chemically when first deposited in the liver cells, and becomes more firmly combined with protein material when it is taken up by phagocytes and carried to the lymphatic system for disposal. In the pancreas the cells of the glandular acini, and the islets of Langerhans, as well as phagocytic and other cells in the overgrown fibrous tissue, are laden with

iron containing pigment, that in the parenchymatous cells being chemically more free than the rest. The glandular tissue shows varying degrees of degeneration and atrophy, and the islets of Langerhans have been described in many cases as especially damaged. It would appear, however, on the whole, that the islets are less pigmented than the ordinary gland tissue. In the other organs of the body iron pigment can usually be recognized in granules to a greater or less extent; it is abundant in splenic phagocytes, in cardiac muscular fibres, in thyroid cells, in glandular epithelium, and in submucosa of the stomach, etc. In the skin it occurs in epithelial cells and in phagocytes round about the sweat glands. It would seem that apart from the liver and pancreas the haemosiderin granules are not associated with special degenerative phenomena in the tissues.

The above description would apply to advanced and terminal cases of the disease where death results from the hepatic cirrhosis or from diabetes, though it may be noted that well-marked pigmentary changes may be present in absence of glycosuria. The earlier stages of haemochromatosis, so far as is known, are unassociated with any symptoms, and for any information regarding earlier stages we are dependent on accidental *post-mortem* findings in patients dying of other maladies. A brief reference may be made to three cases, hitherto unpublished, which appear to belong to this category.

The ages of the patients were 57, 57, and 79 years respectively. Death was due in two of them to peritonitis, the origin of which was undiscovered, and in the other there were symptoms of intestinal obstruction for which no certain cause was found *post mortem*. Only one showed pigmentation of the skin due to haemosiderin, and none had glycosuria in the single sample of urine obtained in each case from the bladder *post mortem*. In each the liver showed a very slight degree of cirrhosis, and fairly abundant haemosiderin in hepatic cells and portal tracts. The conditions in the pancreas were of interest:

(*a*) In one there was a comparatively slight interstitial pancreatitis; the glandular tissue was fairly well preserved, but the cells contained abundant haemosiderin. The islets of Langerhans appeared almost normal and their cells showed very little iron.

(*b*) In the second case there was a similarly slight cirrhosis with little damage of glandular acini. Here the islets appeared quite normal and were free from iron pigment, while the only iron pigment visible was present in glandular acini round about the islets.

(*c*) In the third case the cirrhosis of the pancreas was more marked than in the other two and the glandular epithelium showed some lowering of type, but no iron pigment was present either in acini or in islets.

The appearances in these early cases bear to some extent on the question as to whether the pigmentation or the cirrhosis is the primary factor in haemochromatosis. So far as these cases show anything, it is that neither factor is causative of the other, and presumably the two are due to some third unrecognized cause.

Chemical analyses of the organs in haemochromatosis have thrown a certain amount of light on the pathology of the disease. First of all, estimations of amounts of iron in the various organs have elicited important facts regarding the probable duration of the morbid process. In this connexion it is important to recall the normal distribution and metabolism of iron in the body. In the normal body the total amount of iron amounts to about 5 grams, and roughly half of this, 2.5 grams, is in the haemoglobin of the blood. All tissues contain a minute percentage, the liver and spleen carrying more than other tissues. A small amount of iron is constantly taken in with the food, and a corresponding amount is excreted, mainly in the faeces, so that a condition of equilibrium exists. A minute amount is constantly present in the urine in organic combination, showing that a certain amount of iron is constantly being excreted from the tissues. Stockman found that in an ordinary dietary about 10 mg. of iron were taken into the body daily. Sherman, in America, has made this figure rather higher—namely, 12–19 mg.

In advanced cases of haemochromatosis there is no evidence of alteration in the total amount of iron in the blood, while the excess in the organs is very great. It is not exceptional for the iron in the liver to amount to 7 per cent. of the dried substance of the organ, that is about 100 times the normal percentage, and for the total amount of iron in the liver to exceed 30 grams. Considering the large size of this organ, it no doubt contains a large proportion of the total iron in the body, but the amount present in others is not negligible. If, however, we consider the liver alone, and estimate the iron in the diet as 50 mg. per day—a figure well in excess of the known analyses—then it would take 1,000 days for the accumulation of the 30 grams in the liver, assuming that all the iron in the food was absorbed and none excreted. No very prolonged observation appears to have been carried out on the iron metabolism in haemochromatosis. Garrod and his co-workers found no iron in the urine or bile, nor in 5 c.cm. of faeces in their case. More recently Howard and Stevens, investigating a case, found no iron in the urine over a period of five days; during the same period the iron excreted in the faeces—26.8 mg.—was less by 2.5 mg. than that taken in by the mouth, the patient being on a special fixed diet with a known content of iron. This margin is probably too small to be outside the limit of experimental error, and observations over a longer period would be desirable. The observation is, however, of great importance, as it shows that the retention of iron in a well marked case is not absolute, and therefore the period during which we must assume that a part of the alimentary iron undergoes retention must be greatly lengthened to explain an advanced condition of haemochromatosis.

As regards the immediate source of the iron in the viscera in haemochromatosis, it was at first assumed to be derived from an excessive breakdown of haemoglobin in the blood, on the analogy of pernicious anaemia and other haemolytic conditions where free iron is deposited in the organs. It must, however, be noted that in the majority of cases of haemochromatosis which have been described there has been no important alteration in the blood, and where the bone marrow has been examined it has shown no compensatory hyperplasia such as accompanies severe anaemias. Roque, Chalier, and, Nové Josserand in France, and Howard and Stevens in America, have noted excessive fragility of the red corpuscles in their cases, but this cannot be taken as proof that *in vivo* the red corpuscles were being destroyed more rapidly than normal. Even in pernicious anaemia, though the iron in the liver and other viscera may be much in excess of the normal, it is far short of what occurs in haemochromatosis, and, indeed, may often be accounted for by the amount of iron lost from the depleted blood, so that the total iron in the body is not appreciably increased. The condition in haemochromatosis is very different, for here we have no certain evidence of abnormal haemolysis, and even if the iron which accumulates in the viscera has first passed through the form of haemoglobin we have still to recognize some factor which causes it to be retained in the system. Of the nature of this factor we have at present no certain knowledge, and we can only refer to it in very general terms as an increased avidity of the tissues for iron.

II.—W. H. MAXWELL TELLING, M.D., F.R.C.P.Lond.,

Physician, Leeds General Infirmary.

UNDER the names haemochromatosis and bronzed diabetes attention has been drawn during the last forty years to an interesting morbid condition. It is still an unsettled question as to whether it is a separate disease or just a stage or development of certain forms of cirrhosis of the liver. But the main clinical and pathological features are so sharp and distinctive as to lead most observers to regard it as a distinct disease. It occurs between 30 and 60 and is almost exclusively confined to males. Its essential features are: (1) A massive deposit of iron-containing pigment in the viscera, (2) a peculiar pigmentation of the skin, (3) hypertrophic cirrhosis of the liver, (4) fibrosis of the pancreas, and (5) glycosuria.

By the earlier observers, Hanot and Chauffard, the glycosuria was regarded as the essential phenomenon, and the condition was then called *diabète bronzé*, the pigmentation being regarded as secondary. It is now known, however, that though glycosuria occurs in the majority of recorded cases it is not a constant feature. It is not usually of severe type, but varies in degree, is late and almost terminal in its onset (though sugar may disappear from the urine in the final stage of cachexia), and is now generally regarded as secondary to the fibrotic changes in the pancreas.

There are, then, two conditions which are essential: (1) A very considerable deposit of pigment in the body, and (2) a hypertrophic cirrhosis of the liver and fibrosis of

the pancreas. The disease is mostly in elderly men, and lasts about two to three years as a rule. There is not infrequently an alcoholic history, though a number of perfectly typical cases have been recorded in which alcohol did not enter into the etiology. The diabetic phenomena are slight or moderate, and occur, if at all, late in the disease. The liver is considerably enlarged, and the enlargement may be mainly in one lobe, the right or the left; it is a little tender, firm, smooth, and the seat of a fairly uniform cirrhosis. Abdominal distension, with attacks of diarrhoea alternating with constipation, are common. The spleen may be palpable, and usually shows some fibrotic change.

The pigmentation of the skin is characteristic, and is the clinical feature which has generally led to the recognition of the disease during life. The tint varies from a leaden colour to a more definite bronzy appearance; but, whatever the tint it tends to be "metallic." Exposed surfaces are more deeply pigmented. The pigment deposit is massive in the liver, pancreas and, especially, the lymph glands: the heart and muscles also show it; the spleen and kidneys may be pigmented or normal. The viscera implicated tend to have a dark reddish-brown tint, quite characteristic in a well-marked case. There is sometimes slight jaundice.

The patients are curiously listless and apathetic, in a way that is often seen in Addison's disease, to which the pigmentation yields another resemblance. The disease is uninfluenced by any treatment, and there is a progressive cachexia till death ensues.

In 1899 von Recklinghausen described a group of cases to which he gave the name haemochromatosis. Under this term he included not only the previously recognized cases of bronzed diabetes, but certain cases of cirrhosis of the liver with general pigmentation and certain cases of purely local deposit of pigment. These last do not for the moment detain us, but the cases of cirrhosis with general pigmentation constituted a well marked clinical group, apparently distinct from all other diseases, and of which the original bronzed diabetic cases were only an advanced stage. The term haemochromatosis, therefore, has come to be the name in general use.

Theories as to the exact pathology are numerous and conflicting. Broadly they are three: (1) that the deposit of pigment is the essential process, with the visceral fibrosis as secondary; (2) that the cirrhosis is primary and leads to the increased pigment deposit; and (3) that both processes are the result of a primary and as yet unknown cause.

At first it was assumed that the pigment deposit was due to an excessive blood destruction, but no evidence of such excessive blood destruction has ever been found; there is only occasionally a slight and purely cachectic anaemia. Many subjects were shown to be alcoholic, and this was thought to be the underlying cause of a cirrhosis in the first place. But many cases are certainly innocent of alcohol, and this goes far to weaken the case for cirrhosis as the primary factor.

It was noted by Opie (1899) that the deposit of pigment was greatest where pigment tended normally to be present, and this led to the view that it might be regarded as a morbid exaggeration of a normal process of pigment deposit. Parker, in 1903, made a further suggestion that the condition is not so much an excess formation of pigment as a defective iron elimination; for such defective elimination there is some pathological evidence (Garrod and Gaskell, 1914). Von Recklinghausen, in 1889, had shown that there were two pigments: (*a*) an iron-containing haemosiderin and (*b*) an iron-free haemofuscin. The unduly rigid insistence on these facts, perhaps, hampered progress a little, for it has been shown that haemofuscin, if specially treated, reveals the presence of iron.

It was tempting to regard the cirrhotic process as secondary to the irritation of the massive pigment-deposit, but it is very doubtful if the pigment does irritate in this way. Potter and Milne (1913) noted that where the pigment was most massed there was least evidence of parenchymatous degeneration. The parenchymatous degeneration observed was thought to be the real cause of the fibrous tissue overgrowth, and to be itself the result of a general metabolic disturbance. These observers incline to the view that cirrhosis, however caused, is the primary gross pathological change and that pigmentation, which occurs in a greater or less degree in many cases of cirrhosis of the liver, is in haemochromatosis merely carried to an extreme stage. To-day, and despite recent observations, we are inclined to regard haemochromatosis as a separate morbid entity. There is an interesting series of cases of haemochromatosis in which the liver has undergone cancerous degeneration, primary in its tissue, and it must be admitted that here is another possible link with "ordinary" cirrhosis, in which cancerous degeneration has long been a well recognized event. But such malignant process may be regarded as being entirely sequent to the fibrosis only, and therefore just as much a secondary happening in this disease as in the glycosuria.

A further general point may be made. There is very little indeed in the English medical literature about this disease, and in the past it cannot be doubted that many cases have escaped recognition owing to the disease being relatively unknown as well as rare. In early cases, though by strict comparison with the normal a certain degree of skin pigmentation might be detected, it may not be of a degree sufficient to lead to a diagnosis during life. Yet I have seen two cases which had already developed—and died from—primary malignant disease of the liver without definite skin pigmentation. The recorded cases are almost all of the advanced type, with characteristic pigmentation and frequent glycosuria; by placing early cases on record, particularly with the striking eventuation in malignant disease, more general attention will be directed to the disease, which will then probably be found to be less rare. It would seem that every case of cirrhosis of the liver, and most certainly every case leading to primary carcinoma, should be carefully investigated from the haemochromatosis point of view. By this means much light will undoubtedly be thrown on pigment metabolism and will enable a final decision to be arrived at as to whether haemochromatosis is a separate morbid entity.

DISCUSSION.

Dr. J. F. GASKELL (Cambridge) said that his remarks were all founded on a single case investigated under Sir Archibald Garrod and published in the *Quarterly Journal of Medicine*. This case was fully in accord with all that Professor Shaw Dunn had advanced, and the conclusion arrived at was that the tissues had an abnormal avidity for iron. The condition of the normal paths of excretion of iron was interesting. In the kidney the iron was in glomeruli and tubules of the second order only, thus differing entirely from the arrangement in a condition of blood destruction such as pernicious anaemia where the iron was all in the first convoluted tubules. In the liver the iron was accumulated round bile canaliculi and also in the walls of the bile ducts. These appearances suggested an attempted excretion by normal channels associated with rapid reabsorption. It was possible that the condition was an essential error of iron metabolism with the presentation of the iron to the tissues in an abnormal form; it was excreted abnormally and reabsorbed. The body then made attempts by lymphatic channels to remove the excess of pigment, and from these channels the progressive accumulation of iron in the surrounding connective tissues took place.

Dr. R. L. MACKENZIE WALLIS (London) defined haemochromatosis as a condition where iron-containing pigments were deposited in certain tissues in abnormal amounts. Since in his experience the pigments could all be shown by appropriate methods to contain iron, it did not appear advisable to retain the names haemosiderin and haemofuscin. By hydrolysis with strong acids with the application of heat it was possible to show that both pigments contained iron, though in different amounts. The terms were further unsatisfactory in that they implied an origin from haemoglobin, and up to the present time all the evidence was against such a supposition. Investigation of a case of bronzed diabetes with Sir Archibald Garrod and others (*Quarterly Journal of Medicine*, 1914, vol. vii, No. 26, p. 129) revealed the following facts: (1) There was generalized haemochromatosis with deposition of iron-containing pigments in certain cells; (2) there was degeneration and death of such cells with marked interstitial inflammation of certain organs, especially the liver and pancreas; (3) there was chronic interstitial pancreatitis, with diabetes and death. There was no evidence of any abnormal

haemolysis, and the large quantity of iron in the liver—namely, 32.8 grams—could hardly be explained on the supposition that the iron could be derived from the normal daily haemolysis, which is known to take place. The view that haemochromatosis was a late event in the condition would thus appear to be substantiated.

In a search of the literature great stress was laid upon the fact that many cases gave a history of alcoholism, but this was founded on somewhat indefinite grounds. The one striking point which his investigations of bronzed diabetes showed was that the tissues had an abnormal avidity for iron, so that no trace could be found in the urine, bile, and faeces, and there was no abnormal amount of non-haemoglobin iron in the blood. The explanation of this extraordinary avidity for iron was not yet forthcoming. He thought that all cases showing abnormal pigmentation of the skin, particularly those with diabetes mellitus, should be investigated on these lines. Reference was made to a case of xanthoma diabeticorum, which was at present under investigation.

The question had been raised, Which part of the syndrome in haemochromatosis was primary? Was it the iron-containing pigment which produced the cirrhosis? If one disregarded the terms haemosiderin and haemofuscin, and substituted a name for the iron-containing pigment, an explanation might be forthcoming. In his opinion the free iron pigment caused the cirrhosis whilst the masked iron pigment represented an attempt on the part of the body to get rid of this pigment by means of the lymphatic system. The liver, pancreas, and kidneys contain most of this free-iron pigment, whereas the other pigment (symhaemofuscin) is deposited chiefly in the muscles, blood vessels, and lymphatic glands. It is worthy of note that large amounts of iron were found by Muir and Dunn in the retroperitoneal glands.

Dr. JOHN CRUICKSHANK (Aberdeen) described a recent case of haemochromatosis which had not yet been fully worked out. The patient, a man aged 37, was a native of Aberdeen. He complained of a tight feeling around the abdomen. There was no anaemia or glycosuria. The haemochromatosis was not discovered during life, and no obvious relation could be made out between the clinical symptoms and *post-mortem* appearances. Iron-containing pigment was present in abundance in the liver and in the abdominal glands, but no excess of iron was discovered in the circulation. Besides the typical iron granules, a golden-brown pigment was present in the organs, particularly in the walls of arteries, which did not react to chemical tests for iron. He thought that it was useful to make a distinction between the forms of iron found in the tissues. The terms haemofuscin and haemosiderin were of some value. Iron was not present in the same form in every situation. He asked whether it was possible to ascertain the exact chemical composition of the pigment in each case.

Professor J. M. BEATTIE (Liverpool) said that there were two points which specially interested him in this discussion. Most speakers had stated that the diabetes was a late manifestation. In the case published by him in 1904—the first case, he thought, with *post-mortem* records published in this country—the glycosuria was, as far as he could determine, present for about three years before the bronzing of the skin was noted. At the *post-mortem* examination the cirrhosis and pigmentation of both liver and pancreas was very advanced, and he thought it very likely that these conditions had existed for a very long time. It also seemed almost certain that the pancreatic condition and the destruction of the islets of Langerhans were responsible for the glycosuria, and must have been in existence for at least three years.

In relation to the pigment, he agreed with former speakers that the names haemosiderin and haemofuscin should be dropped, but at the same time it must still be recognized that two types of pigment were usually present. It was true, as he pointed out in 1904, that with the aid of heat much of the pigment which did not give an iron reaction in the cold could be made to do so. But there was still a considerable amount of pigment left which would not give the free iron reaction. This might correspond with the pigment seen in the liver in chronic venous congestion, and in his opinion a great deal of the pigment of the liver and of the spleen—that in which the iron was in fatal excess—was not due to the combination—might be derived from the blood in the liver and spleen respectively; for in both of these organs, on account of the marked degree of cirrhosis, there was a necessary venous congestion, and, even in the smaller vessels, a thrombosis. Thus, without marked changes in the peripheral blood or in the bone marrow, there must be a good deal of local blood destruction in the various cirrhotic organs.

Professor J. SHAW DUNN, in concluding the discussion, said that the pigments described by von Recklinghausen probably comprised two quite distinct varieties—namely, haemosiderin, which occurred in parenchymatous cells and fibrous tissue, and a non-ferruginous pigment, which was confined to non-striated muscular fibres, in arterial walls, and in the intestines. The latter probably corresponded to the pigment of brown atrophy of heart, liver, etc., and was not characteristic of haemochromatosis. As regards the iron-containing pigments, it was difficult, if not impossible, to obtain them in a pure condition, and therefore to analyse them. On the whole the appearances suggested that in haemochromatosis the iron was first deposited in hepatic cells on normal physiological lines, but in exaggerated form. In haemolysis iron settled out mainly in the liver cells. For the recognition of early cases it would appear that pigmentation of the skin was the likeliest feature to rely on. If glycosuria was present the condition would be advanced. Possibly the pigmented skin would give the iron reaction *in vivo*.

Professor MATTHEW J. STEWART (President) said that he had seen six cases of haemochromatosis, *post mortem*, in the past seven years, and agreed with speakers who expressed the view that the disease was probably more common than was generally supposed. In two of the four cases shown primary carcinoma of the liver coexisted. Bronzing and glycosuria, being late manifestations, were of little use in the early diagnosis of cases, and the presence of haemosiderin granules in the urine, noted by American observers, would probably be found liable to the same defect, since renal siderosis also occurs late in the disease. Inasmuch as the lymph glands in relation to the liver and pancreas were among the chief and earliest seats of pigmentary deposition, surgeons might be invited to examine these glands in cases where, for any reason, the upper abdomen was explored. In the event of brown glands being discovered, one of them might possibly be excised for histological investigation.

DISCUSSION ON THE STREPTOCOCCI.

I.—J. MARTIN BEATTIE, M.A., M.D.,

Professor of Bacteriology, [illegible], Liverpool.

THE HAEMOLYTIC STREPTOCOCCI.

THE high frequency of haemolytic streptococci in the human throat may explain the important rôle these organisms play as secondary invaders in a multitude of diseases. At the same time it must be recognized that, like the pneumococcus or *B. diphtheriae*, they may be present in normal throats, and, under certain conditions which we do not clearly understand, may become the actual causal agent of the disease.

Very many observers have noted the presence of streptococci in the throat in from 14 to 90 per cent. of cases, the larger percentages being in camps where men were collected in large numbers, and often in a limited space. Thus, Levy and Alexander[1] found haemolytic streptococci in swabs of the pharynx in 14.8 per cent. of 489 new recruits, while in a company of healthy men at camp for six months they found 83 per cent. Fox and Hamburger[2] give figures almost identical with these—15 per cent. in a group of normal men early in a measles epidemic, and six months later in 83 per cent. of a similar company. Other workers report 40 to 50 per cent.

The difference in percentages is, no doubt, due to the thoroughness with which the swab has been taken: thus Pilot and Davis[3] show that there is a considerable difference in percentages if the swabs are taken from the surface or the crypts of the tonsil. Thus, swabs taken from the pharynx in 100 cases with enlarged tonsils gave 43 per cent. of haemolytic streptococci, from the left

tonsillar surface 49 per cent., and from the right tonsillar surface 59 per cent. Cultures from the crypts of the same tonsils after excision gave 92 per cent. of streptococcal infections. In another series of cases swab cultures were made from the pharynx, the surface of each tonsil, from the gum margin, and the nose of twenty-four healthy persons who gave no history of recent sore throat, and whose tonsils showed no gross evidence of inflammation. In cultures of the pharynx haemolytic streptococci were found in 25 per cent., and in cultures of the surface of the tonsil 58 per cent. In no instance were they found on the gum margin, or in the nose. Non-haemolytic streptococci were noted in all cases from all the situations. My own observations fully bear out these results. During the time I was examining contact cases of cerebro-spinal meningitis and influenza the striking feature was the almost universal presence of streptococci in the naso-pharyngeal swabs, and my experience in the routine swabbing of diphtheria and suspected diphtheria cases is similar.

It is significant that in the various acute infections a common starting-point is the throat. One of the earliest symptoms is "sore throat," and in such cases the haemolytic streptococci can generally be demonstrated in large numbers, and this same organism is found later in the complicating lesions. Taking an average of several observers in four common diseases, the prevalence of these haemolytic streptococci is striking:

Scarlet fever	...	131 cases	91 per cent.
Measles	...	538 ,,	72 ,,
Influenza	...	340 ,,	70 ,,
Lobar pneumonia	...	151 ,,	50 ,,

Pearce[4] regarded streptococci as the most common cause of bronchopneumonia, otitis media, and other general infections secondary to infectious diseases. Perkins and Pay[5] found the streptococcus in 95 per cent. of the total cases of variola, and recovered the same organisms from the blood before death in eight of thirteen cases. Dick and Henry[6] isolated haemolytic streptococci from the blood, lymphatic glands, and spleen and urine in cases of scarlet-fever. It may be said that scarlet fever, in which disease the streptococcus is practically always found, is caused by this organism, and the recent paper by Gordon[7] gives a good deal of support to this view. By the absorption of agglutinin test he differentiated the haemolytic streptococci into three distinct groups or types, and he showed that Type III was the organism chiefly found in the secretions on the tonsil and fauces in scarlet fever, and, I think very justly, says that "the possibility must be realized that the streptococcus in question may ultimately be established as the essential cause of scarlet fever."

My own observations in this field are somewhat limited, but in one case of suspected meningococcal meningitis a pure growth of a streptococcus was isolated from the cerebro-spinal fluid. There was, however, no evidence of meningococcal meningitis, and the man developed scarlet fever. Unfortunately at the time it was not possible to make a careful study of the organism, and the culture died before any work of value could be completed.

Councilman, Mallory, and Pearce,[8] in a very extensive study of diphtheria, found the *Streptococcus pyogenes* to be the most frequent organism associated with diphtheria in the various complications of this disease. In measles the swabs from the throat show streptococci in from 55 to 100 per cent. of cases according to different observers, and it is recognized by all workers that the complications of empyema and bronchopneumonia are due to this organism. A great amount of work has recently been published by various American bacteriologists on the acute respiratory affections associated with influenza, measles, etc., in various large camps. There is practically a unanimity that in the throats of such patients haemolytic streptococci are constantly found and that these are apparently identical with those found in the pulmonary lesions.

Pilot[18] and others in 1918, during the pandemic of influenza, isolated haemolytic streptococci from the lungs in 45 per cent. of the cases. Cole and MacCallum[9] state that the *S. haemolyticus* is the chief, if not the only, cause of bronchopneumonia following measles, and they give the following interesting statistics: Of 69 patients in a measles ward 39, or 56.5 per cent., had haemolytic streptococci in their throats, whereas, of 28 patients suspected of tuberculosis, only 6, or 21.4 per cent., showed streptococci; further, patients on admission to the measles ward gave a percentage of 11.4, in three to five days afterwards 38.6 per cent., and in eight to six teen days 56.8 per cent.

From all the evidence we have, there seems little doubt that the streptococci present in the healthy throat are the important causal agent in the complications following infectious diseases, and it may be that in the respiratory complications the actual cause of the disease may so act on the respiratory mucous membrane as to render it susceptible to attack by these streptococci. There is a good deal of evidence, especially in the careful studies of MacCallum,[10] in support of this view, and further, the experiments of Blake and Cecil[11] show that a preliminary injury to the respiratory tract by gassing with chlorine greatly facilitates the invasion of the lung by *S. haemolyticus*.

Acute primary streptococcal infections are familiar to us all. A recent case which came under my attention is of some interest:

> The patient, a boy of 10 years, was at school apparently well on a Tuesday; the following day he complained of headache and sore throat. On the Thursday he was unconscious and the doctor was sent for. When he arrived he found the limbs rigid, the jaw firmly contracted, so that the mouth could not be opened, and the patient quite unconscious; the boy died that evening. At the *post-mortem* examination a mass of enlarged, acutely inflamed lymphatic glands was found on each side of the neck at the angle of the jaw; these were haemorrhagic in parts. The various organs showed the results of septic absorption, but there was no gross pathological lesion. In the spinal cord, in the dorsal region, there was an area of acute softening, about one inch in length. From these glands and from the softened area in the cord a pure growth of a haemolytic streptococcus was obtained. A suggestion was made that the case might have been an early one of scarlet fever, with no special development of the rash, but, so far, no definite evidence has been obtained in support of this view.

Cases such as this, and the facts I have brought forward of the prevalence of streptococci, naturally suggest a more exhaustive study of these organisms, and the means of destroying them, or, at any rate, of antagonizing their pathogenic effects. It is clear that the streptococci, as we meet them, differ considerably in their morphological characters, their manner of growth, their biologic activities, and especially their pathogenicity, and it is therefore important that we should, if possible, know what special type of organism we are dealing with in each case.

These facts being established, the natural question arises: Can we by any means destroy these organisms in the normal individuals, or can we render the individual immune to their action? In answer to the first portion of the question I say very little. My own experience leads me to the view that a considerable amount of the spread of infective diseases can be prevented by a systematic and regular disinfection of the mouth and nasopharynx with effective and non-irritant antiseptics. With regard to the second portion of the question, this is a scientific problem, and the evidence at present, though very incomplete, suggests a more careful investigation of the streptococci, particularly from the classification side.

The systematic classification of bacteria is a problem of very great importance in the proper understanding and the control of infectious diseases. To the surgeon, the presence of streptococci in a wound is generally regarded as more serious than the presence of staphylococci, and yet we know that the streptococcus may be almost innocuous and the staphylococci most virulent. Streptococci, indistinguishable by all ordinary tests from those responsible for the pathological processes in serious diseases, have been found to be present, and to live, apparently without harm to the host, on the mucous membranes of a large proportion of normal individuals. Is this difference in reaction to be accounted for by difference in susceptibility of different individuals or to differences in the organisms themselves? Are we to regard the streptococci as grouped into several distinct species or as variants of one species? Numerous tests have been devised to determine this latter point, but at present there seems to be no general agreement as to their value.

I. The morphological characters were used, and the long-chained (*S. longus*) and the short-chained (*S. brevis*)

were differentiated; the former were regarded as the more virulent, but every bacteriologist, even of moderate experience, must have realized that the long chained organisms are frequently found on the mucous membranes of healthy individuals, and the short-chained often the cause of intense septicaemia and death.

II. Again, the carbohydrate splitting powers were used, and the work of Gordon,[12] Andrewes, and Horder[13] stands out as a very distinct advance in classification. Their work, however, was repeated by various observers, and the classification has been attacked on several grounds: (1) Walker,[14] and Yates and Beattie[15] showed that the fermentation reactions were not constant in any strain, but varied from time to time, and, further, that they had no relation to pathogenicity. (2) Winslow[16] and others in America maintained that the mere fermentation in itself was unsatisfactory as a test, but that, in addition, it was essential to determine the quantity of acid produced. (3) Hopkins and Lang,[17] on the other hand, maintain that the streptococci concerned in the severe infections in man may be differentiated from the common saprophytic types by fermentation tests, and they recommend a special media (infusion broth, coloured with litmus, and containing 2 per cent. or more of peptone and 1 per cent. of fermentable sugar, and having an initial reaction between 0.0 and 0.5 per cent. normal acidity—phenolphthalein). They further state that the titrations of the amount of acid formed is of no value; that the highly pathogenic strains are usually strongly haemolytic. They, however, agree that the validity of the fermentation tests depends chiefly on whether or not they remain constant in a given race, and this, they admit, they have not tested sufficiently. The general conclusion seems to be that the tests of Gordon are valuable for organisms recently isolated, and give us some indications as to the source from which these organisms come.

III. More recently classifications have been based on haemolytic and immunological reactions, and it is to this aspect of the question that I wish specially to refer. A great deal of work has been done, especially in America, on the streptococci found in bronchopneumonia and in influenza, and it may be taken as generally agreed that the organisms of this type, which are specially pathogenetic, are haemolytic in their reactions. Thus, Rosenow says, there is a direct relationship between haemolytic streptococci and acute streptococcal infections, while chronic streptococcal infections are more closely associated with the *viridans* type (non-haemolytic). Holman[19] states that the majority of streptococci producing pyogenic infections are haemolytic.

Agglutination.—This reaction has not been largely employed; the main reason for this is that most strains of streptococci undergo spontaneous granulation when employed for agglutination tests, and only by repeated experimentation have means been devised to overcome this difficulty. Dochez, Avery and Lancefield,[20] claim to have succeeded in preparing antigens which remain homogeneous. I do not propose to detail their methods, but one essential seems to have been a very accurate adjustment of the hydrogen ion concentration. Experiments in my own laboratory have emphasized the great importance of the reaction of the media, even in the actual growth of these organisms. By their methods these observers have determined four distinct biological types out of 125 strains of *S. haemolyticus*. Havens[21] found that three principal groups constituted 93 per cent. of his series of 292 strains.

Precipitation Tests.—Barnes,[22] using the undiluted supernatant broth from a centrifugalized culture and adding equal quantities of this to diluted rabbit anti-streptococcic serum (dilutions 1 in 50, 1 in 100, 1 in 200, 1 in 400, 1 in 800, 1 in 1,600, and 1 in 3,200), found, after incubation, that there were flocculent precipitates in the homologous combinations of the highest dilutions. After careful control of his experiments he concluded that specific precipitins were formed, also group precipitins. He compared these precipitin reactions with the haemolytic and fermentation reactions—the latter carried out according to Holman's method, using, however, a carbohydrate free broth instead of Hiss serum water—and with few exceptions the reactions agreed. He concludes thus: "One thing quite definitely indicated is that streptococci may ultimately be divided into a number of groups with specific metabolic functions, and having specific immunizing properties as shown by the results of the haemolytic, fermentative, and precipitin tests."

I have given you a very brief outline of these biologic reactions, and it remains for me to indicate their important bearing on the problems of disease. Not many years ago it would have been difficult to find much enthusiasm for the use of antimeningococci serum in the treatment of cerebro-spinal meningitis. I well remember a slight epidemic with which I was associated in which Flexner's serum, which had been proved very efficacious in New York, was tried and pronounced a failure. Since Gordon's work in the differentiation of types, the explanation of the failure is evident. The serum was not homologous, or it did not contain sufficient of the homologous element to be of any value. Those, like myself, who have had to deal with cerebro-spinal meningitis during the recent war know that it is not now a formidable disease, because we can obtain either a polyvalent serum, which contains a considerable amount of the homologous element, or even a homologous serum itself.

We are to-day only at the beginning of the treatment of pneumonia with homologous serum, and though the results so far obtained are not brilliant, still the outlook is far from being a dark one. Can we hope for similar results in streptococcal infections? Records of the therapeutic effects of antistreptococci serum are contradictory. There seems little doubt that success has been obtained in some instances, but in the great majority of cases the result has been negative or possibly harmful. It seems quite clear that the failure is due in large part to a want of appreciation of the diversity of the numerous types of organisms involved. Therefore, any progress is obviously dependent on the recognition of the varieties of the streptococci in any given case.

The next question which naturally arises is, Is there any evidence that this classification into antigenic group varieties is of importance? Gay and Stone, working on experimental streptococcal empyema, used injections of immune serums containing strong antibodies, which had been produced by their *Streptococcus "H"* obtained from a case of bronchopneumonia with empyema. They gave the injections of the serum before the intrapleural infecting dose, simultaneously with the dose, and at periods subsequent to it. In each separate experiment results obtained by immune serum were controlled by rabbits infected at the same time, but treated with normal rabbit serum. They claim that experimental empyema may, in a definite though small proportion of cases, be prevented or even cured by the use of immune serum. Their results were, as I have indicated, obtained by using a definitely homologous immune serum. One can only say, from their results, that a cure may be produced by the use of immune serum, but that the evidence in favour of it being a specific remedy is far from complete. In passing, may I also add that their experiments with vaccines were very unsatisfactory: "The vaccinated infected animals died, not only as rapidly, but even more rapidly than the unvaccinated controls."

Dochez[20] and others have shown that serum can be prepared which is highly protective to white mice against infection with organisms of the homologous type, and that little or no protection results when serum of one type is employed against organisms of the heterologous type. There are undoubted exceptions to this general rule. Occasionally strains of *S. haemolyticus* are found against which all type serums afford a varying degree of protection, and sometimes a serum is obtained from one strain which will protect against an organism of another type. Again, in a series of experiments in mice Havens[21] used three groups of haemolytic streptococci. Mice were inoculated intraperitoneally with two lethal doses of each strain, together with 0.5 c.cm. of each group serum. It was clearly shown that only the homologous serum protected against infection. In every case the mouse, injected with the serum corresponding to the group to which the strain inoculated belongs, lived; all the other mice died.

From the experimental side it seems perfectly clear that the streptococci of human origin are not a unit, but that several types exist, that these types can be differentiated by immunological and other reactions, and that homologous serum can protect against infection. It is true that

at the present there is no real evidence of value that these homologous serums are of practical value in human disease, but I think it can be claimed that a very definite advance in this direction has been made. To the laboratory worker the field opened up is of very great importance. So far, most of the work has been done with haemolytic streptococci isolated from cases of bronchopneumonia, but, when one considers the wide distribution and the important diseases which owe, or possibly owe, their pathological effects to the streptococci the field is almost boundless. My object to-day has been, in opening this discussion, to give, in the short time at my disposal, an outline of the problem before us, a glimpse of the hopeful work that is being done to solve that problem. I hope I may have stimulated some interest and encouraged other workers to join in this often tedious, but, I venture to think, very fruitful line of work.

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STREPTOCOCCUS CLASSIFICATION.

THE problems which confront us in connexion with the streptococci are manifold, and in approaching any of them we sooner or later become confronted by the vexed question of classification. In other groups of organisms the question is less difficult, but in this group classification is involved in a maze, due partly to the manifold schemes which have from time to time been proposed, used for a period, and then found wanting, and have been discarded, whilst the nomenclature and specific names to which they gave rise have been retained to encumber the subject. Partly is the confusion also due to the unsettled position of the question of mutation; whether or not the properties which may serve for a basis change so rapidly and in so haphazard a fashion as to be useless as criteria for differentiation.

Classification thus becomes the alpha and omega of the subject, and a satisfactory system must be necessary if work is to advance at all: and in the few words which I have to contribute to this discussion I wish to limit myself, in the main, to this aspect of it. The necessary essentials for any useful classification in human bacteriology appear to be: (1) simplicity; (2) sharpness of division, and (3) a real meaning of any subdivisions so arrived at, relative to the significance of the organisms as disease-producing agents. It is essential for simplicity that we should find critical qualities which are as few in number as possible. To give an example of one of the most valuable of these that we possess I would instance the use of the fermentation of lactose in the classification of the typhoid colon group. Here we have a simple test, which by some almost providential foresight has been assigned to us to serve to sharply demarcate the organisms of this class into two great groups, in one of which is found the important disease-producing members, whilst their closely allied saprophytic brethren are found in the other.

Classifications in bacteriology are often arbitrary divisions having as their aim the separation of organisms into groups convenient for practical purposes, but we must know where to stop. The more we refine our tests and multiply our criteria the more numerous our subclasses become, until we ultimately reach a limit at which classification becomes individual, each organism occupying a class by itself. Streptococcus classification has suffered not a little from this ultra-refinement. As an example I would cite Gordon's initial classification of the salivary organisms;[1] out of 300 strains examined he constituted forty-eight types, the great majority of which can be resumed under one or two headings, and whose recognition as individuals serves no useful purpose. I am not for a moment attempting to minimize the value of Gordon's work. It was a pioneer attempt from which, it may be said, all subsequent efforts have sprung, but, like most pioneers in an unknown land, his successors can profit by his errors as well as by his discoveries.

Let us now turn to Holman's classification,[2] which is a relatively simple one, and examine its good and bad points. Holman divides the organisms into the haemolytic and non-haemolytic groups, and thereafter forms further subgroups within these classes upon the basis of sugar reactions. It may be taken as a fair example of the sort of classification most in vogue at the present time.

TABLE I.—*Holman's Classification 1916.*

GENUS STREPTOCOCCUS.

	A. Haemolytic.			B. Non-haemolytic.			
	Lactose.	Salicin.	Mannite.		Lactose.	Salicin.	Mannite.
S. infrequens...	+	+	+	S. faecalis ...	+	+	+
S. pyogenes ...	+	+	−	S. mitis ...	+	+	−
S. subacidus ...	−	−	−	S. ignavus ...	−	−	−

In the accompanying table (Table I) I have only shown his main classes, omitting some four or five small groups which most people will agree contain too few organisms to deserve serious consideration. Now what is the value of these subgroups? Let us take first the haemolytic series. I have been through Holman's tables and worked out the distribution of these subgroups relative to some of the chief processes from which they have been isolated. The next table (Table II) shows the distribution of 100 of each of these subtypes of the haemolytic series relative to the condition in which they may be found.

TABLE II.—*Haemolytic Streptococci.* (Holman and others.)

Distribution per cent. of each subvariety.

	S. infrequens.	S. pyogenes.	S. anginosus.	S. subacidus.
Faeces	7.5	0.5	—	—
Throat (all conditions) ...	43	26	31	19
Blood	13	11	11	19
Erysipelas and cellulitis ...	5	4	3	4
Abscesses, septic joints, osteomyelitis, etc.	6.5	20.5	5.5	12
Middle ear, mastoid and cranial sinuses	7.5	14	8	7
Other conditions	17.5	24	41.5	50

It will be seen from this table that these different subtypes are distributed very similarly over the various conditions in which haemolytic streptococci are found. It is of special significance that in such conditions as erysipelas and cellulitis (in which the circumstances are most favourable for the isolation of pure growths of the causal organisms, without the risk of isolating at the same time contaminating saprophytes) the figures are so closely similar. In other cases—for instance, in the throat—many of the organisms recorded must belong to the normal saprophytic group. In one case (*S. infrequens*) the incidence of a particular organism is high. It is very possible that this figure may give a mistaken idea of the frequence of this type, since these particular organisms were largely found by one worker (Ruediger), who includes a very high proportion of throat strains in his results. It cannot, therefore, be said, taking the distribution of these types over the different diseases, that they show any such association with disease, or with particular conditions, as would justify us, from a practical point of view, in making a subdivision on these lines. That is, they all show a roughly similar capacity for producing similar diseases, and I therefore think that there is no practical gain in retaining such a subdivision and would prefer to slump all the haemolytic streptococci together in one large and undivided class.

Now let us similarly treat the non-haemolytic strepto-

cocci found in the human body. These are examined in Table III, which is drawn up from the same source.

TABLE III.—*Non-haemolytic Streptococci.* (Holman and others.)
Distribution per cent. of each subvariety.

	S. faecalis.	S. mitis.	S. salivarius.	S. ignavus.
Faeces	20	3	0.3	1.5
Throat	5	42	47	41
Blood	11.5	8	9	11
Erysipelas and cellulitis ...	0 8	0.4	1	1 5
Abscesses, septic joints, osteomyelitis, etc	6	6	7	7.5
Middle ear, mastoid and cranial sinuses	1.5	4	2	4.5
Other conditions	55.2	36.6	35.7	33 5

Here again we see little differences in the distribution of the various subgroups amongst themselves in disease processes; although they are much less frequently encountered as agents of suppuration than are those of haemolytic series, a point which justifies the division into haemolytic and non-haemolytic groups. There is, however, one great difference, and that is in their site of distribution in the saprophytic state, it being seen that the *faecalis* form is essentially an inhabitant of the faeces whilst all the others occur relatively infrequently in the faeces, relatively frequently in the throat. If we apply the argument used for the haemolytic group we might be inclined to simply divide the series into the faecal group, and the rest (*mitis*, *salivarius*, *ignavus*), the division between these last three being again academic rather than real.

I now want to touch upon my own work in this direction.[3] Classification in the streptococcus genus at the present time must be a question of groups. We meet with a graded series, at one end of which we have organisms possessing almost all the possible properties, and at the other similar ones possessed of no other common property with the genus than their morphology. Instead, however, of following the curve of normal variation, which would be the case if the possible properties were scattered by chance over the series, we find, if we plot out the number of types against number of properties, that there are several peaks on our curve which represent a definite and recurring tendency for the association of certain properties; and that each of these represents a centre of variation around which an association of certain properties is grouped, which association may be taken to define a type. I have specially worked at this association in respect of the organisms found in the faeces, and have endeavoured to show that it is constant, and, reduced to a mathematical formula, is a real association. This method can be briefly alluded to here.

TABLE IV.—*Association of Properties within the Universe N.*

	H.	h.	R.	r.	M.	m.	C.	c.
Number of individuals within the series possessing each attribute	85	49	23	111	75	59	31	100
H (Heat resistance) ...	—	—	4	81	69	16	3	82
h (Heat not resisted) ...	—	—	19	30	6	43	31	18
R (Raffinose fermented) ...	(14 6)	(8.4)	—	—	7	16	9	14
r (Raffinose not fermented)	(70.4)	(40.6)	—	—	68	43	22	86
M (Mannite fermented)...	(47.6	(27.4)	(12.9)	(62.1)	—	—	3	72
m (Mannite not fermented)	(37 4)	(21.5)	(10.1)	(48.9)	—	—	31	28
C (Chain formation) ...	(21.6)	(12.4)	(5.8)	(28.1)	19.0)	(15.0)	—	—
c (Chains not formed; diplococci)	(63 4)	(36.6)	(17.1)	(82.8)	(56.0)	(44.0)	—	—

N. Total number in the series = 134.

The figures in italics are the actual observed figures. The bracketed figures in ordinary type are those calculated for the case of independence of the properties studied in this table, and are given for purposes of reference.

If a series of organisms is taken haphazard from the faeces and their various properties are worked out and charted as is done in Table IV, putting the properties into rows and columns, and noting these as present or absent, one is readily able to see which properties tend to go together. The positive properties are indicated by the capitals, the absence of these by the small letters; thus out of the 85 heat-resisting (H) organisms we find that four of these are R—that is, ferment raffinose. The table shows, in addition, what the association would be in the case of chance alone being at work—in this case 14.6, or nearly four times what we actually find. We therefore conclude that there is a negative association between these properties, and that whatever it is in the complex make-up of the organism which enables it to withstand heating is associated with an innate inability to ferment raffinose. To take one more example. The association of heat-resisting (H) with chain formation (C). Of the 85 H only three are (C). The chance association would be 21.6—that is, seven times greater; again the inference is that some definite character essential to the organism causes the divorce of these properties and, conversely, the association of their other sides—namely, sensitiveness to heat and chain formation.

For any of these properties Yule's coefficient of association[4] may be worked out, which is a measure of the degree of association used by statisticians, and having values between 0 and + or − 1, and denoting association or dissociation as the case may be. When the value is + 1 it denotes that the one property invariably conditions the other, and it is found that some of these values show a very high degree of association in the properties under consideration. Such mathematical treatment is, I think, desirable, as it gives us a definite value for any properties we may choose to be used to form lines of division into types; it further shows that many of the suggested ones are valueless.

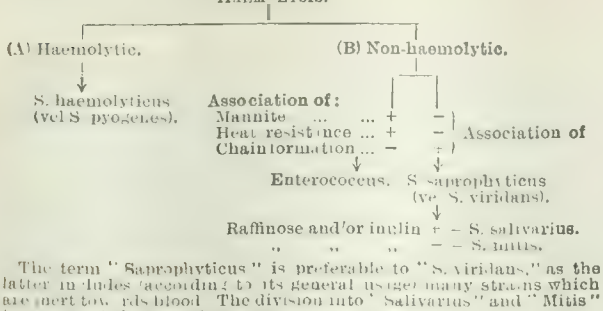
Having touched upon the way in which I am of the opinion criteria for classification should be examined, I wish to go on to the consideration of the value of such tests from the point of view of their permanence. Obviously this is the critical point upon which the whole question turns. If an organism changes its reaction within a few days or weeks of isolation the tests become largely useless. I should like to deprecate experiments directed towards showing that this is the case, which expose the organisms to conditions of growth which are of a rather bizarre nature. These are biologically of great interest and importance, but have little bearing on the problem in hand. What we require to know is whether the organisms, when pure and kept growing in ordinary media, such as agar or broth, preserve their reactions for any length of time.

I think that the truth lies between the two extremes which have been taken up. Neglecting such incidental errors as impure cultures, which undoubtedly will occasionally creep in and are especially hard to exclude when we are dealing with morphologically similar organisms, it can be definitely stated that the type of coccus with which this work has been especially carried out, and which I prefer to call the enterococcus, does retain its characters to quite a remarkable degree when kept in ordinary culture media. And similarly the writer is satisfied that some of the other varieties, in particular the virulent ones, do change their fermentative properties. Fortunately the bulk of these are haemolytic, and the property of haemolysis is a pretty constant one. Given that haemolysis is constant, that the sugar reactions of the enterococcus group are constant, we can, I think, usefully divide the streptococci into the following groups, which fairly indicates the present position of the subject. (See the working scheme of classification, Table V, p. 791.)

I am content that streptococcus classification must be an affair of groups, and that the most we can usefully do is to place any individual organism within one of the groups, and that to attempt more is at present often undesirable.

I would also beg those who are working at any new lines of classification to homologize their work with what has already been done. If not, and if they rush into new systems of classification of their own, they

TABLE V.—*Working Scheme of Classification.* (J. H. D.)



The term "Saprophyticus" is preferable to "S. viridans," as the latter includes (according to its general usage) many strains which are inert towards blood. The division into "Salivarius" and "Mitis" types is probably not of much importance.

tend to make confusion worse confounded in a subject whose curse is the multiplicity of systems proposed for its simplification.

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DISCUSSION.

Dr. J. W. McLEOD (Leeds), in opening the discussion, said: What I have to say refers chiefly to the question of virulence amongst streptococci. Although it is undoubted that the non-haemolytic streptococci have a considerable pathogenic rôle, there is as little doubt that in most instances the higher degrees of virulence are exhibited by the haemolytic streptococci. By haemolytic streptococci are meant only such varieties as will, when grown in bouillon for eighteen hours, produce a haemolysin which can be detected by incubating a small quantity of the culture fluid with a suspension of blood in 0.9 per cent. saline for three quarters of an hour.

There has been a prolonged controversy, especially amongst German obstetricians and gynaecologists, on the question whether haemolytic activity may be accepted as evidence of virulence in any given strain of streptococcus. This work was summarized in a paper published in 1914 (*Journ. Path. and Bact.*, 1915, xix, 392) in which I claimed that in experimental work on rabbits, at all events, it was possible to single out a streptococcal strain as highly virulent if it had the property of producing haemolysin freely and rapidly when the fluid medium used for its growth was undiluted rabbit serum. Since then I have done some work in testing streptococcal strains derived from various lesions in man as to their power of producing haemolysin freely when grown in undiluted human serum.

The technique adopted after a number of trials was to inoculate with a twenty-four hour subculture on agar of the strain under investigation a medium consisting of equal parts of peptone broth and fresh human serum and then to subculture from this at the end of twelve to sixteen hours' incubation to undiluted human serum, which was then incubated. A positive result consisted in the demonstration of haemolysin production in the pure serum culture after twelve to sixteen hours' incubation. In all 23 strains were tested, and of these 5 gave positive results.

The sources of the strains giving positive results, and the results of testing at various dates, were as follow:

1. Meningitis (fatal) following traumatic: Positive results in July, 1918; twice in January and twice in March, 1919; in November and December, 1919; trace in February, 1920; nil in July, 1921.

2. Septicaemia (fatal) following infected haemothorax: Positive result at first test in January, 1919; nil later in the same month and at first test in March; at next test in March, 1919, partial.

3. Empyema (fatal) following influenza; marked *post-mortem* evidences of haemolysis. Trace at each of two tests in March, 1919; nil in February, 1920.

4. Meningitis (fatal) complicating nephritis: Strong positive result in October, 1919; still positive in November, and slight trace in December of the same year; nil in February, 1920, and also in July, 1921.

5. Pyaemia (fatal): Trace in October, 1919; nil in November of the same year.

Of the strains giving negative results five were from fatal injections; these were:

1. Prolonged septicaemia (strain had been for two or three years in subculture before it was tested).
2. Mixed septicaemia, streptococcus associated with *Vibrion septique*.
3. Cellulitis following compound fracture.
4. Septicaemia.
5. Septic endometritis following parturition.

The remaining 13 were from trivial or less serious streptococcal infections.

It is at all times difficult to judge of the virulence of a strain by the effect that it has produced in the human body on account of the many modifying factors. It is probably safe, however, to say that the greater number of virulent strains will be those associated with fatal lesions. It cannot be claimed for the criterion suggested that it singles out all dangerous strains; but the data so far as they go definitely suggest that a strain giving a positive result when tested in this way is a formidable one. It is generally believed that streptococcal strains lose virulence on subculture, and with this view the test considered is consistent, since all strains tested giving a positive result have sooner or later lost this property.

As a matter of fact, in the great majority of cases the degree of haemolysis produced is proportional to the amount of growth in the undiluted serum. If, then, this is an accurate test of virulence amongst streptococci (haemolytic) their virulence will depend mainly on two factors: (1) Power of rapid growth in unaltered body fluids of the animal species under investigation, and (2) power to produce toxin (haemolysin) when so grown. Of course, when different bacterial types, or even different species of streptococcus (haemolytic and non-haemolytic) are compared it is certain that no relationship between virulence and power of growing rapidly in human serum exists: but it does not follow that such a relationship may not exist amongst different strains of similar type.

A certain amount of experimental evidence has been brought forward to show that there is an association between the virulence of a streptococcus and its proteolytic capacity and power of using split protein. (Rosenthal and Patai, *Centralbl. f. Bakt. und Parasit.*, O., 1914 Bd. lxxiii, 406; and N. F. Foster, *Journ. Bacteriology*, 1921, vi, 210.) If an analogy exists between the hypervirulence of some streptococcal strains for rabbits (McLeod, *Lancet*, October 3rd, 1914) and of others for man, then it is unlikely that serum treatment, even with homologous serums, will benefit such infections in man.

Dr. H. WARREN CROWE (Harrogate) widened the scope of the discussion to include the non-haemolytic streptococci. He showed a medium composed largely of heated blood, by means of which the non haemolytic streptococci could be differentiated. With this medium it had been found that in the case of infected teeth and other foci, where streptococci were present in large numbers, a great many different varieties of streptococci could be demonstrated. He pointed out that the problem of vaccine treatment was greatly complicated by these findings, since, in the absence of any mode of determining whether one or more of these varieties was pathogenic, a vaccine must be made containing all the varieties found, and, if possible, in equal numbers.

Dr. W. FORD ROBERTSON (Edinburgh) maintained that growth upon haemoglobin agar furnished valuable criteria for the differentiation of streptococci, especially the distinction between soft and rocky colonies, haemolytic (strictly haemoglobinolytic) and non haemolytic action. If they added to these criteria, first, the distinction between long and short chains, which could almost always be made if a peptone broth with one-tenth part of sheep's serum added was used, and, secondly, the reactions in lactose, inulin and salicin test broths, the outlines of a serviceable classification began to appear.

Professor J. MARTIN BEATTIE, in reply, said he was very sceptical of any classification based on one or two characteristics only. Many years ago in Toronto he thought he had obtained a specific reaction for a special strain of

organism and was about to show the reaction at a meeting when he found that he could not reproduce it, although previously it had never failed to occur. He had never been able to produce that particular reaction since. He told this experience as an example of how fallacious it might be to rely on one particular phenomenon in attempting to classify bacteria. A useful classification was one which gave an idea of the pathogenicity of the strains or whether homologous serums could be used. A large number of organisms must be employed in the experiments before the results could be of value. In cases where serums had failed to protect, it often happened that no antibodies were present in them. Why antibodies should not be produced in some instances was not clear. Professor Beattie thought that vaccine treatment was not always responsible for the cures attributed to it. He cited two cases of meningitis, both of which appeared hopeless from the clinical point of view. An antimeningococcal vaccine was prepared for both, but, as it happened, only one case received any; both recovered. Had the vaccine been given to both cases their recovery would certainly have been attributed to its effects.

THE BLOOD PICTURE IN SCURVY, WITH PARTICULAR REFERENCE TO THE PLATELET.

BY

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It is now generally accepted that in those pathological conditions which are accompanied by a diminution in the number of blood platelets a tendency to haemorrhage is almost always observed.

Already in 1910 Duke,[1] from the analysis of a large number of platelet estimations in different clinical conditions, arrived at the following conclusions: (1) When the platelet count descends below the level of 60,000 per c.mm. there is an abnormal tendency to bleed; (2) if the count falls below 10,000 this tendency is always present; and (3) when below 1,000 it is present in its most severe form. The production of experimental purpura in animals (Ledingham,[2] 1914) by means of an anti-platelet serum, and following on this the observation that anti-platelet serums alone of the antiblood-element serums were capable of producing this pathological picture (Ledingham and Bedson, 1915[3]), completed the chain of evidence.

In scurvy we have another clinical condition in which haemorrhage is a constant feature. The bleeding from the gums and the subperiosteal haemorrhages over the tibiae, the "black eye," these are all characteristic signs met with in the acute stages of the disease. In experimental scurvy in the guinea-pig the haemorrhages are sometimes so numerous as to recall vividly the picture produced in these animals by means of an anti-platelet serum. The question, therefore, naturally arose as to whether or not the platelets were reduced in numbers in the acute stages of scurvy. On searching through the literature the observations made on this point were found to be extremely scanty.

S. Wassermann[4] (1918), in a communication on the blood picture in scurvy as it occurs in man, remarks that the blood platelets are reduced in number in the acute stage, and increased in convalescence. Kirch[5] (1919) gives the findings in two cases, the platelet counts being 280,000 and 14,000 per cubic millimetre, corroborating the observations of Wassermann. However, no details of the technique used by these two workers in the counting of platelets is given, so that it is more or less impossible to judge of the accuracy of their observations. Furthermore, in the two cases of Kirch's, bleeding times of 3 and 2.7 minutes respectively are given, which makes his platelet counts even more difficult to accept. Hess[6] (1914), in a communication on infantile scurvy, states that the platelet count is normal and that the haemorrhages are most probably due to a decreased capillary resistance. In view of these contradictory findings it was decided to work out the picture in scurvy experimentally produced in guinea-pigs, paying particular attention to the platelet count.

Technique.

In the counting of red cells and leucocytes, and in making the differential leucocyte count, the usual technique was employed. The haemoglobin estimations were made by means of Haldane's modification of Gowers's haemoglobinometer. The number of platelets was estimated by the following method:

The skin (of the ear in most cases) is cleaned up with ether, and on the clean surface is deposited a large drop of diluent (the diluent employed consisted of 1 per cent. aqueous solution of brilliant cresyl blue 1 part, 2 per cent. sodium citrate in normal saline 6 parts). The skin is then stabbed, through the drop of diluent, by means of a sharp needle. The blood thus oozes directly into the diluent, which prevents clumping of the platelets, and at the same time stains them blue. With a platinum loop of convenient size some of the diluted blood is transferred to a slide and carefully covered with a cover-slip. The amount of blood taken should be sufficient to spread out evenly between the slide and cover-slip without causing the latter to float. The preparation is ringed with vaseline. The number of platelets and red cells is then counted in several fields of the preparation (Leitz 7, ocular 3), and the ratio of platelets to red cells determined. Having already determined the number of red cells per cubic millimetre, the actual number of platelets is readily arrived at.

Experimental Data.

A series of four guinea-pigs was put on a diet of bran, oats, and water only (no green food or autoclaved milk), it

TABLE I.

Date. 1921.	Weight Grams	Red Cells.	Leucocytes.	Platelets.	Remarks.
GUINEA-PIG B 41.					
Jan. 24 ...	—	4,864,000	5,600	600,000	
,, 27 ...	295	5,168,000	4,000	781,000	
,, 31 ...	320	5,820,000	6,600	885,000	
Feb. 3 ...	310	6,384,000	8,200	715,000	
,, 7 ...	280	7,888,000	5,000	1,656,000	Not lively; coat rough.
,, 10 ...	270	6,566,000	4,400	1,042,000	Unchanged.
,, 14 ...	280	6,896,000	4,000	1,276,000	,,
,, 17 ...	225	5,536,000	4,600	748,000	,,
,, 19 ...	210	--	—	—	In moribund state.
GUINEA-PIG B 42.					
Jan. 24 ...	—	5,470,000	7,000	824,000	
,, 27 ...	325	6,000,000	11,200	747,000	
,, 31 ...	310	6,528,000	10,200	1,300,000	
Feb. 3 ...	330	6,996,000	9,400	1,300,000	
,, 7 ...	240	7,584,000	6,800	1,547,000	
,, 10 ...	290	6,272,000	12,800	836,000	
,, 14 ...	300	6,480,000	11,000	841,000	
,, 17 ...	260	5,021,000	9,000	913,000	Quiet; out of condition.
,, 19 ...	270	5,472,000	6,400	781,000	
,, 21 ...	260	5,536,000	6,000	774,000	Looks ill.
,, 22 ...	250	5,344,000	—	785,000	Unchanged.
,, 23 ...	240	4,960,000	—	824,000	,,
,, 24 ...	220	—	—	—	In dying condition.
GUINEA-PIG B. 43.					
Jan. 24 ...	—	5,766,000	10,600	784,000	
,, 27 ...	280	5,152,000	5,000	792,000	
,, 31 ...	300	7,986,000	6,000	1,477,000	
Feb. 3 ...	320	6,360,000	7,200	936,000	
,, 7 ...	260	7,072,000	4,800	1,100,000	
,, 10 ...	300	5,808,000	6,200	755,000	
,, 14 ...	270	5,904,000	6,000	797,000	
,, 17 ...	225	6,048,000	4,800	761,000	Quiet; out of condition.
,, 19 ...	200	4,848,000	7,200	675,000	Very ill.
,, 20 ...	—	—	—	—	Died during night.
GUINEA-PIG B. 44.					
Jan. 24 ...	—	5,680,000	8,000	800,000	
,, 27 ...	430	6,144,000	6,000	759,000	
,, 31 ...	410	6,864,000	4,800	1,183,000	
Feb. 3 ...	410	6,624,000	11,000	973,000	
,, 7 ...	340	8,000,000	5,400	754,000	
,, 10 ...	390	5,928,000	7,000	575,000	
,, 14 ...	360	6,552,000	4,000	907,000	
,, 17 ...	325	5,640,000	3,600	910,000	Looks ill.
,, 19 ...	300	6,288,000	6,000	886,000	Unchanged.
,, 21 ...	270	5,200,000	6,800	675,000	Very ill
,, 22 ...	—	—	—	—	Died 10 a.m.

* Put on diet of bran, oats, and water *ad lib.*

Differential Leucocyte Count.—This showed fluctuations such as might be met with in normal animals—no constant or striking change. No lymphocytosis, relative or absolute, was noted.

Post mortem Findings.—Guinea-pig B. 41: Some swelling of costo-cartilaginous junctions; small haemorrhages in intestines; suprarenals congested; small haemorrhages. Guinea-pig B. 42: Small haemorrhages in gums; swelling of costo-cartilaginous junctions; large cysts in the shoulder (one or two 1 cm. in diameter); haemorrhages in thigh muscles. Guinea-pig B. 43: Swelling of costo-cartilaginous junctions well marked; haemorrhages in both large and small intestine; suprarenals congested; subperiosteal haemorrhages. Guinea-pig B. 44: Swelling of costo-cartilaginous junctions; small haemorrhages in intestines.

having been shown that such a diet produces acute scurvy with death in the guinea-pig in about three weeks' time (H. Chick, E. M. Hume, and R. F. Skelton[7]). Blood estimations were made before the commencement of the experiment and at intervals of three to four days during its course.

These guinea-pigs lived for periods ranging from twenty-six to thirty-one days on the scurvy diet, and also show an appreciable loss in weight, roughly one-third of their original weight. *Post-mortem* the findings characteristic of scurvy were noted, though it must be admitted that these were not as severe as they usually are. The teeth were loose, there was some "beading" of the junction of the costal cartilages with the true ribs. Both small and large intestine showed some small haemorrhages, and the suprarenals were congested and showed some small petechial haemorrhages. The bone marrow of the femur was of the red active type.

As regards the blood picture, no change of an outstanding character has occurred. The red cells are apparently increased in what we might term the "prescurvy" period, dropping again to normal count at death. The platelets show the same increase and subsequent decrease. Even shortly before their death, when the animals were very weak, the platelets were normal in number. The total and differential leucocyte counts show nothing worthy of note. These findings, it must be admitted, were somewhat unexpected, as a drop in the platelet count was confidently anticipated. However, about this time, through the kindness of my colleague, Dr. Harden, I was able to make some platelet counts on monkeys suffering from experimental scurvy, which bore out the results obtained in the guinea-pig.

TABLE II.—*Platelet Count of Monkeys suffering from Scurvy.*

Date.	Red Cells.	Platelets.	Platelet Ratio.	Remarks.
MONKEY I. Feb. 24, 1921	4,208,000	576,000	7.3	Gums [illegible], some bleeding. [illegible] use of [illegible] subperiosteal haemorrhages). Pallor of [illegible]
Mar. 8, 1921	4,352,000	800,000	5.5	[illegible] were severe. Proptosis right eye.
MONKEY II. Feb. 24, 1921	5,737,000	735,000	7.8	Condition not so acute as in Monkey I. Few haemorrhages in the serum in gums.
MONKEY III.* Feb. 26, 1921	4,560,000	600,000	7.6	

Monkey III was the normal control animal.

Both these monkeys, though showing the typical picture of acute scurvy, gave more or less normal platelet counts. In Monkey I, in which the condition was the most acute, the red cells show a slight drop, whilst in Monkey II the red count is above that obtained in the normal control. Wassermann, in the paper already referred to, states that the red cells are sometimes slightly below the normal number, whilst in other cases a high red count up to seven millions is obtained. It is difficult to understand why an increase in the number of red cells should be met with in this disease, unless it is due to a diminution in the total volume of the blood. If this were so, the normal total leucocyte counts noted in the case of the scorbutic guinea-pigs would in reality represent a leucopenia.

In conclusion, the observations made in the case of two infants might be of interest, as pointing to a practical application of these experimental findings, and at the same time further supporting the contention that the platelets are not affected in scurvy. It is through the kindness of Dr. D. H. Paterson, of the Children's Hospital, Great Ormond Street, that I have had access to this material and am able now to publish these figures. They are tabulated below (see Table III).

In both these cases a diagnosis of scurvy had been made, though it must be admitted that in case R. E. there was some doubt as to the correctness of this view. When, however, the additional evidence afforded by the platelet count was available it was at once seen that the two cases were essentially deficient. In R. E. the platelet count was found to be very low, and this fact, taken in conjunction with the low red count and evidence of a bone marrow reaction, confirmed the doubts felt as to the original diagnosis of scurvy, and it was changed to one of purpura haemorrhagica. The second case, F. S., in which there was little doubt as to the true condition, gave a normal platelet count and a red count slightly below the normal. The subsequent history of these cases bore out the revised diagnosis. Both children received antiscorbutic treatment. R. E. died in the course of a few days, with *post-mortem* findings in keeping with the diagnosis of purpura haemorrhagica, whereas F. S. made a rapid recovery.

TABLE III.

Case.	Age.	Bleeding Time.	Red Cells.	Platelets.	Platelet Ratio.	Blood Smear.
R. E.	1½	++	3,248,000	60,000	53.3	Nucleated red cells. Polychromatophilia. Anisocytosis.
F. S.	10/12	Normal	4,000,000	560,000	6.8	Nothing abnormal seen.

Note.—R. E. had haemorrhages (skin) scattered all over the body; bleeding from mucous surfaces, subperiosteal haemorrhages (tibiae); a bruise 1 in. in diameter over the right eye. F. S. had bleeding from the gums, subperiosteal haemorrhages, and proptosis of both eyes.

Conclusions.

1. In scurvy produced experimentally in guinea-pigs and monkeys and in one human case the platelets were found to be normal in number. It is possible that very transient fluctuations in the platelet count occur in scurvy, and that it is during this period of platelet deficiency that the haemorrhages occur. It is hardly conceivable, however, that in making a comparatively large number of platelet observations such fluctuations should have been completely overlooked. Demmer[8] cites a case of purpura haemorrhagica in which fluctuations in the platelet count, preceding the outburst of haemorrhages, occurred in a most regular manner.

2. The red cells in some cases showed an increase in number, this condition coinciding with a "prescurvy" or incipient scurvy stage. In the acute stages of the disease, particularly where haemorrhages were numerous, the number of red cells fell to slightly below the normal.

3. No variations in the total and differential leucocyte count were observed.

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CHRONIC DUODENAL ILEUS.

BY

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I VENTURE to bring before a meeting of pathologists some observations on a condition which I believe to be a pathological entity, but which in the *post-mortem* room may readily escape notice unless definitely looked for. We are all probably familiar with the findings in a case of death from acute gastro-mesenteric ileus, in which enormous distension of the stomach and duodenum is found, the distension ending, as a rule, opposite where the superior mesenteric vessels cross the duodenum. Such cases, although usually occurring after an abdominal operation, and most frequently after operation on the biliary tract, occur also independent of any operation.

In a long series of examinations of the duodenum in the *post-mortem* room in search of diverticula I was struck by certain cases where a greatly dilated and congested duodenum was found, the dilatation extending as far as the crossing of the superior mesenteric vessels. In the histories of these cases no significant symptoms were

recorded which could be correlated with the pathological condition found.

The rapidly fatal course of duodenal obstruction experimentally produced in animals leads one to anticipate that any degree of duodenal obstruction in the human subject should be accompanied by very definite symptoms and interference with the health of the individual. The necessary proof was forthcoming in the case of an old woman who, after suffering from long-standing gastric symptoms, the chief of which was vomiting, finally developed, without obvious exciting cause, acute gastro-mesenteric ileus which proved fatal. At the *post-mortem* examination there was found enormous distension of the stomach and the first three parts of the duodenum up to the mesenteric vessels, beyond which the gut was empty and collapsed. A second case in which there was also present a duodenal ulcer, for which a posterior gastro-enterostomy had been performed, the patient continuing to vomit and dying in a state of inanition and collapse, also showed the same duodenal dilatation up to the crossing of the mesenteric vessels.

The possibility of clinical diagnosis of the condition was furnished, however, by a subsequent case in which the patient, a woman aged 34, gave a history of gastric trouble since childhood, with periodic bilious attacks, associated with chronic flatulent distension in the epigastric region, and, latterly, progressive emaciation. At operation, the distension of the stomach and the duodenum up to the root of the mesentery was so great as to make its recognition unmistakable. The obvious line of treatment was an anastomosis between the dilated third part of the duodenum and the first loop of jejunum, and this operation was followed immediately by complete relief of all her symptoms.

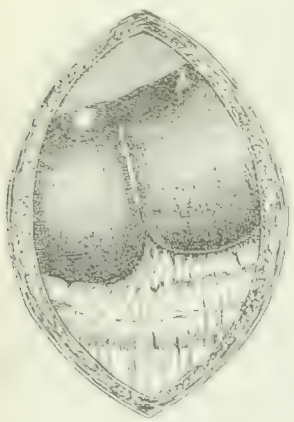


FIG. 1.—Greatly dilated duodenum and pylorus as seen at operation. Ulcer on lesser curvature of stomach just showing beneath liver.

Since then I have met with and successfully treated four similar cases. In Fig. 1 is represented the dilated duodenum seen on opening the abdomen. This necessary contribution from the pathology of the living may, I hope, make the recognition of the milder degrees of the condition in the *post mortem* room possible, for only there can its relation to other morbid conditions in this region be fully established.

Etiology.

In the normal human subject the duodenum is slightly constricted where it crosses the vertebral column (Fig. 2), behind the superior mesenteric artery. Dwight in his wax casts of the duodenum showed how the degree of constriction may vary within the limits of the normal. A congenital abnormality in the relation of the superior mesenteric artery to the duodenum might quite conceivably lead to an exaggeration of the normal constriction sufficient to interfere with function.

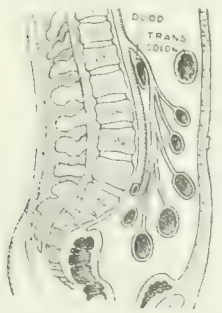


FIG. 2.—Diagram showing how duodenum may be compressed between root of mesentery when intestines sag downwards.

Were a congenital cause operative, then one would expect to find every now and then a case where in early life well-marked obstructive symptoms were recognizable. Such is the case, for both Downes and Dubose have reported cases of megaduodenum in infants, in which at operation no organic stricture of the duodenum was discernible and in which the dilatation extended as far as the crossing of the mesenteric vessels.

It can be shown on the cadaver that any factor which causes a direct downward pull on the mesenteric vessels almost completely occludes the duodenum. During life it has been shown that when the empty small intestines sag into the pelvis, the mesentery folds like a fan, and if the latter is not of sufficient length to allow the intestines to reach and rest on the pelvic floor, a considerable drag occurs on the mesenteric vessels. A lax abdominal wall and a certain degree of visceroptosis are the essential factors in such a case. Apart altogether from general visceroptosis, however, we meet with cases in which there is a congenital lack of fixation of the proximal colon and the caecum and ascending colon prolapse into the true pelvis. In such cases, especially if the caecum is allowed to become loaded, a drag on the superior mesenteric artery and on its right colic branch may cause a greater or less degree of duodenal compression.

In two cases in which I operated for symptoms of duodenal obstruction the cause was found to be prolapse of the proximal colon. A colopexy was followed in each case by pronounced relief of all symptoms.

Morbid Anatomy.

The dilatation in the duodenum is the most striking feature of the condition. This usually, but not invariably, is associated with dilatation of the stomach. The wall of the duodenum is thicker than normal, mainly from muscular hypertrophy. The pylorus may be either widely dilated, admitting three fingers readily, or it may have retained its tone and appear normal. The small intestines will be empty and will occupy the true pelvis, and if dislodged by traction on the mesentery they come out with an audible "pop." In some cases, however, as previously mentioned, it is the caecum and part of the ascending colon which occupy the true pelvis and exercise the mesenteric pull.

Consequences of Duodenal Ileus.

The obstruction may become complete, when the picture of acute dilatation of the stomach with intense toxaemia and collapse and fatal termination follow unless promptly relieved. Short of this, the subjects of chronic duodenal ileus suffer from chronic flatulent dyspepsia with periodic bilious attacks; in fact, I think we have in this periodic accentuation of a duodenal obstruction the pathology of a bilious attack. Some catarrhal change in the duodenal wall almost certainly accompanies such an attack. It is significant that of the eight cases of chronic duodenal obstruction which I have so far investigated three have had in addition a chronic duodenal ulcer and one a chronic gastric ulcer. This association of ulcer and duodenal dilatation has also been noted by Kellogg, and it seems likely that the chronic stasis in the duodenum predisposes to ulceration, as Lane has maintained for many years.

Further, in a case of fatal acute gastro-mesenteric ileus following an operation for removal of gall stones from the common duct, it was observed during life that duodenal content was coming from the biliary fistula. This suggested that a previous chronic duodenal obstruction may have had some etiological relationship with the infection of the biliary passages and the calculus formation.

Likewise, in a case of death from acute haemorrhagic pancreatitis I found a similar duodenal dilatation, and it appeared that entrance of duodenal content into the pancreatic duct had activated the pancreatic ferments. I do not suggest that this is the invariable or even the usual sequence of events, for in other cases of acute pancreatitis no such duodenal dilatation has been found. I merely state the fact as one worthy of investigation in other cases.

In one other condition the presence of chronic duodenal ileus may have an important bearing, namely, in rapid death following the perforation of a duodenal ulcer. It is the common experience of surgeons that perforated duodenal ulcer is a condition with a relatively low mortality when operation is undertaken within twelve hours of the perforation. Occasionally, however, a patient is brought for treatment within a few hours of the rupture in a state of profound shock and collapse, from which he does not rally. In one such case which I investigated the patient, a young man, died within twelve hours of the onset. *Post mortem* there was found a greatly dilated and congested duodenum, which had apparently emptied itself through a relatively small perforation. The explanation I suggest is that in such cases the escape into the peritoneal cavity of a

considerable quantity of the toxic content of a partially obstructed duodenum gives rise to the profound symptoms of shock and toxaemia, which are almost anaphylactic in character and resemble closely the condition which one is accustomed to see in animals with a closed duodenal loop.

It would be out of place for me here to enter more fully into the clinical aspects of this subject, and I would in conclusion summarize the following points:

1. Chronic duodenal ileus is a clinical and pathological entity.
2. It is usually found in female subjects with a certain degree of visceroptosis, or in male and female subjects with a floating proximal colon.
3. It is probably the predisposing cause to acute dilatation of the stomach, both post operative and spontaneous.
4. It is the pathological basis of the recurring bilious attack.
5. It may be found in association with duodenal and gastric ulcer.
6. Its relationship to chronic biliary and pancreatic infections, whilst not yet established, is worthy of further study.
7. In cases of rapid collapse and death after the perforation of a duodenal ulcer the signs of chronic duodenal obstruction should be looked for.

DISCUSSION.

Dr. JOHN CRUICKSHANK (Aberdeen) said that the condition was new to him until a short time ago, when he had discussed it with a surgeon in Aberdeen. The surgeon in question blamed the pathologists for not having recognized it *post mortem*.

Professor M. J. STEWART (Leeds) said that the condition described by Mr. Wilkie was difficult to recognize in the *post-mortem* room. The intestine varied a good deal in size after death, and unless attention was called to the condition from the clinical side it might be missed. He asked whether hypertrophy of the duodenum was always present.

Dr. J. F. GASKELL (Cambridge) had not observed the condition in his *post-mortem* experience. Mr. Wilkie had spoken of blowing up the duodenum with air. Was the condition obvious in the collapsed duodenum before it was blown up?

Dr. J. H. DIBLE (Manchester) asked whether laxity of the pylorus had anything to do with the condition. If air was blown into a normal stomach, would not the pylorus prevent its passage into the duodenum?

Mr. D. P. D. WILKIE, in reply, said that he had not intended any reflection on pathologists by his remarks. The intestines varied very much *post mortem*, and he thought that in the absence of clinical symptoms the condition would not be recognized. The clinical evidence was, however, definite. Hypertrophy should always be present. He thought it was a weak point in Lane's theory that no hypertrophy of the bowel wall was found above the kinks. In his cases thickening of the duodenal wall was a constant feature. Blowing up the stomach with air as a test of the condition was apt to be fallacious. It could only be used to confirm clinical evidence. But it made operation very much easier, and that was why he used it. The pylorus was not always patent. Among his cases there were two types: In (1) the pylorus was patent and vomiting was a feature; in (2) the pylorus was tonically contracted, and the patient had nausea but did not vomit until after twenty-four hours. The effect of blowing in air varied in the two types.

EXPERIMENTAL TAR CANCER IN MICE.

(Abstract.)

DR. JAMES A. MURRAY (Director, Imperial Cancer Research Laboratory, London) gave an account of the work done, in conjunction with Dr. W. H. Wagham, on experimental tar cancer in mice. He began with a brief outline of the history of experimental cancer research. Yansen and Burrell had first succeeded in transplanting tumours. But they and their immediate successors dealt with fully developed cancer. Later a variety of methods were devised to try and show how cells became cancerous. Chronic irritants, such as *x* rays and animal parasites, had been extensively used. What was wanted, however, was a method which would produce uniform results.

Japanese observers had found that it was possible to produce cancer by painting with tar. The defect of their work lay in the fact that they brought forward no particular standard as to what constituted a malignant tumour. It was true that there was no pathological criterion by which malignancy could be judged. Histological examination was only a rapid method of discovering dissemination. Workers with tar produced lesions which resembled squamous carcinomata of the skin. To prove malignancy the observer looked for extension of growth beyond the boundaries of the epithelium, and continued growth when the irritant was removed. The method used by Dr. Murray's predecessors was not quite satisfactory. They kept the animals alive as long as possible and then tried to find metastases.

Dr. Murray's method was as follows: He applied tar to a skin area in mice two or three times a week for several months. The area chosen was the back of the neck, since here the animals were unable to get at it to scratch. The applications need not be very regular. The tar could be applied at any convenient time while carrying on with other work. After a few months warty growths would begin to appear in some animals, and they increased in size as long as they were painted. To prove that malignant change had taken place autologous inoculation was performed. When a benign tissue was inoculated into the same animal growth ceased after a time; a malignant tumour, provided it was not too septic, grew progressively. By using this method it became possible to diagnose malignancy much sooner and to study the early stages of cancerous growth.

Dr. Murray then showed drawings and slides of squamous carcinomata produced in mice by this method. There were no mammary tumours in this series of mice, which was curious when one remembered how frequent such tumours were.

Dr. J. F. GASKELL (Cambridge) commented on the vast amount of work which had been done to solve this prime problem of pathology. The difficulties were immense because there had been no satisfactory method of dealing with the matter. Dr. Murray's work was epoch-making in that it pointed to a method which might prove reliable in the study of cancer. He would like to ask a question—tar was an antiseptic and sterilized the medium in contact with it—could experiments be done in an aseptic manner so as to eliminate any possible septic factor in the production of cancer?

Dr. W. FORD ROBERTSON (Edinburgh) said that the observation of the increase of malignancy of the epithelial new growth on transplantation from the original site was, he thought, one of much importance. It did not, however, throw any light upon the question of causation of malignant growths. It was well known that a water soluble extract made from tar acted as a powerful "auxetic," and it might be that the consequent proliferation of the epithelial cells over a long period, in the experiments described, rendered them more vulnerable to the attack of an infective agent which was the true cause of cancer.

Dr. ARCHIBALD LEITCH (London) said that one of the difficulties of cancer research was that spontaneous tumours were very liable to develop during experiments. In his series of mice tar had been applied to the groin, and it was very difficult to avoid putting some on the mammary gland. Several of his mice had developed mammary tumours. He could not conceive that bacteria had anything to do with the formation of tumours in his cases. Carcinoma could not be diagnosed with certainty by pathological methods. Though certain microscopical appearances might be associated with malignancy, this could not be said to be a constant finding, and the only criterion was a clinical one. Even if we could transplant tumours in man the result would not give us certain knowledge as to the nature of the growth. He did not agree

with Dr. Murray that only malignant tumours grew on transplantation, and cited an instance of innocent adenomyoma of the uterus which had done so.

Dr. JAMES A. MURRAY, in reply to Dr. Gaskell, said that sterilization would be an ideal method, but was not possible to carry out in the animal body. It might, however, be possible to sterilize cells cultivated *in vitro*. One could not protect the deep surface of an experimental area from saprophytes. He agreed with Dr. Leitch that no definite line could be drawn between malignant and benign tumours.

DEMONSTRATIONS.

PROTEIN SKIN TESTS IN ASTHMA.

IN the Pathological Department of the College of Medicine, on July 20th, Dr. MACKENZIE WALLIS demonstrated the cutaneous reactions with various proteins. He had grouped several closely related types of protein together and combined them into six tests. For example, all the various animal proteins, including epidermal, fur, feathers, etc., were used together. If a positive skin reaction was obtained the particular type of protein causing this reaction had then to be determined separately. The skin was cleansed with alcohol or ether, and a small drop of an alkaline solution of the group proteins placed upon it. With a sharp knife or needle the skin is scratched sufficient to break the skin surface without producing bleeding. A positive reaction shows in a few seconds by a zone of hyperaemia spreading outwards from the area tested. This is followed in from twenty to thirty minutes by the production of a definite urticarial wheal.

In many cases of asthma the patient was found to give positive reactions to one or more groups. The largest proportion of cases reacting to these skin tests were found to be sensitive to pollens. In the animal group of proteins feathers appear to be most prominent. Care had to be taken to avoid producing too severe a reaction in a highly sensitive person, and the tests should not be done immediately after an acute attack.

RENAL FUNCTION TESTS.

In the Pathological Department of the College of Medicine, on July 22nd, Dr. MACKENZIE WALLIS demonstrated micro-chemical methods of estimation of urea in blood, sugar in blood, and sugar in urine. These methods possessed the advantage that they could be easily applied without any inconvenience to the patient. Small quantities of blood were required for these estimations, and this could be obtained by a simple prick of the finger. The blood could either be weighed by absorbing it on specially prepared filter paper, and weighing on a torsion balance, or the blood could be drawn up into small graduated pipettes.

The blood was extracted with distilled water, and estimations of urea and sugar made upon the extracts. The use of the tungstic acid method of precipitation of blood proteins devised by Folin and Wu in America rendered such observations possible. It was possible to make an estimation of the blood urea and blood sugar in a very short time; the estimation of the urinary sugar content could be carried out simultaneously. With these methods it was possible within the space of one hour to obtain considerable information which was of value in diagnosis of renal insufficiency.

THE *Journal of the American Medical Association* reports that among the precautions taken during an epidemic of diphtheria and scarlet fever at Monon, Indiana, public meetings had been prohibited, all schools closed, and no child under 16 years of age was allowed in the streets.

IT is reported that during the first six months of 1921 31,880 births have been registered in Paris, while for the whole twelve months of 1913 there were only 48,746; in 1913 there were 31,916 marriages in Paris, while 26,282 took place during the first six months of 1921.

BY recent legislation in Chile owners of factories employing fifty or more women over 18 years of age must, within six months, provide day nurseries for the children of their employees; plans must be approved by the health authorities; not more than twenty five children may be placed in any one room, which must be in charge of a competent person paid by the employer.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LOCAL ANAESTHESIA IN THE REDUCTION OF FRACTURES.

THE reduction of fractures under local anaesthesia was first attempted by Conway in 1885, and was reported on by Lerda and Quénu in 1907 and 1908, but the method has not come into general use, probably owing to the fact that, at first sight, the injection of any solution into the bruised tissues in the vicinity of a recent fracture appears to be risky. However, in the following small series of cases in which the method has been given a trial no untoward result has occurred, and in every case the reparative processes have proceeded normally.

Technique.

The injection is made around the site of fracture with a 10 c.cm. or 20 c.cm. Record syringe, the last two or three cubic centimetres being injected before the fractured ends of bone. This can generally be done from two skin punctures so situated as to avoid important structures. The solution used is 1 per cent. novocain, to each 10 c.cm. of which is added one drop of adrenaline chloride solution (*B.P.*); the amount injected varies from 10 to 60 c.cm. It is essential that syringe, needles, and solution be sterilized by boiling—no other method of sterilization is admissible.

After five minutes the fractured ends of bone can be moved into position without pain, and a splint applied in the usual way. The limitation to the use of this method is the occasional difficulty in finding the exact site of the fracture; it is increased where there is swelling.

The following cases were treated in the casualty department of the Hampstead General Hospital:

Case 1.—H. B., chauffeur, aged 32, suffered an oblique fracture of the lower third of the right radius. It was twice reduced under general anaesthesia, and finally under local. The result was firm union, with good flexion and extension, but slight limitation of pronation.

Case 2.—E. W., a boy aged 15, had a transverse fracture of the lower third of the right radius with separation of the lower ulnar epiphysis. Considerable difficulty was experienced in finding the exact site of fracture. Novocain was twice employed, but, the position not being considered perfect, reduction was performed under nitrous oxide. The result was good union with full range of all movements.

Case 3.—P. L. P., a man aged 80, presented Colles's fracture of the right side with fracture of the ulnar styloid. It was considered that as he was very frail etherization would involve grave risk, and local injection was employed; reduction was effected without pain. Union is now firm, with good movements in all directions.

Case 4.—A. S., a butler aged 67, had an oblique fracture of the middle third of the shaft of the left humerus. He suffered from chronic bronchitis and marked emphysema. Local injection was successfully employed. There is firm union, with some limitation of extension of the elbow-joint.

Case 5.—T. P., aged 60, had a Colles's fracture on the right side. Reduction under novocain injected locally was painless. Union is now complete, but the wrist is rather stiff and finger flexion is not perfect.

The method is of value especially in cases where a general anaesthetic is contraindicated. A preliminary x-ray plate would in some cases be of very material assistance.

R. A. H. FULTON, M.B., Ch.B.N.Z.,
Late Resident Medical Officer, Hampstead General Hospital.

LOCAL ABSCESS FOLLOWED BY ERYTHEMA SCARLATINIFORME.

CASES of erythema scarlatiniforme due to septicaemia or pyaemia are not unusual, but we rarely find them associated with local abscess formation. Two such instances have come under my observation. The second, which I saw recently, proved perhaps the more interesting.

A boy, aged 11, having no previous history of erythema, was taken ill with febrile symptoms, sickness and slight vomiting, followed by a bright rash resembling that of scarlet fever. When I saw him the chest, back, and inner sides of the thighs were covered by the rash. The temperature was 99° F. The following day the temperature rose to 102° F. and the rash spread to the face. The fauces, soft palate, and uvula were congested, but the

tonsils were practically unaffected. There was no enlargement of the glands behind the sterno mastoid. With a rash so intense I would have expected the patient to be more profoundly ill to justify the diagnosis of scarlet fever. On further examination a small abscess of the heel was discovered, with enlargement of the corresponding inguinal glands. The rash faded and entirely disappeared in a couple of days and was followed by a very slight desquamation of the skin. Later, the glands of the groin suppurated and from the pus evacuated *Staphylococcus aureus* was cultivated and a streptococcus which corresponded with *Streptococcus faecalis*.

Glasgow. F. ANDERSON MURRAY, M.D.

Reports of Societies.

LIVERPOOL MEDICAL INSTITUTION.

THE first ordinary meeting of the eighty-third session took place on October 27th, with the President, Dr. J. E. GEMMELL in the chair. Mr. EDGAR STEVENSON read a note on the treatment of septic ulcer of the cornea by chauffage, first described to him by Mr. Harrison Butler about twelve months ago. During this year Mr. Stevenson had treated a considerable number of septic ulcers of the cornea by this method with exceptionally good results, and he considered it far in advance of any other method of treatment. In addition to the rapid healing of the ulcer, an important point was that with chauffage the resulting scar was much thinner than that following healing by any other method. Dr. G. F. R. SMITH read an interesting note on post anaesthetic complications.

Dr. DINGWALL FORDYCE read a paper on the significance and treatment of some abnormalities of the urine in children. He held that thorough examination of a child includes chemical and microscopical examination of the urine, which might disclose the presence of pus cells and motile bacilli. These were never present in great numbers in a perfectly healthy child, but there were a considerable number of children, probably for the most part girls, whose urine was in this condition, and yet who were "fairly well." The bacilli belonged to one of the types of the coli group, and the exact site of the infection was impossible to determine in young children. He stated that the essence of both preventive and "therapeutic" treatment was correct diet and the avoidance or cure of septic foci. A common statement in the textbooks was that sugar was rarely found in the urine in children, but in a recent series of 100 unpicked cases of ailing children evidence of sugar in the urine was certainly present in 10. However slight and fleeting the positive test results might be, an explanation should be sought for them. In a large proportion of cases the presence of a positive test corresponded with indiscretion in diet or digestive disturbance, and disappeared on correction of such. In other cases a septic process was the cause. Clinically the experience in the matter of the connexion between acidosis and glycosuria pointed to laevulose being a common form of the sugar present. Cases in which glucose was the sugar present should be carefully watched and tested, with a view to counteracting any morbid tendency.

ANTIGONOCOCCAL SERUM.

AT a meeting of the North of England Obstetrical and Gynaecological Society held at Liverpool on October 21st, with the President, Mr. CARLTON OLDFIELD (Leeds), in the chair, Miss IVENS (Liverpool) read a paper on the use of antigonococcal serum as an adjunct to conservative surgery in gonococcal infections, basing her remarks on the results of its administration in 40 cases in the majority of which salpingitis had been the prevailing feature. Nicolle's serum from the Pasteur Institute had been employed. The serum was administered as follows: (1) By intraperitoneal injection during laparotomy. (2) By subcutaneous injection after dilution with normal saline. (3) By vaginal serum packs alternating with packs of 10 per cent. salt solution mixed with 5 per cent. carbolic lotion. It was pointed out that the administration of salt solution at the time of serum injection diminished the incidence of anaphylactic phenomena. In the majority of cases the pus tubes were opened up and 20 c.cm. of serum injected into them or left in the pelvis. The tubes were not removed unless very extensively damaged and the abdomen was closed without drainage. All the patients had made an immediate recovery and the results in cases of salpingo-oophoritis, endocervicitis, and arthritis, and more especially in puerperal gonococcal infections, were excellent. A large number of cases had been followed up and were in good health, presenting a marked contrast to cases treated without serum. Three cases required further operation, but the possibility of reinfection was present. Miss Ivens considered that the results she had obtained warranted extended study and experiment with a reliable serum.

THE Harrogate Medical Society held its second meeting of the session at the Clinical Laboratory (by permission of Dr. Sinclair Miller and Dr. F. B. Smith) on October 20th. Dr. A. MANTLE presided and there was a large attendance of members. Part of the evening was devoted to the examination and discussion of pathological specimens from recent cases of clinical interest. Dr. MILLER read a paper on basal metabolism, and this was followed by a demonstration of the portable Benedict apparatus by Mr. KENDRICK of the Sanborn Company, London. Drs. BAIN, EDGECOMBE, SABERTON, BERTRAM WATSON, and others discussed the paper and the value of the apparatus as applied to clinical work.

Rebiews.

THE CHEMISTRY OF COLLOIDS.

The Physical Properties of Colloidal Solutions,[1] by Dr. E. F. BURTON, is one of a series of monographs on physics edited by Sir J. J. Thomson and Professor Horton. The first edition appeared seven years ago; the second is now before us. The general form and scope have not been altered, but a large amount of fresh detail has been added to bring the work up to date.

The book deals with colloidal solutions from the physical standpoint, and attention is chiefly devoted to consideration of the ultramicroscope, the Brownian movement of particles and the optical properties of colloidal solutions; these subjects are dealt with very clearly and fully. The difficult question as to the nature of the surface forces responsible for producing the stability of colloidal solutions is dealt with more briefly, and the phenomena of adsorption in particular are very briefly dismissed. The final chapter of five pages on the application of colloidal solutions might well be omitted, for, as the author says in the preface, this is a topic which requires a treatise in itself. Special attention is given to those problems of colloidal solutions about which the existing knowledge is sufficiently definite to make possible a mathematical treatment; consequently it is chiefly concerned with suspensoid colloids and not so largely with emulsoid colloids. Those problems of colloidal chemistry which are of chief direct interest to the biologist receive relatively little attention. Nevertheless, the book will be found very instructive by the biochemist, for it gives an indication of the real extent of existing accurate knowledge concerning the properties of colloidal solutions. The biochemist and the physiologist have to work with living tissues which are an extraordinarily complex mixture of emulsoid colloids. The reactions occurring in the living tissues were inexplicable by the laws governing the reactions of true solutions, but the partially revealed laws of colloidal solutions suggest possible explanations for a certain number of phenomena hitherto obscure. Unfortunately, whenever a new form of energy is discovered there is a tendency to attribute to it all phenomena for which there is no other convenient explanation. The properties of colloids are uncertain, and the forces which exist on the surface of colloidal particles and determine their behaviour are imperfectly understood, yet there has been a strong tendency to explain all reactions of living tissues for which there is no other convenient explanation by saying that they are due to the colloidal state. Furthermore, the fact that all living tissues are composed of colloids, and the fact that colloidal solutions can behave in a very mysterious manner, have led to the wholly unwarranted idea that colloidal solutions ought to have special therapeutic virtues.

Dr. Burton's book is a very useful corrective to some of the rather loose ideas that have accumulated concerning

[1] *The Physical Properties of Colloidal Solutions*. By E. F. Burton, B.A., Ph.D. Toronto. Second edition. Monographs on Physics. Series. London: Longmans, Green, and Co. 1921. (Med. 8vo. pp. 221; 18 figs. 12s. 6d. net.)

the properties of the colloidal state, for it states very clearly most of the really exact knowledge that we possess concerning the properties of the colloidal state. Medical science, like all other sciences dealing with living matter, is of necessity relatively inexact, and has to be content with laws that roughly cover a fair proportion of the observed facts, hence it is very useful to have the rather vague general laws in a subject such as colloidal chemistry examined by the physicist and submitted to mathematical treatment.

In his *Chemistry of Colloids*[1] Dr. W. W. Taylor deals with the behaviour of colloidal solutions from the point of view of the biochemist, and covers a much wider field than the book previously considered. The present is the second edition; the first edition, which appeared in 1915, was the first English textbook dealing with the subject. The changes in the present edition are chiefly matters of detail, but unfortunately the author has not brought his references up to date in all cases. This is particularly the case in the chapter dealing with the precipitation of colloids by electrolytes, in which case recent work has shown that the power of electrolytes to precipitate suspensoid colloids depends less directly on the valency than was previously supposed.

Dr. Taylor's book is divided into four parts—the general properties of colloids, the preparation of colloidal solutions, adsorption, and the applications of colloidal chemistry. As he has to deal with the general properties of colloidal solutions, he of necessity treats of problems concerning which our information is extremely imperfect. Many of these questions are very difficult to discuss briefly and intelligibly; on this account clarity of expression is all the more desirable, but this is not always attained—for instance, the meaning of the following sentence, which occurs on p. 8, is by no means clear: "This it is which points to the lyo rope character of the effect in the chemical reactions, the essential properties of the water, on which its behaviour as a solvent and as a dispersion medium depend, being changed to a fixed extent by these substances."

The chapters on the very difficult subject of adsorption are naturally not easy to follow, and matters are made worse by occasional slips. For instance, on p. 235 it is established in the letterpress that the static surface tension of a soap solution is less than the dynamic surface tension, but in the accompanying table the static surface tensions are shown as being greater than the dynamic surface tensions. The last portion of the book, on the applications of colloidal chemistry, is of special interest, and the chapter on biology is of particular importance to physiologists and pathologists. The conclusion, however, that oxygen and carbon dioxide are fixed in the blood by an adsorption process will not meet with general agreement. It would have been worth while in this chapter to have emphasized the fact—that since protoplasm is a colloidal substance, therefore every reaction which involves living tissues is a problem for colloidal chemistry.

VENEREAL DISEASE.

In the third edition of Colonel L. W. Harrison's *Diagnosis and Treatment of Venereal Disease in General Practice*[2] considerable changes and additions may be noted. The additions, however, have been effected without materially increasing the size of the work. To the introductory chapter, dealing with the routine of examination of the patient, has been appended a case sheet suitable for use in a venereal clinic. It is actually the form employed by the author in the St. Thomas's Hospital clinic. Labour has been reduced to a minimum by the use of rubber stamps and by recording lesions by the graphic method.

The chapter on the treatment of gonorrhoea in women has been considerably extended. The author is in favour of treatment "to assist drainage from the deeper tissues by procuring a diffuse outpouring of secretion without producing a slough." In other words, he prefers applications containing glycerin and a mild antiseptic to a strong solution which will cause a superficial burn without affecting tissues. He does not, however, subscribe to the somewhat passive line of treatment adopted by many authorities. Endometritis and metritis, except in the acute stages, may be treated, according to the practice of Kensington Infirmary, by direct applications of iodine to the uterine cavity. This is effected by passing a rubber catheter through the cervical canal, after careful sterilization, and gently syringing out with iodine liniment. In deciding whether the patient has been cured or not, Colonel Harrison lays great stress on the importance of the results of bacteriological examination. He points out that in several cases gonococci have been found in clear secretions, from the urethra or cervix, that to the naked eye appear to be perfectly healthy. Conversely, repeated examinations of a purulent discharge often give a negative result. No reliance can be placed on a single negative examination; a minimum of three is required before a patient can be regarded as cured. He holds that a positive complement fixation test is of value provided the patient is not being treated with vaccines.

The chapter on the treatment of syphilis has been shortened. Owing to the fact that nowadays considerably less use is made of the insoluble arseno-benzol products in the treatment of syphilis the space devoted to the subject of salvarsan and its method of solution can be reduced. In reviewing the various compounds available for use the author mentions arseno-argenticum. In his experience it has proved more effective in neuro syphilis than the other preparations. Generally speaking, the author is a strong advocate of treatment with the arseno-benzol compounds, and advises their use even after the Wassermann reaction has become negative and "continuation treatment" is in progress. In his opinion it is unsafe to assume that mercury will prevent any spirochaetes still present in the tissues from reviving. As an example of the way in which a purely mercurial treatment may keep syphilis in the simmering stage he quotes a case of syphilitic meningitis that became suddenly aggravated after nearly ten years' continuous mercurial treatment. On instituting salvarsan treatment an immediate improvement was effected and the patient's mental condition became brighter than it had been for many years. The chapter concludes with examples of the routine course for different types of cases. The tables are based on the experience obtained from a very large number of cases treated during the war and later on at St. Thomas's Hospital clinic. In the treatment of syphilis of the central nervous system the author considers that the results obtained from intravenous or intramuscular injections are as satisfactory as those observed after intraspinal medication. Chapter 22 deals with the vexed subject of prevention. In the author's opinion the greatest hope lies in the prompt treatment of patients in the early stages of the disease, thereby ensuring a maximum of cures and a minimum of infection carriers.

The chapter on the medico-legal aspect of venereal disease, contributed by Dr. F. G. Crookshank, Vice-President of the Medico Legal Society, is new, and is a very valuable addition to Colonel Harrison's work. In it are explained some of the difficulties with which practitioners may be confronted when dealing with the medico-legal aspect of venereal trouble. Such subjects as malpraxis, professional secrecy, the law of libel and slander, privilege and conduct in practice, are clearly dealt with. The paragraphs on medical testimony and the preparation of reports and the giving of evidence are extremely useful. Medical men commonly fail to discriminate between medical opinion and legal proof. In a law court questions of diagnosis, of communicability and so forth, are not regarded as positively settled unless the legal standard of strictness of proof is complied with. The standard of proof required of the medical witness is more exacting than that called for in hospital or private practice. For this reason the information given by Dr. Crookshank on the subject is of great value to any medical man liable to be involved in a case dealing with venereal disease. An outline is also given in this chapter of public health administration and law. Altogether it furnishes to the medical man information which it would be difficult for him to obtain from any other existing work. The fact that the book has reached its third edition is a sufficient indication of the good reception with which it

[1] *The Chemistry of Colloids and some Technical Applications.* By W. W. Taylor, M.A., D.Sc. Second edition. London: Edward Arnold and Co. 1921. (Demy 8vo, pp. 252, 22 figures. 10s. 6d.)

[2] *The Diagnosis and Treatment of Venereal Disease in General Practice.* By L. W. Harrison, D.S.O., M.B., Ch.B., M.R.C.P.E. With a chapter on the Medico-Legal Aspect, etc., by F. G. Crookshank, M.D. Edin., F.R.C.P. Third edition. Oxford Medical Publications. London: H. Frowde and Hodder and Stoughton. 1921. (Demy 8vo, pp. 500; 19 plates, 8 text-figs. 25s.)

has met. It is undoubtedly one of the best books available on the subject. The only criticism we have to offer concerns the arrangement of the book. We should have preferred that the two subjects of gonorrhœa and of syphilis should have been kept separate.

TUBERCULOSIS.

WE have before us five books on tuberculosis—namely, a second edition of Dr. HYSLOP THOMSON'S *Tuberculosis: Its Prevention and Home Treatment*;[1] a book with the odd title, *Practical Tuberculosis*,[5] by Dr. H. F. GAMMONS; a translation of SABOURIN'S book with the English title, *Rational Treatment of Pulmonary Tuberculosis*;[6] a book on *Tuberculosis and How to Combat It*,[7] by Dr. F. M. POTTENGER; and an original work on *Tuberculosis in India*,[8] by Dr. A. LANKESTER.

Dr. Thomson's book deals first with the causes of tuberculosis, the avoidance of susceptibility to it, and the precautions that should be taken against infection. The later part of the volume is concerned with home treatment, its object and its necessity, the measures a patient should take to preserve his health are reviewed, with a description of the various symptoms that may arise to indicate a recrudescence of activity of the disease. The book is very simply written, and as this is the second edition it has evidently appealed to the non-medical public for whom it was doubtless intended.

Dr. Pottenger's book also is for the patient, and includes most of what is to be found in Dr. Thomson's book, but it is not so simply written and is very much longer, owing chiefly to the discussion of physiological matters which have no particular bearing on the subject. It includes chapters on climate, tuberculin, and various symptoms, such as cough, expectoration, the pulse, temperature, etc. Most, if not all, of this can be quite readily explained to the patient during the course of treatment, and whether the book is really needed is doubtful.

In Dr. Gammons's book the chapters on physical signs, diagnosis, and treatment are very short, and contain, we believe, no information with which any well-informed practitioner is not perfectly conversant; those on tuberculin, the *x* rays, and artificial pneumothorax are too meagre to afford any important knowledge. If the phrase "those interested in tuberculosis" refers to the non-medical public, we are afraid a good deal of the book would be unintelligible to them, while we cannot altogether approve the use of such phrases as "blow-ups in tuberculosis" or "young men and women who are at the 'spooning' age." We do not agree that every patient suffering from tuberculosis should be submitted to the Wassermann test. The book is well printed and the proof carefully corrected, but the letter "g" is missing in Fig. 5.

Dr. Sabourin's book is excellent. The first fifty-seven pages, on the curability of phthisis, are interesting, though they perhaps hardly come within the scope of the title. Hygienic treatment receives ample consideration, and the author is a great believer in the rest treatment, if properly carried out. Fever, cough, and disorders of the different systems are thoroughly considered, and the articles on haemoptysis and colds are particularly excellent. The author's views on marriage and suckling differ in some particulars from those usually accepted. He believes that 80 per cent. of patients, if treated in time and properly, would recover. The translator, whose name is withheld, has done his work well, and the book can be thoroughly recommended.

Information with regard to tuberculosis in India up to the present is only to be found scattered in various papers, and Dr. Lankester has done well in supplying an authoritative pronouncement on the subject. He has gone into the matter thoroughly in all its aspects. He does not consider the time is ripe for compulsory notification, which would be opposed by the indigenous medical profession. Infection from bovine sources is extremely rare in large areas in India, and hence our views on the origin of surgical tuberculosis may require revision. Dr. Lankester advises the formation of what he calls a "League of Health" for educational purposes. All interested in tuberculosis in India should study the book.

[1] *Tuberculosis: Its Prevention and Home Treatment.* By H. Hyslop Thomson, M.D., D.P.H. Second edition. London: H. Frowde, and Hodder and Stoughton. 1921. (Cr. 8vo, pp. 107; 7 illustrations. 4s. net.)

[5] *Practical Tuberculosis.* A Book for the General Practitioner and those Interested in Tuberculosis. By H. F. Gammons, M.D. London: H. Kimpton. 1921. Post 8vo, pp. 153; 11 figures. 10s. 6d. net.)

[6] *Rational Treatment of Pulmonary Tuberculosis.* By C. Sabourin, M.D. Authorized English translation from the sixth, revised and enlarged, French edition. Philadelphia: F. A. Davis Company. 1921. (Demy 8vo, pp. 346. 3.50 dollars net.)

[7] *Tuberculosis and How to Combat It.* A Book for the Patient. By F. M. Pottenger, A.M., M.D., LL.D., F.A.C.P. London: H. Kimpton. 1921. (Demy 8vo, pp. 273. 10s. 6d. net.)

[8] *Tuberculosis in India: Its Prevalence, Causation, and Prevention.* By A. Lankester, M.D.Lond. Calcutta: Butterworth and Co. (India), Ltd.: London: Butterworth and Co. 1920. (Demy 8vo, pp. 532. 10s. net.)

IMMUNIZATION.

DR. FORD ROBERTSON'S *Therapeutic Immunization*[9] gives an excellent account of the theory, aims, and practice of an expert bacteriologist whose experience leads him to believe firmly in the treatment of disorder and disease by vaccines. The book contains chapters on such subjects as bacterial infection as a cause of disease, immunity, the theory of therapeutic immunization, bacteriological methods, and the varieties of bacteria that are of clinical importance, the preparation of vaccines and their employment. He notes that it seems clearly established that the combination of a vaccine prepared from *Bacillus coli communis* with tuberculin enhances the therapeutic value of the latter. With regard to rheumatoid arthritis, he concludes that roughly 60 per cent. of the patients are infected with a special type of pneumococcus and about 40 per cent. with an anaerobic gonococcus; the two infections are often combined, and may be associated with any of the bacteria that cause simple chronic rheumatism. Dr. Ford Robertson writes clearly and with the greatest conviction; his book should be in the hands of all who have to do with vaccine therapy.

PSYCHO-ANALYSIS.

A SERIES of volumes, with Dr. Ernest Jones as editor, is now being published under the auspices of the International Psycho-analytical Association. The first volume, *Addresses on Psycho-analysis*,[10] consists of a selection from the psycho-analytical writings of Professor JAMES J. PUTNAM, the distinguished neurologist of Harvard University, who died in 1918. Dr. Putnam became interested in Freud's work in his later years, and soon became convinced of its importance. His psychological writings were numerous, and the papers here selected are so arranged as to enable the reader to follow the development of his psycho-analytical views. The papers are not so much original contributions to the theory and practice of psycho-analysis as they are critical expositions of its essential principles. They are written persuasively and with charm, and almost every page reveals the great sincerity of the writer. As a critic Dr. Putnam is tolerant, alive to the merits of opposing points of view, understanding, and always kindly. Such an attitude gives these addresses a peculiar value, and perhaps as a contribution to psychology the merit of this volume lies chiefly in its well-balanced criticisms of divergent views. The addresses seem to reveal an increasing divergence from certain aspects of Freud's psychology, and this finds its most marked expression in the concluding paper on "the elements of strength and elements of weakness in psycho-analytic doctrine." The difference in outlook from the Freudian doctrines which is manifested in this volume is partially the outcome of a strongly humanistic tendency in Dr. Putnam's psychological attitude. He was unable to accept a rigidly deterministic view of human beings, and in this respect his views appear to approximate to those of Jung, though he was unable to sympathize with the rejection by Jung of Freud's theories of repression, infantile sexuality, and fixation. Dr. Putnam expresses the view, urged by Trotter and others, that Freud has not given sufficient attention to those influences, other than those based on sex, by which men living in social groups are practically moved—pre eminently the gregarious instinct in its different forms. These views do not appear to have gained acceptance by the psycho-analytic

[9] *Therapeutic Immunization in Asylum and General Practice.* By W. F. Robertson, M.D. Edinburgh: E. and S. Livingstone. 1921. (Demy 8vo, pp. 285. 1s. net.)

[10] *Addresses on Psycho-analysis.* By J. J. Putnam, M.D., Emeritus Professor of Neurology, Harvard University. With a preface by Sigm. Freud. The International Psycho-Analytical Library, No. 1. London: G. Allen and Unwin, Ltd. 1921. (Roy. 8vo, pp. 475; 1 portrait. 12s. 6d. net.)

school, and Dr. Ernest Jones refers to this aspect of Dr. Putnam's teaching in the interesting obituary notice which concludes the volume.

It has been contended, and quite reasonably, that the widespread occurrence of neurotic symptoms under the special conditions of warfare served to contradict Freud's generalization that the psychoneuroses were necessarily conditioned by disturbances in the sexual sphere. In *Psycho-analysis and the War Neuroses*,[11] the second volume of the International Psycho-Analytical Library, an attempt is made to answer this contention by four of the leading exponents of psycho-analysis. Three of the papers were read by Drs FERENCZI, KARL ABRAHAM, and ERNST SIMMEL at the International Psycho-Analytical Congress, 1918, and the fourth by Dr. ERNEST JONES at the Royal Society of Medicine, Section of Psychiatry, in 1918. The writers express themselves with a certain reserve, and on the whole seem to take the view that the sexual factor in the production of the war neuroses has not been clearly proved, and that the matter awaits further investigation. The influence of the danger-instincts in these neuroses is not denied, but the opinion is held by all the contributors to this volume that the conflict between the instinct for self-preservation and the ego-ideal is insufficient to lead to a neurosis. It is suggested that, while genital sexuality may not operate in the production of these cases, there is a sexual fixation at the pre-genital (or so-called narcissistic) stage of development which predisposes to the occurrence of a war neurosis. Such a view involves a widening of the concept of sexuality to include self-love, and it also enables the psycho-analyst to place the war neuroses upon a sexual foundation. The writers themselves seem to feel that these views will not be readily accepted, and the attempt here made to fit the sexual theory into the war neuroses is certainly far from convincing.

SMALL GERMAN TEXTBOOKS.

We have before us a round two dozen small or medium-sized German textbooks for students dealing with various branches of medicine, surgery, or the allied sciences. Many of them are books of some merit, and most of them have passed through several editions in the country of their production. They are all designed for the use of German students or practitioners of medicine, but some are little more than cram books. They could be employed by those British students and practitioners who have the requisite ability and desire to read German. But the volumes appear to cover very much the same ground as the many well-known British textbooks dealing with the identical subjects, and to present no single advantage, whether in matter or treatment, over the British volumes. It is therefore impossible to award specific recommendation to any of them, and for want of space they will remain nameless and receive no further notice. The BRITISH MEDICAL JOURNAL cannot refuse to receive such volumes from their German publishers, but it hardly seems worth while that they should be sent out in such promiscuous abundance for review.

NOTES ON BOOKS.

DR. DA ROCHA PEREIRA'S book on the cerebro-spinal fluid[1] gives a full account of the methods and results yielded by its examination in the pathological laboratory. He holds that meningitis without change in the cellular content of this fluid does not exist; that its examination will often give warning of imminent nervous disorder in tertiary syphilis; and that in general the examination of the cerebro-spinal fluid, systematically undertaken, is often of great value. The author gives details of the methods he employs, and tabulates his results in over 200 cases of lumbar puncture. The book is meritorious, if pedestrian; being written in Portuguese, it is unlikely to find many British readers.

The translators, under the title *Sexual Life of Primitive People*, of a book by H. FEHLINGER, state in their preface that "to understand the modern sex problem rightly it is essential to know its origin and gradual development," and that they have found in the book a "short comprehensive outline of the subject, which may serve as a convenient introduction." The book is a summary, badly put together, of various sex customs in primitive races. Clothing, we are told, came into use, not, as somebody seems to have supposed, because of an inborn sexual modesty, but for protection against cold or for purposes of adornment. Among primitive races unmarried people may be allowed full liberty of sexual intercourse, but if Fehlinger intends to suggest that this is the rule he is mistaken. Occasionally difficulties arise where all the women are monopolized by the older men; but even then various methods are available for the younger men. There are chapters on courtship and marriage, and the frequency of artificial abortion in savage people is mentioned. Ceremonies connected with circumcision are described, and many reasons for its performance suggested. None of the explanations seem very satisfactory. With the remark that a Hottentot woman still had her periods at 55 the book ends. Much of the information given is interesting, but it is certainly not new; how it affects the "modern sex problem" we do not know. The nearest approach to a deduction that we can find is in the chapter on pre-marital freedom, where it is stated that "everywhere the fight against the traditional moral ideals has resulted merely in the introduction of prostitution, with all its corruption." But the author does not appear to suggest that we should return to habits of pre-marital freedom.

The massive textbook of therapeutic technique written by Professor SCHWALBE[14] and some thirty other German professors has reached its fifth edition. In the scope of twelve chapters it details treatment of many kinds, medical, surgical, and special, contrived for diseases of all the organs, systems, and parts of the human body. It contains an enormous amount of condensed and clotted information, and should be consulted by any who may desire a German handbook of treatment.

Mr. W. PARTRIDGE'S *Aids to Chemistry*[15] provides the backward student with accounts of general chemistry, inorganic chemistry and organic chemistry in less than 300 small pages. It is, of course, a cram-book, and will no doubt be of service to those in search of such.

[11] *Psycho-analysis and the War Neuroses*. By Drs. S. Ferenczi, Karl Abraham, Ernst Simmel, and Ernest Jones. Introduction by Sigm. Freud. The International Psycho-Analytical Library, No. 2. London: George Allen and Unwin, Ltd. 1921. (Demy 8vo, pp. 200. 7s. 6d. net.)

[1] *Contribuição para o Estudo do Liquido Cephalo-Rachidiano*. By A. da Rocha Pereira. Porto: Companhia Typographica. 1921. (Large 8vo, pp. 353.)

[14] *Therapeutische Technik für die Ärztliche Praxis*. Ein Handbuch für Ärzte und Studierende. Fünfte, verbesserte und vermehrte Auflage. Leipzig: G. Thieme. 1921. (Sup. roy. 8vo, pp. 1133, 666 figures. Gel. M.25; Geb. M.290.)

[15] *Aids to Chemistry*. By W. Partridge, F.I.C. London: Baillière, Tindall, and Cox. 1921. (Fcap. 8vo, pp. 288. 6s. net.)

ROYAL MEDICAL BENEVOLENT FUND.

THE following is an abstract of some of the cases considered at the meeting of the Committee held on October 11th; £437 was voted to thirty applicants.

L.S.A., aged 78, married; is quite unable to work. His wife has been earning a livelihood as a clerk, but for the past twelve months has had very little to do owing to trade depression, and they have had to sell their belongings in order to live. The applicant's only income is 10s. a week from the Old Age Pension. Voted £5 and £26 in twelve instalments.

Daughters, aged 53 and 65 respectively, of M.R.C.S. Eng. who died in 1862. The younger sister suffers from spinal curvature and requires much attention. Owing to failure of dividends their income has been greatly reduced. Voted £18 in twelve instalments each.

Widow, aged 69, of L.R.C.P.E. in., who died in 1897. Applicant was left totally unprovided for, and owing to old age and infirmity she is entirely dependent on widowed daughter, the widow of a soldier, whose only income is a pension of 11s. 8d. a week. Voted £26 in twelve instalments.

Widow, aged 55, of M.B.Edin. who died this year. Applicant is left totally unprovided for, with three small children. Her late husband was only insured for £100 and most of this was paid away in funeral and other expenses. Voted £20 in four instalments.

M., Edin., aged 71. Through illness has had to apply for help to pay the fees at the convalescent home connected with the hospital to which he was sent after receiving treatment. Voted £25 4s. towards convalescent home fees.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, K.B.E., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1. The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for secondhand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

MEMORIAL TO COLONEL E. F. HARRISON.

A memorial to Edward Frank Harrison, C.M.G., Lieutenant-Colonel, R.E., who became Director of Chemical Warfare just before his death in 1918, has been placed in the Examination Hall of the Pharmaceutical Society of Great Britain. It takes the form of a portrait medallion in bronze relief, the design of Miss P. Blundell, and is set in an alabaster tablet, the inscription beneath simply records the name and distinctions of this gallant officer. The memorial was unveiled on November 2nd, within two days of the third anniversary of Harrison's death, by the Secretary of State for War (the Right Hon. Sir L. Worthington Evans, M.P.). The brief proceedings were presided over by Mr. E. T. Neathercoat, President of the Pharmaceutical Society. Among the large company present were Sir Anthony Bowlby, Sir Almeric Fitzroy, Sir W. Glyn Jones, Sir W. H. Horrocks, Sir Herbert Jackson, Major-General Sir C. E. Pereira, Sir Robert Robertson, Sir William Tilden, Sir Dawson Williams, Editor of the British Medical Journal, and Dr. Alfred Cox, Medical Secretary of the British Medical Association. Mr. Harrison did much work for the Association, including the analyses for the two volumes *Secret Remedies* and *More Secret Remedies*.

The President of the Pharmaceutical Society said that the cost of the memorial had been defrayed out of a fund raised by the Pharmaceutical Society and the British Pharmaceutical Conference. The remainder of the fund would provide for the award of an annual memorial medal in silver, and a presentation of books or apparatus, to the author of the paper, being a pharmacist of not more than five years' standing, deemed to be the best contribution of the year to the chemistry of drugs. Harrison was registered as an apprentice or student of the Pharmaceutical Society in 1884. After a very distinguished career as a student he qualified as a pharmacist in 1891, and afterwards took the Honours examination and qualified in pharmaceutical chemistry. Eventually he established himself in analytical practice. One of his most conspicuous services to the Society and to pharmacy in general was in the production of the two editions of the *British Pharmaceutical Codex* in 1907 and 1911, a work which has been recognized as a standard dispensatory for the use of medical practitioners and pharmacists. In 1915, at the age of 47, Harrison joined the Sportsmen's Battalion as a private, and after going through the usual training was transferred to the Royal Engineers; he soon became a leading spirit in the anti-gas campaign. It was mainly as a result of Harrison's zealous research and his co-ordination of the work of his subordinates that in 1916, after various other devices had been tried, the small box respirator was produced, which was afterwards manufactured to the number of twenty millions before the war came to an end. Harrison's death was due to pneumonia, to which he had no doubt been predisposed by exposure to gas in the course of his experiments.

The Secretary of State for War, before unveiling the memorial, spoke of the help the War Office had always received from pharmacists, and mentioned that he was at the moment awaiting a report from a committee, on which three of the most distinguished members of the Society were serving, on a question of great importance to the medical service and therefore to the fighting efficiency of the army. The work and devotion of Colonel Harrison had had perhaps a more direct and visible effect in safeguarding his comrades in battle than the work of any other single individual. There were many present (a reference to the guard of honour which surrounded the hall as well as to the younger men in the audience) who owed their lives to him. The problem which Colonel Harrison was called upon to solve was one of the most dramatic in warfare. He had to provide in the middle of a war an armour which would be proof against a new and sinister weapon deadly to a degree hitherto unthought of. It was a task Colonel Harrison's scientific attainments rendered him peculiarly adapted to undertake. Moreover, it was a task of chivalry, and in Colonel Harrison chivalry found its true knight. It was said in honour of the ancient kings that they killed their thousands. It would be Harrison's memorial that he saved his thousands, for not a man was sent to the front in the later years of the war who might not have to depend at some moment upon the result of his skill and knowledge. Science was a double-edged weapon, and it was impossible to be sure that future discoveries would not be put to deadly use by a desperate enemy. Science had turned the poisoned arrow of the savage into the poison gas of civilization, and it might devise weapons deadlier still. However much we might deplore their use we must be ready, if not to use them in return, at all events to meet them, and it was on this account that the soldier's need for science grew continually greater. Colonel Harrison had the knowledge and he used it, and it was a solemn pleasure to unveil a memorial to a man who was a great patriot and a great pioneer. The Minister then withdrew the Union Jack by which the medallion had been covered, and the sounding of the "Last Post" by a party of trumpeters, while the guard of honour stood at attention, closed the simple ceremony.

SUBTROPICAL ESCULENTS.

The Bradshaw Lecture.

The Bradshaw Lecture was delivered at the Royal College of Physicians of London on November 3rd, by Dr. M. C. Grabham of Madeira, on the subject of "Subtropical esculents." The following is an abstract of his remarks.

It is not within the scope of this lecture to discuss the general standards of nutrition which in their present degree of acceptance relate to essential or accessory foods, but rather to bring before the College the knowledge acquired during a long experience of the animal and vegetable esculents produced in the subtropical climate of Madeira and the other Atlantic islands. I know from the constant applications made to me at Madeira for help and advice in disseminating and transplanting from regions widely apart in our vast empire, that we are fully alive to the present need of utilizing our dormant resources.

Dealing first with vegetable esculents, I propose to select such examples as may best illustrate the growing importance of the food, vital and accessory, with which we can supplement our own home productions for the maintenance and well-being of our constantly increasing race.

The common custard apple, *Anona cherimolia*, grows abundantly in Madeira, and is exported to England in ever-increasing quantities. It has a sweet, creamy, vinous taste, rich and juicy, and is destined to rival the banana in prevalence and abundance when the public taste and demand have developed.

Nasturtium officinale, the common watercress, occurs in every mountain stream, and is largely used as an ingredient in both Spanish and Portuguese soups. Eaten in bulk it is held in high repute in the treatment of gout and rheumatism, and I have seen marked advantage derived from its use in these maladies.

Brassica oleracea, in ever-increasing variety, is an essential ingredient in Spanish and Portuguese cooking, and acquires in these latitudes a coarse, strong flavour, from which only the savoy and cauliflower varieties are conspicuously exempt.

The mango, though comparatively rare in the Canary Islands and Cape Verde, is very common in Madeira: the oval, yellow and pink flushed fruit abounds with a rich, nectarine-tasting juice, not free from a carrot-like suggestion, and finds a ready sale in London during October and November.

The orange in every variety is found in all the Atlantic islands, varying in quality, the juciest and best flavoured being those which come from a restricted area in Grand Canary Island, but their skins are too thin and delicate for commercial exportation. The orange, however, bears transport from far distant regions and is not hurt by cold storage, hence there is no lack of it in English markets.

The lemon, matchless in size and flavour, is found in all the Atlantic islands, while the Madeira citron has a world-wide fame and commercial importance.

The vine, which is commercially negligible further south in the northern Atlantic, is now assuming its proper place in Madeira; every grape of importance is to be found there and the crop is entirely devoted to the winepress.

The lupine is extensively grown in many of the Atlantic islands, both as a vineyard and field crop; the lentil is also found extensively, and forms an important adjunct to the local pottage; while the small early variety of broad bean is generally found in all the islands and at all elevations. As with the broad bean, the better sorts of pea

degenerate both in size and flavour and require fresh seed after a year or two, and even then there is lacking the full flavour of our English productions.

The soya bean was unknown in these regions until, in 1910, I introduced an important variety of *Glycine hispida* from Portugal. The high food value of the soya bean is due to its oil and remarkable protein content, present in a form incomparably superior for digestion and utilization to the cognate protein of peas and kidney beans. The soya bean is probably the only seed yet investigated which contains both the so called water-soluble and, in a limited quantity, the fat-soluble vitamins.

The carob tree occurs in all the islands, and yields large crops of pod and bean; though neglected in times of normal supply, the carob pod became during the war a saleable article of food, eagerly eaten for its sweet farinaceous pod contents.

The peach may be said to flourish too well in Madeira, for its proper cultivation by the propagation of good sorts and the eradication of the self-sown, worthless, hard-fleshed seedlings, is sadly neglected; the same applies both to the nectarine and apricot.

The almond flourishes especially well in the island of Las Palmas, of the Canaries, where whole deep valleys are devoted to it; abundant crops of plums and greengages occur here and there in the Canaries, but not further south. In some mountain districts whole valleys are filled with flourishing cherry trees, but the cherry is not exported, as the fruit ripens when the European markets are well supplied.

Strawberries, both wild and cultivated, occur in every variety in Madeira, though not further south, and of the Pomaceae, the common pear is abundant, though the fruit is inferior, and the apple is abundant and excellent. The common quince thrives in all the islands, and is preserved by the Portuguese as an excellent marmalade.

The loquat, or Japanese medlar, has now become extremely common in Madeira, but not further south, producing its acidulous, amber-coloured fruit from February to May in heavy abundance; the loquat should be available as a cheap and most agreeable comestible in the fruit-vacant months of the early English spring.

It is due to the British people, among them many distinguished naturalists, who have settled at Madeira during the last two hundred years, that this fertile island with its scope of climate and gentle variations of temperature, has become an important focus of assembly for esculents of economic value.

Among the gorgeous varieties of passion flower which adorn the Madeira gardens the two most important are *Passiflora edulis* and *Passiflora lowei*, the latter the best of all passion fruits. The entrancing beauty of the flower alone would entitle the plant to a conspicuous place in any garden, but the fruit is in request beyond these limits and is exported in ever-increasing quantity.

Cucumbers are not common in the Canaries or Cape Verde Islands, though abounding in Madeira. Of the gourds *Cucurbita melanosperma* is a watery constituent of an agreeable Portuguese soup, and *Cucurbita moschata* is largely cultivated in all the islands; in Madeira for at least six months in the year it provides one-third of the daily nourishment of the people. The *Sechium edule chocho*, or pepinella, came to Madeira about 100 years ago, and besides the charm of its creamy flowers the plant yields now a copious and unfailing supply of an esculent of the first order in food value. I have sent this wonderful vegetable to many countries; it is boiled as a favourite vegetable in the winter months, and has an agreeable nutty flavour and a greater power of combining with fats than I have observed in any other gourds.

The Madeira coffee trees, which were formerly cultivated with great success, were entirely destroyed before we had learned how to restrain the depredations of the Argentine ant but they are now slowly reappearing.

Artichokes give a heavy crop, and the special interest attaching to the tubers just now has reference to the presence in them of 12 or 14 per cent. of inulin, a substance akin to starch, which is convertible by appropriate treatment into fructose, the sweetest of all sugars.

The sweet potato, *Batata edulis*, is the foundation food of the Madeira peasantry, and yields freely crop after crop with no restriction of season; but there is no overplus for exportation either in Madeira or the Canaries. In the Azores the batata is grown on a large scale and yields a high percentage of alcohol, the spirit thus extracted being largely used in the treatment of wines of Portugal.

Potato farming has now become an important commercial industry, and it is difficult to cope with the insatiability of the European markets; selection has now shown which sorts arrive in the best condition for marketing, but several forms have long been naturalized in all the Atlantic islands, and are to be found semi-wild in every district.

Potatoes are cultivated at all seasons, both at Madeira and in the Canaries, and besides forming an important portion of the food of the whole population, yield an overplus which arrives in the markets of the north as new potatoes in the early spring months.

The Cape gooseberry is found as a weed in every garden up to an elevation of 3,000 ft., but not one-tenth of the fruit is collected, though there is an unfailing demand abroad for the delicious jam yielded by these berries. The avocado or alligator pear, with its thick butyraceous substance, was the midshipman's butter of other days; it is an excellent fruit, creamy and nutty in flavour, and I have sent abundant seeds of our wild variety far and wide with a view of increasing its range by grafting.

The far-famed arrowroot of Madeira is prepared chiefly from plants of the genus Curcuma, and has a high commercial value. The yield is important, and there is no other starch comparable in specific gravity or nutrient value as this sort when well cleaned and prepared.

Of the many varieties of banana, the Atlantic islands mainly cultivate *Musa cavendishii*, both for export and home use; it is greatly superior in taste and quality to the larger and coarser fruit imported to England from the West Indies. A far superior fruit is yielded by another species, *Musa sapientium*, much cultivated in Madeira for home use, and known as the "silver banana" elsewhere.

Ananassa sativa, the pineapple, will grow wild in most of the Atlantic islands, but, sun-ripened with scientific precision and methods of retarding, its production is made to coincide with the season of greediest demand in London and elsewhere.

The common onion, *Allium cepa*, is cultivated in all the islands and exported in fabulous quantity; the size and quality obtained in Madeira can hardly be surpassed. Long before the physiologists began to speak about vitamins the general public had shown an instinctive taste for the onion, which, though poor in caloric value, abounds in accessory food virtue.

Indian corn, wheat, barley, rye, and oats are grown in all the Atlantic islands in excellent quality, but in Madeira the yield is not more than enough to feed the population for about two months. The sugar cane is a general object of cultivation in all the islands, and the juice is partly devoted to the distillation of alcohol, but mainly for the manufacture of an excellent sugar.

All the well-known fungi of the British Isles are well represented in the islands of the Atlantic; one form, *Boletus edulis*, abundant in the pine woods of Madeira in the autumn months, is a substantial esculent with a tangible protein value.

The animal foods of the Atlantic islands I can pass over with the general remark that cattle of every well-known breed abound, and that we have at all seasons poultry, eggs, milk, and butter in abundance, both for local use and for exportation. We rely, too, on our goats' milk, which is excellent and happily free from the infection which our distinguished Fellow, Sir David Bruce, was able to investigate at Malta.

I shall now touch upon the salient points relating to the latent, almost unexplored resources of food which the surface water and abyssmal depths of the seas in these regions invite us to explore.

From the economic point of view the *Thynnus*, or tunny, is our most important fish; it is never long absent from our island markets, but visits Madeira in vast numbers in the early spring months. In Atlantic regions it is captured with a stout hook baited with a living mackerel or herring, and a full-grown example, quite ten feet long, weighs generally about 400 lb.; when eviscerated and prepared for market, quite 85 per cent. of the fish meat is available for human food.

The *Lepidopus* is a truly subtropical fish of wide distribution, known occasionally under the name of the "scabbard fish," even as far north as our own southern coasts, while in New Zealand it is called the "frost fish," and esteemed the most delicious of that dominion. With the tunny it is the mainstay of our market supplies, and grows to a length of about six feet.

The shern or sherny, *Polyprion cernium*, may be taken as typical of the highly important food yielding order of the Percidae. It is found throughout the Atlantic Ocean, and even also in the Mediterranean; in Madeira it is one of the best known fishes in the market, esteemed for its white flesh and substantial nutriment. The proper home of the well grown adult is in the deep open abyss, and it

is taken by the hook at the enormous depth of 2,500 ft. or even deeper; coming up from a depth so stupendous, the fish becomes so distended with gas, expanding upon the removal of the vast pressure below, that it arrives at the surface in a sort of cataleptic spasm, the stomach usually everted, and the eyes forced from their sockets.

The prawn exists in the deep in great numbers, and, like some of the deep sea larger fish, does not survive its transference to the surface; some of them escape from the traps in the process of hauling in, but float to the surface dazed and helpless with the destructive expansion already noticed.

A delicate red mullet is taken abundantly at all seasons in shallow waters in traps made of cane or wicker-work, without any bait.

Distinguished ichthyologists have gazed in wonder at the unwonted variety, overflowing abundance and colouring of our southern fish markets. There are no flat fish, and the common members of the codfish tribe, which so largely fill our stalls in England, are usually represented by only one subordinate species, the Mediterranean phycis, while the dull tinted tunny contrasts with the brilliant lines of the serranus and lampris, the beryx attracting interest both by the delicacy of its hues and the brassy lustre of its enormous eyes.

We have in these southern waters a reserve of wealth of food which, with the progress of investigation, will eventually be made to minister to the needs of many a populous region far beyond the limits of its present application. When we remember the great depth of the oceans and that animals are found at every depth, we may truly conclude that the total quantity of living matter in the sea greatly exceeds that on the land surface of the earth. The whole subject of these super-equatorial marine food resources abounds both with economic and biological interest.

ALGIERS.

[From a Correspondent.]

"*I speak of Africa and Golden Joys.*"

The season is now approaching when the favoured few who have survived the operations of the tax and rate collector begin to preen their wings in anticipation of the flight south "where the feathery palm trees rise, and the date grows ripe under sunny skies."

As October merges into November, as the atmosphere becomes murky and the skies inclement, what more delightful feeling than the knowledge that in a couple of days we shall be passing through the south of France, under cloudless skies, on our way to a climatic paradise? Those whose time hangs heavy on their hands will be well advised to dawdle through this stage of the journey, quitting the main P.L.M. line at Tarascon in order to visit Montpellier, with its venerable university, the one where Rabelais professed; Aiguemortes, twenty miles away, with its admirably preserved Louis XI fortress, in which the last Protestants to be imprisoned in France were segregated (one of them, a woman, chipping on the wall the highly characteristic suffragette injunction "*Resistez toujours*"); Nimes, with its magnificent gardens *à la* Versailles, its hoary arena where bull fights are still occasionally to be witnessed, and its numerous Roman and mediaeval remains; Arles, with its mutilated but still imposing arena, multitudinous ruins, and interesting museums; and, finally, the magnificent mediaeval fortress-town Carcassone. The tourist is not obliged to retrace his steps to Marseilles, for once a week there is a swift (twenty hour) crossing from Port Vendre to Algiers by *La Marsa* of the Navigation Mixte Co.

In the ordinary way the traveller goes right through to Marseilles and thence by the Transatlantic Company's fine mail steamers direct to Algiers or Tunis. As a rule fine early autumn weather, with an average day temperature of 70° can be reckoned on right up to Christmas. As a matter of fact, there is no real autumn in Algiers. During the summer the country is parched by the continuous but not necessarily excessive heat and the four or five months without rain, but so soon as the autumn rains fall, usually in September, the bosom of Nature begins thenceforth to heave, soon the soil is covered with a tender green, and "Spring unlocks the flowers to paint the laughing soil."

Until then the country, rich though it be in excursions, offers no attraction to the traveller, but by mid-October Nature will have trimmed the landscape, washed the roads, and made things shipshape. The characteristic feature of the climate of Algiers—which, of course, differs materially from that of the highlands of Kabylia and that of the Sahara—is its mildness and brightness. A good general idea of the winter climate of Algiers and of the resources of Algeria from the tourist's point of view may be gleaned from a little book, *From Cloud to Sunshine*,[1] while the itineraries of the various promenades and excursions are set forth in *Promenades à Alger: Excursions en Algérie* (same publisher), an English edition of which is, it is announced, in the press.

The town of Algiers enjoys the reputation of providing an agreeable residence during the winter months and those who dread the inclemency of the northern winter will assuredly find it a pleasant alternative. It is delightfully and picturesquely situated and is big enough (close upon 200,000 inhabitants) to afford a variety of entertainments. Then, too, it is rich in pleasant walks and excursions along shady lanes, through forests, over mountains, and on the shore of the charming bay of Algiers.

With regard to the climate visitors must not run away with the idea that they are going into the tropics. From November to March is the rainy season, and during that period a good deal of rain falls. When it does rain, however, it rains heavily and jovially, and two thirds of the fall is after sunset, so that the total number of rainy days is not excessive, and few indeed are the days not enlivened by several hours of bright, if at times precarious, sunshine.

With regard to clothing it is well to be provided with such garments as would be considered suitable for early spring in England, including a light overcoat and fairly warm underclothing.

The eligible part of Algiers, the part frequented by *hiverneurs* is Mustapha Supérieur which is a couple of miles from the centre of the town, and is reached by a smart electric tram along winding roads commanding views over sea and land of unparalleled beauty. The fashionable hotels are situated in this suburb, which has many majestic Moorish villas half buried in orange groves, most of them occupied by English and American residents.

Owing to its situation close to the sea Algiers is not suitable for consumptives, but it is well adapted for the delicate who require plenty of fresh air and sunshine, for persons suffering from cardio-vascular and chronic renal lesions or rheumatism. Cases of neuritis do better inland in the dry desert air, say at Biskra, and this remark applies to many cases of essential asthma, bronchial asthma, and emphysema. Of motor excursions the foremost is assuredly the tour through Kabylia, the extensive group of mountains between Algiers and Constantine culminating at the Tirourda Pass, 6,000 feet high.[2] The scenery on the way is of the grandest and wildest description, a distinctive feature being the native villages perched on the summits of the craggy hills and therefore easily defended. These can be visited, and offer much of interest for the traveller's inspection: manufacture of native jewellery, inlaid swords, daggers, etc. From Tirourda one can proceed to Bougie, a charmingly situated seaport from which one reaches the famous Gorges du Chabet-el-Akhra; also the intensely picturesque corniche road to Djidjelli.

On the farther edge of this mountain plateau is Constantine, with its awe-inspiring Gorges du Rhummel, the extensive Roman ruins of Timgad, reached via Batna, and, as we descend into the desert, El Kantara and Biskra, which is itself a great centre for excursions into the desert, to Tolga, Tooggourt, and Ouargla. Then, too, within a few hours by motor from Algiers, the traveller can get to Bou Saada, the home, or one of the homes, of the dancing sisterhood of the Ouled Naïls. To the west lies Tlemcen, with its forty mosques and wonderful Saracen ruins at Mansourah. Still another few kilometres and we are at Oudjda, the first fortified town in Morocco. To the north is Oran, a thriving but not very interesting seaport, and to the south is mysterious Figuig and the great red desert.

Not so far afield, some forty miles to the west of Algiers, is the extraordinarily interesting seaside place Tipaza, the site of a one-time fashionable Roman health resort, and rich in partially disinterred ruins. Another twenty miles and there is Cherchel, the former capital of Mauritania, with its ruined but still magnificent aqueducts and palaces.

[1] Baillière, Tindall, and Cox, 3s 6d.
[2] See Grant Allen's novel, *The Tents of Shem*.

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TUBERCULOSIS IN POLAND.

We have received from the Public Information Department of the American Red Cross an interesting note upon tuberculosis in Poland by Dr. Charles Phillips, statistician to the American Commission. Down to the outbreak of war tuberculosis was declining in Poland as in western Europe, but with less regularity. Shortly after the outbreak of war the rate took an upward turn, and by 1917 the ravages of the disease were immense; it is said that 4 per cent. of the inhabitants of Warsaw died in 1917, and that one-fourth of these deaths was ascribed to tuberculosis. The increase in tuberculosis amongst children was proportionally greater than amongst adults; every third child examined in hospitals or private homes was considered to have the disease.

At the armistice the curve of tuberculosis began to descend, and by 1920 had reached approximately the same point as in 1914. Important antituberculosis measures were introduced by the Polish Government, and the energetic action of the Hoover food relief commission and the American Red Cross was of great value. The effect of these measures was most noticeable amongst children, who, in 1919–20, suffered less from tuberculosis than before the war. At adult ages, on the other hand, the position was not better than in 1914. A probable explanation is that the measures of relief were planned with especial reference to children.

An interesting point brought out is the relative immunity of Jews from fatal tuberculosis. According to Dr. Ganc, a Warsaw physician, the mortality rates of Jews and non-Jews are on the average in the ratio of 100 to 180, and this applies not merely to the rich and well-nourished Jews but to all classes. In a memorandum read to the Social Medicine Association of Warsaw on October 13th, 1921, Dr. Ganc stated that this relation had been observed in other countries, that "the non-Jewish population of England, supposedly the healthiest of all nationalities, is still more subject to tuberculosis than the poorest Jews of the London Ghetto. In New York the average city adult death rate is 12.93 per 1,000, but the Ghetto rate is below 10.00; the city's infant mortality rate is 85 per 1,000, while the Ghetto rate is only 52, although this figure applies to a district so congested that the population averages 3,000 people to a city block."

We do not know upon what official statistics Dr. Ganc bases his statement respecting the London "Ghetto," nor, indeed, how the mortality rates upon Jews and non-Jews can be computed from official data. We are also afraid that Dr. Ganc's tribute to the healthiness of the English population can only be accepted with reservations. In later childhood the mortality rate in England and Wales is, we believe, one of the lowest in the world, but, as we recently observed, at ages over 35 our status is not gratifying and contrasts very unfavourably indeed with that of Sweden.

Dr. Ganc attributes the alleged immunity of Jewish populations to their age-long association with urban life. In other words, it is, in his view, a consequence of selection; "probably," he says, "many centuries ago, in the days when the Ghetto originated and the Jews were forced into the towns, they paid a heavy tribute to the white plague." Dr. Chmielowski, of the Polish Ministry of Health, is a supporter of Dr. Ganc's theory, and adduces certain Viennese statistics in its favour. According to these, Protestants come next to Jews in the rate of mortality from tuberculosis, while Catholics have the highest rate. The Protestant population of Vienna is said to have consisted largely of official classes who had lived for generations in the capital, while the Catholics were largely recruited from the country districts. Until we have had an opportunity of analysing the data upon which these conclusions rest, we shall suspend judgement as to their cogency.

The etiology of tuberculosis is a fruitful field for the growth of hypotheses, and the soil raises a goodly crop of weeds, often hard to distinguish from useful plants. Writers seldom realize how wide is the interval between a fireside speculation and a scientific hypothesis. To test the influence of selection upon human mortality is very difficult. In an absolutely unprogressive community much could be learnt from a comparison of successive life-tables. If, for instance, the life-table death rate at age 20 in one decennium is less than it was at the same age in the previous decennium, the decline might be a direct consequence of the selective action of the mortality experienced by persons aged 10 in the previous decennium, *if* the environment had remained constant and there had been no migration. But the proviso is usually unwarrantable, and to make due allowance for the changes which really occur has so far been impossible. Similar difficulties confront such hypotheses as those associated with the name of Professor Calmette. The noble savage has other blessings of civilization to endure as well as the bacillus of tuberculosis. Many years of co-operative study and research will be needed before the etiological problems of tuberculosis are solved.

PATHOGENESIS OF DISSEMINATED SCLEROSIS.

Dr. Birley and Professor Dudgeon's[1] clinical and experimental contribution to the pathogenesis of disseminated sclerosis is singularly complete and interesting, for in addition to its record of careful bedside and laboratory investigation it reviews the recent work on this difficult subject and criticizes the view that the disease is due to spirochaetal infection, not only in the light of their own negative results but also on other grounds. For example, Dr. D. K. Adams's contention, based on a colloidal gold luetic or paretic reaction of the cerebro-spinal fluid in 95 per cent. of his cases, is met by the objection that until the rationale of this reaction is more fully understood, arguments depending on its presence and behaviour are unsubstantial. Their own results, obtained from bacteriological examination of 35 cases, in 15 of which animal inoculations were carried out, in two instances from *post-mortem* material, did not throw any light on the pathogeny, for no specific micro-organism was isolated, and attempts to transmit the disease by inoculation of cerebro-spinal fluid and other material from man to rabbits failed. That the disease has—as W. E. Bullock (now W. E. Gye), Siemerling and Raecke, Kuhn and Steiner, Simons, Marinesco, and others claim—been thus transmitted, is regarded as unproved; for even if it be admitted that *a* disease is conveyed, there is a complete absence of histological proof that the disease thus

[1] J. L. Birley and L. S. Dudgeon. *Brain*, London, 1921, xliv, 150–212.

transmitted is disseminated sclerosis. Rather appropriately, the next paper in this number of *Brain* is on an experimental study of disseminated sclerosis by Dr. W. E. Gye,[2] based on the injection of 129 rabbits and 15 guinea-pigs with cerebro-spinal fluid from 21 patients with disseminated sclerosis; 17 of the rabbits but none of the guinea-pigs became paralysed. This infrequency of positive results, which has been the experience also of other workers, is explained on the assumption that the organism, if there be one, is not constantly present in the cerebro-spinal fluid, and never in large numbers. Dr. Gye admits that the necessary control experiments, namely, the inoculation of a large number—such as 100—of rabbits with the cerebro-spinal fluid of persons certainly not suffering from disseminated sclerosis, have not yet been carried out, but he concludes that disseminated sclerosis is probably an infective disease, and that the virus may sometimes be found in the cerebro-spinal fluid.

Dr. Birley and Professor Dudgeon dismiss the endogenous explanation of the disease, namely, that it is due to some developmental or congenital defect of the neuroglia, which is thus more liable than normal tissue to be affected by irritation—in other words, that the disease is a primary gliosis—as incompatible with its sudden exacerbations and long remissions. On the other hand, the exogenous hypothesis is quite compatible with the discontinuous clinical course of a disease due to the presence of a morbid agent acting with varying degrees of intensity over a considerable period of time. The clinical and histological evidence is regarded as overwhelmingly in favour of the view that the morbid process underlying the disease is inflammatory in nature. The absence of cytological and chemical changes in the cerebro-spinal fluid does not seriously militate against this conclusion, for, in the first place, such changes depend on meningeal lesions rather than on reactions of the nervous parenchyma, and, in the second place, alterations in the cerebro-spinal fluid may be conspicuously absent in such frankly inflammatory conditions as acute poliomyelitis and encephalitis lethargica.

The clinical analysis of the 35 cases, for which presumably Dr. Birley is responsible, brings out some interesting points. Accurate diagnosis is particularly essential in cases used for experimental investigation, otherwise fallacies may arise from utilizing cases really of cerebro-spinal syphilis, for these two conditions differ from others in presenting evidence of very widely separated lesions of the central nervous system. The disease is one of healthy young adults, and in the large majority of cases is characterized by an intermittent course with a haphazard series of relatively acute disturbances due to focal lesions distributed at random, both in the brain and spinal cord, appearing at irregular intervals, and in their early stages showing a general tendency to improvement, so that the possibility of spontaneous cure cannot be entirely denied. In a small proportion of the cases—5 out of the authors' 35 cases—the disease runs a chronic progressive course from the outset; but these two clinical forms are manifestations of the same disease. They are not the results of distinct pathological processes, as was argued by Müller, who sought to confuse the subject by making the unwarranted suggestion that the chronic progressive form, originally described by Charcot, was the only true disseminated sclerosis, and was due to external factors acting on a congenitally vulnerable neuroglia, whereas the commoner discontinuous form was a different disease, for which he proposed the somewhat similar name, disseminated encephalo-myelitis.

[2] W. E. Gye, *Brain*, 1921, xlv, 213–222.

POPPIES FOR REMEMBRANCE.

The celebration of Armistice Day, November 11th, is primarily in remembrance of those who gave their lives in the war. The list compiled at the time of the Special Clinical and Scientific Meeting of the British Medical Association held in London in April, 1919, contained the names of 1,196 medical men; of these, 681 were killed in action, or died from wounds, or were drowned by enemy action; the remainder (515) died of disease while on service. In addition to the commemoration of the dead and the celebration of victory, Armistice Day was this year the occasion of a special effort on behalf of Field-Marshal Earl Haig's appeal for ex-service men of all ranks, made through the British Legion, which invited all to purchase and wear poppies (Flanders poppies). The reference is to John McCrae's poem.[1] McCrae, who was born in 1872, was lecturer in pathology and afterwards in clinical medicine at McGill University; he was the joint author with Professor Adami of a well known textbook of pathology. He saw active service as a combatant officer during the Boer war, and went overseas with the first Canadian contingent in October, 1914, as medical officer to the first brigade Canadian Field Artillery. When the McGill University Hospital unit was formed he became lieutenant-colonel in charge of the medical division, and at the time of his death had just been appointed consulting physician to the Imperial troops in France. During the second battle of Ypres he was in charge of a dressing station in a hole dug in the bank of the Ypres canal; it was in this dug-out, a square hole 8 ft. by 8 ft., roofed over by fragments to keep out the rain, and having a little sandbag parapet to keep out pieces of kick-back shells, that he wrote the appealing piece of verse that was to stir so many hearts. It opens with the lines:

> "In Flanders fields the poppies blow
> Between the crosses, row on row,
> That mark our place."

The lines quoted by the British Legion in support of Earl Haig's appeal are those with which the poem ends:

> "If ye break faith with us who die
> We shall not sleep, though poppies grow
> In Flanders fields."

Sir Andrew Macphail, in a short biography he appended to a collection of John McCrae's poems, wrote: "John McCrae witnessed only once the raw earth of Flanders hide its shame in the warm scarlet glory of the poppy. Others have watched this resurrection of the flowers in four successive seasons, a fresh miracle every time it occurs."

ARTIFICIAL LIMBS.

The third official Committee of Inquiry on Artificial Limbs, which was appointed by the Minister of Pensions on July 5th, 1921, has made its report with commendable promptitude. A Departmental Committee, under the chairmanship of Mr. Herbert Guedalla, M.P., reported in May, 1919, and an Expert Committee under Admiral Bacon in August of the same year. The third Committee was probably called into being in response to the outcry in the lay press and elsewhere of those disabled officers and men who considered that the Ministry of Pensions had not supplied them with the best obtainable artificial legs. It differed from previous committees in that three out of seven of its members had lost legs, and therefore were presumably able to tell "where the shoe pinches." An important instruction in the terms of reference was "to inquire into the comparative advantages of the metal and the wooden limb." The chief subject of discussion appears in effect to have been the question of whether a metal limb should be supplied as a matter of course for thigh amputations, such a limb, on account of its very high cost, having previously been refused by the Ministry, except for very

[1] It was first published in *Punch*; see also *In Flanders Fields and other Poems* (London: Hodder and Stoughton. 5s. net).

special cases. Practically there was only one manufacturer in the field, and the metal socket required special skill and the expenditure of much time in fitting it to the stump, so that the output of this limb was small compared with the number of men about 17,000—who have undergone amputation of the thigh. Fortunately, before the Committee sat a compromise had been made possible by which an ordinary wooden socket made by any limb-maker could be fitted to the remainder of the metal limb, and this and other considerations reduced the price asked to something less than half of that which had been paid previously. Moreover, there is, it is stated, every hope that shortly the price may be reduced to the level of that of a wooden limb, or even less. The Committee was therefore able to recommend that the four categories of cases should be broadly dealt with on the following lines: "(1) The 'Desoutter' and/or other approved light metal limbs should be placed upon the consolidated list, and should be made available for all new cases in which the surgeon recommends them on surgical or other grounds, instead of the standard pattern wooden leg. (2) We think that the lighter wooden or metal limb should, subject to the approval of the surgeon, be made available as soon as possible in all such cases. (3) We recommend that a change from one type of limb to another in these cases should only be made when one of the wooden limbs which the man at present possesses is worn out, and then only if the surgeon concurs. (4) In these cases we think the man should be allowed to continue the use of the heavy or out-of-date leg if he prefers it, and to a resupply when it is worn out if reasonably possible to obtain it, so long as, in the opinion of the surgeon, he is suffering no great harm therefrom." The evidence shows that there would be no need to supply two new limbs in cases (2), (3), and (4), but that the second or spare wooden limb with which the man is already supplied would suffice for temporary use while his other limb was undergoing repairs or replacement. As it is hoped that the metal limbs will last longer and cost less to repair than the wooden ones, it is calculated that a saving to the public purse will result. These recommendations, which no doubt have been accepted by the Minister, should put an end to what has seemed a difficult situation. We notice that a person who has three sound limbs is called "limbless." Once more we protest against this absurdity.

"SUMMER TIME" AND HEALTH.

In 1916 the late Sir Frederick Taylor, who made inquiries on the effect of the Summer Time Act on health, at the request of the Home Secretary, stated that in the opinion of other representative physicians and himself the additional hour of sunlight or daylight tended to improve health, from the well known physiological effect of light upon the biological processes in both animals and plants. Towards the end of last summer, however, a certain amount of public criticism arose in regard to the subject, no doubt in part owing to the extraordinarily long spell of hot and dry weather. In consequence local education authorities were asked by the Board of Education to ascertain what the effect had been of the Summer Time Act during the current year on the health of school children. In some cases the opinions of teachers differed very widely in the same district. Dr. Wyche, for instance, at Nottingham, received a report from one teacher that not a single child had suffered, while another had no hesitation in saying that for the majority of the children the Act was most disastrous in its effect. After a detailed statistical investigation, however, Dr. Wyche came to the conclusion that there was a lack of any trustworthy evidence to show that the working of the Act was detrimental to the health of the children. It was necessary to distinguish between results inherent in our Summer Time Act, and incidental results due to lack of adjustment to its operation. Schooltime is not prolonged by the Act; it is merely moved as a whole one hour earlier, and a longer period of daylight is made available. The London County Council, at the request of the Board of Education, took expert opinion from within its service, and has reported that in the opinion of its advisers the Summer Time Act is an advantage to school children and young persons. On November 2nd, in reply to a question in the House of Commons, Mr. J. Parker said that the Board of Education had received 272 replies from local education authorities with reference to the maintenance of the Act; of these, 158 were in favour of its continuance, 29 expressed no definite opinion, and, while 85 attributed some ill effects to the operation of the measure, the great majority of these bodies believed that these ill effects would be obviated if parents would send children to bed at a reasonable hour. An interesting section of the annual report[1] for 1920 of the chief medical officer of the Board of Education deals with this subject, summarizing the reports of a number of school medical officers. The consensus of opinion seems to be that there is no substantial support of the contention that the Act can be held responsible for any reduction in the hours of sleep of children. There are indications, as there always have been, that children are getting less sleep in the summer months than during the rest of the year, but this is believed to be rather a matter of custom and habit and of parental responsibility and supervision than due directly to the operation of the Summer Time Act. The general impression left by the report is that a certain number of parents have failed to adjust the bedtime arrangements for their children to the operation of the Act; what is wrong, therefore, is not the Act, but the failure of a fraction of the people to adapt their habits to its terms.

EXPERIENCES OF SEASIDE PRACTICE.

In his address from the chair of the Section of Balneology and Climatology of the Royal Society of Medicine on November 3rd, Dr. Hill Joseph of Bexhill reviewed a quarter of a century of seaside practice, and discussed the value of sea bathing. Medical men, he said, were not often consulted about the suitability of sea bathing in the individual case, because as a rule only the robust indulged in this exercise, and those for whom it was unsuitable quickly discovered the fact for themselves. The prevalent custom of going to bathe in bathing costume and mackintosh and returning home in wet garments was a physiological mistake; the bather missed the beneficial effects of skin massage with the towel immediately on leaving the water and the exhilaration of the walk in dry clothing. The people who should not bathe in the sea could not be put in a single category. Many who could safely bathe in enclosed swimming baths, even of cold water, could not safely bathe in the open sea. Generally speaking, sea bathing should not be allowed in the case of people who had any organic disease which gave definite symptoms; it was particularly inadvisable for those who suffered from arteriosclerosis and high blood pressures or from any organic or degenerative affection of heart or lungs, with the exception of some cases of compensated mitral regurgitation. Others who should not bathe were sufferers from subacute or chronic abdominal disease, especially chronic colitis, gall bladder affections, renal disease, and cystitis. All skin affections, except some of a very chronic character, were aggravated by sea bathing, and sometimes a dermatitis resulted. Some persons complained of an excess of wax in the ears after swimming, but probably the superabundance of cerumen was there already, and the salt water caused it to swell up into a soft mass which exuded. Bathers prone to ear trouble could prevent any aggravation from sea-water by inserting in the ear a piece of cotton-wool

[1] Annual Report of the Chief Medical Officer of the Board of Education, 1920. London: His Majesty's Stationery Office. 1921. (Price 6s. net.)

moistened with almond oil, but they should be properly instructed in this small matter. Paddling was sometimes followed by abdominal upset; many children at the seaside, with appetites stimulated by outdoor life, unduly taxed their digestions, so that, having an overloaded colon to start with, the hot sun on the head, together with the wet feet, caused congestion in the abdominal area. The seaside was desirable as a place of residence for children, but those who went to boarding-school there should have their holidays inland. Of recent years it had become the fashion to send cases of surgical tuberculosis to the seaside. Dr. Joseph believed this to be a justifiable practice, and that early phthisis benefited also, especially when combined with the judicious use of tuberculin; but more advanced cases of phthisis, while they obtained benefit from the change to the sea in summer, should not in general be advised to live permanently at the seaside. He protested against advanced cases of phthisis being sent to the seaside without information being given to a local medical man, and the same protest applied to all cases of serious illness. In return, seaside practitioners should write to the ordinary medical attendant of a visitor, giving particulars of any illness of a serious kind from which he had suffered during his stay. The speaker was not satisfied that the classes of cases grouped together under the name rheumatoid arthritis were unsuitable for residence at the seaside, although this was often stated. Certainly they were not made worse; some improved, and a few lost their symptoms if they underwent treatment long enough. On the other hand, he did not agree that these cases never originated at the seaside. A large proportion of seaside residents were middle-aged retired people, who lived too well and took too little exercise, and to the consequences of their defective digestions must be attributed the bad name which the seaside undeservedly had gained so far as this group of diseases was concerned. Sufferers from Graves's disease should not live too near to the sea front; they would be more comfortable half a mile or so inland, and should spend the hotter months away from the sea altogether. The seaside was of special value to convalescents from acute disease or operation, sufferers from neurasthenia, from insomnia (in most cases), from hysteria, from chronic bronchitis (late spring to the end of October), cardiac disease (if not too advanced), asthma (some cases), and convalescents from tropical diseases. Dr. Joseph appealed finally to members of the section to undertake a collective investigation to ascertain what diseases were specially benefited by residence at the various balneological stations and seaside resorts of this country. Dr. C. W. Buckley, in proposing a vote of thanks, said that his study of the subject had brought him to the conclusion that climate had practically no influence upon the progress of rheumatoid arthritis.

GAMES FOR GIRLS.

The subject of games for girls led to an interesting discussion at the meeting of the Medical Officers of Schools Association on October 21st. The openers, Dr. Alice Sanderson Clow, medical inspector of the Ladies' College, Cheltenham, and Miss M. Stansfeld, principal of the Bedford Physical Training College, and every participant in the discussion, with one exception, were in favour of vigorous outdoor games for girls—subject to certain precautions, especially at the menstrual period—and the hope was expressed that the discussion would do something to neutralize the contrary impression fostered recently by press correspondence. Dr. Clow regarded the value of games and physical exercises in the open air for girls as beyond all doubt; the only question was whether strenuous games had any damaging effect upon the organs of reproduction. She had taken special note of the effect of games on the menstrual function in schoolgirls, and had kept a record of over 1,500 cases. Taking, on the one hand, girls who played games, and, on the other hand, girls who did not, she found that the proportion of those who suffered from menstrual disorder was smaller in the first category than in the second, and the proportion in the first category was further reduced amongst those whose exercises were continued without interruption during the menstrual period. For the last eight years she had been advising every girl to continue her warm bath and her games during the menstrual period if she felt inclined to do so. A great many girls who formerly suffered from various degrees of dysmenorrhoea suffered from it no longer after participating in games during this period, and she regarded the prevalent idea that girls should forego all exercise during the catamenia as not in accordance with nature. The best games for schoolgirls were team games—for example, cricket, hockey, and lacrosse. One important matter was to ensure that girls of about the same age and strength were matched against each other. If girls played against men, or if there was any great disparity between the strength of rival teams, it would mean undue and possibly harmful exertion on the part of the weaker. The question had sometimes been raised as to whether games should be allowed immediately after meals. Her own observation of children and her recollection of her own childhood suggested that digestion proceeded just as easily, and perhaps with rather less mental irritation, if no restraint was placed upon the desire of a child to run about directly after a meal. Miss Stansfeld, who also dealt with the effect of games upon the menstrual function, remarked that out of a hundred girls at Bedford it was found that in the case of 97 their movements in the gymnasium were adversely affected during the catamenia. They could not do balance walking nearly so well as at other times, nor could they carry out any gymnastic exercise needing a good deal of co-ordination. In games they found that their "eye was out" during this period. This pointed to some amount of nerve strain, and accordingly she allowed no girls to play games or take vigorous gymnastic exercise during the first three days of the menstrual period. Miss Stansfeld had got into communication with thirty-five former students who had married and borne children. She had asked them to give her particulars of their health during pregnancy, any difficulty in labour, the completeness of their recovery after childbirth, and the general health of the infant. The replies appeared to show that the history of pregnancy and parturition among those women who at college had undertaken extremely vigorous exercise was in no way different from the general experience. As for nursing their infants, just over half of them had been able to suckle the baby for eight or nine months, others for a shorter period. Some question was raised as to whether these ladies, from the very fact that they had been students at the Bedford Physical Training College, were not physically a selected class to begin with, so that nothing could be deduced from them with regard to the general girl population; but Miss Stansfeld said that the only physical test on entering the college concerned the heart and lungs. Dr. Letitia Fairfield said that her experience, as woman director in the medical service of the Royal Air Force, proved to her that there were some games or exercises which should be ruled out so far as women were concerned. One of these was football, which had a vogue among the Air Force women, and was now becoming popular among factory girls in the North of England. It was a game quite unsuitable for women. It meant occasionally direct violence, especially on the chest, and this was not true of any of the other games, like tennis or hockey, if properly played; it imposed also a very considerable strain upon the pelvic region. Another exercise with regard to which an adverse verdict must be given was motor cycling. The vibration of the motor cycle, and especially the effort at starting, accentuated dysmenorrhoea if a girl was already liable to it. At the

same time Dr. Fairfield strongly believed in games for women, and her experience in the Air Force was that menstrual disabilities largely occurred among the clerks and sedentary workers. As a rule, the girls who suffered from menstrual troubles were those who had never gone in for games which developed their muscles. She agreed with Dr. Clow that games were not necessarily to be prohibited immediately after meals. Games played when fasting were possibly more exhausting and dangerous than games on a full stomach. Dr. Elwin Nash drew attention to the dangers of cycling for small children, particularly the want of care often shown in fitting the cycle to the size of the child, with the result that the child had to make extraordinary contortions in order to ride the cycle at all. He regarded swimming as the most strenuous of all forms of exercise; swimming races produced more heart strain than any other form of sport. Another thing needing careful supervision was mixed hockey, because the added effort which the girls had to put forth in order to compete with men might be harmful to them. Dr. Mary Scharlieb and others, both doctors and educationists, expressed themselves in favour of strenuous exercise and games for girls, both on account of their hygienic and their moral value, the latter by way of discipline and team-work.

LEPROSY IN THE PHILIPPINES AND HAWAII.

Leprosy, as is well known, is still found sporadically in the United States. The last report of the Surgeon-General of the Public Health Service shows that during 1919 54 new cases of leprosy were reported in continental United States, and at the end of that year there were in all on the mainland 206 cases, of which 89 were segregated in the Louisiana State Leper Home at Carville. In contrast with the mainland, there were a large number of cases of leprosy in the Island possessions, by far the greatest number being in the Philippines, where more than 5,100 cases were under treatment at the close of 1919. In Hawaii there were 685, and in Porto Rico 37. Some account of leprosy in the Philippine Islands is to be found scattered through the pages of the Director's report of the Philippine Health Service in 1919, of which a copy reached us a short time ago. The practice of the Service is to arrange leper collection trips each year by boats and trains. The patients collected by train are sent to the San Lazaro Hospital in Manila, where they are submitted to clinical and microscopical tests. Those found positive are taken thence and confined for treatment in the Culion Leper Colony, which has a population of upwards of 4,700. Most of the patients reach there in a weakened condition and in advanced stages of the disease; moreover, leprosy is often complicated with other diseases. The Director believes that the procedure of taking all the lepers in the provinces and confining them in the colony will eventually result in the eradication of leprosy in the Philippine Islands. There are, however, difficulties in the way of "a real clean-out campaign," for many lepers try to evade arrest, and escapes from the detention houses are not infrequent. Thus, in 1919, 34 escaped and 12 only were recaptured; in 1918 there were 37 escapes with 14 recaptures. So great, indeed, is the force of sentiment, that the district health officer of Bulacan thinks it next to impossible to eradicate leprosy with the present system and means at command. On the other hand, some encouragement is to be gleaned from the Director's statement that the lepers at Culion are not lacking in interest in life; many of them take an active part in business pursuits, theatricals, club life, cultivation of the soil, and local politics. The efforts of the Health Service to create among these unfortunate people a feeling of relative contentment with their lot have, he says, met with ready response. The report from the Leprosy Investigation Station in the Hawaiian Islands is distinctly more hopeful. Never in the history of the segregation of lepers, extending over half a century, have there been so many voluntary surrenders as during the past year or two. Direct arrest by deputy sheriffs was formerly the almost universal custom. It seems that the old prejudice of lepers against segregation and their disbelief in any remedial measures have been slowly but surely overcome in Hawaii during the past few years. For this several reasons are given. New and comfortable buildings have been erected in a greatly enlarged compound. The dread of the "Federal doctors" has gradually given way before the tactful administration of successive medical officers of the Public Health Service, "until to-day the medical attendant enjoys the implicit confidence and hearty co-operation of his patients." Further, the increasing number released on parole, apparently cured, scattered throughout the islands, and the publicity given to the station's efforts by the newspapers, have been a powerful aid and stimulus to the work. In regard to treatment, we learn that at the Culion Leper Colony in the Philippines a chaulmoogra clinic is in operation with an average weekly attendance of 700 lepers; Mercado's method appears to be the routine mode of administration. In the Kalihi Hospital, Hawaii, a standard system of treatment was adopted in 1919. This consists of weekly intramuscular injections of the ethyl esters from the mixed fatty acids of chaulmoogra oil, combined with 2 per cent. iodine, and the oral administration thrice daily of the mixed fatty acids of chaulmoogra oil, combined with 2½ per cent. of iodine. The chaulmoogra oil derivatives are prepared in the laboratory of the University of Hawaii, under the direction of Dr. Dean. It is stated that not one of the fifty patients released on parole from the Hawaiian Station since the use of the Dean derivatives was commenced two years before had shown any sign of relapse.

THE EFFECTS OF BETEL-NUT CHEWING.

Medical literature contains a number of references to oral carcinoma in betel-nut chewers, due, as believed, to the chronic irritation thus induced; the data have been mainly obtained from India, Africa, and some of the Pacific islands. As betel-nut chewing is extremely prevalent in Siam, Dr. A. G. Ellis[1] has conducted an inquiry into its effects by sending a set of questions to twenty-five medical practitioners, including those at the various mission stations. Betel-nut chewing is a complex procedure, but the chief ingredients used are betel leaf, areca nut, black catechu, lime turmeric paste, and tobacco leaf. Three of these are astringent, and the other attributes possessed by or claimed for the substances collectively are carminative, tonic, stomachic, antiseptic, sialogogue, antidiaphoretic, and vermifuge. On the beginner the effects are somewhat like those of tobacco—giddiness and faintness, but no nausea. In the habitual chewer the lips, tongue, and to a less extent the buccal mucous membrane, become brownish-red in colour, and the lips and tongue may be rough. The teeth become dark-brown or almost black from deposit of lime, which almost entirely prevents decay; but the gums recede, the alveolar process undergoes atrophy, pyorrhoea is common, and the teeth loosen. Loss of teeth favours indigestion, and pyorrhoea may play a part in the "rheumatism" so common in Siam; but betel-nut chewing in itself has little or no direct effect in causing constitutional or gastro-intestinal disturbance. Bacteriological examination of the mouths of twenty betel-nut chewers did not support the contention that the practice has any antiseptic value. The impression of a large majority of the medical men practising in Siam was against the view that betel-nut chewing caused oral carcinoma; but the statistics of the Chulalongkorn Hospital of Bangkok for six years showed that out of 102 cases operated upon for malignant disease 52 were of the lip, and that of these 52 cases 29, or 56 per cent., were in men, and 23, or 44 per cent., were in women, thus contrasting in a very suggestive manner with the usual

[1] A. G. Ellis, *Arch. Int. Med.*, Chicago, 1921, xxviii. 252 267.

sex incidence of carcinoma of the lip—namely, 90 per cent. in males. It is also significant that in Siam betel-nut chewing is more nearly universal among women than among men, and that in general women chew more of the substance.

SIR THOMAS BROWNE ON DRAINS AND EMBANKMENTS.

The late Sir William Osler's well-known devotion to Sir Thomas Browne's literary remains makes it the most natural coincidence that other Regius Professors should share this hobby; and it is not surprising that the Regius Professor of the Practice of Medicine in the University of Glasgow, Dr. T. K. Monro,[1] should contribute a scholarly account of a hitherto unpublished letter of Sir Thomas Browne, dated November 16th, 1659, to Sir William Dugdale, who was interested in the subject of embanking and draining, and subsequently acknowledged his indebtedness to Sir T. Browne in his work, *The History of Embanking* (1662). A series of letters on this subject passed between these two well-known literary characters between October 4th, 1658, and April 5th, 1662, and are preserved in Volume I of Browne's works published by Simon Wilkin, who, however, pointed out that the series was not complete. Two letters appear to have been unknown to Wilkin; one of these was discovered fifty years ago and published in *The Eastern Counties Collectanea* for 1872–3. The other, dealing with the fens, belonged to the collection of autograph letters and historical documents formed by Mr. Alfred Morrison, and at his sale was obtained by Professor Monro. With the exception possibly of the postscript and probably of the endorsement it is a holograph letter, and is dated and signed. Though the name of the person to whom it was written does not appear, the contents leave no room for doubt that it was meant for Dugdale; it occupies nearly three pages of a four-page sheet, folio size; and in the lower fourth of the fourth page, at the right hand, it is endorsed in two vertical lines, "Sir Tho: Browne ‖ about the fens." The full text of the letter is given, and in addition there are facsimiles of the beginning and end of the letter.

The next session of the General Medical Council will commence on Tuesday, November 22nd, when the President, Sir Donald MacAlister, K.C.B., M.D., will take the chair at 2 p.m., and give an address.

Dr. Gustav Monod will give one of the occasional lectures at the Royal Society of Medicine on Wednesday, November 23rd, at 5 p.m. The subject will be syphilis of the stomach, a condition about which little is known and of which few specimens exist; some specimens, however, will probably be lent to illustrate the lecture, which will be followed by a discussion, in which Dr. Charles Bolton, Dr. A. F. Hurst, Dr. J. W. McNee, Sir Berkeley Moynihan, Mr. Herbert Paterson, Mr. James Sherren, and Mr. A. J. Walton will take part.

We regret to announce the death, on November 5th, of Major-General Sir George Evatt, K.C.B., M.D., A.M.S. (ret.), at the age of 77. He was a former Member of Council of the British Medical Association. A memoir will appear in an early issue.

[1] *Scottish Historical Review*, Glasgow, 1921, xix, 49–57.

The Society of the New York Hospital, which controls the New York and Blooming Dale Hospitals, and Campbell Cottages for convalescent children at White Plains, was chartered by King George III, and celebrated its 150th anniversary on October 26th. This society is one of the three institutions of New York which trace their origin to colonial days, the others being Trinity Church and Columbia University.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

Preservation of Insurance Benefits for Unemployed.

The bill introduced by Sir A. Mond to prolong the insurance of persons unable through unemployment to keep up their contributions was taken in Committee in the House of Commons on November 2nd. On Clause 1, which provides for the extension of period during which such persons may remain insured and the conditions necessary to bring them within the provision, Mr. T. Thomson inquired how much money would be required from the approved societies and out of what resources was it to be provided. Sir Alfred Mond, in reply to this and other questions, said the memorandum pointed out that the additional benefits which would be paid under the measure would be paid by the approved societies. It was difficult to state exactly what these amounts would be, but there was every reason to believe the figure would be between £500,000 and £750,000. The approved societies had a surplus reserve on their valuation of five million pounds. In addition, every society had a contingency fund, and these amounted to two million. They could fall back upon the contingency fund in case of need; therefore there was no occasion for alarm. In answer to Major Wood, the Minister said it was not proposed to give to those who, so to speak, had their contributions paid for them, the fullest benefits. It was proposed to pay (*a*) medical benefits to June, 1923; (*b*) full maternity benefit; (*c*) full additional benefit; (*d*) sickness benefit of 8s. for men and 7s. 6d. for women, compared with the full rates; so that, in regard to sickness benefit, there would be a considerable reduction in the full benefit. The clause was adopted with technical amendment.

Inquiry into Working of Act.

On the Report stage Sir Godfrey Collins said that it was in the recollection of the House that every six months, through the experience gained, or through the faults of the original Act, a fresh Insurance Bill had been introduced. Did not the Minister think the time had arrived when there should be an inquiry into the whole of the working of national insurance? He did not suggest that the amounts paid to the approved societies and to the various officials who were administering the Act were too large, but it might be found that simplification could be effected and economies result.

Mr. J. H. Thomas, on behalf of the Labour party, said they did not want national insurance to be brought within the scope of the usual "anti-waste stunts." Whatever objections there were to the scheme of National Health Insurance, no one who had studied the result of the Acts would seriously suggest that the work should be limited. The need for consolidation was obvious to everyone.

Sir A. Mond said that a Consolidation Bill would undoubtedly be of considerable value; such a measure was practically prepared, and it was a question only of finding parliamentary time. He hoped to be able to introduce such a bill next session. He had been giving considerable attention to the matter of setting up some board of inquiry into the working of national health insurance. Mr. Thomas might rest assured that no attempt had been made on his part to depreciate a service the magnificent results of which were generally recognized by all parties in the country. The approved societies were still engaged in valuations which would take some time to complete. The war upset to a large extent the normal administration. After carefully consulting experts, he thought that those who wished for an inquiry would be well advised not to press for it immediately, but to allow a more normal state of things to come about in which they would see more clearly where they were, and then there could be appointed an important commission, to deal not merely with costs of administration, but with a number of other questions. Captain Elliot expressed disappointment at the statement of the Minister that he proposed to postpone for a long period any inquiry into the Act, for this he gathered to be the effect of what had just been said. Those administering the Act would be glad if the inquiry could take place as early as possible. He thought the upset caused by the war was passing so rapidly that it would soon be possible to take stock of the position, not so much from the financial point of view, as from the benefit point of view. The bill was read a third time and passed.

Milk for Mothers and Children.—Sir Robert Newman asked, on November 2nd, whether, in consequence of Circular No. 185, issued in March, the powers of local authorities to supply milk to mothers and children had been considerably curtailed; and

whether the Minister of Health would consider the advisability of restoring to the local authorities the discretionary powers they previously held. Sir A. Mond said that the conditions imposed by the Treasury were designed mainly to ensure that milk should be supplied only to necessitous cases, and it was not anticipated that any appreciable reduction would result. Recent estimates indicated that the expenditure of local authorities on milk had increased under the new conditions. The orders under which discretionary powers had existed were made under the Defence of the Realm Regulations, which had now lapsed, and their restoration would not benefit the cases Sir R. Newman had in mind. In answer to another question by Mr. Charles Edwards, Sir A. Mond said that milk should not be supplied at less than cost price except in cases where the income per head of a family was below a scale to be made by the particular local authorities and submitted for his approval. No general instructions were given as to the scale of income to be adopted. Sir A. Mond further stated that the policy to be adopted with regard to grants of milk to necessitous mothers and children after the present financial year was still under consideration.

Insurance Medical Benefit.—Mr. T. Thomson asked, on November 2nd, what reduction the Minister of Health proposed to make in the levy of 9s. per member required from approved societies on account of medical benefits, seeing that doctors' fees were being reduced from 11s. to 9s. 6d. per member. Sir A. Mond replied that the present cost of medical benefit was 13s. 9d. per head; 9s. 6d. was charged to insurance funds, to which the Exchequer contributed the statutory two-ninths; the excess cost of 4s. 3d. a head was met by a special Exchequer grant. The saving due to a reduction in doctors' fees must clearly go in relief of the excess cost charged to the Exchequer.

The Diagnosis of Small-pox.—Mr. R. Young asked the Minister of Health, on November 7th, whether a letter was sent from his Department on September 20th to the medical officer of the Bedford Rural District Council stating that the case of a boy who was diagnosed by the medical officer and by the medical man in charge of the case at the hospital as small-pox was not officially a case of small-pox, as the boy had been successfully vaccinated; whether there were large numbers of cases of small-pox on record in which successful vaccination had been performed either prior to or subsequent to infection by small-pox; and whether he justified the action of a medical officer of his department in refusing to accept the diagnosis of two local doctors solely on the ground that successful vaccination had been performed. Sir A. Mond replied to the first two parts of the question in the affirmative, and in reply to the third part said the case was that of a patient who was successfully vaccinated by his doctor ten days after the appearance of an eruption suspected to be small-pox; after small-pox the medical officer of the Ministry, who saw the patient in consultation with the local doctors, advised them that, although there was originally reasonable cause to regard and treat this case as provisionally one of small-pox the subsequent successful vaccination differentiated it from those cases which it would be proper to enter in the official small-pox register. With this recommendation his medical advisers were in complete agreement. He was advised that although vaccination could be performed successfully at any time during the greater part of the period of incubation of small-pox, immunity to vaccination developed rapidly after the onset of illness, and after the efflorescence was completed the patient was wholly insusceptible to vaccinia.

Small-pox at Gateshead.—In reply to Mr. R. Young, on November 3rd, Mr. Pratt said that of the total number of children under 10 years of age who were attacked by small-pox in Glasgow in the outbreak of 1920, the figures as to families according to the number of rooms occupied were as under: 13 belonging to families living in one room; 66 living in two rooms; 13 living in three rooms, and 2 living in four rooms. Of these 5, 18, 6, and 2 respectively were fatal cases. The particulars excluded four cases from beyond the city boundary.

Women Officers at Bradford.—Mr. Ratcliffe asked, on November 2nd, if the Minister of Health was aware that the Bradford Corporation employed thirty-three full-time medical officers; to what sum their annual salaries amounted; how did the number compare with the figures of other towns of similar size and population; how did the amount of the salaries affect the taxpayer, and would the Minister take any steps to reduce the total? Sir A. Mond said he had not full information as to the total number of medical officers employed by the Corporation of Bradford; he was concerned only with those whose salaries were charged on grants administered by his department, and he was communicating with the Bradford Corporation as to this portion of their staff.

The Spahlinger Treatment for Tuberculosis.—Sir C. Kinloch Cooke asked, on October 31st, whether any further investigation had been made in the matter of the Spahlinger treatment for tuberculosis, and when it would be available for patients suffering from this disease. Sir A. Mond said he understood that certain unofficial investigations had been made in this matter, but that no definite conclusions had been arrived at. It would not be possible to undertake any independent investigation as to the efficacy of the Spahlinger treatment, which was essential in a matter of this importance, until supplies of the serum were available in this country. He understood that such supplies were not yet forthcoming.

Venereal Disease in the Army.—Sir L. Worthington Evans stated, on inquiry by Major Colfox on November 3rd, that all soldiers suffering from venereal disease were admitted to hospital till active signs of the disease had disappeared and they were fit to return to duty. All such cases were included in the statistical returns. Cases of syphilis had subsequently to undergo a prolonged course of out-patient treatment in barracks, but they were not included in statistical returns after their discharge from hospital unless readmission was necessary, when they were again included in the returns. Asked the incidence of venereal disease amongst British troops in the United Kingdom, in the army of the Rhine, and in the Black Sea in 1919, 1920, and the first six months of 1921, Sir L. Worthington Evans gave the subjoined table. He explained, however, that the figures in brackets for the year 1919, which were afforded on May 18th in answer to a question, had proved, owing to rapid demobilization and other circumstances, quite unreliable. No figures for 1919 were available as to the Black Sea.

Area.	Annual Ratio per 1,000 of Strength.		
	1919.	1920.	January to June, 1921.
United Kingdom	[51]	48.30	38.03
Army of the Rhine ...	[46]	188.64	148.90
Army of Black Sea ...	—	215.73	238.84

Bellahouston Hospital.—In answer to Mr. D. Graham, Mr. Macpherson stated, on November 3rd, that the report of the committee who inquired into the conditions obtaining in Bellahouston Hospital would be published and placed on sale at the earliest possible date.

Mental Deficiency Acts.—Mr. Ormsby Gore, on November 7th, asked whether the Minister of Health had received the representation of the Staffordshire Association for the Care of the Mentally Defective regarding the effect of the Treasury circular on the limitation of the spending powers of local authorities on the treatment of urgent cases of mentally defective persons infected with venereal disease, and whether he would take care that the limitations would not prevent local authorities from dealing immediately with such cases. Sir A. Mond said that the representation was being carefully considered in connexion with the general question of limitation of expenditure under the Mental Deficiency Acts necessitated by the decision that public expenditure must be drastically reduced. Local authorities were at present only able to deal with urgent cases of the kind indicated if the expenditure could be met within the limits of their approved estimates for 1920-21.

Dartmoor Prison: Silence Rule.—Mr. T. Griffiths asked, on October 31st, if grave discontent existed among the Dartmoor prison staff in consequence of the tactics of the deputy-governor in his effort rigorously to enforce the silence rule; and whether the Home Secretary knew that medical opinion was against the silence rule. Mr. Shortt replied that there was some misapprehension as to the so-called "silence rule." Medical opinion was not against the existing practice which forbade unauthorized gossip. The fact that during the absence of the Governor of Dartmoor Prison recently another Governor was sent to take charge, carried no reflection on the deputy, the explanation being that the latter had only been a short time in the service.

Medical Chemicals.—Dr. Murray asked, on October 31st, whether the Board of Trade was aware that a large number of proprietary articles of Continental origin included in the Key Industries Schedule of the Safeguarding of Industries Act were used by hospitals, and that, owing to the duty now imposed, these hospitals would have to pay much higher prices; and whether he was prepared to allow a drawback to those hospitals on such medical chemicals, in view of the low state of the finances of those institutions. Mr. Baldwin said that a number of the commodities in the schedules were doubtless of the kind stated by Dr. Murray. The experience of the war years showed, however, the grave danger of dependence upon foreign sources for important medical supplies, and the need of action to prevent, as far as possible, its recurrence. He was not, therefore, willing to introduce legislation to give effect to Dr. Murray's suggestion. Mr. G. Terrell put it that the duties paid were a part of the profit which importers had been making, and Mr. Baldwin thought that that view was probably correct.

Fine Chemicals.—Mr. Baldwin, in reply to Major M. Wood, said he was aware that a number of the names appearing in the lists of chemical products under the Safeguarding Act, were registered trade names of German proprietary articles, but in the majority of cases the equivalent chemical designation also appeared. It was open to British manufacturers in certain cases to manufacture for themselves certain products under the German trade names.

Postal Delays.—Dr. Murray asked, on November 1st, whether the Postmaster-General was aware that frequently postal packets containing packets for medicinal use were held up for over a fortnight when urgently required for hospitals, general practitioners, and the public. Mr. Kellaway understood the reference to be to packets from abroad, and said that if details of particular cases were given him he would have inquiry made.

MOTOR SHOW FEATURES.

A FINAL LOOK ROUND.

[By a Motoring Correspondent.]

Inasmuch as the Motor Show organized at Olympia, Kensington, and the White City, Shepherd's Bush, London, closes on Saturday, there is time for a last glance round only. During the week that it has been open to the public comparatively little of interest to the medical man, apart from the features brought out in the last issue of this Journal, has been discovered. But the opportunity may be taken to gather some odds and ends.

Dealing in alphabetical order with cars not mentioned in the last issue, it may be pointed out that those interested in the larger sorts of vehicles will find a new Italian chassis, the 20-30-h.p. Alfa-Romeo (Stand 179), at the White City. There is also the Alsace car (151). The 15.9-h.p. four-cylinder Arrol-Johnston (270 Olympia) has new all-block cylinders and detachable head, spring gaiters, and other refinements, as well as improved body types. The 11-h.p. Beardmore (244 Olympia) has an interesting overhead silent valve gear. The new 10-h.p. Calcott (310 Olympia) is an £11 tax machine, having a four-cylinder engine of 65 mm. bore and 110 mm. piston travel, giving a cubic content of 1,460 c.cm. This car has a gear-box giving three speeds forward and a spiral bevel-driven back axle, the two-seater being sold for £350 complete. The polished G 3 type Albert chassis (240 Olympia) is the result of extensive road tests conducted last February. Half-elliptic front springs are used instead of the inverted quarter-elliptic type; the frame has been straightened considerably in section and lengthened by 5 in. in the rear to avoid any overhanging of the coachwork. The cross members have been improved with a gain in rigidity. A single plate clutch replaces the leather cone variety used formerly, the plate being lined with an asbestos compound giving easy engagement, and gear-changing is facilitated. A new form of gauge is furnished in connexion with the gear-box that has four speeds forward. The change-speed lever is more robust, and is placed more conveniently. The engine is better installed in the chassis, and the tappet rods to the overhead valves are increased in diameter, though not in weight. The axis of the crank shaft has been inclined backwards, enabling the transmission to be kept in a straight line from the axle to the flywheel when the car is loaded fully. The exhaust outlet is now detachable instead of being cast integral with the cylinders. To render the magneto more easily removable a strap fitting has been adopted instead of the usual four studs at the base. Some of the all-weather schemes on the new Service bodies are also worthy of note. Apart from showing an open touring body upholstered in Bedford grey, a Primos open body and a coupé-saloon to seat three, Carrow cars (45, White City) show an 11.9-h.p. four-cylinder standard Carrow chassis with an engine bore of 69.5 mm. and a piston travel of 120 mm. This construction employs pump lubrication and thermo-siphon cooling. A Claudel-Hobson carburetter is used, also a Watford magneto. The gear-box gives three speeds forward, the change being controlled from the centre. A single plate ferodo-clutch is used in conjunction with spiral bevel gear in the back axle. The price of this chassis with tyres is £445, and as a standard open two-seater, £495.

Developments and Lower Prices.

Galloway Motors (312 Olympia), of Tongland, Kirkcudbright, show a four-cylinder 10–20-h.p. chassis; as examples of it have been in the hands of the public during this year it does not figure as a new car, but it is actually a very different construction from that which marked the first exhibit of this newly constituted firm on the occasion of the last show of the series. The possession of this new car involves the payment of an annual tax of £11, the engine bore being 65 mm. and the piston travel 110 mm. Thermo-siphon water-cooling is used and forced feed lubrication. A high tension magneto is employed and a Zenith carburetter. The gear-box gives three speeds forward, the control being central. A cone clutch is used as well as a spiral bevel-driven back axle. Michelin pressed steel wheels are employed and a Lucas dynamo lighting and electric starting-set. The price of the chassis complete with tyres is £375 delivered at the works. Medical men may note that one of these chassis with a standard coupé to seat two persons and a dickey seat is provided for £495 delivered at the works, the example shown being painted green and upholstered in corded cloth. Perhaps the most important point about the well-proved range of Hillman (277 Olympia) cars of low taxation ratings is that they are now available at attractive prices; thus the 11-h.p. series have been reduced as follows: Two-seater, £495, representing a reduction of £35; four-seater, £550, a reduction of £50; coupé, £570, a reduction of £40; and four-seater with all-weather body, £630, a reduction of £30. The 10-h.p. model has been reduced to £590, which is a reduction of £30. Mechanically these cars embrace the well-tried features of the firm's practice. Thus the 10-h.p. speed model has a four-cylinder water-cooled engine with a bore measurement of 63 mm. and a piston travel of 120 mm., giving a capacity of 1,496 c.cm. It comes, therefore, just within the 1½-litre class, which is going to constitute a notable branch of motor evolution during the next two or three years. In this direction Hillman has always been a pioneer. Magneto ignition, Claudel-Hobson carburetter, detachable cylinder heads, a gear-box giving three speeds forward, and spiral bevel final drive, together with half-elliptic springs fore and aft, are among the other mechanical features of this car. The 11-h.p. model has the same piston travel, but 2 mm. greater bore measurement. In this the cylinder heads are not detachable; a worm drive, too, is employed and a Zenith carburetter. The 11.9-h.p. four-cylinder Morris-Cowley (315 Olympia) chassis comes under the £12 tax class, the engine volume being 1,550 c.cm. The constructional practice of the firm is followed consistently. The four-plate clutch has cork inserts, and the power is transmitted through the gear-box to an entirely enclosed propeller shaft, the final drive being by spiral bevels. The price of the chassis, with Lucas electric lighting set, is 255 guineas. The same chassis details apply in the case of Morris-Oxford *de luxe* model, save that the electric starter and tyres are additional. Thus it will be appreciated that the chassis of the new standard Morris-Cowley car is identical with that of the Morris-Oxford *de luxe*. Considerable modifications have taken place in the 13.9-h.p. Renault (290 Olympia), which was one of the first cars of this engine rating to be placed on the market by a first-class French house. Circumstances have prevented the arrival in this country in any quantities of this model; it is now available, however, to any extent for which a demand may arise, also in appreciably modified form as to detail and finish. In regard to design, of course, the chief novelty for Renault is the introduction of a new large nominal 45-h.p. six-cylinder machine with an engine of over 9 litres in size. Hence it can scarcely be of practical interest to the average medical man. By contrast, the 15.9-h.p. four-cylinder Renault is shown as a coupé complete for £605. A larger Renault model, also with four cylinders, rated at 15.9-h.p., sells as a chassis at £595. Thus the firm's range is sufficiently wide to interest the medical profession, which it has served well since the early stages of the movement. Renault products have well earned their reputation for wearing qualities. The 12-h.p. Austin car, the introduction of which was announced in these columns a short while ago, is not displayed at the current exhibition, but at the firm's large headquarters in Oxford Street. The design follows closely that of the now well-proved 20-h.p. model. The new product is notable for the amplitude of the body accommodation and for its pleasing lines. In fact, it is a typical Austin product brought now well within the purse range of the average medical man. The engine is not highly stressed, and the wearing qualities should, in consequence, be excellent. It is unusual, too, among machines of this rating from the fact that the gear-box gives four speeds forward.

A Glance at the Accessory Section.

Reverting once more to the exhibition, it may be pointed out that, in regard to the accessory section, the chief feature of interest is to be found in the tyre exhibits. The corded variety is standardized by nearly every chassis maker; it gives much longer wearing qualities. But we do not yet see the corded construction employed as standard on cars in conjunction with straight-sided tyres. The death a fortnight ago of Mr. J. B. Dunlop, at well over four-score years, reminds one of the enormous progress made in the design and production of air-filled tyres since his notable pioneering efforts, as witness the Dunlop Rubber Company's exhibit (492 Olympia) of Magnum cord tyres of the beaded edge varieties built on multi-ply cord casings, as well as of the improved Magnum type standard tyres with beaded edge, and the Magnum cord and canvas type for light cars. The exhibit illustrates, besides, the company's straight-side cord tyres with special rubber non-skid tread, built on the Dunlop multi-ply cord casing. The Bel-[illegible]

Tyre Company (487 Olympia) shows motor car tyres, comprising sundry types of outer covers introduced by this firm—namely, the V design, all-rubber *de luxe*, the Bedam V groove, the Beldam Bulldog, and the Beldam combination steel drum on V design of cover. There are, besides, rubber inner tubes. The Stepney (475 Olympia) exhibit consists of spare motor wheels, road-grip motor tyres, Stepney tubes, Stepney shock absorbers for Ford cars, and waterproof covers for spare wheels and the like. The practice of encasing springs in gaiters has increased to such an extent as to give to the exhibit of the firm primarily responsible for the introduction of the device to this country, Browne Brothers (450 Olympia), more than passing interest. Here a complete range of Duco leaf spring gaiters is on view together with the firm's mechanical tyre pump, horns, valve stem lubricators, clocks, watches, pumps, reb und snuffers, Klaxon horns, vulcanizers, Celerio jacks, and Eto spare parts for Ford cars, among innumerable accessories. The new triple diffuser Zenith carburetter (418 Olympia) is introduced at this show; the firm also exhibits special sets of carburetter fittings for Ford cars and most other well known makes. In the carriage work section Offord and Sons (321 Olympia) show three examples of their all-weather bodies. One is called a four-seater featherweight type, with V windscreen, luggage grid, and special tool-box in the step platform, mounted on a 15-h.p. four-cylinder Belsize chassis. The other is also a featherweight four-seater, carried out in a different colour scheme and upholstered in leather, the whole being mounted on a 12-h.p. four-cylinder Rover. The third example is a five-seater, painted elephant grey, picked out in green, upholstered in antique imitation leather to match, the chassis in this case being a 20-h.p. four-cylinder Chevrolet.

England and Wales.

Voluntary Hospitals Commission.

THE following statement regarding the position of the London hospitals and the decision to make immediate emergency grants has been issued by the Voluntary Hospitals Commission:

Emergency Grants to London Hospitals.

The King Edward's Hospital Fund, as the Local Voluntary Hospital Committee for London, have now reported to the Hospitals Commission in regard to the situation of the London hospitals. They estimate that the aggregate deficit on the maintenance account for the year ending December 31st, 1921, will amount to at least £360,000. This is less than the corresponding figure for 1920, but the gravity of the situation is shown by the fact that without exception all the larger general hospitals, including all the medical schools, will show heavy deficits. Moreover, a number of hospitals have now exhausted all their realizable assets, and without immediate assistance will have no alternative but to close beds. It is a condition of the Government grant of £500,000, which has to meet the needs not of London only but of the whole of Great Britain, that a corresponding amount must be raised by the hospitals themselves. As the total deficits for the year were estimated by Lord Cave's Committee at £1,000,000, the importance of the pound for pound rule is manifest. The Hospitals Commission has provisionally appropriated £180,000 for London, which is half the total deficits for the year as estimated by the King's Fund. But if the London hospitals are to earn this grant they must themselves raise a similar amount. In view, however, of the fact that a number of hospitals have already, or shortly will have, exhausted their realizable assets, the Commission has decided in certain cases to make emergency grants in anticipation of the new money which will have to be raised. These grants are in no case more than half the amount of the estimated deficits for 1921; and the Commission has not felt justified at this stage in making emergency grants to any hospitals whose realizable assets exceed their liabilities, as such hospitals not having exhausted their credit are not compelled to close beds immediately, but can continue their activities, at any rate, for the present. It will therefore be understood that the receipt of the substantial grant does not mean that a hospital is relieved of the necessity of appealing to the generosity of the public. On the contrary, as the grant is in no case more than half the estimated deficit, it will be seen that those hospitals which receive the largest share are precisely those which are most in need of additional revenue.

The total amount of the present emergency grant is £77,900, which is to be distributed as follows:

	£
Canning Town	700
East London Hospital for Children	3,000
Elizabeth Garrett Anderson Hospital for Women ...	600
Great Northern Central Hospital	11,000
Hampstead General Hospital	3,400
Hospital for Epilepsy	850
Hospital for Sick Children	4,300
Infants' Hospital	1,000
King's College Hospital	9,000
London Temperance Hospital	2,000
Metropolitan Hospital	750
Middlesex Hospital	3,000
Mildmay Mission Hospital	400
National Hospital for the Paralysed	800
Prince of Wales's General Hospital	2,200
Queen Charlotte's Lying-in Hospital	3,000
Queen Mary Hospital for the East End	1,000
Queen's Hospital for Children	2,400
Royal Free Hospital	12,000
Royal National Orthopædic Hospital	3,200
Royal Waterloo Hospital for Women and Children ...	500
Samaritan Free Hospital for Women	800
South London Hospital for Women	800
University College Hospital	12,000
Total	£77,900

North of England Edinburgh University Club.

The fourteenth annual dinner of the North of England Edinburgh University Graduates' Club was held at Newcastle-on-Tyne on November 4th. Dr. D. W. Inglis, of Hebburn, president of the club, presided over a large gathering, and Sir J. Alfred Ewing, K.C.B., F.R.S., Principal of Edinburgh University, was the guest of the evening. Dr. Inglis proposed the toast of "Alma Mater," and in response Sir Alfred Ewing said that Alma Mater had had to adopt a system of birth control, because her children threatened to become too numerous; but she remained eternally young, throwing her branches wider and wider every year. The very existence of a club such as theirs indicated what the university meant to the men who had been students there. A most satisfactory feature of the university life was the keenness and energy with which the men who had returned from the war had taken up their studies again. He was glad to see so many of the University's sons in apparently prosperous circumstances, and he asked them to remember the financial claims of Alma Mater. The University received a very welcome grant from the Government, and it was only a reasonable grant because the Government authorities were beginning now to recognize that the universities played an important part in relation to the State and deserved national support. Last year the total amount thus distributed by a committee to the universities was £1,500,000. He was sorry to say that Sir Eric Geddes, who had the faculty of his family for applying dramatic strokes, had announced that the grant was to be diminished by £200,000 next year, and that was why he had ventured to make his appeal to the sons of Edinburgh University.

University of Bristol.

A novelty among the many methods of propaganda which the University of Bristol is employing, in its appeal for £1,000,000 in connexion with its new developments, is the publication of a pamphlet of forty-eight pages containing photogravures illustrating the work and the many-sided activities of the University. All the photographs are interesting and they are excellently reproduced. Students are shown at work in lecture theatres in the faculties of arts, science, and divinity, in the various libraries and museums, in scientific laboratories and engineering workshops, on geological and botanical expeditions, and on visits to modern engineering plants and factories. In the section devoted to the faculty of medicine there are photographs of the class of experimental physiology, while some of the research apparatus of the professor is shown in detail; other photographs show students in the pathological museum, and research students in the bacteriological laboratories. In another series students are seen at work in the different departments of the Royal Infirmary; illustrations of the department of remedial gymnastics and of the casualty department are given, while in another is shown a class at work on materia medica in the dispensary. A publication of this

kind is much more likely to give to the lay public a comprehensive idea of the conduct of a modern university than many pages of verbal description.

Liverpool.

The offertory at the annual medical service on behalf of the Royal Medical Benevolent Fund amounted to £90 10s. The honorary treasurer, Dr. J. Ernest Nevins, received in addition £7 6s. from medical men who were unable to be present at the service. The expenses were £9 14s. 6d., and it is gratifying to note that the amount to be transmitted to the Fund is among the largest since the institution of the annual medical service. The biennial dinner of the Liverpool Medical Institution was held on Thursday, November 10th, at the Adelphi Hotel.

Scotland.

Venereal Diseases.

A conference of representatives of local authorities and others interested in the prosecution of active measures in Scotland for combating venereal disease will be opened in the City Chambers by the Lord Provost, at 11 a.m., on Friday, December 2nd. Sir Malcolm Morris, Vice-President of the National Council for Combating Venereal Diseases, will give an address on the prevalence of these diseases and the work of the National Council; he will be followed by Sir Leslie Mackenzie, medical member of the Scottish Board of Health, who will open a discussion on the prevalence of venereal diseases in Scotland and the need for an educational campaign. In the afternoon Dr. J. McGregor-Robertson, Chairman of the Scottish Committee of the National Council for Combating Venereal Diseases, will explain the functions and proposed operations of that Committee, and subsequently the problem will be discussed as it affects urban and rural districts respectively. Further information can be obtained from the Secretary, Mr. W. E. White, 30, Renfield Street, Glasgow.

Compulsory Retirement of Married Medical Women.

The Glasgow Corporation passed a resolution on September 8th dispensing with the services of married women whose husbands were in regular employment. In consequence of this resolution a large number of women retired on October 31st from the service of the Corporation, including Dr. Moore, Dr. Williams, and Dr. Norrie, assistant medical officers in the public health department. Dr. Moore, who had been six years in the service of the Corporation, was associated with the tuberculosis branch of the department; Dr. Norrie and Dr. Williams, who had three and two years' service respectively, were connected with the child welfare branch. It is stated that the work performed by these ladies will be carried on, but no permanent appointments to their posts have yet been made. A similar case, which recently occurred in London, has been widely discussed in the lay press.

Glasgow Home for Infirm Children.

The forty-seventh annual meeting of East Park Home for Infirm Children, Maryhill, Glasgow, was held on October 19th, with Mr. James Graham in the chair. The directors' report stated that the growth of the ordinary income was again much more than counterbalanced by the increase in ordinary expenditure, and the sum of £1,666 had had to be taken from the extraordinary account to meet the deficiency in the ordinary revenue; the medical report was read by Dr. A. B. Sloan, and Sir Alexander Gracie, in moving the adoption of the reports, spoke of the great amount of useful and unostentatious work accomplished in the institution.

Rectorship of Aberdeen.

Sir Robert Horne, Chancellor of the Exchequer, was on November 5th elected Rector of Aberdeen University in succession to Lord Cowdray, whose three years' term of office has just expired. The voting in the contest was as follows: Sir Robert Horne (Coalition), 557; Sir Donald Maclean (Independent Liberal), 400; and Professor Soddy, of Oxford University, formerly of Aberdeen University (Labour), 253.

Edinburgh Students' Council.

In the annual report of the Edinburgh Students' Representative Council reference is made to the part played in the industrial crisis last March. The Council was appealed to by the authorities to raise a force of students to assist in the maintenance of food supplies and the essential transport services. In less than a week over 600 students had given in their names and large numbers enrolled in the Defence Force, the special constabulary, and as pumpmen at the mines. The principal of the university gave an assurance that those who were absent on public service would not be thereby prejudiced in their university course; the Secretary for Scotland had expressed the gratitude of the Government to the students.

Ireland.

Loss to Irish Hospitals.

At the annual meeting of the Linen Guild connected with Sir Patrick Dun's Hospital the Lord Chancellor of Ireland, Sir John Ross, in proposing the adoption of the reports of the executive committee and of the treasurer, spoke of the work done by the War Hospital Supply Dépôt in Merrion Square during the war and the efforts made to raise money in connexion with it. He had at one time hoped that it would be possible to dispense with the Linen Guilds, but it was clear that they must be continued. Under the cruel taxation that was falling particularly on the middle classes they had not the means to give as they had done formerly. "In addition," the Lord Chancellor went on, "owing to the disturbed state of the country, a great number of those who formerly were our best supporters are leaving the country. I am sorry for that. I think everybody should stand his ground. But still the fact remains that they are going. We cannot ask them to stay here. Ireland is being impoverished of these good people, and England and Scotland are getting them." In proposing a vote of thanks to Sir James Craig, M.D., the President of the Royal College of Physicians referred to the State support of hospitals. Ireland's proportion of the £500,000 given by the Government to English and Scottish hospitals should have been at least £50,000, but the Chief Secretary had said that they had a Parliament of their own, and that already a Government grant was being given to Ireland.

Proposed Reduction of Certification Fees under the Insurance Act in Ireland.

The following letter has been addressed to the Irish Medical Committee:

National Health Insurance Commission, Dublin.
November 1st, 1921.

I am directed by the National Health Insurance Commission (Ireland) to state, for the information of the Irish Medical Committee, that they have been instructed by His Majesty's Government, in common with other public departments, to take steps with a view to securing a reduction in the cost of expenditure on public services which are borne out of Exchequer Funds. The whole cost of the scheme in operation in Ireland for the provision for insured persons, free of charge, of the medical certificates required in connexion with the administration of the Sickness and Disablement Benefits under the National Health Insurance Acts is defrayed from an Exchequer Grant. In view of the fact that the sum available up to January 1st, 1920, was increased as from that date by 40 per cent. it is imperative upon the Commission to secure a reduction of the cost of this scheme at present falling upon Exchequer Funds, the expenditure under which is almost wholly due to the payments to doctors for issuing medical certificates. In these circumstances I am to request that the Irish Medical Committee, which has on previous occasions arranged, on behalf of the medical profession in Ireland, the terms of their remuneration to be paid to doctors under the scheme referred to, will be so good as to send as early as possible representatives to confer with the Commission as to what reduction is to be made.

I am, Sir, yours faithfully,
J. Houlihan.

Dr. T. Hennessy, Medical Secretary,
Irish Medical Committee.

A "faith healer" has been arrested at Los Angeles on a charge of manslaughter in connexion with the death of a patient whom he had treated; the patient had suffered from rheumatism for some years, and the coroner's jury decided that she died as the result of manipulations by the healer which fractured her limbs.

Correspondence.

THE CURE OF SLEEPING SICKNESS.

SIR,—With reference to the editorial notice on the treatment of sleeping sickness in your issue of November 5th (p. 759), I should like to correct a misapprehension in the last paragraph under which apparently Professor Warrington Yorke laboured when he published his recent critical review in a medium which precluded the possibility of a reply.

The expressed object of the mission, as endorsed by the Colonial Office, is to test out and compare various methods of treatment already in vogue or which may be put forward in the near future (the new German preparation, "Bayer 205," having been specified), and, further, to place the Commission under the general direction of an independent scientist.

As clinical and laboratory experience is a necessity the association has approached Professor J. W. H. Eyre of Guy's Hospital, who was in 1906 chairman of the working party of the Malta Fever Committee, and he has signified his willingness to accept the post of director.

With reference to Professor Warrington Yorke's criticism as to absence of controls, I would point out that the work done by Marshall and Vassallo has been performed by them as Uganda medical officers in the field and in their spare time, without the great advantage of having their patients constantly in hospital and completely under their control, so that they have been unable to carry out all the controls and examinations which would have been possible in a well equipped laboratory attached to a hospital in England. Further, they have carried out a method of treatment which they have found highly successful in practice, and have offered several theories to explain these results.

Taking their actual results as compared with other methods of treatment, the Tropical Disease Prevention Association expects to receive early in 1922 a report embodying all the results of treatment up to that date, and from the partial data already to hand there appears every prospect of these figures completely justifying the claim that this serum method is giving better results than any other in use up to the present, especially when cases of trypanosomiasis from the same countries are compared.

The opinion, based on a clinical observation, that "although the administration of one dose of salvarsan, neo-salvarsan, or atoxyl is sufficient to sterilize the blood stream, symptoms reappear within a variable period, averaging about four months, and the disease progresses to a fatal termination," comes in for adverse criticism, although in the main it corresponds with the results revealed by an analysis of the figures put forward by Professor Yorke, and certainly agrees with the results of animal experiments detailed by Colonel Wenyon in his article (in the same issue of the BRITISH MEDICAL JOURNAL) wherein he states "in experimentally inoculated small animals, such as mice, it is usually possible by means of a single dose of a drug to bring about the disappearance of trypanosomes from the peripheral blood, but almost invariably relapses occur in a comparatively short time and the animals die of the infection."

Finally, the Tropical Disease Prevention Association is not prejudiced in favour of any one method of treatment, but it does consider that fair play should be given to any method which has shown promise of success. This attitude is not conspicuous in Professor Yorke's review.

On the other hand, far from condemning the value of "Bayer 205," in spite of the fact that to the best of its knowledge this secret remedy has been used only on one human patient, the association is, the more readily after Colonel Wenyon's experiments, prepared to investigate its importance. A German expedition, under the auspices of our Colonial Office, is now on its way to Rhodesia to test this treatment with the aid of our medical officers in the colony. The expedition, which I am assured by the Colonial Office is disinterested, is entirely financed by German commercial firms who, in view of the present value of the mark and the non-existence of German colonial interests, may or may not be disinterested also. Further, I am informed that the composition of "Bayer 205" will be revealed later. Past experience of German descriptions of the method of manufacture of "606" leads one to anticipate that this revelation may not enable others to reproduce the remedy in question.

It is, perhaps, not fully recognized by tropical experts working at home that treatment of such a disease as sleeping sickness must be administratively and economically practicable on a large scale, as well as scientifically effective in a hospital at home. It cannot be stated too emphatically that the object of the association is to try serum and other methods in the field in order to gauge their respective values for stamping out sleeping sickness.—I am, etc.,

E. T. JENSEN,
Honorary Secretary, Tropical Disease Prevention Association.

London W., Nov. 7th.

A METHOD OF SKIN-GRAFTING.

SIR,—We feel that we cannot allow Dr. Samuel Samuel's short paper on this subject in your issue of October 22nd to pass without comment.

For many years now skin-grafting in various regions of the body has formed an important part of our work in plastic surgery: many thousands of patients have passed through our hands, and in a very large percentage of these skin-grafting has been carried out at some stage or other of their treatment. The procedure has, therefore, become an every-day one in our work and has been placed upon a sound and rational footing.

Esser in 1917 described, in the *Annals of Surgery*, a pressure method which he had used in connexion with ectropion conditions; it is upon this, considerably modified and extended in its field of usefulness, that our present method is based. An accurate mould of the area to be grafted is taken in dental composition; the Thiersch graft is placed upon this with its raw surface outermost; more than one graft may be used; the whole is then pressed into and fixed in position by any convenient means available.

We do not propose to go at further length into a description of technique, for details of which readers are referred to Esser's article quoted above, *Plastic Surgery of the Face* (Gillies), and "Skin grafting of the buccal cavity" (*British Journal of Surgery*, vol. ix. No. 35; Kilner and Jackson).

In regard to results, a "success" is one in which the raw area to be grafted is completely covered with epithelium from the time of operation and which never subsequently shows any denuded patches. Taking this as a standard of success the above method has given us well over 90 per cent. with Thiersch and over 60 per cent with Wolfe grafts. This high percentage is, in our opinion, due to the principle of pressure dressing.

Dr. Samuel speaks of "the application of the method of lymphangioplasty combined with that of anchored dressings" and makes much of the "feeds." Not one of the thousands of skin grafts we have performed has received any such lymphangioplastic feeding, and we therefore consider that Dr. Samuel is entirely wrong in attributing even part of his increased success to this ingenious procedure. His method of anchoring dressings suggests that he has unwittingly stumbled upon what is, to our mind, an indifferent way of obtaining "pressure dressing," and it is to this that any increase in the number of his successful grafts is due.

Might we remind surgeons that they are always welcome to see this work at Sidcup?—We are, etc.,

H. D. GILLIES, GILBERT CHUBB,
T. P. KIENLE, H. B. RUSSELL,
Surgeons to the Queen's Hospital, Sidcup.

Sidcup, Nov. 3rd.

THE ETIOLOGY AND TREATMENT OF VARICOSE ULCERS.

SIR,—I am much interested in the very instructive paper on the above subject in your issue of October 29th by Drs. Grove and Vines, as it reminds me of some experiments I carried out in hospital many years ago. Varicose ulcers can scarcely be called a medical subject, except on the principle that those cases which do not pay are medical and those which do are surgical. However, as my surgical colleagues refused to admit stinking ulcers into their wards, I had no difficulty in appropriating as many cases as I wanted. Varicose ulcers usually occur among the poor, and I found a considerable number of cases among cooks, whose

legs and habits had not been closely inspected by those who should have had an interest in their cleanliness.

When there was extensive ulceration on both legs I immersed the patient in a warm mild saline bath, and she was kept there day and night till the ulcers were nearly healed. When there was burrowing the overlapping skin was slit in as many places as were necessary to allow the skin to lie flat on the underlying surface. The thick margins usually disappeared in twenty-four hours, and the healing was fairly rapid. When the ulcer was confined to one leg and not very extensive, I used a leg bath for six to ten hours daily. In all healing tissues a certain amount of calcium is necessary, and of all the ionizable calcium salts I think the iodide is the best. Each patient had from 8 to 12 grains daily.—I am, etc.,

Liverpool, Oct. 31st. JAMES BARR.

ERYTHEMA NODOSUM.

SIR,—Further evidence of erythema nodosum being an acute specific fever was produced by Dr. J. Odery Symes in the BRITISH MEDICAL JOURNAL of November 5th. In my own description of the disease, published in the *Practitioner* in 1913, which Dr. Odery Symes refers to as "a most convincing paper controverting the rheumatic theory," I regarded the condition as an "infective disease of separate entity." It may be of general interest to quote an extract from a letter, dated August 2nd, 1913, which I received from the late Sir William Osler on the subject:

"Erythema nodosum . . . is a disease in which I am very much interested. It is extraordinarily common here, and the difference in incidence in England and America is very striking. We rarely saw a case at the Johns Hopkins Hospital. The association with tonsillitis is itself suggestive of an acute infective disease."

The obvious importance of the subject is in the necessity of separating the prognosis of erythema nodosum from that of acute rheumatism.—I am, etc.,

London, W., Nov. 7th. A. HOPE GOSSE.

THE TREATMENT OF CUTANEOUS ANTHRAX.

SIR,—In the JOURNAL of July 16th, p. 97, Dr. Ernest F. Neve refers to cases of cutaneous anthrax treated with the actual cautery, which he thinks might be a useful substitute for excision, as practised by Mr. Ogilvie and Mr. Hall. With reference to this, I may be allowed to mention that I have met with excellent results in over 50 cases by scarifying the pustule and about an inch of the surrounding skin and applying finely-powdered potassium permanganate. This was followed up by bathing the part three times a day with Condy's fluid in warm water, a little carbolic oil being applied after each bathing. In some acute cases affecting the face or upper part of the body I have used emetics and a mixture of ipecacuanha and ammonia.

The rationale of the treatment is that the virus of anthrax is an animal poison like that of snake-bite, and the permanganate is an antidote acting directly and immediately, and through the blood and absorbents. Serum injections could be carried out as in excision or the actual cautery.—I am, etc.,

JOHN W. WEIR.

Engcobo, Tembuland C.P., South Africa, Oct. 7th.

SPINAL ANALGESIA.

SIR,—I have read with great interest Mr. Morrison's report on 11,000 cases of spinal analgesia in the BRITISH MEDICAL JOURNAL of November 5th, p. 745. May I be allowed to ask three questions on points which he does not make quite clear, answers to which, I am sure, would be of considerable value coming from one with such a large experience of the method?

1. What strength solution of stovaine does he use? It is impossible to follow out his technique or compare his dosage with that of others without knowing this.

2. Does he use a light (isotonic saline) solution, or a heavy (glucose) one? If the former, in what position does he place his patient during operation?

3. With regard to strychnine, is he prepared to say that it is of definite value, and that cases in which he has used it have been fitter than those in which he has not?—I am, etc.,

London, W., Nov. 7th. STANLEY ROWBOTHAM.

METATARSUS VARUS.

SIR,—In your issue of October 29th is an interesting communication from Mr. Blundell Bankart, in which occurs a statement I am unable to accept without further confirmation. The statement is that metatarsus varus "is due to congenital absence of the internal cuneiform bone." Mr. Bankart bases this statement on the observed facts that in the six feet of three patients under the age of 3 years affected with metatarsus varus, upon which he has operated, "the internal cuneiform bone was absent and represented by *a flat disc of fibro-cartilage* between the base of the first metatarsal bone and the scaphoid." (The italics are mine.) I beg to suggest that the italicized description is that of a *normal* internal cuneiform bone of a child under the age of 3 years.

Mr. Bankart further states that he has "not had the opportunity of examining a patient who has grown up with this deformity." May I refer him, therefore, to Dr. James K. Young's *Manual and Atlas of Orthopaedic Surgery*, 1911, pp. 833–34, where he will see a photograph and radiograms of an undoubted case of double metatarsus varus (under the care of Sir Robert Jones) occurring in an adult, in which the internal cuneiform bones are present on each side as large as usual?—I am, etc.,

London, W., Oct. 29th. PAUL BERNARD ROTH.

Obituary.

EDGAR BEAUMONT, M.D.

EDGAR BEAUMONT was born in 1860 and was the son of Josiah Beaumont of Huddersfield. He entered the Medical School of St. George's Hospital in 1831, and having previously begun his medical work in Yorkshire, he took the diploma of M.R.C.S. in 1883 and those of L.R.C.P. and L.S.A. in the following year. In 1907 he took the M.D. at Durham. After a hard struggle in his early years, he built up a good general practice in the neighbourhood of the Crystal Palace. His ability and happy disposition brought him success, for he had in a high degree the gift of becoming the friend as well as the medical guide of his patients. He touched life at many points; as surgeon to the Norwood Cottage Hospital he kept well abreast of modern developments and never spared himself.

He was a keen horseman and sportsman, and enjoyed his holidays like a boy. Some twenty years ago he collaborated under the pseudonym of Clifford Halifax with the late Mrs. L. T. Meade in a series of detective stories which appeared in the *Strand Magazine;* they had a medical flavour, the investigator having a busy practice in Harley Street. The plots were mainly supplied by Beaumont, who, though urged to continue the series, never found time to do so. A most delightful and unselfish companion, he leaves a gap that his friends will long regret. Although his appearance and sunny manner hardly ever suggested it, his health had long been unsatisfactory, and he had had several short attacks of acute illness since 1914. He was, however, spared the trials of a prolonged invalidism and incapacity for the life and work he loved, for he died in Charing Cross Hospital twelve hours after the onset of cerebral haemorrhage. He leaves a widow and a married daughter.

WE regret to announce the death of Dr. RICHARD PERCY WOODROOFE, of Eccleshill, Bradford, which took place as a result of pneumonia, on October 24th, at the age of 58. Dr. Woodroofe was a native of Dublin, and received his medical education at the Ledwich School, Dublin, and the Yorkshire College, Leeds. He took the diploma of L.A.H.Dub. in 1884 and the L.R.C.S.I. and L.M. ten years later. After holding the posts of surgeon and medical assistant at the Mercer's Hospital, Dublin, he was in general practice at Idle, Greengates, and Eccleshill for thirty-three years. During this long period he had built up an extensive practice in the district and had endeared himself to the hearts of his patients and fellow-practitioners by his cheerful, unassuming and lovable disposition. He was a careful practitioner, always assiduous in the interests of his patients, and a most loyal colleague to his neighbours. His help was at all times at the service of his friends in any time of need, and was cheerfully rendered with punctilious care. His familiar figure will

be greatly missed in the district. He was laid to rest in the churchyard of his parish church in the presence of many members of the local profession and large numbers of sorrowing patients. Dr. Woodroofe was a member of the Bradford Medico-Chirurgical Society, and took an abounding interest in the work of the British Medical Association, being at the time of his death a joint secretary of the Bradford Division. He had also been a member of the Bradford Local Medical and Panel Committees from their commencement. He leaves a widow and three sons, one of whom joined him in practice a year ago.

We regret to have to record the death of Dr. J. W. Stephens of Cardigan; it was due to double pneumonia and came as a distressing surprise to his many friends. He was born at Kilgarren, three miles from Cardigan but in the county of Pembroke, and his long residence in the border town made him well known in the northern part of Pembrokeshire and the southern part of Cardiganshire, as well as in part of Carmarthenshire. He was educated at St. Bartholomew's Hospital, and took the diplomas of M.R.C.S. and L.R.C.P. in 1888. He was at the time of his death the senior practitioner in Cardigan. He was M.O.H. for Cardigan Urban and Rural District Councils and for the port, Admiralty surgeon and agent, inspector of seamen, and medical inspector of schools in Cardiganshire and Pembrokeshire. He was a J.P. for the county of Pembroke and the borough of Cardigan. In a tribute to his memory published in the *Cardigan and Tivyside Advertiser* of October 28th, Sir John Lynn-Thomas, K.B.E., F.R.C.S., wrote: In early life he was a keen athlete and a vigorous football player. . . . He soon became absorbed in practice, closely following the development of medicine and surgery, and the community gained by his alertness and progressiveness and by his continued studentship. . . . His enthusiasm and progressiveness in the evolution of his calling took up more time than his not too robust constitution could afford. In my opinion he paid the great sacrifice for his patients' sake at too early an age. In him the Cardigan Memorial Hospital Scheme has lost an enthusiastic and progressive worker. His attitude towards the value of hospital treatment properly organized was distinctive, and had he been spared he would have been a pioneer in educating people with regard to the place which a hospital takes in the building up of a sound organization for the prevention of avoidable human shipwrecks in sudden storms of illness.

The Services.

AUXILIARY R.A.M.C. FUNDS.

The usual quarterly committee meeting of the Auxiliary Royal Army Medical Corps Funds was held on October 28th, at 11, Chandos Street, Cavendish Square. Six grants were made to cases in the Benevolent Branch for the orphans of officers, amounting to £158, and forty-six grants in the Relief Branch for widows and orphans of the rank and file, amounting to £1,366.

These Funds are for the relief of widows and orphans of commissioned officers, non-commissioned officers, and men of the rank and file of the Royal Army Medical Corps, Special Reserve, Territorial Force and New Armies, and also for the relief of the children of those who have been so severely damaged in the late war that they need help for the education of children.

Requests for relief should be addressed to the honorary secretary, at the offices of the Funds, 11, Chandos Street, Cavendish Square, W.1.

DEATHS IN THE SERVICES.

Colonel Herbert St.Clare Carruthers, Madras Medical Service retired, died suddenly of heart disease on September 19th. He was the son of Captain Francis John Carruthers, of the Indian Army, was born at South Stoneham, Southampton, on April 18th, 1856, and educated at Charing Cross Hospital; he took the diplomas of L.R.C.P. and S. Edin. in 1878, and entered the I.M.S. as surgeon on September 5th, 1878; he became surgeon-major and lieutenant-colonel after twelve and twenty years' service respectively, and was promoted to colonel on June 30th, 1913, when he held the post of Inspector-General of Civil Hospitals, Burma, retiring on September 30th, 1914. He served in the Afghan war of 1878-80, receiving the medal, and was [illegible] in India during the late war.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a Congregation held on November 5th it was agreed to present an address to Professor G. D. Liveing, who held the Chair of Chemistry from 1861 to 1908, and has resided in the University for every term since he matriculated seventy-five years ago at the age of 19. The address was read by the Public Orator, Mr. T. R. Glover, and was received with applause. It is a most seventy years since Dr. Liveing started the first laboratory for students in Cambridge.

The Senate approved a Grace relating to the granting of titular degrees by diploma to qualified women students in pursuance of the decision of October 20th, 1921.

The following medical degrees were conferred:

M.D. R. J. Hearn.
M.B., B.Ch. T. H. Somervell.
B.Ch. G. W. Mitchell, R. B. P. Lansdown.

G. B. Batten, M.D.Edin., I. S. Hirsch, M.D.Columbia, E. R. Morton, M.D.Toronto, and C. W. S. Saberton, M.D.Manch., have been approved for the diploma in medical radiology and electrology.

UNIVERSITY OF LONDON.

The following have been appointed associate examiners for the session 1921-22: Medicine, Dr. C. Bolton, F.R.S., Dr. W. P. S. Branson, Sir J. Charlton Briscoe, Bt., and Dr. Cecil Wall. Surgery, Mr. C. C. Choyce, C.M.G., Mr. H. S. Clogg, Mr. W. Sampson Handley and Mr. C. A. R. Nitch.

The Lords Commissioners of H.M. Treasury have, on the nomination of the University, appointed Dr. T. D. Lister, C.B.E., an Income Tax Commissioner for the University in the place of Sir Cyril Jackson, resigned.

Applications for the University chair of chemistry, tenable at St. Thomas's Hospital Medical School (salary £800 per annum), must be received by the Academic Registrar of the University not later than the first post on November 19th.

Medical News.

The second social meeting of the Royal Society of Medicine for this session will be held on December 7th, when Fellows and their friends will be received by the President and Lady Bland-Sutton at 8.30 p.m. During the evening Sir Berkeley Moynihan will deliver a short address on "Medicine in Art," with lantern illustrations. On Monday, November 28th, Dr. Guelpa will give a lecture before the Society on the treatment of diabetes by "disintoxication."

The annual dinner of the Cambridge Graduates' Club of St. Bartholomew's Hospital will take place on Wednesday, November 30th, at 7.30 p.m., at Frascati's Restaurant, with Sir Humphry Rolleston in the chair. Those intending to be present are asked to write to Mr. R. M. Vick, The Warden's House, St. Bartholomew's Hospital, E.C.1.

At a meeting of the New York Academy of Medicine on October 20th Sir Harold Stiles was the guest of honour and read a paper on "Surgical tuberculosis in children and its relation to the milk problem."

The Lady Priestley Memorial Lecture of the National Health Society will be given by Professor Edward Mellanby at the house of the Royal Society of Medicine (1, Wimpole Street, W.) on Wednesday, November 16th, when Sir James Crichton-Browne will take the chair at 5 p.m. The subject of the lecture is vitamins and health.

The thirty-eighth annual dinner of the past and present men students of the Leeds School of Medicine will be held at the Queen's Hotel on Wednesday, November 16th, at 6.30 p.m. for 7 p.m., when Dr. W. H. Maxwell Telling will preside.

At a meeting of the South-West of England Tuberculosis Subgroup of the Society of Medical Officers of Health, held at Bristol on October 27th, with Dr. B. A. Peters in the chair, it was agreed that future meetings should be held on the same date and at the same place as the West of England Branch of the Society. A subcommittee was appointed to make representations to the Ministry of Pensions with regard to the drawing up of reports. Several recently advertised sanatorium appointments carrying a salary of £500 to £700 per annum, with board and residence, having been confined to unmarried men, the subgroup requested the council of the society to urge the Ministry of Health not to sanction such advertisements, as being against the best interests of the patients and the status of the tuberculosis branch of the public service. A resolution was also passed that the security of tenure now granted to medical officers of health ought to be extended to the tuberculosis service.

THE first American Birth Control Conference is being held in the Hotel Plaza, New York, from November 11th to 13th, and it has been announced that following the conference clinics will be opened in several of the southern States where there are no laws prohibiting them.

WE are informed by its President, Mr. C. V. Drysdale, D.Sc., that the Malthusian League, whose object is to educate public opinion to the necessity for birth control, has established a pre-maternity, maternity, and child-welfare centre at 153A, East Street, Walworth, S.E.17. Whenever the circumstances clearly point that on medical, hygienic, eugenic, or economic grounds, restriction or spacing of births is necessary, medical advice and instruction will be given on this matter. Two doctors and a nurse will attend at the centre.

A SHORT course of lectures and clinical demonstrations in heliotherapy, with special reference to surgical tuberculosis, will be given at Leysin, Switzerland, from January 10th–14th, 1922, by Dr. Rollier and his assistants. Applications must be received by Dr. Rollier, Les Frêmes, Leysin Village, before December 15th, from whom further particulars can be obtained.

THE annual meeting of the Radiological Society of North America will be held at Chicago from December 7th to 9th; among the speakers will be Dr. Guilleminot of the Faculty of Medicine, Paris, and Dr. Wintz of Erlangen.

THE third Argentine National Antituberculosis Conference was held at La Plata from October 23rd to 28th, and, in addition to addresses on different aspects of the disease, such matters as compulsory insurance against sickness and the necessity for cheap housing were discussed.

THE Ministry of Health is issuing a number of pamphlets giving popular instruction on the subject of food and nutrition. One report in this series, by Dr. J. M. Hamill, was discussed recently in a leading article in this JOURNAL (October 29th, p. 713), when the value of its publication at the present time was emphasized. A memorial is now being organized by the Bread and Food Reform League from members of the medical profession and of scientific societies to the Minister of Health, suggesting that the next pamphlet to be published by the Ministry should make direct reference to the important mineral content of oatmeal and whole wheatmeal, and the necessity for grinding in a digestible form. As bread forms the principal food of a large section of the population, especially children, the memorial suggests that the value of finely ground whole wheatmeal bread and the importance of the germ being retained in household bread should also be pointed out.

THE famous Swedish prize entitled the Berzelius medal has been conferred on Professor E. Abderhalden, of Halle, for his researches on biochemistry.

THE President of the French Republic has made Dr. A. D. Bevan an Officer of the Legion of Honour for services rendered to medical science and education as president of the American Medical Association during the war.

SIX of seven defendants composing the Thompson Treatment Co., which sold a consumption cure, were, according to the *Journal of the American Medical Association* of October 15th, found guilty in the federal court of San Antonio, Texas, on the charge of using the mails to defraud.

THE thirteenth course of Herter lectures was given at Johns Hopkins University on October 5th, 6th, and 7th, by Sir Arthur Keith, on the subject of "The differentiation of modern races of mankind in the light of the hormone therapy."

ON September 25th a monument commemorating Cesare Lombroso was unveiled at Verona, his native town.

IN an editorial notice in *Deutsche medizinische Wochenschrift* for October 13th, Professor J. Schwalbe protests vigorously against the custom of honouring prominent scientists in Germany by publishing "Festschriften." It seems that these publications sometimes appear in a medical journal, and the subscribers who do not wish to pay as much, say, as 450 marks for a special number have to break the continuity of this particular journal to which they may be regular subscribers. As for the contents of this kind of publication, Professor Schwalbe speaks of them with withering contempt; the authors, he says, have often been whipped-up for the occasion, and the result is accordingly "literature" which, if the recipient of this honour ever troubles to read it, must materially diminish the pleasure the recipients are supposed to derive from such dedicatory works.

IN the recent municipal elections many doctors have been elected to the town councils all over the country. In Leicester, for instance, two medical men gained seats, Dr. J. Donald and Mr. C. J. Bond; in Sheffield, Dr. W. D. Mart gained a seat with the large majority of 2,934.

THE school of hygiene of Johns Hopkins University, U.S.A., is preparing plans for an expedition for the purpose of studying problems of dietetics, nutrition, and sex among the Eskimos: Dr. Victor E. Levine, of the Creighton School of Medicine, Omaha, has already started with a small party to make a preliminary survey.

THE annual meeting of the Alberta Medical Association was held recently in conjunction with the clinical congress of the Alberta section of the American College of Surgeons at Calgary.

AS was noted in the BRITISH MEDICAL JOURNAL of October 8th last (page 572), the twenty-seventh Congress of the Italian Society of Internal Medicine was made an opportunity for celebrating the ninetieth birthday of Professor Cardarelli and Professor Maragliano's fortieth year as a clinical teacher. We have received a copy of the Neapolitan periodical *La Riforma Medica*, in which are given the letters of congratulation and homage sent to these well-known men of science on this occasion by distinguished pathologists, clinicians, and others from all the world over. Included among them are tributes from Oxford, from Cambridge, from the President of the British Medical Association, and from the Editor of the BRITISH MEDICAL JOURNAL.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*, telephone 2630, Gerrard.

2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*, telephone, 2630, Gerrard.

3. MEDICAL SECRETARY, *Mediocracy, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*, telephone, 4361, Central).

QUERIES AND ANSWERS.

"P." asks for suggestions in the treatment of a case of leucoderma which has resisted all local applications and internal remedies. Is electricity of any value, and, if so, in what form?

"C. S." asks whether extensive acne with numerous pustules, on the back and front of the chest and on the back of the neck of six years' duration, should be considered a disqualification in a candidate for a public service.

INCOME TAX.

"CUIQUE SUUM" purchased a practice early in 1921, and is being assessed for 1921-22 on the previous three years' profits of his predecessor, who had acted as locumtenent or assistant since the transfer of the practice.

*** As our correspondent points out, his own income is likely to be less than his predecessor's. There appear to be two means of redress open to him: 1) To claim that he succeeded to that portion of the practice which did not include surgical operative work, and that the three years' profits on which he is assessed should be exclusive of that source; or (2) to accept the assessment as it stands and lodge an application for its revision at the end of the year on the ground that there is a "specific cause" which renders the three years' average unfair, the "specific cause" being the payments made to his predecessor. The former course would be

difficult owing to the impossibility of separating the past fees for surgical work, and the latter would, by substituting the profits of the year for the basis of the previous three years' average, give more substantial relief apparently. As regards the claim for renewal of the car, we think that the maximum is £360−£180=£180. The claim to £350 assumes that the car purchased was new, whereas it was, in fact, second-hand. Apart from the car in hand (which represents capital outlay) the out-of-pocket cost has been £180 only.

"ENQUIRENDO" has bought a practice and is making payments by instalments; he asks if he can make any deductions on that account.

*** No. The payments are of two kinds, capital and interest; the former is specifically excluded by the Income Tax Acts, and "Enquirendo" is entitled to deduct tax from the interest payments, and, therefore, must include them in the return of profits.

CANCER HOUSES.

DR. J. P. WIGHTMAN (Scalby, Yorkshire) writes: A few years ago there was in a small village in Yorkshire an empty farm-house called the Cancer House. It was demolished for the owner by a healthy farmer, who soon afterwards developed cancer of the intestine from which he died. His house-keeper, who took his meals up to him, and who probably spent some time in the dust and lime, also developed cancer of the breast. My mother, at the age of 54, went to live in a house about 250 years old; she died from cancer of the liver. Some ten years afterwards a lady who lived in the same house developed cancer of the intestine.

Is it in any way possible for one of the causes of malignant disease to be present in the structure of property that has been inhabited for two or more centuries? I have made inquiries about literature on this subject, and so far have failed to hear of any.

*** The idea that there might be some connexion between cancer and particular houses has at various times occurred to a good many people, and there is a considerable amount of literature to be unearthed; but nothing at all conclusive has been observed. Half a century ago Fleissinger stated that in the part of France in which he practised cases of cancer were particularly numerous in old houses on the confines of forests. The existence of this association does not seem to have been confirmed by others, and so far as we are aware Fleissinger has published nothing more about it. Some years ago some members of the British Medical Association in the Midlands arranged to make an inquiry, but we are unable to put our hands on the reference, and nothing has been heard of the matter recently. At the meeting of the Ulster Branch of the British Medical Association on April 30th, 1910 (BRITISH MEDICAL JOURNAL, 1910, vol. i, p. 1171), Dr. John Campbell discussed the matter of cancer houses, and related some examples of what he believed to be instances of the condition. The result of inquiries made by the Imperial Cancer Research Fund, as related in the annual reports for 1913 and 1914, were noted in the BRITISH MEDICAL JOURNAL of 1913, vol. ii, p. 256, and 1914, vol. ii, p. 190; they did not tend to support the belief in cancer houses.

LETTERS, NOTES, ETC.

MEDICAL WOMEN'S FEDERATION.

WE are asked to state that the discussion on birth control reported in our columns of October 29th, p. 708, took place at a meeting of the London Association of the Medical Women's Federation, and not at a meeting of the Medical Women's Federation, which comprises all the local associations of London and the provinces.

HERPES ZOSTER AND VARICELLA.

DR. W. H. WHITCOMBE-BROWN (Westcliff-on-Sea) writes: In view of the recent correspondence and articles the following recent cases may be of interest to your readers: T. I. R., the father, developed herpes of the face and neck on September 4th, 1921; H. R., the son (an adult living at home), developed very well marked profuse chicken-pox on September 19th.

APPLICATION OF RADIUM TO THE PROSTATE GLAND AND BASE OF BLADDER.

DR. R. H. BROWNE (Carthew, London, S.W.) writes: It is not so generally known as it deserves to be that certain conditions of the prostate gland, and of the base of the bladder, unsuitable for operation, and very tedious and unyielding in treatment by drugs, can be beneficially affected by the action of radium applied per rectum. The conditions referred to are those of chronic congestion, with haemorrhage, chronic inflammation, and chronic enlargement of the prostate, and to such growths of the base of the bladder as papillomata, with haemorrhage. The cases of chronic prostatitis include those which result from gonorrhoea. The treatment is simple and painless.

FLEAS.

DR. E. FRASER (Great Bedwyn) writes in reply to "A. B. S.": Many years since the late Rev. D. A. Herschel, who went extensively amongst the poor, told me that he always used essence of thyme and that it quite protected him from the annoyance of fleas. Shortly after this I moved into a large old house, which had been empty for about two years, save for a caretaker and his very dirty family, who had occupied the room which we used as a night nursery. The first night revealed the fact that the room was swarming with fleas, so the next day I sprinkled about a tablespoonful of essence of thyme over the beds, beddings, and fleas, with the result that the children were not troubled with fleas again. Since then I have often recommended the same treatment for the clothes and have generally found that it has been successful. If "A. B. S." cares to try it I shall be glad to know if it affords him any relief.

CRITICISM WITH A PUNCH.

EVERY doctor loves *Punch*. What other friend can be so depended upon to amuse the waiting patient while lunch is finished in comfort or the previous notes of the case are looked up? And the *Punch Almanack for 1922* is delightful. It is an old story that *Punch* was never as good as it used to be, but there never can have been such humour as in the new *Almanack*—such unconscious humour we mean. There is, of course, a well known daily newspaper for people who can't think, as well as several picture papers for those who can't read, but the provision of ready-made criticism for reviewers who can't write is an even more modern development of journalism. We mentioned lately (September 17th, p. 435) the growing practice with certain publishers of sending out with the copies of a book to be reviewed printed or typed statements, more or less fulsome, on the scope of the book and the success of the author in dealing with his subject. *Punch*, old as he is, is usually up to date, and his publishers have included in the review copy of the *Almanack* which we have received, a leaflet that has given us more genuine amusement than all the humorous drawings, articles, and light verse, excellent as these are. This leaflet points out that the art editor contributes four page drawings in colour, and says that "each one burlesques with a really remarkable cleverness the work of one of the great Masters. . . . This series will deservedly attract a very great deal of attention." Another famous artist "contributes a most interesting series of ten pictures," a younger *Punch* recruit "provides a very funny series," and other pictures are referred to as "by Mr. Punch's gifted artists." The literary contributions are dismissed in more summary fashion, but the printer receives a kindly pat—"the colour section is wonderfully well printed as usual." The last sentence states that "the *Almanack* is modestly priced at one shilling, and can be recommended as excellent value for the money from the point of view of both quality and quantity"; but it would be worth even more money if the publishers would put their thoughtfully provided self-criticism into every copy.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33, 36, 37, and 38 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 34, 35, and 36.

THE appointments of certifying factory surgeons at Broughty Ferry (Forfar), Inverary (Argyll), and Peterhead (Aberdeen) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not prepaid at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or fictitious names.

Direct clinical evidence to the value of 'Iodolysin'

"Iodolysin"

IN RHEUMATISM & RHEUMATOID ARTHRITIS

A soluble compound of 'Thiosinamin' containing 47 per cent. of Iodine, which has given strikingly successful results in the treatment of Rheumatism, Rheumatoid Arthritis and Arthritis Deformans

"NO AGENT SO EFFECTIVE."

"A lady was sent to me several months ago suffering from advanced Rheumatoid Arthritis. Knee, wrist and ankle joints were all affected. In a word she was a complete cripple. After six weeks treatment she was able to walk well and movement was possible in all joints which formerly were in a state of ankylosis. In my own opinion there is no medicinal agent so effective in the treatment of Rheumatoid Arthritis as 'Iodolysin.'" . . . . M.B.

"UNIFORMLY SUCCESSFUL."

"I have used 'Iodolysin' in a very large number of cases with uniformly successful results. Typical is that of a lady age 48 of obese habit. She was so affected as to be scarcely able to move. 'Iodolysin' in 20 minim doses was prescribed together with 'Iodolysin' Ointment for local application to the joints. She was completely relieved for the time and keeps well and free from pain when treatment is instituted for short periods every 18 months." . . . . M.D.

ENFORCED UNEMPLOYMENT REMEDIED.

"I am pleased to be able to testify to the very excellent results which I have obtained from a fairly extensive use of 'Iodolysin' particularly in cases of Rheumatoid Arthritis. Cases of long standing disability and enforced unemployment through stiff and crippled joints have been so much alleviated that they have been able once more to earn their own livelihood. The patients tolerate the drug perfectly well, and I have had no trouble with nausea or any unpleasant effects."

. . . . M.D.

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A MEDICAL OFFICER OF HEALTH

(M.D., M.R.C.P., M.R.C.S., L.R.C.P., etc.,)

writes:—

"I AM 69 years of age, strong and well, don't feel more than 25, and I attribute this greatest of all blessings to sleep and "FRUIT SALT" which I have taken every morning for 35 years." *June 17th, 1921.*

ENO's Fruit Salt is a pleasant effervescent, saline laxative, which bases its claim on its uniform standard of purity, on its agreeableness, and on its long record of popularity, due entirely to the experience of those who have taken it. Among those who have found it a helpful factor in maintaining a healthy activity of the digestive and metabolic functions are many doctors, both at home and abroad. ENO makes no claim to cure disease, but rather to assist in correcting some of the inevitable consequences of a civilised and artificial life to which man's physical structure has not yet become biologically adapted.

Only by trial and experiment can a just opinion of the quality of ENO be formed

GOOD HEALTH
ENO'S FRUIT SALT

An Address
ON
THE DRUG HABIT.

Delivered at a Meeting of the Pharmacological Society,
BY
Professor W. E. DIXON, M.D., F.R.S.

The food customs of mankind should not be regarded as random practices adopted to please the palate, or to gratify an idle and vicious appetite. They are more probably the result of experience and instinct which supply important wants in the animal economy. The natives in many different countries of the world use herbs containing caffeine or one of its allies in the form of a decoction or infusion, although such herbs possess neither characteristic taste or smell. Caffeine is obtained most readily from tea, which may contain anything from 3 to 5 per cent.; other plants are coffee from Arabia containing caffeine, cocoa from South America containing theobromine, kola from Central Africa containing both caffeine and theobromine, guarana paste from Brazil, Paraguay tea from the Argentine, and there are many others.

Stimulants in some form would appear to be even more essential to the exigencies of life under modern civilization. Caffeine, which is universal, is a powerful cerebral stimulant, but its action in banishing sleep and its effect on the heart effectually prevent it from being taken in excessive doses. Chronic poisoning by tea and coffee is not very uncommon and may occur when six or seven grains of caffeine are taken daily. The sufferer is tremulous, shows loss of self-control, and exhibits fits of excitement and depression; he has a haggard appearance and loses his colour. Cardiac symptoms are often first noticed. A renewed dose of the poison gives temporary relief. Such patients abandon their tea or coffee without much difficulty when they are assured that it is the cause of their trouble, and a true "craving" never exists.

Tobacco.

Tobacco smoking is universal: the following table gives the composition of the smoke from the cigarette and the opium pipe:

Average Yield of Tobacco and Opium Smoke in Conditions corresponding to those which occur in Smokers.

	100 grams tobacco burnt as cigarettes.		100 grams dross opium containing 7% morphine.
HCN	0.080	.....	0.010
Pyridine	0.146	.....	0.147
Nicotine	1.165	.....	
NH_3	0.360	.....	0.395
CO	410 c.cm.	.....	0
Morphine	—	.....	0.016

Chandoo opium smoke contains 0.1 per cent. morphine.

Ordinary Virginian tobacco from which cigarettes are made contains weight for weight nearly twice as much nicotine as Manila cigar tobacco. But when these two are burnt during smoking the smoke from the cigar contains more than twice the amount of nicotine in that from the cigarette. During the slow combustion of a cigar, as in ordinary smoking, immediately behind the lit end is an area in which the water and other volatile substances in the tobacco condense; during the act of smoking, a large portion of the nicotine at the seat of combustion is destroyed (50 per cent.), and the nicotine which finds its way into the mouth of the smoker is derived from the hot gases passing through this hot moist area in which the rest of the nicotine has condensed. The smaller the moist area behind the point of combustion, the less likely is the smoke to contain volatile toxic bodies. A thin cigar or a cigarette will yield fewer of these products than a thick cigar, for the thin cigar or cigarette obviously permits a relatively greater cooling.

The nicotine from the smoke of one cigar should correspond with the nicotine from that of twelve to eighteen cigarettes. In practice it seems as if even less nicotine than this reached the circulation unless the cigarette is smoked to the very end. Experiments we made some years ago on boys showed that the Manila cigar caused a considerable rise in blood pressure in five or six minutes, followed by collapse, representing respectively the stimulation and depression of nicotine on nerve cells. No such effect could be obtained with cigarettes. The blood of cigarette inhalers, however, contains carbonic oxide—perhaps 5 per cent. for a man who smokes twenty cigarettes a day—and the vertigo, tremors, nausea, anaemia, and loss of memory for recent events are all symptoms which occur in chronic CO poisoning. The cigar smoker, on the contrary, absorbs a considerable amount of nicotine, and true nicotine poisoning may follow from excess.

Some tolerance can be acquired to both nicotine and CO. Nicotine tolerance is brought about by destruction of the alkaloid in the body of the addict; since the alkaloid reaches the circulation slowly and in minute quantities the tissues are able to deal with it. CO tolerance is known in animals, and is due to an increase in the number of red blood cells and percentage of haemoglobin.

The pleasure of smoking is no doubt partly due to the stimulating and later narcotic properties of nicotine, though there are other factors like rhythm and sight to consider. The habit is rarely very strong, as most of the nicotine is destroyed during combustion. A smoker never forms a very strong "craving," but were he to inject his nicotine the tale might be different.

Addiction Drugs.

It is sometimes said that civilization is responsible for the craving for narcotic drugs; that men weary of the strain and anxiety involved in the fight for existence, and that anything that gives them relief from their cares and anxieties is seized with avidity. Those who are addicted to the use of narcotics in civilized communities are rarely the phlegmatic and the dull, but rather those possessed of quick perception, acute sensibility and other higher attributes of mind which go to make up the qualities of high breeding and culture. These people are so highly reflex, so easily responsive to external impressions, that the associations set loose by any ordinary stimulus cause such a complexity of cerebration that the ordinary affairs of life become a burden. In them mental activity quickly gives rise to fatigue, depression, and distress.

The higher faculties of mind, such as those concerned with choice, attention, judgement, and control, are the last to develop in man. They are not completely formed till the age of 15 or 16, and the nerve cells in the brain which are associated with these attributes of mind are the most delicate and by far the most sensitive to narcotic poisons, so that they would be influenced by narcotics before other cells, such as those associated with movements and sensations. It is therefore not difficult to understand why narcotic drugs are so esteemed by such people. In narcotism they shut out contact with reality and drift along knowing little of the reactions of mastery and defeat. They are sheltered by the inhibition of the higher centres. The very acuteness of their intellect is their undoing; they exaggerate the everyday trifles and inconveniences of life out of all proportion to their significance, and life becomes for them oppressive and anxious. Perhaps in a few special instances persons possessed of such vivid sensations may benefit by a narcotic, which limits these conflicting impulses by allowing a freer play of the higher mental faculties; certainly the records of De Quincey and Coleridge suggest such a possibility.

Increased nervous sensibility would seem to be an effect of civilization and wealth. An attempt was made some years ago to compare this sensibility in different nations by estimating the number of women who employed anodynes during normal parturition. The figures obtained were for the United States 70 per cent., Great Britain 50 per cent., and for Spain and Russia 5 per cent. The figures are interesting in view of the prevalence of addiction in the States. The morphinist is not a mental defective, and drug addiction does not lead to insanity or serious nervous diseases needing custodial care, but it makes the habitué more dangerous to society: it diminishes his usefulness to the community and injures his career. The addiction commences as a vice, like smoking, but the developed craving becomes a disease.

There seems to be agreement on the point that the addict is generally a psychopath before he acquires the habit (Rhein, McIver, and Price), while some authorities,

like Block, boldly assert that normal persons never become drug habitués.

The neurotic, having indulged on a few occasions with his narcotic, is so delighted with its effect in giving him some immunity against the stresses and worries of life that he desires, naturally enough, to repeat the panacea, and so the habit is formed, weak at first, but growing with each successive dose, and before he knows of his fetters he is a prisoner. It is not difficult in most cases to recognize in society those who are addicted to drugs. The chief characteristics of drug addicts are plausibility and disorderliness. They are full of schemes for the benefit of others, but, owing to luck always being against them, none of these fructify. They are late for appointments owing to the faults of others, and have no regard for time. In everything they are casual and slack to the extreme limit. Rules of ethic become so blurred that they are hardly regarded, and they lie for the sake of lying. When under the influence of the drug they can work and write, though after a somewhat disjointed and slovenly fashion.

Opium.

Opium, or one of its derivatives, is the commonest addiction drug. Those who indulge in opium may be divided into three groups: the opium eater, the opium smoker, and the injector. The opium eater is uncommon amongst Europeans, possibly on account of the constipation, the delayed absorption, and the difficulty in obtaining the large supplies necessary. It is not unusual for the opium eater to consume half a pint or more of laudanum in the twenty-four hours, twenty drops being a liberal dose for a normal man.

The general use of opium eating in India led to the appointment of a Royal Commission in 1895, which reported that moderate indulgence led to no injurious effect and did not shorten life, but that, on the contrary, it tended to ward off sickness and lessened the discomfort consequent on poor food and malarial and other diseases. Sir W. Roberts, the Medical Commissioner, said: "The evidence laid before the Commission showed that in some districts of India the local consumption of opium bore a close relationship to the greater or less prevalence of malaria in the localities." Opium is still taken in the Fen districts of England as a popular remedy to "ward off the ague." The Commission were frequently told that people who were well off and had plenty of good food tolerated the opium habit with impunity, whereas the poor with an insufficient supply of food suffered from it. On the other hand, they were often told that opium ameliorated the lot of the underfed man and enabled him to live longer and better with a scanty diet. In India the opium habit is mainly a habit of middle life and advancing years. This is in marked contrast with the Western morphinist, 70 per cent. of whom, from recent American statistics, are said to be under 30. With one exception, the Commissioners recommended that nothing should be done in the way of restricting the Indian growth and exportation of opium.

The pernicious nature of the habit of *smoking opium* was early recognized in China and India. In China the habit is traceable as early as the end of the seventeenth century, and by the year 1729 it had grown so common in some parts of China that it drew down an imperial edict severely prohibiting opium-smoking shops and the sale of opium for smoking purposes. In the year 1799 an edict, which was issued by the Governor of Canton, directly prohibited the import of opium. Sir J. B. Lyall, one of the Commissioners, in his Memorandum II attached to the Commissioners' Report, says of this edict: "It is a very strong denunciation of the opium habit as morally and physically degrading, and as ruinously expensive."

The amount of alkaloid absorbed in the smoke is very small, both because the amount of opium used in the pipe is small, and because most of the alkaloid in the opium is destroyed. Nevertheless, absorption is rapid and produces an immediate effect. After the first few whiffs there is a feeling of elation, followed in the habitué by delightfully languid ease and an exalted sense of superiority, and later by dreamy sleep. The smoker becomes a slave to the habit, and the evil is enhanced—at all events in the West—since for indulgence the devotee must prosecute his vice in the worst possible surroundings. This way of taking opium is the least objectionable, because the amount of alkaloid taken is so small, because a strong craving is not formed, and because "cure" is relatively easy.

Pipe smoking is usually begun as a group indulgence, while morphinism is solitary and secretive. Both types of habitués commonly use opium with discretion and may indulge in the narcotics for years without apparent evidence of harm.

The dose has to be continually increased, but as the amount of alkaloid absorbed is so very small the craving never reaches great intensity as with those who inject the drug. The varieties of opium chosen by the smoker are not those which contain the greatest proportion of alkaloid. One average pipe of opium contains about three milligrams of morphine, and ten pipes only about half a grain. But the greater part of this is destroyed in the process of smoking, so that the amount absorbed is exceedingly small; this, no doubt, accounts for the comparative ease with which this habit is cured. Opium smoking obtained a distinct vogue in the United States until it was superseded by the infinitely more objectionable habit of injection. It is worth noting that before the war large quantities of morphine were sent yearly into China, often in proprietary packages, as a cure for the smoking habit; a cure it is, but it produces another vice infinitely worse.

In Europe and America the alkaloid is usually *injected* by the hypodermic needle; this is the worst and most pernicious form of taking the drug, and however the habit has been formed, to obtain the requisite relief the devotee must be continually increasing the dose. The amount of morphine injected daily varies greatly; 15 grains is an ordinary quantity for a morphinist to use in the twenty-four hours, though the same person will double this dose in the case of any small imaginary trouble.

The Department of Health of the City of New York published in an important memorandum statistics and details, by medical experts, of nearly 8,000 cases of drug addicts during ten months. Five per cent. of these patients asserted that the habit resulted from medication during illness; this figure is obviously likely to be too high. Sixty-nine per cent. asserted that bad associations were responsible; this figure may be too low. Seventy per cent. of the patients were under 30; other authorities say that 90 per cent. occur in adolescence. Only 1,580 out of 2,800 received at the clinic were willing to accept treatment and withdrawal of the drug. Those treated were kept six weeks and discharged in good physical condition, "cured." In three months a large proportion had already relapsed in spite of all efforts made to assist them.

Much of the increase in drug addiction has without doubt been started in ignorance; opium smoking was regarded as a harmless pastime to be relinquished as desired; the employment of the "white snuff" cocaine served as a nerve stimulant and pick-me-up; and heroin was used as a substitute for morphine, with the idea that it was not an opium derivative. Much evidence is to hand that difficulty in getting alcohol leads people to try any substance which may have a "stimulant" effect. Sheer ennui, a luxurious life without serious responsibility, lack of exercise, over eating, fatigue, and dyspepsia are predisposing causes. A few take to morphine because it is accessible; of these, doctors and pharmacists form the majority: no doubt they think that their technical knowledge will save them from abuse.

The addict always finds it to his advantage to co-operate with the distributor of his drug, and almost never will he give information leading to the disclosure of his source of supply.

Withdrawal.

Addicts are held in addiction largely through fear. Prolonged indulgence often fails to give them pleasurable sensations; still they must go on in order to avert the crisis of withdrawal. Their horror of pain, both mental and physical, is an obsession, and contact with the responsibilities of the world, they feel, is not to be borne.

The symptoms of withdrawal correspond almost exactly with stimulation of those tissues which morphine in medicinal doses depresses. The yawning, sneezing, nausea, vomiting, and mucous secretion result from stimulation of the medulla; the abdominal pains and diarrhœa from stimulation of Auerbach's plexus; the twitchings, cramps, circulatory troubles (rapid pulse, arrhythmia), and some-

times even convulsions, and collapse hardly distinguishable from surgical shock, are due to excessive stimulation of the cortical cells. A patient seen with these symptoms, even when in a state of collapse, on receiving an injection of his drug, exhibits a transformation almost miraculous; he becomes in a few minutes a relatively normal person. Whatever peculiar characteristic of mind or accidental incidents may determine the formation of the habit, when once it is formed the patient has a real disease, and he can only exist free from great physical and mental pain when he is under the influence of the drug to which he is addicted.

Strong alcoholic beverages taken for a long period of years in some people lead to a craving. It is not necessary that these people should ever have been intoxicated, but only that they should have taken daily libations of alcohol for some time in sufficiently large amounts to depress the central nervous system. The sudden cessation of this habitual alcohol, such as might occur in a man from an accident necessitating his stay in a hospital for a week, is sometimes responsible for an attack of delirium tremens, which is in every way comparable with the condition of a morphinist during morphine starvation.

The explanation I suggest to account for these withdrawal symptoms is that nerve cells after prolonged narcosis are, on reawakening, hyper-excitable. The contrary effect is an everyday axiom, that stimulation is followed by depression. But there is another explanation. Morphine and cocaine maniacs must be continually increasing the dose to get the necessary effect. This acquired tolerance is at least partly explained by the enhanced power of the tissues to destroy the alkaloid. On this we have decisive evidence. But it is also suggested that this acquired tolerance, this inability of cocaine, morphine and other drugs to produce their normal action on the brain, is due to some substance which neutralizes the effects of the poison. We know several such chemical substances which are elaborated by the body and neutralize poison; carbolic acid, the salicylates and camphor are so neutralized and rendered innocuous in the body by relatively simple chemical substances. Moreover, when there is a demand for some substance in the animal economy that substance is elaborated by the tissues. Valenti rendered dogs tolerant to morphine, and found that on suddenly stopping the drug the animal showed typical withdrawal symptoms. He alleges that injection of the serum from these dogs into normal dogs caused similar symptoms. This is mentioned because so much reliance appears to be placed on this work in America. Whether the lack of morphine is or is not the sole determining factor in the production of withdrawal symptoms cannot at present be decided, but it can be stated definitely that neither morphine nor any other drug causes antibody formation.

When once a habit is formed it becomes all but impossible for the addict to renounce it voluntarily, the craving is stronger than the controlling powers; it is the combination of association-memories and an abnormal brain. Few would hesitate to employ opium for the relief of physical pain; why not, then, for the alleviation of mental suffering? The answer must be that there is no such thing as moderation in the habitual employment of narcotics in such people. The craving becomes so intense that the sufferer is unhappy—indeed, almost in agony—unless he is continually under the influence of his drug. Craving is rarely obliterated by a short-time treatment, and unfavourable circumstances will cause it to spring to the surface months after the cure.

Heroine.

Heroine was brought to the notice of the profession in 1898, but it was not much used until 1912. About this time it was employed in the United States, and to a smaller extent in Europe, as an addiction drug and substitute for morphine. Sometimes it was taken by injection, and sometimes as a snuff like cocaine. Both here and in America the public had little difficulty in obtaining any supplies they required of this proprietary substance. It was even much vaunted as a cure for morphinism.

The addict often prefers heroine to morphine. The average morphine addict has perhaps one or two stools weekly, whereas the bowels of the heroine addict are almost normal. The heroine addict does not exhibit so much pallor and emaciation; the symptoms are less pronounced and withdrawal is easier. Heroine is not necessary to the physician, it has no advantages over codeine or morphine, and its use might be forbidden without harming a single genuine patient. The amount consumed varies from 8 to 20 grains daily, and considerable tolerance is attained.

Codeine does not commonly lead to addiction, and only one or two cases of a codeine habit have been recorded.

Cocaine.

Coca leaves have been used from time immemorial by the Indians in the west of South America as a stimulant and narcotic, and the habit survives to the present day, especially in Peru. The Indian takes his coca leaf in much the same way as Europeans employ tea or coffee—as a stimulant in mental and physical fatigue. It is asserted that natives who chew the coca leaf are able to perform long and rapid journeys with less fatigue and without feeling the pangs of hunger and thirst. Attempts by Europeans in the Alps and elsewhere to simulate these effects have not been successful. It may be that there are other constituents in the freshly gathered leaves which are absent from the dried leaves.

In Europe the addict employs the alkaloid cocaine only. This he either takes by the mouth, injects, or uses as a snuff. Formerly coca wines, snuffs, and lozenges were universally sold, but now the hypodermic injection has superseded the other methods almost entirely. When cocaine is sniffed up the nostrils as a powder it is absorbed very rapidly, and produces its effect even more quickly than when injected.

Cocaine acts differently from morphine; it first powerfully stimulates the brain, causing mental excitement and restlessness; the flagging nerve cells are whipped into activity and lassitude and fatigue pass. But this is accompanied by clouding of associations, and a marked depression of the central nervous system always succeeds the stage of excitement. Cocaine fascinates by the rapidity with which it relieves exhaustion and dispels gloom and by a delightful sense of mental and physical vigour. Morphine acts not by stimulating, but by depressing sensory nerve cells in the brain, so that fatigue and mental and physical pains are assuaged.

Tolerance can be acquired to cocaine like morphine, but it is less definite and slower in formation; still there are several cases on record in which 100 grains were taken daily. The prognosis in such addicts is better than with morphine; the abstinence symptoms are less severe and the cocaine can be cut off at once. Cocaine compared with morphine is relatively unimportant, and it may be doubted whether there is any case of cocaine addiction not associated with opium habituation.

Indian Hemp.

Indian hemp (*Cannabis indica*) is hardly taken as a narcotic in Europe, but in India different preparations of the dried flowering tops are made into a drink, are eaten or smoked. For smoking the crude drug is generally mixed with tobacco and the fumes drawn through water. Sometimes the devotees will sit in a circle, and a pipe is passed round, each person taking a few whiffs. Hemp is also used in the East in the preparation of sweetmeats and as a seasoning in cookery. In former times hemp preparations were used as substitutes for opium, but the drug keeps badly, and its unreliability is responsible for its disuse. Hemp intoxication differs from that produced by morphine in the preponderance of pleasant hallucinations and the active motor restlessness.

The Royal Commission on Indian Hemp in 1893 advocated control and restriction; its report aimed at suppressing the excessive use and regulating the moderate use within due limits. Total prohibition was regarded as neither necessary nor expedient.

Prevalence of the Drug Habit.

In this country narcotic drug addicts are as yet comparatively few, but in the United States the position has become serious. Even before the war Dr. Wilbert, of the United States Public Health Service, estimated that there were 175,000 addicts in the country; his figures were based apparently on the importation and sale of opium through trade channels. In a Government report it is estimated that 90 per cent. of the opium and cocaine entering the U.S.A. is used for other than legitimate medical purposes. Austria, it was estimated, only used

half a grain of opium per head per annum, Italy 1 grain, France 3 grains, and America 36 grains; Dr. Copeland, M.O.H. for New York City, puts this figure at 40 grains.

To some extent fashion or opportunity determines the type of drug used: in New York heroine is used almost entirely; in Chicago morphine is the common narcotic, and in cities with a large coloured population cocaine is in vogue.

The vast majority of cases of opium smoking, heroine and cocaine sniffing are acquired socially, though it is agreed in America that the largest single factor in the production of the morphine addict is professional medication.

Treatments for morphinism I am not considering, but it is generally agreed by those best fitted to give an opinion that the proper treatment, besides custodial care, consists in (1) the gradual withdrawal of the drug, in about ten days; (2) intensive purgation: (3) the administration of atropine or hyoscine. By this treatment the patient may be discharged in six weeks in good physical condition, and apparently a normal man without craving.

But can we cure a character, convert weakness into strength, so that temptation disappears? Perhaps proper education of the higher faculties of mind, like self-control, may do much, but simply to control conduct so that choice cannot be exerted is to court disaster. True temperance is dependent on self-control, not on control by others. Perhaps if children were taught something of the realities of the life into which they must presently enter, and received more vocational guidance, they would be in a better position to combat the difficulties and temptations to which they must presently be subjected, certainly in a better position than by a system of education apparently devised to fit a life of cultured leisure.

Alcohol.

It would hardly be fitting to conclude without a brief word on *alcohol*. Fermented beverages, and more especially beer, have formed from time immemorial the national drink of Great Britain. The introduction of the caffeine beverages did not oust them, and, although their popularity has not waned, the amount consumed is steadily diminishing before legislative restrictions and the attacks of the abstainers. England was once a drunken nation, and Mr. Lecky tells us that in 1688, 90 gallons of beer a head were consumed per annum: at the beginning of this century this had diminished to 30 gallons. Now it must be very much less and the percentage of contained alcohol smaller.

It has been clearly shown that as the difficulties of obtaining alcoholic beverages have become greater the consumption of drugs and truly noxious substances has become greater also. It is almost inconceivable to what lengths men will go to obtain something as a substitute for alcoholic beverages, and very few drugs or chemical substances—especially volatile chemicals—have not been used. This evil effect of prohibition has necessarily been more evident in America, where in past times most of the States have at some time, though generally only for a short period, adopted the principle of prohibition. Wood spirit (methyl alcohol) is one such evil substance; as little as a teaspoonful may cause blindness and an ounce death; several cases of poisoning have recently been reported from America. Methyl alcohol is oxidized in the body to formic aldehyde and formic acid, and it is to the production of these substances that the poisonous action is due.

Ethyl alcohol must be regarded as an addiction drug, though true addiction, in the same sense as morphinism, must be extremely rare. It is interesting to note that many authorities believe that habitual inebriety is not acquired, in the strict sense of the term, but that the inebriate starts life handicapped by imperfect brain development. That is to say, he takes alcohol in excess, just as he does everything else which is foolish and wrong.

It is notorious that morphine addicts rarely turn to alcohol; if they do, it seldom gives them what they seek, and they almost invariably return to narcotics. De Quincey says: "I do not readily believe that any man having once tasted the divine luxuries of opium will afterwards descend to the gross and mortal enjoyments of alcohol." Nobody questions the evils produced by alcohol in the intemperate, but for the vast majority moderation in alcoholic beverages produces pleasure and benefit. Ought we then to advocate prohibition? Would the benefits so accruing outweigh the disadvantages? Prohibition in other countries has led to other and worse addictions and to industrial unrest, evils which appear to counterbalance the benefits. It is an axiom with lawyers that legislation for hard cases makes bad law; the plethora of these which we have experienced in recent times should make us chary in advocating yet another. Apart from this, prohibition is at present impracticable, as it would mean a loss to the revenue of over one hundred millions annually.

Plato says: "No one desires drink simply but good drink; nor food simply but good food." To the average man these add a little more joy and beauty to life. The position is perhaps summed up by Matthew Arnold, who says: "Wine used in moderation adds to the agreeableness of life."

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PYROGENIC THERAPY.

("*PROTEIN SHOCK.*")

BY

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(*A Further Contribution.*)

The paper published in this Journal, vol. i, 1918, p. 195, described a severe febrile reaction which I obtained in 1916–17 with certain colloidal metals used intravenously; a reaction identical with that which certain American investigators had been producing at the same time by the intravenous use of suspensions of killed typhoid and coli bacilli (vaccines), and termed by them "protein shock." I found, however, that the full reactions following these particular metallic colloids could be produced by the protein used as the protective or coating to the metallic particles and in the same dosage. In an inert medium, such as gum water, the metallic suspensions were destitute of any fever-producing properties. In a recent examination of various well known metallic colloids the characteristic protein reactions were very marked, and so the clinical results would be questionable. When the metallic particles were suspended in an inert watery medium and injected in considerable quantity, the slight rise of temperature which sometimes followed was found to be quite capable of production by the water of the continuous phase.

"Protein shock" being rather an unfortunate expression,* I suggested "pyrogenic therapy" instead, chiefly in view of the fact that the reaction was produced by substances called "pyrogens" by Burdon-Sanderson. Moreover, the fever so induced is essential, as no benefit accrues without it. The view is, indeed, gaining ground that the high temperature, which is ushered in by a rigor more or less severe, is the crucial factor. Further reference to this will be made. In any case it is evident that some such distinguishing appellation is now needed, as "protein therapy" is a generic term applicable to uses of protein which are entirely different and distinct.

The cases in which the reactions were produced by the protein-protected colloidal metals were chiefly those of delayed resolution in pneumonias and pleurisies, with rises of temperatures to 100° and 101° F. for some considerable time. Recovery seemed complete at the end of the reaction; the temperature remained normal and the local lesions gradually cleared up. Some cases of acute pneumonia were then tried, but the results were by no means favourable. Certainly a fall of temperature soon occurred; but this proved to be a negative phase effect, as it always rose again to about the original level. These trials indicated that with a high temperature the defences

* In the first place there is no shock in the true sense, and, secondly, the reaction can be produced by certain non-protein substances.

of the body are already fully engaged, and the introduction of a pyrogenic substance is illogical, and merely adds to an already heavy burden. This treatment is therefore indicated in subacute or chronic conditions, wherein the defensive reserves are quiescent or only partially called out.

Cases of arthritis of various kinds have mainly been treated, with on the whole very favourable results; but skin affections and many infective disorders have also been laid under contribution. Where the response is good no other treatment gives such rapid or complete relief. I wish now to record briefly some results obtained in certain functional neuroses presenting pain or paraesthesia or both, and probably of toxic origin. Though not serious, these disorders are very persistent and often entail intolerable discomfort, being more or less refractory to ordinary methods of treatment.

Case 1.—A woman, aged 58, had for several months very severe cramp in the feet and legs during the night which obliged her to get up and endeavour to obtain sleep in a chair. Many remedies were tried. She had rheumatic fever at 21; she was not alcoholic. Her teeth were very defective; she was otherwise healthy. Pyrogenesis was induced with alfalfa seed proteose with immediate relief (temperature 102.8 F.). A second reaction was induced in a week, followed by permanent relief. Two other cases somewhat similar have been successful.

Case 2.—A woman, aged 47, suffered pain with paraesthesia neuritic for weeks over the left shoulder and back, especially troublesome at night. Only temporary relief was obtained "in medicine and topical applications. She was otherwise healthy; the menses had ceased some time ago. Two reactions were induced (102 F. and 103.4 F.), using caseose as the pyrogen, with permanent cessation of the symptoms.

Case 3.—A woman, aged 48, had got acroparaesthesia for three months: numbness and tingling "pins and needles", in both hands, with pains radiating up the forearms. She was rheumatic, but otherwise in good health. She had tried electrical treatment without relief. A very active lecitho protein was used which gave a good reaction (103 F.). The temperature went down slowly, being 101 F. after twenty-four hours; afterwards it became subnormal. Complete relief ensued, and there was very little further inconvenience. Another case gave a similar result.

Case 4.—A woman, aged 48, strong and healthy, had for two months been subject to most distressing noises in the head, which she thought "would drive her mad," and likened to "a traction engine in the brain." There was no apparent cause, no deafness or ear disease. The noises were continuous night and day. A maximal reaction was induced with lecithoprotein (temperature 104.4 F.). The temperature fell slowly, being 101 on the third day. By this time the noises had totally disappeared, and up till now, after ten months, there has not been the slightest return, and the patient enjoys excellent health. Prolonged elevation of temperature as in the above case is not usual, though pyrexia lasting twelve days has been noted. More commonly the temperature falls to subnormal within eighteen to twenty-four hours.

The only other case of tinnitus I have treated was that of a male, aged 39; I saw him in consultation with Dr. Hartigan of North Kensington, but in this instance there was deafness in one ear and a long history of Ménière's disease. The case had resisted every treatment, and pyrogenic therapy was tried as a *dernier ressort*. The patient was tolerant to moderate pyrogenic doses, but gave a maximal reaction to 500 million of recent *B. typhosus*, in which a second rigor occurred a few hours after the first. The symptoms remained quiescent for a week or so and then returned.

This treatment is not to be lightly undertaken. Careful consideration must be given beforehand to the condition of the patient, the pyrogen to be used, and the dosage. The patient should have a good reserve of strength, an efficient heart muscle, distensile arteries, and a safe blood pressure. Elderly feeble subjects are unsuitable; also those more or less exhausted by long illness or whose defensive resources have already been largely used up by prolonged fever. In suitable cases the full pyrogenic reaction may be necessary for a successful result—namely, a good rigor, high pyrexia, body pains, profuse sweating, and usually sickness and diarrhoea. If two such reactions (at a week's interval) fail, it is little use trying more. But some cases, considered unfit to stand the maximal reaction, may derive great benefit from submaximal doses more frequently repeated, and in yet others the condition may be such as to render the maximal reaction unnecessary. A temperature of 102.2 F. should be aimed at, however. As regards the pyrogen to be used, that depends largely on the experience of the operator, but for those not specially acquainted with the various substances, typhoid vaccine, or caseose (2 c.cm. and upwards of a 2 per cent. solution), may be employed. Personally, I have the caseose prepared by gentle hydrolysis. Owing to its content in albumoses, Witte's peptone in large doses is sometimes used, but it is dangerous, as it may induce during or immediately after the injection, even in non-sensitized persons, symptoms of asphyxiation and collapse, with possibly serious consequences. As regards the bacterial suspensions, it is important to ascertain beforehand the degree of subculture to which they have been subjected. *B. typhosus*, for instance, subcultured for a long time, possibly years, has been largely detoxicated, and gives a feeble reaction in comparison with a recent culture. Mistakes have been made in this way in regard to the relative susceptibilities of patients. Usual doses are 50 to 200 million of a fresh culture and 100 to 500 million and upwards of an old one. Before giving the full dose it is necessary to find out how the patient is going to react to the pyrogen selected, as great variations are encountered. The only satisfactory way of doing this is by giving a small trial dose. If the reaction it produces is considered excessive, it may be best to select another pyrogen and test it in the same way. In either case, the full dose is based on the result. The particular pyrogen used is immaterial, so far as the characteristic effects are concerned, and in the case of infections there is no added advantage in using the particular organism, the reaction is entirely non-specific. Typhoid-immune animals show the same degree of hyperleucocytosis when injected with *B. coli* as with *B. typhosus* (McWilliams). Culver[1] treated thirteen cases of gonococcal arthritis with non-specific proteose, and nine cases with killed gonococci (three to five injections spread over three weeks). The opsonin content was determined by the extinction method (Klein) and the bactericidal substance in the serum by the dilution method. The results were indistinguishable in the two sets. Others have verified these results.

The best time to give the injection is the early part of the day; a cup of tea or coffee with a little bread-and-butter may be allowed a few hours previously, and the bowels should be emptied. The patient must be in bed; warmth is grateful during the chill, and if the pains are severe aspirin will give relief. It is well to have adrenaline at hand in case of any contretemps, but up to the present I have not had occasion to use it.

That temperature is a natural means of defence is, of course, too well recognized to require more than mention. But in infection there is an optimal temperature which no doubt varies according to the infecting organism on the one hand and the condition and constitution of the patient on the other. When the temperature is over the optimum—Nature having overshot the mark, so to speak—although combustion of metabolic products may be energetic, yet the factors conducing to recovery, the cellular products of defence and attack, suffer injury, and in time become exhausted. A similar state of exhaustion may occur in cases of long-continued fever. For most infections fevers the optimal temperatures lie between 102 and 105 F. The object of pyrogenic therapy is to induce a temperature within these limits, in those infective or toxic conditions wherein a sufficient stimulus for the induction of pyrexia is naturally lacking or else is weakened, though capable of producing a ready response if artificially roused. By so doing we draw on the accumulated stores in various parts of the body, secure the production and mobilization of new weapons of attack, and direct them to the seat of disturbance.

Let us consider briefly the effects of this induced pyrexia. They are roughly divisible into the physico-chemical and the "vital." The former consist mainly in a greatly increased transformation of energy: increase in the velocity coefficient of chemical systems, with alteration of the equilibrium constant, and greater activity of the catalyst. Enzyme action may be doubled or trebled. The rate of adsorption is increased with diminution in the amount adsorbed—that is, the dissociation of adsorption compounds is increased. Hence increased dissociation of oxyhaemoglobin with supply of more oxygen to the tissues. Energy is also liberated by the lowering of surface tension, which at a critical temperature may disappear, possessing as it does a negative temperature coefficient. The hydration of ions is diminished, and so their velocity increased from reduced friction. The viscosity of the blood is reduced and its flow rendered easier, while the dilatation of the blood vessels makes them more permeable to the serum.

What may be termed the "vital" changes in the pyrogenic reaction, so far as known, are chiefly expressions of a powerful stimulation of certain productive capacities of the cells and tissues, more especially those that are extra-ordinary, and the rapid mobilization of these products. After an initial leucopenia there is a leucocytosis in which a striking blood picture has been described and figured, that by Cowie and Calhoun[2] showing in some cases many young and atypical cells, myelocytes, mast cells, nucleated reds, and increased size and development of the platelets. Changes in the white cells, the blood pressure, and pulse frequency have been described (with illustrative charts) by Gow.[3] Miller and Perry[4] record the curious phenomenon of phagocytosis of erythrocytes in the peripheral blood by the large mononuclear cells. Others have obtained evidence of increase in circulating antibodies, at first by detachment from their mooring stations and later (two or three days) by new production.

Now, changes very similar have been described as the effect of artificial heat. Thus, J. B. Murphy and Sturm,[5] in a series of experiments, found that mice subjected to dry heat of 55° to 65° C. for five minutes showed an initial leucopenia, followed by leucocytosis, which continued for two to three weeks, the increase amounting to a gain of over 200 to 300 per cent. above the normal for the animal. Mice so treated developed a high degree of immunity to cancer grafts as compared with the controls. Precisely similar results were obtained with bovine tubercle bacilli, the resistance in the heated mice being increased from two to three-fold. In regard to phagocytosis, Ledingham[6] found that when leucocytes were put in contact with fresh serum and staphylococci and incubated together at different temperatures for the same period of time (varying from 15 to 45 minutes) phagocytosis was considerably increased at temperatures over 37° C., up to 43 C. McCallum[7] states that the influence of temperature has not hitherto been sufficiently recognized, and quotes a number of experiments showing that animals kept at a high temperature in a thermostat room, in whom small doses of bacteria or toxins had been injected at intervals, developed a much more effective defence than those left at ordinary temperatures, in that "agglutinins and bacteriolytic substances were produced far more quickly and in much greater amounts than in the controls."

We find, as a matter of fact, that the conditions amenable to pyrogen therapy are chiefly those which are benefited by thermal baths (water or air), such as arthritis (various), neuritis and neuralgia or myalgia, certain skin affections, and subacute or chronic inflammatory exudations; and, further, the results are so far comparable in view of the more intense and prolonged pyrexia produced by the pyrogen and the collateral effects of its autogeneration.

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ILIO-TIBIAL BAND GRAFTS FOR THE RADICAL CURE OF LARGE INGUINAL HERNIAE.

BY

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THE difficulty of securing a satisfactory radical cure in cases of large inguinal herniae is so well known that it need not be enlarged upon, but if evidence is needed it is furnished by the number of operations which have been described for the purpose. It is also obvious that the results obtained are not always entirely successful, and there is, therefore, some excuse for this description of yet another method of dealing with the condition.

Fortunately, herniae which cannot be treated by Bassini's operation, or some modification of it, are not common, but in the three cases to be described the base of the sac was very wide, and the lower fibres of the internal oblique—those arising from Poupart's ligament—were so weak that it was impossible to bring down any part of the muscle to the deep surface of the ligament; therefore, after closing the base of the sac by interlocking ligatures, or by a continuous suture, there remained nothing to strengthen the abdominal wall over the hernial site except the external oblique, which was greatly stretched and weakened in each case, the superficial fascia and the skin. Recurrence was practically certain if the operation had been completed, leaving the abdominal wall in such a weak condition, and I thought it would be worth while to try a graft of the ilio-tibial band to take the place of the internal oblique.

The usual incision for the radical cure of hernia was made, and, after ligaturing bleeding points, the external oblique was divided over the whole length of the cord. The remains of the internal oblique were raised from the underlying structures by blunt dissection, and the sac found and separated in the usual way. The sac was opened and the contents replaced in the abdomen, and, with a finger in the sac to prevent the exit of these contents, interlocking sutures were placed and tied, and the sac was removed about a quarter of an inch beyond the ligatures. The cut edges were also brought together by a continuous silk suture. Two strips of gauze were passed beneath the cord, so that it might be lifted out of the way while the graft was being sewn into position beneath.

I then made a semilunar incision, with its base anterior on the outer side of the patient's thigh, raised the flap of skin and subcutaneous tissue, and removed a piece of ilio-tibial band of such a size and shape that, when folded diagonally, it would fill the triangular space between Poupart's ligament, the outer border of the rectus sheath, and the exit of the cord through the fascia transversalis.

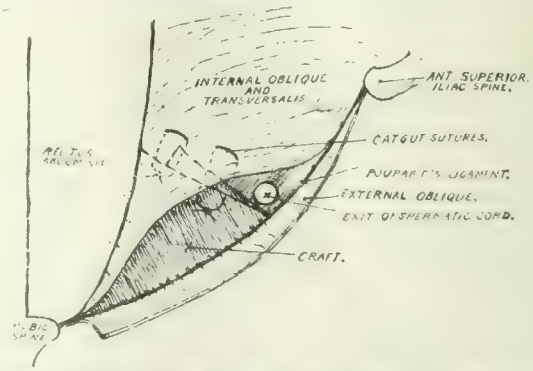


Diagram to show ilio-tibial band graft in position. Dotted lines indicate deep or buried structures or stitches. The external oblique is not shown except in relation to Poupart's ligament. The internal oblique external to the exit of the cord should be brought down to Poupart's ligament if necessary.

The folded edge representing the diagonal of the piece of band removed was stitched by a continuous suture of silk to the deep edge of Poupart's ligament from the attachment of the conjoined tendon to the pubic spine to a point a little external to the exit of the cord, and the inner edge was also stitched with silk to the outer border of the rectus sheath (conjoined tendon). The upper and outer edge was passed beneath the fibres of the internal oblique and transversalis muscles, and anchored to the deep surface of these by two or more mattress sutures of chromicized catgut, so that when contraction occurred during some effort requiring the use of the muscles of the abdominal wall, the graft should be drawn tight, and so offer the greatest possible resistance to the exit of any of the abdominal contents. These deep sutures should, of course, not be drawn so tight as to cause strangulation of the muscle fibres included by them. If any part of the internal oblique could be brought down to the deep surface of Poupart's ligament over the graft, this was done. The cord was replaced on the graft, and the external oblique and superficial structures were closed over it in the usual manner.

Three cases were operated on in this way, and the following is a brief account of them:

CASE I.

Pte. T.: left inguinal hernia. Operation on December 3rd, 1915. The hernia was very large, and the base of the sac would allow three fingers to be passed into the abdomen. The external oblique was very much stretched, and its oblique fibres were widely separated; the intercolumnar fibres were very weak, and the whole structure could not have given any support to the abdominal wall in the hernial region. The part of the internal oblique arising from Poupart's ligament was very weak also, and would not have offered any effective resistance if it had been brought down to the ligament. After ligature and

removal of the sac a single layer of ilio tibial band was inserted in the way described and the wound was closed.

The patient replied to a letter of mine on June 16th, 1921, stating that he is a miner, and is able to do full work without any trouble; that he has never worn a truss; that the scar does not bulge on coughing or straining, and that he is most grateful for the result.

CASE II.

A. M. B.: double inguinal hernia. Left side operated on March 15th, 1917. The hernia was as large as in the first case. A double thickness of ilio-tibial band, produced by folding the piece removed diagonally, was inserted in the way described.

In answer to my inquiry the patient stated, on June 19th, 1921, that, although he has some cramp-like pains in the groin, especially after sexual intercourse, he has no bulging of the hernial region on coughing or straining, and does not wear a truss. He also expresses gratitude for the operation, which, he says, is quite successful.

I operated on the other side at a subsequent date. Here the conditions were much better, the base of the sac being smaller, and the internal oblique stronger. I did not consider a graft necessary on this side, and did an ordinary Bassini's operation, which is quite successful.

CASE III.

Bdr. F. C.: left inguinal hernia. Operation on May 2nd, 1917. The abdominal wall was very weak in the hernial region and the sac had a large opening. I could not have made a satisfactory repair by the usual method, and therefore inserted a folded graft as described.

The patient writes on June 19th, 1921, to say that the operation is quite successful. He has no pain whatever, and no bulging on sneezing, coughing, or straining. I quote his own words: "I am perfectly cured, and never felt so well before. The work I do is heavy, but I never feel any pain, so shall never want to wear a truss."

The operation has stood the test of six years in the first case and of four years in each of the others without recurrence of the hernia, and two of the patients have been, and are, doing heavy work. I am confident that repair by usual methods would not have been satisfactory, and I believe that this method may be of considerable value in difficult cases. I have not seen any trouble from the removal of the piece of ilio-tibial band. There is a slight bulging of muscle through the gap for a few days after the operation, but none of these patients had muscle hernia on leaving hospital.

For stitching the graft into position I used silk, because I thought it would remain unabsorbed for a considerable time, and would therefore hold the graft until it was firmly united to the neighbouring tissues, but, provided catgut which will last three weeks and is absolutely sterile can be obtained, I do not see any reason why it should not be used if desired. In each case healing was uneventful, and I had no trouble from the use of silk.

IONIC MEDICATION IN THE TREATMENT OF NEURITIC AND RHEUMATIC PAINS.

BY

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CASES of neuritic and rheumatic pains are frequent events in general practice, and not a few of them prove rebellious to treatment. It may be questioned whether in such cases practitioners generally realize the benefit that may be obtained by the employment of ionic medication, especially in cases where ordinary drug treatment fails to give relief.

The treatment is easily carried out by means of the following apparatus, all of which may be obtained at small cost from makers of electrical requirements: namely, a switchboard connected with the electrical mains supply, with a sliding resistance, and with a milliampère meter in circuit; two insulated conductors connected with the poles of the battery and with flexible metal electrodes 4 in. by 3 in.; two pads, each of 16 to 20 layers of lint and of a size sufficient to prevent the metal electrodes from coming in contact with the patient's skin; 2 per cent. solutions of quinine hydrochloride and of sodium salicylate and 1 per cent. of potassium iodide for different conditions, while at the indifferent electrode a 2 per cent. solution of common salt is employed. The only other requirements are bandages to keep the pads in close contact with the patient's body and a suitable couch.

In all cases the pads, especially the one placed in connexion with the positive pole, must be thoroughly saturated with the warm solution employed. The current must invariably be applied and switched off very slowly and smoothly. A current of from 15 to 75 milliampères is employed according to the locality of the pain and the age, sex, and condition of the patient. The séance should be given daily for twenty to forty minutes. Occasionally I have combined ionization with high-frequency massage to the general advantage of the patient and as a helpful agency in the encouragement of sleep.

Notes of a few cases lately under my care may induce others to test this method of treatment:

Trigeminal neuralgia. A lady, aged 52, sent to me in February, 1921, by Dr. Archd. Sloan, complained of neuralgic pain in the area of the left fifth cranial nerve, and particularly in the supra-orbital region. The pain had been present more or less continuously for twenty years, and was aggravated when the patient washed her face or when she was exposed to wind. Ionization with solutions of quinine hydrochloride (connected with the positive pole), of sodium salicylate, or of potassium iodide, each of the last connected with the negative pole, were employed on successive days. After thirty-three applications there was distinct improvement, and by the end of April the pain had completely ceased. I saw her on August 5th, when she informed me that since the end of April she had had no pain, and that the experiences which had previously provoked or aggravated the pain could now be enjoyed without any discomfort. In addition, her general health had greatly improved.

I have successfully treated many cases of neuralgia of the superficial branches of the circumflex and musculo-spiral nerves. Their intractability to ordinary methods is well known, yet, with very few exceptions, I find that relief can be secured by ionic medication, a solution of quinine hydrochloride being the most useful. One case as an example may be cited.

A solicitor, aged 52, otherwise in excellent health, sent to me by Dr. Walls Christie in January, 1921, complained of a sudden attack of pain of three days' duration in the right arm, the pain being so severe as to cripple the use of the limb. At the same time there had developed a sensation of numbness in the outer three and a half fingers. Seventeen applications of ionization with a solution of quinine hydrochloride effected a complete cure, and neither the pain nor the numbness has returned.

The average number of applications required is from fifteen to twenty, but many patients are relieved after a less extended course. A lady, 40 years of age, sent to me by Dr. R. O. Adamson on account of severe brachial neuralgia, was completely relieved after six applications. Another lady, aged 33, sent by Dr. W. McMillan, had her brachial neuralgia removed after nine visits.

Neuralgia of the smaller occipital nerve. An elderly lady, advised by Dr. Linton of Renfrew and Dr. George S. Middleton of Glasgow, came into my private nursing home in September, 1920, complaining of great pain at the back of the head and over the right parietal region and vertex. The pain had lasted for more than six months. Ordinary drug treatment and rest in bed had produced little result. Ionic medication with solutions of quinine hydrochloride and of sodium salicylate, however, gave a complete and lasting cure.

Neuralgia in the region of both tuber ischii. A young medical student was referred to me by Dr. Ernest G. Fortune on account of pain in the region of both hips. This had lasted for five years and had prevented him from engaging in any form of sport to which he had previously been devoted. He could stand, lie down, and walk slowly, but any hurried effort caused him suffering. I skiagraphed both hip-joints but discovered nothing abnormal. Quinine ionization was applied twice over each tuber on successive days with surprising effect. Three evenings afterwards he went to a dance "by way of a trial," as he remarked, and took part in every dance with no sensation of pain at the time or ill effect thereafter.

Neuralgia of the twelfth dorsal nerve. A colliery manager, aged 60, consulted me fifteen months ago on account of a severe and continuous pain over the area supplied by the twelfth left dorsal nerve. The pain had troubled him more or less for two years, and though he had tried many forms of treatment, including, he said, the surgical division of the nerve, he had derived no benefit. Ionization with quinine, however, relieved him very considerably and permitted him to continue his work, though this entailed exposure to heat and cold and to wet clothes.

I may, perhaps, be permitted to quote my own case. About nine years ago I was completely laid aside for three weeks with violent neuritic spasmodic pain in the region of the twelfth left dorsal nerve, extending to the thigh. Ionization with quinine gradually produced complete cure, and though I have since been engaged on home military service for four and a half years, have spent months under canvas, been exposed often to wet and inclement weather, and engaged constantly in field exercises and route marches, I have had no return of the pain.

In cases of pain, which for want of other explanation must be termed "rheumatic," the results of ionic medication are most gratifying. A solution of sodium salicylate connected by an electrode with the negative pole is applied to the part affected, while a solution of common salt is used at the indifferent electrode in connexion with the positive pole.

A young engineer engaged in work involving exposure to cold and damp came to me in March, 1921, with "rheumatism" in both feet. He had suffered much for several years, and could walk only with difficulty and pain. The knees and the finger joints were also affected. After a somewhat prolonged course of ionization with sodium salicylate he made a complete recovery, and was able to walk easily and without discomfort. His swollen finger-joints became normal, and this enabled him to resume piano playing, from which he had previously been debarred.

Ionization with copper metal to the interior of the uterus gives satisfactory results in cases of endometritis and menorrhagia. The whole uterine mucous membrane is dealt with and no anaesthetic is required. The operation is of the simplest character. A patient of Dr. Alexander Thomson, suffering from a dilated meatus urinarius following childbirth, with inability to retain urine on any movement, was completely cured by the introduction of a copper probe through which a very gentle continuous current of from 3 to 5 milliampères was passed for five minutes at a time. The useful effect of zinc ionization in cases of carbuncles and boils is also well known.

It is with every confidence that I venture to encourage practitioners to test ionic medication as a simple and effective therapeutic agent in cases such as are here described.

A CASE OF CHOLECYSTGASTROSTOMY.

BY

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THE following case presents features of interest and seems worthy of record:

A married woman, aged 45, complained of ill health of seven years' duration. She suffered from attacks of abdominal discomfort half an hour after meals; they were never very severe, and she rarely vomited; she had had no melaena or haematemesis so far as she was aware. At intervals of a few weeks she had had attacks of nausea and diarrhoea. During the previous two months she had been worse and was losing weight. She was pasty-faced and sallow, but not jaundiced. The temperature and pulse were normal, as was the urine. Nothing of note was found on examination of the chest or rectum. There was a small, firm, rather fixed swelling just above and to the right of the umbilicus. The spleen was readily palpable an inch below the costal margin. The liver was not enlarged, nor the stomach dilated. A blood count showed merely slight secondary anaemia, and a barium skiagram gave no evidence of ulcer or pyloric stenosis.

Operation.

The abdomen was opened above the umbilicus. The swelling proved to be a hard nodular mass in the head of the pancreas. The liver, gall bladder, and ducts were normal to sight and touch. The splenic vein was dilated, and ran directly into the pancreatic mass, and the splenic enlargement was clearly due to venous engorgement. The diagnosis between chronic pancreatitis and carcinoma was uncertain. On the assumption that the swelling was probably inflammatory, some form of drainage of the biliary passages seemed indicated, and by cholecystenterostomy rather than cholecystostomy. In view of the great induration of the pancreas and enlargement of the spleen it seemed doubtful whether a few weeks' drainage would suffice.

Cholecystenterostomy, then, was decided upon in the hope that it would prove curative if the swelling were inflammatory. If it were malignant it would serve to prevent jaundice from the inevitable and early obstruction of the common duct. The pancreatic mass so overlapped and fixed the duodenum that no amount of mobilization would render it available. My experience has been that the use of the colon is preferable to that of the jejunum, and arrangements for cholecystcolostomy were being made when it was noticed the relation of the gall bladder to the stomach was such that an anastomosis could readily be made without disturbing their relations. This was done by simple suture in two layers and the abdomen closed. Recovery was uninterrupted.

Four months later the patient expresses herself as being completely relieved of her symptoms and having "never felt better in her life." The pancreatic mass was just appreciable to palpation, although distinctly smaller, and the spleen could still be felt.

Operations with the object of short-circuiting the common bile duct date from 1830, when von Winiwarter of Liége, at the suggestion of Nussbaum, performed the first. He used the colon and operated in six stages, lasting from July 20th, 1880, until November 14th, 1881. The first operation in this country was performed by Mayo Robson in one stage in 1889. The use of the duodenum was suggested by Cozi, and the first operations were those of Terrier and Bardenheuer. No doubt physiologically the best site for the junction is the duodenum, but as a matter of practical surgery it is not always available.

The objection to the use of the jejunum is that regurgitant vomiting, such as used to follow gastro-enterostomy with a "loop," is not unknown. This may be partially guarded against by the plan recommended by Mickulicz of performing a lateral anastomosis between the two limbs of the jejunal loop, but probably the best method is to make a retrocolic junction. An opening is made in the transverse mesocolon and the jejunum pulled through it. The operation is completed by drawing the junction down and suturing it to the edges of the aperture in the mesocolon, just as in posterior gastrojejunostomy. To the use of the colon there is the objection that there is an appreciable risk of suppurative cholangitis. In practice, however, this does not often occur, and the anatomical suitability of the colon has caused its frequent use with generally satisfactory results.

Attention seems to have first been drawn to the possibilities of the use of the stomach for this purpose by Oddi[1] in 1887. He experimented on dogs, and found that the diversion of the bile into the stomach was quite consistent with perfect health. His observations were confirmed by Cannac, Masse, Mocquot and others.

The first operation on the human subject was performed in Vienna on September 21st, 1892, by Wickhoff and Angelberger[2] in a case of gall stones and stricture of the common duct. The patient recovered. They were followed by Terrier[3] on December 19th, 1895, in a case of carcinoma of the head of the pancreas. The patient survived ten months. Monod[4] did a similar operation on June 1st, 1896, but the patient died the next day. Jaboulay[5] recommended it as the operation of choice in tumours of the head of the pancreas. About this time cases were also published by Montagnon and Duchamp,[6] and by Krumm,[7] while Perrin[8] in 1902 collected fourteen cases, including the foregoing, with generally satisfactory results. Kehr[9] has several times strongly advocated the operation, and had, in 1914, performed it sixty-two times, but gives no results.

Cases in the literature since 1914 are naturally scarce, but the subject has been referred to in America by Barr,[10] Jacobson,[11] and Erdmann.[12] The latter quotes Moynihan as having operated in this way twenty-one times with one death, and as having seen no disability from the presence of bile in the stomach. Moynihan advocates operation in all cases of obstructive jaundice, however positive may be the evidence of malignancy. The diagnosis is often difficult and never certain.

To sum up, it may be said that, while short-circuiting operations of this type will rarely be performed to-day—as were many of the earlier ones—for stones impacted in the common duct, indications will still be found, especially in cases of pancreatic disease. It is submitted that when the indication arises the use of the stomach for the anastomosis makes the operation technically easy, physiologically sound, and unlikely to be followed by undesirable complications.

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THE Japanese Home Office is about to investigate the death rate of infants in Tokyo, basing itself on the police statistics of the deaths of infants under the age of 5 years and their causes from 1916-20. It is believed that in the poor quarters of Tokyo the infantile death rate reaches 37 per cent. of births.

EIGHTY-NINTH ANNUAL MEETING
OF THE
British Medical Association.
Held at Newcastle-on-Tyne, July, 1921.

SECTION OF NEUROLOGY AND PSYCHIATRY.

Professor Ashley Mackintosh, M.D., F.R.C.P.Edin., President.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF BORDERLAND CASES.

OPENING PAPER

BY

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The duty has been placed in my hands of opening the discussion on the subject of the diagnosis and treatment of borderland cases from the psychiatric point of view. The nature of this borderland which we are to consider can be surmised from the arrangements which have been made for opening this discussion. On the one side of the boundary line we have the region of the neuroses consisting of disorders presenting such symptoms as those of spasm and paralysis, of paraesthesia and anaesthesia. On the other side we have the territory of the psychoses, which includes such disorders as those of mania and melancholia, and of dementia praecox. As a result of the closer attention and great study given in recent years to nervous and to mental disorders, two facts, not, however, unsuspected before, have emerged into prominence. The first of these is that anything of the nature of a borderline or of any hard and fast boundary does not exist. It has been found that the neuroses and the psychoses pass as gradually, as gently, and as naturally from one to the other as day passes into night and as darkness turns into dawn. It would be wrong, however, to conclude from this statement that all neuroses may by extension develop into psychoses, for that is not the case. Rather there are so many intermediate forms that the transition from the one group of symptoms to the other is easily made. The second fact observed is that the intermediate zone, this so-called borderland, is not a narrow and negligible strip of territory, but is a broad and extensive domain, which from the influence it exercises on human life, on its happiness or misery, is also a very important one.

This brief introduction does not convey a complete picture of what we mean by borderland cases, and the subject must in addition be approached by another route. By borderland cases we mean those in which some form of disorder of the mind plays an important, if not essential part. In some of these the symptoms themselves are of a nature which are at once recognized to be clearly mental; symptoms such as phobias, anxiety states, and compulsive obsessions. The clearly mental cases, however, of a more serious nature, presenting mental symptoms amounting to legal insanity, are excluded from the borderland group, for they are regarded as being definitely across and over the border. It will be necessary later to refer to this legal complication. In other cases the symptoms are not obviously mental and are apparently of a physical character, such as paralysis and anaesthesia. But even in these cases, in which, when looked at objectively, the symptoms appear to be physical, when studied more carefully from within, they are often found in their origin and essential nature to be purely mental. The paralysis of a limb, the loss of the power of speech or of hearing, may depend on an emotion or an idea, and what is very important from the patient's point of view, these symptoms may suddenly vanish and healthy function be restored by purely mental agencies. The borderland group, therefore, includes all cases presenting symptoms of a mental nature or of mental origin, but it excludes those of certifiable insanity, which are regarded as definitely over the border.

There is one qualification which it is necessary to make to this statement. The group as defined above is large, and perhaps extends too far in one direction, for it may include cases with very slight or evanescent symptoms as well as those with more serious, prolonged, and even permanent ones. Although there is not always a scientific reason for any differentiation between these, in practice it has been found expedient to restrict the term "borderland cases" to those of the more serious type—to those in which the question of certifiable insanity, if it does not arise as a real issue to be considered, at least exists mentally in our conception of the type of case, and this not as a remote but as a related contingency.

There are now three considerations arising from these conclusions which are cognate to the subject if not of it. There is, in the first place, the admission of the wide sphere of symptomatology which comes under the category of mental, either in nature or in origin. If we exclude mechanical disabilities, such as those due to the destruction of a tissue or an organ, most of the symptoms of which a patient complains when in ill health are mental. The commonest symptom of all is pain or its various modifications, such as malaise and discomfort, which are only pain in a more diffuse and less acute form. The sensation of pain is a purely mental phenomenon, whether it be due to organic disease or not, and it may be removed by purely mental means. Other symptoms also—such as paralysis of movement and loss of sensation, often found in hysteria—may be of mental origin and be caused entirely by inhibition of the will and of the attention. Even organic changes may be secondary to emotional disturbance, acting either directly or indirectly through the influence of the endocrine glands. The necessity for the modern clinician regarding every symptom from the mental point of view, as well as and quite as much as from the materialistic, is therefore obvious.

In the second place the value of psychotherapy and the range of its usefulness has now been found to be almost unlimited. This form of treatment has ever been successful in appropriate cases. It was the first form to be adopted by primitive man, it and it alone is almost exclusively referred to in the Bible, and it is the form of treatment the young child receives naturally from its mother when it injures itself. Neurologists have been slow in discovering its value owing to their pathological trend, but it has been practised by the psychiatrist for a century and more, when he was alleged to be doing nothing for his patients. The first medical man to refer to it pointedly was Pinel, when he described the value of moral treatment, and it has been practised in our mental hospitals by such men as Tuke, Conolly, Clouston, and many others. The form of treatment employed was not designated by them psycho-analysis or mental suggestion, nor given any other special name, but the individual attention which they gave to their patients and the personal influence they exercised over them by living amongst them, though not systematized or stereotyped in form or procedure, nor based on abstract speculations, was psychotherapy or mental healing pure and unalloyed, and was followed by excellent results.

Finally, the number of nervous cases now regarded as functional and not organic has increased enormously. There was a time when neurologists were so bound up in their materialistic conceptions and pathology that they looked with some pity on the psychiatrist who could not display under the microscope, brilliantly coloured by an aniline dye, the physical basis of the delusions or other symptoms of mania and melancholia. This was regarded of him as a reproach, yet after all he was right. The neurologist now also realizes that very many of his own cases are purely functional and mainly mental. The amount of good that can be done by him in the classical cases of sclerosis or softening of the nervous system is negligible in comparison with the benefits received in functional cases by mental means alone.

These considerations lead us with a convincing directness to the important part the psychiatrist ought to play in the treatment of functional nervous disease and all borderland cases, yet it cannot be said, for one reason or another, that he occupies the position he should. For example, how many of our large general hospitals have one such specialist on their staff? It has often been pointed out, and with truth, that the physicians of mental hospitals have suffered greatly through not being in closer

touch with the physicians, and particularly the neurologists, in our general hospitals, but there is a converse side to this picture, which is equally true. Have the neurologists not also suffered as greatly owing to their want of familiarity with psychiatry? How many of them have acquired any practical experience of it at all? I know of one very eminent neurologist who, when a young man, spent some time in a mental hospital in a subordinate position, and he has since told me again and again that he then gained the most valuable experience in his whole professional career. I need only refer in passing to the important part played by psychiatrists in the practical treatment of those suffering from war neuroses and psychoses as a result of their special experience in mental hospitals and their tact in the personal management of such difficult cases.

In the short time now at my disposal I will discuss three points of interest relating to borderland cases from the psychiatric side of the question. The first of these deals with the existence of mental depression and the possibility of committing suicide. No one who has not been responsible for the lives of patients suffering from melancholia has any conception of the seriousness of this risk, for practically every melancholic patient is a potential suicide at one stage or another of his illness. The risk, moreover, is greatest when the patient is least deranged—that is to say, during the early stages and during convalescence. He is then best able to seize opportunities, and is given most opportunities, of committing suicide, for he is then least carefully supervised. Melancholia is the commonest form of psychosis, it is the slightest departure from the normal, and it is the form which is most frequently treated out of a mental hospital. The melancholic patient is usually quiet; he can talk sensibly on subjects unrelated to his depressive ideas, and as he has some insight he often comes of his own accord for treatment. A patient suffering from melancholia is thus a typical borderland case, but the medical man who is treating it has under his care the most dangerous form of mental disorder that exists so far as danger to life is concerned. It is impossible here to enter into an account of the differential diagnosis of melancholia from other states of depression, and I would advise everyone not a psychiatrist for the sake of his own peace of mind to call one in for advice on this point if he is treating a depressed person, unless the case is an obvious one or he himself assumes that the patient is suicidal and takes the necessary precautions. Were I asked to deliver one lecture and one only on psychiatry, that lecture would be on melancholia and its treatment. Were my audience to forget all I said, with the exception of the one statement that practically every patient suffering from melancholia is a potential suicide at one stage of his illness or another, then my lecture would not have been given in vain. What adds to the distress of the tragedy of such a suicide is a knowledge of the fact that practically all patients suffering from melancholia who are neither senile nor diseased make good recoveries.

The next point I will discuss is the stage at which the patient is no longer a borderland case, but is across the border and could, if deemed expedient, be certified insane. Insanity, for the purpose of detention and treatment, is not defined by the English law, but if an insane person be detained and restrained, he must be certified. In Scotland a "lunatic" is defined, but, on the other hand, he may be detained and treated under certain conditions without being certified. The law is not primarily concerned with disease or its treatment as medicine is, but with conduct. If, however, the conduct be so affected by disease of the mind that the patient is unfit to enjoy complete liberty, we then have the medico-legal condition known as insanity. It is not possible here to describe all the varieties of insane conduct that may lead to certification. In melancholia we may have, for example, refusal to take food. Any remarks made by the patient to the effect that life was not worth living or that he would be better in his grave is so serious an indication of the danger of suicide, in view of the well-known symptoms of this disease, that it would be foolish to wait till the attempt on his life had actually taken place. Such patients, if certified, can still be kept under private care in England, and in Scotland they can be kept for six months in private houses or nursing homes without certification. They are, however, no longer true borderland cases.

I now come to my last point: a plea for the emancipation of the mental hospital and the introduction of a new status and a new era for it. The Act regulating the admission of patients into mental hospitals in Scotland is 65 years old, and that of England is quite as antiquated in spirit. These Acts were, no doubt, very suitable for an age in which *Hard Cash* was written, but they have outgrown their usefulness. They are no longer a blessing but a curse, and one that falls heaviest on the poor. Why should not borderland cases, cases of mental disorders and the psychoses in their early and curable stages, receive all the advantages of the accommodation and treatment given in our modern mental hospitals, from which they are at present debarred owing to the necessity of being previously certified a lunatic and legally committed? Private patients are, however, entering such mental hospitals as Craig House in greater numbers voluntarily than under certificate. They come at an earlier and more recoverable stage, one that corresponds closely to the borderland case. If the lunacy laws could be so amended that patients of small means, suffering from curable mental disorders, could also enter mental hospitals and receive early treatment without being certified lunatics, as patients enter general hospitals, and as the majority of private patients in Scotland paying the higher rates of board now do, then a new era would be introduced. Simple notification would provide these patients with all the legal protection that is now needed by them. The borderland, which after all is a geographical expression which depends for its existence not on medical or scientific views but on an artificial legal distinction, would disappear and our mental hospitals might then be regarded as true hospitals for the treatment of a special disease. Our mental patients might then come to them for treatment more readily and at an earlier stage, and might recover without being painfully conscious of a reproach which they believe at present attaches to them after certification.

DISCUSSION.

Dr. Ivy Mackenzie (Physician, Victoria Infirmary, Glasgow; Consulting Physician, Glasgow District Board of Control): There can scarcely be any consensus of opinion as to the character or nature of mental disorder symbolized in the term "borderland case." It is a matter of every-day experience that there is practically no ailment which, on its symptomatic side, does not present evidence of disorder of the nervous system. Acute and chronic infections, cardiac disease, rheumatism, pernicious anaemia, and arterial disease, are each, in individuals of peculiar neural disposition, prone to find expression in discomfiture which can best be explained on a neurological hypothesis. The nervous system is, in such cases, the component part of the individual which most obviously betrays the evidence of organic instability. But while for therapeutic purposes this aspect must be constantly kept in view, it would not be practical to use the term "mental" in this context.

If, however, we confine our attention to those varieties of disease which the alienists agree belong to the category of insanity, it is no less difficult to be precise as to the character of the case which is "borderland." There is a general and natural disposition to apply the term to the mild or incipient stages of what ultimately turn out to be the more gross types of alienation. Thus the initial stage of primary dementia or dementia praecox is frequently characterized by mentality and behaviour which, while to the experienced observer obviously indicative of grave disorder, is nevertheless so vague in its manifestations as to justify the designation "borderland." The term in such a case may not be a misnomer, but if it be taken to imply that those cases are suitable for special treatment, say, in observation wards or in special wards of a general hospital, then its practical application will end in disappointment. These may be compared and contrasted with such cases which on the surface present evidence of disorder often mild and equivocal, others with excitement characterized by excessive self-assertion, flighty ideation, and mildly delirious hallucinosis. These latter are definitely alienated, for the time being at least. Their conduct may be such as to be a source of possible disaster to themselves and discomfiture to their friends.

It may be, and frequently is, the case that the circumstances combined with the attitude and lack of insight in the patients leave no option in the matter or manner of treatment; in other words, it is often imperative that

they be certified for institutional treatment. Yet this represents a type of case which in the practical sense of the term is obviously "borderland." He is the subject of a transient excitement, the expression of a cyclic disturbance incident to causes or conditions so far unknown, but exhibiting to those who have the knowledge features which justify a good prognosis.

Take, again, another great class of patients, which for administrative purposes may be grouped under one heading—the senile and pre-senile insane. About 20 per cent. of all the insane cases in a large industrial area such as Glasgow come under this category. From the time of onset of the more pronounced mental symptoms till the period of death there is an interval of from three months to five years, and the majority die within eighteen months. The pathological basis of the disorder is to be found in senility or in premature arterial degeneration. In this case the process of somatic decay involves structures which are closely related to the groundwork of mentality. They have usually led useful and industrious lives, and to compel them to spend the remainder of their days among degenerates and lifelong lunatics with criminal propensities is to make a deliberate addition to the misfortunes to which the mentally afflicted are exposed. In a very real and practical sense many of these are "borderland" cases for which treatment outside of an asylum could quite well be provided. As a matter of fact, in Glasgow during the war provision was made in special wards with 100 beds for the treatment of these cases.

These considerations serve to emphasize the difficulty there is in practice, not to speak of theory, in segregating a special class of disease as "borderland cases." It is this special difficulty, however, which appears to me to offer a solution to the main problem. All mental cases, with few outstanding exceptions, should pass through observation wards. This may be done in Scotland, and in Glasgow about 1,000 cases pass through the observation wards each year. An opportunity is thus afforded of discriminating between those who are likely to recover soon and those in which asylum treatment is indicated. Toxic and hysterical states, the depressed and excited manifestations of *folie circulaire*, and other transient forms of mental aberration are treated successfully in many instances within the prescribed period of three months. Provided with means of this kind, the academic difficulty of defining a borderland case is obviated. The cases are there and must be dealt with. In the first instance they are observed and assorted. Some are certified for the asylum, others for institutions for defectives, others "boarded out," and others sent to institutions for senile cases. Where recovery is probable provision is made for retention and treatment. The wards, in addition to serving an administrative and therapeutic purpose, are also of great value to the police authorities in providing a means of solving some of the problems of the relation of mental disease to crime.

Although it has not been officially recognized by the Ministry of Pensions, who hand over their lunatics to the Poor Law, while pretending to deal with "borderland cases" themselves, the hospital has been a boon not only to pensioners but to pensioners' friends, who have repeatedly expressed their gratitude for what it has provided. I am far from suggesting that the arrangements in Glasgow are even approximately satisfactory. Encumbered by the restrictions of the Poor Law, there is no provision for treatment of patients except such as come under the technical designation of "pauper." To get rid of the term "lunatic" while retaining that of "pauper" is surely to halt at a stage where the progressive mind in medicine will refuse to rest. This is not the occasion on which to follow this argument in its details, but it is obvious to all interested in the subject that the struggle by the profession to emancipate the insane from the trammels of tradition will not be successful until the treatment of the mentally afflicted is carried out under conditions which place them, so far as hospital provision is concerned, in the same category as other sick members of the community.

The treatment of "borderland cases" is, I am convinced, in the first instance a matter for administrative reform, and this is so in spite of the heroic pretensions of psycho-analysts, psychotherapists, and others who only play on the fringe of the problem. The way for such reform must, in the first instance, be paved by legislative sanctions increasing the authority of the General Board of Control, which, in Scotland at any rate, has always pursued a progressive policy, and has earned thereby the gratitude and confidence of the profession. The General Board should have the power not only to authorize, and exercise a general supervision over, the treatment of mental cases in special clinics, but they should also be in a position to prevent the indiscriminate treatment of such cases in nursing homes. An extension of the facilities for general hospital treatment would in itself contribute in no small degree to a curtailment of mischief incident to the nursing home practice.

Whether the Poor Law authority is a body competent to develop the administrative, therapeutic, and educational possibilities inherent in any effective measure of reform is, to say the least of it, open to doubt; but when the question is raised, as it so often is, I always remember how much Glasgow owes to the intelligent and far-seeing policy of Mr. Motion, the late inspector of poor for the city. If only the reforms initiated under his administration were carried to their conclusion in the spirit in which he was actuated, I have no doubt whatever that the present problem of the borderland case would be in a large measure a question of the past.

Dr. Helen Boyle (Honorary Medical Officer, Lady Chichester Hospital, Hove) said: I have greatly enjoyed listening to Dr. Robertson's paper, and with his wealth of experience at Morningside and elsewhere it is invaluable, but perhaps I may be allowed to say a little because I see the matter from a somewhat different angle. My experience since 1905 at the Lady Chichester Hospital (for early recoverable nervous and borderland patients, with no certifiable patients at all) is that of cases at a much earlier stage than most of Dr. Robertson's, though no doubt he sees many early cases too. It is too large a subject to tackle thoroughly in a few minutes, but there are three points that I should like to call attention to.

1. The first point is the importance of unhappiness as an early symptom in the diagnosis of nervous and borderland patients. It is not normal for a man or woman to be unhappy for more than a short time, and it is one of the great needs of the times that this fact should be rubbed into the general public. If a person goes on being unhappy he should make up his mind to know the reason why. It is abnormal, unhealthy, and usually remediable. In the so-called "early" cases that we get we find that there is a history of unhappiness for months or years or sometimes almost a lifetime before they come in. It may be that their work is unsuitable or that there is a lack of it. One case I recall of a woman, an able forewoman and buyer before marriage, happy and energetic, who married a man absorbed in his business from breakfast to bedtime and consequently out nearly all day. She had a tiny house in the village, a maid and no children, and nothing to do. She suggested work, but it was considered "infra dig." and with a nice house and garden what more could she want? She broke down time after time, unhappy from having nothing to put her energies into: she needed work.

2. The second point I want to emphasize is the importance of using all the remedial means we possess, not only one of them, in treating these patients. The causes are almost always multiple, seldom if ever one alone. You may get heredity, faulty early environment and attitude of mind, the loss of a son in the war, and an attack of influenza all in the same case. It is like a chain with many links, and it is well to attack as many as possible at once; for instance, if the patient is under weight it is essential that this should be increased, for psycho-therapy is often useless until the general health improves. With increased weight psycho-therapy becomes easy and effective.

3. This brings me to the last point: that the things we most want are out-patient clinics and beds in connexion with general hospitals for "early" cases. We already have some excellent out-patient clinics, such as those at Oxford, Cambridge, and in connexion with some London hospitals, but I would urge the necessity of beds for this type of case in all general hospitals and clinics, more especially the teaching ones. Beds are often essential for treatment even in cases otherwise suitable for pure psycho-therapeutic methods. It is frequently useful for the mal-adjusted patient to get away from home in order to see the conditions in proper perspective. If you have

to readjust your relations to those you are living with, in the light of further knowledge, surely it is easier if you come back fresh to them. These wards or wings of hospitals should be run with entire avoidance of red tape, and it should be possible to obtain almost any physical and mental condition desired. The patients should be able to get up and go out, to go to cinemas, concerts, to shop or bathe; they should be able to have gardening, dancing, hydrotherapy, electricity, massage, suggestion, re-education, handwork, or any other treatment. We have a hospital magazine, a cricket team, a club night, and a chapel.

Moreover, there should be no compulsory detention of any kind or you will not get the very early cases. When recently in the United States seeing the best of their nervous and mental work I found both at the Phipps Clinic at Baltimore, in connexion with the Johns Hopkins University, and at the Boston Psychopathic connected with Harvard University, that compulsory detention, which enables them to take acute mental cases, is already beginning to have an effect in keeping out early cases. This is understandable.

Dr. Bedford Pierce (Medical Superintendent, The Retreat, York) spoke on the serious responsibility in dealing with suicidal patients, and concurred in the opinion that if supervision was undertaken it should be done thoroughly. He pointed out that in some cases with suicidal thoughts rigid supervision was actually injurious, and that some patients would not recover until the supervision was relaxed. The risk was great, and this was one of the great causes of anxiety for all engaged in that branch of medicine. In surgery risks were freely taken in the interest of patients, and in psychological medicine this was sometimes necessary. The question needed to be looked at from a changed point of view.

Dr. Bedford Pierce advocated the admission of voluntary boarders in the general hospitals, and believed their admission would be beneficial both for the patient and for the hospitals themselves. One serious difficulty in treatment was the question of expense. It seemed impossible to secure the nursing attention that was necessary without assistance from the public funds, as the cost was necessarily very large.

Dr. Alfred E. Carver (Physician, Birmingham and Midland Hospital for Diseases of the Nervous System) said: The difficulty is that the specialist does not, as a rule, see the patient early enough. By the time a case has reached the "borderline" or certifiable stage the mischief has already gone far. If only we can get our cases really early, the question of in-patient institutional treatment will rarely arise. It is precisely to his ordinary surroundings that we seek to adapt our patient, and it is better to do this, so far as possible, while the patient is in them and at his everyday work. Many of those whom we remove to an institution adapt themselves to life within it and may be discharged only to break down again very soon in their ordinary surroundings. For example, I have known cases of apparently cured melancholia commit suicide upon the very day of their return home.

I agree with Dr. Boyle that the term psychotherapy should be used in its most comprehensive sense, but the essential is that whatever method we apply it should be applied early. This can only come about when the general practitioner and the public recognize the early symptoms and the importance of treating them promptly. Such a common symptom as nervous dyspepsia is often treated for a long time merely by drugs until a large number of other anxiety symptoms have developed. It thus becomes firmly rooted and correspondingly difficult to remove. Eventually even it may set up chronic organic changes though originally psychogenic in nature.

For really early treatment we need no alteration in the lunacy law, and in my opinion it would be far better were the profession to concentrate their energies upon early recognition and treatment than upon the care of borderline—which are late—cases.

Dr. W. L. Ruxton (Physician, Lying-in Hospital, Newcastle-upon-Tyne), speaking on the difficulties of the physician who, whether for advice or certification, came first in contact with mental cases, advocated the extension of the voluntary system. He emphasized the difficulty of persuading patients to go voluntarily to recognized asylums, hence the necessity of separating the two establishments and having the voluntary establishment in healthy country and not town surroundings. He pointed out the very inadequate machinery and difficulties of certificates, which were not met by the emergency certificate. He regarded early melancholics who had any semblance of hallucinations of hearing as the most dangerous cases from the point of view of suicide.

Dr. Mary Sturge (Physician, Birmingham and Midland Hospital for Women) pointed out that the presence of many persons in the "borderland" was encouraged and maintained by such unrecognized and untreated conditions as post-nasal infection, displaced kidneys and pelvic organs. She instanced cases whose neurasthenic or mental condition was relieved by physical means rather than psychopathic.

1. A school teacher: thin, miserable and neurasthenic; had not worked for months; no nasal symptoms whatever, but a history of influenza a year ago. Nasal swab only slightly covered, but culture showed a triple infection, including the influenza bacillus and pneumococcus. There was marked improvement of mental outlook after the first dose of autogenous vaccine.

2. A missionary: quite unfit to return to India; kidney fixation performed by Billington method. The patient wrote subsequently in June, 1918, "I was miserable and depressed to the last degree for about two years. Since the kidney has been fixed in the right place I have felt no depression at all, and I am told I have an altogether different expression on my face."

3. A case of puerperal melancholia: Prompt return of patient's mind to its normal condition after reposition of retroflexed uterus. Previously the patient had been in a state of melancholia for several weeks.

Dr. James Middlemass (Medical Superintendent, Borough Mental Hospital, Ryhope, Sunderland) said: I take part in this discussion only because of the President's request, and not because I have special experience in borderland cases. I can speak only as it affects the superintendent of a mental hospital dealing with rate-paid patients. I have frequently had former patients come to the hospital and ask to be readmitted. Some of these I have been able to admit because they were certifiable, but others who were not certifiable but were still so-called borderland cases I have been unable to do anything for except to give some useful advice. I think it is a defect in our means of dealing with these and similar cases that we cannot give them institutional treatment. It is to be hoped that when any amendment is made in the existing Lunacy Acts this important matter will not be forgotten. Such provisions for the admission of voluntary patients into ordinary mental institutions already exist in some Continental countries and also notably in the Union of South Africa. The existence of these provisions shows that the legal difficulties are not insuperable.

The next point is the desirability for the provision of some assistance in studying and regulating the environment of these borderland cases. In many instances it is found that the chief exciting factor in bringing on the threatened mental breakdown is one of environment. A man may be working at an uncongenial occupation or one for which he is naturally unfitted. A woman may have a drunken husband and his treatment of her may be such as to make her depressed, nervous, and sleepless. A change to another occupation or persuading the husband to take the pledge and be sober may be the best line of treatment for these cases. We may with advantage study the lines on which "social service" is being developed in America, as it seems to me it is on these lines that great good may be done in the way of prevention of mental breakdown.

The last point I would refer to is the good that may follow the visit of former and recovered patients to the hospitals where they have recovered. I always encourage this, and in many instances have seen great good result. It is a form of psychotherapy of great value.

Dr. J. Mackie Whyte (Physician, Dundee Royal Infirmary) referred to the practical experience which he

had had for some years in the treatment of early cases of mental disease in the Dundee Royal Infirmary. The experiment was on a somewhat small scale, but proved in many ways of value. On the whole, he thought such cases should be treated in separate wards, or a special building attached to the general hospital, and the greatest stress should be laid on the quality of the nursing. As to cases of suicide, they could not reckon on cowardice as a restraining factor in mental cases.

Dr. W. R. Dawson (Dublin; Government Inspector of Lunatics in Ireland) said: The prevailing general impression from this interesting and useful discussion is that the methods of treatment urged by the speakers are in general those which have been used in asylum practice for the last thirty years, and are to be found in the early editions of Sir Thomas Clouston's *Manual of Mental Diseases*, which seems to indicate that the methods are being rediscovered by the general medical profession. In this connexion it must be urged that in staffing mental wards or departments in connexion with general hospitals—which should certainly be established—medical men with asylum experience should be appointed, psychiatry being of all branches of medicine that most dependent at present on clinical experience. In speaking of departments for mental cases in general hospitals it may be pointed out that hospital wards can take a comparatively small class of cases, and if all the various methods of treatment touched on by Dr. Boyle are to be tried, there would have to be a separate department of the hospital.

As to the suicidal period in melancholia, it may be pointed out that, in addition to the early stage of the disease, another period which requires care is just before full recovery, when the patient is well enough to appreciate his position.

Dr. W. H. Bryce (Fife) pointed out the width of the borderland, and that on the nervous side of this borderland there were many cases which were potentially suicidal; hence a certain amount of risk had to be taken. He discussed the physical element present in many cases, and pointed out how a physical illness or a shell concussion seemed to liberate the psychical element. In some cases it was difficult to decide which was the determining factor. He emphasized the necessity of treating every aspect of the case—for example, by lavage, vaccines, etc., for colitis, as well as by psychotherapy for the accompanying depression or morbid ideas. Physical treatment, he concluded, should therefore be combined with the psychotherapeutic measures.

The President of the Section referred, in a brief speech, to the deplorable frequency with which cases of acute melancholia were labelled "neurasthenia" or "hysteria," and to the unfortunate results which ensued.

In a short reply Professor G. M. Robertson wished to confirm what the President had said as to the great mistake of calling melancholia hysteria or neurasthenia. The suicidal tendency coloured the whole picture. He believed that nearly all these cases recovered, in spite of a close supervision. After alluding to the close relation obtaining between pain and unhappiness, he emphasized anew the multiple etiological factors in borderland cases, and concluded by an appeal for the study of happiness in human life.

THE BLOOD AND THE NERVOUS DIATHESIS.

BY

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The structure of the neuron and its mode of functioning depend upon two factors, (*a*) its innate potentialities, as determined by heredity, and (*b*) the influences brought to bear upon it from without, or, in other words, the environment. These environmental influences fall under two heads: the plasmic, operating through the perineuronic lymph (also in the main determined by heredity), and the non-plasmic—for example, mechanical stimuli acting on the sensory end-organs, and the action of one neuron on another at the synaptic junctions.

The Influence of the Plasmic Environment upon the Evolution of the Neuron.

A consideration of the circumstances which determine the evolution and dissolution of the neuron (or other cell) makes it evident that its entire career is as much the outcome of environmental influences (peculiar for each type of neuron) as of innate impulse, and that its development is indeed not so much due to a spontaneous impulse operating, unaided, from within, as to its capacity to be moulded in definite ways by specific environmental influences. Further, the environment of the neuron, notably its plasmic environment, is chiefly responsible for whatever disease may affect it; even its final senile decay results as much from extrinsic as from intrinsic causes.

Normal development of the nervous system implies that the individual neurons shall be bathed in healthy plasma containing a due supply of nutritive materials, salts, vitamins and endocrines, and a minimum of nocuous substances. Faultiness in any of these respects may seriously interfere with the normal development of the nervous system. Consider the influence of endocrine activity alone. This is shown by the phenomena of cretinism and hypopituitarism as well as by the effects of removing the ovaries and testes in early life. The differences in the nervous organization of the man and the woman are mainly due to the differences in the nature of the endocrines yielded by these and kindred structures.

The nervous system does not long maintain the efficiency of early maturity. From (say) the age of 30 years onwards some deterioration, slight though it be, tends to take place with each succeeding year; and this proceeds with accelerated pace when the period of senescence is reached. This progressive deterioration is not a purely spontaneous process. It results from causes which are in the main extrinsic; it is largely due to plasmic influences operating upon individual neurons from without. If, on the attainment of maturity, the neuron continued to be bathed in healthy adolescent plasma it would tend to retain its powers in undiminished efficiency. Some degree of deterioration would, no doubt, set in even under such conditions, but the process of final decay would be long drawn out. The neuron does not, however, continue to be flushed with youthful plasma. This fluid from maturity onwards undergoes a steady alteration in composition, and there necessarily results a parallel alteration in the structure of the neuron. Deterioration, at first slow, proceeds more rapidly when the blood becomes senile, and the capillary circulation languishes as the result of cardiovascular degeneration. The neuron does not, that is to say, become senile wholly from intrinsic spontaneous causes, but has senility—in great measure—thrust upon it by the plasma. In short, the nervous system becomes senile not so much by a process of wearing out as by one of suicide on the part of the organism at large.

Influence of the Plasmic Environment in Checking the Evolution of the Neuron.

Abnormal development of the nervous system induced through the plasma may be due to inborn or acquired defects of the plasma. Inborn plasmic defects are such as result from some defect in the germinal rudiment of a plasma-forming organ, such as the pituitary body, thyroid gland, ovary, testis, adrenal gland, or digestive organ. It is clear that, given defects of this kind, the nervous system, not being furnished with the normal plasmic constituents, will fail to develop properly, even though its germinal rudiment be normal. We shall then have to do with a defectively organized nervous system which, though not the result of an inherent defect in that system, is nevertheless due to causes inherent in the organism, causes which take their origin in the zygote or fertilized ovum.

The inheritance of nervous diseases, both organic and functional, is, in my belief, due far more to the inheritance of plasmic defects than of a primary nervous defect. We must not, however, forget in this connexion that the nervous system itself controls the elaboration, purification, and circulation of the plasma, and thus indirectly influences the environment of the cells of the body politic, including the neurons themselves.

Acquired plasmic defects are such as result from unhealthy conditions of life. If the conditions of life be persistently bad, the plasma will be persistently bad, and the nervous system, even though initially normal, will not

develop normally. Thus rickets, rheumatism, and chronic intestinal disorders in children are apt to be accompanied by nervous symptoms; from which we may fairly draw the inference that the condition of plasma characteristic of each of these affections necessarily interferes with the normal development of the nervous system.

Influence of the Plasmic Environment in Causing Dissolution of the Neuron.

With the exception of genuine senile degeneration, in which some degree of spontaneity may be admitted, degeneration never occurs spontaneously in a normally evolved cell, be it a neuron or any other. The vast majority of organic diseases of the nervous system are produced through the plasma, either in consequence of deficient supply (such as may result from vascular disease) or faulty constitution. It is sufficient to mention the toxaemias, whether of metabolic, bacterial, protozoic (as in the case of syphilis), or extraneous origin (alcohol, lead).

Functional Reaction of Neurons to their Plasmic Environment.

Every variety of cell responds specifically to its plasmic environment: the muscle cell responds in one way, the the gland cell in another way, the nerve cell differently from either; and, again, each variety of these cells has its own specific reaction. The exquisite sensitiveness of neurons to chemical influences is well shown by the action of drugs; most of these produce their effects essentially through the nervous system. This is obviously the case with drugs which act as anaesthetics, hypnotics, anodynes, nerve sedatives, and nerve tonics; but it is also largely true of other drugs, such as purgatives, emetics, anti-emetics, sudorifics, diuretics, and drugs acting upon the cardio-vascular system; moreover, practically all the poisons, with the exception of the corrosives and metallic irritants, cause death by their direct action upon the nervous system.

In addition to its nutrient constituents the blood normally contains a number of substances having an action similar to that of drugs, and playing a necessary part in the normal functioning of the cells. Many of them exercise a specific action upon the neurons, and there is no doubt that they play a considerable part in controlling the activities of the nervous system.

Nerve Stimulants and Nerve Depressants.

We may roughly classify these substances into nerve stimulants and nerve depressants. When the former predominate there is a feeling of well-being, or even of exhilaration. When the latter predominate there is depression, which may vary from a slight fit of the "blues" to the deepest melancholy.

The congenital craving for alcohol and other drugs I attribute to a defect in respect of these substances, either to a deficiency of nerve stimulants or an excess of nerve depressants. Mankind all the world over shows a liking for stimulants in one form or another, and not infrequently the liking amounts to a veritable craving. When the blood is well provided with nerve stimulants and not overcharged with nerve depressants, there is no craving for extraneous stimulants, such as alcohol, tea, or coffee; but when it is defective in the one or surcharged with the other, there is felt the desire for the glass of wine or the cup of tea.

Those who display a congenital disposition to drug cravings, alcoholic or other, come of a stock in which neuroses and psychoses, including insanity, are rampant. I hold that in all these congenital taints it is the blood which is essentially at fault.

The organism stands in need of nerve stimulants—substances having a stimulating, bracing effect upon the nervous system. Not only do certain endocrine glands yield such stimulants, but stimulants are likewise ingested with the food, which is indeed often specially chosen for its stimulating properties. Others, I suggest, are generated within the organism by the metabolism of the tissues at large.

One can hardly doubt that the exhilaration, amounting at times to a veritable intoxication, experienced by young children in abounding health, is due to the action of nerve stimulants, endocrines or otherwise. I may here draw attention to the fact that there is strong evidence that substances having a stimulating and tonic action upon the nervous system are generated in certain diseases. Thus, in general paralysis of the insane the patient may exhibit all the features of mild intoxication. Again, it is not uncommon for the sufferer from migraine to feel preternaturally well the day before his attack, as though he were under the influence of some nervine tonic having an effect similar to that of strychnine.

There is, on the other hand, abundant evidence that nerve depressants may exist in the blood. In normal health they are at a minimum, but in disease they may be present in sufficient quantity to give rise to a variety of symptoms, such as irritability and mental depression, which may culminate in actual insanity. It is well known that a feeling of malaise accompanied by mental depression may sometimes be relieved by a blue pill and black draught, and that periodic attacks of bad breath and naughtiness in a child may be removed by a dose of medicine, such as Gregory's powder.

Other instances of the influence of stimulants or depressants on the nervous system causing morbid symptoms are: the irritability of the gouty man, the coma and convulsions of uraemia, the vomiting of acidosis, the coma of diabetes, the irritability and convulsions of rickets, the delirium and coma of malignant jaundice, and the numerous varieties of functional insanity.

Source of the Plasmic Substances which Influence the Nervous System.

These substances are derived from three main sources:

(*a*) From endocrine glands. Some, such as the thyroid, have a stimulating action, causing such effects as flushing, tachycardia, perspiration. The parathyroids are thought to yield a substance having an inhibitory action on the motor neurons, inasmuch as the removal of these glands leads to tetany. Extract of the posterior portion of the pituitary body causes, when injected into the blood, a generalized vasomotor constriction and localized dilatation of the intrarenal arterioles. Adrenaline has a curious selective action on certain portions of the autonomic system, causing, for example, a generalized vasomotor constriction, dilatation of the pupils, contraction of the sphincters of the intestines and bladder, and relaxation of the propulsive muscles of both these organs. The influence of testicular activity is shown by the remarkable nervous phenomena associated with the rut; the rutting animal is intensely erotic and dangerously combative, and a similar combative spirit is displayed by the mammalian mother when called upon to protect her young. Here also the altered emotional tone is hormonically induced.

(*b*) From the digestion of food and the metabolism of the tissues generally. Some of these are stimulating, others depressing.

(*c*) From the food. Most natural foods, vegetable as well as animal, contain nerve stimulants. Animal foods are more stimulating than vegetable foods, and some animal foods (for instance, butcher's meat) more stimulating than others (for instance, fish). Of vegetable foods, maize, beans, and oats are more stimulating than grass. All vegetable feeding animals exercise a discriminating choice in their search for food, and seem to show a predilection for the most stimulating varieties. Man shows his desire for stimulating foods in his love of condiments—pepper, pickles, piquant sauces, and the like. Long before he learnt to brew alcohol he gathered stimulating herbs and berries and mixed them with his food. It was not until a comparatively late period in his history that man learnt to brew for himself stimulating beverages, such as tea, coffee, cocoa, and alcohol.

The Functional Nervous Disorders due to Morbid Plasma.

These may roughly be classified as follows:

(*a*) Those due to defects as regards substances furnished by endocrine glands. Among the symptoms thus arising are: the vomiting, exhaustion, and low blood pressure of Addison's disease; the palpitation, rapid pulse, and increased perspiraton of Graves's disease; the apathy, slow pulse, and dry skin of myxoedema, the various nervous phenomena associated with hyper- and hypo pituitarism, and the long array of nervous disturbances—flushing, rigors, sweatings, headache, depression, and the rest—connected with menstruation and the climacteric. It is

probable that many of the nervous phenomena of "shell shock," such as tachycardia, tremor, agitation, profuse perspiration, blue hands, are due to disturbed endocrine action, in which the thyroid gland figures prominently. Disordered activity of the endocrine glands is largely responsible for hysteria, "psychasthenia" in its various forms, borderland insanity, and, indeed, many forms of actual insanity. Sir Frederick Mott claims to have shown that a relation exists between dementia praecox and degeneration of the reproductive glands. When, some years ago, I came to the conclusion that senescence is in large measure a suicidal process wrought through the blood, I suspected that altered endocrine activity might figure largely in its causation. Recent observations tend to confirm this view.

(*b*) Those due to defects as regards substances furnished by tissues other than the endocrine glands. These defects cover a wide field. It is sufficient to refer to the nervous phenomena characteristic of uraemia, diabetic coma, and malignant jaundice.

(*c*) Those due to defects as regards substances furnished by digestive processes. Faulty digestion, whether in the stomach, liver, or bowel, leads to blood poisoning. We may speak of this as indigestion toxaemia. The poisons absorbed from the alimentary tube include not only those resulting from imperfectly elaborated foodstuffs, but also the products of bacterial activity produced within the tube. These indigestion toxaemias are responsible for a vast amount of functional nervous disturbance. A man with "good nerves" has generally a sound digestive system; he will tell you he can eat and drink anything without feeling the worse for it. On the other hand, the habitual sufferer from indigestion is generally nervy.

Among the functional nervous disturbances which may be set up by indigestion toxaemia are: headache, tinnitus, giddiness, and other morbid cephalic sensations too numerous to mention; irritability, mental depression, nervousness, drowsiness, insomnia, disturbed sleep, torpid sleep, bad dreams, lassitude, weakness, tremors, twitchings, convulsions, widely scattered pains and other dysaesthesias, palpitation, flushing, shivering, and sweating.

(*d*) Those due to nerve poisons resulting from the invasion of the tissues by micro organisms such as those which produce the infectious fevers. Such are headache and other pains, giddiness, tinnitus, deafness, blindness, hallucinations, delirium, stupor, coma, insanity, rigors, twitchings, convulsions, rigidity, flushing, sweating, dry skin, tachycardia, nausea, vomiting, and diarrhoea.

(*e*) Those due to nerve poisons introduced from without. These include drugs, alcohol, and such poisons as those which cause pellagra, ergotism, and botulism. They may give rise to all the symptoms already mentioned.

It is noteworthy that drugs can induce most of the symptoms met with in the insane—not only depression, excitement, delusions, and incoherence, but such subtle effects as a rapid flow of ideas, and an apparent lengthening of time and widening of space. Of interest in this connexion is the fact that large quantities of alcohol have much the same functional effects as those observed in general paralysis of the insane.

The Influence of the Blood on the Feelings.

I have incidentally referred to the influence of the blood on the feelings. That influence may now be considered more particularly. Under the term "feelings" I include the sensations and the emotions. The peri-neuronic lymph plays as it were upon the mind-organ, either upon the grey matter directly or upon the sensory end-organs—which constitute a kind of psychic keyboard—and by virtue of its manifold and ever-changing constituents causes the feelings to be modified in an infinite variety of ways. The following brief summary indicates some of the more important effects of the plasma on the sensations and emotions:

(*a*) The special sensations. Functional blindness from uraemia, teichopsiae and scotomata in migraine, deafness and tinnitus in toxaemias.

(*b*) Other sensations. Pains, general or local, in the toxaemias of febrile diseases, neuralgia in anaemia, headache and other morbid cephalic sensations (sensations of pressure, heaviness, lightness, bursting, and irritation) induced by the blood states peculiar to the climacteric, pruritus and cutaneous dysaesthesias (numbness, tingling, burning), muscular dysaesthesia—for example, fidgetiness.

(*c*) The appetites. Thirst, hunger, eroticism, sleepiness, drug craving.

(*d*) The panaesthesia. The feeling of wellness or illness, of energy or fatigue.

(*e*) The emotions. The blood exercises a profound influence on the emotional nature. It may, as we have seen, give rise to a pleasurable or painful panaesthesia. Now the former predisposes to pleasant emotions, the latter to unpleasant emotions. A tired man is apt to be irritable; after he has been refreshed by food he is disposed to more pleasing emotions. A pleasurable panaesthesia, especially the sense of exuberant well-being, tends to call forth joyousness and to foster a belief in self: it constitutes the fundamental psychic characteristic of the megalomaniac, whether as met with in everyday life or in the asylum. A painful panaesthesia in the shape of profound malaise tends, on the other hand, to evoke a feeling of gloom and self-distrust.

The blood may exercise a more specific influence on the emotions. Consider the apathy of the myxoedematous patient, the intense nervousness and agitation of the sufferer from Graves's disease, the violent emotionalism exhibited at the period of the rut, the altered emotional tone at the time of puberty, at the menstrual epoch and the climacteric, the irritability of the naughty child with the bad breath, or of the gouty man on the eve of his attack, the elation produced by alcohol, and the peculiar emotional effects of certain drugs such as cannabis indica. The emotional effects of alcohol are manifold; it may make a shy man bold, a reserved man expansive, a mild man combative, a depressed man gay, a surly man genial, a cold man ardent, a close man generous. There is, indeed, hardly any limit to the emotional effects which may be wrought through the medium of the blood; and we are driven to the conclusion that the blood plays a preponderating part in determining mental temperament.

Not only is it possible to produce crude emotional effects through the blood, but such subtle emotional states as shyness and modesty, and changes in ethical feeling. Dr. Gordon Holmes tells of a young woman who in consequence of a growth forming in one adrenal gland took on pronounced masculine features, physical and mental. Men lost all attraction they had had for her, and all sense of feminine modesty disappeared. On the removal of the growth she reverted physically and mentally to her normal feminine condition, her interest in the opposite sex returned, and with it her maidenly modesty.

As a further instance of the specific influence of the endocrine glands on the emotional nature, I may mention the case of a boy of 16 who, after an attack of mumps, suddenly developed the symptoms of hypopituitarism. In the course of a few weeks he increased 3 st. in weight, developed an inordinate liking for sweets and cigarettes, and from being a straightforward lad took to deceiving his mother in all sorts of ways.

Mental Temperament the Root Factor in the Causation of the Minor Psychoses.

Under the term "minor psychoses" I include such affections as hysteria, anxiety neurosis, morbid fears, hypochondria—in fact, all those psychoses which have excited so great attention among psycho-therapeutists within recent years. *The root factor in the causation of these affections is an innate peculiarity of temperament.* Persons who are morbidly liable to them—all are in some degree disposed to them—are endowed with a peculiar mental temperament. They *feel differently* from normal persons, and, seeing that mental temperament is largely determined by the blood, it follows that the diseases in question are largely induced through the blood.

In order to understand the close relation between mental temperament and mental disease we must bear in mind that the entire mental personality is built up around feeling; initially, mind is, indeed, nothing but feeling. Consider, for instance, the influence of feeling on conduct and thought.

The Influence of the Feeling on Conduct.

Our feelings are our psycho-motors; their purpose is to adapt the organism to its environment by means of the

skeletal muscular system. Pleasurable feelings prompt to beneficial activities—the endeavour toward; unpleasant feelings prompt to the avoidance of hurtful activities—the endeavour fromward. This driving or "conative" function of feeling tone constitutes the mainspring of consciously initiated activities throughout the entire animal kingdom, be the feeling a crude sensation, such as hunger, a crude emotion such as fear, or so subtle an emotional state as that which we term conscience.

Instances of psycho-motor activity. A flash of light causes blinking, tickling the nose causes sneezing, irritation of the skin causes scratching; a feeling of pent-up energy prompts to muscular activity; in certain affections of the nervous system, such as mania and hysteria, it may lead to violent outbreaks. The feeling of fatigue, on the other hand, impels to beneficent rest.

Hunger prompts to the food quest—selection being carried on by means of taste and smell, both of which are richly endowed with feeling tone—while the enormous motive power of the reproductive instinct is well known. The impelling power of emotional feeling tone is well illustrated by fear and anger—the one impels to flight or concealment, the other to the violent overcoming of an impediment in the way of conative promptings. As regards the other primitive emotions, disgust prompts to avoidance, curiosity to investigation, negative self-feeling to submissiveness, positive self-feeling to a masterly attitude, tender feeling to altruistic behaviour.

The Influence of the Feelings on the Thought.

When the thoughts are left to pursue a random course they are very largely determined by the feelings of the moment. The hungry man thinks of his next meal, the erotic man has erotic thoughts, the fearful man thinks of the object of his dread, the vindictive man resolves schemes of revenge, the man inflated with ambition lays plans for all sorts of impracticable schemes. The melancholic dwells upon his wretchedness, his incompetence, his unworthiness. The inflated self-assurance of the general paralytic begets corresponding thoughts.

Of great significance in regard to the influence of the feelings on the thoughts is their power not only to beget but to hold the thoughts pertaining to them. Every thought is suffused with a certain amount of feeling tone, and the more highly it is coloured with feeling the more does it obtrude itself. Imperative and fixed ideas are in large measure the result of the morbid intensity of the feeling which generate and sustain them.

The Influence of the Blood Plasma on Mental Temperament.

A person's mental temperament or disposition may be defined as the sum total of his emotional dispositions. We have seen that the blood plasma influences both the sensations and the emotions, and this prepares us for the conclusion that it plays a large part in determining mental temperament. What may be termed the habitual constitution of the blood is peculiar for each individual, and is largely responsible for the habitual feeling note of each. The difference in the feeling note of different persons is, no doubt, in part due to differences in the nervous organ played upon, but I can have little doubt that it is in the main due to differences in blood constitution. I believe that if two persons were to exchange bloods they would in large degree exchange temperaments, and that such changes in temperament as characterize the successive phases of the vital cycle are in the main determined by the blood; that if the blood of an adolescent became senile he would feel like an old person, and that if the blood of an old person became adolescent he would feel young again, although the damaged instrument would not yield quite the same tuneful music as of old.

On the same lines we may explain the differences of racial temperament, as illustrated by the Celt and the Teuton, the Negro and the Mongol; as also the striking temperamental differences observed in the different species of dog—for instance, between the Aberdeen terrier and the spaniel, or again between the chow and the pekinese.

While feelings—largely initiated through the blood—beget thoughts, thoughts may on their part beget feelings; good news may cause intense joy, bad news intense misery. But even here the influence of the blood has to be taken [illegible] which a person responds to good or bad news depends upon his mental temperament, which, again, is largely dependent upon the blood. It has in the next place to be remembered that the influence of thought on feeling may to a large extent be brought about through the blood, notably through the medium of internal secretions: thus bad news, by exciting fear, may liberate secretions the effect of which is to cause a depression of bodily activity, whereas good news, by exciting joyful emotion, may release secretions having the opposite effect, and in each case the altered emotional state may be sustained by the altered state of the blood.

In insisting upon the important part played by the blood in the genesis of the neuro-psychoses I am not contending that psychic factors, factors making a direct mental appeal, take no part in their causation, nor that psychic means are wholly unavailing in their treatment; but I do contend that psychic treatment is impotent to alter the morbid emotional state which is the essential etiological factor in the more malignant forms of these disorders—those, I mean, which break out under the most favourable mental environment—for no mental treatment is capable of rectifying the peculiar condition of the blood which is responsible for it. This can only be done by material means. Who will engage to correct by psychic means the morbid emotionality of the sufferer from Graves's disease, myxoedema, or chronic alcoholism? Who, again, will engage to change the inborn temperament which is mainly responsible for the more intense form of hysteria, hypochondria, or anxiety neurosis? Patients thus afflicted are from the very beginning endowed with a peculiar mental temperament.

A due consideration of the facts and arguments adduced in this paper brings home to the mind the preponderating influence of the blood in the causation and treatment of the neuroses and psychoses.

Let the neurologist and psychiatrist concentrate their attention on the blood.

SOME POINTS IN THE MANAGEMENT AND TREATMENT OF PARAPLEGIA.

BY

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It can be said with justice that the general care of paraplegic patients is often allowed to be determined and carried out by the nurse without the necessary supervision that its importance demands. The physician is apt to focus his attention too exclusively on the treatment of the pathological process underlying the lesion of the spinal cord or cauda equina, and to forget that the life of his patient largely depends upon the prevention of septic complications. A discussion on the management of paraplegic patients may therefore serve some useful purpose even if it only revives and brings into proper perspective knowledge much of which is already common property. In a short paper it is impossible to deal with more than a few outstanding points in relation to the general treatment of severe paraplegia, and I propose to confine the discussion to the care of the skin, the paralysed bladder and rectum, and the general health of the patient.

The Paralysed Bladder and Rectum.

With the onset of severe paraplegia urine and faeces are retained from atonic paralysis of the detrusor muscle of the bladder and large bowel and tonic contraction of the vesical and anal sphincters. The period of retention lasts, as a rule, in the case of spinal lesions, for two to three weeks, but where the lesion involves the sacral nerve roots it may persist for over a year. Under favourable conditions, however, retention is sooner or later followed by periodic micturition and defaecation, each evacuation being the result of active contraction of the detrusor with simultaneous relaxation of the sphincter. At first the activity of the vesical and rectal muscles is feeble, and a proportion only of the urinary and faecal contents is expelled; but in the absence of complications the periodic involuntary action of the bladder and rectum within a few weeks may become perfect, as has been demonstrated by experimental measurement.

It is during the stage of retention of urine that severe urinary sepsis, the commonest cause of fatal toxaemia, is most liable to develop and, if present, difficult to control. Even when periodic micturition has begun the danger is still great so long as each motor act is ineffective in emptying the bladder completely. Residual urine rapidly decomposes and therefore must be withdrawn by catheterization, an operation which is never quite free from the risk of introduction of pyogenic organisms. It is only when recovery of the bladder has reached the stage at which contraction of its muscular wall expels all the contained fluid and artificial drainage is no longer required that the period of relative safety from severe infection of the urinary tract has been reached. Bearing this in mind, what form of local treatment for the bladder should be adopted until automatic micturition has become complete? The following requirements are essential:

1. *Evacuation of all the urine in the bladder at least every six hours by a method which, as far as possible, minimizes the risk of external infection.* It is often claimed that urine will remain sterile if instruments are not introduced into the bladder. Those who hold this view advocate that evacuation should be brought about by either allowing the urine to force open the sphincter and overflow from the distended bladder or by manual expression through the lower abdominal wall at regular intervals. Clinical experience, however, agrees with experimental evidence that such methods court disaster and should not be employed. Paralysed bladders, even in the absence of catheterization, are always infected with pyogenic organisms, which probably travel in the blood and lymphatic streams from the intestines and elsewhere. But provided that urine is not allowed to remain in the bladder for more than a few hours and irrigation is systematically carried out, inflammation of the vesical mucosa may never become severe. These conditions, however, are not fulfilled by the methods for drainage we have just been considering.

Distension of the bladder must also be avoided for various reasons. In the first place, the rapidity with which pyelitis and pyelonephritis often develop after prolonged distension of a paralysed bladder, and the results of experimental investigation show that back pressure of urine along the ureters has a deleterious effect on the kidneys, and may be quickly followed by the onset of septic nephritis. Second, stretching of the bladder wall appears to lower its resistance to organismal invasion. Third, vesical distension delays the onset of automatic micturition, and, if prolonged so that the detrusor muscle is seriously injured, may permanently prevent its appearance in cases of severe paraplegia.

These considerations therefore show that it is impossible to avoid the use of instrumental methods of drainage if accumulation of stale urine in the bladder and stretching of the detrusor muscle is to be prevented. Either of two methods can be employed with comparative safety provided that strict precautions are taken against contamination of urine in the bladder. Both depend upon catheterization per urethram, but in one the drainage is continuous and in the other it is intermittent.

Continuous drainage by a tied-in cathether, when Kidd's[1] technique is followed, is probably the best method for emptying the paralysed bladder. It must, however, be carried out by the doctor himself, and on no account be left to the vagaries of a male nurse. After having carefully cleansed the prepuce and glans penis and washed out the urethra, a sterile coudé gum-elastic catheter is passed along the urethra until about an inch of the instrument lies within the bladder. It is then anchored by strips of silk attached to the penis by adhesive strapping and to a safety pin which has been boiled and passed through the extra-urethral portion of the catheter. The urine is usually caught in a glass urinal, which must be kept scrupulously clean. But if the lower limbs are being periodically convulsed by vigorous flexor-adductor spasms, which tilt up the urinal and so cause wet beds, or if the patient is getting about in a wheel-chair, it is better to plug the catheter with a wooden stopper which can be removed every two or three hours by the patient himself to allow the urine to drain off. The catheter is left *in situ* for three or four days, at the end of which time it is removed, cleansed, boiled, and then reinserted.

The second method of drainage—that of periodic catheterization—has the disadvantage over the tied-in catheter in that, because the operation of inserting the instrument into the bladder is carried out more frequently, the risk of infection from external sources is increased. But if due care is exercised serious trouble need not arise. To ensure against stretching of the bladder wall the urine should be drawn off at regular intervals of not longer than six hours.

The safety of either of these methods for evacuation of urine depends upon the strictest attention to cleanliness. Preparatory to catheterization all vessels—bowls for solutions, urinals, etc.—ought to be boiled, and the parts surrounding the urethral orifice must be covered with clean and preferably sterile towels. Adequate cleansing of the penis, especially the glans and prepuce, is very important, and the urethra must invariably be washed out—a measure which is too often neglected. For this irrigation the most convenient apparatus is a glass douche bottle containing a solution of oxycyanide of mercury 1 in 4,000 suspended about two feet above the patient. Rubber tubing connects the bottle with a glass nozzle the end of which fits the orifice of the urethra. The stream of fluid is controlled by clipping the rubber tube. The posterior part of the penile urethra should be compressed between the finger and thumb in order to prevent the passage of fluid into the bladder.

The hands of the operator must be washed as carefully as for a surgical operation, and sterilized rubber gloves ought to be used in passing the catheter.

2. *Irrigation of the bladder.* In addition to effective drainage of the bladder, irrigation should be carried out night and morning. The chief purpose of lavage is to remove any sediment that may have collected in the bladder, and although it is preferable to use fluids with antiseptic properties they must be non-irritating. It is safe to employ oxycyanide of mercury 1 in 4,000, potassium permanganate 1 in 4,000, or a half-saturated solution of boric acid. The boric acid solution heated to about 105° F. is particularly useful when the urine is alkaline, as it dissolves the phosphatic débris which under such circumstances is often deposited on the mucosa.

When irrigation is first carried out, in order to avoid stretching the muscle, the amount of fluid which the bladder can hold under the least pressure should be ascertained and never exceeded. The fluid should be run into the bladder under little pressure, best through a short funnel inserted directly into the catheter. When the stage in recovery is reached at which an appropriate quantity of urine in the bladder excites contraction of the detrusor muscle much can be done by the exercise of this function to hasten the development of automatic micturition. For example, when during the process of irrigation the column of fluid in the glass funnel begins to rise the bladder should be allowed to evacuate as much of its contents as possible against the least head of pressure. At first a proportion only of the contained fluid will be expelled by the bladder in this way, and the residuum must be forced out by pressure into the pelvis through the lower abdominal wall. Sometimes the vesical reaction can be originated and strengthened by artificial means. For example, in certain cases of spastic paraplegia associated with flexor spasms of the lower limbs active contraction of the bladder is facilitated by extravesical stimulation. Thus a bladder which by itself reacts to a fluid content of 600 c.cm. may be excited to contract by scratching the sole of the foot or the inner aspect of the thigh when it contains less than half this quantity of fluid. Or again, stimulation of this kind may so reinforce the activity of the detrusor that it succeeds in emptying the bladder completely when otherwise a residuum of fluid would have been left.

The practical advantage of these observations is evident; for in such cases the patient, even when deprived of direct voluntary control over his bladder, can, by breathing deeply or gently scratching the skin of his thighs, excite reflex micturition and increase the strength of the muscular contraction evoked, so that evacuation of urine will be complete.

3. *Regulation of the reaction of the urine to litmus.* When the bladder is paralysed the urine, in the majority of cases, has a tendency to become alkaline, and the alkaline form of cystitis is usually more difficult to control than the acid variety. Thus it is a good general rule to keep the

urine definitely but not too strongly acid by the administration of drugs by the mouth. The most convenient preparations for this purpose are acid sodium phosphate 30 to 60 grains and ammonium benzoate 15 to 30 grains, given in solution three or four times a day. Urotropin as a urinary antiseptic is, in my opinion, an overestimated drug. A great objection to its use is that it frequently leads to dyspepsia and loss of appetite, which is most undesirable in paraplegic patients.

As soon as automatic micturition is established, and has reached the stage at which complete evacuation of all contained urine occurs, artificial drainage can be stopped. Once this point in the clinical course has been passed one feels less anxious about urinary sepsis. Nevertheless, it is well to continue drug treatment, and a watch must be kept on the state of the bladder by examining the urine at least once a week. If, in spite of suitable precautions, acute cystitis and pyelitis should develop, appropriate treatment must at once be begun. For if inflammation of the urinary tract is allowed to became chronic acute exacerbations tend to recur at intervals of three or four weeks, and with involvement of the kidneys a fatal termination in uraemia is only a matter of time. Four-hourly irrigations of the bladder until the urine is clear should be combined with an attempt to change the reaction to litmus as quickly as possible by increasing the dose of acid sodium phosphate. Most patients will tolerate six drachms of the drug a day. If in severe and chronic cystitis lavage through a catheter is unsuccessful in cleansing the bladder, it may be beneficial to perform suprapubic cystotomy so that through-and-through irrigation can be carried out. Encourage the patient to drink large quantities of water to flush out his urinary passages, and if gastro-intestinal symptoms are troublesome exclude milk from his dietary. Vaccine therapy is, on the whole, disappointing in the treatment of cystitis.

A word in regard to the management of the paralysed bowel. As in the case of the bladder, care must be taken to prevent distension and ensure regular and complete evacuation of faeces. In general, aim at getting the bowel emptied once a day by giving an aperient at night and an enema in the morning. The amount of aperient should be adjusted to keep the contents of the rectum neither too firm nor too soft. Bulky laxatives, such as infusion of senna pods or a mixture of liquid paraffin and liquid extract of cascara, are best. When automatic defaecation has appeared an enema may be necessary only once in two days, and can often be entirely dispensed with.

The Prevention and Treatment of Bedsores.

One of the most grave complications which may follow gross lesions of the spinal cord and cauda equina is the formation of bedsores and the toxaemia which results from them. Several factors probably play a part in diminishing the vitality of the skin, and of these not the least important in the early stage of acute paraplegia is defective circulation in the paralysed portion of the body. Thus for the first two or three weeks after acute lesions of the cord, when reflex activity is depressed and the paralysed muscles are atonic, oedema tends to develop in dependent parts, the skin rapidly becomes discoloured if subjected to pressure, and venous thrombosis is not uncommon. Sluggish circulation is partly the result of impaired local vascular tonus, due to disturbed innervation, and partly the result of lack of that support to the vessels which is normally afforded by muscles in a state of contraction. Later, as tone in the muscles and reflex movements appear, the circulation in the lower limbs and the nutrition of the paralysed tissues improves; bedsores are then more easily combated. Bedsores are always more liable to develop in the presence of debilitating and febrile complications and when the skin is analgesic, for then abrasions and wounds fail to attract the patient's attention.

The prevention of bedsores is the nurse's province, but it is the duty of the physician to see that she knows how to carry out her work efficiently. In order that pressure on the paralysed parts is distributed equally the patient must be nursed on a water or air bed. Further, his position in bed must be altered several times a day, care being taken when he is placed on his side that one lower limb does not rest on the other. An overhanging rope or chain hung from a vertical support attached to the top of the bed is a necessary part of the nursing equipment. By pulling on it and raising himself in this way the patient can help the nurse to move his body, and in addition the exercise entailed is beneficial.

Sufficient time is not always expended in washing the skin, which should be well lathered with soap and water morning and evening. But removal of the dirt is not in itself sufficient. An indispensable part of the process is firm and prolonged friction with the palm of the hand to increase the vascularity of the skin. In giving instructions to the nurse this point ought to be insisted upon, and she should be told to pay particular attention to bony prominences. The whole operation is completed by dusting the skin with a bland powder.

Another of the nurse's duties for the prevention of bedsores is to see that the sheets are kept dry. The common causes of wet beds, spilling of urine, the involuntary evacuation of loose motions and profuse sweating, are most troublesome in cases where the lower limbs are the seat of spasmodic reflex movements. These when violent and flexor in form may excite reflex micturition, defaecation and sweating, upset the urinal and drag the unfortunate patient to and fro on the bed. Their control is mainly a question of prevention by removing the stimuli which cause them. Thus the bedclothes over the feet must be held up by a cage; undue tension on the flexor muscles should be prevented by placing a small pillow under the knees and supporting the feet with an adjustable foot-rest, and pressure of the urinal on the external genitals ought to be diminished as far as possible by suitable means.

In the event of bedsores developing their treatment must be persistent if septic absorption is to be minimized and healing promoted. Wounds of this kind are often regarded as hopeless and the treatment adopted is in consequence half-hearted. But although paralysed and insensitive tissues react feebly to infection they will heal in the majority of cases if they are assiduously treated by appropriate methods.

Care must be taken that the blood flow to and from the wound is not impeded by pressure on the surrounding tissues. This can be achieved by adjustment of the patient's position in bed and avoiding the use of rubber air-rings. For superficial clean sores stimulating dressings ought to be chosen, and dry gauze or gauze soaked in liq. aluminii acetatis 2 per cent., red lotion or a 2 per cent. aqueous solution of silver nitrate will meet this purpose. Bleeding from the surface of the wound, however, is an indication for the use of emollients such as equal parts of castor oil and zinc ointment or glycerin and compound tincture of benzoin. In the case of deep sloughing sores the dead tissues must be removed and the wounds thoroughly explored for hidden collections of pus. Excellent cleansing solutions for these wounds are eusol 1 in 4,000, liq. sodae chlorinatae (*B.P.*) and liq. aluminii acetatis 2 per cent. Fomentations are of value, but they must be frequently changed and used for not longer than a day at a time as they are likely to lead to the formation of pale, unhealthy granulations. A good general rule in the treatment of bedsores is to vary often the form of dressing and antiseptic fluid employed.

When a dirty sore situated over the trochanter of the femur or the ischial tuberosity has penetrated and infected the underlying bursa the sac must be excised, otherwise healing will not take place. Black blisters on the heels do best if the skin forming their outer walls is left as a covering for the wounds. They should be protected with clean dressings after the fluid has been removed through a small incision.

General Hygienic Treatment.

So far we have dealt only with the means by which the more dangerous complications of paraplegia can be guarded against and combated by local treatment. But the success of these measures depends primarily on the general vitality of the individual. Extensive paralysis of the body undoubtedly diminishes the vigour with which the body as a whole attempts to repel and react to infective agents. Therefore it is important to study how the health of paraplegic patients can be kept at the highest possible level.

Mentally and physically they thrive best in the open air, and whenever possible they should spend most or the whole of their time out of doors. For this class of case a

hospital built on sanatorium lines and surrounded with a large garden is the ideal, but even under ordinary hospital conditions a freer use could as a rule be made of the facilities for ventilating the wards.

Again, these patients are kept far too long lying flat in bed. As soon as the pathological process in the vertebral column or spinal cord has settled down they should be propped up in a sitting position for part of the day, and every encouragement given them to exercise the non-paralysed parts of their bodies. The therapeutic value of traction on an overhead rope has already been mentioned. With recovery of reflex functions other forms of exercise can be utilized. Patients who are unable to walk should, in the absence of bedsores and urinary sepsis, be made to wheel themselves about, first in a ward chair and later in a mechanical self-propelling chair. The latter especially is most valuable, for it allows them to get about by themselves in the open air. Some of my patients with severe lesions of the cord are in this way able to travel more than twenty miles in a day. A self-propelling chair, to be suitable for this purpose, must be light in weight, fitted with pneumatic tyres, a brake, and a three-speed gear. The pattern of the propelling mechanism is important, as it should provide for the exercise of the muscles of the trunk as well as those of the upper limbs. The best method of propulsion is by traction on a pair of upright handles, not simultaneously but alternately.

Lastly, the mental as well as the physical needs of the patient demand attention. Paraplegia is not only a chronic disorder but also one of the gravest incapacities with which we have to deal. Part of the trunk, the lower extremities, the bladder, rectum, and sexual functions may be permanently paralysed or their functions disturbed indefinitely. The patient may take some time to realize what this means, but sooner or later he is compelled to face the necessity for orientating himself anew to the everyday problems of life. Inability to cope with the situation inevitably results in depression and a desire to be free from the burden of living. He is in danger of becoming paralysed mentally as well as physically. Compulsory inactivity and dependence upon others weigh heavily upon him and make it necessary for the physician to devise ways and means by which the patient can gain a sense of comparative freedom and usefulness. Some form of work is essential, and it should have a definite aim in view if it is to be successful in holding the patient's interest and preventing morbid introspection.

In conclusion, I would plead for a wider realization of the duties of the physician in the care and management of paraplegic patients.

REFERENCE.

(1) BRITISH MEDICAL JOURNAL, 1919, i, p. 597.

DISCUSSION.

Mr. McCRAE AITKEN (Surgeon, Military Orthopaedic Hospital, Shepherd's Bush) said: If a surgeon may be allowed to speak in this Section, I should like to refer to some practical points raised by Mr. Riddoch. Taking them in order, the first is the question of cleansing the penis before catheterization. A further precaution against the possible formation of an ulcer at the meatus with its attendant risk of infection of the bladder is to cover the penis with a sterile dressing between the periods of catheterization, thus rigidly excluding extraneous sources of sepsis as if dealing with a surgical wound.

Passing next to the question of bedsores, Mr. Riddoch referred to thorough washing with a lather of soap and water. I would deprecate the use of water after the skin has once been thoroughly cleaned, because it is too softening to the skin. My practice is to have the skin polished with soap only. The hand is covered with a dry linen glove or cloth which is rubbed with soap, and the skin is polished with this just as an ostler cleans a saddle. This removes all the sweat to which he referred, provides the friction necessary for the nutrition of the skin, and leaves the skin smooth and polished. With regard to the danger of beds wet with urine causing bedsores, it is better to treat the patient in a double Thomas frame. The patient lies on a sheepskin pad or saddle, and the hand covered with soap at once polishes the patient's skin and the saddle, without any necessity for turning or moving a patient with a spinal injury.

The next point is the question of flexor spasms of the lower limb. Spasm occurs not as the result of tension, but as the result of change of tension which immediately elicits a muscle reflex in hypertonic muscles. The use of the Thomas double frame enables the surgeon to control these muscles in extension, so that they cannot get into spasm so easily, and in about six weeks the balance between opposing muscles is so far established by controlling the strong flexors that the liability to flexor spasm is largely eliminated.

In the same connexion I would strongly oppose flexing the knees and hips by a pillow under the knees, as this position produces actual contractures which must be overcome perhaps only by operation before the patient can be put on his legs. It must be remembered that most cases who can sit up and have recovered control of bladder and rectum can usually be taught to walk with splints provided the lower limbs are straight, so that the patient can balance on them. For this reason I also dread the habitual use of the ward chair as liable to produce flexion deformities.

As an orthopaedic surgeon who finds these cases in cripple homes let me beseech you, who are neurologists to prevent deformities which may afterwards cost us six months of hard work before we can begin to teach the patient to balance.

In reply, Dr. RIDDOCH again insisted that the first principle in the management of paraplegia is the prevention of complications. Bedsores, severe cystitis, and contracture deformities of the lower limbs are not, as is so often supposed, the inevitable consequence of grave spinal lesions; by the adoption of proper methods of nursing they can be prevented. The complications to which Mr. Aitken referred are the outcome of bad nursing, and should be looked upon as such.

Forcible stretching of the paralysed muscles in the stage of flaccidity as a means of preventing the appearance of spasmodic reflex movements and tonic contractures at the later stage of reflex activity is unjustifiable and unnecessary. Such treatment is based on wrong principles, and leads to permanent injury of the muscles.

THE PHYSIOLOGY OF SYMPTOM PRODUCTION IN DISEASE AND INJURY OF THE NERVOUS SYSTEM.

BY

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IN spite of many notable advances in neurology within recent years, we still know very little of the fundamental physiological factors underlying many of the common manifestations of disease and injury of the nervous system. For example, although it is known that minor derangements of the cerebral circulation may cause grave disorders of nervous activity, yet we lack any complete analysis of the processes actually at work in producing these disorders. The time at our disposal does not allow of a comprehensive discussion of the problems indicated in the title of this paper, but so far as is possible I should like to review the main principles at present adopted by neurologists in the interpretation of the symptoms of diseases of the nervous system, to emphasize the importance of a physiological method of approach to these problems, and, finally, to discuss in more detail one physiological factor of importance in the production of disorders of function in the nervous system.

As neurologists, we have somewhat rigid conceptions of the general principles governing the dissolution of function in the nervous system. Valuable as they have been to us in the past, these conceptions are now tending to become traditions which are no longer altogether favourable to advance in knowledge. Undoubtedly, too, there is a growing inclination to invoke phylogenetic and psychogenetic factors rather than purely physiological ones in the interpretation of clinically observed disorders of the nervous system. Among the more fruitful of our guiding principles is Jackson's theory of the dissolution of function. According to this, function is "taken to pieces" from the top—the most recently acquired, most highly specialized, and

least deeply impressed elements of function suffering earliest and most severely. Further, since dissolution is partial, there is not only loss of function, but also release of function. As Jackson has expressed it, "the lower levels of evolution remaining" are released from higher control, are unbalanced, and act excessively, giving rise to positive or release symptoms. In every case, therefore, we have a dual symptomatology including negative or defect symptoms and positive or release symptoms. To these two groups we must add a third small group, that of so-called irritative symptoms. All clinically observed disorders of function are commonly considered to be included within these three groups.

To Head and Rivers we owe the addition of a phylogenetic factor to this hypothesis. Their view is that the lower level release symptoms represent what have been primitive activities of the nervous system at an earlier stage of its phylogenetic development. For example, protopathic sensibility and the mass reflex of spinal man are to be regarded as approximating in character and form to the normal sensori-motor reactions of some hypothetical primitive animal. In his recent book, *Instinct and the Unconscious*, Rivers has fully developed this biological conception of the "protopathic animal." In a somewhat loose way, phylogenetic ideas have been popular with Continental neurologists for some years, and we frequently see various abnormal reflex reactions described as reversions to the tree-climbing antics of our ape-like ancestors. It is expressive of the speculative character of our phylogenetic hypotheses that Professor Karl Pearson should recently have adduced evidence that our forebears were not arboreal in habit.

An even newer fashion, if I may use the term, is to postulate a psychical origin for disorders of bodily function of the most varied kind; for, flushed with its triumphs in the realms of the psychoneuroses, clinical psychology is now boldly attacking the problems of organic disease. Thus, we have the pernicious vomiting of pregnancy and infantile constipation at one extreme, Jacksonian epilepsy and disseminated sclerosis at the other, all attributed to psychical factors. Perhaps the criticism that the hypotheses at present dominating neurological thought are largely unfavourable to progress, needs further explanation; it will certainly meet with opposition. As far as Jackson's hypothesis is concerned, the chief danger probably lies in its being accepted as a universal law. Can we assume that defect and release explain all the symptoms of nervous disease, except the few somewhat diffidently attributed to irritation? It seems improbable. For example, in the present state of our knowledge it is not possible to give a satisfactory interpretation of the symptom-complex of paralysis agitans on this basis. As for the phylogenetic school, we must remember that its hypotheses are purely speculative, rarely find any support from comparative anatomy or physiology, and cannot replace investigation on scientific lines.

There are even greater objections to the undiscriminating application of the psychological method in so far as it pretends to determine the origin of disorders of function in the nervous system. Even in the case of the highest nervous functions Pavlov has strongly emphasized, and has indeed demonstrated, by his remarkable work on conditioned reflexes, that, in his own words, "it is necessary that the fundamental and guiding principles should be purely physiological ones." Although it may be no easy matter to decide exactly where physiological methods must give place to psychological ones, yet there can surely be no doubt that before we have recourse to the purely verbal resources of the psychologist we must exclude the presence of physiological factors. Jeliffe has provided us with a good example of the grotesque conclusions which may arise from the psychological investigation of a physiological problem. From the psycho-analysis of a small number of patients suffering from disseminated sclerosis Jeliffe concludes that the disease is the result of a defective power of psychic symbolism. As a consequence the affect of the individual is denied a normal and unrestricted outlet and discharges its "energy" downwards into the "somatic pathways" of the nervous system. These, being already in full activity, are overloaded and wrecked, the wreckage appearing as patches of exudation with subsequent sclerosis. Here "psychical energy," whatever it may be, is used as synonymous with physical energy. To assert that a man might coagulate his protoplasm by the heat of his anger would not be more ridiculous. Quite apart from obvious and common absurdities of this kind, psychological explanations must always be unsatisfying. For example, are we any wiser when we are told that the phenomena of an epileptic convulsion symbolize an attempt on the part of the epileptic to take refuge from the storm and stress of life by a return to the shelter of the maternal uterus?

Therefore one turns with relief from these abstract and speculative points of view to the less familiar discussion of physiological factors in the production of symptoms of disease. In this connexion the recent remarkable discoveries in the physiology of respiration promise to be of great interest and importance to us. Among these discoveries that of the regulation of the Hering-Breuer reflex by the chemical reaction of the blood, as Haldane has revealed it to us, affords a striking example of the subordination of a reflex reaction to a chemical non-nervous stimulus, in this case the hydrogen ion concentration of the blood. Not less important is the conception of anoxaemia, or oxygen-want, as it affects the nervous system. The extreme sensitiveness of the nerve cell and the synapse to anoxaemia has long been recognized, and by physiologists has been extensively investigated; yet we may search neurological literature in vain for any thorough discussion of a factor which, when present, influences the whole activity of the nervous system.

In anoxaemia the cells lack sufficient oxygen for their metabolic processes. The shortage may be due to a low oxygen tension in the blood, such as occurs at high altitudes and when the lungs are not being properly ventilated. We speak of this as the anoxic type. It may also depend upon deficiency of haemoglobin in the circulation, as in anaemia, or in carbon monoxide poisoning, when much of the haemoglobin is not free to take up oxygen. This is the anaemic type. Finally, the blood may be normal, but its supply to the tissues may be defective—the so-called stagnant type of anoxaemia. For some years observations have been accumulating on the psychical and neurological symptomatology of anoxaemia. In acute anoxaemia, however produced, there is distinct impairment of the highest cerebral functions; defect of memory, of attention, and of judgement, associated with marked emotional disturbances, such as pugnacity, obstinacy, and extreme irritability. Fixed ideas are common. In some subjects the symptoms of alcoholic intoxication are closely reproduced. On the lower levels we have muscular spasms and twitchings, weakness, tremor, and ataxy, with paraesthesiae and sensory impairment. Visual and auditory acuity are diminished. All these effects are transient and pass off on return to normal atmospheric conditions. We may conclude, therefore, that acute anoxaemia of short duration does not give rise to permanent defects of function.

Of the effects of chronic anoxaemia very little is known, and it is this form which we might expect to be of greater importance to us as neurologists. On the whole, the symptoms seem to resemble those of fatigue rather than those of alcoholic intoxication. A study of the nervous system in the various clinical conditions in which chronic anoxaemia obtains is urgently called for.

Many interesting details on all these points are to be found in the original papers of Haldane and his coworks, in those of Barcroft, and also in the reports to the Medical Research Council by medical officers who served with the Air Force in France during the war.

Anyone may reproduce for himself very readily some of these symptoms by a two-minute period of forced breathing. The effect of this is to wash out CO_2 from the blood, and thus to render the oxyhaemoglobin less easily dissociable. A state of relative anoxaemia results. Towards the end of the period of forced breathing marked carpo-pedal spasm and tonic spasm of the face and jaw muscles develop. The direct and the electrical excitability of the affected muscles increases, the tendon jerks increase in force, amplitude, and duration; while in the ensuing period of apnoea there is extreme weakness, ataxy, and tremor. As far as can be determined sensation is also impaired. In short, the symptom-complex of tetany is closely reproduced.

The effects of anoxaemia have been extensively studied in the spinal animal. It has long been known that slight grades of asphyxia increase the reflex excitability of the spinal centres. Kaya and Starling demonstrated that in this condition oxygen-want and not CO_2 excess is the

essential factor, but Mathison's observations indicate that minimal degrees of CO_2 excess may also have a stimulating effect. Slight asphyxia in the spinal cat leads to the spontaneous appearance of the scratch reflex. After posterior root section motor discharges still continue, indicating that a true hyperexcitability of spinal grey matter exists. Pilo-motor discharge and sweating are even more readily elicited than limb movements, so that with suitable grades of anoxaemia we can provoke simultaneous motor, sudorific, and pilo-motor reflexes. Associated with these the passage of urine has also been observed. In other words, a true mass reflex may be obtained from the spinal cat. Under deeper grades of anoxaemia co-ordination breaks down and tonic motor discharges from all the spinal motor neurons occur, followed by loss of excitability and death. With such severe degrees I am not at present concerned.

Of purely clinical evidence leading to the same conclusions there is abundance. The effects of oxygen-want are seen in the convulsions of asphyxial states and in the epileptiform fits which often usher in a cortical thrombosis, or accompany free haemorrhage from any part of the body. The irritative symptoms which indicate commencing compression of the brain in traumatic intracranial haemorrhage are associated with cyanosis of the brain, that is, with deficient oxygenation. When compression renders the affected region of the brain anaemic, irritative symptoms give place to paralytic. In an admirable article in Choyce's *System of Surgery* Trotter has dealt with the symptoms of compression from the point of view of the cerebral blood supply. He points out that cyanosis is associated with so-called irritative symptoms, but that the term irritation is not accurate in this connexion, for we are dealing, not with excessive stimulation, but with a true increase of excitability of the nerve cells. For example, the Jacksonian fits, which may arise in a case of depressed fracture over the motor cortex, depend, not upon irritation of the brain by indriven bone, but on compression of the cortex and interference with its circulation. There is no evidence that mechanical stimulation of the motor cortex can excite response. These observations confirm the conclusion, experimentally reached, that the initial reaction of the central nervous system to minimal degrees of oxygen-want is the development of an increased excitability, while paralysis of function follows more severe grades.

An interesting point seems to emerge from the analysis of these nervous symptoms. Side by side with increased excitability and over-response there is always impaired efficiency of function. Take the coarse movements of a Jacksonian fit resulting from compression of the motor cortex. They are clearly a travesty of the finely adapted purposive movements normally meditated by this region of the brain. Here, surely, there is no question of defect and release. It seems that the discharges from a hyperexcitable centre are not only exaggerated but they are also qualitatively altered—and this for the worse—and it is extremely doubtful if so-called irritative symptoms ever occur apart from distinct impairment of functional efficiency. If this conclusion be just, we see a group of phenomena to which Jackson's hypothesis cannot be applied, and a source of fallacy if we do apply it universally.

Clearly, then, all these observations are of importance to clinical neurology, though in the present state of our knowledge we cannot state how far-reaching this importance may be. It is not my intention at the moment to prove the importance of anoxaemia as a factor in the causation of disorders of the nervous system, but rather to urge its adequate consideration and investigation. All the evidence indicates that in the primitive character of sensitiveness to oxygen-want on the part of the central nervous system we have a fundamental and potent factor in the production of disordered nervous activity.

Let me conclude with an example of a symptom-complex to which anoxaemia may provide the clue—a clue not supplied, in my opinion, by the accepted phylogenetic interpretation. I refer to the "mass reflex." After transection of the spinal cord in man the isolated lower half of the cord enters at once into a state of profound spinal shock, in which reflex activity is, for the time, almost in abeyance. Emerging from this the cord passes on to a phase of intense reflex activity. Head and Riddoch, to whom we owe all our knowledge of the condition, find that when once activity is established, almost any stimulus applied to the body or limbs below the level of section evokes a sudden, stereotyped, and explosive outburst of reflex responses. It includes powerful bilateral flexion of the legs, contraction of the abdominal muscles, an outburst of sweating, and partial evacuation of the bladder. They call this complex response the mass reflex. They regard it as a release phenomenon in which lower motor centres freed from higher control react excessively. In addition, they add that it represents a primitive form of defensive reaction to harmful stimuli, which, after an age-long suppression in man, or "permanent inhibition," to use Head's own words, now reappears in its primitive form.

There seem to be several grave objections to this interpretation. In the first place, it may be doubted whether the conception of "permanent inhibition" as a normal process has any foundation. Secondly, the nervous system in known primitive animals, such as the sea anemone, hydra or insect, never shows an activity of this coarse, explosive and ill-adapted kind. Even the primitive nerve net of the hydrozoa is, as Parker has shown, capable of effecting finely graded and accurately localized responses. Delicacy of organic regulation of function is universal throughout the animal kingdom. In short, all the facts of comparative physiology are against such a view. Thirdly, it is difficult to see a useful protective function in a response consisting of squatting, sweating, and micturating to each and every stimulus, especially when we bear in mind that the protopathic animal has no power of localizing stimuli.

Let us therefore consider the mass reflex anew. In the stage of reflex activity the isolated portion of the cord responds to any stimulus by firing off at maximum intensity, and in a form which does not vary with the site of stimulation, every reflex reaction of which it is capable; motor, pilo-motor and sweating. The associated passage of urine is probably not a true act of micturition, of which the divided cord appears incapable, but depends upon the violent contraction of the abdominal muscles accompanying the mass reflex. Thus in one of Head and Riddoch's cases the abdominal muscles of one side alone took part in the reflex, and it was only when the reflex on this side was elicited that the passage of urine was observed, although the sweating was bilateral.

Therefore, all that the clinical evidence allows us to say is that the divided cord is now in a state of marked hyperexcitability, so that there is a simultaneous discharge of reflex reactions which are in no sense allied, but comprise all the reactions of which the cord is capable. Here then we have a condition apparently identical with that obtained in the spinal cat with suitable grades of oxygen starvation. Is it possible that in man under these conditions a similar process is at work? There is some evidence to this effect. We know that after division of the spinal cord the nutrition of all the tissues below the level of section suffers. The nerve cells of the cord do not escape, but show the chromatolytic changes described as "isolation dystrophy." As the most highly specialized tissue, we might expect the nervous system to suffer most severely. How far this defect of nutrition may reproduce or resemble the effects of anoxaemia, with its resulting formation and retention of acid metabolites in the nerve centres, we have no direct evidence to tell us, for the problem has not been investigated from this point of view. Nevertheless, the striking similarity of the mass reflex in man to that obtainable in the spinal animal, together with the known nutritive disorders of the cord in man, constitute strong presumptive evidence that the condition in the two cases has a common cause.

In conclusion, there seems no doubt that our first line of attack upon the problems of disordered function in the nervous system must be physiological. The psychical disturbances produced by anoxaemia are but one of many indications that, despite the reproaches and exhortations to reform with which in its youthful impetuosity the psychogenetic school overwhelms us, we cannot afford to abandon the help of the rapidly increasing wealth of physiological knowledge in favour of the verbal methods of research and the allegories of clinical psychology.

Dr. Riddoch said that if the reflex reactions in spinal man are to be closely compared with those of animals similar experimental conditions should obtain. It was never claimed by the original investigators of the "mass

reflex" that the complete reaction could be evoked in animals possessing an intact and fully developed nervous system. In the human infant, however, during the first few weeks of life it is sometimes possible to excite a reaction to harmful stimulation of the foot which shows many of the features of the mass reflex. Thus when a toe is pinched the lower limbs and trunk become strongly flexed and evacuation of urine may occur. Dr. Walshe's explanation of the mass reflex as being an expression of a hyperexcitable state of the spinal cord is not by itself entirely satisfactory; for although the reaction is excessive and involves a large muscular field, strong stimuli may be required to evoke it, and the latent period is often of considerable duration.

EPILEPSY FROM THE PSYCHOLOGICAL STANDPOINT.

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On account of its peculiarities epilepsy is of great social importance, and has from earliest times arrested the interest of the medical profession. An almost innumerable succession of hypotheses have been put forward to explain its etiology, yet even at the present time it remains one of the least understood of morbid phenomena. Unfortunately earlier investigators so concentrated their attention upon the convulsive paroxysms that they neglected to study the epileptic as an individual. Thus, as all seizures are essentially alike, the idea grew up that there could be but one epilepsy, also that the patient was only epileptic at the time of the seizure. This paralogism was not conducive to successful therapy, with the result that a majority of physicians have come to regard the epileptic as incurable and a bore, who is to be dismissed as soon as possible with a bromide mixture and a gloomy prognosis.

It has long been recognized that while in a small group of epileptics a diversity of physiogenic lesions can be demonstrated, a yet larger group exists in which no such factors are definitely inculpated. Hence arose the broad classification into symptomatic and idiopathic epilepsy, according to which the physiogenic lesion is regarded as causal in the so-called symptomatic group, while ignorance is the ground for using the label idiopathic. This fairly represents the contentions of Redlich, the great protagonist for the exclusively organic causation of epilepsy. Such an attitude seems curious when we reflect that any of the so-called causes may be present without producing epilepsy and vice versa. But the history of medicine shows many parallels to this line of thought, which is the curse of causalism.

More recently investigators have widened the scope of their study and have paid attention to the epileptic as an individual, a personality. With this the overwhelming prominence of the seizure has ceased to obscure our view, and we have come to regard epilepsy as a syndrome. Further, the new method of approach has revealed the etiological determinants, in any given case, to be multiple, not single. Thus we should more correctly speak of the conditions which in combination may produce the epileptic syndrome than of the cause of epilepsy. Believing, as many of us now do, in the multiplicity of conditions which contribute to the final clinical picture of this morbid state there is no warrant for ignoring the important influence which, in any given case, any of the so-called causes of symptomatic epilepsy may have. But at the same time we realize that it alone is never sufficient, and that each epileptic personality must receive careful individual study from every point of view. The matter might tersely be expressed in a formula as follows: (*a*) psychological factors + (*b*) physiological factors + (*c*) anatomical factors + (*d*) other factors (produce) = epileptic syndrome.

Since the several factors may be present in varying number and proportion in different cases the need for studying the individual epileptic is clear. Healy, in treating of crime, asks: "Who can tell whether the person who exhibits antisocial (sexualistic) tendencies is the victim of an excessive output from certain internally secreting glands, or of obsessive mental imagery, or of predisposing anatomical conditions, or of various environmental and physical experiences?" The answer, which applies equally to our subject, would seem to be that in any given case several, possibly all, of these factors are present as conditions determining behaviour. Having said so much, I may pass on to a more detailed consideration of psychological factors without being accused of ignoring physiogenic ones, which are admittedly active in varying degree in different cases. My purpose in this short paper is confined almost exclusively to a consideration of psychological factors because their enormous importance, particularly from the therapeutic point of view, has until quite recently not been appreciated.

Being now free from the limitation imposed by devoting attention exclusively to his seizures, let us study the epileptic in his interparoxysmal periods. Aschaffenburg has laid stress upon the moodiness which, independent of seizures, characterizes the epileptic. Grasset also noted that, "on the one hand, epileptics are sombre, taciturn, defiant, suspicious, always ready to fly into a passion, . . . on the other hand, they are obsequious, wheedlesome, full of effusion and gentleness." Vogt similarly found the epileptic character to be "a peculiar mixture of mutually antagonistic components." So much is this the case that Féré considered the character of potential epileptics to be sufficiently anomalous to justify a suspicion of the disease long before actual paroxysms manifested themselves.

Thus we see that the epileptic personality is notably very variable in his mental and emotional states. To know him one day does not enable us to predict what he will be like on the morrow. All we can be sure of is that his behaviour will be irregular and moody, and that he will exhibit selfishness and lack of control. The above characteristics show us the foundation for Lombroso's famous dictum that "the criminal is essentially an epileptic, even though he shows none of the ordinary signs of the disease." This dictum, though literally untrue, has been recognized by many—Tarde and Stekel, for example—as possessing deep significance. It is, however, to Pierce Clark that we owe the most penetrating and illuminating study of the epileptic mentality. As a result of his intensive observation and psychological analyses Clark has not only confirmed the view of Féré that the potential epileptic exhibits definite character traits, but has proceeded further to elucidate the psycho-biological basis underlying them and conditioning the seizures or other equivalents.

The essential features of the epileptic make-up may be summarized as follows: The epileptic shows an extreme hypersensitiveness or irritability associated with an exaggerated egoism and obstinacy. He is consequently unable to adjust himself to the unpleasant demands of his environment. Equally, however, he is not able to indulge his crude egoistical tendencies in society. A failure of integration therefore results, which expresses itself as a lapse of consciousness, convulsion, or "equivalent." Thus the seizure may be regarded as a regressive reaction away from stressful reality. The difficult or painful adjustment is thereby neurotically evaded, but, as with all such failures of adaptation, a heavy price must be paid for the evasion. Naturally this obstinate refusal to adapt is met with in varying degrees of intensity. An individual who refuses to adjust at all and whose integration thus breaks down even in face of slight environmental stress must be regarded as a highly psychopathic personality. Such an one, unless his attitude can be modified, will not go far, and characteristically we find the highest incidence of epilepsy in the first decade of life—a time when integration is but poorly developed and the world of phantasy is more real psychologically than is objective or external reality.

I have taken above the case of an individual whose make-up is such that from infancy he inflexibly refuses to make any effort at adjustment and yet demands of his environment all the advantages which adjustment would secure. Let us next consider those who possess in lesser degree the fundamental epileptic mentality. They will naturally require greater stress in one form or another before the characteristic reaction is brought into play. Here we see the importance of physiogenic conditioning factors; for an individual with a slighter degree of the essential epileptic make-up may have his adaptive ability diminished by the effects of intoxication, trauma, etc., which would in the equation previously given come in as increments to the (*b*), (*c*), or (*d*) factors. To take an example which on several occasions I have observed in

women. The stress of the menstrual period may be just sufficient to upset the balance so that at this period the left-hand side of the equation becomes equal to (produces) the epileptic syndrome. The disturbances associated with puberty may, in a predisposed person, similarly give rise to augmentations of stress with consequent maladaptation. (I may note here the frequency with which epilepsy is correlated with precocious over-development both of general physique and sex attributes.) Of smaller influences acting in this way, overeating and constipation are often sufficient to overbalance an epileptic personality.

There must always be a relationship between the degree of temperamental defect, the stress of the environment, and the (*b*), (*c*), and (*d*) factors, in order that their sum may be adequate to produce the epileptic syndrome. But this relationship varies from individual to individual; hence, each case requires close individual study. We might conceive a series in which at one end the psycho-biological instinctive defect was so great as to render other factors almost negligible, while at the other end a severe organic lesion might be required before the left hand of the equation would equal (produce) the syndrome. Intermediately, though in my opinion with a large preponderance towards the former end, would come the bulk of our cases. To look at the matter in this way helps us to understand how it comes about that the psychopathologist and the organicist each considers that a complete explanation of the syndrome may be arrived at exclusively from his particular standpoint. Each standpoint is valuable so long as we do not develop or retain a blindness for the other. Unfortunately, medicine, like theology, has continually suffered from narrow-mindedness. The refusal to appreciate and adapt to light gained from a new point of view is capable of producing in some medical men a lack of co-ordination not altogether unlike the reaction of an epileptic. It is regrettable that such failures occasionally manifest themselves even at what should be purely dispassionate scientific discussions.

The war, which has done so much to open the eyes of most people to the importance of psychological factors, has not been without influence upon our subject. A majority of the epileptic soldiers had already shown indications of their defect before the war. But to consider apparently attributable cases: Eager, in reporting his observations on a hundred consecutive cases of head injury at the Lord Derby War Hospital, gives it as his opinion that in the small percentage which subsequently developed epileptic reactions, these were referable to psychic rather than physical causes—the cerebral damage allowing instinctive tendencies to regain the upper hand; he also reports good results from psycho-therapeutic treatment. Stanford Read, in treating of war psychoses, states "it is quite certain that typical epileptic seizures frequently took place as a frank reaction to particular environments and specific situations." Increased experience all tends to show that the dividing line between hysteria and epilepsy is more and more difficult to draw. I notice, for example, that the table showing the differential diagnostic points between the two, which, as a student, I learnt from the sixth edition of Osler, is omitted from the last edition.

Time does not permit me to give any illustrative cases in which the epileptic syndrome was definitely brought out by war conditions, but I published two such in the British Medical Journal of January 15th, 1921, and I have met with a large number of others. These cases are peculiarly amenable to our therapy, because the stress calling out the reaction is altogether unusually severe, and the patient, unless allowed to form an epileptic habit, is comparatively easily brought back to a state in which he can make ordinary adaptations to the stress of every-day life. This question of habit formation is of considerable importance, for, *caeteris paribus*, the longer any type of reaction has been practised the more firmly does it become established. In the words of Thorndike, "the likelihood that any mental state or act will occur in response to any situation is in proportion to the closeness of its inborn (instinct) connexion therewith, to the frequency of the connexion therewith, and to the amount of satisfaction resulting." I regret that time does not allow me to enter also into the question of the special mental conflicts revealed by psychological exploration made during the transitory confusion accompanying minor attacks, and by analytical study of post-convulsive dream states, epileptic deliria, etc. To gain an insight into this the series of original publications by Pierce Clark from 1908 to 1920 must be studied.

There remains the last and most important point—namely, therapeusis. Does the psychological standpoint help us here? Although a complete change of make-up is not possible, a great modification can be accomplished by suitable measures. Here again I must insist upon the need for individual study of each epileptic personality, for rational therapy can only be based upon the understanding thereby gained. Of course the physiogenic factors (the (*b*), (*c*), and (*d*), in our equation) must be sought for and, to the best of our ability, relieved. Sedatives also may have a limited value, though as generally employed as a routine and with a total lack of discrimination they undoubtedly do more harm than good. Attention to good hygiene is important and in its widest sense this serves to inculcate obedience to discipline, regularity, and self-control—factors we should be aiming at from every angle. In the youthful epileptic all repressive measures should be abandoned, and training should be concrete and practical, not abstract or intellectual. It should gradually accustom him to the type of stress which he seeks to evade but must be brought to meet. To accomplish this tact and patience founded upon a real understanding of his difficulties are essential.

The educational demands made of the epileptic must be less insistent and for shorter periods of time than with normal children, and, above all, must be entirely individualistic and elastic. Novelty and a wide range of appeal are imperative. Steady work, though not carried to the point of fatigue, is a great desideratum. Too often the doctor encourages the epileptic, who is by nature a shirker, to give up his work. This is a great mistake: the epileptic rather needs vigorous encouragement and a stimulation of interest in everything that will keep up spontaneity and contact with the world. In frankly developed, though not in the disintegrated, epileptics psychological exploration and explanation will be of much help in affording to the patient some insight into the conditions underlying his faulty method of meeting life. Personally I can testify to this in cases which I have thus treated without the addition of any drugs. McCurdy has shown that even the so-called epileptic dementia merely indicates that the patient has almost entirely withdrawn his interest from the external world, and that by means of stimulating interest this dementia may be dissipated. He mentions a case, diagnosed as a hopeless dement in two State hospitals, who has been completely well, both as to his freedom from seizures and his "dementia," for nearly twenty years. Féré and Treadgold also refer to similar cases.

Treatment involving so much individual attention and training is more easily carried out in special institutions. Parents, even if they have the requisite time, are generally at a disadvantage in managing the epileptic, and tend either to be over-indulgent or, by impatience and demanding too much, to increase the stress against which the patient is, in his characteristic way, reacting. A great deal can nevertheless be accomplished with the patient in his home surroundings, provided that the understanding and co-operation of those about him can be secured. Psychological study of the epileptic personality has indeed made our outlook much more hopeful than previously it could be.

To sum up: (1) Epilepsy is a syndrome conditioned by a multiplicity of factors; (2) each epileptic personality requires intensive individual study; (3) in a majority of cases the psychological factors are by far the most important, and an understanding of these is, for therapeutic reasons, essential.

THE EARLY DIAGNOSIS AND TREATMENT OF DISSEMINATED SCLEROSIS.

BY

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In conjunction with Dr. E. M. Dunlop and Dr. J. W. S. Blacklock, both of the Pathological Department, Glasgow University and Western Infirmary, I have been endeavouring, on behalf of the Medical Research Council, to attempt an investigation of disseminated sclerosis on

clinical, serological, and experimental lines. Dr. Dunlop has carried out the Wassermann reactions of blood and cerebro-spinal fluids of a large series of cases of the disease and control cases of other nervous diseases, while Dr. Blacklock has been mainly responsible for the pathological portion of the investigation.

The recognition of disseminated sclerosis, once the disease is fully established, presents little clinical difficulty, but if the diagnosis be withheld until so late a stage, irreparable damage has been done to highly specialized nervous tissue, and a return to normal function is an impossibility. It would therefore appear imperative, from the point of view of possible successful treatment, that the disease be recognized in its earliest stages. On interrogating advanced cases where the clinical diagnosis is beyond doubt, one almost invariably elicits a fairly definite symptomatology referable to the earliest stages of the patient's illness.

In the first place, in almost every case one obtains a history of derangement of bladder function, as evidenced by urinary frequency, precipitancy, slight retention, or incontinence—points which have recently been emphasized by Dr. Henry Head. In the case of male patients I have frequently noted in addition that at about the same period nocturnal seminal emissions are complained of. In the second place, one can usually elicit from such a patient a past history of temporary derangement of vision and diplopia.

The important question therefore arises as to what attitude we are to adopt towards such symptoms occurring in young adults, especially if accompanied by central colour scotoma, retrobulbar neuritis, inco-ordination of associated ocular movements, or transient fine nystagmus. Do such symptoms constitute a complex which may be due to various causes? Can derangement of bladder function and diplopia ever be regarded as purely functional, and, if so, what is the evidence in support of such a statement? If they are inexplicable on a functional basis, can they be interpreted as heralding the onset of any organic nervous disease other than disseminated sclerosis, neuro-syphilis being, of course, excluded? It appears to me that it is on the possibility of an answer to these questions that the hope of the early recognition of disseminated sclerosis depends. The symptomatology of onset is, however, frequently undetected or ignored, and after a considerable lapse of time the physical signs of permanent damage develop one by one, the loss of the abdominal reflex being early and almost constant. Finally the disease is definitely recognized, though it is by no means clear as to how many of the so-called cardinal signs must have developed before a diagnosis is held to be justifiable.

In a previous communication to the *Lancet* I have already referred to the fact that the colloidal gold reaction of the cerebro-spinal fluid would appear to be almost constantly positive in this disease. In a series of twenty cases of functional nervous disease which I investigated the cerebro-spinal fluid was negative to Lange's reaction, and should these facts be substantiated in a larger series of cases some help in early diagnosis might be hoped for from the use of this method of examination. The exact significance of the colloidal gold reaction is at present uncertain. It would appear not to be specific in the sense that the Wassermann reaction is specific, though, like the Wassermann reaction, it depends on some quality of the globulin fraction. I do think, however, that the test is of undoubted value to the clinician as indicating the first definite sign of involvement of the central nervous system in organic disease.

The question of treatment is inseparable from that of ætiology. Our results are in support of the view that in a large proportion of the cases presenting symptoms as described above, the condition is not of syphilitic origin, and further, that these have their basis in infection by some other agent which is probably specific in character.

In the experimental portion of the investigation blood (usually citrated) or cerebro-spinal fluid from cases of disseminated sclerosis has been used for primary inoculation into rabbits. Emulsions of brain and cord of certain animals which showed paralysis after inoculation have also been used for subinoculation into other rabbits. The material has been injected intraperitoneally and occasionally intratesticularly. Cerebro-spinal fluid from 8 cases of disseminated sclerosis has been injected into 15 rabbits, 5 of which (inoculated from 4 of the 8 patients) have shown definite nervous symptoms. Nine rabbits received injections of blood from 6 cases and 4 of these rabbits (inoculated from 2 of the 6 cases) showed nervous symptoms later. Six other animals have been inoculated with emulsions of brain and cord of rabbits, which developed nervous symptoms, and of these 2 have shown nervous symptoms. The other 19 rabbits have shown no evidence of nervous symptoms so far, the period of observation varying from nine months to seven weeks with the different animals. The symptoms which developed in the affected animals consisted chiefly of partial or complete paralysis of one or more limbs, the hind limbs being most frequently involved.

One series of experiments is of special interest:

On November 1st, 1920, rabbit 13 received intraperitoneally 4 c.cm. of the cerebro-spinal fluid from M. B., a case of typical disseminated sclerosis of two and a half years' duration. On May 17th, 1921, it was noted that the head was slightly bent over to the left side and the animal showed a tendency to travel in circles to the left. On May 22nd these symptoms were more definite, and by May 31st the animal had its head fully bent over to the left side, so that the left side of the face was parallel to the ground. It travelled in circles, always to the left, and had definite signs of cerebellar ataxia, continuously falling over to the left side and keeping rolling over in this direction unless supported by the wall of the cage. The rabbit was killed on June 7th. Subinoculation from this rabbit has so far been unsuccessful.

Rabbit 18, which had received 10 c.cm. of blood from the same patient on November 11th, 1920, by January 12th, 1921, had complete paralysis of the hind limbs and pare-is of the forelimbs. The animal was killed on January 13th and mixed emulsions of brain and cord in saline were injected into two rabbits (R. 25, R. 26). Rabbit 26, on April 9th, 1921, showed cerebellar symptoms similar to those of rabbit 13 of this series, the head being twisted to the left side. On April 11th, the cerebellar symptoms were well marked. On April 18th the animal was unable to stand upright, as it constantly rolled over to the left side. Nystagmiform movements of the eyes were also noted on this date.

Great importance has been attached to the behaviour of control animals, inoculated with other materials or uninoculated, which have lived in the same cages as these animals or in adjacent cages and have not shown any nervous symptoms. The controls living in the same cages were in the first instance normal rabbits which were kept under observation for four and a half months, and after that rabbits inoculated with normal blood and cerebro-spinal fluid and also blood and spinal fluid from a case of neurosyphilis which had been under observation for over three months. Similarly the rabbits used for other experimental purposes, numbering forty-five, which have lived in adjacent cages to the above for three months or more have shown no nervous symptoms. Histological and bacteriological investigation of the inoculated animals is also being carried out.

From the above experiments it would appear that a disease showing nervous symptoms can be produced in rabbits inoculated with blood or spinal fluid from cases of disseminated sclerosis. This disease can be transferred to other rabbits by an injection of an emulsion of brain and cord of inoculated rabbits showing nervous symptoms before death. It would therefore seem that in this disease we are dealing with an infective agent.

The credit for the pioneer work in connexion with the experimental transmission of disseminated sclerosis to animals is due to Dr. W. E. Bullock, who published his results in the *Lancet* in 1913 and stated that on the development of symptoms in inoculated animals, histological examination of the animals showed a complete reproduction of the appearances found in the human subject. There have been recently circumstantial claims by various Continental writers, notably Kuhn and Steiner, to have detected the presence of a spirochaete in inoculated animals, while Schuster and Siemerling have described similar spirochaetes in the brain of patients who have died of this disease.

It appeared to me, therefore, justifiable to adopt by way of investigation energetic treatment with potassium iodide, mercury, and novarsenobillon. The value of the first two drugs in the treatment of disseminated sclerosis was strongly urged by Marie thirty years ago; arsenic is in almost general use in this connexion and the employment of it in the organic form is not a seriously new departure. It is of interest to note that there is now a considerable mass of experimental evidence to show that when the drug

is injected intravenously arsenic can be subsequently detected in the cerebro-spinal fluid in a fair degree of concentration. The best results have been obtained by intensive mercurialization by inunction with the Aachen formula, combined with repeated intravenous injections of small amounts of novarsenobillon extending up to twenty or more doses, intramuscular injections of intramine and oral administration of potassium iodide.

In addition the treatment of the functional manifestations would appear to be worthy of investigation. In no case was serious ill effect noted. Some cases appeared to derive no benefit clinically from treatment. In others considerable improvement was noted as regards speech, gait, intention tremor and bladder control. Of course the question of natural remissions had to be considered, especially in the early cases which responded best, but it is noteworthy that even in later cases which showed no clinical improvement, the condition of the cerebro-spinal fluid as regards behaviour to Lange's test underwent a definite change in the direction towards normal. It might therefore appear justifiable to administer these drugs to early cases in the hope of arresting the further progress of the disease.

Dr. Riddoch laid stress upon the importance of a history of transient defects of function in the diagnosis of disseminated sclerosis at an early stage and the diverse symptomatology of the affection.

At the London Hospital the Lange colloidal gold test was being carried out by Dr. Marrack in his laboratory as a routine in the examination of cerebro-spinal fluid. Samples of fluid in a few cases of disseminated sclerosis had been examined, and when the test was positive it had yielded the so-called tabetic form of curve. The test was entirely negative in one typical example of the disease, and a mild tabetic curve had been occasionally obtained in diseases other than disseminated sclerosis and neuro-syphilis. He felt that although the test might in the future prove of great value, caution was yet necessary in estimating its diagnostic importance.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF TRAUMATIC ANIRIDIA.

The following case may be of some interest on account of its rarity. On March 29th, 1904, a man, aged 22, was admitted into the Londonderry Eye, Ear, Nose and Throat Hospital. He presented a rather peculiar appearance. His left eye looked as if a large black sloe or cherry were occupying the place of the pupil or anterior surface of the globe seen between the eyelids; on the right side was a normal eye with a hazel grey iris; the anterior chamber of the left eye was full of blood, which extended all around to the edges of the sclerotic and all over the posterior surface of the cornea. There was complete blindness of the eye, and no red reflex could be got by the ophthalmoscope. The patient, who said that he felt no pain in the eye, stated that some hours previously a piece of glass had entered the eye and had been pulled out.

The eye was douched and cleansed with a warm boric acid lotion and examined. There was a small insignificant closed and clean wound at the sclerotic margin of the cornea; there was nothing in the wound nor protruding from it, but the iris was completely absent. A drop of solution of atropine was instilled, to give perhaps some rest to the eye, which was then bandaged and the patient put to bed. During the two weeks taken for the absorption of the blood and clearing up of the parts no pain was experienced and there was no reaction or inflammatory trouble, showing that there had been no sepsis, and that the ciliary body had escaped injury. With and without the aid of the ophthalmoscope the ciliary body could be seen beautifully all around with its normal anatomical attachments and with no irregularity in its contour. The whole of the fundus was in a healthy and normal condition. There was no escape of vitreous and the lens was uninjured. The sight was good for distance and large print could be read. No trace of iris could be seen in any of the chambers, so that it must have been drawn out with the piece of glass through the small wound. That the aniridia might have been congenital was, for obvious and various reasons, after investigation, completely negatived. On looking over some works on the eye for a like case, I found only one case, related by Fuchs. In this case a small grey mass was found in one of the chambers after the clearing up of the parts. This was considered the remains of the iris, which had been completely detached by some accident, the nature of which is not mentioned.

Londonderry. W. B. Hunter, M.D.

THE IODINE TREATMENT OF GOITRE.

A good deal has been written on the action of iodine, used both internally and externally, as a therapeutic agent in goitre. I have used for a large number of years in the treatment of goitre both sodium and potassium iodide (I prefer sodium iodide), with a tonic such as syr. ferri phos. co. and syr. hypophos. co., also syr. ferri iodidi. In the valleys of east and north-east Lancashire the disease is endemic, especially in females, quite a large number being affected between the ages of 16 and 30 years, but there are a large number of cases over that age, and the largest goitres are seen in these cases. Another marked feature is that it affects males much less frequently than females; this is particularly true of the exophthalmic form. Males respond to the treatment much more quickly, consequently the duration of treatment is very much less than in females.

The method of administration of iodine may be a matter of opinion. I usually give 2½ to 3 grains of sodium iodide three times a day between meals, continued for about six weeks, then discontinued for about a month. The treatment is resumed, and so on for an indefinite period.

Large goitres disappear, some more quickly than others, and the treatment may have to be kept up for two or more years. Larger doses of the drug may cause patients —especially males, and more especially elderly males—to lose flesh quickly, but the weight is soon recovered on reduction or discontinuance of the drug. Measurements of the neck taken from time to time show that the swelling softens first and then grows smaller, and that the greatest and most rapid reduction takes place during the interval when the treatment is interrupted. Some of the cases have been under *x*-ray treatment for years; others have been advised to have the gland removed. I may have been fortunate in not having any that have required operative treatment, as all have cleared up with iodine.

When the risks and after effects of removal of the gland are considered, together with the possibility of having to take thyroid for the rest of life, the alternative of taking iodine for six months to two years, or even longer, is, in my opinion, preferable. If the iodine treatment were carried out generally the number of cases requiring operation would be very small. Exophthalmic goitre responds to treatment more slowly at first, and the other phenomena—cardiac, nervous, etc.—require separate attention, but these subside with improvement in the gland.

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TORSION OF THE TESTIS OCCURRING DURING OR IMMEDIATELY AFTER BIRTH.

The rarity of torsion of the testis at so early a period in life makes the following case of interest.

Mrs. F. gave birth to a full-time male child on June 5th, at 8 p.m. No doctor was present at the confinement, but the next day the nurse in charge noticed that the right testicle was swollen.

Eleven days later the child was admitted to the Children's Hospital. He had gained weight, was taking food well, and appeared to be in no distress whatever. The right testicle was hard, but possessed a certain elasticity suggestive of deep fluid. The scrotum had a dusky violet tinge, and the skin was adherent at the lower pole and towards the mid-line. The cord at the upper pole appeared to be hard and knotted. At operation the testicle and its coverings were removed together with the adherent part of the skin, and the cord tied at the external ring. Convalescence was uneventful.

The removed testis showed the typical plum-like appearance of gangrene, and in its centre contained some dark fluid. The organ appeared to lie horizontally, the constituent parts of the cord being separated and entering the organ along the whole

length of the surface. The twist in the cord was double that is, the organ had performed two complete revolutions from left to right in a horizontal plane. The adhesions between the external spermatic fascia and the dartos were quite organized, showing that the condition had been of some standing

I have little doubt that the condition was present some time before the nurse observed it, probably just before, during, or immediately after birth. The points of interest were: (1) The insidiousness of onset; and (2) the lack of constitutional disturbance.

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British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

At a meeting of the North Lancashire and South Westmorland Branch of the British Medical Association held at Kendal on October 26th, the President, Mr. A. S. Barling, opened a discussion on "The diagnostic value of abdominal pain." As viscera had no spinal nerves they would be expected to be insensitive to pain, and that this was so was illustrated by a case of obstructed colon, in which a side-to-side anastomosis had to be done hurriedly and the loop left outside; four days later the loop was cut without any anaesthetic, and no pain was felt excepting a slight hypogastric pain, which was reflected, not direct. Sir James Mackenzie had originated investigation into hyperalgesic points ten years ago; but as he was one of the most modest of men, his work received little or no appreciation. Any irritation of the viscera was responded to by sensation of pain in the spinal nerve whose distribution to the parietes corresponded with the affected viscera. Cutting did not give enough stimulus to initiate pain in the corresponding cerebro-spinal nerve area. The theory was that visceral irritation, carried to the spine, affected the neighbouring centre in the spine, which initiated an impulse to the afferent cerebro-spinal nerve. This was conveyed to the sensorium, and from there referred to the area of distribution of the corresponding cerebro-spinal nerve. Mr. Barling illustrated his remarks on an outline drawn by Dr. Somervell. He indicated the hyperalgesic points found in disease of the stomach, duodenum, appendix, large and small intestines, and also the gall bladder and kidneys. It was well known, he said, that although viscera were insensitive to pain, visceral pain was the most severe of all—for example, gall stones, kidney stones, and colic. A case was described in which the diagnosis of colon involvement, as distinguished from appendicitis, was made before operation from the situation of hyperalgesic points.

An interesting discussion followed. The President, in closing the discussion, welcomed the criticism, as he thought people only moved when they disagreed.

Dr. Livingston showed a test for sugar; he also showed photographs of a meningocele 7 in. in circumference at the junction with the skull, which was successfully operated on, the patient being a baby 8 weeks old. Dr. Craig showed a case of osteomyelitis, with numerous pyaemic foci, in a boy aged 11; amputation of the left leg at the hip had been necessary and the boy was now recovering. Dr. Henderson read a short paper on his experience as a school medical officer in Westmorland, giving statistics of the different diseases found.

Dr. Gibson thanked those who had read notes and shown cases, and Dr. Oldham complimented the organizers on a very successful meeting. The members were entertained to tea by the Secretary of the Kendal Division, Dr. J. Lang Cochrane.

According to the *Japan Medical World* the number of licensed dentists in Japan in February, 1921, was 6,409, or six times as many as there were in 1907; in addition to this about 600 dental students are expected to obtain their licences as dentists during this year. There are now twelve dental schools in Japan, four of them of the highest standing, although a dental college under Government control has not yet been established. Only two of the medical colleges attached to the universities have their own dental departments—namely, the Tokyo Imperial University and the Keio University.

Reports of Societies.

THE THRESHOLD OF THE KIDNEY.

In his presidential address to the Section of Therapeutics and Pharmacology of the Royal Society of Medicine, on November 8th, Dr. W. Langdon Brown emphasized the reciprocal advantages to be derived from co operation between the laboratory worker and the clinician. The Section constituted a common ground for workers in both fields, where criticism and comparison were possible. His address was largely a plea for more co operative study of this kind with regard to the kidney and its regulating mechanism; such a study could not fail to afford fresh guidance as to treatment. The function of the kidney was to keep the chemical composition of the blood constant, and the manner in which this was achieved was now beginning to be understood, with, in consequence, a better appreciation of the significance of certain departures from the normal performance of kidney function in disease. The three factors in the problem were the urine, the kidney, and the blood, and if the condition of any two of these was known, that of the third could be deduced. The kidney caused very little change in the material which it excreted; the formation of hippuric acid in the kidney was about the only known instance of such an alteration of chemical constitution. In glycosuria the kidney reacted in a curiously subtle way, while in albuminuria much might be learnt from a biochemical study of the blood. Certain biochemical tests had now been elaborated which enabled a comparison to be made between the condition of the urine and that of the blood, and a good deal of light was thrown upon the manner in which the kidney functioned. Here Dr. Langdon Brown gratefully acknowledged the large amount of biochemical work which Dr. Mackenzie Wallis had done in his own cases. He went on to enumerate and summarize Ambard's recent work on the physiology of the kidney. It was clear that there was a limit to the degree of concentration which the kidney could accomplish, but that limit was not reached under normal conditions. The more the parenchyma of the kidney was diseased the less was the power of concentration. This power fell after surgical operations (thereby accounting for the urinaemia which followed) and in gastro-intestinal conditions. In the toxaemic kidney Dr. Langdon Brown considered that the threshold was abruptly lowered by degenerative but not inflammatory change. Severe forms of this were seen in poisoning by mercurial salts, arsenic, cantharides, and uranium bichromate, and in the toxaemia of pregnancy. In cases of toxaemic kidney there was a marked increase of diastase output, and this must be due to the threshold of diastase being lower than normal. If the patient with toxaemic kidney could be kept alive, complete recovery might be expected; this condition did not lead to chronic nephritis

In the course of his address Dr. Langdon Brown projected on the screen a series of charts illustrating pronounced cases of kidney disturbance of various types. He said that one considerable factor in some cases of glycosuria was the delay in the storage of the sugar after it was absorbed. If patients were allowed starch which had been cooked in fat there was a much slower appearance of sugar than otherwise. In one case a child had nocturnal enuresis when the sugar threshold was passed, but if that threshold was not exceeded no symptoms ensued. Another case passed a large quantity of sugar following upon a period of pronounced mental agitation. A great fallacy in all these investigations was to base a conclusion on one single sugar test. He had seen a big fall in the amount of glycosuria as the result of a single "egg and vegetable" day. A rise of the threshold seemed to follow rather than to precede hyperglycaemia. Polyuria and increased thirst only occurred to the accompaniment of a considerable increase of the threshold. The hyperglycaemia could be abolished by giving phloridzin, and he would like to invite discussion on the question whether this drug was justifiable. He had not himself used it, but had relied so far on egg and vegetable diet. In conclusion, he mentioned that the polyuria of diabetes insipidus could be kept in check by injections of pituitary gland. Dr. Cow of Cambridge had

shown that water given by the mouth and absorbed by the gastro-intestinal tract was more active than the same quantity of water injected subcutaneously or intravenously, and it was possible that in the former case some ferment was taken up by the water, which had a direct stimulating action upon the pituitary gland.

Dr. Lapthorn Smith, in moving a vote of thanks, mentioned that sugar had been made to appear in the urine of a dog by scratching the floor of the fourth ventricle. He had always had an idea that the central nervous system played a part in the production of diabetes, and this seemed to be confirmed by cases in which the disease followed definitely upon some great nervous or mental strain. He also raised the question of whether the substitution of saccharin for sugar had any harmful effects.

Dr. Langdon Brown, in replying, said that he had always held that diabetes could not be explained without taking the sympathetic nervous system into account. He was not convinced that the pancreas told the whole story, and he had tried to bring forward such other evidence as he could in his recent Croonian lectures. With regard to saccharin, he thought it was better to get people to do without it, and most of his own patients preferred to avoid it, especially as it had no nutritive value.

SIMPLE ENLARGEMENT OF THE PROSTATE

At a meeting of the Medico-Chirurgical Society of Edinburgh, on November 2nd, the retiring President, Emeritus Professor F. M. Caird, gave his valedictory address, reviewing the work and some of the outstanding personalities of the society during the cycle of a hundred years just closed. Thereafter the new President, Sir Robert W. Philip, took the chair.

Sir David Wallace read a paper on "Simple enlargement of the prostate." He paid a tribute to the work of Freyer, who had made the operation on the prostate a practical one. He limited his subject to simple enlargement of the prostate, excluding conditions of stenosis of the prostatic urethra, the small fibrous prostate, and the malignant prostate. The exclusion of these conditions might be difficult, for the symptoms might be similar; cystoscopy was sometimes of help. Treatment differed according to a clinical grouping of the cases. In the early cases, where the symptoms of frequent micturition were not urgent, and the bladder was not distended although the prostate might be definitely enlarged, he did not recommend operation, for three reasons: because the prostatic enlargement was not necessarily progressive, because the symptoms did not always become worse, and because the operation was a serious one. In such cases palliative measures—for example, attention to the bowels and diet, avoidance of cold, care in completing the act of micturition, and the use of citrate of potash—might relieve and even cure the condition. In these cases he was against catheterization. It must be remembered that a proportion of these early cases (1 in 6) became malignant, so that they must be kept under observation. The second group, of more advanced cases, with increasing frequency of micturition and precipitate calls to urinate, but with a good state of general health, called for prostatectomy. The third group, of more advanced cases, where the bladder was distended, there was a large voiding of overflow urine of low specific gravity, and the general health was poor, required careful preliminary study before a decision as to treatment could be taken. The condition of the kidneys, as judged by the daily urea in the urine, and also the blood urea, must be ascertained. A daily quantity of urine of from 120 to 160 oz., with a specific gravity of 1003, and a distended bladder, called not for prostatectomy but either for catheterization or cystostomy, and preferably the former. Those cases in this third group in which the urine was septic were, in his experience, a less grave operation risk than the former, and in them it was his practice to do prostatectomy. As to the operation, he preferred the suprapubic to the perineal route; the latter was the slower operation, and the condition of the bladder could not be seen so well. Speed in the operation was a desideratum; he opened the bladder close to the symphysis, and in dealing with the emptied prostatic cavity he was careful to mould it, and occasionally to pack it, as a precaution against haemorrhage; for drainage he used a tube in the bladder and not a urethral catheter. Thomson Walker recommended a more open operation, so as to remove carefully all tags, and also to ensure arrest of bleeding; but he did not adopt this as a routine. It required more time; further, the danger of bleeding was rather from veins than arteries, and could be dealt with as above described.

Emeritus Professor Caird said the above classification of cases into operative and non-operative groups was valuable. The older the patient the greater the risk; but the risk was justified by the results in the successful cases. Mr. Miles said that age alone could not determine the question of operation, and cited cases where operation had succeeded in a man aged 78 and failed in a middle-aged man. Prognosis in the operative case was uncertain; and he agreed with the policy of caution in advising operation. As to the operation itself, he preferred the more open method, enabling one to see better the condition in the prostatic capsule. Mr. C. W. Cathcart, from a successful case of long-continued pubic drainage, suggested a trial of this procedure in advanced cases where operation was not possible. Dr. J. Orr, speaking as a general practitioner, advised the early sending of prostatic cases to the surgeon. The outlook for the prostatic patient was better now than when he began practice.

Mr. H. Wade gave statistics as to operation mortality from the clinical records of the Royal Infirmary, which all referred to the advanced type of case. For the period 1902–12 the operation mortality was 35.4 per cent.; for the period 1910–20 the operation mortality was 25 per cent.; for the same period, in 198 severe cases not operated on, 52 died, a mortality of 25 per cent. Mr. J. W. Struthers alluded to this last group of advanced cases left without operation, and suggested that, in view of their miserable condition and very probable early death, prostatectomy should be done more frequently, even in spite of the grave operation risks. Mr. D. P. D. Wilkie spoke of his *post-mortem* experience of cases after prostatectomy. In these there was nearly always septic cellulitis in the space of Retzius, and from this a general septicaemia. In view of this he suggested a two-stage operation: first, opening the bladder, and later enucleating the prostate.

Sir David Wallace, in his reply, detailed the palliative measures advised, emphasizing the value of micturating whenever desire was felt, and doing so slowly and thoroughly. He did not agree with the frequency of infection of the space of Retzius in fatal cases. Septic infection was rather from the veins in the capsule. He did not advocate the two-stage operation.

On November 3rd a paper was read before the Harrogate Medical Society by Mr. A. B. Pavey-Smith, F.R.C.S., entitled "Some remote effects of tonsillitis." The evidence, experimental and clinical, pointing to the tonsil as an important focus of infection in systemic disease was reviewed, and the diagnosis of latent chronic tonsillitis described. A discussion, concerned especially with arthritis and its connexion with tonsillar infection, followed.

At the annual meeting of the German Medico Legal Society, held recently at Erlangen, the imperative necessity for official and police *post-mortem* examinations was emphasized.

In the organ of the Finnish Medical Society (*Finska Läkaresällskapets Handlingar*) a letter addressed to Sir William Macewen, President of the Société Internationale de Chirurgie, by some of the leading surgeons of Finland, is published, protesting against the decision, in the summer of 1920, to exclude all German and Austrian members.

An International Congress of Maternal and Child Welfare will be held in Paris from July 6th to 8th, 1922; a preliminary programme has been drawn up, and communications should be addressed to the Secretary-General of the Ligue contre la Mortalité Infantile, Paris.

According to the *Presse Médicale*, over 100 French physicians responded to the invitation of the medical profession in Poland to attend the first Franco-Polish Medical Congress at Warsaw. The second congress is to be held in Paris in 1923.

Reviews.

AN ENCYCLOPAEDIA OF MIDWIFERY AND WOMEN'S DISEASES.

After some considerable delay, unavoidably associated with post-war trade conditions, *The Practitioners' Encyclopaedia of Midwifery and the Diseases of Women*[1] has made its appearance as one of the "Oxford Medical Publications." The delay would appear to have been justified, however, as the paper, printing, and general appearance of the book are beyond cavil. Our first desire is to congratulate Dr. Fairbairn on the successful completion of what must have been a herculean task in editorship, and our second feeling is that the book bears clear evidence that he was the right man to edit such a composite volume. The conjunction of midwifery and gynaecology in one volume is somewhat of a new venture, and although their natural and organic association is well recognized in practice, yet the two have hitherto usually been presented in separate books. Nothing in the whole volume is better in its way than the editor's introductory remarks, which define the respective positions and relations of the two subjects with a lucidity as masterly as it is characteristic.

In a short review of a work of this sort—950 quarto pages written by some fifty different contributors—it is difficult to know where to begin. But in the first place it must be stated in regard to its scope that the *Encyclopaedia* covers the whole ground usually and legitimately included under its combined title, and even offers valuable contributions on such aspects of the subjects as the public health, social, and medico-legal bearings of obstetrics and gynaecology. Dr. Fairbairn has been fortunate in obtaining the co-operation of a very able team of contributors, and he has, in our opinion, succeeded in obtaining from his collaborators articles upon subjects on which each individually may be accepted as an authority.

The *Encyclopaedia* is divided into seven parts. The first covers the life-history of the female reproductive organs, and under this comprehensive term are included the anatomy and development of the organs, the physiology of ovulation and menstruation, conception, the development of the early ovum, and the changes in the maternal organism consequent upon impregnation—all of which are written by Dr. R. W. Johnstone. This part of the subject is rounded off by articles on the physiology of labour and the puerperium by Dr. Nepean Longridge, and on the physiology of the menopause by Dr. T. G. Stevens.

Part II deals with normal reproduction from the point of view of obstetric practice. The Editor himself discusses the diagnosis of pregnancy, while Dr. J. W. Ballantyne deals with one of his favourite topics, the hygiene of pregnancy. The management of normal labour is entrusted to Dr. Haig Ferguson, who has also a valuable article on the application of hospital methods to private midwifery practice. In view of recent correspondence in the Journal these two articles call for special mention, for the teaching is thoroughly sound and scrupulous without being open to the reproach of any impracticable idealism. The relief of pain in labour is fully and admirably discussed by Dr. R. C. Buist in this section and amplified in a subsequent part of the volume by Dr. Osborne Greenwood; both give details in regard to the production of "twilight sleep."

Part III is occupied with discussions on abnormal reproduction, under three headings: abnormal pregnancy, abnormal labour, and abnormal puerperium. Amongst the articles in the first section are two by Dr. Gordon Ley on stillbirth and on the toxaemias. These are excellent, if a trifle too dogmatic in parts; the writer, however, has a weakness for statistics, which are hardly suitable for a work of this kind. General diseases complicating pregnancy are adequately dealt with by Dr. Buist, whilst Dr. John Adams adds a short article on syphilis in pregnancy, based on his great experience at the Thavies Inn Centre. Dr. Eden and Dr. Clifford White discuss between them the different forms of abortion, and Dr. Russell Andrews writes on ectopic pregnancy in a very full and practical way, stressing in particular the difficulties of differential diagnosis. Dr. Andrews is also responsible for the first article in the section on abnormal labour—namely, that on persistent occipito-posterior positions. Our only criticism here will be directed to his sweeping assertion that "rotation with forceps must be mentioned only to be condemned as a dangerous method which ought never to be employed." This is the manœuvre which gave "great joy" to Smellie, and it continues to give on occasion great satisfaction to many obstetricians of wide knowledge and experience. When Dr. Andrews supports his dogma by instancing what may happen when the method is demonstrated on the closed fist, one is compelled to wonder if his own experience of the manœuvre goes no further. At any rate fistic arguments are fallacious, and one might as well condemn the use of the forceps as an extractor because of the disaster which befell Uncle Toby's fists when Dr. Slop demonstrated his forceps upon them. "Upon my honour, Sir, you have tore every bit of skin quite off the back of both my hands with your forceps, and you have crushed all my knuckles into the bargain with them to a jelly!"

Preternatural labour is treated by Sir William Smyly in a lucid and practical fashion, and the same may be said of Dr. A. W. Russell's articles on twins and monstrosities. Dr. Blacker contributes the articles on haemorrhage, both *ante-* and *post-partum*, and has succeeded in giving practical and full instruction on these large subjects in a laudably succinct manner. Professor Jardine is responsible for the article on the clinical aspects of eclampsia, and his writing bears the invaluable stamp of an unrivalled practical experience of the condition. Professor Munro Kerr and Dr. Prescott Hedley discuss delayed and obstructed labour, and in their excellent articles both have kept in view the essentially practical aims of the volume. The complications of the puerperium are dealt with by Dr. Nepean Longridge, with the exception of sepsis, which is fully discussed by Professor Munro Kerr in the section on infection in the diseases of women—to which it logically belongs.

Part IV is devoted to the infant; questions of feeding and general supervision are discussed by Drs. H. C. Cameron, Eric Pritchard, and H. K. Waller, while asphyxia, deformities, and ophthalmia are taken up by Dr. J. A. Willett, Mr. J. Howell Evans, and Dr. J. H. Fisher respectively.

The second half of the *Encyclopaedia* deals with the subject of the diseases of women. But as many gynaecological conditions are closely knit up with conditions affecting organs and systems other than the reproductive or genito-urinary, the Editor has wisely set his bounds reasonably wide, and has included a useful section on conditions in the abdomen, and in the renal and nervous systems, which may complicate or simulate gynaecological disease. The description of methods of examination is written by the Editor, and supplemented by special articles by Drs. Topley, H. W. Wilson, and Knox. Then follows a series of articles on gynaecological symptoms by Dr. Aldrich-Blake, Lady Barrett, Professor Hellier, and Dr. Beckwith Whitehouse. The article on uterine haemorrhage by the last named is masterly, but it is a pity that in a book of this kind he has elected to use terms such as epimenorrhoea, menostaxis, etc., which, however desirably accurate they may be, are not in common use amongst gynaecologists, and are unknown to all but a few general practitioners. A "practitioners' encyclopaedia" is not the place in which to "push" a new terminology, and we think the Editor might have exercised his control on this point with advantage.

Pathological conditions are classified under malformations (by Dr. J. W. Ballantyne), vascular lesions (in connexion with which Dr. Fothergill refers to varicocele, so commonly diagnosed as ovaritis or ovarian neuralgia), mechanical lesions, infections, overgrowth, new growth, and retrogressive changes. The main varieties of infection are discussed separately, following upon a general review of the whole subject of infection and its effects by Dr. R. W. Johnstone. Gonorrhoea is dealt with by Dr. Herbert Williamson, puerperal infection by Professor Munro Kerr, tuberculosis by Professor Ewen Maclean, and syphilis and the rarer varieties by Dr. J. M. Wyatt.

In the next two sections Dr. T. G. Stevens supplies a general review of the subjects of overgrowth and new

[1] *The Practitioners' Encyclopaedia of Midwifery and the Diseases of Women.* Edited by John S. Fairbairn, M.A., B.M., B.Ch.Oxon., F.R.C.P.Lond., F.R.C.S.Eng., Obstetric Physician, St. Thomas's Hospital, London, etc. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1921. Cr. 4to, pp. xv + 950; 175 figures. £3 3s.

growth, and describes in particular vulvar and vaginal neoplasms, and the retrogressive changes of the menopausal and post climacteric period. Dr. Fletcher Shaw also writes on overgrowth and on pre-climacteric retrogressive changes, while Dr. Comyns Berkeley deals with fibroids and malignant disease of the uterus, and Dr. Willett with ovarian tumours.

The new and widened outlook in midwifery is interestingly indicated in Part VI, in which Dr. Eardley Holland has an article on preventive obstetrics. Dr. Wheaton follows this by a study of the methods to be adopted, and describes the working of maternity and child welfare centres. Mrs. Adamson writes with special knowledge on industrial occupations and their effects on the health of women workers, while Miss Catherine Chisholm deals with menstruation in relation to women's work. Mr. Edwin Smith contributes a useful chapter on medico-legal points arising in connexion with gynaecological and obstetrical work.

Part VII comprises a description of operative and other therapeutic measures, both obstetrical and gynaecological. The writers include the Editor, Dr. Victor Bonney, Dr. Hastings Tweedy, Dr. W. E. Fothergill, Dr. Blacker, Dr. Cuthbert Lockyer, and others. The articles are all full and essentially practical, and will be most helpful to the practitioner. We have sought in vain for any reference to the operation of vaginal hysterotomy, and the omission of a description of this operation, which is now well established as being of great value within certain limited indications, is regrettable. The articles on vaccines, x rays, electricity, radium, massage, and physical exercises, will be amongst the most useful to the general practitioner.

The illustrations are, on the whole, scarcely worthy of the letterpress, as judged by the standard of the modern textbook. They vary greatly in merit, and, being mostly borrowed, have not always the exact aptness that is desirable. Obviously, however, freer illustration would have increased materially the size of an already large volume. The index seems both full and accurate.

Taking it all in all this is the best *Encyclopaedia* of its kind that we have seen. It is eminently calculated to be helpful to the practitioner as a work of ready reference, and as its merits become known it is assured of a wide circulation and an increasing popularity. It is manifestly the outcome of a great deal of thought on the part of the Editor as to the actual needs of those for whose use it is primarily designed, as well as in the arrangement of the matter, which is in some respects unique. It is a mine of accurate information, and its teaching is based upon an enormous collective experience gleaned from practically all the medical schools of the United Kingdom. We conclude as we began, by congratulating Dr. Fairbairn on a monumental achievement.

DEVELOPMENTAL PATHOLOGY.[2]

Outwardly Professor Talbot's volume has all the appearance of a solid scientific work; nearly every page carries an illustration. Its title, *Developmental Pathology*, raises the anticipation that here, at last, is a much needed book—one which synthetizes all we know concerning the abnormalities of development to which the human body is so liable. No sooner do we open the covers and dip into its pages than our suspicions are aroused, and before we reach the end we are convinced that in this case outward appearances are deceptive. Here and there are glimmerings of light, sometimes possibly foreshadowing a new truth, but for the greater part the facts are either wrongly stated or altogether misunderstood by the author.

The object of this book, says Professor Talbot in the opening sentence of his preface, is to show:

> "First, that the ontogeny of man, his structures and organs, is a modified recapitulation of his phylogeny in development. Second, that as the vertebral phase appears early in embryogeny, an unstable nervous system, checked by parental defects, eruptive fevers, and other agencies at the periods of stress in the child, affects phylogeny and ontogeny."

Here we have a free use of scientific terminology, but the author's meaning is beyond ordinary comprehension.

The picture given by the author of the phylogeny of man is this (p. 21):

> "The embryo of man, therefore, exhibits a similar passage through vertebrate forms resembling the fish, the reptile, the bird, the lower mammal, the lower monkeys, the higher apes, until the fully developed child resembles the lower forms of mankind."

It seems strange that anyone who has seen a human embryo at any stage of development could make such an erroneous statement as this. Again, when dealing with the phylogeny of the kidneys, the author permits himself to make the following remarkable statement on renal structure:

> "In mammals there is a firm, compact, oval organ. Vessels leave and enter at the hilus or notch. The central secreting portion, the medulla, is usually distinctly separated from the cortex, or outer portion which contains the straight tubules carrying the secretion to the ureters."

Such a statement makes orthodox men rub their eyes, for they have always observed the opposite—the *secretory portion* in the cortex and the straight tubules in the medulla. But even more remarkable for a scientific work is the paragraph which follows the one just quoted:

> "In the kidney of the rabbit several phylogenetic changes are manifest. The shape is oval, the hilus is developed. In the ontogenetic development the relative position of the two organs shows an advance towards the kidney of man the right being slightly in advance of the left. The substance of the kidney shows the division into cortical and medullary areas. The pelvis of the kidney is noted for the first time, forming the dilated beginning of the ureter."

Such a statement needs no comment; at no time has any rodent-like animal been looked upon as a stage in man's evolutionary history.

There is scarcely a page in this work which does not require the free use of an erasing pencil. For instance, on p. 88 this statement is made:

> "Defect in either, at this period of stress, may so affect the struggle for existence between the fetal organs that reversionary conditions gain the ascendancy. This is true of such conditions as cyclopia, in which the pineal eye becomes the actual eye, as in certain lizards, while the paired eyes in man disappear."

The author of this work must have had a peculiar experience of cyclopean monsters, for in the cases examined by all other observers within our knowledge the single eye has been found to be a compound of the two normal eyes, while no irregularity has been noted in the pineal body. No mention is made of the experiments devised by Professor Talbot's distinguished countryman—Professor Stockard of Cornell University—by which cyclopean monsters can be produced at will.

We must therefore express regret that a work of this nature should come from the pen of one who has free and full access to the rich tide of embryological literature now appearing in the United States. At the present time American embryologists "lead the field."

PYELOGRAPHY.

La Pyélographie,[3] by E. Papin, is really an atlas of pyelography, the plates at the end of the volume quite overshadowing the text in importance. In the latter chief prominence is rightly given to the question of technique. After summarizing the history of pyelography the author discusses the accidents that may arise from the use of such fluids as collargol, emphasizing the precautions that must be observed in order to avoid inflicting pain and damage. Like the majority of urologists, he has abandoned the collargol and thorium nitrate in favour of a 30 per cent. solution of sodium bromide. As this, however, unlike collargol, is devoid of antiseptic properties, he adds a small quantity of mercury oxycyanide as an additional precaution. The results obtained with this solution have, in his opinion, been as successful as those previously gained from the use of 10 to 15 per cent. collargol. The injection is made by gravity by means of a burette, which is raised 50 cm. above the level of the couch. The pressure of the injected fluid can easily be controlled with this simple apparatus, the entry of the fluid being stopped immediately there is any complaint of pain. According to the author the pain of distension varies inversely with the volume of

[2] *Developmental Pathology: A Study in Degenerative Evolution.* By Eugene S. Talbot, M.S., D.D.S., M.D., LL.D., Professor of Stomatology, Bennett Medical College (Loyola University). Edinburgh: E. and S. Livingstone. 1921. (Med. 8vo, pp. 457; 346 figures. 25s. net.)

[3] *La Pyélographie.* Par E. Papin. Paris: A. Maloine et Fils. 1921. (Cr. 4to, pp. 45; 85 figures. Fr.25.)

the pelvis. The distension of a normal pelvis is accompanied with considerable pain, whilst on the other hand a large hydronephrosis may be entirely filled without causing a patient any distress.

In considering the results of pyelography Papin deals with the subject under the following headings: the normal pelvis, hydronephroses, movable kidney, anomalies of the ureter and kidney, tubercle, pyelitis and pyonephrosis, polycystic kidney. Plates illustrating these conditions are given at the end of the book. These plates are, to a great extent, diagrammatic—that is to say, although based on actual negatives, the plates have obviously been subjected to a great deal of touching up. Shadows other than the essential ones have been removed and the outline of the pelvis or of the opaque bougies, used for catheterization, considerably darkened. An immediate gain in clearness is certainly achieved by such methods, but we should have welcomed the inclusion of a few untouched negatives in the collection. The plates have been well selected and cover the ground of pyelography well. The atlas will certainly be of interest to urologists and to radiographers also. The mere fact that a work of this nature has been published is an excellent indication of the progress that pyelography has made during the last few years, and of the important position that it has reached amongst diagnostic methods.

METCHNIKOFF'S LIFE.

The Life of Elie Metchnikoff, 1845–1916,[4] written three years ago by his second wife OLGA METCHNIKOFF, has now been translated from the French, and the English version is introduced by an appreciative preface by Sir E. RAY LANKESTER, whose friendship with Metchnikoff, dating from 1888, provides some interesting personal touches. Madame Metchnikoff is eminently qualified to write the memoir of an interesting personality, not only by a married life of forty-one years, but by her knowledge of zoology, which she first acquired at Odessa from her future husband. He was anxious that this biography should be written as an interesting psychological document, and much of it was completed under his eye and with his help.

Metchnikoff was born in 1845 in Little Russia, of well-to-do but not very careful parents; he decided when only 15 years old to devote his life to natural science, and three years later had an article on the stalk of *Vorticella* in Müller's *Archiv*. His strenuous struggle as a researcher and teacher then began, and the death, after a short married life, of his first wife in 1873 led him to make an attempt, fortunately unsuccessful, on his life. He then threw his energies into anthropology and zoology at Odessa, and there met his second wife, who describes him as "at that time not unlike a figure of Christ; his pale face illumed by the light in his kindly eyes, which at times looked absolutely inspired." As a professor at Odessa his opposition to the prevalent reactionary tendencies earned for him the reputation of an *enfant terrible*. In view of recent discussions it may be interesting to record his opinion that although women cannot accomplish creative work in science their higher education is necessary for their general intellectual development. In 1881, when intensely neurasthenic, he again resolved to end his life, and in order to spare his family the sorrow of an obvious suicide he inoculated himself with the spirillum of relapsing fever, choosing this method to determine if this disease could be communicated in this manner; he recovered, but the severe attack was thought to have increased or originated the cardiac condition that eventually caused his death. Political difficulties led to his resignation, and he started laboratory work at Messina, where he considered that the great event of his scientific life occurred in the conception of phagocytosis, which suddenly burst on his mind and transformed him into a pathologist; the first account of this work was published in 1883. After a brief return to Odessa in 1886, he finally found a congenial atmosphere at the Pasteur Institute in Paris, where his wife at first acted as his assistant. Though his life now ran on happy lines, the bearings of phagocytosis on immunity involved him in many years of scientific controversy, especially with Germans.

When 53 years old his attention was directed to the problems of premature old age, its relation to chronic toxaemia of intestinal origin, and of the postponement of old age and death to their natural term, or the achievement of "orthobiosis," the philosophy of the normal cycle of life. In this connexion he did his well-known work on syphilis and on the sour milk diet. His conclusions were subsequently collected in his book, *Forty Years' Search for a Rational Conception of Life*. A born biologist, he became a pathologist inspired by the purest philanthropy and by optimism. In 1913 he had a severe cardiac attack and began to prepare for death, although in order to gain support for his contentions as to the proper mode of life he was anxious to reach the age of 70. The story of his long struggle with cardiac failure, lasting till June, 1916, is told with great pathos by his talented wife, who has combined in an unusually admirable manner an account of the scientific activities and the human aspects of a really great man.

PHYSIOLOGY.

The new edition of Professor CATHCART'S *Physiology of Protein Metabolism*[5] contains, boiled down and in assimilable form, a great deal of information about the fate of proteins in the body, a subject that has given rise to a vast amount of experimental work. After chapters on the digestion and absorption of protein, and on the converse process — its regeneration — the author discusses alimentation with pre-digested protein and with the de-aminization of the protein molecule. Other chapters deal with the protein requirements of the body, the various theories of protein metabolism hitherto advanced that leave us still in the dark, starvation, work, and with protein saving by means of carbohydrate and fat. The book is well written, and the reader is in general left to make up his own mind on any point after the evidence has been put before him. The volume may be warmly recommended to the attention of advanced students of physiology. It has, we believe, no serious rival.

The second edition of Professor WALTER JONES'S *Nucleic Acids*[6] gives a full account of the chemistry and physiology of an important group of the proteins, that which is intimately connected with the purine bodies in the human organism. An appendix at the end of the book describes methods of preparing several of the nucleic acids and other chemical substances mentioned in the text; a full bibliography is appended. The author notes that while the lower animals, from monkeys downward, possess the power to convert uric acid into the more soluble allantoine (a step in purine metabolism), the apes and man have no such power. The book is suited to the chemist and students of physiological chemistry.

The laboratory manual of *Practical Physiological Chemistry*,[7] by Dr. J. A. MILROY and Professor T. H. MILROY, now in its third edition, provides the senior and junior student and also the medical student throughout his career with a full and practical account of the subject with which it deals. The text suggests, as is of course the case, that the authors have had considerable experience in teaching; the detailed descriptions of the way in which the experiments should be carried out leave nothing to be desired. The first 250 pages are devoted to qualitative analysis; then follow 130 pages on quantitative analysis. Various useful tables are given in an appendix, and several schemes for the detection of many substances of physiological importance are appended. Two coloured plates show the absorption spectra yielded by the blood pigments and some of their derivatives. The book is well

[4] *The Life of Elie Metchnikoff, 1845–1916*. By Olga Metchnikoff. With a preface by Sir E. Ray Lankester, K.C.B., F.R.S. London: Constable and Co., Ltd. 1921. (Med. 8vo, pp. 307; 1 photograph. Price 21s.)

[5] *The Physiology of Protein Metabolism*. By E. P. Cathcart, M.D., D.Sc., F.R.S. Second edition. Monographs on Biochemistry. London and New York: Longmans, Green and Co. 1921. (Roy. 8vo, pp. 182. 12s. 6d. net.)

[6] *Nucleic Acids: their Chemical Properties and Physiological Conduct*. By W. Jones, Ph.D. Second edition. Monographs on Biochemistry. London and New York: Longmans, Green and Co. 1920. (Roy. 8vo, pp. 158. 9s. net.

[7] *Practical Physiological Chemistry*. By J. A. Milroy, M.A., M.D., and T. H. Milroy, M.D., B.Sc., F.R.S.I. Third edition. Edinburgh and London: W. Green and Son, Ltd. 1921. (Demy 8vo, pp. 457; 3 plates, 20 figures. 21s. net.)

got up and illustrated, and may be recommended to the attention of students of medicine.

DR. HARRIS'S *Practical Histology for Medical Students*[8] is a manual for the laboratory bench. The text is on the left-hand pages, and consists of summary descriptions of the methods to be employed in the preparation of histological specimens from the material and tissues usually studied by medical students. The right-hand pages are reserved for drawing of the corresponding preparations or slides by the student after he has made them. The book endeavours to give the student the minimum of normal histology necessary for his future studies in pathology, and in this it should prove successful; the addition of an index would make it more serviceable.

CLINICAL SURGERY.

THE plan of Professor HERTZLER'S new book on *Clinical Surgery by Case Histories*[9] is somewhat novel. He has adopted a regional basis of classification, but the volumes are made up of a series of case histories which follow one another in a constant stream. For instance, to select from three sections at random: "I was called to see a man, aged 45, because he had persistent pain in the left side of his head and neck following a mastoid operation"; "A farmer came to the hospital because of a sinus in the left side"; "A merchant, aged 36, came because of stiffness of his fingers." The advantage of such a method is, of course, that one begins to read the history of the case without the bias that would have been ours if the section had been labelled "Cerebral abscess," "Empyema," and so forth. The reader has no more knowledge of what the condition will prove to be than had the clinician when first confronted with the case. Thus "a man found unconscious at the foot of a stairs" (p. 57) proved to be a uraemic subject, whilst "a housewife, aged 58, found lying on the hospital steps" (p. 444) had a fracture of the neck of the femur. Vol. I contains diseases of the head, neck, thorax and extremities, and is illustrated by 284 photographs and drawings, of which the author evidently has an unusually fine collection. Vol. II deals with diseases of the abdominal and genito-urinary organs; it has 199 illustrations and contains an index. We imagine that this book will more easily find a sphere of usefulness in the United States than it will in this country. There is not much in it for the skilled surgeon, in spite of the, at first sight, rather intriguing method of arrangement. It is rather the book for the "occasional operator" in the small town. Yet few will be able to resist the temptation of turning over the pages and glancing through the clinical histories which are frank, unvarnished, and "uncooked." The book is excellently produced.

NOTES ON BOOKS.

THE seventh edition of Professor BOAS'S[10] diagnosis and treatment of diseases of the stomach provides the specialist with an account of a subject in which the author has a reputation as an expert. It is divided into two equal parts. The first details the examination of the patient and the methods of investigating his processes of gastric secretion and digestion; many varieties of gastroscope (an instrument for inspecting the gastric mucous membrane) are described, but their employment is not recommended. The general treatment of gastric disorders is set out in some hundred pages, and balneotherapy, which plays a large part in Germany, is fully dealt with. The second part of the volume deals with the symptoms, diagnosis, and treatment of the various diseases of the stomach, and is full of practical statements and directions. Professor Boas[11] has also published a smaller volume on diet in diseases of the stomach and intestines, with an appendix by Professor Kelling on the feeding of patients before and after operations on the alimentary tract. Both these volumes reflect current practice in Germany; in neither is attention paid to the methods or treatment employed by physicians or specialists in other countries, a fact that appreciably lessens their value outside the country of their origin.

The second edition of Professor BING'S textbook of nervous diseases[12] consists of thirty lectures in which these disorders are discussed at full length, mainly from the clinical point of view. The matter is well arranged and clearly set forth, and is illustrated by a number of adequate diagrams and photograms. In the account of Graves's disease we notice that Professor Bing describes it as discovered "simultaneously" about the year 1840 by Graves and Basedow. As a matter of fact, Graves described it in 1835, Basedow in 1843. Blunders of this kind are not common, and on the whole, Professor Bing writes with knowledge and experience; his book may be recommended to medical students and medical men in search of a textbook of neurology in German.

The second edition of Dr. WOODWARK'S *Manual of Medicine*,[13] described by the author as a *vade mecum* for students and general practitioners of medicine, preserves the characteristics of the first edition. It consists of ten sections in which the disorders of the various parts or systems of the body are considered, with, at the end, an account of the acute specific fevers. Every page bristles with summarized and often tabulated knowledge, and the volume may fairly be said to contain a great deal of information as to the etiology, pathology, symptomatology, course, and treatment of the many diseases considered in it. The *Manual* is well up to date, and may be recommended to those who like their medical knowledge presented in pemmican form. It suffers from the disadvantage, common to all books of this type, that it appeals to the memory only and does not tax the intelligence.

SMITH'S *Physicians' and Surgeons' Visiting List for 1922*[14] is a neat little volume for the pocket. It contains thirty-two pages of information and tables generally useful to the medical man; then follow the diary, with a week to each page, pages for obstetric and vaccination engagements, and pages for memoranda of various kinds. The volume is well bound and furnished with a pencil and a pocket for papers.

BARNETT and THORNE'S *Organic Analysis, Qualitative and Quantitative*,[15] provides students of chemistry, particularly those reading for a university degree, with a sound scheme of analytical methods that should be of educational value to those that use it. The book goes far beyond the requirements of the medical student, although he too could gain much profit from the pages given to the use of the polarimeter. It is clearly written and well illustrated.

[8] *Practical Histology for Medical Students.* By D. T. Harris, M.B., B.S., B.Sc. London: Langley and Sons, Ltd. 1920. (Double cr. 8vo, pp. 54.)

[9] *Clinical Surgery by Case Histories.* By Professor A. E. Hertzler, M.D., Ph.D., F.A.C.S., University of Kansas. Vol. I: Head, Neck, Thorax and Extremities; Med. 8vo, pp. 562; 284 figures. Vol. II: Diseases of the Genito-urinary Organs; pp. 546; 199 figures. London: Henry Kimpton. 1921. (£5 net the two volumes.)

[10] *Diagnostik und Therapie der Magenkrankheiten.* Von Professor I. Boas. Siebente völlig neubearbeitete Auflage. Leipzig: G. Thieme. (Roy. 8vo, pp. 677: 70 figures, 6 tables. M. 138.50; bound, M. 155.50.)

[11] *Diätetik der Magen- und Darmkrankheiten.* Von Professor Dr. I. Boas. Nebst einem Anhang: Diätetik vor und nach operationen am Magen-Darmkanal, von Professor Dr. G. Kelling. Leipzig: G. Thieme. (Sup. roy. 8vo, pp. 221. 6s. 9d.; bound, 8s. 3d.)

[12] *Lehrbuch der Nervenkrankheiten für Studierende und praktische Aerzte.* In 30 Vorlesungen. Von R. Bing. Zweite, vermehrte und vollständig neubearbeitete Auflage. Berlin and Vienna: Urban and Schwarzenberg. 1921. (Sup. roy. 8vo, pp. 680; 162 figures. Geh. M.100. Geb. M.130.)

[13] *Manual of Medicine.* By A. S. Woodwark, C.M.G., C.B.E., M.D., F.R.C.P. Second edition. Edinburgh, Glasgow, and London: H. Frowde, and Hodder and Stoughton. (Cr. 8vo, pp. 500; 3 plates, 16s. net.

[14] *Smith's Physicians' and Surgeons' Visiting List, Diary, Almanac, and Book of Engagements for 1922.* No. 2 edition. London: Hazell, Watson, and Viney, Ltd. 6½ by 3½, pp. 32 + engagement columns. Cloth, 7s. 6d.; roan, 8s. 6d.; morocco, 10s.)

[15] *Organic Analysis, Qualitative and Quantitative.* By E. de Barry Barnett, B.Sc.Lond., F.I.C., and P. C. L. Thorne, M.A.Cantab., A.I.C. London: University of London Press, Ltd. 1921. (Demy 8vo, pp. 179; 31 figures. 7s. 6d. net.)

APPLIANCES AND PREPARATIONS.

An Obstetric Chart.

DR. BETHEL SOLOMONS (Dublin) has sent us a specimen of an obstetrical clinical chart recently made for him by Messrs. Fannin and Co. At the head is space for the name and age of the mother, the place of the child in the family, and its sex. This is followed by a chart of the mother, which shows temperature, pulse (morning and evening), motions (day and night), urine (day and night), lochia (morning and evening), and day of puerperium. Underneath there is a chart for the baby, showing motions (day and night), feeds (day and night), when cord is off, and weight. In the margin space is provided for remarks. The chart is compact and well designed; its habitual use will ensure records of a complete kind on a uniform system. The charts are sold at 1s. 6d. a dozen.

THE LONDON SCHOOL OF TROPICAL MEDICINE.

The annual dinner of the London School of Tropical Medicine was held at the Trocadero Restaurant on November 9th, under the presidency of Lieut.-Colonel A. W. Alcock, C.I.E., F.R.S., I.M.S., Professor of Medical Zoology in the University of London, to which the school is attached. Just over a hundred members of the teaching and administrative staff, past and present students, and guests sat down at the tables.

Past, Present, and Future.

Professor Alcock, in proposing the toast of the School, said that the institution had now well come of age, and its twenty-first year was a turning point in its history. He had no need to remind anyone present that the idea of the school emanated from Sir Patrick Manson. The wonderful originality of that great man was revealed many years ago, when, amid the exigencies of a busy practice, he carried through those exact experiments—a habit rare among general practitioners—which opened out new domains of pathology and preventive medicine, of which the school was only one of the results. But that fine idea of Sir Patrick Manson might have come to nothing if it had not been imparted to a statesman of vision in Mr. Joseph Chamberlain, then Secretary of State for the Colonies, who instantly grasped its full significance. Even then the idea might not have struck root so deeply nor borne fruit so soon had it not been for the Seamen's Hospital Society. He had often been asked what there was in common between a hospital for merchant seamen and a school of tropical medicine. It needed only a moment's thought to realize that in the scheme of the British Empire the two things went naturally together. The life of the crowded population of these islands depended for the most part on the raw material which the seamen brought from other shores. What better help could be given to those seamen than to provide healthier ports of call in the rich tropical dominions from which they brought their cargoes? Who could think of our immortal Drake, the founder of our sea power, cut off by dysentery in his mid-fifties, or of our incomparable Nelson, sent home invalided and not expected to recover from the effect of his two years' service on the East Indies station, without understanding something of what tropical disease—and therefore tropical medicine—might mean to the destinies of these isles. (Applause.) It was to the everlasting credit of the Seamen's Hospital Society that it set its seal upon these truths by an instant and generous response to the grand design of Manson and Chamberlain. It might be doubted whether even the medical profession realized the debt it owed to the Seamen's Hospital Society for its courage and enterprise in starting this great educational experiment.

During the life of the school seventeen expeditions had been sent out to investigate various problems of tropical disease, and more than two thousand medical men had gone through the school's course; these had been men of every race and nation from China to Peru, destined to fill all kinds of positions in the tropical world—medical officers of plantations, of railways, of industrial concerns in those regions, as well as medical missionaries and private practitioners. The school kept its laboratory in close touch with the wards of the hospital. So practical was the course, so full of demonstration and exhibition, so faithful in the mirror it held up to Nature, that even students who knew little or no English were able to go through with it. He knew from his own experience the difference in outlook between the man who went to his work in the tropics by way of the London School or the sister institution at Liverpool and the man who, however keen, never had that chance. The vicissitudes of the school, as of all human institutions, in twenty mutable years, were not to be forgotten. In the fullness of time Sir Patrick Manson had to relinquish his participation in the school's work. Sir Patrick was the *pontifex maximus*, the patriarch of tropical medicine. While he was with the school the eyes of the world were upon it. Wise men came from the West as well as from the East to leave their blessing with his foundation. The school again suffered severely in the loss of Dr. C. W. Daniels, a man who, though he did not wear his heart upon his sleeve or affect the graces of the courtier, was to be picked out of 10,000 men, and for his experience, insight, breadth of outlook, and solid worth of judgement, was fit to sit with Manson in the gate. If such losses could ever be recompensed by material gains—which he doubted—the school in its twentieth year had an accession of fortune which might satisfy the materialist if that was ever possible. It arose in this way. In the war the sturdy British sailor had gone on his lawful occasions, little concerned for himself, though hell gaped on every side of him, and in admiration for his valour and sympathy with his suffering the British Red Cross Society and the Order of St. John bestowed upon the sailor through the Seamen's Hospital Society the very appropriate gift of the hospital in Endsleigh Gardens. The Society resolved to remove the school to the new hospital, and through the personal interest of Lord Milner and the liberality of the citizens of London the removal was accomplished from the docks to a very much more academic quarter.

In one branch of work the school now showed a deficiency exactly where, from its close association with such an important adjunct of the mercantile marine as the Seamen's Hospital Society, it ought to show a conspicuous excellence: this was in tropical sanitation. The school would certainly not fulfil its expectations if it did not soon provide a course in tropical sanitation, practical and adequate for the man who meant to take up the important subject of preventive medicine in the tropics. The authorities of the school were aware of the need, and only lack of money prevented them from meeting it. He hoped it would not be forgotten that the tropics, where Manson and Bruce and Ross made their fruitful discoveries, was the proper place for the study of the causation and consequences of tropical disease, but he did not think that this sort of work need be done any longer by means of costly and ostentatious expeditions from home. Such expeditions had had their day. They were necessary at the beginning to awaken public opinion at home and to stimulate local effort abroad, but now that influential men at home understood the importance of the subject, and that institutes for medical research had sprung up in so many of the tropical dominions, while a steady stream of men trained in London or Liverpool was flowing to the tropics year by year, these large expeditions from home might do more harm than good by appearing to disparage those local efforts which it was so extremely necessary to foster and encourage. The policy of the school should be to co-operate with these indigenous institutes, to try to develop a common life with some of them, and this might be most economically done by allocating here and there a member of the staff, especially a junior member, to maintain touch and to work in association with them. But there was one most promising branch of research which for climatic and other reasons was better attempted in a tropical hospital at home than in the tropics themselves: the application of biochemical methods to the study of tropical pathology. That was a study with such infinite possibilities that, whether it was regarded from the scientific standpoint as likely to raise the whole of pathology to a higher level, or from the practical standpoint as affecting the interest of patients, if the school did not go on to provide for some such study it would fall below the modern academic standard. Another lack in the school was of a different kind. When it was brought from dockland it left behind its mess. The loss of the mess was an intellectual and educational deprivation. Carlyle said rightly that men who had nothing else in common could find comfort and counsel in feeding together. How much more could men who had varied professional experiences from all parts of the world profit from the opportunity to sit at meat together and smoke a pipe together!

Those were the three present needs of the school: a department of tropical sanitation, a department of biochemistry, and a mess. The schoo', in shifting its quarters, also suffered from that fitful fever known as reconstruction and reorganization, with its aggravating symptom known as co-ordination. From such complaints a society would never recover until the theorist understood, what every biologist knew, that a too nicely contrived and balanced organism usually came to grief by the weight and friction of its elaborate devices, and that true co-ordination, instead of being some wonderful arrangement for running a ship without a captain, depended on a specialized and centralized professional administration, which was the first requisite

for unity, concord, and success. (Applause.) He hoped it would come to pass that the school would be administered in all professional matters – in everything outside finance—not by a distracting multiplicity of committees and sub-committees, but by a single medical council, responsible to the board of governors. (Applause.) Finally, he recounted some mercies for which to be thankful. The school had come into intimate association with that other fine and well-designed missionary organization for propagating knowledge and promoting study of tropical diseases—namely, the Tropical Diseases Bureau, which was now housed under the same roof. Then again, through the kindness of the Air Ministry, the school had lately been able to make a start with a field laboratory for the study of entomology. The staff also had been strengthened by the inclusion of several distinguished men greatly experienced in tropical diseases, including Sir Leonard Rogers. The school would soon be in possession of a portrait that did some justice to its venerable and illustrious founder—a portrait which might stir them to emulation in some measure, as the presence of Manson in the flesh had done –

> For emulation hath a thousand sons
> That one by one pursue.

The Mansonian Tradition.

Colonel R. H. Elliot, I.M.S., proposed the health of the guests, and made special mention of Professor J. W. Stephens, of the Liverpool school—a school which was the friendliest of rivals to the school in London—and Sir William Leishman, whose name would go down into history as one of the greatest of our empire builders. Tropical medicine was so young that its founders were still with us, and therefore we failed to realize what great figures they would appear to those who came after.

Sir William Leishman, in responding, referred to the genial and stimulating warmth which was always to be gained in an association of medical men interested in the tropics. He believed that workers in tropical medicine were more companionable than men in other branches of medicine, and the keen edge of their discussions never had any venom. They had lived under the sun, and the sun had compelled them to shed not merely their clothes but their armour of reserve. He paid a tribute to the Colonial Medical Service, with whose work he had lately been impressed while serving on a Colonial Office Committee concerned with tropical Africa. He begged those present to remember on Armistice Day their recent comrades in the regular service. His message from his own corps was that the regular service could never forget the magnificent help given by the civil profession during the war.

Colonel J. J. Pratt, I.M.S., in highly appropriate language, expressed the general sentiment towards the Chairman of the evening, remarking upon his modesty and high attainments.

Professor Alcock, in response, quoted Hamlet, "Use every man after his desert, and who shall 'scape whipping?" The part he had taken in the school during the last fourteen years was a very small one. He joined because he was impressed with the fact, as a zoologist in India, that 80 per cent. of tropical disease was due to animal parasites, and thought this fact needed teaching. He had the advantage of 22 years in the Indian Medical Service—a service so full of distinguished names as to keep the conscience quick and the temper humble, so full of varied opportunities as to keep the intellect always alert and interested, and so full of professional responsibility as to keep the judgement always sober and reflective. He came to the school also because he would number Manson and Daniels among his colleagues, and might have a hand in shaping future Mansons, inheritors of the Mansonian tradition, which was to emphasize the fact that all pathology, especially tropical pathology, was a branch of biology, and that all living medicine was really biology applied. He added that if he had been successful in any small way at the school it was because of the instant help of the Secretary (Sir James Michelli), who was like one of nature's own patient, silent, constructive forces. (Loud applause.)

Sir A. W. Clarke, deputy chairman of the governing body, announced that H.R.H. the Duke of York had agreed to become president of the group of charities with which the London School of Tropical Medicine is associated, in succession to late Marquess of Milford Haven.

THE TREATMENT OF LEPROSY.

The only lepers met with nowadays in England are those rare cases which have been infected abroad. Leprosy has been for so long, however, an example of a slow incurable disease, and has so many historical associations, that any possible cure of this disease is of great general interest.

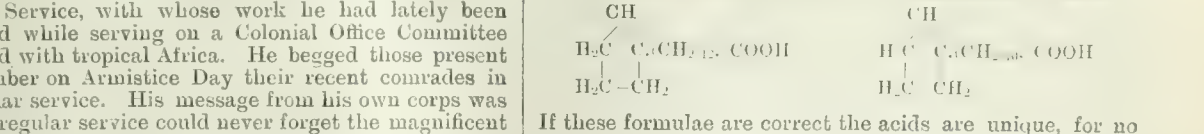
Chaulmoogra Oil Derivatives.

During the past ten years different workers in different quarters of the globe have developed the technique of the treatment of this disease by derivatives of chaulmoogra oil, and although it is too early to claim that the disease can be permanently cured, yet there appears to be every possibility that these drugs will afford a true specific cure for leprosy. This would mark a very important advance in specific therapeutics, for until now all the triumphs of chemiotherapy have been over protozoal diseases, and leprosy will be the first disease of bacterial origin to be cured by a specific internal disinfectant.

Chaulmoogra oil has been used in the treatment of leprosy for more than thirty years. It was formerly believed to be derived from the seeds of *Gynocardia odorata*; the true origin of the oil was discovered in 1901 by Sir David Prain, who showed that it came from the seeds of *Taraxtogenos kurzii*, a tree which grows in Assam and Burma.

Chaulmoogra oil is an evil-smelling and intensely irritant oil, which rapidly produces gastric disturbance if given by the mouth. For fifteen years it was given in intramuscular injections by Dr. Hopkins in Louisiana and by Dr. Heiser in the Philippines, but the injections were very painful, and although they undoubtedly produced benefit, yet the patients usually discontinued treatment as soon as their symptoms were at all alleviated.

Chaulmoogra oil contains two fatty acids, chaulmoogric and hydnocarpic acid. Hydnocarpic acid was formerly termed gynocardic acid; these acids have been recently isolated by Dean and Wrenshall,[1] who have assigned to them the following formulae:



If these formulae are correct the acids are unique, for no other fatty acids with similar five carbon rings are known.

The progress made in the treatment of leprosy has been due chiefly to the substitution of non-irritant derivatives of these acids for the irritant chaulmoogra oil. Sir Leonard Rogers,[2] working in India, used the sodium salts of chaulmoogric and hydnocarpic acids. The preparations he had at his disposal were too irritant for repeated subcutaneous or intramuscular injections, but could be given intravenously. He used a dose of 0.2 c.cm. of a 3 per cent. solution twice a week intravenously, the dose being gradually increased to 5 c.cm. once a week. This treatment he found produced a great improvement in the majority of patients within three months, and treatment for six to twelve months removed all clinical symptoms in a large proportion of patients. He recommended a further treatment for a year to avoid relapses. The results obtained in many instances were extremely striking; in some cases of leprosy of twenty years' standing the treatment removed all clinical signs of disease. Microscopic examination of the leprosy nodules showed that the treatment produced a rapid destruction and disintegration of the bacilli in the nodules.

Rogers also tried the effects of other unsaturated fatty acids, and found that sodium morrhuate, the sodium salt of the unsaturated fatty acids of cod-liver oil, produced even better results than sodium hydnocarpate. In one series of 51 cases treatment with hydnocarpate caused marked improvement in, and rendered bacteriologically sterile, 41 per cent. of the cases, and a further 39 per cent. were improved. The Mission for Lepers in India treated 183 cases with sodium hydnocarpate and 117 cases with sodium morrhuate; the treatment was not concluded at the time of the report, but marked improvement had

been produced in 70 per cent. of the cases. The results of Rogers with sodium morrhuate have not yet been confirmed by workers outside India.

Dean in Honolulu treated leprosy with the mixed ethyl esters of the acids of chaulmoogra oil, to which 2 per cent. of iodine was added. The esters were given intramuscularly and by the mouth, six times as much being given by the latter as by the former route. This treatment was very successful, and it was found possible to release on parole 50 per cent. of the lepers treated, as being clinically cured and non-infectious.

Dean found on further researches that a purer and more fluid product, which was more readily absorbed, could be obtained by distilling the esters *in vacuo*. He also concluded that the results produced by intramuscular injection alone were as good as those obtained by combined intramuscular and oral administration. The absence of irritation with this preparation is shown by the fact that out of 6,924 intramuscular injections given only one produced an abscess.[4] He also concluded that the pure esters were just as efficacious without the addition of iodine,[5] and that hydnocarpic acid was more efficacious than chaulmoogric acid, and that probably the acids with the lowest boiling point were most effective. This suggests the possibility of finding derivatives of these acids of even greater therapeutic efficiency.

Walker and Sweeney[6] examined the action of the acids of chaulmoogric oil upon acid-fast bacilli *in vitro* and found that these acids produced a specific disinfectant action upon these organisms. This observation suggests the possibility of these substances acting in a beneficial manner upon tuberculosis, but experiments by Rogers, and by Voeghtlin Smith and Johnson[7] upon the action of these substances upon tuberculosis in animals have yielded negative results.

The results obtained by the treatment of leprosy with derivatives of chaulmoogra oil are of the very greatest interest: the reports cover a period of twenty years and deal with many hundreds of cases. The reports show that these drugs will alleviate the great majority of cases of leprosy, and apparently will cure completely about 50 per cent. Some years must elapse, however, before it is certain that these apparent cures are permanent.

Leprosy has always been regarded as an example of an absolutely incurable disease, and hence these results are the more noteworthy. Moreover, the drug can be shown actually to cause the rapid destruction of bacteria living in the body; this represents a very great advance, and shows that it is quite possible that a specific cure may be found for tuberculosis. The development of the treatment is also of interest, because the fact that chaulmoogra oil has an action in leprosy has been known for thirty years. No really effective treatment could, however, be devised until fairly pure preparations of the active principles of the oil had been obtained. The advance in the treatment is, therefore, very largely a triumph for organic chemistry.

Messrs. Burroughs and Wellcome have prepared a preparation of the esters of chaulmoogra oil which they call Moogrol. The preparation contains no iodine; it is a clear oily fluid which does not produce any marked signs of irritation when injected subcutaneously into animals, and is intended for intramuscular injection. The dose is 1 c.cm. rising to 6 c.cm. for each injection. The price is 30s. for a bottle containing 100 c.cm.

Action of Antimony.

Cawston[8] has reported from Natal that injections of antimony produce a markedly beneficial effect in leprosy, and that he found colloidal antimony (oscol stibium) to be the most suitable antimony preparation for injection because it was not irritating. He found that doses up to 12 c.cm. of oscol stibium when injected intramuscularly produced no local irritation and no general toxic effects. The number of cases reported as improved by this treatment is, however, very small, and it is impossible to form any opinion as to its value until the results of a far more extended trial are published. The evidence that antimony is of benefit in leprosy in no way compares with the evidence obtained for the action of chaulmoogra oil.

Oscol stibium is prepared by Messrs. Oppenheimer and Co., and is a colloidal preparation of antimony sulphide Sb_2S_3; it contains 0.05 per cent. of antimony. Like other colloidal metals, it is a suspensoid colloid, and, since it is not ionized, it naturally does not produce irritation. One grain of antimony is contained in 120 c.cm. of the solution, and 40 c.cm. contains about the same amount of antimony as 1 grain of tartar emetic. The fluid is naturally of low toxicity.

Colloidal preparations are a convenient form in which small quantities of metals can be injected without inducing local irritation, but there is no reason to suppose that they enter the general circulation until they have been ionized. The available evidence indicates that they act in a manner similar to non-colloidal preparations of metals, except that they do not produce local irritation and are absorbed rather more slowly.

These remarks are prompted by the literature Messrs. Oppenheimer circulate with these preparations; in it the following statement occurs: "This example seems clearly to indicate that, to perform efficiently the function required of it, a drug must either be in the colloidal state at the moment of administration, or be capable of conversion into that state inside the body." This statement is certainly incorrect for the vast majority of drugs, and we know of no facts in pharmacology which in the least support any such general conclusion.

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RESEARCH DEFENCE SOCIETY.

THE Research Defence Society was founded in 1908 with the object of enlightening the public on questions relating to animal experiment and methods of medical research generally; in particular it was intended as a unit which would meet, on behalf of professional workers, the constant attacks, some misguided and some unscrupulous, made upon them by individuals or by societies of antivivisectionist persuasion. It was intended to record year by year instances in which experiment upon animals has been successful in throwing light upon or actually combating processes of disease, and to expose the unwarrantable statements of its opponents, by distributing at suitable intervals authoritative statements, written in language which could be appreciated readily by any intelligent lay reader. Recently, since the Jenner Society has been merged with it, it has undertaken similar work in opposition to antivaccination organizations. In these subjects the society has enjoyed a very large measure of success.

The society since its inauguration has obtained the active support of a large number of medical men, and enjoys the patronage and support of very many distinguished and enlightened laymen. Its success has been sufficient to encourage its council to further efforts; it is especially desired that the society be placed in closer contact with the general practitioners of the profession. Since the medical profession, of all sections of the community, is obviously in the best position to appreciate the ultimate merits of experimental work, and since all but an insignificant proportion of medical men in this country realize how important it is that physiological and pathological research should be placed under no further legal restrictions, the society believes that a rapid and thorough extension of its work can be obtained by the co-operation suggested. While it is realized that difficulties stand in a medical man's way should he become an active propagandist, yet it is well known that many opportunities present themselves to medical men, during the course of their professional work, of influencing opinion in the right direction. The society appeals to individual members of the profession to use these opportunities where they reasonably can do so, and especially to place facts before members of the Houses of Parliament. The society also invites all members of the profession to enrol themselves as members

or as associate members of the society, or to associate themselves with the society upon the following terms:

1. *Full Membership.* By subscribing to the society 10s. per annum, receiving in return the published reports and pamphlets of the society free of cost.

2. *Associate Membership.* By subscribing to the society 5s. per annum, and receiving in return such reports and pamphlets of the society as are desired at cost price.

3. *Association.* By requesting the publications of the society to be sent to them at cost price, or by requesting that there shall be sent to them at cost price such pamphlets as would be of particular use to them in propagating knowledge of methods used in medical research work.

A postcard will elicit further particulars from the Secretary, Research Defence Society, 11, Chandos Street, Cavendish Square, London, W.1.

WOOD TAR OILS FOR THE DESTRUCTION OF LICE (PEDICULUS HUMANUS) ON HAIR-CLAD AREAS.

During the war, at the request of the War Office, I tested the efficiency of a by-product of the Department of Propellants, entitled "light wood tar oil," for use as an insecticide. It proved to be very serviceable for the destruction of lice, and I recommended it for use in the treatment of verminous heads as cheap, safe, and efficient.[1] It was also recommended as a basis for the preparation of culicifuges.[2]

In the spring of last year, while acting as entomologist to the Typhus Research Commission of the League of Red Cross Societies in Poland, I suggested the use of a sample of this oil, which I had with me in Warsaw, for use as an additional precaution in the clearance of lice from typhus patients. The Commission found it very effective, but were unable to obtain further supplies.

Since my return from Poland I have been unable to ascertain the existence of any further supplies of this particular oil, but through the courtesy of a late official of the Department of Propellants, I have been able to get into touch with two firms who are able to supply wood tar oils and wood oils of a somewhat similar description. These firms have kindly supplied me with samples with which I have carried out a number of tests, using a sample of the original "light wood tar oil" and an East Indian mineral lamp oil (called by the trade name of paraffin) as controls.

My object was limited to ascertaining by laboratory tests the probable efficiency of these oils for use in the destruction of lice on the hair of the body or the scalp.

Method of Testing.

1. A male, a female, and a nymph of *Pediculus humanus* (*capitis*), the head louse, were immersed in the oils for two minutes and then placed on dry filter paper to recover in the event of their survival. The result was that they were invariably killed.

2. As above, but immersed for thirty seconds only. The result was that all were killed.

3. Immersed as above for thirty seconds but placed on absorbent filter paper after immersion. The males and females were killed, the nymphs sometimes recovered.

4. Instead of immersing the insects, a small drop, large enough to immerse a part but not the whole insect, was placed on the thorax of each specimen while it rested on absorbent filter paper. This experiment was performed twice. In both series the paraffin failed to kill any of the insects, which either never lost their activity or soon recovered it. The wood oils were considerably more effective, rendering most, if not all, the insects immobile for a time and generally killing one or more of the adults; the nymphs, which are more resistant, usually recovered.

There is therefore an element of chance in the killing of a louse by a drop which does not envelop the whole of the body, and this renders the thorough treatment of the hair down to the skin essential. Death depends on the penetration of the oil into the louse, and should it run off the wax-like surface of the skin or be rapidly absorbed by any fabric which comes in contact with the insect penetration is unlikely to ensue.

All the wood oils tested gave equally good results, but a watery fluid named "Furfurol" liquor, apparently consisting of water and some free oil, was found to be entirely ineffective in these trials.

[1] Danger of Disease through Lice, London County Council Education Committee, May, 1919; and Lice, *School Hygiene*, March, 1919.

[2] The Comparative Efficiency of Certain Culicifuges, *Parasitology*, February 28th 1919.

The efficient oils are described as follows:

Messrs. Shirly Aldred and Co., Ltd., Worksop. Sample A, "wood creosote." Sample B, "light wood oil."

Messrs. R. W. Greeff and Co., Ltd., Thames House, Queen Street Place, London, E.C.4. - Samples A, B, and C, Swedish wood tar oils.

As these oils are used for such trade purposes as flat-oiling wood to protect it from rot, etc., they should be obtainable at prices sufficiently moderate to enable them to be used more freely than the essential oils or proprietary articles which are frequently recommended. They should, in fact, prove even cheaper than the mixture of olive oil and paraffin which has been so widely recommended. If purchased in quantity, samples should first be obtained and tested to ascertain if any irritation of the skin is caused. The particular samples supplied caused my skin no irritation. It is necessary, however, to state that a very wide range of susceptibility exists in regard to the sensitiveness of the skin.

Conclusions.

My conclusions in respect of the use of such wood oils for the destruction of vermin in hair are as follows:

1. Nymphs should always be used in control tests, because, owing to the protection afforded by the double skin with which they are temporarily endowed when moulting, they are far more resistant than adult lice.

2. No absorbent material should come in contact with the treated area for a period (as long as possible up to an hour); greased or waxed paper or rubber-surfaced articles should for preference be used to cover the hair after treatment.

3. In treating hair-clad areas by spraying or other methods the oil must be used liberally so as to render the complete immersion of the vermin in droplets of the oil probable.

4. The oil should always be used neat, or if for any reason it is necessary to economize it, the fluid added should either be another oil or some fluid with which the oil is miscible. It must be borne in mind that volatile fluids, though frequently increasing penetration, shorten the period of action. Hence the effective nature of such remedies as olive oil and paraffin, where both the slow penetration of the heavy oil and the rapid evaporation of the light mineral oil are compensated for by mixing the two.

5. A repetition of treatment is always desirable within a few days. For typhus work a second treatment is essential in case eggs may have escaped the first treatment, because such eggs may hatch while the patient is still infective, and the lice after feeding be transferred to a nurse or doctor.

6. The objectionable odour of paraffin can always be covered by the addition of a small quantity of an essential oil or other scent such as oil of mirbane (nitro-benzol), camphor, etc. Camphor has an additional advantage in that it has the property of allaying skin irritation.

A. Bacot,
The Lister Institute of Preventive Medicine.

In 1918 the deaths from influenza in Germany (excluding the two Mecklenburg States) numbered 185,815. Between the ages of 15 and 30 the deaths numbered 54,828.

Professor H. Dold, of the Institute for Experimental Therapy in Frankfurt-on-Main, has been appointed to the charge of the sero-diagnostic department of the "Emil von Behring" Institute, under the supervision of Professor Uhlenhuth.

Messrs. Schall and Son (71, New Cavendish Street, W.1) have issued the seventeenth edition of their catalogue dealing mainly with *x*-ray apparatus. That part which relates to instruments for *x*-ray work, high frequency, diathermy, and so on, is well illustrated and complete; it contains, amongst other things, a note upon the working expenses of an *x*-ray installation, from which the approximate cost of each exposure for taking a plate or for giving a treatment can be ascertained. The first eighty pages gives a good elementary description of the various instruments used in radiology, and is an excellent introduction to *x*-ray work. Included is a separate slip dealing with *x* rays in gynaecology and in the treatment of malignant disease.

British Medical Journal.

SATURDAY, NOVEMBER 19TH, 1921.

HOSPITALS AND CLINICS.

To cut one's coat according to the cloth is no easy task, even to the skilled cutter who has the cutting in his sole control. It is a terrible business when two, three, or more cutters claim a share in the work and each is convinced of the overriding importance of his own part of the coat. Shall the claims of the sleeve override those of the skirt, or ——? But, difficulty notwithstanding, if the cutters were filled with a spirit of sweet reasonableness, the work might be accomplished to the satisfaction of all parties, including the wearer.

That is no fanciful sketch. It is being played out in real life to-day, and nowhere with greater sharpness than in the allotment of supplies to the medical services of the country. The Ministry of Health is compelled to reduce commitments just at a time when the claims made upon its resources are increasing. There have to be maintained those preventive services which do so much to make the abounding life of a civilized community possible; there are domiciliary and hospital services; there is a growing list of ancillary services which rank between these two, their scope being part preventive and part curative; and to these must now be added, by direction of Parliament, a certain measure of responsibility for the assistance of the great voluntary hospital system which is in truth the source and inspiration of all those other services. To divide his diminished resources between such important claimants will demand no mean measure of skill on the part of the Minister of Health, and we fear that, however skilful and just be his partition, he will gain only the hostility of his several beneficiaries, for each is (and by its very nature must be) convinced of the irreducible importance of its own sphere of action. The contribution of the Ministry to the finances of the strictly preventive medical services is small, and we may take it as certain that there will be and can be no change in this. The support of the "State" hospitals—fever hospitals and Poor Law infirmaries—is equally a matter of local government. But the finances of the numerous clinics for maternity and infant welfare, tuberculosis, and venereal disease, are very largely provided by the Ministry—in fact, it is the largest contributor; and the demands made on account of the support of these clinics are steadily increasing, so that what was in the initiation of these schemes a relatively small charge on the finances of the State is now a heavy one. The prospect of a reduction in these grants, either because of the need for economy or because of a necessity for sharing some of the available resources with other claimants, has already aroused considerable apprehension amongst the keenest supporters of the clinics.

In discussing this problem we may take it as agreed that no effort can be spared that will tend to the betterment of motherhood, for on healthy mothers we rely for healthy infants, and so for a succession of vigorous citizens who will serve the community; and so also can no effort be spared that will tend to stamp out those twin curses of civilization—tuberculosis and venereal diseases. It is only when we come to consider the details of the arrangements entered into for the furtherance of these ends that we find some disagreement between the enthusiasts, who can see no flaw in their widest schemes, and the practical, common-sense citizen who knows what he wants and wishes to get it with the smallest cost and overlapping of effort. When the working of these several clinics is examined from this latter standpoint it will appear that the ideals which were held in view in their establishment have been to some extent departed from, and that from this departure there has resulted some degree of failure, some overlapping of effort and waste, and some unnecessary increase of cost.

Education was the ideal in the establishment of the maternity and infant welfare clinics. The reformers said: "Let us teach the mothers how to be mothers, how to mother their infants; let us bring within the reach of the poorest of mothers the knowledge that no riches can measure." Now too many of these centres are converted into out-patient departments and relief stations, where the educational ideal takes second place (at least in the popular mind) to a material interest. The clinics for the treatment of venereal diseases were confessedly an emergency and temporary measure. In the fear of a vast increase in these diseases succeeding the war some special provision was considered to be an urgent necessity, the more especially since there had been a rapid development of new and complex methods of treatment which were unfamiliar to the past generation of students of medicine. The establishment of these clinics was justified on the ground that through such a measure alone could a knowledge and practical experience of these new methods be secured to existing private practitioners so that they might take up and carry forward the work of treatment initiated by the clinics. This great educational ideal has been obscured in many parts of the country. Clinics have been formed apart from voluntary hospitals where teaching is customary, and the private practitioner who gave part of his time to the work of the clinic has been displaced by the whole-time officer whose interest is bounded by the clinic. A similar criticism may be made of the tendency of the tuberculosis dispensary: it is merely an out-patient department with a very limited field of vision and inspiration.

These tendencies mean more than a sacrifice of the ideal with which these efforts were established. They mean an overlapping of effort, an attempt to do work for which other persons or other agencies are duly authorized and equipped. They arouse a suspicion of hostility between the overlapping agencies, so that the clinics tend to become isolated from the main stream of medical work, to their detriment. The spirit which engenders these lapses from the ideal is not a wholesome spirit. Partly it is the vulgar human instinct of acquisitiveness, a desire to expand the sphere of influence of one's office; but worse, it is a spirit of faithlessness, a lack of faith in the capacity of others. Hard times are often more conducive to the birth and vitality of high ideals than times of ease. It may be, therefore, that a restriction of the finances of some of these clinics will mean the revival of the primary ideals of their birth, to their greater success, and to the better health of the nation.

The position of the voluntary hospitals is full of anxiety. There are, perhaps, no institutions which have been so heavily hit by the changes brought about by the war. The volume of the work that falls to be done by them has not been lessened, but the same volume of work can only be done at a greatly increased cost, so that the former high level of support given to the hospitals is now wholly inadequate. Yet, at this critical time, many of the class from which came the bulk of benefactions are

no longer able to maintain this support, at least to the same extent, and the new generation of wealth holders has not yet learnt the duty and value of public benefaction. The report of Lord Cave's Committee fully established the claim of the hospitals for support. They did their work with efficiency and economy. And the report proved an especial claim on the State for help by reason of the indebtedness incurred for work done for sick and wounded sailors and soldiers during the war—a debt which for the London hospitals alone amounted to half a million pounds. In our issue of last week was given a statement regarding the position of the London hospitals and the decision to make immediate emergency grants to the hospitals whose realizable assets were so exhausted that they would without immediate assistance have no alternative but to close beds. The total grant made through the Ministry of Health for the aid of the hospitals of Great Britain is £500,000, and it is a condition of this grant that a corresponding amount must be raised by the hospitals themselves. The General Council of the King Edward VII Hospital Fund for London has entered a protest against this requirement that fresh money shall be raised pound for pound with the Government grants, on the ground that it will lead to great difficulties and possible injustice, and points out that the condition was not recommended by Lord Cave's Committee or enjoined by Parliament. The fact that emergency grants to the extent of £77,900 have had to be distributed between two dozen of the London hospitals in advance of any fulfilment, or possibility of fulfilment, of this condition argues the urgency of the needs of the hospitals.

The claims of the hospitals upon the benevolent are great. But they make a still wider claim upon all. These hospitals are the germinal areas of medicine in these islands. There is no one who himself, or whose kin, has suffered sickness, and whose necessity has been relieved by the ministrations of doctor or nurse, who is not in debt to the hospitals over and above the honourable discharge of personal dues. Each, doctor and nurse, has brought to him in his sickness the skill gained in the womb of the hospital, and he is in debt for this. To starve the voluntary hospitals will mean not only the closing of beds needed for the sick poor: it will mean a diminution in the activity and volume of the work which is the life force of private and public medicine, and from which comes that inspiration of preventive as of curative medicine without which clinic, dispensary, and sanatorium would languish and die. We do not believe that the day of the voluntary hospital is done. We recognize the difficulties of the time, but these are not insurmountable—certainly not to men of faith, who believe in voluntary effort, and whose belief is of that vitality which communicates itself to others.

ADDICTION TO DRUGS.

NOWADAYS so much is heard of the evil effects of the drug habit or addiction to drugs in other countries that Professor W. E. Dixon's address on the subject, printed at page 819, will be read with great interest. Without attempting any definition of the term "drug," he points out that human beings have always had the taste for drugs, whether stimulants, sedatives, or what not, and that to set all these substances down as purely harmful is no doubt to do an injustice to the unconscious physiological acumen of our ancestors and ourselves. Tea, coffee, tobacco, and alcohol are all of them drugs, and Professor Dixon enumerates some of the harmful effects they may work in the human organism; but, except in the case of alcohol, he excludes them from the list of true addiction drugs, of which, of course, morphine is the stock example. Striking a balance between their good effects and their injurious influences, he is clearly in favour of their use with temperance, though temperance is not the word he uses. All men are not made alike; to the poet tea may appear as "the cup that cheers but not inebriates," while in the charwoman it may produce such symptoms as the tremulousness, the fits of excitement and depression, and the anaemia with which so many medical men are familiar. In the case of alcohol Professor Dixon emphasizes the crop of new and more harmful drug addictions which seem apt to spring up in countries that try to enforce total abstinence by law. The chronic drunkard starts life handicapped by some imperfect development of his brain; nobody questions the evils produced by alcohol in the intemperate, but for the vast majority of civilized persons moderation in alcoholic beverages produces pleasure and, by so much, benefit; and it is argued that legislation is happiest when it works for the vast majority of those whom it is calculated to affect.

Turning to the true addiction drugs, opium with its derivatives and congeners of all sorts, Professor Dixon finds nothing good to say for their use in unqualified hands. He remarks that their devotees are the highly strung, over-sensitive, and nervous persons of their day, quick in perception, acute in sensibility, lacking in balance and in backbone, eager to escape from the realities of life. In narcotism, he says, they shut out contact with reality, and drift along knowing little of the reactions of mastery and defeat; they are shattered by the inhibition of their higher centres, and the very acuteness of their intellect is their undoing. Remembering De Quincey and possibly Coleridge, it may, perhaps, be necessary to admit that in a very few special instances persons possessed of such vivid sensations might benefit by a narcotic: but as a rule the morphinist, though not a mental defective, must be regarded as a menace to society—casual, careless, untrustworthy. It is argued by some that normal persons never become drug habitués, and that addiction to drugs may be taken as evidence of an existing psychopathy.

Opium, heroine, cocaine, and indian hemp, are described as the favourite narcotic drugs. There are, of course, degrees in the viciousness of the various forms of this addiction. Opium, for example, may be either eaten, smoked, or taken by subcutaneous injection. Professor Dixon points out once more that opium eating in strict moderation is now in India, as it was in our own fen country, a defensible practice, for it tends to ward off sickness and to lessen the discomfort of poor food and various diseases, such as malaria. The opium-eater is uncommon among Europeans. The habit of smoking opium as a form of self-indulgence is said to have had a distinct vogue in America until it was superseded by the infinitely worse habit of morphine injection. It is said, also, that before the war large quantities of morphine were sent yearly into China, often in proprietary packages, as a cure for the smoking habit, a cure that produces another and a worse vice. There is reason to believe that much of the recent increase in drug addiction has been started in ignorance. Thus opium smoking was begun as a harmless pastime to be given up when desired, and indeed the vice is one that can often be cured with comparative ease because the amount of the alkaloid absorbed is in fact very small. Cocaine, too, employed as "white snuff," was regarded as a nerve

stimulant and pick-me-up, but it gives rise to a drug-addiction disastrous alike to mind and body. The prevalence of this vice is, we think, under-estimated by Professor Dixon. Certain reports from France, from Paris in particular, lead to the belief that the habit is fairly common among certain classes. Cocaine demoralizes much more rapidly and completely than morphine. It is taken solely for its intoxicating effect, and there is never the excuse that it relieves pain. But the actual withdrawal of the drug as a preliminary to the cure of the vice is easier in the cocaine habit, because the symptoms due to withdrawal are much less than in the case of morphine; there is far less misery and shock. The two drugs are, as Professor Dixon says, often taken by the same narcomaniac, and alcohol is often added; sometimes the same patient goes from one drug to the other, having a psychic craving for drugs of addiction. Heroine was used as a substitute for morphine, with the false idea that it was not a derivative of opium, and was even offered as a cure for morphinism.

In regard to the difficulty of curing the morphinist and the "drug-addict" generally, there are many reports showing the remarkable ingenuity and skill displayed by these patients in getting hold of their favourite drug and evading laws made to cut off all sources of its supply. The first part of the cure naturally consists in withdrawal of the drug, and here it is often a matter of the utmost difficulty to secure the co-operation of the patient, without which, of course, the "cure" is soon valueless. Thus, in the city of New York nearly 8,000 cases of drug addiction were recently collected during ten months; it was found that only 1,580 out of 2,800 of the patients were willing to accept treatment and withdrawal of the drug. Those treated were kept six weeks, and discharged in good physical condition "cured." In three months a considerable proportion had already relapsed, in spite of all efforts made to assist them.

Opinions differ as to the extent of narcotic drug-addiction in our own country, but it is generally accepted that in America these unfortunates are many and increasing in number; even before the war it was estimated that they numbered 175,000 in the United States. It would seem as though the cure for intemperance in narcotics, as for intemperance in alcohol, must lie in the development of character rather than in legislation. A way will always be found to get round coercive legislation; and the experience of other countries goes to show that as the difficulties of obtaining alcoholic beverages increase the consumption of noxious substitute drugs increases also. The way to sovereign power still lies through the mid-Victorian paths of self-reverence, self-knowledge, self-control; and true temperance must be based, as Professor Dixon says, on self-control, not on control by others. Perhaps if children were taught something more of the realities of the life into which they must presently enter, and were educated in self-discipline, they would be better able to combat the difficulties and temptations that must be faced in the world they will have to live in. To control conduct so that the individual has no liberty of choice is to court disaster.

RHODESIAN FOSSIL SKULL.

During the past week British anthropological dovecotes have been set in a flutter by the announcement of the discovery of a fossil human skull in Northern Rhodesia. The skull, we are glad to know, has found a permanent home in England, and is now safely lodged in the Natural History Department of the British Museum, South Kensington. Some time must elapse before the detailed results of a systematic examination can be published, but in the meantime it is possible to outline the bearing of the Rhodesian discovery on our knowledge of man's origin. There can be no doubt that the Rhodesian skull, which is in an excellent state of preservation, is of the Neanderthal type—the type which characterizes that ancient and extinct species of European now known as *Homo Neanderthalensis*. The differences between the European and newly discovered African form relate to detail; the divergence between them is not more than that which separates the cranial form of the negro from that of a modern European. The Rhodesian type is undoubtedly the more primitive, and presents a remarkable degree of resemblance to the famous Gibraltar skull in the Museum of the Royal College of Surgeons of England.

The discovery thus reveals no new type of humanity, but does give rather a startling revelation of the extension of an ancient type. Our knowledge of Neanderthal man has been of slow growth. The first discovery of the kind was made in Forbes's Quarry, Gibraltar, in 1848, the next in the Neanderthal Cave, near Düsseldorf, Germany, in 1857. Since then the remains of this peculiar species of humanity have been found in Belgium and France, but never in England or Italy. An important find was made at Krapina, Croatia, during the opening years of the present century. The teeth of the Neanderthal race, which are very peculiar, have been found in Jersey and lately in Malta. In every instance where it has been possible to fix the antiquity of Neanderthal remains, it has been found that they fall within a definite phase of the ice age. They are mid-pleistocene. The same strata in which such remains are found carry stone implements of a recognized kind of workmanship—the kind to which archaeologists give the name Mousterian. The Neanderthal species of mankind seems to have made his appearance in Europe quite abruptly, and, after dominating that continent for a long period, was totally replaced by European men of the modern type. Where he came from we have had no means of guessing hitherto. The finds at Gibraltar and Malta indicated a possible origin in Africa. The discovery at the Broken Hill Company's works in Northern Rhodesia shows that a primitive form of Neanderthal man lived in ancient Africa south of the equator; the discovery points to Africa as a possible cradle of Neanderthal man. Yet we have to remember that Southern Europe during the middle pleistocene phase was bleak, cold, and wet—not a likely home for a human product of tropical origin.

The discovery of ancient man in Southern Africa cannot be said to have been unexpected. Fifty years ago it was noted that stone implements of palaeolithic shapes, not unlike the kinds found in the gravels of Europe, occurred in many districts of South Africa. In a pleistocene formation, near Boskop, Transvaal, an ancient skull of a peculiar type was found just before the war broke out. It represents a peculiar variant of the modern type of skull, and, in spite of a great cranial capacity, is certainly negroid in its affinities. Thus it will be seen that Africa, particularly Africa south of the equator, bids fair to rival Europe as a mausoleum of ancient man.

We believe that the business to come before the General Medical Council at its autumn session, which begins next Tuesday, is unusually varied and important: it is probable that the session will last longer than has recently been customary.

THE DEFENCE OF EXPERIMENTAL MEDICINE.

We publish elsewhere from the Research Defence Society an appeal addressed particularly to general practitioners of medicine. It is well known that efforts are made from year to year by the opponents of experimental medicine to introduce fresh legislation further hampering experimental work, and it is considered that the similar attempts which are to be anticipated in the future should be met by a more extensive campaign than has hitherto been possible. As is also well known, a general election is well within the bounds of possibility, and experience shows that during a general election candidates for Parliament are each approached by local antivivisectionists carefully coached by a number of societies. On the other side, the medical profession, and men of science generally, who are in complete agreement with it in regard to the imperative need of experiment, have been content to trust too much to the goodness of their cause. The nucleus of an organization for meeting the agitation of the antivivisectionists has existed in the Research Defence Society since 1908, and the profession is deeply indebted to that society, and especially to Viscount Knutsford (the chairman of its council), Mr. Stephen Paget (until lately honorary secretary and now vice-chairman), and to Sir David Ferrier (who has long been treasurer and is now associated in that office with Lady Horsley). It is desired to widen the basis of the society, and it is true that all but an insignificant proportion of medical men in this country realize how important it is that physiological and pathological research should be placed under no further legal restrictions. General practitioners, general surgeons and specialists, are not less convinced of the truth of this than are those members of the profession who are actively engaged in laboratory research; over and over again some local member of the medical profession has come forward to defend the cause when the antivivisectionists have instituted intensive propaganda in his neighbourhood. We have no doubt whatever that the objects of the Research Defence Society have the sympathy of the medical profession generally; the society now asks for the profession's active support, and we hope that the result of the present appeal will be that a large number will become members of the society, and that many of them will be able to induce members of their families and lay friends to assist the society, either by becoming members or associate members.

EVACUATION FROM MOBILE COLUMNS.

Dr. A. H. Macklin, now surgeon to the *Quest* on its way to the Antarctic, has published an interesting account of how the sick and wounded were cared for in the mobile columns of the North Russia Expeditionary Force.[1] Written in the first instance as a thesis for the M.D. degree of the University of Manchester, it gives a new insight into the efforts of that gallant little army. Major Macklin (as he then was) had served as surgeon—and dog-driver and handy-man, as explorers must be—in the Shackleton Antarctic Expedition of 1914, and, on his return, after distinguished service in France and Italy, he became senior medical officer to the mobile columns of the North Russia Army. Ordinary equipment and methods of warfare were quite inadequate, and so "mobile columns" were formed to carry out operations against the enemy. These units were designed to go from a centre over trackless and snowbound regions, attack the enemy, and return. During the time each was absent it had to depend entirely upon its own resources, and had to carry all its own cover, food, and fodder for animals. In each unit there were some 260 men, trained in the use of skis and snow-shoes, their transport consisting of sledges drawn by horses, reindeer, dogs, or men, and they had to cover any distance up to 200 miles in a maximum time of fifteen days. To carry out his duties Major Macklin had to arrange for dealing with sick and wounded men 100 miles distant from the nearest source of surgical assistance, so that their chances of survival must have seemed very remote, for such extreme cold rapidly benumbs a devitalized man and makes him helpless. Each unit of the mobile columns had therefore to contain a large number of men trained in first aid, and had to be accompanied by a medical officer; the difficulties were multiplied when the columns split into numerous small parties. Operations in North Russia, it will be remembered, were directed to the defence of the ice-free ports on the Murman coast—at first against the Germans, who occupied Finland, and, later, against the Bolshevists in the south. The military and strategical value of sending out these small detachments so far from their bases to give sporadic pinpricks to an enemy of indefinite strength was perhaps more evident to the high command on the spot than it is to us to-day. Be that as it may, the mobile columns carried out their instructions in the most gallant fashion, and their medical arrangements, which were well thought out, proved adequate. Major Macklin's previous Polar experience was naturally of the greatest value; he was accustomed to the climate, to the equipment, and to the method of transport. He had himself driven dog transport in the Antarctic regions, and he was familiar with the measures necessary for protection against the climate. He found that while reindeer were the best type of transport in barren regions, the area in which they could be used was limited to that in which reindeer moss grew; ponies were the most suitable in the populated areas, but dogs could be used under all conditions and when ponies and reindeer were useless. Men, though the most reliable for haulage purposes, were yet the slowest and most extravagant in food. As large and complete an equipment as possible was desirable; but, on the other hand, it had to be rigidly limited to a weight and bulk which could be safely transported. The system of evacuation followed, as far as possible, the usual military procedure by which the regimental medical officer accompanying the unit was responsible for the evacuation of the wounded to his aid post; from this point the responsibility devolved upon the officer commanding a field ambulance, whose duty it was to collect wounded from the aid post and evacuate them to a dressing station. Thus, when a man was wounded he was attended on the spot by the regimental stretcher-bearers, evacuated to an aid post, where he was attended by a medical officer, examined, re-dressed, and prepared for the long sledge journey to the advanced dressing station, passing a series of medical and transport relay posts. The advanced dressing station was so situated as to lessen the distance of the sledge journey as far as possible, but was placed at a point where it could receive adequate medical and general supplies. The medical equipment carried in the mobile columns had to be light, and consisted only of those things which were absolutely necessary; this equipment was carefully selected by Major Macklin, who gives full details. His knowledge of Polar climates had taught him that frost-bite was very liable to occur even in healthy men living under the conditions met with by the mobile columns, and his notes on this subject are of special value; he considers that brisk dry rubbing without oil produces better results than massage with oil, and that steps ought, in fact, to be taken to prevent the access of grease or oil to the skin or clothing.

[1] *The Evacuation of Sick and Wounded from Mobile Columns.* By A. H. Macklin, O.B.E., M.C., M.D.Vict., late Major R.A.M.C. Manchester: The City Press Co., Ltd., Oxford Road.

THE PATH OF INFECTION IN PNEUMOCOCCIC INVASION OF THE LUNGS IN MAN.

Since the publication in 1897 of the late Dr. Samuel Gee's aphorism, "Pneumonia is not a local but a universal disease; and the brunt of it may fall upon any part—lungs, endocardium, membranes of the brain, intestines, kidneys," the path of infection in pneumonia, whether by the blood vessels or the air passages, has been the subject of

controversy. In the Lumleian lecture for 1912, "On some moot points in the pathology and clinical history of pneumonia," Dr. Percy Kidd, relying mainly on the early occurrence of septicaemia before the appearance of local signs, summed up in favour of the haemic route. Recently, in a paper giving the results of a histological and experimental research, Drs. R. R. Armstrong and J. F. Gaskell[1] classify the pneumococcic infections of the human lung as follows: (1) Air-borne, (*a*) lobar pneumonia, (*b*) bronchopneumonia; (2) blood-borne, miliary pneumonia; and (3) lymph-borne infection, relapsing pneumonia. In lobar pneumonia the infection is seen to be first localized in the bronchioles, all of which in the area of inflamed lung are affected; their epithelium rapidly becomes completely desquamated, and the infection then spreads into the alveoli, reaching last those furthest from the bronchioles. As compared with this histological evidence, the occurrence of positive blood cultures is not regarded as an argument of weight in deciding the path of infection, for experiment shows that infection of the extremely vascular lung easily leaks into the general circulation, especially in the early stages before the establishment of local protective reactions The generally accepted opinion that lobar and bronchopneumonia are essentially the same process is confirmed and extended; in both the pneumococcus reaches the lungs by the air passages and settles in the terminal bronchioles; the factors determining whether the reaction is lobar or bronchopneumonic are the virulence of the organism and the resistance of the host; for children and old persons react to less virulent infections than adults, in whom greater vigour of the respiratory movements may play a mechanical part by materially assisting in the rapidity of infection of the alveoli, and so in rendering lobar pneumonia the prevailing form in adult life. There is an interesting suggestion as to the mechanism of the crisis in lobar pneumonia; the invading pneumococci are practically destroyed by the fifth day of the disease, and then the liberation of endotoxin, which is responsible for the general symptoms, comes to an end, and as soon as this endotoxin is neutralized, a process apparently occupying about forty-eight hours, the crisis follows, usually on the seventh day. Miliary pneumonia, due to infection of the alveoli by pneumococci reaching the lungs by the blood stream, is described and shown in a figure; this blood-borne infection spreads from the capillaries directly into the air vesicles, and the bronchioles either escape or are affected only by secondary extension. An absence of polymorphonuclear exudate is characteristic of this lesion, which is widely spread through the lungs, is merely part of a general septicaemia, runs a very rapid course, and is almost confined to young children; it is analogous to generalized miliary tuberculosis, and it is suggested that the pulmonary changes in pneumonic plague are also of this nature. The third method by which pneumococcic infection is spread in the lung is by way of the lymphatics, either from existing areas of infected lung or from the bronchi; this process, analogous to the spread of chronic pulmonary tuberculosis, is slow, and accounts for some cases of chronic and relapsing pneumonia.

SCARLET FEVER AND MILK.

Dr. A. J. Douglas, the medical officer of health for Winnipeg, describes in his annual report an outbreak of scarlet fever which occurred in April, 1920, following a dance held at a certain hotel in that city. From April 17th, a week after the dance, when the first case was notified, until April 26th, fifty cases, including three members of the hotel staff, were reported among those who had attended this dance. Three weeks before the outbreak two guests had been removed from the hotel suffering from scarlet fever, but no connexion could be traced between these two cases and the subsequent outbreak. Examination of the hotel staff, especially those who were concerned in the handling of food, yielded a negative result. The only possible source of infection in the hotel, according to Dr. Douglas, appeared to be the milk supply, which was not pasteurized, or an ice-cream made from cream also unpasteurized. There were, however, no other cases of scarlet fever among the dairyman's customers, and none at the dairy itself. In these circumstances Dr. Douglas suggests that the milk was infected within the hotel either by someone suffering from or recovering from an unrecognized attack of scarlet fever or by a carrier with no symptoms of the disease. The explosive character of the outbreak at its onset is certainly suggestive of an infection due to milk, but, like many of the scarlet fever epidemics attributed to this cause, of which 15 examples were collected by the late Mr. Ernest Hart and 59 by Bosey and Kober, making a total of 74, the evidence cannot be said to be conclusive. In some epidemics of this kind, and notably in the classical Hendon outbreak in 1885, the spread of scarlet fever has been attributed to an eruptive disease of the udders of the cows. In the Winnipeg outbreak no information is given as to the condition of the cows, but expert veterinary opinion, as Ker points out, is against the view that cows are subject to scarlet fever, and it seems safe to accept Savage's view that they are at most the carriers of the human infection. Other sources of milk contamination in the Winnipeg outbreak, such as the milker's hands, the milk pail, and the water supply of the dairy, are not discussed, nor is it stated how many of the 50 cases had partaken of the ice cream. The possibility of some of the dancers suffering from a *forme fruste* of the disease should also be considered. In conclusion, therefore, we may repeat that the evidence of this outbreak being due to milk is not conclusive, though the history of the onset is suggestive of such a cause.

SIR PHILIP MAGNUS.

Sir Philip Magnus has announced his intention of not seeking re-election as a Parliamentary representative of the University of London at the next general election, on the ground that he has just entered his 80th year, but adds that he sees no reason to expect a dissolution before December, 1922, possibly not before December, 1923. Sir Philip Magnus was first elected to represent the university at the general election in January, 1906—nearly sixteen years ago. In a letter announcing that he will not seek re-election he says that the member for the university has to safeguard its interests, which differ in some not unimportant features from those of other British universities. The member, Sir Philip Magnus continues, "has to attend very closely to the separate requirements of the different classes of professional men and women who constitute so large a majority of the members of his unique constituency, and many of whom are permanently engaged in the all-important task of maintaining the physical health and of developing the intellectual capacity of our future citizens. It is highly desirable, therefore, if I may venture to offer a suggestion, that in the selection of a candidate to represent our university in Parliament regard should be had, not only to his views on questions of general party policy, but also to his wide educational experience and to his detailed acquaintance with the requirements of members of the medical and teaching professions, as affecting the special interests of those professions and the service they are called upon to render to the State." Sir Philip Magnus himself has afforded a shining example of the qualities he describes as necessary to a university member. On many occasions he has given his cordial assistance to the British Medical Association in parliamentary matters, and gratitude is in particular due to him for his share in the long fight for

[1] R. R. Armstrong and J. F. Gaskell, *Journ. Path. and Bacteriol.*, Edin., Vol. xxv, No. 2. The research embodied in this paper was selected and carried out, and the paper was written while one of the authors was working under the Medical Research Council and the other held the Ernest Hart Memorial Scholarship of the British Medical Association.

securing tenure for medical officers of health, which was brought to a successful conclusion last year. In recognition of these services he was, at the Annual Meeting in 1920, elected an honorary member of the British Medical Association.

MEDICAL WOMEN'S FEDERATION.

The Council of the Medical Women's Federation held its autumn session in Edinburgh on November 11th and 12th, meeting in the beautiful library of the Royal College of Physicians. It sat for two days, and twenty-two members, representing the ten different associations of the federation in Great Britain, were present. A long discussion took place on the serious situation raised owing to the recent dismissal by the Glasgow Corporation of three married medical women who for some years had been employed in its child welfare and tuberculosis departments. When appointed they were already married; now they are dismissed at the instance, it was reported, of the Labour members of the corporation, who object to the employment of any woman whose husband is earning a regular income. The case of Dr. Miall-Smith, recently dismissed by the St. Pancras Borough Council on account of her marriage since appointment, also came under consideration. Nothing precluding marriage was contained in the terms of her contract. It was felt strongly by the council that it was not the function of the State or of any public authority to inquire into the private and economic affairs of men or women who apply for medical appointments. Persons should be allowed to hold office because of their individual capability to perform the assigned duties. If such inquiries were uniformly pressed it would mean the exclusion from public service of many men who, by inheritance or marriage, have sufficient money to maintain a small home. A resolution was unanimously carried recording the opinion of the council of the Medical Women's Federation that "marriage should be no bar to the holding of posts by medical women," and that "their exclusion is entirely contrary to the spirit of the Sex Disqualification (Removal) Act, 1919, and against public policy." The need for maintaining the standard so steadily advocated by the British Medical Association, of equal pay for equal work in the case of medical men and women, was once more emphasized by the council, in view of the danger of women being invited by public health authorities to accept a lower salary than is deemed essential for men. The council of the Medical Women's Federation is fully alive to the detriment to the profession as a whole which would occur if this principle were infringed, and is doing everything in its power to discountenance any form of "underselling" on the part of medical women. Amongst other subjects raised at the meeting, that of birth control stood prominent. A subcommittee was appointed to study the subject from all points of view, in order to ascertain the ultimate effects of birth control upon imperial health and welfare. The council of the federation also expressed the opinion that the services of medical women are desirable in large mental hospitals in the interest of the women. This is already recognized by many able superintendents. The introduction of psychotherapy as part of mental treatment was given as a strong reason for adding suitable medical women to the staffs of all large mental hospitals and asylums.

FACIAL SURGERY WITHOUT SURGEONS.

We have received an exceedingly interesting publication, entitled *Report on Work, 1917–1921*, of the Queen's Hospital, Sidcup, for sailors and soldiers suffering from facial and jaw injuries. It is famous throughout the world for the great success it has obtained in the treatment of facial mutilations, perhaps the most tragic and ghastly of war wounds. The report, which includes some striking illustrations of plastic surgery of the face, gives an account of the last four years' working of the hospital, and states that the end of its labours is now happily in sight. The admiration which we had for the Queen's Hospital has, since reading this report, been greatly intensified, for it would appear, at least according to the internal evidence of this report, that the committee has achieved its thousands of brilliant results without the aid of any surgeons or dentists, except one honorary consulting surgeon and the presidents, Sir Alfred Keogh and two late Directors-General of the Naval Medical Department, whose part was presumably not active. It does mention, it is true, that at one time some overseas medical officers were at the hospital—"separate units for Canadians, Australians, and New Zealanders with their medical officers and staff were accommodated"—and also that "some four teams of American surgeons and dentists were attached for training in the special work," but otherwise the entire work of the hospital was apparently carried on by the vice-presidents, general committee, commandant, matron, honorary secretary and treasurer, accountant, and auditor. The point is not that no names of surgeons are mentioned, for that might have been an oversight, but that absolutely no mention is made of the existence of any active surgical staff. A leaflet was enclosed in the report, printed in red ink, to which we turned eagerly as perhaps giving some explanation of this unusual method of staffing a hospital, but it merely expressed the regret of the honorary treasurer that, owing to an accidental omission, no mention had been made in the report of the Committee of the National Relief Fund. So the mystery—or the triumph—remains.

We regret to hear of the death, on November 14th, of Dr. Sheridan Delépine, Professor of Public Health and Bacteriology in the University of Manchester, and Director of the Public Health Laboratory. We hope to publish a notice of his career in an early issue.

Medical Notes in Parliament.

From our Parliamentary Correspondent.

The Prorogation.

Parliament was prorogued on November 10th until January 30th. It is understood, however, that the date for the new session may, of course, be brought forward or put backward according to circumstances. There is also a distinct possibility that in the interval a general election may occur if the Cabinet be unable to carry through the Irish negotiations with the Ulster leaders and with the representatives of Sinn Fein.

The whole of the time of the autumn sitting of Parliament was occupied with Government business. The five measures which principally engaged attention were: The Trades Facilities Bill, to provide capital for public undertakings and to assist export trade; the bill to enable local authorities to afford more work for the unemployed; the Unemployed Workers' Dependants' Temporary Provision Bill; the bill to preserve insurance benefits for the unemployed, but on a reduced scale, as was explained last week; and the Equalization of Rates Bill, applying to London only, the purpose of which is that the poorer parishes may be enabled to draw to a limited extent from the richer for the relief of their burdens.

In regard to finance, the Chancellor, Sir Robert Horne, gave a gloomy picture of the prospects for next year's Budget. The estimated surplus and the sum that was to have been allocated for the payment of Sinking Fund will, he now reckons, both have disappeared, but with extreme care an actual deficit may be avoided. Even to secure this result Ministers have found it necessary to announce drastic economies in all departments, and it is stated that Sir Eric Geddes's Committee in its report will recommend big reductions of expenditure wherever possible. The outlook for the Ministry of Health, however, appears to be practically defined already by the needs of the nation; and fresh cuts there can hardly be contemplated. In view of the situation the insurance practitioners agreed, as was reported a few weeks ago, to a reduction in their capitation fee from 11s. to 9s. 6d., and numerous health activities are being conducted on a very restricted basis. A small silver lining to the cloud is afforded by indications here and there of some revival in trade, and by the proposals at the Washington Conference to stop the construction of

capital ships. Thus the revenue position may be improved, but there has to be borne in mind that income tax in respect of commercial undertakings is being paid on a three years' average, and that a large drop in returns has accordingly to be anticipated for the year after next.

Voluntary Hospital Grants.

Mr. A. Lyle asked the Minister of Health, on November 9th, whether, under the terms of his Departmental Paper No. 1,402, giving the terms of appointment of the Voluntary Hospital Commission, the announcement that after the first emergency grant further grants would be made only against fresh money raised by the hospitals meant that they could not reckon, for the purposes of obtaining assistance, any ordinary revenue which they might receive in the current years; and whether, since this condition would prejudicially affect the poorer hospitals, which had practically tapped all sources of income, and which now saw, at all events for the present, no further new sources of revenue in sight, he would, in the interests of these poorer hospitals, investigate the operation of this condition. Sir Alfred Mond replied that the amount by which the income of a hospital for 1921 exceeded the income for 1920 would be reckoned as new money for the purpose of calculating the grant. In cases where the hospitals of a given area agreed to combine for this purpose their aggregate income could be made the basis for calculating new money. In regard to the second part of the question, he understood that King Edward's Fund was proposing to confer with the London hospitals as to the best method of raising their share of the anticipated deficit on the year's working.

Mr. Lyle asked how much of the money would be distributed this year. Was the Minister aware that this grant was made to meet an immediate necessity, and could he say that it would not be spread over, at any rate, two years? Sir A. Mond said he should want notice of the first part of the question. The money would be allocated as soon as practicable, and, he hoped, very shortly. Rear Admiral Sir R. Hall inquired whether Charing Cross Hospital was entirely self-supporting by good administration. Sir A. Mond said he could not give an answer to that, but he hoped it was so.

Mental Treatment of Ex-Service Men.

During the present month a number of questions have been asked in the House of Commons regarding the treatment and care of ex-service men suffering from mental disorder.

Captain Loseby asked, on November 3rd, the maximum amount paid as treatment allowances to an ex-service man confined in a lunatic asylum, and if the same allowance was payable in respect of a patient certified insane undergoing curative treatment in an institution approved by the Board of Control. He further inquired if more than 6,000 ex-service men were in lunatic asylums and if treatment allowances were paid by the Ministry of Pensions for persons so detained, but refused in certain instances to persons who were unwilling to suffer such detention, but asked, in the alternative, to be received by known institutions approved by the Board of Control, though not lunatic asylums in the ordinary sense. Captain Loseby also asked if the Minister was aware that an institution known as Chartfield, supported by voluntary subscriptions, had by intensive medical treatment achieved remarkable results in the cases of ex-service men temporarily insane through the war; and whether treatment allowances were being refused to patients anxious to enter this institution and were in certain cases being granted only on the condition that the patient suffered detention in a lunatic asylum.

Mr. Macpherson agreed as to the number of ex-service men in asylums. Men suffering from certifiable insanity due to war service were eligible for treatment and allowances at the expense of the Ministry in any institution approved by the Board of Control which, in the opinion of the Ministry's medical advisers, afforded the most appropriate treatment. Treatment allowances for these patients were substantially on the same basis as in other cases of in-patient treatment, and did not vary with the institution. Captain Loseby appeared to confuse treatment allowances with the cost of treatment. All the officers whose condition was due to service, at present in Chartfield, were, according to his information, receiving maximum retired pay; but the Ministry refused to accept responsibility for the charges for their medical treatment. He welcomed the deputation which Captain Loseby recently brought to him to consider what improvements were possible in treatment, and he arranged to have Chartfield inspected and to consider its possibilities. The report has not yet been submitted, but he had consulted with the Board of Control, who now said they were unable to recommend the Ministry to place this home on the approved list for the reception of patients generally. This was in accordance with the general policy of the Ministry which had been and remained to separate persons suffering from mental disorder from other patients. Captain Loseby put it that the Ministry had not been asked either in regard to Chartfield or any other institution to utilize the place generally, but only for the sane patients, and he asked whether the Minister adopted the position that if a man were insane he must go to a licensed lunatic asylum and to no other place. If that were not so, what test did he apply in regard to approving the particular position?

Mr. Macpherson replied that he was bound by law to send a certified patient to an asylum or some other place approved by the Board of Control. The places he utilized for this unfortunate class of men were very well run indeed. He did not ask for any charity. It was an obligation of the State to attend to this work. Mr. Macpherson added that he had no personal knowledge of the success or otherwise of Chartfield. A report was now being submitted. He should consider the individual merits of the place. It was, of course, his duty to see that the various institutions under the department were good and were carrying on successful work. He refused to send ex-service men to a charity institution.

Sir Watson Cheyne asked whether it was not a fact the general asylums were fully aware of the hope and possibility of treatment, and put that as their first object in receiving patients. Captain Loseby said he could not follow what kind of hardship was held to be inflicted upon the insane by compelling them to mix with the sane. Mr. Macpherson said it was difficult to discuss the question of policy by means of question and answer, but he refused to mix insane patients with neurasthenics.

Asked by Captain Loseby, on November 8th, the number of lunatic asylums approved by the Ministry of Pensions for ex-service men and the number of these which were run for private gain, Mr. Macpherson said that approximately 240 institutions were under the control of or had been approved by the Board of Control and the Ministry, and of these more than sixty were private establishments.

On the following day Captain Loseby asked the Prime Minister if the treatment allowances upon which some six thousand ex-service men depend, were paid strictly upon the condition that these men consented to be confined in lunatic asylums, whereas the allowance was refused in respect of patients being treated and anxious to be treated in certain private institutions of the Board of Control; also whether the official figures showed that on January 1st, 1919, there were 2,507 ex-soldiers confined in lunatic asylums; that the figures had risen to 4,673 on January 1st, 1921, and to 6,135 on October 27th, 1921. He asked, further, if the Prime Minister was aware that bitter laments were continually emerging from the men so confined, and whether he would consider the advisability of setting up a Commission of members of the Houses of Parliament to hear complaints and consider whether conditions could be improved.

Mr. Macpherson, who replied, said that the lunacy law required that every person who was certified as insane should be sent to an institution approved by the Board of Control, save that under certain conditions a single patient might be placed in a private house not specifically licensed for the reception of lunatics. Treatment allowances were granted, and the necessary cost of treatment was defrayed by the Pensions Department in respect of all certified patients whose insanity was due to war service and who were receiving treatment in institutions, whether public or private, approved by the Board of Control and by the Ministry. He could not speak for the ex-service men in asylums the origin of whose state did not entitle them to Royal Warrant benefits, but as regards certified "service patients" it was not accurate to suggest that any large number of complaints were received as to the conditions of their treatment. On the contrary the number was small, and they had invariably proved to have been made on unsubstantial grounds or to be of minor importance. When a complaint was received the practice was for the institution to be inspected and the whole circumstances investigated by Pensions Ministry officers, either alone or jointly with Commissioners of the Board of Control. Under an arrangement with the Board of Control, asylums were now visited by medical officers of the Pensions Ministry, and the service patients personally interviewed. Thus he was kept in close touch with the conditions of asylums, and he did not consider that there was any ground for adopting the suggestion to set up a commission. He could not accept as accurate Captain Loseby's statement as to the number of certified ex-soldiers in asylums in January, 1919, and January, 1920. On the latter date the number was approximately 6,000.

Captain Loseby inquired whether, if he could produce tangible evidence that some lunatic asylums were highly unsuited for ex-service men and made out a prima facie case, the Minister would advise the setting up of a commission. Mr. Macpherson did not think he could do so, but said he would be glad if any member of that House would visit any institution under his control. He had taken the greatest personal interest in this particular branch of work, and the complaints he had received had always been on unsubstantial grounds. Mr. Gritten asked whether it would not cause a large drain on financial resources to place large numbers of patients in private institutions. Mr. Macpheson said that was so; the State, in his opinion, was behaving very generously, but he had consistently refused to mix patients who had been certified with those who had not. In answer to Sir Philip Magnus, Mr. Macpherson added that the private institutions approved by the Board of Control, like the asylums, were periodically visited by the department. In reply to Mr. Gillis, he said that

provision had been made in the Ministry's neurasthenic hospitals for the accommodation and treatment by trained medical officers of uncertifiable cases suffering from war injury.

On further questions by Captain Loseby, on November 10th, Mr. Macpherson stated that the number of ex-service men at present receiving treatment in county or borough asylums at the cost of the Ministry was approximately 6,210, and of these some 4,140 had dependants eligible for and in receipt of treatment allowances. Captain Loseby inquired whether the number of men in lunatic asylums since January this year had increased by some 35 per cent. Mr. Macpherson believed that that was not so.

Scarlet Fever and Diphtheria in London.—In reply to Mr. Gilbert, on November 9th, Sir A. Mond said that he had appointed a special Office Committee, with medical representation, of the London County Council and the Metropolitan Asylums Board to investigate the increase in scarlet fever and diphtheria in London. There were at present 6,192 cases of scarlet fever and 2,996 cases of diphtheria under treatment in the hospitals of the Metropolitan Asylums Board. The Board's accommodation was limited to approximately 9,500 beds, but it was hoped that the arrangements which had now been made would meet the needs of the situation.

Medical Research Institute, Hampstead.—Mr. F. Green asked, on November 9th, whether the Home Secretary had received a letter, signed by twenty-five persons living in the neighbourhood of the Mount Vernon Central Institute for Medical Research, complaining of the cries and shrieks of a dog between October 10th and 16th. Mr. Shortt said he was informed that on the first two days of the period covered by the question there was no dog on the premises; that one dog came on October 12th and another, which was noisy at first on the 13th, but that these had not been operated upon; that they had been inoculated with a drug but without effect, and were still in perfect health. The dogs were seen by the Home Office Inspector on October 14th and were found by him quiet and, apparently, normal.

Institutional Treatment of Tuberculous Patients.—Dr. McDonald asked, on November 9th, if steps could be taken to relax the order that tuberculous ex-service men must be treated within the area of their residence, especially when greater benefits could be offered outside such area and voluntary means were available for the maintenance of the patient. Sir A. Mond replied that so far as he was aware no such order had been issued. The institutional treatment of tuberculous ex-service men was undertaken by the county and county borough councils, and it was within the discretion of a council, acting on the advice of their tuberculosis officer, to decide in what institution any particular case should be treated, provided that the institution and the arrangements made by the council for the use of the particular institution had been approved by the Minister of Health.

Ex-Service Men and Tuberculosis.—Major Tryon, on November 1st informed Mr. Sitch that during the past eighteen months 6,500 pension awards had been made to ex-service men in respect of tuberculosis; but as rejections were not classified according to diseases, he could not state the number of claims in respect of tuberculosis which were not accepted during that period.

Mental Deficiency Acts: Expenditure.—Mr. Leslie Scott, referring on November 9th to the circular issued by the Board of Control to local authorities calling upon them to limit their expenditure next year under the Mental Deficiency Act to the total amount sanctioned for this year, asked if the Minister of Health was aware that even if no cases, except those classed as urgent by the Board of Control, were dealt with, the result of the limitation would be to leave some 2,000 urgent cases uncared for, to their own unhappiness and suffering, to the great harm of many others, and at a cost to the community in rates and taxes for police, criminal justice, and Poor Law many times as great as the cost of looking after them under the Act of 1913. Sir A. Mond said he had seen the circular. Local authorities were at present able to deal with urgent cases as defined by the Board of Control provided that the expenditure fell within the limits of their approved estimate for 1921–22. The question of the limitation of expenditure under the Mental Deficiency Acts necessitated by the Government decision for drastic reduction of expenditure was receiving careful consideration.

Typhoid Fever.—In answer to Mr. Hirst, on November 10th, Sir A. Mond said he had been aware of the outbreak of typhoid fever in the village of Bolton-on-Dearne since August, when it began. It was attributed to an infected water supply, which was being dealt with.

Prison Hospital Appointments.—Sir S. Hoare asked the Home Secretary, on November 10th, whether the lady members of the Voluntary Advisory Board would in future be consulted before appointments to the hospital staff, disciplinary or nursing, were made. Mr. Shortt said that the Prison Commissioners had already arranged to do this in respect of a hospital at Holloway, and were very glad to have the Nursing Board's assistance.

St. Andrew's Mental Hospital, Northampton.—Sir Alfred Mond, in reply to Mr. Myers on Nov. 8th, said that this hospital was visited and thoroughly inspected by two commissioners on May 16th and 17th last, who reported that the institution continued to be very well maintained, and that all the patients were seen and were found to be properly and kindly cared for.

England and Wales.

Newcastle Royal Infirmary War Memorial.

A memorial tablet, erected in the chapel of the Royal Victoria Infirmary, Newcastle-upon-Tyne, to the memory of the twenty members of the staff who fell in the war, was unveiled on November 10th by Professor David Drummond, Vice-Chancellor of the University of Durham and President of the British Medical Association. Dr. Drummond said that of those whom the tablet commemorated eleven were medical practitioners, seven medical students, and two hospital porters; each one of them had been a staunch friend of the institution. The tablet was dedicated by the Bishop of Durham (Dr. Hensley Henson).

The British Orthopaedic Association.

The annual meeting of the British Orthopaedic Association will be opened at the house of the Liverpool Medical Institution on the morning of Friday, December 2nd. The President, Sir Robert Jones, K.B.E., C.B., will be in the chair, and a discussion on the late results of the treatment of congenital dislocation of the hip will be opened by Mr. H. A. T. Fairbank and continued by Mr. E. Laming Evans; afterwards a demonstration of radiograms of bone and joint affections will be given by Mr. C. Thurstan Holland. In the afternoon Mr. T. R. W. Armour will give a demonstration of operations and cases at the Royal Southern Hospital, and the members will dine together in the evening. At the morning session on the following day, Saturday, December 3rd, Mr. Harry Platt will read a short paper on a series of endosteal tumours, Mr. R. C. Elmslie will give a demonstration of such tumours, and Mr. D. McCrae Aitken will read a paper on "Function in relation to repair in bone." In the afternoon visits will be paid to the Royal Liverpool Country Hospital for Children at Heswall and to the Hospital for Children, Leasowe, Cheshire.

King Edward's Hospital Fund for London.

A special meeting of the General Council of King Edward's Hospital Fund for London was held at St. James's Palace on November 9th, with the Earl of Donoughmore in the chair.

The Honorary Secretary, Lord Somerleyton, read the order of appointment, signed by the Prince of Wales, President of the Fund, delegating his powers as President, during his absence abroad, to a Committee consisting of Lord Donoughmore, Lord Finlay, and the Governor of the Bank of England; and a letter from His Royal Highness was read by the Chairman.

The Chairman of the King's Fund Policy Committee (Lord Stuart of Wortley), in presenting a report of that committee on the reorganization of the King's Fund, said that the post-war crisis in hospital finance had added much to the work of this Fund. The old work had increased in quantity, and work of new kinds had been added. Hence the reorganization proposals that were before them that day. They involved no change in the Fund's Act of Incorporation, and therefore no application to Parliament. The old work would have increased in quantity in any case; the money difficulties and anxieties of the hospitals would have had that effect even if there had been no Cave report. But, arising out of that report, much work of a new kind had been added to the old; its urgency had been increased, and the time available for doing it made less, by the interpretation put by the Government on the Cave proposals. The work of the committees needed to be better concentrated and their responsibility more accurately ascertained. The new framework proposed was submitted as a businesslike apportionment of the field to be surveyed. He moved that the general principles of the scheme be approved, and the Policy Committee be authorized to work out the details.

The resolution was seconded by Sir Cooper Perry. Sir William Collins suggested that the Policy Committee should present a further report on the steps to be recommended for the preservation of the voluntary system of hospital management. Lord Stuart, in reply, said that the measures for the preservation of the voluntary system

were being worked out in consultation with the hospitals, and no final report was possible. The resolution approving the scheme was carried unanimously.

The Chairman of the Executive Committee, Lord Stuart, presented a report of that committee on the conditions attached to Government grants to voluntary hospitals, recommending that the Council should pass the following resolutions:

(i) That the President and General Council of King Edward's Hospital Fund for London have considered the conditions attached by the Treasury to the temporary assistance voted by Parliament to voluntary hospitals requiring that fresh money shall be raised pound for pound with the Government grants, and are of opinion that the application of this condition, which was not recommended in the report of Lord Cave's Committee, nor separately considered (much less expressly enjoined) by Parliament, will lead to great difficulties and probably to great injustices as between different hospitals in the distribution of the grants; and they trust, therefore, that the condition will not be pressed.

(ii) That copies of this resolution should be forwarded to the Prime Minister, the Chancellor of the Exchequer, and the Minister of Health, and the Voluntary Hospitals Commission.

The resolutions were carried.

New X-Ray Equipment at Bradford.

On November 4th a new deep therapy *x*-ray apparatus, which has been installed at the Royal Infirmary, Bradford, was formally dedicated to public use by the Lord Mayor. The apparatus, the cost of which was £1,000, is the gift of Mrs. W. H. Shaw, of Bradford, and was largely the result of an appeal made in the local press by Mr. G. E. Priestman, chairman of the board of management. In the course of the opening ceremony Mr. Priestman mentioned the desirability of obtaining a supplementary apparatus for treating cases of malignant disease of the throat and nose, and later in the afternoon Alderman Thomas Sowden offered a donation of £150 from himself and Mrs. Sowden for the purchase of this apparatus, which was gratefully accepted. Dr. W. Mitchell, who has been in charge of the electrical department of the Bradford Royal Infirmary for some fifteen years, said he was certain that the right thing had been done in the purchase of the new apparatus, which would enable them to keep abreast of the times. The rays produced by the apparatus were of great penetrating power, and, in his opinion, radium had been a failure to a large extent because of the small quantity of high velocity rays emanated. There was a consensus of opinion that surgery should be the first resort in most cases, but there was hope that a number would be cured by *x*-rays which could not be cured by surgery, though he did not presume to say that it would cure every case.

Armistice Day at University College, London.

Armistice Day was celebrated at University College, London, by the dedication of two memorial tablets, one in University College Hospital Medical School and the other in the Slade School of Art. The tablets commemorate the students who fell in the war, both old students and students who left the college directly for the field, and they are part of a larger scheme of memorial in which it is hoped eventually to record in enduring stone the name of every student from the college who gave his life for his country. Both tablets are beautifully wrought, with the lettering on a white marble panel bordered with variegated grey marble, and the figures of the fateful years 1914–19 picked out in gold. Among the inspiring names on the tablet in the medical school is that of Victor Alexander Haden Horsley—one name among four-and-thirty others, as its bearer would have wished it to be, without any indication of special rank or distinction. The roll of honour at University College, including all departments, contains three hundred names, and the reading of it, partly by the Provost, Sir Gregory Foster, and partly by the Dean of the Medical School, Dr. G. F. Blacker, in the presence of the staff and students and the nurses from the hospital, gathered in the main quadrangle, occupied a solemn quarter of an hour. At the close the Last Post was sounded, and then came the silent two minutes of remembrance and rededication, which were followed by the Reveille and the hoisting of the college flag to full mast. Previously the President of the University College Hospital Society and the Presidents of the College Unions had placed wreaths at the spot where these names are at present temporarily inscribed. The tablets were formally presented on behalf of the War Memorial Committee by the Provost. The Dean, in accepting the tablet for the Medical School, said that in its position just within the vestibule in University Street it would recall, even to the most thoughtless who passed in and out, the noble ideals which had thrilled the young lives in those recent days of ardour and renunciation. The blood of these gallant men was not shed in vain, and within these quiet walls of study and preparation their spirit would remain for evermore.

Ireland.

Ulster Medical Society.

President's Address.

The opening meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on November 3rd. The ex-President, Dr. Thomas Houston, after the minutes had been read, introduced the president for the ensuing session, Dr. Robert Hall. A hearty vote of thanks was accorded to Dr. Houston for his services to the society and his conduct of the chair during the past year. The President referred in feeling terms to the sad death from accident of Dr. Louis Jefferson during the past year, and after some introductory remarks went on to discuss the subject of his address, which was "Some rare conditions of lung disease." The first he mentioned was that of a large cavity which, owing to some peculiarities, simulated pneumothorax. He then gave notes of cases of "ballooning of the lung"; of bronchopleural fistula, some relieved by aspiration, and others unsuccessfully incised and drained; of a case of huge effusion which developed some temporary pneumothorax three days after each aspiration, but in which no lesion to account for such a phenomenon was found after death; of interlobar empyemata, some cured by aspiration after pneumonia; and of primary acute congestion of the lungs, to be distinguished from oedema of the lungs. Dr. Gardner Robb proposed, and Dr. W. Burns seconded, a hearty vote of thanks to the President for his address, which was passed with acclamation; Dr. Hall replied.

Roll of Honour.

Dr. Houston, ex-President, explained that when Dr. McKisack was President of the Ulster Branch of the British Medical Association in 1918–19 he (Dr. McKisack) desired to do something to form a permanent remembrance of those who had left their homes and practices and served abroad; he had submitted a design for a roll of honour to the council of the society, which had approved the suggestion and accepted the offer with grateful thanks. The plan had now come to maturity, and he asked the President to unveil the memorial. The President then drew aside the large Union Jack which covered the roll of honour, and said that he accepted it on behalf of the society; all the Fellows and Members then stood up and sang the National Anthem. Professor Lindsay proposed a hearty vote of thanks to Dr. McKisack for his gift. Members of the society, he said, had played their part brilliantly in the war. The motion was seconded by Professor R. J. Johnstone, who gave further details of the inception of the scheme and the great interest Dr. McKisack had taken in it. The President conveyed the vote to Dr. McKisack, who returned his warm thanks for the kinds words and for the reception by the meeting; he was proud and glad to have an opportunity, as he was sure all present were, of showing their appreciation of the services of those who had done so much for them. He gave his best thanks to Dr. Robert Marshall, the acting secretary, who had taken much trouble in getting the names and seeing that there were no inaccuracies nor omissions. The roll of honour takes the form of a handsome finely polished oak frame, with the Ulster coat of arms at the top and "Ulster Medical Society" immediately beneath, with at the bottom "1914–1919." There are 130 names in parallel columns with their rank and services, in sunken gold letters: in the case of those who died on service the date and fact are recorded.

Correspondence.

ON THE OPERATION OF PROSTATECTOMY.

SIR,—In your issue of October 15th I was pleased to see a note of vindication of Professor A. F. McGill's priority over Freyer in advocating and in performing an intended and methodical enucleation of the prostate gland. It gave me especial satisfaction because from time to time, in discussions at the meetings of the British Medical Association, I have insisted upon the fact—in vain. I have also insisted on these occasions upon the further fact that the actual priority or primacy is due to American surgery, the cases of Amussat (1827) and Dittel (1885) and Benno Schmidt (1886) being exceptional. The cases cited in proof were well known to us on this side of the water, in which Belfield of Chicago (1886) and Eugene Fuller of New York were the pioneers (1890). Mr. Atkinson's case at Leeds in 1889 is not generally known, I think, on this continent, and adds to the obligation we owe to Sir Clifford Allbutt's and Mr. Harry Littlewood's communication in your columns. It is not surprising that a practitioner of so much activity as was Freyer in his twenty-one years of much occupation in the North-West Provinces of India should be ignorant of American medical literature at that time; and in his lectures delivered in the Medical Graduates' College in November, 1900, and in the first and second editions of his work on *Enlargement of the Prostate* that lack of acquaintance therewith is still evident. But in the third edition, of 1908, p. 107, recognition is made of the work of both Belfield and McGill, which, however, was neither adequate nor generous, and this notwithstanding that Mansell Moullin, in the third edition of his *Enlargement of the Prostate*, published in 1904, with which it is hardly conceivable that Freyer could be unacquainted, gives chapter and verse and full acknowledgement of their priority.

The proverbial differences of doctors, though usually saddled upon the medical profession, doubtless had primary reference to doctors of theology and casuistry, and I shall ask leave to make a quotation which may have an application in both ways. It is from Professor Hugh Hampton Young's (Johns Hopkins) article on hypertrophy of the prostate in the fourth volume of Keen's *Surgery*, on p. 433:

"That the first complete suprapubic prostatectomy was done by Eugene Fuller of New York, in 1894, is now well established, and we cannot understand why some of his fellow countrymen should have given the credit of this to Freyer, who made his 'discoveries' five years later, and after he had attended a meeting of the International Medical Congress in Paris in which Guiteras described the details of the method which was employed by many of us in America. I was with Guiteras, and in fact participated in the writing of his paper, so that I can substantiate his assertions that if Freyer did not then learn the method from him he failed to avail himself of his opportunities."

Toronto, Oct. 28th. I. H. CAMERON.

P.S.—Apropos of Mr. Zachary Cope's letter in your issue of October 1st, p. 539, let me direct your attention and his, although it is hardly worth while, to a squib upon "Acute Abdomen" in the *Canadian Medical Association Journal* for April last, p. 277.

ERYTHEMA NODOSUM.

SIR,—As a general practitioner intrigued by the enigma of erythema nodosum, I have read with interest the communications of Dr. J. Odery Symes and Dr. A. Hope Gosse. It is high time the profession made up its mind on this problem. Both these authorities dismiss in the directest way the rheumatic hypothesis; but I am not converted. Indeed, what they say only serves to confirm in me the notion that rheumatism (whatever rheumatism may mean) does play a part in causation.

And that raises a question put by G. K. Chesterton in one of his Dickens prefaces, "How far can an author tell a truth without seeing it himself? Perhaps an actual example will express my meaning. I was once talking to a highly intelligent lady about Thackeray's *Newcomes*. We were speaking of the character of Mrs. Mackenzie, the Campaigner, and in the middle of the conversation the lady leaned across to me and said in a low, hoarse, but emphatic voice, 'She drank. Thackeray didn't know it; but she drank.' . . . How far can a writer thus indicate by accident a truth of which he is himself ignorant? . . . The author sees only an arc or fragment of a curve; the reader sees the size of the circle."

At every turn of Dr. Symes's abstract of his address I found myself asking Chesterton's question. Dr. Symes began by doubting "the rheumatic origin," and asserting that "amongst practising physicians" that view is "fast disappearing"; but always, as he proceeded, he flung out hints that a general practitioner could only read as evidence of the guilt of rheumatism—the reference to a nurse who had "pains in the limbs with fever" before erythema nodosum appeared, and "the night nurse of the same ward" with "fever and arthritis" before the rash; the parallel he draws between this disease and chorea ("a cerebral form of rheumatic fever"); his surmise that "the specific infective agent gains entry by the tonsils"; his admission that "convalescence is generally prolonged" and relapses "not uncommon" and arthritis "rather more frequent than in other acute fevers"; his failure "to grow an organism from the blood"; his note on the low "degree of immunity conferred," and history of a case in which were combined "tonsillitis and erythema nodosum with endocarditis and pericarditis" and "a strong rheumatic family history." . . .

All the suggestive passages are not epitomized there, but to me these things say only one word—rheumatism. And Dr. Gosse's letter, with its conjunction of tonsillitis and erythema nodosum, does not alter the impression. Such recent work as A. Lambert's at Bellevue Hospital, New York, and P. D. White's at U.S. Base Hospital No. 6, and H. Nordlund's at the Sabbatsberg Hospital, goes to prove the link between tonsillitis and rheumatism. And personal experience compels me to expect benefit from salicylates in erythema nodosum.—I am, etc.,

Belfast, Nov. 11th. ROBERT WATSON.

SIR,—The doctrine of the non-rheumatic origin of erythema nodosum has interested me ever since I received it from the late Dr. David Lees, fifteen or more years ago. The broadest facts upon which it rests are that children riddled with acute rheumatism extremely seldom show the rash of erythema nodosum, and that relapses and recrudescences are as conspicuously absent in erythema nodosum as they are a cardinal feature of children's rheumatism. On both these points Dr. J. Odery Symes has laid emphasis in his paper published by you on November 5th. But there is a third, and to my mind a still more weighty argument—namely, that erythema nodosum does not conform to the clinical picture of the rheumatic infection. In rheumatism haemorrhagic lesions always denote the severest forms of the infection, whereas in erythema nodosum we see a haemorrhagic rash accompanied by a minimum of other "rheumatic" manifestations (arthralgia and fever, but no severe acute carditis, no chorea, no nodules, etc.). I think this is conclusive; and I may add that the same three arguments serve to separate "peliosis rheumatica" (Schönlein's disease) from the rheumatic infection. Considering the damaged state of the tonsils in rheumatic children it is not to be wondered at that occasionally these patients will show erythema nodosum or "peliosis rheumatica."

Dr. Symes is perhaps a little sweeping in his condemnation of the immutability of textbooks, and, did modesty permit, I could refer him to at least one obscure volume on the medical diseases of children (dated 1911) in which the true faith is maintained.—I am, etc.,

London, W., Nov. 11th. REGINALD MILLER.

SIR,—The following notes of cases which have recently occurred in our practice may be of interest, in connexion with Dr. Symes's article on erythema nodosum (p. 741) as a specific infective disease.

May M., aged 21, consulted one of us on September 10th with sore throat; the temperature was 105°, and there were well-marked nodes on both shins, with a history of having been ill for some days. The rash had been present for a couple of days. Nodes also appeared on the extensor aspect of both upper and forearms, and also on the malar regions. Phlyctenules were present in the right eye. She progressed under salicylates, although their effect on her general condition was doubtful, and they certainly did not reduce the pyrexia, which came down slowly. They did relieve the severe joint pains. A fortnight later she had a definite relapse, with a fresh crop of nodes and return of pyrexia and joint pains. She then slowly got well.

Ivy M., aged 12, was seen on September 19th with well-marked nodes on both shins and a sore throat. The nodes later also appeared on the extensor aspect of the arms and joint pains were present. Her attack was much less severe, and she was well in about a fortnight.

Phyllis M., aged 17, also developed the disease; she was seen first on October 3rd. The crop of nodes was confined to the shins, and she complained of sore throat. Her attack was less severe than in the other two cases, the period of illness being about a fortnight.

The point is that all these cases are members of the same family. They were all girls. Each complained of sore throat, and it is interesting to note that each succeeding case was less severe than its predecessor.

The mother, at the time of the occurrence of the second case, volunteered the statement that her son, aged 20, had had similar "spots" before May M. was taken ill, but he was not compelled to seek medical advice.—We are, etc.,

KENNETH ANDERSON,
NORMAN C. COOPER.

Winscombe, Nov. 8th.

SIR,—The perusal of Dr. J. O. Symes's address leads me to publish the following case:

I saw a girl, aged 6 years, on October 17th, 1921. She had erythema nodosum over both shins, and a few abrasions of skin, due to scratching. There was no history of rheumatism or any serious illness, except an operation for removal of tonsils and adenoids some time ago. Her father and her brother were healthy. The mother I have been attending for a bronchial affection and ulcerated cervix uteri. The girl was not very ill, and had apparently recovered by October 24th. On October 27th she appeared to be suffering from a slight catarrh. From October 28th to November 2nd she gradually became worse, complaining of frontal headache, and there was obstinate vomiting. She lay on her right side with the head bent forwards, the chin touching her neck, the upper and lower limbs flexed on the body. No adventitious pulmonary sounds were heard; the respiration was regular; both inspiratory and expiratory efforts were prolonged, with only a momentary pause. Cardiac sounds were feeble and the pulse very slow. The temperature was normal; she was semiconscious, but could be roused; deglutition was good, but there was constant grinding of teeth. The patellar reflex was absent, the plantar present. She remained in much the same condition until November 8th, when the cardiac sounds and respiration became more normal. Later in the day coma set in, the pupils became dilated, and there was incontinence of urine, but not faeces; the bowel (rectum) had to be emptied. All reflexes were abolished except extension of both great-toes. The upper and lower limbs assumed a normal position, and she lay on her back. The temperature was not more than 100° throughout the illness. She died on the morning of November 10th.

My first impression was that she was suffering from an acute toxaemia of streptococcal origin, the seat of infection being the abrasion of skin over the tibia—that it was the exciting cause of developing in a tuberculous constitution an active tuberculous meningitis.—I am, etc.,

J. DUNCAN HOWE.

Preston, Lancs., Nov. 15th.

THE COLON AND COLITIS.

SIR,—The able and practical address of Lord Dawson on colitis (BRITISH MEDICAL JOURNAL, July 9th) deserves the very closest attention, especially where he emphasizes the importance of the detoxicating influence of the liver and the association between muscular failure—so frequently the essential factor—with the disappointing results in so many cases of operative procedure. Recently among Continental workers numerous—and what would appear to be precise—physiological researches have been conducted concerning the etiology of entero colitis, and as a result treatment on comparatively new lines has been suggested and practised with advantage.

It appears to be clearly established that the pathognomonic symptoms of the disease at the onset may be attributed to alterations in the functions of the liver, which does not secure the inhibition of the coagulating ferment, the proper elaboration of the fats, nor the antifermentative power of the intestine. To meet the deficiency bile or bile extracts have been employed, but with indifferent success. The constipation and pain are relieved and the membranous matter in the excreta becomes progressively less, but diarrhoea is apt to supervene, and on cessation of the treatment there is a return of all the symptoms. Repeated examinations of the faeces have established, besides, the existence of muscular fibres and grains of starch not attacked, which indicates that there is also insufficiency of the duodenal and pancreatic secretions. It appears that there is a curious synergia between all these organs, and that the chemical agent is a hormone—the secretine of Bayliss and Starling—which is produced by the duodenal mucous membrane, circulates in the blood, and excites the secretion of the bile, intestinal juice, and above all the juice of the pancreas.

Pavlov and others have discovered in the duodenum and jejunum a singular ferment called by them enterokinase, and which has the property of transforming protrypsine inactive into trypsine active; it has been found that if a trace of this is added to pancreatic juice, collected free from all contact with intestinal secretion, albuminoids are digested, whereas they are unaffected by the pancreatic juice alone. It follows that intestinal and pancreatic digestion is not perfect unless the duodenal mucous membrane is intact and furnishes the secretine and the kinase.

The pathology of membranous entero colitis is thus very complicated, and although it may appear as if the influence of the liver were preponderant, it may eventually prove that the biliary insufficiency is but a consequence of alterations the seat of which is in the first intestinal segment. It has been suggested that an associated therapy would be beneficial, and the biliary extracts and the extracts of the duodenum—such as choleokinase, for instance—have proved of marked benefit in many cases. Briefly, all the symptoms are relieved, but what, it may be inquired, is the cause of such a complicated, distressing and intractable malady? Lord Dawson suggests disturbed motor function and disturbed secretion, which would appear to confirm the views already stated; but it would seem from various facts founded on clinical data, such as the great increase within recent years of affections of this nature, as well as the temperament of the persons generally affected, that the primary cause rests in the central nervous system.

We cannot disregard the fact that most patients suffering from this disease are "emotionalists"—that is to say, there is disorganization of the sympathetic. It is not to be wondered at that colitis should be so frequent in those classed as psychoneurotics, and that it appears in certain forms, such as fixed ideas and obsessions of which the oscillations follow the disease itself. Distant parts also exercise an influence, such as rectal irritation, intestinal stasis and appendicitis, and lesions of the uterus, ovaries, etc. It is important to emphasize that the treatment of these affections often improves the entero-colitis and vice versâ.

From these facts it would appear to be established that a synergia exists, the essential factor of which rests in the sympathetic, but that it has to be put into play by various reflexes when a state of disorganization exists. The following case may be of interest in this connexion:

A lady, aged 40, for several years had suffered from colitis. Diarrhoea, with eight to ten motions a day, has been a prominent symptom, with much mucus. Certain articles of diet, especially meat and vegetables, aggravated the intestinal symptoms and also produced an intense urticarial rash all over the body, accompanied with much smarting and itching. The rash was pinkish-red and looked like angio-neurotic oedema in the face and hands. The lips were invariably pale in colour. This lady had much treatment, both here (Egypt) and in England, without deriving benefit.

The treatment employed, and which practically effected a cure, consisted of sulphur baths, saline intestinal lavage, permanganate of calcium gr. 1/4 in a tumblerful of water several times a day, and, in addition to light diet, cooked apples and the papaw fruit in abundance. After remaining in good health for twelve months she became pregnant, and during the ensuing period of nine months the bowels acted normally and she had not a single attack of the rash. This satisfactory state of affairs continued until five months after the birth of her child, when there was a return of the rash in a severe form, which, however, promptly yielded to the same treatment as formerly, combined with arsenic and calcium lactate. The bowels have acted normally for nearly three years.

The theory of an infectious origin of the disease has a certain number of adherents, especially as certain microbes, particularly the *Bacillus fluorescens* and *proteus vulgaris*, have been regarded as the cause of the malady. However, these microbes are common hosts in the intestine and their multiplication has been attributed, not to contamination properly so called, but simply to a deficiency of the biliary secretion and trypsigen, to a diminution of antiputrid and antitoxic power, which gives support to the hepatic-pancreatic-duodenal pathology already alluded to. Nevertheless the part which the toxins and microbes play

in aggravating the symptoms cannot be ignored, and explains probably the symptomatic relief obtained from such drugs as calcium permanganate.

It is fairly clear that the immediate cause of enterocolitis is due to disturbances in the biliary and duodenal secretions and without doubt also in the pancreatic, but that the remote causes reside in the disorganization of the sympathetic, which regulates the functions of these organs as well as the vasomotor system. The sympathetic in its turn is affected by multiple causes, hereditary or acquired, cerebro-spinal, alimentary infection, etc., but it remains the necessary intermediary. It is but a question of time when muscular failure supervenes, and, to quote Lord Dawson's words, "given failure in the function of movement, in the function of secretion (internal and external), and the consequent irregularities of putrefaction and deranged absorption, and colitis receives a large measure of explanation."

The treatment which has been found the most efficacious is, after attention to any concurrent trouble, comprised under a moderate regimen, regulated exercises or repose as the case may be, and the employment of few drugs. The diet is of vital importance, but it must be altered to suit the idiosyncrasies of each individual: some do well on fillets of beef, for instance; others cannot touch it; cooked fruit, especially apples, and the papaw, when it can be obtained, are invaluable, especially the latter, which I look on almost as a specific; eggs are also well tolerated when lightly cooked or raw. As regards drugs, calcium permanganate will be found very useful in many cases; there may be a great future before choleokinase, secretogen, and such preparations.

As the psychic craze has not yet reached here, no opinion can be expressed about its effects on a pathological entity like colitis, but it is different with purely physical remedies, which are undoubtedly invaluable. As regards the psychic treatment, it is possible that the physicians who established great reputations at other times by the employment of certain drugs, now completely discarded, must have exercised some such influence, but ethically, scientifically, and unostentatiously.—I am, etc.,

T. Gerald Garry, M.D., M.A.O., M.Ch., M.B.E.

Cairo, Aug. 5th.

THE TREATMENT OF INTERNAL HAEMORRHOIDS BY INJECTION.

Sir,—Nearly every speaker at the meeting of the Section of Proctology at Newcastle referred to the treatment of internal haemorrhoids by injection. Nearly all admitted that their experience of the treatment was very limited, or stated that the method had a definite, though limited, place in the treatment of internal piles. That it is applicable to every case I, at any rate, have never for a moment alleged. But, like that accurate and shrewd observer, the late Sir James Goodhart, who certainly had no axe to grind, I do urge that its sphere of usefulness is very much wider than most operating surgeons will allow. That the public are beginning to realize this, and that the 2,000 cases I treated by this method at St. Mark's Hospital between 1914 and 1917 were very successful is proved, I think, by Sir C. Gordon-Watson himself, when he states that "It would appear from inquiries made at St. Mark's Hospital that there is a prevalent impression that this form of treatment is freely practised there—an impression which may have arisen from an article having been written on the subject in the British Medical Journal by an advocate of this method who did temporary work at St. Mark's during the war." I assume that I am the advocate to whom he refers. What I cannot understand is Sir C. Gordon-Watson's reason for reviewing only 49 cases—presumably not cases of mine, since no case of perineal abscess occurred in the series of 2,000 or so cases which I estimate that I treated in the three years—when he might have dealt with the very large number of cases that were under my own care.

Some little time ago I made inquiries of 300 private cases which I had treated upwards of three years previously, and received replies from the majority of them. Of these, 83.4 per cent. reported themselves absolutely free from rectal symptoms, and many of the remainder merely mentioned trivial symptoms, such as "occasional uneasiness." These figures compare quite favourably with those obtained by operation. Indeed, I meet almost daily with patients who have suffered relapse after operation—performed in some cases by recognized rectal experts—and who shudder at the idea of submitting again to what they describe as "the nightmare" they endured after their operations. No patient ought to have cause to refer in these terms to treatment by injection.

A strikingly long list of complications after operations—including several deaths—is referred to by many of the Newcastle speakers. As far as I am concerned, my list of complications after injection consists of six cases of recurrent haemorrhage—easily dealt with by clamping a vessel through a speculum—and a very few cases of pain necessitating confinement to bed. The latter cases were due to thrombosis, probably from using a little too much of the solution. I also had one case in which an external pile became inflamed and suppurated shortly after internal piles had been injected. The vast majority of cases are relieved of all symptoms from the moment of the first injection, do not have to miss a day's business, and appear to be permanently relieved of their piles.

Some of the speakers said that they never injected more than one, two, or three piles at a sitting, and most spoke as if they imagined that one injection is sufficient. My own practice is to deal with as many piles as are present, and to repeat the injections at weekly intervals until no more trace of piles can be seen on visual examination through a speculum. The average number of injections which I find necessary is four; rarely or never have I found one injection sufficient to cause total disappearance of the piles, and still more rarely have I found more than six injections necessary. If this be compared with the time lost in the preliminary treatment for operation, the ten days in bed after operation and the customary period of convalescence after leaving the nursing home or hospital, and if the formidable list of possible complications be compared with the very few and trifling complications after injection that I have met with, I think most would decide on injection rather than operation when their own turn came. That this is true is shown by the disproportionate number of medical men who have been to me for injection and who are amongst my 83.4 per cent. of complete successes.

Sir C. Gordon-Watson made some sweeping statements about supposed complications after injection, but on what authority he omitted to mention. Nevertheless, he summed up by saying that "Treatment by injection is entitled to more consideration than it has received in the past," and that "we ought to give a more extended trial to this method, especially amongst those who can ill afford the time to lie up." I am encouraged by this to hope that he will be as good as his word, and feel sure that, when he has gained a large experience of injection treatment, he will be more ready to meet that public demand for it that he has told us already exists.—I am, etc.,

London, W.C., Oct. 22nd. Arthur S. Morley, F.R.C.S.

THE CURE OF SLEEPING SICKNESS.

Sir,—In August last it fell to my lot as Sectional Editor of the *Tropical Diseases Bulletin* to write a critical review of recent work on sleeping sickness. For reasons which are clearly stated at the commencement of my review, I decided to deal mainly with the work of Marshall and Vassallo. Judging from Dr. Jensen's letter, published in your issue of November 5th, this review has caused considerable distress to him and to a recently self-constituted body, the Tropical Diseases Prevention Association, of which he is the honorary secretary.

I may say at once that until I read an annotation in the *Lancet* of September 10th—the day on which my critique was forwarded to the Tropical Diseases Bureau for publication—I was ignorant of the fact that Dr. Jensen's association was acting as sponsor to Marshall and Vassallo. My object in writing the review was simply to present to the readers of the *Tropical Diseases Bulletin* a critical analysis of the work on which Marshall and Vassallo based their sweeping claims, and as the result of a most careful consideration of their papers I reached the following conclusions:

1. The work is based on two fundamental assumptions, both of which are incorrect, or at least can only be accepted with very considerable qualification.

2. The treatment is not new, even for trypanosomiasis, but is substantially the same as that tried by Reichenow in 1914, and

abandoned by him as useless in that it failed to sterilize the cerebro-spinal fluid.

3. Marshall and Vassallo produce no satisfactory evidence that intrathecal injections of salvarsanized serum sterilize infected cerebro-spinal fluids.

4. The results, so far published, fail to substantiate the claim that the treatment gives better results than any hitherto obtained by other methods.

Scientifically Dr. Jensen's letter is of no value, as he does not attempt (probably because he is unable) to controvert the arguments on which I based these conclusions. He points out that the work done by Marshall and Vassallo was performed by them as Uganda medical officers and in their spare time. This may account for the unsatisfactory nature of Marshall and Vassallo's observations, but it certainly does not invalidate my conclusions, nor is it likely to inspire belief in Marshall and Vassallo's claims, or respect for the judgement of Dr. Jensen and his association.

Dr. Jensen, however, is mainly concerned in defending the position of the Tropical Diseases Prevention Association, and in view of the youth of this body it would, naturally, resent anything which might suggest that it had been guilty of a gross error of judgement. Even though willing to make full allowance for his sensitiveness on this point I cannot refrain from pointing out to Dr. Jensen that he has descended to somewhat questionable tactics.

In the first place, he states that I published my critical view "in a medium which precluded the possibility of a reply." This is an unpleasant suggestion, and in view of the publication of his lengthy letters in the British Medical Journal and in the *Lancet*, the complaint seems unjustifiable. I do not know whether he has communicated with the Editor of the *Tropical Diseases Bulletin*, but although I can well believe that a letter of the kind in question might be refused publication, I do not believe that anything of scientific value would be rejected.

In the second place, Dr. Jensen loudly protests that his association "is not prejudiced in favour of any one method of treatment, but it does consider that fair play should be given to any method which has shown promise of success." Such platitudes may satisfy Dr. Jensen and certainly they do nobody any harm, but it is rather amusing to read in the next line that one who has had the temerity to differ from the association on a matter of the value of evidence is accused of lacking a sense of fair play. In fact there is a delicate insinuation that I have purposely belittled Marshall and Vassallo's work in order to promote the interests of a certain German chemical firm.

Dr. Jensen's letter closes with a remarkable homily which runs as follows:

"It is, perhaps, not fully recognized by tropical experts working at home that treatment of such a disease as sleeping sickness must be administratively and economically practicable on a large scale as well as scientifically effective in a hospital at home."

Possibly this is the case, but how it touches the question at issue is obscure, unless it is intended to have a personal application. If so, I can only point out that it comes strangely from the pen of one who, so far as I am aware, has contributed nothing to our knowledge of the disease, and deplore the fact that one who is so little conversant with the literature of the subject should have attempted the task which Dr. Jensen has undertaken.—I am, etc.,

WARRINGTON YORKE.

Liverpool School of Tropical Medicine,
Nov. 14th.

*** Readers of the British Medical Journal will find details of the claims of Drs. Marshall and Vassallo in Dr. Marshall's paper published in the Journal of May 22nd, 1920, p. 702; in their joint paper published on May 28th, 1921, p. 773; and in the report of a discussion at the Royal Society of Tropical Medicine, published on May 28th, 1921, p. 777.

THE FIRST OVARIOTOMIST.

Sir,—In the British Medical Journal of November 12th, p. 775, there is published an address by Sir Harold Stiles, delivered at the Convocation of the American College of Surgeons, Philadelphia, October 28th, 1921. Sir Harold is reported to have made the following statement: "Lizars, who was appointed Professor of Surgery in the College of Surgeons, Edinburgh, in 1831, is well known in America as being the first surgeon in Great Britain to perform the operation of ovariotomy, which had been introduced by McDowell."

The distinction, however, of having performed the first ovariotomy falls to a surgeon practising in Glasgow, and a graduate of Glasgow University named Dr. Robert Houston. I append the following extract from an article, "Dr. Robert Houston of Glasgow, the First Ovariotomist," contributed to *Janus*, Amsterdam, by Dr. James Finlayson of Glasgow, in the number November–December, 1896:

"If the question were put, 'Who performed the first ovariotomy?' nearly everyone would answer—Ephraim McDowell in America. But it has long been known, in various quarters, that Mr. Robert Houston, while practising in Glasgow, successfully performed this operation fully 100 years before McDowell's first case, or 70 years before McDowell was born. His case is quoted in the Index Catalogue of the Surgeon-General's Library at Washington, under the heading of 'Ovariotomy, History of,' and the date of the operation is there correctly given as 1701. It was admitted as a genuine case of ovariotomy by Dr. Atlee, the American ovariotomist, as far back as 1849, who called attention to it in a letter to the editor of the *American Journal of Medical Sciences*, April, 1849, p. 534; he there gives a copy of the report of the case. Houston's paper appeared in the *Philosophical Transactions* of the Royal Society of London, vol. 33, London, 1726. The delay in reporting the case enabled him to state that the woman remained well till shortly before her death in 1714. The title of Houston's paper is 'A dropsy of the left ovary of a woman aged 58 years, cured by a large incision made in the left side of the abdomen.' Not only is the case admitted to be a genuine ovariotomy by Dr. Atlee, but it is also given at length by Lawson Tait in his *Diseases of the Ovaries*, fourth edition, Birmingham, 1883, p. 258.

"An element in the successful result of the ovariotomy case lay, no doubt, in the dressings applied: 'Several compresses dipped in warm French brandy; and because I judged that the parts might have lost their spring, by so vast and so long a distension, I dipped in the same a napkin four times folded, and applied it over all the dressings, and with a couple of strong towels which were also dipped, I swathed her round the body.'"

The name of Houston may have escaped the notice of Sir Harold Stiles, and I thought this matter of sufficient interest to bring before your readers.

The following particulars may be appended:

ROBERT HOUSTON, 1664 (?)—MAY 15TH, 1734.

Born and educated in Glasgow; son of a Glasgow surgeon. M.A. Glasgow. Member of Glasgow Faculty a little after 1684. Obtained M.D. from Glasgow University, 1712; their third Doctor of Medicine. F.R.S. Lond., 1725. First ovariotomy performed by him whilst practising in Glasgow in 1701—that is, seventy years before Ephraim McDowell was born. Subsequently practised in London.

Works.—Report of his ovariotomy case in *Philosophical Transactions* of the Royal Society of London, vol. 33, London, 1726. Also an important case of extrauterine pregnancy in the same *Transactions*, vol. 32, London, 1725. Also two books: *Lithotomus Castratus*, etc., London, 1725; *The History of Ruptures*, etc., London, 1726.

—I am, etc.,

J. FINLAYSON FLEMING, M.B., Ch.B.

Londonderry, Nov. 12th.

NATIONAL PROVIDENT HOSPITAL ORGANIZATION—SUSSEX SCHEME.

Sir,—I will endeavour, as briefly as possible, to traverse some of the animadversions upon the contents of my letter in the Supplement of October 22nd, as respectively contained in—

1. The three-starred footnote, appended to that letter, I protest is quite superfluous. Had your contributor read that part of my letter commenting on the silence of the Journal with average intelligence he would have seen that my interrogation referred to a time incidence ("concurrent with or since the publication of the manifesto of the Organizing and Executive Committee of the National Provident Scheme in the correspondence columns of the Journal, September 17th") subsequent after the publication of the articles which he refers to as evidence to the contrary, and the existence of which I was quite aware, and took for granted was known to most of your readers at the time I compiled that letter. In any case, the contents of these articles only amount to a narration of consecutive developments in the progress of the scheme, and do not contain a single comment or criticism on the merits of the scheme or the questionable way in which the scheme was being rushed by its committee; nor does your contributor deny that "concurrent with, or since, September 17th, no allusion to

this important point" (that is, the attitude of the general body of the profession) "has as yet appeared in the JOURNAL." While I do not pretend that the syntactical arrangement of the words in the foregoing parenthesized quotation may be most happily expressed, for your contributor to infer, as he elects to explain, in the last sentence of the footnote, for the benefit of your readers—"the letter, to which we understand Dr. Muir Smith refers as a manifesto, followed in the JOURNAL, September 17th"—surely would not unduly tax the perspicacity of the merest office tyro to clarify.

2. Dr. J. F. Gordon Dill's letter, JOURNAL, October 29th, pp. 719–20. The specious claim put forward by Dr. Gordon Dill in paragraphs 2, 3, and 4, that the National Provident Scheme has received the imprimatur of the British Medical Association is effectually disposed of by Dr. C. O. Hawthorne in his letter in the JOURNAL of October 29th, pp. 720–21.

In face of the incontrovertible fact that the whole of the medical profession in Sussex was not consulted before the Sussex Scheme came into operation, the assurance of Dr. Gordon Dill, in the last sentence of paragraph 4 of his letter—that "the principle upon which the Organizing and Executive Committee of the scheme have always acted, and will continue to act, is that no step of importance shall be taken until the medical profession has been consulted about it"—is worth as much as the proverbial "scrap of paper."

In the fifth paragraph Dr. Gordon Dill, after transcribing a sentence from the eighth paragraph of my letter, proceeds to differentiate between a consultative and a general practitioner scheme, and goes on to conclude: "In fact, it" (Sussex Scheme) "does not provide any of the services of a club practice, and few, if any, of the services which it does provide were ever undertaken by the doctor of a club." In that quotation I purposely qualified the appellative by "glorified" (that is, exalted) to show that I recognized the distinction without admitting the difference between the Sussex Scheme and an ordinary provident scheme, such as the Eastbourne Provident Medical Association—a general practitioner scheme which also provides consultative and dental services. The way or manner in which either form of scheme discharges its contractual liabilities, being purely a matter of detail, does not affect the fundamental operation of contract capitation practice being common to both, nor does it eliminate the bargaining spirit—gambling in the treatment of human illness—from either, which pernicious element has brought disrepute upon contract capitation practice, which the profession has only tolerated as the lesser of two evils (friendly societies and family clubs), or undertaken under the dire compulsion of statutory enactment (National Health Insurance). I, therefore, cannot admit that Dr. Gordon Dill is entitled to claim for the Sussex Scheme any exemption from the odium attached to club practice, on the ground that it is a consultative scheme designed for the benefit of voluntary hospitals. Here the analogy ends and a sharp divergence begins between the two forms. The Committee of the Sussex Scheme is composed entirely of *laymen*, that of the Eastbourne Association entirely of medical practitioners. This difference in constitutional administration places the Sussex Scheme in the same category as a medical aid institution. The British Medical Association has laid it down as a *sine quâ non* that the medical profession shall be fully represented in the management of provident medical schemes and voluntary hospitals boards. What action does the Standing Committee on Voluntary Hospitals of the Association propose to take anent this flagrant disregard of the Association's fiat instigated by Dr. Gordon Dill, who, at the last meeting of the Sussex Branch Council, accepted full responsibility for the transformation of the personnel?

3. Viscount Selby's letter, honorary secretary to the Committee of the Sussex Scheme, published in the JOURNAL, October 29th, p. 720, traversing the objections to the scheme set forth in paragraph 6 of my letter, which he quotes in full *seriatim*, and which he characterizes as "some gross misstatements as far as Sussex is concerned," I will deal with in the order of their reference:

Quotation (*a*). If "The e is not a word of truth in this," will Viscount Selby please explain how a *lay* committee can be in any "way representative of the *profession* in the county," and, if the committee is not a "Brighton caucus," what districts in the county, outside Brighton, Hove, and Preston are represented on that body?

Quotation (*b*). Viscount Selby does not contravene.

Quotation (*c*). If "This is not true," and as Dr. Gordon Dill admits that the scheme, *at present*, contains no such provision, will Viscount Selby please adduce any written or printed documentary evidence in support of his assertion?

Quotation (*d*). If "This paragraph is wholly misleading," does Viscount Selby deny the main point of my contention that these "two classes of persons who, with incomes of £400 and £500, . . . have hitherto been able to afford the private fees usually charged for such services, and whose claims to semi-charitable consideration have neither been demanded, urged, nor established"?

Quotation (*e*). If "This danger is purely imaginary," and if Viscount Selby is aware of the fact that the resources of the majority of the district hospitals are fully taxed in dealing with impecunious cases, will he please indicate in what way could the institutional treatment, demanded under a definite contract, say of 20 per cent. of the "first ten thousand" members, be effected other than through one of the two alternatives I have suggested?

Quotation (*f*). This Viscount Selby does not contravene. I quite agree that it is the indiscriminate administration of charity that has brought the voluntary hospitals well-nigh to the edge of bankruptcy, and not the least of those culpable in this respect is the Sussex County Hospital. The committee of the Eastbourne Hospital, unless under exceptional circumstances, will not admit any patient whose income from all sources exceeds £260 per annum, and then only on the written recommendation of the medical attendant. If this plan, a very proper safeguard, had been universally adopted, probably this question would never have arisen.

Quotation (*g*). Viscount Selby, being a layman, can hardly be expected to grasp the professional ethics of the analogy.

The sum of Viscount Selby's laborious efforts to "correct some gross misstatements" amounts to an exhibition of dialectic skill in making the best of an awkward brief. In the process of traversing these quotations he confirms a few, transposes some, and amplifies most of the statements therein. Viscount Selby's denials—"This is not true," "There is not a word of truth in this," and "This paragraph is wholly misleading"—are only forensic platitudes commonly used by counsel in defending a weak case. In any case these expletives are only Viscount Selby's opinions upon my representations, and, as Viscount Selby, in the opening paragraph of his letter, graciously concedes, "Dr. Muir Smith has as much right to his own opinion as anyone else," these extravaganzas leave me but little perturbed about the validity of my contentions. If in the course of my letter I have "so ingeniously misunderstood and misrepresented" the policy of the scheme, as Viscount Selby imputes, I can assure him that his "amazement" is not shared by the members of this Division.

4. Dr. L. A. Parry's letter, JOURNAL, November 5th, pp. 769–70. Dr. Parry's disclaimer, on behalf of the Brighton Division, is somewhat belated, and probably would never have been written but for the publication of my letter. Why Dr. Parry should parenthesize that sentence explanatory of his inadvertence in substituting "by Sussex" for "for Sussex" in the resolution submitted to the Annual Representative Meeting by Brighton, as if it were of no importance to one of the points I raised, is best known to himself. That this error should have escaped the notice of Dr. Parry, who drafted the resolution, and Dr. Fothergill, who sponsored the resolution at the Annual Representative Meeting—two of the most punctilious and clear-headed medico-politicians in the ranks of the Association—until the publication of my letter is scarcely credible.

5. Mr. Robert Sanderson's letter, JOURNAL, November 5th, p. 770. The two points referred to in the second paragraph of Mr. R. Sanderson's letter I have already dealt with. I made these statements on the faith of verbal information casually given to me at the beginning of this year. Why all this mystery about the genesis of the Sussex Scheme? Dr. Gordon Dill is generally accredited with the authorship, and he has not denied the impeachment. Mr. R. Sanderson is as well aware as I am that Dr. Gordon Dill is a physician on the staff of the Sussex County Hospital, and is engaged in consulting work. Be that as it may, one of the salient features of the scheme is that it has the whole-hearted support of the honorary medical and surgical staffs of the hospitals in Brighton.

With regard to the point raised in the third paragraph of his letter, it may surprise Mr. R. Sanderson to learn that, during the current year, to my personal knowledge, four panel patients (all women) paid five guineas each for

an *x* ray examination; two, with incomes under £200, paid four guineas each for auto-vaccines; one man, income £2 10s. per week, paid twenty guineas for a surgical operation on his wife and six guineas per week for her three weeks' maintenance in a nursing home: and four, incomes under £150, three to five guineas each for minor surgical operations, besides many others who have willingly paid one to two guineas each for an ordinary consultation. These are samples of patients with incomes not exceeding £260. When we come to the other two classes, with incomes ranging from £260 up to £500, surely they are in a better position "to afford the private fees usually charged for such services," and if Mr. R. Sanderson still doubts the truth of my statement that the consultants and specialists here derive the greater part of their professional income "*from this very class of person whom the scheme is designed to attach to its membership*," I shall be pleased to send him the names and addresses of the consultants in this place, so that he can communicate with them and ascertain for himself the validity of my contention. Mr. R. Sanderson says: "The scheme will certainly not benefit the consultant." I never said, nor implied, that it would do so. On the contrary, I stated: "It is no part of the duty of the profession to devise ways and means to rehabilitate the finances of voluntary hospitals, least of all at the expense of its own members," and that is exactly what this scheme will do. It will not materially affect the consultant whose income amounts to a few thousands a year, but it will gravely affect the consultant whose income amounts to a few hundreds a year. If the operation of the scheme were confined to the Brighton district, then no objection could be taken by the Eastbourne Division to the limitation. Every district ought to know what is best in the interests of the local hospital, the medical profession, and general community. Now this scheme, being avowedly designed to attract members from all parts of the county, is nothing short of a coercive measure to bring every voluntary hospital into subservience. Whether a district hospital refuses or agrees to co-operate, the consultants are in danger of losing part of their incomes. By comparison the Eastbourne district is as much a self-contained district as Brighton is so far as institutional treatment, consultative and specialistic services are concerned. This is proved by the fact that only four in-patients and six out-patients from the Eastbourne district were treated at the Sussex County Hospital last year. *Yet* at the last meeting of the Sussex Branch Council, *when*, in response to my representations, *the members present unanimously appealed to Dr. Gordon Dill*, as a matter of equity, *to refrain from accepting per membership of the scheme the application of any person residing in the Eastbourne district, he obdurately refused to comply.* Yes, Mr. R. Sanderson, the scheme may be "altruistic in origin and intention," but it is malevolently ultra-altruistic in the incidence of its operation.—I am, etc.,

Eastbourne, Nov. 5th. WM. MUIR SMITH.

*** We hope that this correspondence may cease, or that, at most, any further letters may be confined to the correction of errors of fact. The subject is being discussed by the profession in many parts of the country.

MOTOR CARS: SPARE PARTS.

SIR,—There is one very important point with regard to the choice of a motor car which your expert has not touched upon.

It is the supply of spare parts. Many of your readers may not be aware that some of the British motor firms refuse to send these parts until they have been paid for. I remember on one occasion writing for a part which was valued at about 30s. I explained in my letter how necessary it was, as I required the use of the car for my professional work, and I could not drive it until the part arrived. I asked for it to be sent by the first train next morning and said my man would meet it. They did not send it. They did not even trouble to telegraph to me. They wrote a letter stating that the price of the part was 30s., and that on receipt of the amount it should be dispatched. This involved a delay of three days with its attendant worry and expense.

Nothing would induce me to purchase another car from this firm, and I would strongly advise any member of the profession, before placing an order for a car, to insist on a guarantee that spare parts shall be dispatched immediately on receipt of request.—I am, etc.,

J. LIONEL STRETTON,
Consulting Surgeon, Kidderminster Infirmary and Children's Hospital.

November 8th.

FRAUDS ON MEDICAL MEN.

SIR,—I was interested in your article, "Frauds on Medical Men," in the BRITISH MEDICAL JOURNAL of November 5th. In August, 1916, Edward Thomas Johnson came to my surgery—after having written several letters and called me up on the 'phone—with a similar yarn to the one he spun Dr. Hallett. He got a cheque out of me, but as soon as he had left I rang up the bank to stop payment as I felt I had been indiscreet. Johnson, however, managed to get payment from the bank; the bank had to lose the amount; about three weeks or a month afterwards Johnson was caught and sentenced to one year's hard labour for a similar offence. It is to be hoped that when he gets out again readers of the BRITISH MEDICAL JOURNAL will remember your warning.—I am, etc.,

Sale, nr. Manchester, Nov. 7th. C. S. ASHE.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Elections to Fellowships. Mr. E. G. T. Liddell, B.M., B.Ch., Trinity College, formerly Senior Demy of Magdalen College, has been elected to a Fellowship at Trinity College; Mr. M. H. MacKeith, B.M., B.Ch., Queen's College, has been elected to a Fellowship at Magdalen College, and has been appointed to a Demonstratorship in Human Anatomy.

General Board of the Faculties. Dr. E. W. Ainley Walker has been elected a member of the General Board of the Faculties as a representative of the Faculty of Natural Science.

UNIVERSITY OF MANCHESTER.

THE following lecturers have been appointed: Neurology: Dr. D. E. Core. Radiology: Dr. A. E. Barclay, O.B.E. Surgical Diseases of Children: Mr. H. H. Rayner.

The following awards have been made: Leech Fellowships in Medicine: F. R. Ferguson, Eugenia R. A. Cooper. Graduate Scholarship in Medicine: G. V. Ashcroft. Tom Jones Memorial Surgical Scholarship: A. H. Southam.

UNIVERSITY OF GLASGOW.

THE following were among the degrees conferred on November 12th:

M.D.—D. K. Adams, T. J. Mackie (*in absentia*), N. Morris, Wm. Taylor (*in absentia*), Charles Cameron, R. J. Grant, R. C. Robertson, H. W. Torrance (*in absentia*), C. Broadfoot, Ethel Crawford, J. P. Crawford, A. Garvie, W. H. Kerr, D. M. MacRae, G. o. Taylor (*in absentia*).

M.B., Ch.B.—A. A. Beil.

With honours. } With high commendation.
With commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on November 10th. Diplomas were granted to seventy-seven candidates found qualified at the recent examination. The names were printed in the report of the Royal College of Physicians published on November 5th, p. 772.

F.R.C.S. with Ophthalmology.

The following Regulations relating to the special course of study and examination in Ophthalmology for Fellows of the College were adopted by the Council:

1. The examination comprises anatomy, physiology, and optics in their relation to ophthalmology; clinical and pathological ophthalmology, and ophthalmic operations.

2. The examination consists of (*a*) two written papers, (*b*) a written and *viva voce* examination on patients, or operations, (*c*) a *viva voce* examination upon pathological and anatomical specimens and upon ophthalmology in general.

3. The examination will be held in June and December.

4. Candidates must be Fellows of the Royal College of Surgeons of England, or have passed the Second Professional Examination for the Diploma of Fellow.

5. Candidates must produce evidence of having held the office of clinical assistant, house surgeon, or registrar for a period of two years at an ophthalmic hospital recognized by the College for the purpose or in the ophthalmic department of a recognized general hospital after obtaining a registrable medical and surgical qualification. (Note. No hospital or department containing less than ten beds for eye cases will be recognized.)

6. The conditions of Clause 5 may be modified at the discretion of the Court of Examiners in the case of a candidate (*a*) who holds, or has held, the appointment of ophthalmic surgeon or assistant ophthalmic surgeon to a hospital, infirmary, or dispensary, (*b*) who has carried out original investigations in any branch of the examination; (*c*) who has written a thesis or published work on any subject of the examination; (*d*) whose studies or practice have extended over a prolonged period of time without fulfilling the exact conditions.

7. The candidates must give four weeks' notice of their intention to present themselves for examination to the Director of Examinations, Examination Hall, 8-11 Queen Square, Bloomsbury, London, W.C.1, and forward at the same time the evidence required by Clause 5.

8. The fee for admission or readmission to the examination is £10 10s., and must be paid to the Director of Examinations three days before the examination commences.

9. A candidate who passes the examination will receive a certificate entitling him to describe himself as F.R.C.S. with Ophthalmology.

The War Collection.—The President reported that he had, on November 4th, signed and attached the College seal to the agreement between His Majesty's Principal Secretary of State for the War Department and the Royal College of Surgeons of England relating to the custody by the College of the Army Medical War Collection of pathological, orthopaedic, and other specimens.

Welfare of the Blind.—A letter was read from the Clerk to the London County Council calling attention to a scheme for the welfare of blind persons in London, and to setting up under the scheme of a Central Council for the London blind for advisory and other purposes, and expressing the hope that the College will assist the London County Council in the promotion of the welfare of the blind by appointing a representative to serve upon the Central Council. Mr. J. Herbert Fisher was appointed by the Council to represent the College.

The Thomas Vicary Lecture.—This will be delivered on Thursday, December 8th, at 5 p.m., by Sir Charles Ballance, on "A glimpse into the history of the surgery of the brain."

The Bradshaw Lecture.—This will be delivered on Wednesday, December 14th, at 5 p.m., by Mr. H. J. Waring, on "The operative treatment of malignant disease, its possibilities and limitations."

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At a meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on November 4th, Dr. Robert Marshall of Belfast and Dr. Victor M. Synge of Dublin were sworn in as Fellows of the College, and Dr. Patrick Ley of Dublin was admitted a Member.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

At the annual meeting of the Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow held on November 7th the following office bearers were elected: President: Dr. W. G. Dun. Visitor: Dr. W. R. Jack. Treasurer: Mr. George McIntyre. Honorary Librarian: Dr. E. H. L. Oliphant. Councillors: The President, the Visitor, the Treasurer, the Honorary Librarian, and Dr. James A. Adams, as representative to the General Medical Council (*ex officio*), Mr. R. M. Buchanan, Dr. Ebenezer Duncan, Mr. Henry Rutherfurd, Dr. A. K. Chalmers, Sir Kennedy Dalziel, and Mr. J. Mason Noble.

Obituary.

SIR GEORGE EVATT, K.C.B., M.D.,
Major-General A.M.S. (ret.).

Major General Sir George Joseph Hamilton Evatt, K.C.B., Army Medical Service (ret.), died in London on November 5th, aged 77. He was born on November 11th, 1843, the son of Captain George Evatt, 70th Foot, educated at Trinity College, Dublin, and graduated M.D., with honours, in the Queen's University, Ireland, in 1863, taking the L.R.C.S.I. in the same year. He entered the army as assistant-surgeon on March 31st, 1865, attained the rank of surgeon-colonel on March 30th, 1896, and that of surgeon-general on November 20th, 1899, retiring on November 11th, 1903. During the old regimental days he served in the 25th Foot, the King's Own Scottish Borderers. From 1880 to 1886 he was medical officer of the Royal Military Academy, Woolwich; he was senior medical officer at Quetta in 1887–91; sanitary officer at Woolwich, 1892–94; secretary to the Royal Victoria Hospital, 1894–96; as colonel he was P.M.O. in Hong Kong from 1896 to 1899; and as surgeon-general was P.M.O. of the Western District, 1899–1902, and of the Western Command, at Salisbury, 1902–3, comprising what is now the Southern Command and part of Wales. He rejoined for service during the recent war, and served as president of travelling medical boards in the Western Command in 1915–16. When he first joined the Army Medical Department in 1865 he reported for service to an officer wearing the Waterloo medal; it was rather more than a century after Waterloo when he himself finally ceased to serve.

He had a long list of war service: Perak, 1875, medal with clasp; Afghanistan, 1879–80, capture of Ali Musjid, Bazar Valley Expedition, advance on Kabul, and relief of Sherpur, twice mentioned in dispatches, G.G.O. of November 14th, 1879, and *London Gazette*, November 7th, 1879, medal with two clasps; Sudan 1885, Suakin, action at Hasheen, advance on Tamai, mentioned in dispatches, *London Gazette*, August 25th, 1885, medal with clasp, and Khedive's bronze star; North-West Frontier of India, Zhob expedition, 1890, mentioned in dispatches, *London Gazette*, May 19th, 1891.

General Evatt had political aspirations, and thrice unsuccessfully attempted to enter the House of Commons as a Liberal, contesting Woolwich in 1886, the Fareham Division of Hampshire in the first election of 1910, and Brighton in the second election of that year. He did a large amount of public work of various kinds; with Sir James Cantlie he raised the R.A.M.C. Volunteers in 1883, founded the Medical Officers of Schools' Association in 1884, and drew up a scheme for the Army Nursing Service Reserve in 1886. He had been President of the Poor Law Medical Officers' Association, and honorary colonel of the Home Counties Division, R.A.M.C.(T.F.). He received the C.B. in 1903, a good service pension in 1910, and the K.C.B. in 1919.

He was the author of many works on military medical administration: *The Medico-Military Topography of the Persian Gulf and Euphrates and Tigris Valleys*, 1874; *The Causes and Cure of Army Drunkenness* (prize essay), 1876; *The Death March through the Khyber Pass*, 1879; *Army Medical Organization: A Comparative Examination of the Regimental and Departmental Systems*, third edition, 1883; *Suggestions for the Organization of the Volunteer Medical Service*, 1885; *The Medical Organization of the Base of Operations in War*, 1885; *The Duties of the Bearer Companies of the Medical Corps in War*, 1886.

General Evatt was an old member of the British Medical Association and for a time served on its Council. In 1904 he accepted a commission from the British Medical Journal to investigate the Irish dispensary medical service on the spot, and made a very full and careful report, which greatly influenced the subsequent policy of the Association. He was a man fertile in ideas and made a large number of contributions to the military and medical press, chiefly on the subject of army organization and the training of army medical units for war. He will probably be chiefly remembered for his persistent advocacy of the formation of the medical officers of the army into a Corps. A Royal Warrant finally establishing the Corps was issued in June, 1898, a few years before Evatt's retirement. He is among the four officers commemorated by the memorial at the Royal Army Medical Corps College to those who took the largest part in convincing the Government of the need for this reform.

In 1887 Evatt married Sophie Marie Frances, daughter of William Walter Raleigh Kerr, Treasurer of Mauritius, and had one daughter.

D. D. GOLD, M.D., D.P.H.,
Medical Officer of Health, Herefordshire.

We regret to announce the death, in his forty-ninth year, of Dr. David Drybrough Gold, medical officer of health for Herefordshire, which occurred on November 4th, very suddenly from unsuspected heart disease. Dr. Gold received his medical education at Edinburgh University, where he graduated M.B., C.M. in 1896 and M.D. in 1904; in the latter year he also took the diploma in public health at Edinburgh. He was appointed an assistant medical officer under the Metropolitan Asylums Board, then assistant medical officer of health for the county of Essex, and became county medical officer of health of Hereford in 1909. He was the contributor of a number of articles on public health subjects to the scientific journals, and was a Fellow of the Society of Medical Officers of Health. He was a member of the British Medical Association, in which he took much interest, serving as a member of the Public Health Committee in 1920 and 1921; he was chairman of the Hereford Division in 1920, and was representative of the Division in the Representative Body. Dr. Gold was married only three years ago, and much sympathy has been expressed for his widow in her sudden bereavement.

We regret to record the death, on November 8th, of Mr. Henry Horsley, of Croydon, in his eighty-fourth year. Born at Kennington in 1838, Mr. Horsley received his medical education at Guy's Hospital, and qualified with

the diplomas of M.R.C.S. and L.S.A. in 1859. He was one of the first surgeons to the Croydon General Hospital, and in later life he was for many years consulting surgeon. He was a very old member of the British Medical Association, and was especially identified with the old South-Eastern Branch. Mr. Horsley is survived by four daughters and two sons, one of whom is a medical practitioner, and was educated at his father's old hospital. Mr. Charles Wray, F.R.C.S., writes: Mr. Horsley was one of several noteworthy characters pre-eminent for their ability and exceptionally high code of ethics. Amongst them were Alfred Carpenter, John Galton, Peter Duncan, and Sir Constantine Holman, all of whom in their day were ardent supporters of the British Medical Association and all the best it stands for. All who knew him will agree he was a credit to his hospital and to his profession.

THE death occurred suddenly, on October 18th, of Dr. ELLERINGTON REED TURNER, of Kintore, Aberdeenshire. He was born at Brora, Sutherland, fifty-nine years ago, and received his medical education at Aberdeen University, where he graduated M.B., C.M. in 1891. He commenced general practice at Kintore in 1895, and during his long connexion with the burgh took a keen interest in all public affairs. He was provost for nine years, held office in the school board and in the literary and other societies, and he was medical officer of Kintore and neighbouring parishes. He is survived by his widow.

DR. A. J. MCCLYMONT died at Klerksdorp, Transvaal, on August 29th; he graduated M.B., Ch.B. at Edinburgh in 1898, and first went out to South Africa as a civil surgeon during the Boer war. At the close of that war he returned to England, but went back in 1906 to the Orange Free State. During the late war he served in East Africa, returning to practice in the Transvaal in 1919.

THE death is announced at Roxbury, U.S.A., on September 4th, of Dr. FANNY BERLIN, at the age of 69. Dr. Berlin, who was born in Russia, and graduated M.D. at the University of Zurich, Switzerland, was one of the pioneer women surgeons of the United States, having settled in Boston in the late seventies as resident physician to the New England Hospital for Women and Children. Subsequently she was appointed an honorary surgeon to that institution, and for many years had a large surgical practice in Boston.

OTTO VON SCHJERNING, head of the German Army Medical Service, and a well-known writer on military hygiene, has recently died.

The Services.

INDIAN MEDICAL SERVICE.

Pensions.

AN officer of the Indian Medical Service writes to suggest that in reproducing in our issue of September 3rd the revised rates of pensions in the I.M.S. we ought to have repeated the statement that these revised rates will be subject to alteration, either upwards or downwards, after July 1st, 1924, to an extent not exceeding 20 per cent., according as the cost of living rises or falls, and that after 1924 a further revision may take place every three years. These facts were set forth in the Memorandum issued by the India Office last year, and the references to the Indian Medical Service were printed in full in our issue of June 12th, 1920, p. 813.

The second annual dinner of medical officers of No. 14 Stationary Hospital, B.E.F., will be held on Friday, December 9th, at the Trocadero Restaurant, London, W., at 7.15 p.m. for 7.45 p.m., with Colonel C. E. Evans, D.S.O., in the chair. Tickets, price 17s. 6d. inclusive of wines, may be obtained from Major H. M. Perry, or Dr. H. L. Tidy, 39, Devonshire Place, W.

The first annual dinner of the 19th Casualty Clearing Station will take place in London on Friday, November 25th. Sir Henry Gray, K.B.E., C.B., C.M.G., will be present. Further particulars may be obtained from the dinner secretary, the Rev. E. C. DeFreit, 6, Alexandra House, Regent's Park Road, Finchley, N.3.

Colonel R. C. Maewatt, C.I.E., F.R.C.S., Indian Medical Service, has been appointed an honorary surgeon to the King, Vice-Colonel C. R. M. Green-Lett.

Medical News.

WE have read with regret Reuter's telegram stating that Sir Andrew Macphail was shot and seriously wounded in his house in Montreal by a man named Ogulnik, who afterwards killed himself. Sir Andrew Macphail has been Professor of the History of Medicine in McGill since 1907; he was long editor of the *University Magazine* and the writer, among other works, of the biography of Dr. John McCrae, author of In Flanders Fields, to which we referred last week. Sir Andrew Macphail served with the Canadian Contingent throughout the war, and was at Vimy; of his experiences there he gave some account in the Cavendish Lecture—"A Day's Work"—delivered at the West London Medico-Chirurgical Society in 1917. Afterwards he was with the Canadian Headquarters Staff in London, and there added to his many friends. We are glad to read that Sir Andrew Macphail is expected to recover.

THE Fellowship of Medicine and Post-Graduate Medical Association, with the co-operation of various special hospitals, is arranging to hold a series of special courses in general and special subjects during the forthcoming year. The first of these—a six weeks' post-graduate course in general medicine—will be held from January 9th to February 18th, 1922. The course will consist of a morning and an afternoon session, and the ground covered will include pulmonary affections, heart disease, disease of the nervous system, fevers, and lunacy; the programme will be so arranged as to entail a minimum amount of travelling each day. The numbers attending the course will be limited, and early application for further particulars as to syllabus, fees, etc., should be made to the Secretary to the Fellowship, 1, Wimpole Street, W.1.

THE Committee of the Universities' Library for Central Europe, formed to renew the stocks of books and scientific and learned periodicals in the universities of Central Europe, has recently issued its report for its first year of working, ending March 31st, 1921. It has sent consignments of literature to Austria, Czecho-Slovakia, Esthonia, Germany, Hungary, and Poland. Donations of money and of English books published since 1914 are still urgently needed, and may be sent to the Honorary Secretary, Mr. B. M. Headicar, London School of Economics, Clare Market, W.C.2.

THE Lumleian Lecture will be delivered at the Middlesex Hospital Medical School on Tuesday, February 7th, at 3 p.m., by Sir John Bland-Sutton, LL.D., F.R.C.S., on "The choroid plexuses of the brain and psammomas."

THE sixty-second annual meeting of the Dutch Dermatological Society was held at Amsterdam on October 29th and 30th.

IN September 1,110 fatal cases of plague occurred in Java, as compared with 928 in August and 439 in July.

THE Glasgow University Club, London, will hold its annual autumn dinner on Friday, November 25th, at 7.30 p.m., in the Holborn Restaurant, with Professor J. Millar Thomson, F.R.S., in the chair.

IN the week ending September 24th 69 cases of anterior poliomyelitis were notified in New York City, the largest number since the great epidemic of 1916.

THE annual dinner of the Medical Society of University College Hospital will be held on Monday, December 12th, at Frascati's Restaurant, at 7.15 for 7.30 p.m. Tickets, price 10s., may be obtained from the Secretary or the R.M.O.

THE next meeting of the Hunterian Society will be held on Wednesday, November 23rd, at the Sion College, Embankment, E.C. (close to Blackfriars Bridge), at 9 p.m., when Mr. H. D. Gillies will read a paper on "Plastic surgery of the face." All members of the profession are invited.

THE next quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will take place on Tuesday, November 22nd, at 11, Chandos Street, Cavendish Square, W., under the presidency of Dr. C. Hubert Bond, at 3.15 p.m. Papers will be read by Dr. M. Hamblin Smith, Medical Officer H.M. Prison, Birmingham, on "The medical examination of delinquents," and by Dr. H. Davies Jones, Ashhurst Hospital, Littlemore, on "Forgetting."

DR. DONALD W. C. HOOD, C.V.O., has been appointed Honorary Consulting Physician to the Royal Earlswood Institution for Mental Defectives, in succession to the late Sir George H. Savage, who was associated with Earlswood for over twenty years.

A MONUMENT has been erected at Havana to Charles Finlay, who discovered the part played by the stegomyia in yellow fever.

DURING the first half of 1920, 225 children committed suicide in the United States, and about twice as many in the first half of 1921, anxiety about school examinations being assigned as the chief cause.

THE next congress of the Royal Sanitary Institute will be held at Bournemouth from July 24th to 29th, 1922.

PRESIDENT HARDING has appointed Dr. J. G. South of Frankfort, Kentucky, a former president of the Kentucky State Medical Association, Minister to the Republic of Panama.

ALDERMAN DR. A. J. RICE-OXLEY, C.B.E., J.P., has been unanimously elected Mayor of the Royal Borough of Kensington for the third time, and Dr. Henry Jackson has been elected Mayor of Wandsworth. The names of the following medical men have been noted among the list of newly-appointed Mayors of provincial towns: Dr. E. J. Byrd (Pudsey), Dr. H. O. Grenfell (Saltash), Dr. O. W. Griffith (Pwllheli), Dr. H. Tibbits (Warwick), Dr. H. S. Walker (Louth).

THE resignation of the Cabinet in Czecho-Slovakia has caused a change in the Ministry of Health, to which post Dr. B. Vrbensky has been appointed; the new Minister is a dentist by profession, but he holds a medical qualification, as appears to be usual in Czecho-Slovakia. In politics he is a Socialist.

A DANCE in aid of Westminster Hospital and School will be held at King Edward VII Rooms, Hotel Victoria, Northumberland Avenue, on Friday, December 2nd.

STRONG protests have been made by the medical profession in France, and especially by the Syndicat général des médecins français électro-radiologistes, against the appointment by the prefect of the department of the Seine of a radiographer who is not a qualified medical practitioner to be director of the radiological laboratory of the Salpêtrière Hospital in succession to the late Dr. Charles Infroit.

IT was decided at a recent meeting of the British Spa Federation that in future the spas composing the federation will require all patients to have medical prescriptions, dated not more than twelve months previously, for all treatments except a few generally recognized to be obtainable at any "hydro" or treatment establishment.

THE annual general meeting of the Medical Officers of Schools Association will be held at 11, Chandos Street, Cavendish Square, W.1, on Tuesday, November 29th, at 5 p.m. An address by the President, Mr. E. C. Elmslie, M.S., F.R.C.S., on the "Status of physical instructors in schools," will be followed by a discussion.

WE are asked to state that the speakers in the discussion on a paper on syphilis of the stomach, to be read as an occasional lecture by Dr. Gustave Monod at a meeting of the Royal Society of Medicine on Wednesday, November 23rd, at 5 p.m., will be Dr. A. F. Hurst, Dr. J. W. McNee, Mr. Herbert Paterson, Mr. A. J. Walton, and that Sir Berkeley Moynihan, Dr. Charles Bolton, and Mr. Sherren, whose names were mentioned last week, will not be able to be present.

A. R. LING and D. R. NANJI contributed to the Royal Society on November 10th a note on the longevity of certain species of yeast. Eight cultures of yeast prepared in 1887 by the late Professor Hansen were found to be still living. In what form they have retained their vitality has not yet been determined. Hansen showed that one species at least, *A. apiculatus*, found on the exterior of certain fruits, hibernates in the soil; and as this species, or at all events the yeast with which Hansen worked, does not form endospores, it may be that the yeasts now described have been preserved as resting cells.

THE American Red Cross Child Health Exhibition, covering practically every department of child welfare, which has been touring a number of the large cities of France since May, closed its year's work in October at Valenciennes. Besides spending a month in Paris this exhibition remained for from two to three weeks at Lille and other cities of North-Eastern France, and has been very successful, the average attendance at the exhibition being about 5,000 persons daily. The exhibition received unanimous support from the French medical profession in every city which it visited, and the local medical practitioners gave their services to it freely in the work of lectures, consultations, examination of babies, etc. It is expected that the exhibition will be continued next summer under the management of the French child welfare organizations.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and leaders and documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 374, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"VICTORIAN" has an income of £800 a year from property and investments in Australia. What would be his liability if he came to this country for one or two years?

He would be liable to account for tax on his income as measured by the amount of the remittances from Australia. In calculating the tax payable, the usual allowances—for example, £225 free and £225 at 5s. would be made, and an allowance is also made for the tax paid in Australia.

A. McD." uses his private car for travelling from the place of his real employment to the hospital, where he holds an honorary appointment.

We understand that the Board of Inland Revenue offers no objection to the inclusion of honoraria from hospital appointments with the main source of earnings and to the calculation of expenses accordingly. We therefore think that our correspondent may properly deduct his expenses. His colleague, who travels to another place to perform duties in connexion with a Pension Board, appears to be in a somewhat different position.

"RELAY" inquires whether he is correctly informed that army pay must be dealt with on the basis of the actual year's pay and not on the three years' average.

Yes, on the other hand, a practitioner on active service can have the assessment on the past three years' profits dealt with on the current year's basis also. If the total income on that basis be less than the allowances the difference cannot be carried forward against the income of the next year.

"MAJOR I.M.S." landed in England from India on June 15th, 1921: he receives privilege pay to October 6th and furlough pay from that date to March 31st, 1922. He asks what income he is liable to declare.

Our correspondent should make his declaration as "a person not ordinarily resident in the United Kingdom." On this basis his income should be dealt with as follows:

1. Pay: The amount receivable for the period June 15th, 1921 to March 31st, 1922.
2. Private practice, etc., in India: Presumably at present in abeyance, if not, if any earnings in this country they are liable to tax.
3. Interest on Indian shares: Income liable if remitted to this country, less an allowance for tax borne there.
4. 5½ Per cent. War Loan interest: Not liable to assessment in the circumstances of residence.

LETTERS, NOTES, ETC.

PAST AND PRESENT.

DR. W. E. HOME writes with reference to the recommendation on the note headed "Past and Present" on p. 715 of our issue of October 29th to read certain books by Professor Shield Nicholson and others: As an Edinburgh student and secretary of the Conservative Association years ago may I recommend instead *The Strength of Nations* (not the "wealth") by J. W. Welsford (Longmans, 6s.) published in 1907, which has explained to me everything that has happened since, the suffragettes and the unemployed, and foretold the great war?

Birth Control.

Dr. Marie C. Stopes, President, Society for Constructive Birth Control and Racial Progress, 61, Marlborough Road, Holloway, N.19, writes, in the course of a letter on this subject: Dr. Marcindale is reported in your pages to have given an address to medical women in which she pointed out that the birth control movement in England dated from the Bradlaugh trial in 1877. Had she attended the presidential address of the Society for Constructive Birth Control she would have learned that there was a very flourishing movement, centring round Dr. Trall in 1866, years before Bradlaugh touched the subject, and also a considerable movement earlier than that. This point is important, as "birth control" has hitherto (erroneously) been much prejudiced in popular opinion by being supposed to be an atheistical movement originated by Bradlaugh. Furthermore, dealing with the methods used by the wife she includes the "introduction of rubber cap" as one and dismisses it as being "not entirely satisfactory." With not only enormous numbers of private confidences from individuals for years past, but also with eight months' experience of running the only clinic for birth control, I may claim to know something of methods. There is not one, but there are nearly two dozen different varieties of "cap," and we have found from experience that all, save one, are unsatisfactory, and that one type of cap is entirely satisfactory for normal people when intelligently used. The great difficulty, of course, in contraceptive methods is the problem of the woman with a displaced uterus. Such cases, and those of persons diseased in other ways, require special attention and methods, and I hope that medical women will concentrate on the various problems raised by such, after ascertaining accurately what is already known of the subject.

The late Dr. Wickham Legg.

Dr. E. H. Ezard (Cambridge) writes to point out an error in the obituary of Dr. Wickham Legg. By inadvertence it was stated that Dr. Legg's editions of the Quignon Missal and the Sarum Missal were made for the Henry Bradshaw Society. It should have been stated that the former was published at the Cambridge University Press before the society came into existence, and that the Sarum Missal was edited for the Clarendon Press, Oxford. Dr. Ezard sends us a list of Dr. Legg's principal contributions to the Henry Bradshaw Society, for which we have not space; he also mentions that in 1917 Dr. Legg presented to the members a facsimile of the Bodley Missal consisting of some 300 pages of phototypes.

The Term "Neurasthenia."

Dr. R. M. Ladell (Wylde Green, Birmingham), in the course of a letter on the subject, writes: It appears to me that the discussion on the neurasthenic element in midwifery and gynaecology, reported in your issue for October 29th, was robbed of much of its value by the looseness with which the terms "neurasthenia" and "neurosis" were used. One would hesitate to criticize on the strength of what is not perhaps a full report, were it not that one of the speakers, Dr. Helen Boyle, confessed herself as feeling "in a maze" owing to this very point. Surely it is time that the habit of using the term neurasthenia to cover every conceivable manifestation of functional nervous disorder should be abandoned. Neurologists now restrict the meaning to a definite syndrome comprising cranial headache, disordered sleep, chronic fatigue, and irritability. As such neurasthenia is recognized to have a very definite etiology, and it seems strange that the majority of the speakers showed themselves to be quite out of touch with modern research. Many of the conditions described should have been classed as conversion hysteria, and some obviously belonged to the anxiety neuroses. It is painful to read of gynaecologists still pinning their faith to operation for such a purely psychic condition as is dysmenorrhœa in the absence of gross mechanical cause. There must be special departments and specialists in the increasing complexity of medicine, but it is not good that the specialist should work in a water-tight department. Dr. Farquhar Buzzard's valuable contribution recognized this, but even he did not give the strong lead one would expect.

Nursing in Prison Hospitals.

In our issue of November 5th, p. 763, we published a reply by the Home Secretary to a question in the House of Commons as to the recent appointment of an untrained nurse to take charge of the hospital at Holloway Prison. Mr. Shortt stated that the person appointed had been engaged in hospital duties for seventeen years. With reference to this matter Mrs. Scharlieb writes to us as follows:

The Voluntary Nursing Advisory Board for Holloway Gaol went to the Prison Commissioners' Office on November 7th, and were most kindly received by Mr. Waller. Drs. Dyer, Griffiths, and Mr. Wall (Secretary), were also present. After considerable discussion the following points were agreed on:

The Holloway Hospital is to be staffed entirely by certificated nurses, reasonable time being allowed for the absorption of the existing officers where not certificated. In this way it is hoped that all difficulties may be overcome, and that the matron, with the assistance of a trained and certificated staff, may be in a position to secure the good nursing of the patients confided to her care.

The Voluntary Nursing Advisory Board expressed their appreciation of the good services rendered by the unqualified officers who have prison training only. They announced their intention of sending a special message of thanks to one of these ladies who is likely to be taking up work elsewhere.

Degrees and Diplomas.

"M.R.C.S., L.R.C.P." writes: May I suggest to "Triple Qualification" that the idea that the colleges should have the right to confer degrees instead of diplomas is not one likely to cut much ice. The colleges have not the least intention of stirring a little finger to alter the anomalous position of their diplomates, who spend their life doctoring without being entitled to call themselves doctors. The M.B. in general practice has a good opportunity to take the M.D. with a reasonable amount of reading. But do the colleges offer any opportunity to the general practitioner to become an M.R.C.P.? A glance at their regulations shows that they are very carefully designed to prevent any such contingency. Most men who enter the blind sac of the diploma and licentiate course do so in ignorance of the disability entailed, and it seems to me that the only thing that can be done is to bring home to them by some means what they are doing before it is too late. I notice that many of my neighbours who are not in possession of a degree nevertheless adopt the style of "Dr." on their plates and visiting cards. I never had sufficient "nerve" myself, but I long since gave up asking to be addressed as "Mr." Explanations are troublesome things, but I always feel guilty of some slight deception even after fifteen years of practice.

"An Old Guy's Man" writes: I cannot agree with your correspondents "Triple Qual." and "Conjoint," who seem to think that those with university degrees get the best posts. In London, I am certain that provincial degrees are at a discount—at least they were so in the eighties, a time when the unqualified assistant flourished. I left hospital in 1884, not in a very good state of health. I answered an advertisement for an assistant in Kensington, and got it, though my principal some time afterwards informed me that he had received a swers from over forty applicants, a great many with the M.B. or M.D. of provincial universities; somehow, being a London college man himself, he preferred the home-made article, and I got the post with a single London qualification. I afterwards joined an old doctor from my own school in a first-class practice in the provinces, as my health did not permit me to reside in London.

Electrical Apparatus.

We have received from Watson and Sons (Electro-Medical), Ltd., of Sunic House, Kingsway, copies of their latest "bulletins" containing particulars of their electro-medical apparatus. The principal new introduction is a portable diathermy apparatus, which can be taken to a patient's house. Practically all forms of alternating current supply can be connected to the machine, and when only direct current is available a separate rotary converter is supplied. The apparatus in its cabinet, apart from the rotary converter, weighs only 26 lb.

X-Rays, Limited, of 11, Torrington Place, London, W.C., have sent us their latest price lists, which show some reductions in the prices of the materials used in radiography. Certain *x*-ray plates and films appear to have come down considerably in cost, and the reduction is even more marked in the case of intensifying screens. X-Rays, Limited, have lately introduced a new transformer, designed to give 200,000 volts, and to operate the new model of Coolidge tube for deeply penetrating *x*-ray treatment.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 30, 31, 34, 35, 36, and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32, 33, and 34.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
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EIGHTY-NINTH ANNUAL MEETING
OF THE

British Medical Association.

Held at Newcastle-on-Tyne, Aug. 1921.

SECTION OF ORTHOPAEDICS AND DISEASES OF CHILDREN.

A. H. Tubby, C.B., C.M.G., M.S., F.R.C.S., President.

DISCUSSION ON BLOOD DISEASES IN CHILDREN.

OPENING PAPER

BY

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In the last quarter of a century many workers in many lands have busied themselves with the task of trying to penetrate the mystery of the failure of the haemopoietic system in man. It has not been possible for any of us, especially during the years of war, to keep pace with the amount of written matter on this subject, and often it has seemed that medical science in this department is at a standstill.

It is certain that no striking advance has been made in our knowledge of the subject since the discovery of the disease leukaemia in 1841, eighty years ago, initiated a period in which the diseases of the anaemia type have been carefully studied. But though there has been no single new fact of equal importance added to our knowledge in the last twenty-five years I believe that our discussion to-day will show that there has been a real advance in our general conception of the whole subject, and that we can now classify and arrange our knowledge with a precision and an accuracy which would have been impossible at that time, and which will serve the important end of indicating not only the gaps in our science but also the nature of the means by which these may be filled.

Before we enter upon the discussion of the anaemias of children it will be well to attempt to define exactly the scope of our subject. It is not easy to define what we mean by anaemia, though it is easy to recognize its existence. I suppose that I may take it for granted that we are in agreement that during life the corpuscular elements of the blood, both red and white, are derived from the bone marrow, although it is possible that some at least of the lymphocytes are produced from lymphoid tissue elsewhere; and that the haemoglobin, whatever may be the exact site of its formation, enters into the corpuscle within the bone marrow. Anaemia is therefore in the broadest sense an affection of the haemopoietic tissue of the bone marrow, or in some cases possibly merely a defect of haemoglobin formation.

I think that we shall also be in agreement that this function of the bone marrow may be disturbed by toxins, which may act either (1) by diminishing its reproductive powers, or (2) by destroying the product more quickly than it can be formed. As an example of the first we could instance any of the common diseases which produce a temporary anaemia; the influence of some of the specific fevers, or of conditions of malnutrition, which produce an anaemia apparently more dependent on a general lowering of health than upon any special toxin. The anaemia resulting from a large or persistent haemorrhage in which the finished product is removed more quickly than it can be reproduced is an example of the second. It is, however, probably true that in most cases of anaemia both forces are at work; there is a poisoning of the haemopoietic system and an exaggerated destruction of the finished product. Of the nature of the poisons we know next to nothing, though the study of bacterial haemolysins and of certain chemical substances has thrown some light upon the problems, and it is further known that certain *x* rays have a profound influence on blood formation. But whatever the nature of the poisons the ultimate source of many of them is almost certainly infective, and our power to arrange and classify the various types of these diseases seems to me to be dependent on the recognition of this fact. But it is possible that there are other causes, congenital or acquired, and I should hope that there will be some discussion on congenital or inherited abnormalities of blood formation.

The next point which I would suggest for discussion is the methods which we have employed and are now employing for the elucidation of the problems of anaemia. It is true that experimentally by the use of powerful tissue poisons and by dieting we have been able to produce in animals anaemia which is in many respects the counterpart of some of the anaemias which we meet with in the human being. But for the most part we have relied on clinical observation and the study of the morphology of the blood corpuscle, especially as seen in dried and stained films. I do not wish it to be supposed that I belittle this method. It has supplied us with a means of differentiating some of the forms of disease under discussion, and has in many ways helped the clinical physician, and further, has modified some of our radical conceptions of disease; but I am inclined to think—and this is a point which our discussion can usefully debate—that the knowledge which we can derive from this method of study is now stabilized, and that much of the later work in this particular field is sterile. The controversy which rages, for instance, about the exact nature and origin of the lymphocyte of the bone marrow, the pre-myelocyte, the pro-myelocyte, myeloblast, or primitive cell, does not appear to me to promise any addition to our essential knowledge of the anaemias. There are, on the other hand, many problems in connexion with the function and life-history of both the red and white corpuscles of the blood, but especially of the white, the solution of which would probably be of great value. We know something of the functions of the polymorphonuclear leucocyte; we know nothing of the basophil, and next to nothing of the eosinophil. What is their normal function, and why in certain circumstances, but specially in leukaemia, is their number in the circulating blood so enormously increased?

General Survey.

From these definitions and speculations I pass on to a general survey of the clinical position as it stands at the moment, and for our present purposes propose to classify the anaemias as (1) congenital; (2) secondary, that is, those in which a removable cause is operating to produce the anaemia; and (3) primary, those in which an unknown, and at present usually unascertainable, cause is operating.

Congenital Anaemia.

That there are children who within a few days of birth exhibit a remarkable degree of anaemia is beyond doubt, but this for the most part quickly disappears, and it is exceptional to meet with a newborn baby suffering from an anaemia which calls for treatment. The most common cause of anaemia at this age is the occurrence of severe sepsis, or more rarely lues or tuberculosis. The children who are born of leukaemic mothers are, I believe, without exception unaffected; though there are on record a few cases of leukaemia occurring within a few days of birth, who, again without exception, have been born of healthy mothers.

But there is a disease known as congenital acholuric jaundice, of which anaemia may be a very prominent symptom. The term "congenital" is in a sense misleading, for I believe that I am correct in stating that no case of this disease has been hitherto recognized in the first two years of life, though the most striking peculiarity of the affection, the fragility of the red blood corpuscle without the anaemia or the jaundice, has been found in some of the youngest members of an affected family. What is the exact relation of this peculiarity to the developed disease is unknown, for many individuals who possess it pass through life without disability, while in some others an anaemia develops which threatens their existence, or at least makes it a life of invalidism. There is one family with which I am acquainted

in which the affection has been recognized in four generations.

Apart from this disease the instances of congenital anaemia are few, though perhaps I should briefly refer to those fatal cases of jaundice with anaemia recurring in child after child of the same mother, of which several examples have been recorded by Busfield, Arkwright, Auden, and others. They appear to be cases of a severe form of toxaemic jaundice.

Secondary Anaemia.

In regard to those anaemias of which we can definitely recognize a cause, either the presence of some acute infection, or of some chronic disease such as tuberculosis or syphilis, or due to the influence of defective nutrition, I have little to say. It is probably agreed that the defect of the blood formation is here due to the general malnutrition of the tissues or to the action of a poison actively destroying the elements of the blood as rapidly as they are formed. The study of such cases is not however without its lesson, for it throws light on the reaction of the haemopoietic tissues to various stimulants. It is notorious, for example, that sepsis gives rise as a rule to a marked polymorphonuclear leucocytosis, yet from time to time cases are reported in which in place of the expected polymorphonuclear leucocytosis there is instead a rise in the lymphocytes. No explanation of this phenomenon is offered as yet.

Before I pass to the consideration of what I have called the primary anaemias I must mention von Jaksch's pseudo-leukaemic anaemia of infants. By my own definition this is a primary anaemia, yet it is so obviously the product of external conditions and environment that I think we may fairly consider it in this place. It is an anaemia of the second and third years of life, rarely seen before the end of the first year and almost invariably ceasing by the end of the third year. Moreover, it is, I believe, almost confined to the hospital class of the population, and does not occur among children who are brought up under favourable conditions. It is a characteristic disease, with its waxy pallor, the enormous spleen and the striking presence of a high proportion of typical myelocytes in the circulating blood. It is not a fatal disease in itself, that is, the patients do not die of the anaemia; they die of intercurrent infections, bronchopneumonia and diarrhoea. I personally am convinced that it is a disease different from any other form of anaemia, but others have maintained that any severe anaemia in an infant may assume this type. The objection to this contention seems to me to be that no one has ever seen the development of this complaint from an ordinary secondary anaemia. Usually there is no difficulty in recognizing the disease, but there may arise difficulties in the more severe cases in the distinction from leukaemia. I have seen two such cases, both of which eventually made a good recovery. The disease is of extreme interest because of its resemblance to leukaemia; if it is related to leukaemia it is difficult to perceive why there should be so great a difference in the prognosis of the two diseases, and the tissues *post mortem* do not bear the least resemblance to leukaemic tissues either in the liver, spleen, or bone marrow.

Primary Anaemia.

I turn now to the consideration of the most difficult of the problems of our subject: the diseases which await accurate classification as a preliminary to a better recognition of their causes, and therefore of more efficient treatment. I know that opinion in this sphere is diverse, and that the discussion will most probably be chiefly concerned with this problem, and therefore I propose to challenge dispute by making my own statements more dogmatic than either my knowledge or my judgement properly permit. In this sense, therefore, I suggest that there are only three types of severe blood disease which occur in children before the age of puberty, and that these are leukaemia, purpura, and a grave anaemia to which a number of names have been attached but which is most familiar, perhaps, by the title of "aplastic anaemia." Personally I prefer to call the disease "the grave anaemia of children," because the term "aplastic" seems to me to be strictly applicable to any severe grave anaemia, even to some of the secondary anaemias in which recovery is the rule, whereas in this disease recovery is very uncommon. It would be, to my thinking, just as proper to call leukaemia "hyperplastic anaemia," a proposition which, I think, most of us would condemn at once. Nomenclature is always a difficulty in medical problems; the essential thing is to be quite clear about the meaning of the terms which we use.

By leukaemia, therefore, I mean an anaemia characterized by enormous increase in one or more of the leucocytic elements of the circulating blood; purpura is a name given to an anaemic disease in which the chief characteristic is the occurrence of extravasations of blood in and beneath the skin and mucous membranes; and the anaemia gravis of children is a disease characterized by a progressive diminution of the corpuscular elements, both red and white, of the blood, and by progressive failure of haemoglobin formation. There are, of course, other features which many of us would include in our definition, but I am here concerned to reduce the description to its simplest terms. When we meet with characteristic examples of any of these types there is no difficulty; perplexity begins when, as not seldom happens, the case does not conform to type. Most often this happens in the most acute cases, and then the differential diagnosis between leukaemia of an abnormal type, an anaemia gravis, a fulminant purpura, or possibly an unusual form of lymphadenoma, demands careful consideration. In adults and occasionally in adolescents there is also the diagnosis of infective endocarditis to be considered, but in younger children this problem is seldom present.

Let us take first the problems of leukaemia. There are, it is agreed, two main types of this disease: first, the chronic myeloid leukaemia, characterized by the presence of a large spleen and a great abundance of myelocytes in the peripheral blood. The type is not that most usual in children. It is more usual to meet with the other variety, acute lymphocytic leukaemia, in which there is often great swelling of the superficial lymphatic glands, extreme anaemia, swelling of the spleen, moderate in comparison with that in the myeloid type, and a tendency to bleed from the skin and mucous membranes. This is commonly called lymphocytic leukaemia, but the cells found are not the ordinary lymphocytes of the normal blood, but cells larger and with larger nuclei; in fact, though usually devoid of granules they are nearer in general structure to the myelocyte of the bone marrow. About the origin and nature of these cells controversy rages, but I believe that whatever their characters there will be a general agreement to the proposition that they belong to, and are derived from, the bone marrow. If this is agreed we arrive at the position that whatever the type of cell met with in the particular case leukaemia is always a disease of the bone marrow. I should myself be prepared to go further and claim that the character of the leucocytes depends chiefly, though certainly not entirely, on the acuteness of the affection; the more acute the onset and progress of the case the greater the tendency to the production of the non-granular "lymphocytic" cells, and in the more chronic cases there is a high probability of the cells being of the fully-formed myelocytic and polymorphonuclear type. I should here indicate that this conception will do away with the "mixed" leukaemias.

The next problem which faces us is that from time to time we meet with cases having the general characteristics of a leukaemia which show no excess of leucocytes, rather tend towards a leucopenia. For such cases the term "aleukaemic leukaemia" has been used, together with other names, of which perhaps "leukanaemia" is the most popular. The name "aleukaemic leukaemia" should at any rate be reserved for those cases in which the leucocytes, though diminished in number, are mainly of the "lymphocytic" or "myeloblastic" type, and these should be sharply differentiated from those cases in which with the same paucity of leucocytes the normal polymorphonuclear and lymphocytic cells are the majority of those present. These belong, in my opinion, not to the leukaemic group, but to the class of purpura or even more to that of anaemia gravis.

Have we any other criteria than the character of the leucocyte present in a particular case? After death the

bone marrow even of these "aleukaemic" cases is darker red than normal, and both to the naked eye and to the microscope presents a striking difference from that of the anaemia gravis type.

To make this plain, I must quote the case of a boy aged 1¾ years, who, after an illness of one month, came to the hospital with a purpuric rash all over the body, and a fever of 100.6 . He had general slight enlargement of the superficial glands, but the liver and spleen were not especially prominent. His blood count showed:

Red blood corpuscles...	...	2,180,000 per c.mm.
White blood corpuscles	...	3,800 per c.mm.
Haemoglobin... ...	...	30 per cent.

So far he might have been classed as a grave anaemia, but the differential staining of the leucocytes showed that of the total of 3,800 no less than 3,100 were "lymphocytes" of the bone-marrow type, while over 400 of the remaining cells were counted as myelocytes; that is, the blood showed the leukaemic characteristics. After death his bone marrow was markedly redder than normal, looking like red currant jelly, and microscopically the marrow and tissues were crammed with the "lymphocytic" type of cell.

A further means of differentiation after death is afforded by the fact that in the leukaemic disease the "free iron reaction" is seldom present, whereas in the anaemia gravis type this is commonly demonstrable at least in the liver, and in the markedly yellow bone marrow. The mere fact, therefore, that a particular case of severe anaemia has a low leucocyte count and an "aplastic" condition of the circulating blood does not suffice to remove it from the category of leukaemia. The bulk of the cases reported as leukanaemia, and many reported as "aplastic anaemia," seem to me to belong to this type.

There are, of course, further difficulties in connexion with leukaemia, notably their relation to the group which I will call broadly "chloroma," cases in which the blood has the characters of a "lymphocytic," or more rarely of a "myeloid" leukaemia, though the deposits in the organs show all the characters of malignant growth. The consideration of these cases has led some authorities to conceive leukaemia as a whole to be of the nature of a new growth: a conception which, for the bulk of the examples, seems to me to be quite untenable.

I pass on to the consideration of the anaemia gravis, which in childhood takes the place, according to my own experience, of the pernicious anaemia of adults. The main features of the affection are well illustrated by the case of a girl of 11½ years of age who had a six months' history of progressive weakness with increasing pallor. On admission to the hospital she had:

Red blood corpuscles...	...	1,140,000 per c.mm.
White blood corpuscles	...	5,200 per c.mm.
Haemoglobin... ...	...	30 per cent.
Colour index	...	1.3

Of the leucocytes 1,800 were polymorphonuclear cells, and in successive counts these never fell below that total, and often rose above 2,000, and as the disease progressed they became more and more the predominant white cell, in the later counts representing two thirds of all the leucocytes present. She had very few nucleated red cells and no abnormal leucocytes. She had petechiae sparingly distributed on the limbs and trunk, retinal haemorrhages, epistaxis, and blood in the stools and vomit. She died within the month, and at the autopsy her bone marrow was found devoid of any trace of red colour; her liver gave a strong "free iron" reaction, and there was no infiltration of any of the organs with leucocytes.

Such a case is the type commonly called "aplastic anaemia," but, as I have already said, I prefer to give it the less debatable name of "anaemia gravis," because among other reasons I can discern no mark which would separate it from cases of severe secondary anaemia which recover. It is not a specific entity, any more than is the pernicious anaemia of adults. Just as in that disease our clinical difficulty is to discover the source of the infection which gives rise to toxaemia, which in turn attacks the haemopoietic tissues, so in these cases I believe that if we can only discover the focus of infection we may succeed in saving them. In the body of my patient after death one kidney was found riddled with small abscesses. It is, of course, possible that these were the result of infection late in the disease; but it is also possible that they were the cause of the profound toxaemia and anaemia. During life there was no indication of infection of the urinary tract, save that on one occasion, about ten days before death, an abundance of leucocytes were found in the urinary deposit under the microscope.

The remaining types of severe anaemia can be briefly dealt with. From time to time there occur fatal profound anaemias, which belong to the purpura group; almost certainly they are also infective in origin. These can usually be separated from both of the previously mentioned types by the absence of glandular, splenic, or hepatic enlargement, and by the tendency of the blood to assume the post-haemorrhagic characters, that is, a moderate polymorphonuclear leucocytosis and a red blood count higher than 2,500,000 per cubic millimetre, with an abundance of nucleated red corpuscles.

I mentioned earlier infective endocarditis as a possible cause of severe anaemia. It is, of course, familiar to everyone that this disease may, in the adult, give rise to an anaemia which presents the characteristics of an "aplastic anaemia." In children the difficulty must be very rare, and I, at least, have never met with a case in which the condition of the blood gave rise to doubt. I have seen one case of lymphadenoma which was diagnosed as "aplastic anaemia"—wrongly, in my opinion, for there was in every count an unusual number of nucleated red corpuscles, amounting in one instance to over three thousand per cubic millimetre. In addition, she had from time to time an active polymorphonuclear leucocytosis. She died after several months' illness, with the typical lesions of Hodgkin's disease.

After this review, what are our prospects of dealing with these anaemias? I have tried to indicate that in my judgement the anaemia gravis type is caused by an infection, and I think that our main efforts should be directed not so much to a study of the characters of the individual type of cell as to the early detection of the focus of infection. It will often elude us, as in the past, but the more we concentrate on this aspect of the problem the greater our hope of success. The same I should hold to be true of the leukaemias, though I do not think that the evidence of infection is here so strong. The anaemia gravis of children is almost confined to the hospital class of patient, and the bulk of them come from the lower grades of the town populations. That is not the case with leukaemia, which apparently makes no distinction and may attack the child brought up in the most perfect surroundings. Yet the disease as a whole seems to be more closely allied to the infections than to the new growths or to any metabolic disease.

I have purposely omitted any reference to Banti's disease, for I have myself never met with an affection in a child below the age of puberty which appeared to me to present the characteristics so familiar to us in later life. But I must not omit to remind you of the curious disease known as Gaucher's type of splenic anaemia. It is, as you know, characterized by a family incidence, an enormous enlargement of the spleen and liver, due to the presence of abnormal cells of the endothelial type, and generally a freedom from physical illness, though the bulk of the organs may cause some disability in later life. Cases of this disease have been reported in infancy, and lately my colleague Dr. Hutchison has had in his charge an infant who died with anaemia and a large liver and spleen, in whose organs these characteristic cells were found after death.

In the leukaemias, then, at present prognosis must be pessimistic and treatment empirical. I have never seen an undoubted case of leukaemia recover permanently, though some have recovered a certain degree of health and lived to a period beyond our expectations. In the other types of severe anaemia if we fail to detect the focus of infection as a rule the disease progresses to death. In the definitely purpuric cases injections of normal horse serum or of human serum sometimes appear to stay the tendency to bleed; but in anaemia gravis neither serums, drugs, nor in my own experience blood transfusions, avail to impede the march of the disorder.

DISCUSSION.

Dr. H. Brooker Mills (Philadelphia) said: I entirely agree that it is hard to define anaemia, and that little advance has been made in its study in recent years. I would like to ask if Dr. Thursfield would consider haemophilia as a "congenital or inherited abnormality of blood formation." I agree with him that lues and tuberculosis, especially the latter, in my judgement, are rarely causes of anaemia in infancy. His classification appeals to me strongly as it simplifies the study of the subject so much, but I am not sure that it would not be improved by reversing Nos. 2 and 3. That sepsis is undoubtedly the main cause of congenital anaemia there can be no doubt, and that "the early detection of the focus of infection" is the direction in which our main efforts should be made is undoubtedly true. In reference to Gaucher's disease, I feel there are probably more cases than have been recognized or recorded.

As to treatment, massage was long since advised by the late Dr. S. Weir Mitchell, who showed excellent results in improving the quality of the blood by this method, especially when combined with rest, but I believe most of his patients were adults. A recent author recommended the use of sodium cacodylate hypodermically, and I have seen good results from its use.

Dr. Herbert Morley Fletcher (London) expressed the thanks of the Section to Dr. Thursfield for his clear exposition of a most difficult subject. He agreed as to the necessity of simplification in the classification of the various forms of the so-called blood diseases. He referred to the comparative frequency of the occurrence of Mikulicz's syndrome (enlargement of the lacrymal and salivary glands) in lymphatic leukaemia in children, especially in the early stages of the disease.

As regards the results of treatment of the grave forms of anaemia in children, he was not so pessimistic as Dr. Thursfield, because although drugs and transfusions might not avert a fatal termination, they might bring about a temporary amelioration.

Dr. John Thomson (Edinburgh), after expressing his high appreciation of Dr. Thursfield's paper, referred to two cases of congenital hypertrophy of the pylorus in strong healthy infants who suffered from severe haemorrhage shortly after Rammstedt's operation. In both cases there was profuse general oozing from the cut surfaces during the operation. In the first case the child died within a few days, and the peritoneum was found to be full of blood. In the second there was very severe haemorrhage from the abdominal wound, which continued until three injections of the father's blood had been given into the subcutaneous tissue. Thereafter the bleeding stopped entirely and the child made a good recovery. What, Dr. Thomson asked, is the relation of such cases to the so-called "haemorrhagic disease of newborn children"?

Reply.

Dr. Hugh Thursfield, in reply, thanked his various critics for the extremely flattering tone of their remarks, and endeavoured to answer some of the points raised. Haemophilia and melaena neonatorum seemed to him to be examples of tissue diseases in which the haemopoietic function was secondarily disturbed. Anaemia gravis, he reiterated, was not a specific entity; it was, in fact, strictly comparable to the pernicious anaemia of adults, which, it was now generally agreed, is not a specific entity.

Mikulicz's syndrome was a phenomenon not at all unusual in "lymphocytic" leukaemia, and was often associated with leukaemic deposits in the skin; but it was a phenomenon which occurred quite independently, and in such cases after long duration it eventually disappeared without producing any alteration in haemopoiesis.

He welcomed particularly the information given by one speaker in the discussion, that research by new methods into the calcium of the blood was going on actively at Cambridge. New methods were pre-eminently necessary for progress in this sphere, and he hoped to hear more of this in the next winter.

DISCUSSION ON THE GENERAL PRINCIPLES OF TREATMENT IN TUBERCULOUS DISEASE OF THE BONES AND JOINTS IN CHILDREN.

OPENING PAPER

BY

Sir HENRY GAUVAIN, M.A., M.D., M.Ch.Cantab.

I would first tender my thanks to you for having invited me to open the discussion on a subject in which I am deeply interested, and which is now attracting considerable attention, both medical and lay. I deeply appreciate the honour, and shall endeavour in the time allotted me to sketch the more important principles of treatment which modern research and experience indicate as the most suitable for these conditions, and likely to be productive of the best results.

It is, I think, now unnecessary to urge the claims of conservative treatment. The more advanced surgical opinion recognized its value early this century. Reiteration of the fact that a tuberculous bone or joint lesion is an osteitis or arthritis occurring in a tuberculous patient, and not merely a bone or joint affection, is so well appreciated that it hardly needs emphasis. Continued research ever more clearly demonstrates its truth. A tuberculous lesion is but a local manifestation of a more general infection. Probably few if any bone or joint lesions, clinically demonstrable, are independent of other lesions, which may be only discoverable *post mortem*, and general constitutional symptoms of infection are rarely difficult to demonstrate. Tuberculous antigens may be found in the blood and urine of tuberculous patients even before there is clinical evidence of tuberculous disease. Wildbolz[1] and Imhof have facilitated the early diagnosis of tuberculosis by work on the antigens in the urine and blood, and the practical tests they have devised may prove of great value, not only in affording a readier means of early diagnosis, but also as disclosing evidence of activity of disease, a matter of paramount importance, especially in bone or joint tubercle, and one which has not received the attention it demands.

Not only may tuberculous antigens be demonstrated in the blood of tuberculous patients, but the tubercle bacilli themselves have frequently been discovered. Indeed, Sabathe and Buguet[2] have recently devised a technique by which they claim that tubercle bacilli can very readily be detected in the blood. By the method they have introduced they state that in more than 300 blood examinations made from patients with tuberculosis, they have not once failed to demonstrate tubercle bacilli in the blood. Whether this claim will stand the test of further investigation I am unable to say, but it had long previously been known that tubercle bacilli could be demonstrated in the blood of many tuberculous patients, and it emphasizes the fact that we should no longer restrict our vision to the tuberculous bone or joint we are asked to treat, but should take the wider view and treat the patient suffering from tuberculosis. If this extended conception of a tuberculous bone or joint lesion is correct—and the whole trend of evidence constantly accumulating confirms this view—it must most profoundly influence our ideas of treatment, increasing our responsibilities but enlarging our possibilities.

In March of this year I was honoured by the Medical Society of London[3] by an invitation to open a discussion on the non-operative treatment of surgical tuberculosis. In that address I gave with some fullness my views on the desirability of adopting conservative methods in the treatment of tuberculous disease of the bones and joints. To save repetition, I would ask you if you would be good enough to regard this contribution as supplemental to that address. I defined conservative treatment of tuberculous disease of the bones and joints as the adoption of all measures which tend to improve the patient's general health, increase his powers of resistance to tuberculous disease, and preserve or restore the part or parts attacked, in contradistinction to radical treatment, which aims at the cure of the disease by the removal of the local lesion. Such a definition implies the adoption of very active, numerous, and sometimes complicated methods of

treatment, and by no means necessarily excludes surgical interference, although surgery from being the one treatment becomes relegated to an inferior, though still useful, position as a possible aid to cure or amelioration under certain conditions.

Conservative treatment is a treatment involving immense attention to detail. Every possible aid to the patient's cure is invoked, and one's ingenuity is constantly being exercised in exploring any possible avenue which can suggest itself as likely to assist in securing the desired end. Obviously, the ideal treatment would be one which would at once slay and render innocuous the tubercle bacilli infesting the host, yet without at the same time injuring the patient. Such a treatment is at present unobtainable, though it is within the realms of possibility. But, while we still cannot directly and speedily destroy the bacillus in its host, we can do much to render the tissues of the host unsuitable for and resistant to the invading organism, and it is on such lines that the more immediate hope of practical advance may be based.

A general disease demands general treatment. To reinforce and strengthen the natural defences against the attack of the tubercle bacillus is the most practical, and is also a practicable, method of defeating that attack. Life in the open air, in a dust and germ free atmosphere, under the bactericidal and tonic action of the sun, is a first principle in antituberculous therapeutics.

Treatment, then, of tuberculous bone and joint disease may be best conducted on the following lines: General, which would include climatic, hygienic, disciplinary, dietetic, drug, educational or occupational, and such measures. Local, which is largely concerned with the correction or prevention of deformity, and is chiefly orthopaedic in character, subject to those limitations enjoined by the fact that the patient is tuberculous. With local treatment may be included those surgical measures which are still required, but the indications for which are continually diminishing as skill in the employment of conservative treatment increases. Lastly is what I may call adjuvant treatment. The relative importance and scope of application of adjuvant measures of treatment have largely increased in recent years, and represent perhaps the most interesting advances made in the conservative treatment of bone and joint tuberculosis. Amongst such aids are heliotherapy, balneotherapy, chemiotherapy, vaccine treatment, and the therapeutic employment of *x* rays and other electrical agents. In addition, auxiliary methods of treatment, including attention to conditions which have a direct or indirect bearing on the disease being treated, should not be neglected, such as the care of the patient's teeth, tonsils, eyes, ears, skin, etc.—matters so often overlooked, but of such associated importance.

To discuss these various forms of treatment summed up in the word conservative, the indications for their individual or combined employment, the stage at which any one should be applied, the extent to which they may be usefully adopted, the effects which they may separately or in combination be expected to produce, and the ultimate results which may be reasonably anticipated, is obviously impossible. Certain of them are only fully applicable in a large, efficiently staffed, and well-conducted institution. Nevertheless, institutional life is by no means essential, and thoroughly efficient treatment can often be undertaken in the patient's own home. For desiderata in an institution I would beg to refer to a memorandum I was asked to submit to the Departmental Committee on Tuberculosis (Cd. 6654, Appendix). With your permission I shall make a few observations under each of these headings, not intended to be in any sense complete, but rather as a general expression of opinion, and with the hope that discussion will be stimulated.

General Treatment.

The indications for and nature of general treatment are so well recognized that they scarcely need comment. On one point, however, I may request your attention for a moment. We are rather apt to regard private and institutional treatment as two distinct entities, but lessons learnt from the one may often be profitably applied to the other. In this respect I fear we who are responsible for the charge of institutions have been somewhat slow in making use of observations learned in private practice. Every general practitioner has realized the value of climatic change and the benefit to be derived from altered environment and altered conditions of life for certain of his patients. Such an observation we have been slow in putting into effect in institutional practice. And yet it may frequently be exceedingly useful in hospital work. I was fortunate in enlisting the sympathy of the Trustees of the Treloar Cripples' Hospital to this aspect of treatment in surgical tuberculosis, and this has resulted in the establishment of a branch hospital at Hayling Island for the treatment of our patients. The result has been remarkably encouraging. We are acquiring a mass of valuable information on the selection of cases for marine or inland treatment. Certain cases undoubtedly make better progress inland, others at the seaside. Others improve most rapidly by alternate periods of treatment at each.

A marine institution for the treatment of surgical tuberculous affections should possess certain characteristics which I would regard as indispensable if the best results are to be obtained. The climate should be bracing but mild, the rainfall slight, the air clear and free from mist and other contamination. The soil should be dry and sandy. There should be abundant sunshine of high actinic value, the benefit of which is enhanced by reflection of light from the sea. The hospital should be so situated that it is right on the seashore and of easy access to the beach. The shore should be flat for the convenience of the patients, there should be an extensive beach on which treatment may be undertaken unhampered by visitors and others. There should be considerable tidal excursion. All these desiderata are present at Hayling, and treatment at Alton has been immensely benefited by the possession of these added advantages.

Patients are especially helped who, having improved up to a certain point, then remain stationary and need an added impulse to further promote the cure. There are also numerous special indications. Intensive heliotherapy with sea-bathing to assist may be practised. This combined treatment is of especial value in sinus cases. As a general rule in the summer I send down as many ambulant patients as possible to enjoy the delights of the beach, in the winter the proportion of recumbent cases is higher. In addition the life is made as different as possible, the menu is altered, times of meals changed, and everything possible done to further alter the patients' environment. I am of opinion that this scheme of treatment might usefully be imitated by other similar institutions.

Local Treatment.

While I have emphasized the importance of general treatment, because, perhaps, it has not been given the attention it demands, careful local treatment is of supreme importance.

It is required for the cure of the local lesion, the prevention or correction of deformity, and the management of complications, such as abscesses and sinuses. It involves minute attention to detail, is largely orthopaedic in nature, provided those limitations that the patient is tuberculous are ever borne in mind. Each case requires individual consideration, and presents its special problems; a set treatment is to be deprecated.

Speaking generally, for the more severe local lesions it may be said that there are three stages of local treatment, depending upon the progress of the disease: (1) Acute commencing and progressive disease, which requires absolute rest in the recumbent position, with immobility of the part attacked, combined with the adoption of special means to correct or prevent deformity and abolish muscular spasm. (2) The chronic or subacute stage, where recumbency may not be essential, but very complete immobilization of the local lesion is still called for to assist repair and prevent the recurrence or increase of deformity. (3) The stage of convalescence, where complete immobility is no longer required but protection or support by light accurately fitted removable splints, which may be discarded when the patient is at rest, will suffice.

These three stages during which treatment is required are of indefinitely varying duration, depending upon numerous factors, such as the site and extent of the lesion, the virulence of the infection, individual power of resistance and repair, presence or absence of other lesions, age of the patient, conditions under which treatment is conducted, etc. Abscesses, if present, should where possible be evacuated by aspiration with careful technique.

A closed tuberculous abscess is generally harmless; indeed, is sometimes welcome. The danger of such an abscess does not lie in its tuberculous infection, but rather in the possibility that unless due precautions be observed it may become secondarily infected. Then the clinical picture changes, fever supervenes, and the prognosis becomes grave.

May I illustrate my remarks on local treatment by reference to a case of acute tuberculous disease of the hip-joint with deformity? The patient, I assume, is receiving open-air treatment under the best available climatic conditions, as that is altogether advantageous from both humanitarian and economic considerations. While treated he is being educated and occupied to relieve the monotony of necessarily long-enforced recumbency. The patient is recumbent and immobilized on a suitable bed on a firm mattress. Extension is applied to the affected limb, which, if necessary, is first flexed until there is no lordosis, and placed in such a position that the two anterior superior iliac spines are on the same horizontal plane and the straight line joining them is at right angles to the long axis of the trunk. This extension is continued until the deformity is corrected and the affected limb is not only fully extended but preferably arrives at a position of slight abduction. As a general rule it should be our endeavour to obtain cure with movement. If that be our aim it is desirable to continue extension until muscular spasm has completely disappeared. A late sign of muscular spasm[1] secondary to tuberculous disease of the hip-joint may be detected as follows: the leg on the affected side is gently internally or externally rotated to its extreme limit; if then a further sharp light rotatory movement be conveyed to the limb, reflex spasm of the abdominal recti is demonstrable if the disease is still active.

This is a clinical sign of great practical value. If absent there is reasonable presumption of inactivity of the local lesion, and confirmatory evidence of value may often be obtained by *x*-ray examination. The outline of the bones forming the hip-joint is clear and well defined, recalcification has occurred, a striking contrast to the picture in active hip disease.

The patient may now be safely allowed ambulatory treatment in a short, well-applied plaster spica with crutches and patten, to be substituted some three months later, if no signs of reactivity have occurred, by an accurately fitting celluloid splint, which may be removed at night. This would be suitable local treatment in a large proportion of cases of hip disease. Should there be much intra-articular destruction accompanied by persistent cachexia, sound bony ankylosis may be preferred, and is more readily obtained by prolonged plaster fixation at an earlier stage in a selected position.

A single Thomas hip-splint is now generally—and I think rightly—regarded as an unsuitable appliance in tuberculous disease of the hip-joint. Should there be abscess formation, aspiration is the treatment of choice. The site of entry of the cannula should be selected with care, should be remote from the direction in which the abscess is extending, the cannula should pass through a substantial layer of healthy tissue, and should so penetrate the abscess wall that the orifice created becomes a closed valve when the cannula is withdrawn. These are precautions for the avoidance of subsequent sinus formation which common sense dictates. Neglect of these leads inevitably to disappointment in the conservative treatment of tuberculous abscesses of bony origin. Should the pus be caseous, it may generally be liquefied *in situ* by the employment of suitable modifying fluids.

Sinus formation is the most serious complication to avoid in the treatment of tuberculous bone and joint disease. If a sinus is present but uninfected, the most scrupulous care should be taken to avoid secondary infection and secure healing. If infected, free drainage is called for and the immediate use of autogenous vaccines is strongly advocated. Sequestrotomy is often desirable if an infected bony sequestrum exists, but great care should be taken to avoid undue injury, and further spread of infection, in its removal.

Alteration of posture to ensure better drainage, and ambulatory treatment with the same object, is often of value if the disease is not too acute.

Should the sinus be a chronic one of long standing, without extensive bony infection at its source, the therapeutic injection of Beck's bismuth paste is frequently successful. Heliotherapy, balneotherapy, and *x*-ray treatment are of immense assistance in suitably selected cases; there are special indications for the employment of each, separately or combined. Vaccines, in my experience, are only of value for very recent infections, but in these are of the greatest possible use. The general principles of treatment here laid down for hip disease are of equal significance in other tuberculous bone or joint infections.

Adjuvant Treatment.

Under this heading I would include methods which comparatively recently have come into considerable prominence, which depend for their effect on reactions provoked which may be controlled and utilized to the advantage of the patient treated, and which represent certainly the most interesting and probably the most important therapeutic advance in the treatment of all forms of surgical tuberculosis made of late years. Their application demands skill, experience, and judgement if the best results are to be obtained. They represent alternative and often shorter routes of procuring the desired end, and in certain cases afford means of ensuring successful treatment of really supreme value. They may be employed in suitable cases separately or in combination during, or at some period in, the treatment of bone and joint tuberculosis. The indications for their use are variable, according to the nature of the lesion and individual peculiarities of the patient treated. Such adjuvant measures include heliotherapy, *x* rays and other electrical methods of treatment, balneotherapy, vaccine treatment, and chemiotherapy. None are indispensable for obtaining cure, but their judicious employment often markedly assists and accelerates cure.

Of these, heliotherapy,[2] or sun treatment, may be selected as an example. It has attracted considerable and increasing attention. A bulky literature has been developed concerning this method of treatment, and while perhaps practised more on the Continent than in this country, it has a large and steadily increasing number of advocates, both in England and America. For practical purposes we may regard the action of sunlight on a tuberculous patient as being beneficial in one of two ways:

1. By exercising a local or direct action which is applicable to any patient on any superficial tuberculous lesion. Sunlight is bactericidal, and its bactericidal action is assisted by the favourable inflammatory response which suitable exposure provokes. Ultra-violet radiation has very little penetrative power, and its direct action is therefore confined to the surface, deep-seated lesions not being directly affected. The direct action is therefore limited to superficial ulcerations and the various forms of cutaneous tuberculosis.

2. More interesting, more difficult to explain, and more valuable is the remote or indirect effect of sunlight. It appears to be intimately associated with the patient's own power of pigmenting. Skin pigmentation is dependent upon exposure to sunlight, *plus* some inherent property peculiar to the individual exposed and varying in different persons. Equal exposure to the same source of light in different patients produces varying results. In some, pigment is easily and quickly formed; in others, obtained with difficulty; in others still, it is not obtainable at all. Ultra-violet rays of the wave-length of those in sunlight appear to be most suitable for the induction of pigment. Those of shorter wave-length obtained from artificial sources are apparently more dangerous and less effective. Pigment once formed appears to have two effects: it has a protective rôle and permits prolonged exposure to light and air without danger, and it has been suggested that it has a transforming faculty, converting the physical energy of sunlight into chemical energy which can be made use of in the body on the analogy of the chlorophyll pigment of the plant.

The latter theory is pure supposition and not as yet capable of satisfactory proof. It is, however, certain that for the indirect advantages of sun treatment to be obtained pigmentation is essential. In general terms, the greater the area pigmented and the longer exposure can be comfortably maintained the greater appear to be the benefits derived. Interest in natural heliotherapy is due to a large extent to Rollier's investigations and practical demonstration of its value. It is difficult to ascribe what proportion









[illegible]

[illegible]





FIG. 3.—Patient suffering from tuberculous disease of the hip-joint with deformity; before treatment.

FIG. 4.—The same patient after treatment; movement has returned.



FIG. 8.—[illegible] patient [illegible] during treatment [illegible] at Hayling Island. Patient shown supported in the arms of a nurse on the left hand side of the illustration. The child on the right is suffering from tuberculous disease of [illegible] hip-joint with [illegible] sinuses.

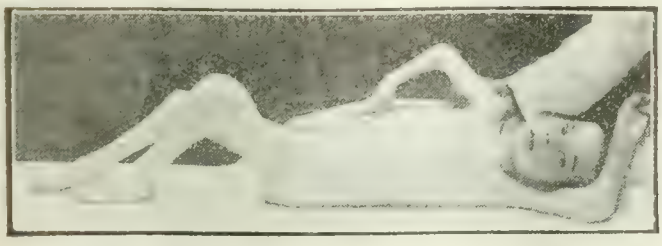


FIG. 7.—Patient formerly under the care of Dr. Clive Riviere for pulmonary tuberculosis in whom general dissemination had occurred. The following lesions developed: Cranial caries, cervical adenitis, tuberculous disease of both elbows, both wrists, both hips, both knees, both ankles, severe mesenteric tubercle with threatened intestinal obstruction; numerous abscesses and sinuses.



FIG. 9.—Dr. Clive Riviere's patient to-day. The white bands round the left leg are areas of skin shaded by splint worn.

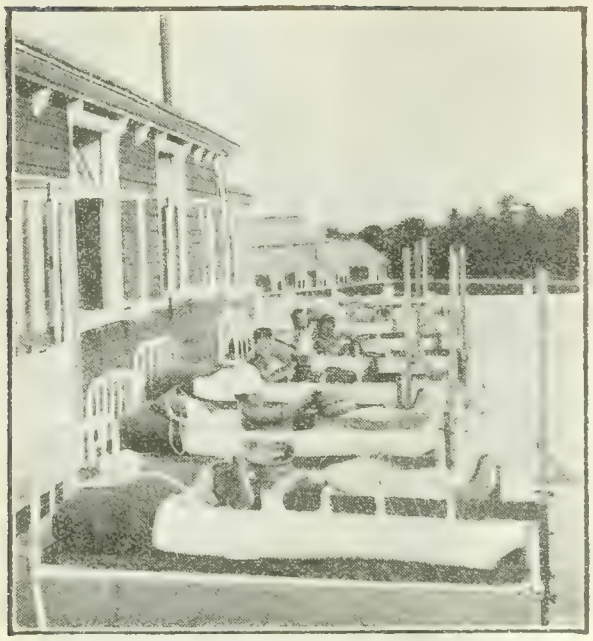


Fig. 11.—Heliotherapy for ambulant patients at Alton where [illegible]. A corner of one of the wards.



Fig. 11.—Heliotherapy for [illegible] patients. Amongst the wild [illegible] at Alton.



Fig. 12. Heliotherapy at Hayling Island. Ambulant patients sunbathing. From left to right the patients are suffering from (1) knee tubercle; (2) multiple tuberculous lesions; (3) knee tubercle; (4) shoulder tubercle; (5) spinal caries; (6) multiple tuberculous lesions; (7) double spinal caries with double psoas abscesses and tuberculous disease of both hips, with numerous infected sinuses; (8) tubercle of right hip; (9) spinal caries; (10) knee tubercle. All these patients had abscesses or sinuses, many had both. Note the excellent general condition and muscular development.

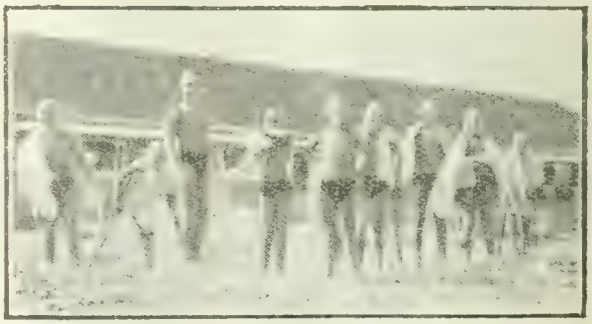


Fig. 13. - Ambulant cases about to bathe.



Fig. 14 - Recumbent case about to bathe. Patient suffering from tuberculous disease of right hip and left shoulder, abscesses with each lesion.



Fig. 15. Ambulant patient bathing.

of the benefit obtained from insolation is due to the actual effect of sunlight and to mere exposure to open air under favourable conditions, but that the sun is directly responsible for some of the benefit is clinically demonstrable by the varying behaviour of pigmenting and non-pigmenting patients treated under identical conditions of fresh air, but with or without direct sunlight. In English institutions also the contrast between the appearance of patients during the winter months, when insolation is not possible, and during the summer, when it is available, is in suitable cases striking in the extreme.

An extended research is now being undertaken at Alton with the assistance of the Medical Research Council and under the guidance of Professor Leonard Hill. At present the effect of heliotherapy on general nutrition and metabolism is particularly being investigated by Dr. Campbell. One of his experiments I here quote in his own words and with his kind permission. "Two batches of six children, one of individuals who had pigmented well, and the other of individuals who did not pigment well, gave the results shown in the subjoined table. The experimental conditions as regards food, time of observation, and cooling power of the atmosphere as measured by Dr. Leonard Hill's kata-thermometer, were similar for each group.

The children who pigmented well show average weight and nutrition, which when compared with standard figures for normal children of the same age indoors may be classed as high; on the other hand, the children who did not pigment well are about standard. As regards heat production, although of slightly younger age the former show a higher average figure (1,550 kilocalories per diem) than the latter (1,323 kilocalories per diem). All the children were on hospital diet and most of them fixed in splints in bed. The standard figures for basal metabolism—that is, when the subject is at rest and in the post-absorptive condition—is about 1,100 kilocalories per diem at the age of 12 years. If one allows 20 per cent.—a liberal allowance under the conditions—for the influence of food, the normal standard becomes about 1,320 kilocalories, the figure given in the table. It is a point of interest and of the present research to determine what effects are produced by exposure to the open air and by exposure to the sun."

Dr. Campbell's Tables.

Subjects.	Number of Observations.	Average age; Years.	Average Weight; Kilogrammes.	Average Height; Centimetres.	Average Surface Area; Sq. Metres.	Average Heat Production; Kilocalories per Diem.
Six children who pigmented well	18	11.6	32.4	138	1.10	1,550
Six children who did not pigment well	21	12.5	27.2	141	1.05	1,323
Standard for normal children	-	12.0	30.0	140	1.15	1,320

Sunlight has great psychological value in treatment. It stimulates and exhilarates after suitable exposure. Prolonged exposure, on the other hand, is harmful, even before it reaches the stage of actual sunstroke. Graduated exposure, therefore, should be enforced, the patient's tolerance to light treatment ascertained and gradually increased. With the improving metabolism, blood changes may be noted. The number of red cells and the amount of haemoglobin is said to increase, a leucocytosis often replaces a leucopenia. According to Rollier, insolation has an analgesic action, the respiration rate is diminished, but the amplitude increased, there is an increased excretion of toxic products. On local lesions, sinuses frequently at first discharge more freely, the discharge becoming more serous and less purulent, finally the sinus frequently healing. Sequestra are sometimes spontaneously extruded. The return of mobility of affected joints is hastened. Skin lesions especially heal more rapidly; in short, insolation accelerates and consolidates the cure. The favourable clinical effects observed are being now systematically investigated at Alton, as previously mentioned.

Balneotherapy.

Insolation, with associated aerotherapy, constitute important and well recognized accelerating agents in effecting cure. Combined with sea-bathing and paddling, their value is enhanced to a truly remarkable extent. Without detailing the local benefits obtainable, the increased metabolic activity following properly managed and timed balneotherapy is clinically obvious in the improved appearance, mentality, general nutrition, and muscular development of patients selected for this treatment at Hayling Island. The extent of the improvement is now being measured by Professor Leonard Hill and Dr. Campbell in terms of metabolic activity, and the figures they will publish later will furnish exact evidence of the value and importance of this combined adjuvant treatment. Meantime, the urgent need for the knowledge of this method of treatment, so eminently suitable for and so readily available to English sufferers, justifies an anticipation of detailed reports to follow on a method of treatment applicable in the highest degree on our own shores, the value of which we have been so slow to appreciate.

Conclusion.

It is of interest to recall to-day that when this subject was last discussed at the annual meeting of the British Medical Association, in 1912, Sir Harold Stiles[6] entered a strong and able plea for radical measures in treatment. In urban hospitals there may be some justification for this, but in the specially designed and equipped country hospitals which are arising throughout the country facilities for utilizing the various methods of treatment I have mentioned are available, and the modern tendency is to permit less and less primary surgical interference. To-day radical measures are rarely called for in the treatment of tuberculous bone and joint disease in children, and as the indication for their employment has diminished, so the results, both as regards ultimate mortality and from orthopaedic considerations, have improved. The lowered mortality is striking and worthy of record, but not less remarkable is the improvement in orthopaedic results. Mr. Elmslie has remarked on this by a comparison of the condition of London cripple school children observed some years ago and noted recently. In over 2,000 cases treated to a conclusion at Alton the mortality during treatment was under 2.5 per cent.

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DISCUSSION.

Mr. JOHN FRASER (Surgeon, Children's Hospital, Edinburgh) said: Before passing any comment on the question of the treatment of tuberculous diseases of the bones and joints in children I should like to draw your attention to one point which I think may be of considerable pathological interest. I allude to those cases which are really a combination of tuberculosis and syphilis. Some time ago a good deal of interest was aroused regarding the type of tuberculous disease which occurs in the centre of the diaphysis of a long bone. The interest chiefly centred round the fact that the "locale" was so different from that met with in ordinary tuberculous disease situated at the metaphysis. I have come to the conclusion that the diaphyseal type of infection is always an example of a mixed infection of syphilis and tuberculosis. The specific infection is the primary error, being congenital, and it is apparently responsible for a vascular change at the subdivision of the nutrient vessel; secondary to the vascular change the deposit of tubercle arises.

Mr. Fraser alluded to the histological aspects of the disease, the very remarkable hyperostosis which occurred, and the curious central sequestrum formation. He exhibited lantern slides in illustration of the points.

In regard to treatment, Mr. Fraser said that he was thoroughly in agreement with all that Sir Henry Gauvain had said, but one must remember that the circumstances varied considerably in different localities. He felt confident that no one would dream of operating on a tuberculous bone or joint focus so long as conservative treatment held any prospect of success. He pointed out, however, that under certain social conditions operation might offer the best results, both immediate and in the future. He deplored the very insufficient accommodation for the institutional treatment of bone and joint tuberculosis which at present existed, and he hoped that the Legislature of the future would do something to correct this very real deficiency.

Sir Henry Gauvain had criticized to some extent the views of Sir Harold Stiles as expressed in the British Medical Association Meeting in 1912, but Sir Henry must remember that Sir Harold Stiles's work was carried out under conditions in which it was exceedingly difficult to arrange for prolonged conservative treatment.

Mr. Fraser further alluded to two other aspects of the treatment—to the combined heliotherapy and congestive treatment which is at present on trial in Germany, and to the results which have been obtained in the Edinburgh Children's Hospital by the use of detoxicated tuberculin.

Dr. Camac Wilkinson (London) said: Bone tuberculosis is held to be a form of surgical tuberculosis; and so it is, as soon as surgical complications needing surgical procedures have arisen, but no sooner. Till then it is the clear duty of all to strive to avert those sequelae which, despite the surgeon, may end in tragedy. There has been a tendency to surrender passively the early stages of bone tuberculosis to the surgeon. For the last thirty years I have done my best to dispossess the surgeon of this field of medical activity, and in some cases I have succeeded in modifying the diagnosis or in securing results denied to the surgeon after a long trial of his measures. A real knowledge of the nature of the tuberculous process, whether in bone or elsewhere—should convince any one that it is risky to attempt to "cut out or away" tuberculous tissue or areas.

In the future our hope lies rather in turning, not to the surgeon, but to the general practitioner, who has the best and earliest and most opportunities of intervening at the very earliest stage, when not only the tragic sequelae of bone tuberculosis but even bone tuberculosis itself may be prevented. The general practitioner stands upon a vantage ground which dominates the whole field of tuberculosis, because he is the chief, chosen, and trusted "guide, philosopher, and friend" of the family circle in medical affairs. If early diagnosis be our aim, the real solution of the tuberculosis problem surely begins and continues in the family, and, as a corollary, general practice is an indispensable preparation, and yields invaluable experience in the evolution of the ideal tuberculosis officer. This was my view before the Insurance Act was passed, and experience has greatly strengthened this view.

It was a retrograde step to appoint tuberculosis officers associated with the Public Health Department. Far better would it be that general practitioners who had studied tuberculosis in actual practice should be selected as part-time tuberculosis officers. I am offering the general practitioner no easy task. The study of tuberculosis will always be difficult and laborious, and the general practitioner might find that he had more than he could do. This kind of work would pay him well, and the labourer is worthy of his hire. Remember that Rudyard Kipling tells us that "if you give any man anything that he has not painfully earned for himself you infallibly make him or his descendants your devoted enemies." I now proceed to elaborate this thesis, with the general practitioner, possessing knowledge, "painfully earned for himself," ever watchful, resourceful, patient, courageous, as the central figure and guiding spirit in the crusade against tuberculosis in the family.

As a bacteriologist I must concentrate upon the specific cause, its nature, its source, and its migrations. Two outstanding features of bone tuberculosis deserve special attention. Bone tuberculosis is chiefly associated with the tubercle bacillus of the human type. This fact proves that the original source of bone infection is man himself suffering from open tuberculosis, usually of the lungs; and these human tubercle bacilli carriers spread infection in the home and infect the children. The first line of defence (A) is in the family, the general practitioner is the officer in charge. Bone tuberculosis is practically never the primary tuberculous lesion. Elsewhere, at a distance, recently or long ago, there has been a primary infection, most often in the bronchial glands or lungs or both, a cryptic focus of tuberculous disease, whence tubercle may spread to distant parts, such as bones. The bronchial glands form the second line of defence (B) When this line of defence fails, bone tuberculosis may occur The bone forms the third line of defence (C). Thus the migrations of the tubercle bacilli indicate the three essential lines of defence (A, B, and C) in the home, in the bronchial glands, and in the bone.

(A) *First Line of Defence.*

To prevent bone tuberculosis in children with its tragic consequences, we must protect the child from risk of infection from human tubercle bacilli carriers who expel tubercle bacilli into the air. Needless to say, measures to protect children in the family circle are often perfunctory, inadequate, and illusory. Segregation of all carriers is of the first importance, not compulsory segregation at institutions, but at first voluntary segregation in the family may be sufficient. Meanwhile all carriers must be treated. There are actual and potential carriers. The aim of treatment is to convert all infectious cases into non-infectious cases and to prevent non-infectious cases becoming infectious.

Lastly, whenever actual carriers are found in a family, all members of the family should be tested thoroughly with tuberculin once a year, and whoever reacts with certainty is a potential carrier and should be treated with tuberculin. The testing with tuberculin is an accurate means of calculating the success or failure of segregation and other measures of prophylaxis. There is no other way of controlling measures of prevention. Tuberculin skilfully used in the family for prevention and treatment is far more effective than the best sanatorium measures, because it can be applied to the majority of sufferers immediately and on the spot; it attacks the disease directly, and it can be applied over and over again at a relatively small cost.

(B) *Second Line of Defence.*

When infection has occurred and tubercle bacilli have reached the bronchial glands by the air route, we have to face a graver situation. The early stage of bronchial tuberculosis oftentimes causes no signs or symptoms, and may long remain a latent lesion. The early diagnosis of bronchial tuberculosis is just a matter of guessing, unless tuberculin is used for testing. Agglutination tests avail not, nor opsonic indices, nor other blood tests. Tuberculin is the one and only means, and its administration is both safe and simple. With it the answer is definitely and decisively Yes or No. The "Yes-No" diagnosis should have no place in medicine. Once the diagnosis is settled by tuberculin, it is easy to arrest and cure bronchial tuberculosis with tuberculin used on well-tried and well-proven lines. The cure of bronchial tuberculosis is tantamount to the prevention of bone tuberculosis. Thus the risk of bone tuberculosis is much diminished. The bronchial glands constitute the second line of defence; and again the family physician must be on the *qui vive*.

(C) *Third Line of Defence.*

If the second line of defence gives way, bone tuberculosis may become a *fait accompli*. Even early bone tuberculosis may cause no signs or symptoms for some time. Again tuberculin may be the only weapon to clinch the diagnosis. If the tuberculin test answers "Yes," there is still hope that tuberculin used as a remedy may arrest the disease and prevent those tragic sequelae which make homes for cripples a sad necessity.

The success of the general scheme I have here outlined depends essentially upon two conditions: (1) That tuberculin is a safe and trustworthy means of determining the early diagnosis of tuberculosis, both in bone and elsewhere; and (2) that tuberculin used as a remedy in the manner that I have recommended—after a close, careful and continuous study for thirty years—secures greater and more lasting successes than any or every other known method.

Mr. A. H. TUBBY (London) congratulated Sir Henry Gauvain on his graphic address and on the valuable work achieved at the Treloar Hospital at Alton. Whilst it was now generally accepted that surgical or external tuberculosis was most efficiently treated by the "climate and rest method," yet such was not always the case, and a conflict of opinion prevailed for some years. As one of the protagonists in this matter, Mr. Tubby trusted he might be pardoned if he introduced a personal note, indicative of the stages by which they had arrived at definite conclusions.

When he was in the late Professor von Volkmann's clinic at Halle in 1888 he saw a tuberculous child being placed on the operating table for the thirty-fifth time. This and numerous other cases in that clinic raised doubts in his mind as to the rationale of operating. Some years' additional experience at the Evelina Hospital for Children and as consulting surgeon to the Hip Hospital at Sevenoaks left him deeper in doubt. And, by way of parenthesis, it might be remarked that the latter hospital was one of the two or three pioneer hospitals in this country of the "climate and rest" treatment, and even of heliotherapy. About the year 1900, Dr. (now Sir) Dawson Williams drew the speaker's attention to some pamphlets sent from America advocating conservative measures, and Mr. Tubby then instituted statistical inquiries at the London children's hospitals, and contrasted them with the results obtained at Sevenoaks. At that time operations for surgical tuberculosis were generally practised in the London hospitals, and the conservative methods were carried out at Sevenoaks. There was no doubt that the practice at the country hospital was productive of better results than in the urban hospitals. The conservative treatment was brought before the profession in some articles in the BRITISH MEDICAL JOURNAL. The next step was to initiate a discussion on the whole question at the then newly instituted Society for the Study of Disease in Children. Opinion in that society in 1903 was so divided that some of the "operating" section contemplated leaving the society if it pursued the matter further, officially. The title of the speaker's opening paper was, "Is the urban hospital treatment of external or surgical tuberculosis justifiable?"

In 1912, however, a discussion took place in the Section for the Study of Disease in Children of the Royal Society of Medicine on the treatment of surgical tuberculosis in children, and it was opened by a paper by Mr. Tubby. The net result of the discussion was that those who had strongly advocated, nine years previously, the operative treatment now proved to be firm advocates of conservative methods. It was evident that the good work done at Sevenoaks, Margate, and Alton had proved the means of their conversion. When Sir W. Treloar founded the Cripples' Hospital at Alton, so little was the important part which tuberculosis played in crippling children understood that no adequate provision had been made for the treatment of that disease; and it was not until the speaker pointed out to one of the trustees that two-thirds of the then cripples owed their disability and deformity to tuberculosis that suitable measures were taken to grapple with the problem in that institution.

The original attitude of the Departmental Committee under the Insurance Act was a further proof of the prevalent ignorance on the subject. It was not until attention was drawn to the point in the *Times* by the late Mr. Clement Lucas and others that the scope of the inquiry was extended to tuberculosis in children and evidence invited from Mr. Tubby and others. He was permitted to submit to the Committee a comprehensive scheme dealing with this matter.

He must, he said, apologize for the intrusion of these personal reminiscences, but they illustrated how hardly won was our present position in the matter of the recognition of the importance of conservative treatment of surgical tuberculosis. As an addendum to his remarks, Mr. Tubby desired to hear Dr. Camac Wilkinson's opinion as to the value of tuberculin in non-suppurating bone tuberculosis.

Mr. LOCKHART STEPHENS (Emsworth) considered that the general practitioner was responsible for the awful late results. Open air and sunlight cost nothing, and were applicable even in humble surroundings. Large costly institutions were only necessary for grouped cases, as in a county scheme. Alton and Hayling Island should be seen by every general practitioner.

Mr. F. C. PYBUS (Newcastle-on-Tyne) said that the present amount of tuberculosis was a social blot, but, like all preventable diseases, had become a matter for health authorities and administration. It was also a social blot that provision had not been made for the treatment of surgical tuberculosis. All were agreed that conservative treatment was proper, and that, given suitable conditions, most cases got well. Many surgeons, however, had to do the best they could with the means at their disposal, and most cases in the north had to be dealt with at the out-patient departments, and brought long distances by train. In many cases the parents had not house room for the necessary abduction or spinal frames, and some patients were taken off splints to be brought to hospital. In his opinion the single Thomas splint was unsatisfactory, as it failed to prevent flexion or adduction.

Operative measures often had to be performed as being the best under the circumstances. These included the removal of local bone foci, subperiosteal resections, and the removal of sequestra from joints. These were only performed after the failure of conservative measures. Abscesses were treated radically, great care being taken to prevent infection of the wound by the contents of the abscess.

At least 50 per cent. of the cases were bovine infections, and therefore to prevent successive generations of affected cases the milk supply required control. Surgical tubercle formed, he believed, 30 per cent. of cases in the Children's Hospital. The present schemes for open-air hospitals were held up owing to financial stringency, and this was always the way in health measures. Alton Hospital should, he said, be known everywhere to stimulate public authorities to do likewise.

Dr. H. SCURFIELD asked if Sir Henry Gauvain could give a rough idea of the proportion of cases in which cripples could be turned into useful sound citizens by Alton methods. He thought if local authorities and the public knew the wonderful results obtained by modern conservative treatment of surgical tuberculosis the necessary institutions would soon be available.

Dr. GERTRUDE HERZFELD (Edinburgh) emphasized the importance of the prevalence of bovine infection rather than human, as shown in Edinburgh by Sir Harold Stiles and Mr. John Fraser. In the out-patient department of the Sick Children's Hospital some hundreds of cases of surgical tuberculosis were seen annually, and only a very small proportion gave a family history of tuberculosis. In the large majority the milk was the source of infection, and it was there she considered that they must go for prevention. She agreed with Mr. Pybus as to the inefficiency of the Thomas hip splint.

Dr. T. HARTLEY MARTIN (Liverpool) said that the Liverpool Hospital for Children, Leasowe, had 240 beds for the treatment of non-pulmonary tuberculosis in children. Since 1914, 84 per cent. of the cases had been discharged with the disease arrested. All cases were kept under rigid care after discharge. In 1919 84 cases were discharged. At the present time 80 were still under after-care observation, 75 of whom were still absolutely fit, five relapsed and were readmitted to hospital, four being cases of tuberculous peritonitis and one tuberculous adenitis (diffuse foci). In only 12 per cent. of the cases of pulmonary tuberculosis admitted to hospital was there any definite family history of the disease.

Mr. MCCRAE AITKEN (London) said that one of the most satisfactory points in the discussion was the absolute unanimity of opinion that bone and joint tubercle must be treated by conservative means. As an old pupil of Sir Robert Jones he had been twenty years associated with this work. When he left Edinburgh he believed that tubercle of joints ended in amputation sooner or later. In 1897 the first three operations he ever saw furnished a beautiful demonstration of three stages of tubercle of the knee-joint. Within seven years he saw all those three limbs amputated. In those days Thomas's walking calliper was unknown in Edinburgh.

In 1901 he passed to Liverpool, and the first patient he saw in Sir Robert Jones's out-patient clinic was a boy with an enormous tuberculous knee riddled with sinuses. When he said, "I suppose you will excise this, sir?" the reply received was a vociferous "No; bring a walking calliper splint." In those days there were no open-air homes; the boy was treated as an out-patient, and he recovered with a movable knee.

General practitioners and surgeons without open-air facilities might take heart from the fact that twenty years ago these patients were treated as out-patients, not as in-patients, by Robert Jones, and good results were obtained. In 1901 the beginnings were made of the open-air hospital at Baschurch, and the results were very striking. For those who might build he urged sleeping in the open air. None of the wards in Shropshire or at Eastcote had more than three walls.

One of the striking features was the way a miserable slum child recovered its appetite for breakfast. In this connexion they had had to fight the question of food during the war, for unlimited butter, fat, and sugar was an essential part of the treatment.

Dr. Camac Wilkinson, in reply, said that the best answer he could give Mr. Tubby was by showing some charts which he had brought to illustrate the value of tuberculin in diagnosis. One case seen with Sir Alfred Fripp and Dr. Whitcombe, had a sinus under the clavicle of two or three years' duration, probably connected with the acromion process, and had a typical reaction to tuberculin. He was treated with tuberculin in increasing doses till 1 c.cm. old tuberculin was given without any reaction. In about four months the sinus closed and the ulcer healed, forming a beautifully smooth, almost invisible, scar. This was in 1911, and there had been no recurrence.

He had had many similar cases connected with glands and one extraordinary case was a woman who had suffered from tuberculosis of the hip for more than ten years. She had eight sinuses, with abundant discharge from all. The temperature ranged from 99.4° to 100°; the weight was 7st. 13½ lb. Under tuberculin five sinuses healed within a year, and she had no ache or pain, while when she came to the dispensary morphine had to be given every night and the woman pleaded to the doctor for amputation or anything else to check the pain. She came to the dispensary twice a week from Watford (twenty miles) and made great and steady progress. Her weight in February, 1913, was 9 st. 7 lb. The largest dose given was 4 c.cm. T.E., and this caused no reaction at all.

Upon the question of the relative incidence of the human and bovine types respectively of tubercle bacilli in bone tuberculosis he asked those who disagreed with him to study carefully the exhaustive analysis made by Oehlecker and Steffenhagen and published in the *Tuberculose-Arbeiten aus dem K.K. Gesundheitsamte*, Berlin. There were but few experts equal to work of this kind, as it needed much time and skill in experiments on animals. According to Oehlecker, morphological, cultural, and pathogenic characters in guinea-pigs, rabbits, and bovines showed that in a series of twenty-six cases the bovine type was found only once in a child. When all trustworthy records were collated and an average obtained, it would surely be found that although the relative incidence of these two types of tubercle bacilli might vary somewhat in different countries and places, bone tuberculosis even in children was much more frequently associated with the human than with the bovine type, and the measures of prophylaxis must be adapted to this scientific fact.

Sir Henry Gauvain, in reply, said that owing to the lateness of the hour it was not possible for him to answer all the questions raised in the discussion. He was very grateful for the generous reception which they have given to his remarks, and it was especially pleasing to know that conservative treatment of bone and joint tuberculous disease in children was in such general favour that the principles he had advocated had received unanimous approval. They had the evidence of the Chairman that since conservative treatment had been more generally adopted there had been very marked diminution of deformity in London school children. He quite agreed that the single Thomas hip-splint was an unsuitable appliance in tuberculous disease of the hip-joint, no one appliance was suitable for this condition in all its stages.

Dr. Camac Wilkinson had mentioned that German observers had shown that human infection very largely preponderated over bovine infection in bone and joint tuberculosis. Similar observations had been made in this country by Drs. Eastwood, Griffith, and Stanley Griffith, to whose writings he would refer. Out of over 100 consecutive examinations made of pus obtained from bone and joint cases at Alton, the patients being drawn from all parts of the South of England and of Wales, these observers showed that some 27 per cent. of the cases were bovine, a few atypical, and approximately 70 per cent. of human origin.

Mr. Tubby had long been an advocate of the conservative treatment of surgical tuberculosis in suitable country hospitals, and he (Sir Henry Gauvain) wished to record his gratitude to him for much encouragement given to himself in his own work at a time when such encouragement was much needed and hence doubly welcomed. The change in surgical opinion on this subject during recent years had been very marked. The results of treatment—and after all that was the final criterion—had fully justified the views they now held that conservative treatment was the most suitable for tuberculous bone and joint disease in children.

Resolution.

On the motion of Mr. A. H. Tubby, C.B., C.M.G., seconded by Dr. Harold Scurfield, the following resolution was unanimously adopted:

The Section of Orthopaedics and Diseases of Children desires to express to the Council of the British Medical Association their high opinion of the value of modern conservative treatment of surgical tuberculosis, and their realization of the necessity for the multiplication under the best climatic conditions of institutions similar to those already existing in various parts of the United Kingdom.

THE POLYARTICULAR MUSCLES AS THE CAUSE OF ARTHROGENETIC CONTRACTURES.

BY

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(*Abstract.*)

As inflamed joints are fixed by the surrounding muscles the polyarticular muscles undergo lengthening and shortening in movements of the neighbouring joints, the monarticular muscles do not. This may be the reason why in chronic arthritis the polyarticular muscles are better preserved than the monarticular. In the knee, for example, the rectus cruris is retained in front, the semimembranosus and semitendinosus muscles and the long head of the biceps at the back. This may explain why in chronic inflammations the knee, as well as other joints, tends to contracture in the direction of the pull of the surviving polyarticular muscles.

Osteogenesis Imperfecta.

Besides the characteristic changes of the long bones—fragility, translucency, etc.—and the defects in the skull, osteogenesis imperfecta may show dwarf symptoms (micromelia) and mechanical malformations (congenital lumbodorsal kyphosis and compression of the lower extremities against the abdomen), or, in other words, signs of infolding. The same complex of symptoms is manifest in other cases of osteogenesis imperfecta. Therefore they may have a common cause. The dwarfing of the extremities and signs of infolding are also present in achondroplasia and, though in a less degree, in mongoloid idiocy and cleidocranial dysostosis. In these conditions all symptoms find an explanation by assuming that direct pressure of too small an amniotic sac has produced the infolding in about the sixth, seventh, and eighth weeks of foetal life respectively; and enhanced indirect or hydrostatic pressure has produced the symmetrical growth-stunting of those tissues which were growing fastest at the moment the pressure acted. If evidence can be obtained that about this time in foetal life there is a period of relative rapidity in the development of bone, this may be a justification to add osteogenesis imperfecta to the chronological series of misdeeds of too small an amnion as is presented in *Feebleness of Growth and Congenital Dwarfism* (Oxford Medical Publications).

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BIRTH PARALYSIS.

BY

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The Pathogenesis of Birth Paralysis.

In discussing birth paralysis, or, alternatively, obstetrical or Erb's paralysis, may I state at the outset that we are concerned solely with that type of lower neuron paralysis of the upper limb which is seen in the newborn infant, and is due to a definite injury sustained during the process of delivery. This condition has long been known to obstetricians, and one of the earliest descriptions available is that of Smellie (1768). Duchenne[1] in 1872, from an investigation of the electrical reactions of the upper arm muscles in four infants, recognized the existence of a paralysis in this form of birth injury. Two years later Erb, using the same methods in adults with a similar type of disability, postulated the existence of a lesion of the upper part of the brachial plexus at or about the junction of the anterior primary divisions of the fifth and sixth cervical roots. It was assumed at first that the plexus in the neck was injured by direct pressure, but later on from experimental work on the cadaver (Clarke, Taylor and Priest, 1905), the view that the nerve trunks were stretched or torn during forcible separation of the head and shoulder was universally adopted. The findings of the operative exploration of the plexus in such cases in the hands of Kennedy of Glasgow,[4] and later Taylor[5] and Sharpe[6] in America, confirmed the experimental work as regards the localization and the varying degrees of the actual nerve injury. Until recently this conception of a supraclavicular injury of the brachial plexus as the underlying lesion in birth palsy was accepted without comment.

In the extensive literature which has grown up around this subject the number of reported operations on the plexus has been relatively small, because every authority has recognized the outstanding fact that the majority of patients show an early spontaneous recovery from the paralytic phenomena. This fact cannot be too often emphasized. Further, a good many of these infants are not placed under expert observation until such recovery is manifest. The comparatively transient nature of the paralysis in so many cases, and the well recognized tendency to the development of contractures of the limb, particularly in the shoulder region, are facts responsible for the appearance of the newer theories of pathogenesis. In 1910 Turner Thomas[7] of Philadelphia, and soon after him Lange[8] of Munich, stated that the early physical signs of birth palsy, and their mechanical sequelae, could be explained by the assumption of the existence of a primary injury of the capsule of the shoulder-joint. The immobility of the limb was to be looked upon, in their view, either as a pseudo-paralysis, or a true paralysis of a fleeting nature due to the secondary inclusion of nerve trunks in the region of the shoulder-joint. At about this time also Vulpius[9] of Heidelberg revived the old theory originally propounded by Küstner[10] in 1889, that a displacement of the upper epiphysis of the humerus was the essential cause of the symptoms and disability included under the term "birth paralysis." The shoulder-joint theory has been supported more recently by Ashhurst[11] of Philadelphia, and repeatedly with continued vigour by Turner Thomas himself. As a compromise the view that under the heading of birth palsy are to be included at least two distinct varieties of lesion, producing in the later stages identical mechanical disabilities, has been advanced by a number of observers (Van Neck,[12] Peltesohn,[13] Biesalski,[14] Rosenfeld[15]).

It must be stated that these alternative conceptions of the pathogenesis of birth palsy have not as yet received general commendation. It will be impossible in the limits of this paper to elaborate in full detail the evidence in favour of the various schools. This was dealt with comparatively fully in the discussion on this subject before the British Orthopaedic Association in November, 1919, by Fairbank[16] and the writer.[17] One may summarize the position in this controversy as follows:

1. Clinical, experimental, and operative evidence is all in favour of the view that in the majority of cases of birth paralysis there is a supraclavicular lesion of the brachial plexus, the degree and localization of the injury varying within considerable limits. In the majority of cases the actual nerve lesion is of the incomplete anatomical type and is followed by the occurrence of unhindered spontaneous regeneration. In a few cases—and comparatively few—the injury of one or more trunks is of a higher grade, so that insuperable obstacles to the occurrence of spontaneous regeneration are present. The localization of this type of injury is often in the region of the origin of the nerve roots from the spinal cord.

2. There is a certain amount of evidence in favour of the view that a primary injury of the shoulder joint capsule, with secondary involvement of certain terminal branches of the brachial plexus, may occur in a small proportion of cases which demonstrate all the clinical features of typical birth palsy. There is, however, only one recorded case of a demonstration at operation of the actual nerve injury in the axilla (Lange).

3. There is little, if any, authoritative evidence to support the view that in any case of birth palsy an injury of the upper epiphysis of the humerus can be assumed or proved.

Etiology.

The various general etiological factors demand brief reference only. The majority of cases of birth paralysis are seen in infants born after a prolonged and difficult labour, in which there has been a disproportion between the size of the child and the maternal pelvis. From the statistics available of a large number of recorded cases, it is seen that vertex presentations outnumber breech presentations in the proportion of about 4 to 1. Occasionally other associated traumatic lesions are discovered, such as sterno-mastoid "haematoma," fractures of the humerus or clavicle; these simply point to the degree of violence which has been a necessary accompaniment of the successful delivery of the infant.

Symptomatology.

Early Stages.—In the newborn infant the immobility of the limb, together with the characteristic posture, form a well known clinical picture, and one which it is unnecessary to describe in full detail. In some cases swelling and tenderness localized to the supraclavicular region on the affected side can be demonstrated, and the infant often resists all efforts at examination and manipulation of the limb. Such local signs of trauma are, however, usually short-lived. In connexion with the neurological syndrome it is to be remembered that three clinical types are distinguished, namely, "upper arm," "whole arm," and "lower arm" paralyses.

Later Stages.—If the condition is untreated from this stage onwards one of two things may happen. A considerable degree of spontaneous recovery may occur, as manifested by the steady return of active power in the limb. Such recovery after weeks or months may prove to be complete as regards the actual paralysis, in that voluntary power returns in all the components of the muscle groups affected. On the other hand, this recovery may be incomplete, leaving a residual palsy which is commonly seen to affect the distal part of the limb—for instance, the extensor muscles of the wrist, fingers, and thumb. Whether such spontaneous recovery be slow or rapid, complete or incomplete, in the majority of cases a mechanical obstacle to the full function of the limb will now be evident—namely, the presence of an internal twist of the whole arm, best marked at the shoulder-joint, but often demonstrable in the forearm as a pronation contracture. Associated with the shoulder-joint contracture there is seen also a posterior subluxation of the head of the humerus, a distortion which is dependent on the contracture, and which is an index of the degree of its development. With the growth of the child these contractures become more and more noticeable, and the general underdevelopment of the whole limb and shoulder girdle is a striking feature, although the contour of the arm as regards muscular development shows the absence of any localized atrophy. The interference with the function of the limb as a whole is often considerable. The prolonged existence of the shoulder-joint subluxation is productive of secondary changes in the joint structures and shoulder girdle, one of the characteristic physical signs being a hooking down of the tip of the acromion.

Whitman[18] of New York in 1905 gave the first impetus to the recognition of this disabling sequela of birth palsy, and in this country Fairbank,[19] reporting 37 cases in 1915, 28 of which showed a subluxation, emphasized its importance and introduced the open operation for its relief. In the larger series of cases reported by Fairbank before the British Orthopaedic Association two years ago, 60 in number, the posterior subluxation of the shoulder was found to be present in 70 per cent. In a series of my own, out of 34 cases, 28 when first seen had this contracture and subluxation.

It should be realized more universally that the shoulder-joint contracture, with its accompanying subluxation, dominates the whole clinical picture of birth paralysis, and further, that this distortion is preventable by the application of early correct treatment.

On the other hand, in a minority of cases the complete absence of recovery may be seen, the paralysis persisting indefinitely, and with the development of profound muscle-wasting in the affected groups, and the production of a flail limb comparable to that seen so often in anterior poliomyelitis. This is admittedly an uncommon sequela; such limbs are exceedingly rare in adults in whom a reliable history of birth injury can be established. In my own series two examples of this type were met with in patients aged 13 and 18, and in both the anatomical localization of the nerve injury was undoubtedly radicular, and for practical purposes almost intravertebral.

Treatment.

We may discuss the treatment of Erb's paralysis and its mechanical sequelae under three headings:

1. The early postural treatment.
2. The question of the indications for the operative exploration of the plexus and the feasibility of direct repair of the nerve lesion.
3. The treatment of the contractures in cases where the paralysis has undergone recovery.

1. *Early Postural Treatment.*

Our early postural treatment is to be directed by the recognition of two facts which have already been stressed; in the majority of cases spontaneous regeneration of the injured nerve trunks will occur, and inevitably the typical internal rotation contracture will develop unless measures are taken to prevent it. It has therefore become a routine amongst those surgeons who by training and experience are competent to deal with disabling lesions of this type, to fix the injured limb at once in the position of abduction and external rotation at the shoulder, with the elbow flexed, the forearm supinated, and, if need be, the wrist dorsiflexed. This for convenience we may refer to as the "birth palsy position," and as is well known it provides the position of relaxation of the affected muscle groups and prevents the development of the contractures in the shoulder and forearm. In the newborn infant a simple T splint of block tin or aluminium is effective for this purpose. At this stage very gentle daily manipulations should be carried out particularly in the direction of external rotation at the shoulder, as in dealing with out-patients it is often difficult to ensure that the parents maintain the splint day and night in an accurate position. This posture must be maintained until the child has developed the active power of external rotation and abduction at the shoulder-joint which is generally a matter of some months. With the increasing intelligence of the child simple active muscle training by the use of toys and so on, together with light daily massage, can be added to the daily treatment.

The two essential factors in the early treatment, however, are continued splinting and daily passive stretching at the shoulder-joint. If the treatment is faithfully carried out along these lines recovery of active power in the upper limb group of muscles will be seen to be proceeding by the time the child has passed the age of 6 months, and no contractures will have developed. The birth palsy position is to be continued by means of the splint at night time only for a long period, and muscle training and passive stretching must be persevered with. One has seen the contracture develop later in a number of patients in whom splinting has been discarded too early, or where, owing to the neglect of the parents, the attendance of the child has been discontinued. It should not be necessary to-day to express the opinion that the conventional treatment so often recommended of bandaging the arm to the side is quite inefficient.

2. *The Question of Operative Exploration of the Brachial Plexus.*

It has been common surgical teaching that if after the end of three months' conservative treatment signs of recovery are lacking, and if from external electrical tests the affected muscles give the classical reaction of degeneration, the brachial plexus should be explored. Sharpe and Taylor advocate the routine exploration of the plexus in these cases at the early age of one month, and have reported independently a large series of operations, but with no end-results capable of scrutiny. This attitude does not appear to me to be sound, and from my own experience and a wide study of the literature I have no hesitation in opposing it. One must repeat that in the majority of cases the actual lesion of the nerve trunks is of such a type that spontaneous regeneration can and does occur, and that the paralysed muscle groups regain voluntary power. The disabilities of the average untreated limb following birth palsy are entirely mechanical and due to the presence of contractures and not to the continuance of actual muscle paralysis. Thus, for example, in a series of thirty-four personal cases of birth palsy recovery of the paralysis occurred in twenty-nine. This is well illustrated in the large series of cases observed in the Boston Children's Hospital by Thomas and Sever.[20]

I would urge that a reasonable procedure is to wait at least nine months in any case, and at the end of that time, if there be a complete absence of recovery and the development of muscular atrophy characteristic of a continued nerve block, that the question of exploration of the plexus be then considered. Even under these circumstances, if the clinical examination of the distribution of the paralysis reveals signs indicating the location of the lesion close to the spinal cord, exploration is not worth while, as direct nerve repair must be regarded as impossible. For this type of case it is better to wait until the child is older, and then to utilize the alternative methods for the restoration of function such as have proved their utility in the similar disabilities of infantile paralysis. Such alternative methods are particularly applicable also to the type of case where recovery has taken place in the upper arm muscles and a residual paralysis of the extensor group of the forearm exists. Six examples of this type occurred in my series, four of which, after prolonged relaxation by splinting, showed recovery of this muscle group, and for two of which, after failure of recovery, tendon transplantation was performed. It will thus be seen that in birth paralysis the operation of direct nerve repair will rarely be needed and may not even be feasible.

3. *The Treatment of the Contractures.*

In the infant or very young child it is usually possible to correct the posterior subluxation of the shoulder and internal rotation contracture by means of a single manipulation under anaesthesia. This can be repeated if necessary until the shortened internal rotators are completely overstretched. When stretching has been achieved by manipulation alone it is essential to maintain fixation in the correct position for a considerable period, and preferably by means of a well-fitting plaster. Correction by such simple measures has been entirely successful in eight cases of my own. In children over one year reduction by manipulation alone is often difficult, and above the age of 2 usually fails. In such cases the operation in which the contracted structures are divided must be performed. These may include, in addition to the subscapularis tendon, the pectoralis major, the coraco-humeral ligament, and coraco-brachialis tendon. In fifteen patients I have performed an open operation, using in the earlier cases the approach and technique described by Fairbank, but latterly the modification of this operation, introduced by Sever[21] of Boston, in which the joint capsule proper is left untouched.

The experience of a number of imperfect functional results after this operation has led me to adopt now a very short period of post-operative fixation, one not exceeding four to six weeks. The posture to be used after the division of the contracted structures is that of the typical birth palsy position, or, better still, with the limb

in a greater degree of abduction at the shoulder-joint. It is, of course, essential in attaining this position to prevent the scapula from following the arm, and for technical efficiency immediate post-operative fixation in plaster is to be preferred to the use of any form of splint. The after-results obviously depend on the efficiency of the physio-therapeutic treatment, and until the child has developed the full power of active over-correction return of the contracture is likely, as the effect of gravity and the normal physiological position of rest of the upper limb together constitute a natural deforming force.

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THE ANTE-NATAL TREATMENT OF CONGENITAL SYPHILIS WITH SALVARSAN AND MERCURY.

BY

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THAT the curative treatment of congenital syphilis, if not a failure, is at least a great disappointment no one who has had much experience will deny. With our improved methods, and especially when the treatment is commenced at the earliest possible moment, the death rate has been diminished and the clinical manifestations made to disappear more quickly and more completely, but a cure, in the sense of causing a positive Wassermann reaction to become negative, has only been obtained in a proportion of the cases.

Results of Curative Treatment.

This proportion of successes, too, depends very much on the age of the patient when the treatment is commenced. In our experience at the Royal Hospital for Sick Children, Glasgow, even with intensive treatment, we were unable to obtain a cure in the above sense in 10 per cent. of the children under 1 year of age, and in as great a proportion as 50 per cent. of those who first came under observation when over 1 year of age. As I have remarked, these are the results of intensive treatment, the course, in some cases, consisting of as many as even 20 to 30 injections extending over a period of several months. This is a point of some moment, as such extended courses, on account of the pain which is often caused, produce much nervousness on the part of the child, and through the apparent hopelessness of the whole proceeding, depression on the part of the physician.

Perhaps, however, the greatest disappointment has been the after-history of many of the children in whom one had thought a cure had been obtained. In some instances the children returned with condylomata, and in two instances in which the treatment was carried out at the ages of 6 weeks and 1 year respectively the children developed at the age of 7 years interstitial keratitis. In one of these latter children the Wassermann reaction had remained persistently negative, while in the other, though negative after the cessation of the course of treatment, it was found to be positive when again seen on account of keratitis.

Recently I have been examining as many as possible of the children treated some years previously and have been disheartened at the frequency with which the Wassermann reaction has, with the lapse of time, again become positive. At the present moment it is impossible for me to give complete figures regarding this point, as the investigation is still in progress, but I hope to publish the findings at an early date because I consider such information of the greatest interest and importance.

Limits of Curative Treatment.

In any case, the curative treatment has the great shortcoming that it only influences the disease in children born alive, and neglects altogether its ravages during intra-uterine life. These latter, expressed in the form of miscarriages and stillbirths, contribute in no small measure to the total loss of life from syphilis. Various have been the estimates of this loss, but it probably amounts to at least 20 to 30 per cent. of the pregnancies of syphilitic mothers.

Ante-natal Treatment.

Ante-natal treatment is, of course, no new method, but with the advent of salvarsan it has been given a new importance because, though the results still leave something to be desired, they are infinitely superior to those obtained by the most perfectly practised curative methods. Ante-natal treatment with salvarsan was first practised by Sauvage and Jeanselme, now almost ten years ago, but unfortunately it has not been adopted as generally as it deserves, being, as it undoubtedly is, not only easy of execution, but also, as already mentioned, exceedingly satisfactory in its results.

Technique.

The necessity of administering salvarsan intravenously has, on account of the difficulty of venepuncture in infants and children, considerably limited its use. In the adult, however, venepuncture is an operation of comparative simplicity, and the whole proceeding a matter of only a few minutes when concentrated solutions of the drug are employed. It is an operation, too, that can be quite safely carried out in outdoor practice. The only precaution that I have found necessary is that the patient take a laxative on the day previous to receiving the injection, as without it headache and vomiting may be troublesome. Immediately after the injection the patient may remain in the recumbent position for half an hour, after which she is able to proceed home on foot. I have never seen a pregnancy interrupted or any bad effects whatsoever; in fact, the patients usually declare that they feel unusually well.

Results of Ante-natal Treatment.

In the first place ante-natal or prophylactic treatment stands in marked contrast to the curative method, in that it at least attempts to influence the disease occurring during intrauterine life, and thus to cut short the loss of life from miscarriages and stillbirths. Galliot collected the statistics relating to 144 pregnant syphilitic women treated with salvarsan, and in only eleven, or 8 per cent., did the pregnancy not proceed to the birth of a living child. Adams in the Thavies Inn Clinic has now treated 95 syphilitic mothers, and in all has obtained the birth of a living child.

My own series of pregnant women treated only consists of fifteen, but in only one did the pregnancy not terminate with a living child, and in that instance a difficult labour was the determining factor. Equally striking with the above is the fact that not one of the children, some of whom have been kept under observation for as long a period as seven years, has presented any clinical manifestations of the disease. In all the children, too, the Wassermann reaction was negative in infancy and early childhood, but in one, who reacted negatively during infancy, a weak positive reaction was obtained at the age of 7 years, in the absence, however, of any clinical signs.

These results are very satisfactory and only show the one blemish in the weak positive Wassermann reaction in one child at 7 years of age. Perhaps I should remark in this connexion that the Wassermann tests of previous years were performed according to Wassermann's original technique, whereas those performed this year were carried out according to Harrison's method, which, of all methods, undoubtedly gives the highest proportion of positive results, and, in fact, is considered by some unduly sensitive. These results, too, are decidedly superior to those recorded earlier by Sauvage and Jeanselme, but are quite similar to those recently obtained by Adams.

But perhaps the most striking feature of this form of treatment is the way in which the mothers of previously syphilitic children continue to bear healthy non-syphilitic children in spite of no further treatment being instituted. This is well exemplified in the following series of families, the mothers of whom were treated in 1914, and have been kept under observation since.

Case I.

Mrs. M. Five previous pregnancies. No miscarriages. Fifth child definitely syphilitic. Wassermann reaction slightly positive in mother and child.

February 21st, 1914. Seven months pregnant.

February 22nd till March 22nd. Four injections of neo-salvarsan intravenously *plus* mercurial inunction. No treatment since.

April 7th. Wassermann reaction positive but weak.

April 25th: Sixth child born (female). June 22nd: Child 8 weeks, well; Wassermann reaction negative. March 8th, 1915: Child 11 months, well; Wassermann reaction negative. December 3rd, 1919: Child 4½ years, well; Wassermann reaction negative. June 3rd, 1921: Child 7 years, well; Wassermann reaction negative.

September 1st, 1916: Seventh child born (male). January 10th, 1917: Child 4 months, well; Wassermann reaction negative. September, 1918: Child 1 year, well; Wassermann reaction negative. February, 1921: Child 4½ years, well; Wassermann reaction negative.

February 2nd, 1921. Wassermann reaction negative.

Case II.

Mrs. W. Three previous pregnancies. First stillborn; second, apparently healthy child of 4½ years; third, case of congenital heart disease with saddle nose. Wassermann reaction positive in mother and second and third children.

February 11th, 1914. Five and a half months pregnant.

February 11th to April 19th. Four injections of neo-salvarsan intravenously and mercurial inunction. No subsequent treatment.

May 19th. Wassermann reaction negative.

May 24th: Fourth child born (male). February 21st, 1915: Child 9 months, healthy; Wassermann reaction negative. June 11th, 1921: Child 7 years, well; Wassermann reaction negative.

September 11th, 1920: Fifth child born (female). November 11th: Child well; Wassermann reaction negative. Seen at 10 months, well.

June 6th, 1921. Wassermann reaction negative.

Case III.

Mrs. K. Three previous pregnancies. First child had rash on body and died at 2 months; second was an 8 months child and only lived one month; third was a typically syphilitic child, which died at 8 weeks. Wassermann reaction positive in mother.

April 22nd, 1914. Two months pregnant.

April 23rd to July 1st. Five injections of neo-salvarsan intravenously *plus* mercurial inunction. No treatment since.

November 2nd: Fourth child born (male). March 8th, 1915: Child 4 months, healthy; Wassermann reaction negative. June 7th, 1921: Child 7 years, well; Wassermann reaction negative.

January 7th, 1917: Fifth child born (female). June 7th, 1921: Child 4½ years, well; Wassermann reaction negative.

April 9th, 1919: Sixth child born (male). June 7th, 1921: Child 2¼ years, well; Wassermann reaction negative.

June 7th, 1921. Wassermann reaction positive.

Case IV.

Mrs. S. Seven previous pregnancies. Last child was typically syphilitic and gave a positive Wassermann reaction.

April 22nd, 1914. Two months pregnant.

April 22nd to July 1st. Five injections of neo-salvarsan *plus* mercurial inunction. No subsequent treatment.

June 8th. Wassermann reaction negative.

December 10th: Eighth child born (male). March 10th, 1915: Child 3 months, well; Wassermann reaction negative. June 21st, 1921: Child 7 years, well; Wassermann reaction positive.

March 10th, 1915. Wassermann reaction negative.

January 5th, 1917: Ninth child born (female). June 21st, 1921: Always well. Wassermann reaction doubtful.

May 15th, 1919: Tenth child born (male). June 21st, 1921: Always well. Wassermann reaction negative.

December 6th, 1920: Eleventh child born (female). June 21st, 1921: Always well. Wassermann reaction negative.

June 21st, 1921. Wassermann reaction negative.

Case V.

Mrs. M'N. Four previous pregnancies. First died at 10 months from "bronchial asthma"; second died at 8 months; third alive. Wassermann reaction positive. Fourth seen by me with severe congenital syphilis.

September 30th, 1914. Seven months pregnant. Wassermann reaction positive.

September 30th to October 21st, 1914. Four injections of neo-salvarsan intravenously and mercurial inunctions. No treatment since.

December 10th. Fifth child born (male). March 12th, 1915. Child 3 months, well; Wassermann reaction negative. Died of bronchopneumonia.

January 24th, 1916. Sixth child born (female). Seen at 4 months, well; Wassermann reaction negative. Died at 6 months of bronchopneumonia.

January 12th, 1917. Wassermann reaction positive.

June 12th. Seventh child born (male). December 12th. Aged 6 months, well; Wassermann reaction negative. January 8th, 1918. Aged 9 months, well; Wassermann reaction negative. June 30th, 1921. Aged 4 years, well; Wassermann reaction negative.

January 8th, 1918. Wassermann reaction negative.

July 29th, 1919. Eighth child born (female). Died when 7 weeks old of bronchopneumonia; no evidence of syphilis.

October 2nd, 1920. Ninth child born (male). Died when 2 months old of bronchopneumonia; no evidence of syphilis.

June 30th, 1921. Wassermann reaction negative.

It would seem from a survey of the above histories that even though these women continue to bear non-syphilitic children, their own serums may persist in reacting positively to Wassermann's test. One knows, of course, that the child of a woman whose blood reacts positively is not necessarily syphilitic. In fact the erratic appearance of healthy and syphilitic children in a family is one of the most striking features of congenital syphilis. In the above series of families, however, there are no syphilitic children borne, which is probably due to the fact that, although all spirochaetes have not been destroyed, those situated in the uterine tissues, which we consider the *fons et origo* of the disease in the foetus, have been destroyed. Other foci of spirochaetes, however, may, on account of the avascularity of the harbouring tissues, have escaped the effect of the spirochaeticide, and, though continuing to bring about the serological changes, be harmless so far as the product of conception is concerned.

Time of Election for Treatment.

When should the treatment be carried out? Is there a time of election? Should the treatment be carried out as soon as the diagnosis is made or should it be delayed till the woman is pregnant? In other words, "Are equally good results obtained irrespective of when the treatment is instituted?"

Personally I have usually selected the period of pregnancy partly because on theoretical grounds it seemed to me that the increased vascularity of the tissues—the endometrium—which we consider the locus of the invading spirochaete, during that event will facilitate the influx of the spirochaeticide. I also thought that the near approach of another possible syphilitic child would be an inducement for the mother to subject herself to the treatment. Certainly, I do not think that better results could be obtained by carrying out the treatment at any other time, but if equally good results could be obtained, then a greater latitude would be allowed the physician, and in this way help towards its more general adoption. Though I have also treated women when not pregnant, I have not personally sufficient data on which to found an opinion, but I have no doubt that to-day some information on this important point will be forthcoming.

Notification of Syphilis.

As I have previously mentioned, this method of treatment has not been practised as generally as it deserves. It undoubtedly is the treatment *par excellence*, an opinion homologated by all who took part in the discussion on the diagnosis and treatment of congenital syphilis at the Royal Society of Medicine in February of this year. It is consequently our duty to promote anything that will encourage its general application.

In so many syphilitic mothers the sole evidence of the disease—with the exception, of course, of a possibly positive Wassermann reaction—is the syphilitic progeny that it seems to me the only feasible plan of recognizing those requiring treatment is to notify all miscarriages and stillbirths and syphilitic children. Those examples of miscarriage and stillbirth due to syphilis can be decided by subjecting the mother's blood to the Wassermann test and the necessary treatment instituted. In this way we could reduce the loss of infant life from syphilis to a minimum.

I know that there have been many objections raised against the notification of this disease, but I consider we have satisfactory answers to all of them. We are already notifying one form of congenital venereal disease—ophthalmia neonatorum—so that the further step recommended should be comparatively easily made. Were our reasons for notification merely the collecting of statistics, then its adoption, I admit, would be most difficult to support, but our reason is the more general adoption of the most advanced and most satisfactory method of treatment, the like results of which we medical men cannot promise with such confidence in any other morbid condition that we are called upon to treat.

At the meeting of the Venereal Diseases Section of the British Medical Association last year this same question of notification was raised, and the President (Mr. Turner) sounded a word of warning, as he called it, that the public were not ready for such a measure. When, might I ask, did it become the proper attitude of the physician to delay treatment till his patient considered it right and proper? In conclusion, I ask, have we made up our minds about the value of notification? If we have, then it is our bounden duty to act with all the power that within us lies.

DISCUSSION.

Dr. H. Brooker Mills (Philadelphia) said that he heartily approved of the prenatal treatment of syphilis, either before the pregnancy occurred if the disease was known to be present, or during the pregnancy if syphilis was only discovered after conception had taken place. He had seen nothing but good result. He asked if Dr. Findlay advised breast nursing in these cases, and, if so, if he would withhold the treatment of the mother during this time. In view of the difficulty of intravenous medication of infants, he was in the habit of administering 6 10 of a decigram of salvarsan in 100 c.cm. of normal salt solution by the Murphy drip with good results. Dr. Findlay, in reply, said that he always advised breast feeding.

Dr. Harold Scurfield (late M.O.H. Sheffield) asked if Dr. Findlay treated all his cases as out-patients and if he thought the authorities responsible for establishing venereal disease centres were sufficiently aware of the comparative failure of the treatment of congenital syphilis and of the vastly superior results obtained by treating the mother before the birth of the child. Dr. Findlay emphasized that all his cases were treated as out-patients.

Resolution.

On the motion of Dr. Findlay (Glasgow), seconded by Dr. Scurfield, the following resolution was passed, several members of the meeting dissenting:

> This meeting of the Diseases of Children Section of the British Medical Association, feeling strongly the failure of the curative treatment of congenital syphilis, and appreciating the very superior results obtained by the pre-natal or prophylactic method, recommend, in order to encourage the latter method, that the notification of all cases of congenital syphilis, miscarriage, and stillbirth is desirable. Those miscarriages and stillbirths due to syphilis could be detected by Wassermann's test of the mother's serum, and the necessary treatment of the mother carried out. This meeting desires the Council of the British Medical Association to bring this question to the notice of the Ministry of Health.

THE CAUSATION OF THE SYMPTOMS IN CONGENITAL HYPERTROPHY OF THE PYLORUS.

BY

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The essential cause of congenital hypertrophy of the pylorus is entirely obscure. No circumstances are known as yet regarding the heredity, intrauterine life, birth, or surroundings of the children which can be blamed for its occurrence.

As to the way in which this unknown cause produces the muscular overgrowth, which is the primary structural characteristic of the disease, two hypotheses have been suggested: (1) Professor Hirschsprung (to whom belongs the credit of having been the first to draw the attention of the profession, in 1888, to the clinical importance of the condition) regarded it as a primary developmental hyperplasia, and all that can be said in favour of this view has been ably stated by later writers—especially by Dr. Cautley and the late Mr. Clinton Dent. (2) The other theory, which seems to me far more likely, regards the muscular hypertrophy as secondary to some form of antecedent overaction, and suggests that this may have resulted from long-continued inharmonious working of the various elements of the muscular mechanism which controls the emptying of the stomach. Such incoordination would probably have begun before birth, but would be most active and effective during the first weeks



Fig. 1. Fig. 2.

Fig. 1.—Transverse section of normal pylorus near the duodenum. ¼ diam.; child of nine weeks.

Fig. 2.—Transverse section of hypertrophied pylorus near the duodenum. ¼ diam.; child of nine weeks.

(*Photographs by Mr. Richard Muir.*)

of life. To deranged muscular action of this sort we may attribute, not only the hypertrophy of the muscle, but also much of the retention of food in the stomach. As the case progresses, however, other very important mechanical causes of obstruction arise, which greatly aggravate the symptoms. These secondary causes of blocking consist in the increasing thickening of the muscular coat of the pylorus and in longitudinal folding of its mucous membrane (Figs. 1 and 2).

There are good reasons, derived from pathology, clinical observation, and the results of surgical operation, for believing that the size of the pylorus increases very greatly during the early weeks of life. While the muscular tissue is becoming rapidly thicker, it is confined within the peritoneal coat. This tube is not capable of stretching with sufficient rapidity to make room for its enlarging contents. The muscular overgrowth, therefore, presses increasingly inwards and narrows the lumen. At the same time, its compression usually throws the mucous membrane into one or more large "polypoid" folds, which further contract the passage until, in the worst cases, it becomes almost entirely occluded. These folds have been described by many writers on the subject, and have even sometimes been regarded as the primary source of the symptoms.[1] It is interesting to note that apparently similar folds have often been found in the posterior urethra in cases of congenital hypertrophy of the bladder with hydronephrosis[2]—a condition which is probably to be considered as closely analogous to congenital pyloric hypertrophy.

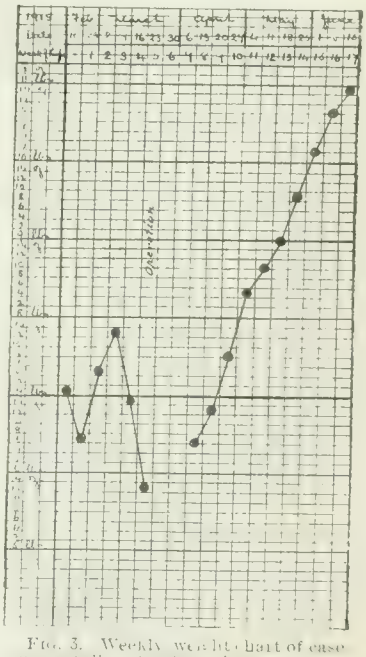


Fig. 3. Weight chart of case successfully treated by operation (Loreta).

The main clinical features of the disease may be divided into four stages:

1. There is first a stage without any symptoms, which

lasts from one to eight weeks (usually two to four) after birth. During this period the child seems quite normal and gains weight at the usual rate. The pylorus cannot be felt, and there is no characteristic visible gastric peristalsis; and, although there may be occasional, or even frequent, mild "putting up" of the milk, there is none of the typical "shooting" vomiting.

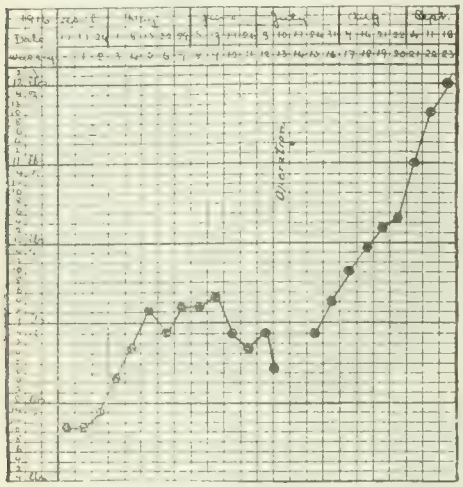


FIG. 4.—Weekly weight chart of case successfully treated by operation (Rammstedt).

2. A stage of primary symptoms of pyloric obstruction of varying duration. In it there are various indications of interference with the passage of food out of the stomach, and, later, of great enlargement of the pylorus. These indications are: (*a*) Characteristic violent vomiting, beginning usually between the second and fourth week; (*b*) prolonged retention in the stomach of any food that is not vomited (as demonstrated by the use of the stomach tube); (*c*) drying up of all the tissues, with arrest in the normal gain in weight, scanty urine and small infrequent motions; these symptoms are due mainly to the small amount of fluid which is reaching the bowel; (*d*) exaggerated visible gastric peristalsis, which usually begins during the fourth or fifth week and may be much later in appearing, but it never occurs during the first two and a half weeks; its presence is evidence of pyloric obstruction and also of muscular hypertrophy, with commencing dilatation of the stomach wall; (*e*) enlargement of the pylorus can be felt in the majority of cases, but usually not before the third or fourth week of life, and often only later; the youngest child in whom I have found it was 18 days old.

3. A stage of secondary symptoms. This varies in date of onset and in duration, according to the severity of the case and to the nature of the treatment employed. We find (*a*) emaciation and debility; (*b*) great dilatation of the stomach; (*c*) much mucus in the gastric contents and in the faeces; (*d*) ordinary symptoms of dyspepsia and toxaemia, such as flatulence, colic, diarrhoea, drowsiness, and sometimes convulsions. These symptoms are mainly due to catarrh of the stomach and bowel, resulting from abnormal retention, with fermentation of the stomach contents, and often also from the unsuitable character of the feeding.

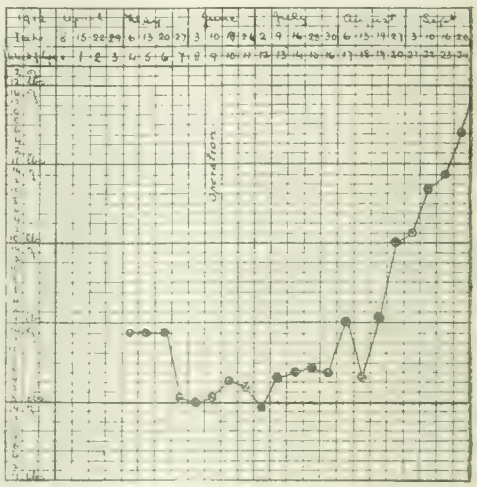


FIG. 5.—Weekly weight chart of case treated by operation (Loreta) with only partial success; curve therefore resembles that of a medically treated case.

4. Lastly, if the child survives the earlier stages, there is a period of recovery. During this stage the muscular incoordination of the organ becomes normal, the peritoneal coat gradually widens, the muscular hypertrophy probably subsides, though certainly very slowly, and the lumen enlarges.

The disease is therefore, in an important sense, self-limited; for, if the child does not die of inanition from too little food reaching the bowel, or from some complication, the natural processes of growth and development will always, in time, remove the obstruction altogether. Weekly weight charts (Figs. 3 to 7) illustrate the extreme slowness—lasting for months—with which the opening up of the pylorus proceeds in medically treated cases, and the rapid gain which follows a successful operation.

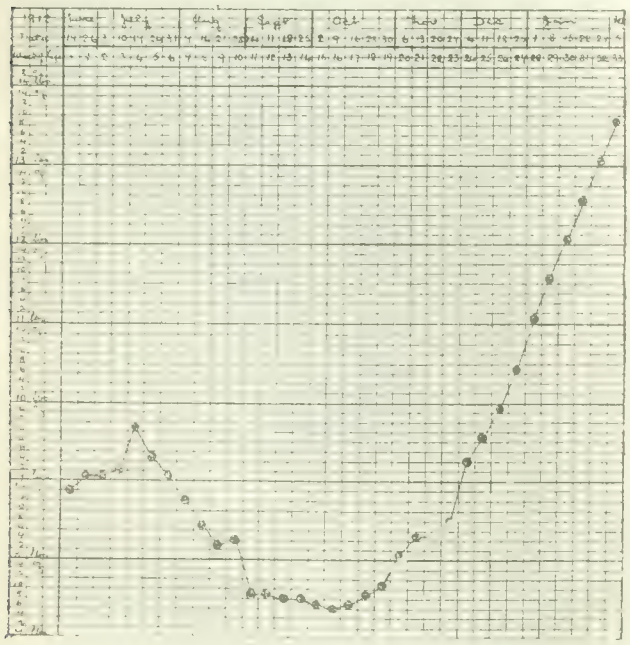


FIG. 6.—Weekly weight chart of medically treated case.

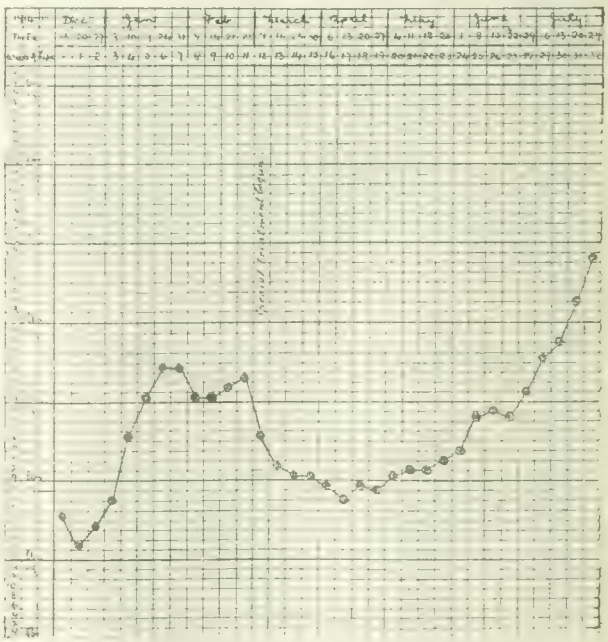


FIG. 7.—Weekly weight chart of medically treated case.

Some of the clinical features of pyloric stenosis which were formerly very perplexing seem to be capable of explanation by the combined functional and mechanical causation of the pyloric closure. For example, the usual complete absence of symptoms during the first week, or weeks, of the child's life, and the absence of palpable enlargement of the pylorus, are almost certainly due to the slight degree of the muscular hypertrophy present at this

stage. Owing to this, the passage is still relatively wide, and its functional closure by irregular muscular action is not, in most cases, sufficiently constant to have serious consequences. Later, as the thickening of the muscular coat and the folding of the mucous membrane increase, the opening becomes so narrow that it is not large enough for its purpose, even where the muscle is in a state of relaxation.

In some cases the symptoms set in unusually early and severely, and the obstruction is dangerously complete before the end of the third week; while, in others, in which the diagnosis is equally certain, the onset is delayed, and the vomiting and other symptoms are much less urgent than usual. It seems probable that the very acute cases are those in which the pyloric tube is small, or the muscular overgrowth and the folding of the mucous membrane especially rapid in their formation; while those cases with mild and late symptoms may owe their less severe character to the obstruction in them depending relatively more on muscular contraction and less on mechanical blocking.

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CONGENITAL HYPERTROPHIC PYLORIC STENOSIS:

AN ANALYSIS OF 50 OPERATIONS.

BY

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THE surgical aspect of this subject is to be considered under two headings—namely, (1) operative technique, and (2) general surgical considerations.

Operative Technique.

The problems of this disease are many; all operations, however, are directed to one object only, the relief of pyloric obstruction. In a previous communication[1] by one of us, reasons, both practical and theoretical, were given for considering Rammstedt's operation to be the method of choice. We still adhere to that view, and are confident it will supersede all other methods hitherto practised.

Rammstedt's operation is so rapid, easy and simple that it is safe in all hands; but six cardinal rules are essential to success: (*a*) Gentleness (or, as Moynihan terms it, "daintiness") in all intra-abdominal manipulations. This is nowhere of greater importance than in dealing with small infants. (*b*) Speed; this is important, but it is quite distinct from "hurry," which usually means roughness. (*c*) Minimum of manipulation; the exposure and delivery of the pylorus should be so planned that only liver and stomach are seen. Prolapse of intestine, and particularly omentum, increase the risks. (*d*) The pyloric incision should be placed as near the convex upper surface as can be conveniently reached—that is to say, the most avascular area. The mucosa must be exposed throughout its length until it bulges into the wound. (*e*) Length of pyloric incision;[2] the tumour should be divided throughout its whole length on the proximal side; but the incision should stop just short of its termination on the distal or duodenal side. (*f*) Haemostasis; bleeding points from the cut edge are controlled by very fine mattress sutures of catgut. This may be required at the two extremes of the incision, particularly on the proximal side. Experience has shown that the observance of these rules is of the greatest importance.

General Surgical Considerations.

Now since it is probably true that the study of failures is more instructive than the recitation of successes the object of this paper is to examine the causes of failure and to learn thereby the means by which the mortality can be (indeed has been) greatly reduced.

We have studied our series of fifty cases operated upon. Of these, eight were operated on by other methods and are excluded, while two died from a prevalent epidemic after operation, and two, early in our experience, from accidental causes. This leaves for this study thirty-eight cases operated on with a mortality from all causes of 55 per cent. There are three varieties of death after operation, one of which is also a common feature of cases treated medically without operation. These are: (*a*) Sudden immediate collapse (within a few hours of operation) occurred in 21 per cent. of the total, or 38 per cent. of fatal cases. (*b*) Sudden delayed collapse (within three to six days of operation) occurred in 18 per cent. of the total, or 33 per cent. of fatal cases; this is also observed in cases medically treated. Deaths in both these categories (*a* and *b*) occur quite suddenly in infants who appear to be in excellent condition. (*c*) "Diarrhoea" was responsible for death in 15 per cent. of total cases, or 28 per cent. of fatal results. (We include here both steatorrhoea and infective enteritis.) It is under these three divisions that the fatalities are to be studied. Now, since the etiology and pathology of this disease are intimately associated with the causes of death, it is important to estimate these factors as far as possible.

Hypertrophy.

Briefly, then, the pyloric hypertrophy is a real one, the muscle showing both hypertrophy and hyperplasia (photographs shown). There is only one cause of localized hypertrophy of a muscle, and that is over-use. Clinical evidence appears to us to support the view that closure of the pyloric sphincter is controlled by stimulation of the sympathetic nerve supply and by its hormone (adrenaline)[3]; and the logical inference is that the pyloric hypertrophy is associated with hyperadrenalism, the result of excessive sympathetic stimulation. (The hypothesis advanced by Dr. Pirie and one of us.) We are unable on present evidence to agree with Haas that pyloric closure is controlled by the vagus; the improvement and cures in his cases, following the vigorous use of atropine, are probably attributable to consequent diminution of secretion and shrinkage of the mucosa rather than to any effect on the pyloric sphincter.

Now there is no evidence of hyperadrenalism in the child; but, since it is generally conceded that the hypertrophy takes place *in utero*, it is probable that the hyperadrenalism is maternal in origin. There is some evidence of this in our series. Thus there is a natural anxiety and apprehension, etc., in every pregnant mother; and this is accentuated under certain circumstances—for instance, (*a*) first children, (*b*) children born after a long interval, (*c*) children born while the husband's existence is in jeopardy (for instance, during the late war), (*d*) children born when all other children died in infancy, and (*e*) the individual factor, which could only be estimated in a few, and is excluded.

Of the 37 cases available, 60 per cent. were first children. In addition, we have considered as equivalent to a first child, in effect on the mother's psychology, cases coming under categories (*b*), (*c*), and (*d*), and we find that 21 per cent. of cases are equivalent to first children in this respect. The first child factor, therefore, is present in 81 per cent. of our cases, and, if the individual variation of females in sympathetic responsiveness is borne in mind, the percentage is probably higher.

We submit that these figures afford definite evidence in favour of hyperadrenalism as an etiological factor in pyloric hypertrophy. Further support is to be found in the study of adults, where the effect (both direct and indirect) of psychic conditions on the adrenals and gastro-intestinal tract is an everyday clinical experience.

Pancreatic Insufficiency.

But, adrenaline being antagonistic to pancreatic function, it would be expected that pancreatic insufficiency (one manifestation of which is a failure to digest fats) would be a feature when obstruction is relieved. Diarrhoea occurring late after operation is one of the most disappointing terminations of successful operation; 15 per cent. of all cases died from this cause. Diarrhoea is further responsible for 28 per cent. of fatal cases; while, of the 44 per cent. who developed this complication, 35 per cent. died.

The diarrhoea is of two types: (*a*) Steatorrhoea. The mortality of cases developing steatorrhoea was 33 per cent.

(*b*) Infective (enteritis). Where this complication supervened, over 80 per cent. died. The inference is that concomitant pancreatic insufficiency exists with pyloric hypertrophy; that it enhances still further the pyloric closure; and that, pancreatic secretion being the main chemical stimulus of succus entericus, food, when obstruction is relieved, passes through undigested. Such a condition means the presence of an "irritant" in the small intestine, and invites acute infection in the presence of organisms. That the mortality is 80 per cent., therefore, is to be expected, and that this dreaded complication is not primarily infective alone is suggested by the fact that its onset is uninfluenced whether gastric lavage has been practised or not.

Steatorrhoea, therefore, predisposes to infective enteritis. This feature is not noticeable in our experience after the relief of pyloric obstruction in the adult; and it constitutes a link in the chain of evidence against the view that all the sequelae are entirely secondary to pyloric obstruction. We feel the balance of evidence to be in favour of the view that both pyloric hypertrophy and pancreatic insufficiency are separate, but interacting, manifestations of original hyperadrenalism—a view further supported by the fact that the size of the pylorus bears no relationship to the severity of the symptoms or the course of the disease. Thus the surgical breach of the vicious circle, by pyloric section, cures the obstruction immediately, but leaves untouched the pancreatic defect, which takes roughly as long to be re-established to the normal as the duration of the original symptoms.[4] This has an important bearing on post-operative feeding.

Biliary Insufficiency.

Biliary insufficiency is a necessary accompaniment of pancreatic insufficiency, since both are mainly dependent on secretin for their stimulation, and therefore both are affected by the degree of pyloric obstruction. The onset of hepatic failure, under such conditions, would appear to be dependent only on the presence of an exciting factor. We have been unable to get direct evidence of this factor as a cause of death, but the question arises whether death from delayed collapse is not due to fatty degeneration of the liver.

In this connexion Mr. Twistington Higgins informs us that he has found this in sections of the liver when death of this type occurred; while Dr. Donald Paterson has observed it in fatal cases where no operation has been performed. Further, though the relationship of the anaesthetic employed to the mortality will be referred to later, in support of this suggestion is the fact that in our series 86 per cent. of deaths from delayed collapse occurred when chloroform and ether were administered. No case has been lost from this cause when gas and oxygen has been employed.

There are two other accessory factors accentuating pyloric closure, and therefore tightening the vicious circle under discussion:

Gastritis arising from retained contents, by causing hyperaemia and swelling of the mucosa, accentuates the obstruction, and therefore also increases the pancreatic and biliary insufficiency. Now gastritis is easily eliminated by lavage, and we should expect to find that systematic pre-operative lavage, by allowing some acid to pass into the duodenum, would render less complete the pancreatic and biliary insufficiency and improve the prognosis. On the other hand, a higher mortality would be expected when lavage had been omitted. Thus, when lavage was practised previous to operation, 56 per cent. recovered, and when lavage was omitted only 29 per cent. recovered. Of the total recoveries, 87 per cent. were treated by lavage, while of total fatalities 68 per cent. were so treated. In only two cases was gastritis severe enough to cause haematemesis, and both died. We conclude that the degree of retention gastritis has an important bearing on the prognosis, and that the elimination of this unfavourable factor by lavage is an essential preliminary to operation.

Phimosis, adherent prepuce, retained smegma, and balanitis may all provide a focus of constant irritation. The marked influence of sympathetic stimulation on the gastro-intestinal tract is generally acknowledged, while the sex stimulus is naturally one of the most powerful in the animal kingdom, and its response is also sympathetic in character. Further, the sympathetic stimulus arising from manipulation or trauma of the prepuce under anaesthesia is evidenced by laryngeal stridor and a striking excursion of the blood pressure. (The same feature is observed in other parts of the genital organs in both sexes.) It is not surprising that a similar effect on the gastro-intestinal tract should be observable in the milder continued stimuli of irritative lesions. The association of phimosis, etc., with vomiting (pyloric spasm) and constipation of different degrees in otherwise normal infants may be proved by any investigator, while it is only to be expected that in a narrow hypertrophic pylorus the effect is still more evident. But, for reasons which will be apparent, we do not now advocate circumcision as an alternative or a routine preliminary to Rammstedt's operation, but it should certainly be performed after recovery when necessary.

That these are added factors in pyloric closure is further suggested by an analysis of cases. Thus, there were 68 per cent. of males and 31 per cent. of females in the series, or rather over 2 to 1. Further, in the presence of such an added factor, it would be reasonable to expect that obstruction would be more complete, and therefore the onset of symptoms would be more acute, the course more severe, and the prognosis worse. Of the males, the onset was acute or fulminating in 55 per cent., gradual in 44 per cent. Of the females, only 22 per cent. showed an acute onset, and in 77 per cent. it was gradual.

If we take post-operative diarrhoea as some indication of the degree of pancreatic and biliary insufficiency, we find again that males run a severer course. Thus diarrhoea before operation is definitely more frequent in females (for constipation was a feature of 88 per cent. males compared with 75 per cent. females), indicating a less complete obstruction in females. But death from post-operative diarrhoea occurred in 83 per cent. males and only 16 per cent. females—convincing figures compared with the sex proportion. The prognosis is proportionately unfavourable, for of the total deaths 28 per cent. were females and 71 per cent. were males; while of the female cases 50 per cent. and of the males 57 per cent. were fatal. Of death from immediate collapse, 37 per cent. were females (14 per cent. of total mortality); 63 per cent. of such deaths were males (23 per cent. of total mortality). Of deaths from delayed collapse, 28 per cent. were females (9 per cent. of total mortality), while 72 per cent. were males.

If there is any truth in the suggestion that this kind of death is due to fatty degeneration of the liver it should be specially noted that the percentage of males is definitely higher in this than in the previous category. It may further be noted that of deaths from post-operative diarrhoea "16 per cent. of females" represents 4 per cent. of total mortality, and "83 per cent. of males" represents 23 per cent. of the total mortality, and this is a most striking feature.

If, further, the extraordinary infrequency of symptoms in cases where circumcision is performed *early* be borne in mind it cannot surely be contended that the steady sex preponderance, and the striking figures produced, are without significance. We lay great stress on the question of sex and the first child factor in the etiology and severity of the condition, and submit that the figures afford justification. The latter will again be referred to in connexion with mortality from operation.

The prognosis is influenced to some extent by the following additional uncontrollable factors.

Uncontrollable Factors.

Age.—The average age at the time of operation in our series was 8 weeks. The mortality in cases of 8 weeks and under was 66 per cent.; over 8 weeks the mortality was only 34 per cent., so that the proportion is roughly 2 to 1 (vide weight). The average age was considerably increased by a few mild cases in older children, one of which was operated on in the twenty-first week. In a large majority the age was under 6 weeks, several infants being 2 weeks, and in two instances 1 week of age. It is interesting to note that the increased risk in the younger subjects occurs particularly in relation to immediate collapse and the late onset of diarrhoea. Thus, of the deaths from immediate collapse, 75 per cent. were 8 weeks or under, in contrast to the equal proportion of deaths to recoveries in delayed collapse. The age does not seem to influence the onset of post-operative diarrhoea; but, when

diarrhoea has supervened, the younger the subject the less likely is the recovery, for deaths from diarrhoea occurred in only 16 per cent. over the average age and in 83 per cent. under the average age.

Weight. This is most important, for the average weight was 6.5 lb.; and under this weight 69 per cent. died, while of those over the average only 37 per cent. died. A decline in weight clearly constitutes an urgent indication for surgery, especially when near the border-line—that is to say, 6 lb. Of the total deaths, 75 per cent. were under the average (represented by a proportion of 3 to 1); and, if this be compared with the age at operation, it will be evident that the weight is of greater prognostic significance.

First Children and First Child Equivalent.—Of these, 55 per cent. died and 45 per cent. recovered; and, of the total mortality, 71 per cent. were first children or the equivalent. The reason for this increased mortality is probably the more marked hyperadrenalism in the mother, leading to the increased severity of the disease in the child. It is equally significant that of the first children 63 per cent. were males.

Onset of Symptoms. The age at onset is of value in relation to the first child factor; for whereas the average age of onset was 3.4 weeks, the average age in first children was 2.9 weeks. Further, at two weeks the proportion of first to other children was equal; in the third week the figures were 6 to 9; in the fourth week 2 to 4; and in the fifth week 4 to 7. This means that there is a tendency to an increased delay in the development of symptoms (or, in other words, decreased severity) in second, third, and subsequent children. This constitutes an additional scrap of evidence in favour of hyperadrenalism as an etiological factor. In harmony with this we find that of all cases 31 per cent. of those above the average age at onset developed post-operative diarrhoea, while in those below the figure was 67 per cent. The influence on prognosis is evident.

Pre-operative pyrexia is frequent and often difficult to explain; in our series 42 per cent. of cases showed a temperature varying from 100° to 105° F. (Two cases reached 105 F. and both recovered.) Contrary to our expectation, we are unable to find any evidence that such sporadic pyrexia has any definite bearing on the prognosis in itself; it certainly constitutes no plea for avoiding surgical interference. Further, subcutaneous infusion does not raise the temperature to an appreciable extent, rarely more than 1½° (or 100° F.).

Controllable Factors.

Anaesthesia. This concerns death from immediate and delayed collapse only; the late onset of diarrhoea is apparently uninfluenced by this factor. Chloroform and ether, and ether alone, are both unsatisfactory anaesthetics; for, whereas the former showed a mortality of 43 per cent., the figure for the latter alone is 71 per cent. Local and spinal anaesthetics both expose these infants to dangerous complications. One fact is evident namely, that the powerful drugs of this type are badly borne. The possible bearing on fatty degeneration of the liver should be noted.

The best results are being obtained with gas and oxygen; for though the mortality is 37 per cent., the operation mortality (immediate and delayed collapse) is nil. *These fatalities were all due to diarrhoea occurring some weeks after recovery from delayed operation.* Thus: Immediate collapse occurred in 14 per cent. with chloroform and ether, in 42 per cent. with ether, and in 0 per cent. with gas and oxygen; delayed collapse occurred in 28 per cent. with chloroform and ether, in 14 per cent. with ether, and in 0 per cent. with gas and oxygen. With gas and oxygen the total mortality (all from late diarrhoea and marasmus) at Great Ormond Street up to the present time is 30 per cent. (the operation mortality being apparently eliminated); and this figure is only a little above the 28 per cent. deaths from diarrhoea.

Post-operative Pyrexia.—One of the features of Rammstedt's operation has been the extraordinarily high temperature compatible with recovery (for example, 106°). The average temperature was 103 F. It was thought at one time that preliminary subcutaneous infusion with normal saline and glucose (2 per cent.) might be partly or wholly responsible, but in a series of cases this was omitted, and little difference was observed. This opinion coincides with the analysis of our cases; for of those whose temperature rose above the average, 84 per cent. were infused; while, of the remainder, 75 per cent. were infused. Further, it has been suggested that the high temperatures observed might have been due to infection from within, since, after pyloric section, only the mucosa intervenes, and lymphatics are necessarily damaged. Apart from the fact that we have never observed peritonitis in the absence of accidental puncture of the mucosa, if sepsis were a factor it would be expected that systematic lavage would diminish such a risk. But in our series lavage, or its omission, has not influenced the temperature, and we conclude that no septic element is responsible.

If the temperature be investigated in relation to the anaesthetic employed the figures are conclusive. For, when chloroform and ether were employed, the temperature rose above the average in 60 per cent., and when gas and oxygen were employed the average was exceeded in only 16 per cent. Hyperpyrexia, therefore, is probably due almost entirely to the anaesthetic, and it is not a feature with gas and oxygen; but we find no evidence that hyperpyrexia causes immediate or delayed collapse, or, indeed, that it appreciably influences the mortality.

Preparation for operation consists in systematic gastric lavage and subcutaneous infusion of 2 per cent. glucose in normal saline, until the elasticity of the skin has returned or for at least two days. Both are important. We have operated with such preparation, and also without (as emergencies). When lavage was practised (78 per cent. of cases) there were 56 per cent. recoveries; when omitted (22 per cent.) the recoveries fell to 29 per cent. When infusion was adopted as a preliminary to operation the mortality was 43 per cent.; when it was omitted, 63 per cent. died. In the fatalities from immediate post-operative collapse, 57 per cent. were not prepared by infusion. Where the patients were below the average age (8 weeks) the figures are still more convincing—for of those infused, only 17 per cent. died; while those who were not so prepared show a mortality of 83 per cent. These figures appear to us conclusive that preparation for operation by lavage and infusion is one of the essentials, and that operation should never be undertaken as an emergency. Further, the younger the subject the more urgent is the need for such preparatory treatment.

Duration of Symptoms and Prolonged Medical Treatment.

In regard to the duration of symptoms previous to operation, the condition of the patient varies directly with the duration of the symptoms; for where the condition was noted as good the average duration was 4.3 weeks, and where the condition was bad the average was 6.2 weeks. Further, the average duration in fatal cases was six and a half weeks; while in those who recovered it was four and a half weeks.

Prolonged medical treatment is responsible together with other anaesthesias for a large proportion of fatal cases. When such treatment was continued over four days the mortality was 70 per cent., but surgical interference within four days reduced the mortality to 43 per cent.

We have not been able to demonstrate that the diet before operation influenced the result; but post-operative feeding is most important. Until pancreatic functions are fully restored (the interval corresponds approximately to the duration of the symptoms) fats are passed undigested. Briefly, the best results may be expected by starting feeding on glucose water for twenty-four hours, and gradually working up to peptonized milk from which most of the fats have been removed, until the pancreatic functions have been coaxed back to the normal, and the full complement can be dealt with. Then, no doubt, breast milk is the best, but it is rarely obtainable, owing to the prevalent but deplorable habit of weaning infants directly they vomit.

Conclusions.

The following are the most important:

1. Accumulating evidence supports Pirie's hypothesis, that hyperadrenalism causes pyloric hypertrophy, which is to be regarded as one of its manifestations.
2. Pancreatic and biliary insufficiency, also resulting from hyperadrenalism, accentuate the pyloric closure and influence the mortality.
3. The sex preponderance is of similar importance.
4. Gas and oxygen anaesthesia will nearly eliminate operative fatalities, both immediate and delayed.

5. Operation should never be undertaken as an emergency.
6. Systematic preparation for operation by lavage and infusion is essential. Even moribund cases can be so rendered operable, and make a good recovery.
7. Such preparation should never exceed four days at the outside.
8. Now that the operation mortality has been so greatly reduced by the employment of gas and oxygen, *operation is indicated as soon after the diagnosis as the necessary preparation treatment will permit.*
9. The possible risk of performing an avoidable operation is negligible when compared with the prejudicial results of ineffectual prolonged medical treatment.
10. The most careful medical after-treatment is essential.

REFERENCES.
[1] *Lancet*, September, 1919. [2] Ibid. [3] Tyrrell Gray "Influence of nerve impulses in visceral disorders," *Lancet*, June 19th and 26th, 1920. [4] *Lancet*, September, 1919.

MILK CONTROL AND TUBERCULOSIS.

BY

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THE control of milk which may be infected with bovine tuberculosis is so defective at the present time as to afford little or no protection for milk consumers. This is not because of a lack of enthusiasm amongst those who are supposed to exercise supervision over the milk supply, but because of their inability to effect the necessary reforms under the present legislation on this subject.

Milk which is suspected of spreading infectious diseases other than tuberculosis is comparatively easily controlled, because of the explosive outbreaks which such diseases usually give rise to. These outbreaks, when traced to a definite milk supply, can be prevented from further spread from that source by invoking the aid of the Infectious Diseases (Prevention) Act, Section 4. This Act gives the local authority power to make an order preventing the dairyman from supplying the milk in question within the district.

But with tuberculosis there is no explosive outbreak; the infection may be received in large doses for a considerable period, apparently without giving rise to any immediate symptoms of disease. Consequently, unless examinations of milk are constantly being made, the infection may be disseminated amongst the community.

If samples of the milk are frequently taken for bacteriological analysis, it may be asked, what benefits accrue? We are told that the microscopical examination of milk for acid-fast bacilli is of no practical utility, and that the only satisfactory method by which organisms, such as tubercle bacilli, can be detected with certainty in milk is by inoculating animals (guinea-pigs) with the suspected material. A period of approximately six weeks must elapse before a definite opinion can be given that the milk contains this bacillus.

If it is possible to trace the infection to its source (and in many areas the milk in the churn of the purveyor has been obtained from a number of herds widely separated and has been mixed at the dépôt or dairy, so that tracing the infection is almost an impossibility) one may find that each of the cows contributing its quota of milk is apparently in excellent health and shows no signs of tuberculous disease of the udder. One may be told that "a beast was recently sold because it seemed out of sorts," and further inquiries may show that the animal has changed owners several times in the comparatively short period of six or seven weeks.

Under the Market Fairs Clauses Act, 1847, the Public Health Act, 1875 (Sections 116 and 117), and the Public Health Acts (Amendment) Act, 1890, diseased, unsound or unwholesome food—including milk—may be seized and destroyed. Little assistance is obtained from these Acts, because it is impossible to show at once that the milk is diseased, and consequently further action is not possible.

Section 2 of the Dairies, Cowsheds and Milkshops Order, 1899, which reads: "If at any time disease, including in the case of a cow disease of the udder, is certified by a veterinary surgeon to be tuberculous, the milk from the cow shall not be mixed with other milk or sold for human food," conveys the impression that some assistance is given in dealing with such infected milk. It is important to remember that this is practically the only power under which tuberculous milk can be dealt with, and it will be seen that the help afforded by this Order is more imaginary than real.

Who is to ask the veterinary surgeon to inspect the animal? If the farmer or dairyman asks his advice, the fact that disease exists is not likely to be disclosed. Is the veterinary surgeon to be an employee of the local authority? I believe only one or two of the larger cities, of which Birmingham is one, employ full-time veterinary officers for this work. Unless the local authority concerned is prepared to recompense the owner for the slaughter of the affected cow, very little improvement can be effected, because the beast may not be slaughtered without the consent of the owner. Who is to see that the milk of the diseased cow is not mixed with other milk or sold for human food? The most careful supervision by an inspector could not prevent this mixing of the milk. Since the withdrawal of the Tuberculosis Order, 1914, no powers appear to exist whereby the owner of a milch cow which is infected with tuberculosis can be compelled to have it slaughtered.

Such, then, is a very brief survey of the powers that exist for the control of tubercle-infected milk. It has been shown that bovine tuberculosis can and does infect practically every part of the human body, especially during childhood, and the presumption is that this infection is derived from cow's milk.

1. Sir Robert Jones recently stated that half of the cases in a large hospital for cripples are tuberculous in character, and that two-thirds of the surgical tuberculous cases are infected with the bacillus of the bovine type, and only one-third with the bacillus of the human type.

2. In 1914 Eastwood and Griffith reported to the Local Government Board that in the dead bodies of 150 unselected children evidence of tuberculous infection was found in 62 per cent. of the cases.

3. Hamburger states that tuberculosis in the dead body rises from 15 per cent. in the first year of life to 70 per cent. between 11 and 12 years, and to 90 per cent. at puberty amongst the poorer of the population of large towns. That very many of the children are infected with the bovine type of bacillus there can be little doubt.

4. Dr. Inman states: "Cultures from all types of tuberculous disease in man showed that bovine infection was present in not less than 18.7 per cent. of the total number of cases. In phthisis the percentage of bovine infection was 1.4. Cultures from tuberculous neck glands in children during the first five years of life showed bovine infection in 85.7 per cent. of the cases examined, and between the ages of 5 and 10 years in 65 per cent. of the cases."

5. Stanley Griffith, in his recent report to the Medical Research Council on the bacteriological characteristics of tubercle bacilli from different forms of human tuberculosis, shows that 20 per cent. of the cases examined were undoubtedly bovine in origin.

6. Dingwall Fordyce states "he has never seen tuberculous disease of the middle ear and mastoid in breast-fed babies."

It is obvious, therefore, that very many of the cases of tuberculosis which occur are due to the bovine bacillus, and therefore might be prevented. With the powers that exist at the moment for controlling the milk supply, and with the very large number of animals infected with the disease, it will, I think, be generally agreed that there is ample opportunity for very many children fed on fresh cow's milk to receive large doses of the infection.

7. Sir John McFadyean estimates that amongst adult cattle the proportion affected with tuberculosis was more than 30 per cent. of the whole, and to eradicate the disease from cattle would mean the slaughter of from 750,000 to 1,000,000 cows or heifers.

8. Dr. A. W. J. MacFadden (Ministry of Health) concurs in the above estimate. He adds that 2 per cent., including those giving milk containing tubercle bacilli, are in such an advanced state of the disease as would bring them within the provisions for slaughtering made under the Tuberculosis Order. If this slaughter of the 2 per cent. were enforced it would therefore still leave 28 per cent. of the animals infected and capable of spreading the disease amongst the younger animals.

9. Sir Rubert Boyce, in 1898 and 1899, examining the milk supplied to Liverpool, found tubercle bacilli present in 6.6 per cent. of that produced in the town, and in 17.8 per cent. of milk sent in from the country.

10. Stenhouse Williams found that at least 2 per cent. of cows examined and apparently healthy were excreting tubercle bacilli in their faeces, and that in a dark place (like many of our cowsheds) this infection remained alive for at least twelve months, while on pasture land, or as liquid manure, it remained infective for four months at least.

It will be apparent, therefore, that in our cowsheds in the towns, and indeed amongst most herds, the possibility of the dissemination of the disease is infinite, and the wonder is that any of the animals escape. Apart from the infection of the human body with the bovine bacillus, when it is considered that the number of deaths from tuberculosis in the first year of life is probably much higher than 1 in 26 (Sir A. Newsholme), and that the total deaths from this disease in England and Wales amounts to approximately 50,000 per annum, it will be agreed that the most stringent regulations are urgently necessary to enable infected milk and diseased animals to be disposed of without delay.

The Milk (England and Wales) Order, 1921, made by the Food Controller provides for the sale of Grade A milk and Grade A (certified) milk. A licence for the sale of these is only granted when the herd from which the milk is produced is certified free from tuberculosis, as determined by the tuberculin test. Grade A (certified) milk, which is bottled milk, must also not show *B. coli* in 1 in 10 c.cm. in each of two tubes, or more than 30,000 bacteria per cubic centimetre, and must be delivered to the consumer not later than two days after the day of its production. Thus for those who can pay the extra cost there is produced a milk guaranteed free from tuberculosis. Unfortunately this order only provides increased immunity for the wealthy, and does not assist the poorer people amongst whom the disease occurs in greatest numbers.

What is urgently necessary is that the Tuberculosis Order, 1914, withdrawn as a war measure, and the Milk and Dairies (Consolidation) Act, 1915, be made operative at once. The Tuberculosis Order, 1914, which has for one of its objects the destruction of all bovine animals showing signs of tuberculosis, provides for the following: (1) Every person having in his possession or charge any cow which appears to be suffering from chronic disease of the udder, (2) any bovine animal which appears to be suffering from tuberculous emaciation, or (3) has a chronic cough and shows definite clinical signs of tuberculosis, shall forthwith notify the police or local authority, and after examination if it is considered to be tuberculous it will be slaughtered. The suspected animal must be kept isolated under the charge of the owner until it is examined, and the milk must not be mixed with other milk, etc.

The Milk and Dairies (Consolidation) Act, 1915, which is to come into operation within one year after the termination of the war, would give power to: (1) Stop a supply of milk which is thought to have caused or is likely to cause tuberculosis. (2) Make obligatory the inspection of cattle in dairies by the medical officer of health, if the milk is suspected of being tuberculous. (3) Prohibit the sale of tuberculous milk. It is an offence to sell milk from a cow suspected of being tuberculous. (4) A medical officer of health in whose area milk is being sold may require the medical officer of the area in which the milk is produced to take samples, etc.

With these two measures (Tuberculosis Order, 1914, and the Milk and Dairies (Consolidation) Act, 1915) in force it would be possible for local authorities to appoint veterinary surgeons to carry out the examination of dairy cattle in their area by tuberculin and other methods. Milk would be sampled for the purpose of detecting tubercle bacilli, and this traced to its source would enable the authority, through their veterinary officer, to have the affected animal disposed of (and compensated for) under the Tuberculosis Order. With the support of these two measures an attempt might be made to deal with the problem of tuberculous cattle and their milk. There can be no question of the urgency of the matter.

DISCUSSION.

Dr. SCURFIELD said the position was very difficult. There was practically no Grade A certified milk, and even if we got pasteurized milk on lines similar to those adopted in America, bacteriologists doubted if twenty-five minutes' heating at 145° F. was sufficient to kill the tubercle bacillus. Home boiling of milk often impoverished it by the removal of fat with the skin.

At the present time he thought dried milk was the only safe milk on the market. We used far too little milk, and he believed a greater consumption of milk would do a lot to prevent rickets. Dried milk was more easily digested by infants, the fat-soluble A vitamin was apparently not damaged by the process, and the damage to the anti-scorbutic vitamin, if any (which Hess seemed to doubt), could easily be counteracted. He thought he could say that, after an extensive use of dried milk, the risks of scurvy and rickets arising from its use were *nil*.

An inquiry begun in Sheffield recently had led him to believe that rickets often began after weaning or the cessation of bottle feeding, because the "toddler" did not get enough of the right kind of fat, and was frequently fed on white bread, jam, and margarine—a dietary which would cause rickets in puppies. He thought our children needed much more safe milk.

DEMONSTRATIONS.

ON Thursday, July 21st, at 3 p.m., in the Ministry of Pensions Hospital, Mr. A. M. MARTIN (Newcastle) gave a demonstration on congenital dislocation of the hip: late results. He described his methods of reduction and after-treatment, and showed cases illustrative of his methods and two late cases where an excellent result obtained in each. An informal discussion followed.

Afterwards cases of congenital lesions of the heart were shown in Dr. Hume's wards in the infirmary.

On Friday, July 22nd, at 3 p.m., in the Ministry of Pensions Hospital, Mr. A. E. MORISON (Sunderland) gave a demonstration on cranioplasty, discussing the indications for this operation, the great improvement which followed it, and emphasizing the value of the preliminary excision of all scar tissue from the scalp, dura and brain, muscle graft of any cavity in the brain tissue, and an overlying fascial graft. He showed eight cases, with numerous skiagrams.

Dr. J. D. LICKLEY (Newcastle) then gave a demonstration on hydrocephalus, and discussed the pathology, symptoms, and treatment; he showed photographs, casts, and pathological specimens.

Dr. F. A. HORT (Sunderland) gave a demonstration on finer adjustment, with special reference to the hand, and discussed some suggested refinements in various methods of splintage. He showed models of splints and some very beautiful plaster casts, zoological and botanical.

THE expedition sent by the German Red Cross Society to Russia has reached Petrograd, whence it will proceed to the district of Kasan, and later to the Volga district.

PROFESSOR ORTH, who has hitherto been President of the German Central Committee for the Study and Control of Cancer, has had to resign on account of ill health, and his place has been taken by Professor Kraus.

THE Foundation Robert Koch for Combating Tuberculosis in 1920 granted 57,000 marks to authors of scientific works and 5,000 marks as prizes. The Foundation has 100,000 marks to dispose of in 1921.

THE annual grant of the American Pharmaceutical Association has been awarded to Professor Macht, of Johns Hopkins University. The grant is the income of 20,000 dollars, and is to be used by Professor Macht for the continuation of his researches upon certain synthetic compounds which have a sedative action.

THE Deputy Police Commissioner of New York, in his report for the quarter ending September 30th, states that though so far in 1921, 2,488 persons had been arrested for addiction to drugs, there were still 20,000 drug "addicts" at large in the city. The arrests for the quarter were unprecedentedly high, numbering 932, and of the 659 cases brought to trial 93 per cent. were convicted.

PERSISTENT PAIN IN LESIONS OF THE PERIPHERAL AND CENTRAL NERVOUS SYSTEM.*

BY

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Persistent pain, which may be defined as acute bodily discomfort, varying in degree from a sensation of soreness or aching to one of intense and intolerable agony of torment, may be due to a variety of diseases affecting primarily other structures and tissues than the nervous system. Thus carcinoma naturally occurs to us, or other malignant growth, as a probable cause of any deep-seated pain, persistent in character, and lasting for weeks and months, more especially if accompanied by progressive emaciation.

The appreciation of any sensation of pain due to visceral or bone disease necessarily involves the agency of the nervous system in the transference of the sensory impulses from periphery to thalamus and cerebral cortex, but I am limiting my remarks as far as possible to diseases involving the nervous system itself, and shall omit discussion of the referred pains of visceral disease, such as dental neuralgias, errors of refraction, angina, the colics, sinus suppuration, abscesses, acute inflammations, and the like.

For the sake of convenience I have in the following classification arranged the causes of persistent pain in diseases of the nervous system in five classes progressing from periphery to centre, or from nerve ending to cerebral cortex.

Causes of Persistent Pain in Diseases affecting the Peripheral or Central Nervous System.

1. *Peripheral* due to inclusion of nerve endings in scar.
   - (*a*) For example, neuro-fibrositis, traumatic or rheumatic; a liposis dolorosa.
   - (*b*) Due to septic or to rheumatic terminal trigeminal neuritis:
     - (1) Chronic paroxysmal trigeminal neuralgia (Fothergill's disease, tic douloureux).
     - (2) Chronic neuralgia of upper or lower jaw.
   - (*c*) Geniculate neuralgia.
   - (*d*) Glossopharyngeal neuralgia.
2. *Disease involving Nerve Trunks.*
   - (*a*) Supraorbital neuralgia.
   - (*b*) Multiple neuritis.
   - (*c*) Brachial or sciatic perineuritis.
   - (*d*) Tumours or gummatous neuritis:
     - (1) Trigeminal.
     - (2) Spinal—for example, neurofibromatosis.
   - (*e*) Causalgia.
   - (*f*) Cervical or first rib pressure.
3. *Lesions of Posterior Root Ganglia or Posterior Roots.*
   - (*a*) Post-herpetic neuralgia:
     - (1) Trigeminal.
     - (2) Spinal.
   - (*b*) Tabetic neuralgia.
   - (*c*) Other root scleroses.
4. *Central Sclerosis of Bulbar or Thalamus.*
   Intra-medullary growths.
   Syringomyelia and syringobulbia.
5. *Psychoneuroses.*

Neurofibrositis.—The pains of chronic or acute fibrositis of the lumbar or dorsal region, often known as lumbago and muscular rheumatism, are doubtless only too well known to many of us, though common as the affection is its pathology is largely a matter of conjecture. Violent and especially sudden muscular action is the exciting cause in a considerable number of cases, the sudden onset of intense pain immediately after a heavy muscular strain, such as a slip or fall when carrying a heavy weight, the pain relieved by lying down or sitting in a deep chair and aggravated immediately on movement, suggest rupture of muscle or tendinous fibres involving sensory nerve filaments as the cause. In the majority the pain disappears after a few days or weeks, while occasionally the disorder persists for years.

Recently I was consulted by a farmer, a powerfully built muscular man, who some ten years ago slipped and fell when carrying a sack of wheat weighing about 260 lb. He was immediately seized with acute pain across the lumbar region, and more especially in the neighbourhood of the right posterior iliac spine. He has been subject to this pain ever since off and on, worse on movement or during heavy lifting, and now and again he is subject to exacerbations so severe he can scarcely move or dress himself. When I saw him during such an attack his spine was flexed laterally towards the right, and there was a small circumscribed area of great tenderness on deep pressure over the right posterior iliac spine. Careful marking of the site of chief tenderness, followed by injection of a few minims of 90 per cent. alcohol deep into the tender area, completely relieved his pain within fifteen or twenty seconds, so that he was able to stand up straight, the lateral flexion of the spine having now disappeared and he walked away in comfort.

Acupuncture has long been recommended since Sydney Ringer's time for similar conditions, but if one or more definite areas of tenderness on deep pressure are discovered, I consider that alcohol puncture is far more valuable.

Traumatic neurofibrositis may involve larger nerve trunks, not nerve filaments only, and sciatic perineuritis is a fairly common early sequel to fibrositis of the lumbar region, whether this is of rheumatic origin or due to a fall or other injury. Here again the pain may continue for months, or even years. Sciatic perineuritis as a sequel of muscle strain or fall is particularly amenable to treatment by massive saline injections into the nerve just below the notch, the probable site of the nerve sheath damage. Alcohol injection of the sciatic must of course never be attempted, owing to the certain result of paralysis of the foot which would ensue, but saline injection of 50 or 60 c.cm., preceded by 2 c.cm. of 2 per cent. novocain into the nerve often cures the sciatica immediately. This treatment, though often valuable, is less certainly successful in the rheumatic sciaticas, possibly owing to the large area of the nerve which may be the seat of trouble. In both the rheumatic and the traumatic sciaticas, there are frequently spots of deep tenderness with aching pain either in the neighbourhood of the trochanter or between the notch and the iliac crest, which may keep up the discomfort and pain after the actual sciatica has been relieved. These are probably local areas of neurofibrositis in the glutei or erector spinae, and may be mostly successfully injected deeply with alcohol, after the nerve itself has been treated with saline injections. The saline injections may relieve by breaking apart laterally adhesions of the nerve sheath, as the sciatic nerve is a loosely built nerve and readily takes the fluid, swelling up like an egg at the site of injection (as may be seen by injecting the nerve after exposing it on the *post-mortem* table).

Paralysis of the sciatic I have never seen as a result of violent muscular action, but in the region of the brachial plexus local paralysis from involvement of the posterior scapular, long thoracic, or circumflex nerves may occur. As with sciatica, so *brachial perineuritis* may occur from muscular overstrain, or rheumatism and other toxic causes, such as pyorrhoea. Usually the posterior cord and musculo-spiral nerves suffer most. As in the lumbar region, so also in the neighbourhood of the scapula, and sometimes in the forearm, areas of deep tenderness may be the sole cause of chronic wearing pain, or may accompany a more extensive brachial neuritis. Alcohol puncture of such tender spots often has most brilliant results, chronic pain that may have persisted for many months or years being relieved instantaneously. The spots must be carefully located and marked, and a fine needle—hypodermic size is usually long enough—plunged vertically into the spot down to the level of the rib or scapula. Care must, of course, be taken that the needle does not pass between the ribs and pierce the pleura.

Bruising of the scalp by an injury to the vertex from a blow against the lintel of a door or fall of a heavy weight is sometimes followed by persistent headache, varying in intensity, or periodic and associated with a local area of tenderness on pressure. These cases also may be relieved by the same treatment. This form of headache must be distinguished from migrainous neuralgia, in which the periodic headache is unilateral, and often associated with intense pain and tenderness on pressure on one temple. Alcohol injection in these cases is quite useless, as is only to be expected, the origin of the pain being probably central and not peripheral.

Chronic paroxysmal trigeminal neuralgia is certainly of peripheral origin, and is probably due to septic neuritis of nerve filaments in the maxilla or mandible. Scarcely

*Being the opening paper at the joint meeting of the Neurological and Surgical Sections of the Royal Society of Medicine, November 10th, 1921.

ever does this disease affect the upper division and supra-orbital alone, but it may be involved along with the second division.

John Fothergill's original description, nearly a hundred and fifty years ago, of the painful attacks is scarcely to be improved on to-day, though his view of its pathology, thinking that it must be cancerous because of the long-standing pain, is now discarded. Many causes appear to contribute to its appearance. Heredity of the disease I have met with in about 1 per cent. of my cases. Strong emotion may precipitate an attack. Injury and blows on the jaw are a not infrequent cause, as may also be exposure to severe chill, as in motoring or driving; a septic antrum has preceded typical tic douloureux of the second division too often to be a coincidence. I find the disease twice as frequent in women as in men, a point also noted by Fothergill, though he saw only sixteen cases in his practice—or business, as he calls it. A curious point my statistics show is that the disease is twice as frequent on the right side as the left, and commoner in the upper than the lower jaw, though both are often affected. The larger incidence on the right side may be due to better use of the toothbrush on the left side of the mouth, as would be natural in right-handed people, according to Mr. Warwick James. Bilateral trigeminal neuralgia is comparatively rare. I have met with it perhaps thirty times only among several hundreds of cases. The disease rarely disappears spontaneously when established; I have known this occur only once, in the father of a sufferer from this disease, who was my patient. Her father suffered for twenty-five years until he was 90, but was free for the last fifteen years of his life, living to 105. In the early stages, however, long periods of remission may occur; I have known thirty years elapse between the first and second attacks, and intervals of one or two years are common. Sometimes a certain periodicity is seen, as for a few weeks to three months every autumn or winter. As the years pass usually the intervals of freedom get shorter. In a few there is practically no remission, agonizing pain inevitably following every movement of the face, as in eating or in washing. One of my patients, a lady, had been unable to wash the right side of her face for twenty years.

Often the lightest touch of a hair or draught of air will start a paroxysm, though at other times nothing may provoke the pain. During the painful bouts the prick of a pin usually seems more acute on the affected side, though this is a temporary hyperaesthesia only, and is not present between the attacks.

Fothergill, 150 years ago, thought hemlock pushed to toxic doses was a cure for this complaint, but our experience nowadays is that drugs comparatively rarely are of service, and that real relief is obtained only by a solution of continuity of the offending nerve trunk. Practically the choice, in severe cases of pain, is between gasserectomy or division of its sensory root, both severe operations, on the one hand, and alcohol injection of the nerve trunks at their deep foramina, or injection of the ganglion itself. For bilateral cases of this neuralgia the gasserectomy operation is not permissible, owing to the jaw drop that would ensue, though bilateral destruction of the ganglion by injection may be done, as the motor root then recovers, though the sensory ganglion cells are permanently destroyed. A curious point I have often noticed when injecting the foramen ovale and ganglion is that the ophthalmic or inner portion of the ganglion goes totally anaesthetic before the second division, and it may be extremely difficult at times to get total anaesthesia of the cheek when the forehead and eyeball remain permanently anaesthetic. I have no satisfactory reason to account for this.

Another puzzle that occasionally arises, though fortunately it is rare, is the partial recurrence of sensation on the chin and remainder of the third division, when the first and second divisions remain totally anaesthetic. With this reappearance of sensibility pain may return, and that this is not necessarily the result of faulty injection is proved by the fact that gasserectomy and division of the sensory root behind the ganglion may not alter the conditions. One is tempted then to call the persistent pain a psychalgia, but that this is so I am not convinced, as there is no doubt true sensation on the lower lip and chin. Gasserectomies, of course, like other operations, may sometimes fail through being incomplete; I have seen several such cases where pain has returned after about ten years, with reappearance of cutaneous sensibility, yet I do not think that is the explanation in the few cases above referred to, though no such case that I am aware of has come to autopsy.

Another form of *persistent trigeminal pain* that I have seen many instances of is, in my experience, peculiar to young women. It is continuous, not paroxysmal, though it may vary in severity, and it affects either the upper or the lower jaw. It is not provoked by eating, laughing, washing, or other movements of the face, as is true tic douloureux. It is more difficult to relieve by alcohol injection than spasmodic tic douloureux, inasmuch as total anaesthesia is necessary to abolish the pain, and with commencing regeneration of the nerve the pain recurs. In tic douloureux, however, in a large majority a medium anaesthesia from injection may be sufficient to abolish the pain, in some cases for many years; in one of my early cases there has been no recurrence twelve and a half years after injection of the foramen ovale, though only light anaesthesia now remains. This lady had previously suffered from typical tic for twenty years, section of the inferior dental nerve having given only two years' relief. In her case the neuralgia commenced at 17, and I have seen it commence at 17 in two other cases, and once at 16, many in the twenties, but most commonly about the age of 50.

On the other hand, the type of persistent neuralgia of upper or lower jaw previously described I have met with only in women of 15 to 35. Its cause I am very uncertain about, unless it is a chronic osteitis of the jaw. Its limitation to women I do not understand, as the sufferers I have met with have not been notably of neurotic type. Moreover, the true tic douloureux is undoubtedly much more frequent in women than in men—about two to one. These cases are more difficult to treat than true trigeminal neuralgia, as nothing short of total nerve destruction cures the pain.

Geniculate neuralgia, or neuralgia affecting the distribution of the sensory fibres contained in the seventh nerve, has been fully described by Ramsay Hunt and others, though some deny the association of the seventh nerve with such neuralgias. Transient pain around and behind the ear, lasting for two or three days, is a commonplace in association with the onset of facial palsy, and often precedes the motor paresis. Much rarer are instances of true herpes zoster affecting the auricle in association with facial palsy. The distribution of the herpetic rash is usually on the concha and antihelix, though it may be found behind the ear where the pinna joins the scalp, and also along the posterior wall of the exterior auditory meatus. Such a distribution of herpes I saw once in a medical man, without facial palsy, who for many weeks afterwards had excruciating paroxysmal neuralgia affecting the ear, front of the ear, and back of the lower jaw and neck. Pierce Clark and Taylor of America describe a case of chronic tic douloureux affecting this area which was cured by operation by trephining and dividing the pars intermedia Wrisbergi, or sensory root of the seventh nerve, intracranially.

Glossopharyngeal Neuralgia.—A rare form of chronic paroxysmal neuralgia or tic douloureux may affect the glossopharyngeal nerve. In its paroxysmal suddenness of onset, and in the severity of pain, glossopharyngeal tic is identical with trigeminal tic, for which it may easily be mistaken. Distinguishing it, however, from the latter, the pain in glossopharyngeal tic starts in the throat, in the region of the tonsil and anterior pillar of the fauces. The pain radiates to the ear, and especially just in front of the ear, along the back of the mandible, and into the upper part of the neck. I have met with two only of these cases, both of which had lasted over ten years, one a man aged 40, the other an old lady of 87. As in trigeminal tic, the first onset of the pain may be furious and sudden, in the man's case the pain striking him in the throat as he opened his mouth to eat a sandwich. When I met with these cases, now ten years ago, I knew of no reference to glossopharyngeal neuralgia, and in case the pain might be an unusual form of trigeminal neuralgia I injected the third division at the foramen ovale in each case, quite successfully as regards destroying this branch, but without influencing the recurrent neuralgia. I have since seen somewhat similar spasmodic pain, with intense hyperaesthesia of the side of the neck, in a case of recurrent

epithelioma in the tonsil, following seven years after extirpation of a vocal cord for malignant growth. It was this case which convinced me of the identity of glossopharyngeal tic in the two previous cases referred to, and I have lately seen a description by Sicard in France of three cases met with during the war of glossopharyngeal neuralgia, which were cured by surgical help in division of the nerve in the neck.

Diseases Affecting Nerve Trunks.

Supraorbital Neuralgia.—Persistently recurrent supraorbital neuralgia is met with in both sexes, though oftener in women. I assume that migrainous and true trigeminal neuralgia, and the peripheral causes, such as errors of refraction, frontal sinusitis, frontal herpes, antral abscess, and dental neuralgias, have been excluded. Sometimes paroxysmal supraorbital neuralgia occurs daily, coming on about the same time, perhaps 10 or 11 a.m., and lasting until 5 p.m. I have seen this type follow influenza several times. Usually the pain is limited to the supraorbital nerve, but it may involve the whole of the ophthalmic branch.

In a recent case, a woman of 47, pain began four years ago, lasting for eight hours daily from January to June. Next year and the year after a similar repetition occurred. A year ago she had a more severe attack, and since then has had pain daily from 12 noon to 5 p.m., never a day free. The pain is situated in the forehead and left side of head as far back as the coronal suture, and extends along the left side of the ridge of the nose. Unlike trigeminal neuralgia, the pain is not evoked by talking, eating, or other movements of the face, or by rubbing. Supraorbital injection gave little or no relief, though deep anaesthesia was produced. Injection of the Gasserian ganglion was then done, the anaesthesia of the first division being total for an hour or more, but subsequently wore off partially. The neuralgia disappeared completely for several days, and then reappeared in a much attenuated form. Very probably total destruction of the ganglion would have produced a complete cure of the neuralgia.

Perhaps the majority of paroxysmal supraorbital neuralgias are migrainous in type, for which alcohol injection is of little or no use. In some subjects this migrainous periodic neuralgia is limited to the temple.

Only comparatively rarely does true trigeminal neuralgia invade the first division of the fifth nerve—that is to say, a paroxysmal neuralgia, sudden and intense, and brought on by movements of the face, rubbing of the skin, or even a draught. In only one instance have I seen it remain limited to the first division of the fifth nerve for years without either the second or third division becoming involved, and even in this case rubbing the chin would start the pain in the forehead. Practically always the neuralgia also involves the second, or even all three divisions, when the supraorbital distribution is involved, though it is to be remembered that the pain in the second division of the fifth frequently, indeed generally, extends above the eyebrow and in front of the temple. In all cases of persistent or recurrent pain anaesthesia must be looked for. If it is present in trigeminal cases then either syphilitic neuritis, gumma, or tumour is the cause.

Chronic pain in the distribution of the trigeminal nerve may be due to tumours or gummata involving the sensory root of the fifth nerve within the skull or one or more of its branches externally. Tumours in the ponto-cerebellar angle may irritate the sensory root of the fifth and simulate trigeminal neuralgia for years. The pain, however, though variable, is less spasmodic and not brought on by light touches or movements of the face. The main point in distinguishing lesions of the trunk or main branches from trigeminal neuralgia is the appearance of diminished sensibility in the affected area. Motor palsy of the muscles of mastication also may be present. When these signs of gross damage to the fifth nerve are found trigeminal neuralgia may confidently be excluded, unless neurectomy or alcohol injection has previously been done. Peculiarly distressing cases to deal with are the nasopharyngeal growths, causing persistent pain and increasing anaesthesia of either the second or third divisions of the fifth. When the growth invades the zygomatic fossa and involves the third division deafness of that ear is usually produced by involvement of the Eustachian tube. When the growth is more central and invades the spheno-maxillary fossa, besides involving the second division of the fifth, there is produced presently diplopia, and later proptosis and fixation of the eyeball, through extension into the back of the orbit. Beyond anodyne remedies I know nothing that relieves these cases. Operation seems useless; the growth is never circumscribed and always recurs. In *malignant growths of the maxilla* pain may be exceedingly troublesome, even after excision, due to recurrent growth. This pain may be completely relieved by a successful alcohol injection of the Gasserian ganglion. Similarly the agonizing pain due to *carcinoma of the side of the tongue* and lower jaw may be completely arrested by alcohol injection of the third division of the fifth nerve at the foramen ovale.

Persistent trigeminal pain for weeks and months, nonspasmodic, and accompanied by diminished sensibility of that side of the face, but without the pressure signs above referred to of Eustachian deafness, proptosis, and diplopias, should suggest *gumma* as a probable cause. Even if the Wassermann reaction be negative it is well always to give antisyphilitic treatment a trial. I have met with several such cases of syphilitic trigeminal neuritis which cleared up completely under treatment by biniodide of mercury or salvarsan injections.

Rib Pressure on Brachial Plexus.

Chronic pain in the arm and neck, running down to the inside of the hand, in women between 20 and 30, will usually suggest cervical rib as a cause, through pressure on the first dorsal nerve as it rises to join the inner cord. Wasting of the musculature in the hand and diminished sensibility along the inner border of the forearm to the wrist renders the diagnosis more certain. If a skiagram demonstrates a cervical rib, the position is clear. Many cases of rib pressure due to the first rib alone, in the absence of a cervical rib, have been recorded; I have had two such cases successfully relieved by operation within the last six months. In one of them the first rib caused a prominent hard swelling above the clavicle, which it was difficult to believe was not a cervical rib when the skiagram proved the absence of the latter. The diagnosis is therefore more complicated and difficult now that we must realize that with symptoms suggestive of cervical rib the skiagram may be normal.

Causalgia.

During the war the frequency of cases of persistent agonizing pain due to injuries of nerves, often slight, was most remarkable. The large majority of these cases involved the median or internal popliteal nerves, though I have seen it also in the distribution of the ulnar, long saphenous, external cutaneous of the thigh, and radial nerves.

In some cases the nerve injury was so slight that no demonstrable anaesthesia was present, only an intense hyperasthesia, varying at times, and liable to be aroused into an intense spasm of pain by a sudden emotion, noise, or vibration, or light touch, thereby reminding us somewhat of the onset of the paroxysms in trigeminal neuralgia. The pain is described as of a burning heat, hence the name causalgia (*καίω*, I burn), and bursting sensations in the fingers were common. The pain in many cases lasted for weeks and months, and in some it was necessary to produce nerve blocking in order to arrest the pain, by alcohol injection of the trunk of the nerve above the injury. Common enough during the war, I have seen only one such case in civil life, where a man tore his thenar eminence in some cogwheels two years previously. The pain was limited to the ball of the thumb, and immediate and complete relief was obtained by injecting the median nerve with alcohol just above the wrist. The nerve can be easily found here as it lies between the tendons of the flexor carpi radialis and palmaris longus, and pricked with a hypodermic needle and injected. No open operation is necessary for this.

Painful stump was another very common sequel of amputation in the war.

Brachial and Sciatic Perineuritis.

Sciatica I have already referred to, especially in association with lumbo-sacral fibrositis, either of a rheumatic, septic, or traumatic origin.

A very chronic and obstinate type of sciatica I would like to refer to here, in which the most noticeable sign on examination is *scoliosis*, a lateral flexion of the spine away from the painful side causing the hip on the affected side to stick out. The lower cervical spine may be as much as 5 inches to one side of the vertical median line when

standing. This scoliosis disappears on sitting or lying. It is a result of a local lumbar fibrositis in the erector spinae in the region of the fourth and fifth lumbar transverse processes. Occasionally a definite area of deep tenderness can be localized, and it is sometimes possible to procure an immediate and dramatic relief by alcohol puncture of the spot. Short of that treatment these cases are very chronic and resistant to ordinary treatment, and three months' rest in bed may be necessary to effect a cure.

Brachial neuritis is seldom so chronic as some of the sciaticas, though the acute form is probably more painful, due, I think, to the structure of the cords of the brachial plexus being denser and firmer than the sciatic, and thus admitting of less swelling in inflammation of the sheath. This point is easily demonstrated in the dead body by cutting down on the sciatic and brachial nerve trunks and injecting fluid through a hypodermic needle. The sciatic takes it easily and swells up in an egg shape, but it is difficult to force more than a few drops into the main brachial trunks.

Chronic pain about the scapula and arm may be due to cervical rib or to neurofibrositis, as already stated. A common cause of pain referred from the shoulder down the arm, perhaps to the elbow, its maximum usually about the insertion of the deltoid, is *adhesions in the shoulder-joint*, the result of some slight injury, such as straphanging, being jerked by getting on or off a bus or tram, or by a slight fall.

These cases are frequently diagnosed as neuritis. The pain starts usually a day or two after the injury, and is due to a synovitis, the subsequent adhesions causing pain with every movement or pressure on the joint. Wrenching under gas, with subsequent passive movements and massage, usually effects a cure, but some cases are too painful to tolerate the after-treatment and partial fixation is permanent. To be distinguished from this condition is the fixation of the shoulder from adhesions subsequent to immobilization during the acute stage of brachial neuritis. The history of severe pains and pins-and-needles down to the fingers generally makes this point clear, but the treatment by massage, passive movements, or even wrenching under gas is the same.

Diseases of Posterior Spinal Roots or Root Ganglion.

Post-herpetic neuralgia is one of the most inveterate and difficult neuralgias we have to treat. Due in part to an inflammatory lesion in the root ganglion, in some cases to a neuritis of the nerve trunk, and in others even to inflammatory changes in the grey matter of the posterior horn in the spinal cord, the pain is constant and wearing, causing great depression. Rare under the age of 50, chronic neuralgia following an attack of shingles is increasingly common in older people. In some the pain may persist for months and then gradually disappear, but in others it may remain for years, and has led to suicide. With the pain is usually a severe numbness and sense of constriction, and the area of scarring is usually partially anaesthetic. Beyond local anodynes and mild tonic treatment, I hesitate to suggest more active measures. Alcohol injection in spinal cases is, I believe, quite useless, and division of posterior roots after laminectomy is, I believe, not always successful. I should be glad to hear experiences of surgeons on this point.

Herpes of the trigeminal area is mostly limited to the ophthalmic division, often called *frontal herpes*. A common sequel is numbness, sensation of constriction and paraesthesiae, or formication, not really amounting to pain. Occasionally, however, in old people subsequent neuralgia in the anaesthetic area is very distressing and persistent. For this, alcohol injection of the Gasserian ganglion may give complete relief, and I have done this in three such cases, but it is necessary to produce total and lasting anaesthesia equal to that resulting from a gasserectomy.

Chronic pain in the limbs, usually the lower limbs, may result from posterior root sclerosis, subsequent to meningitic lesions. *Haematorrhachis*, or intraspinal haemorrhage in the lumbo-sacral region, may result from heavy muscular effort. The effused blood is apt to clot around the roots of the cauda equina and cause chronic irritation and pain in one or both lower extremities, with wasting and loss of reflexes, and possibly diminished sensibility. Lumbar puncture will clear up the diagnosis, a straw-coloured cerebro-spinal fluid being drawn off even a year or more after the onset. In one such case I had laminectomy performed, and a large purple clot 4 in. long surrounding the roots of the cauda equina removed, eighteen months after the injury.

Tabetic pains are too well known to need enlarging on here. Their treatment is perhaps less satisfactory. Mercurial friction improves some, intravenous salvarsan yet others, while for those who do not notably improve under salvarsan only I have seen considerable numbers benefit immensely as regards severity of pain by intraspinal injections of the serum taken from the patient's blood after intravenous salvarsan. Usually there is a strong reaction about two hours after the injection of 50 to 55 c.cm. of the serum, severe pains in the limbs coming on and lasting twelve to twenty hours, followed by more or less complete relief, which may last for years. Presumably the injection of the serum sets up some congestive reaction in the posterior nerve roots which acts beneficially on the chronic syphilitic neuritis which is the source of the pain. Root sclerosis may be due to other causes, such as haemorrhage, toxic degeneration in diabetes, and other causes of neuritis.

Intramedullary Lesions.

Proceeding centrally, we find chronic neuralgic pain resulting from intramedullary lesions affecting the fillet and thalamus. Usually the pain is constant, burning and pins-and-needles in character, but occasionally it is paroxysmal and neuralgic.

More than ten years ago I showed before the Neurological Section a man of over 60 who had suffered from an attack of thrombosis of one posterior inferior cerebellar artery. As a result of the thrombosis, implicating the side of the medulla with the lobe and the descending or spinal root of the fifth nerve, there was analgesia of the left fifth nerve area and of the right half of the body excluding the face and the forehead. In the analgesic area of the left fifth he complained of constant neuralgic pain, which nothing appeared to relieve. It is, perhaps, difficult to understand how a simple sclerotic lesion can cause persistent neuralgia in the absence of any irritating focus, and this is the only instance of this posterior inferior cerebellar syndrome which I have seen with permanent neuralgia resulting, though this particular thrombosis does not appear to be very rare, as I have met with twenty or more cases.

It has been suggested that the persistent burning pain and paraesthesiae in lesions of the thalamus or fillet is due to the spontaneous unrestrained activity of these nuclear centres for sensation. Similar pain is met with in some cases of syringomyelia and syringobulbia, the pain being referred to analgesic areas, an analgesia dolorosa. Intramedullary spinal tumours also are liable to cause a burning pain as an early symptom, which may precede for many months any more definite localizing signs.

Psychalgia.

Pain of mental origin is usually distinctive in character, such as the vertical pressure pain or clavus hystericus of some neurasthenic headaches. A mental neuralgia may usually be distinguished from a true neuralgia of peripheral origin by its distribution not being anatomical in form and overlapping other nerve areas, and especially in crossing the middle line.

A parson, aged 65, for two and a half years has had pain in the right great toe. Of three surgeons who saw him, one operated for exostosis, the second excised the joint, the third told him he had a kink in his colon, but let him off with an abdominal belt and paraffin internally, and advised him to get a tendon cut. In spite of all treatment—or because of it—his pain is now much worse. On inquiring into his history, I found he was the child of first cousins, and that insanity was very prevalent in his family. As I could see nothing wrong with his foot or leg, I have little doubt that this pain was an instance of psychalgia.

With the psychalgias may, perhaps, be included many of the *coccygodynias*, though perhaps in the majority of them there is a history of some local injury at the outset.

Occasionally there may be difficulty in diagnosis, as in the following case:

This was a Jewish patient whom I saw for pain on the left side of the cheek and forehead and nose, but crossing the nose as far as the inner canthus of the opposite eye. He was anxious for injection treatment, and as he had had much medicinal treatment without benefit, somewhat against my better judgement I injected the second division of his fifth nerve. Although dense anaesthesia resulted, the pain was not improved, being

indeed rather worse. I then hesitated between advising suggestion treatment and injection of the Gasserian ganglion. He would not have the former, and, again against my better judgement, I injected him, this time through the foramen ovale, producing total and permanent fifth nerve anaesthesia. His eye and cornea fortunately gave no trouble, but he was now even more complaining of the pain, and he therefore went to see a surgeon regarding gasserectomy, who, however, refused to do the operation when he found the fifth nerve area totally anaesthetic. Baulked in this, he went to yet another surgeon, who operated to remove his ganglion; but the last I heard of him was that he was complaining even more of pain.

The moral of this tale is that it is unwise to attempt any form of surgical treatment for psychalgias, the pain is apt to get worse, or spread to another area, and once an operation has been performed, it is most difficult for another practitioner to sift the real from the false and to make a diagnosis.

A CASE OF PYOCELE OF THE FRONTAL SINUS.

BY

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On May 16th, 1921, I was asked by Mr. Potts, ophthalmic surgeon to this hospital, to examine a patient, a married woman, aged 57, for frontal sinusitis. She had a slight swelling at the inner canthus of the left eye, and complained of some "pricking in the left eye," but not of headache or any other subjective symptom.

The swelling was firm and could not be pressed away. Intranasal examination showed no discharge on either side; the mucous membrane was quite normal in appearance and there was no enlargement of the turbinate bones. The post-nasal space was also quite clear of any discharge. Transillumination showed both frontal sinuses clear and of about normal size; the maxillary antrum was also clear; there was no history of a blow. My report was that the frontal ethmoid and maxillary sinuses were unaffected.

Three months after this the patient was admitted into hospital with a compressible swelling on the left frontal sinus. The house-surgeon, Mr. Reed Hill, needled it and got pus. There were no subjective symptoms such as headache, etc.; the temperature was negligible. The eyeball was pushed downwards and outwards, with swelling of the soft tissues of the upper eyelid and inner angle of the orbit.

Operation.

I operated as soon as the patient could be got ready, making an incision along the eyebrow; there was an immediate gush of odourless reddish mucopus. A gloved finger was inserted into the cavity, which was felt to be unusually large. I therefore made a further incision at right angles to the original at its inner angle, going well up the forehead; the flap was turned upwards, the cavity swabbed dry, and all bleeding arrested.

It was then made clear that the anterior wall of the frontal sinus, with the exception of a thin pliable piece of bone adherent to the flap, was absorbed. The floor (except for a small plate of bone over the orbit), the posterior wall, and the septum between the two sinuses were also absorbed, so that the right frontal sinus could easily be explored. Portions of dura mater were missing, and brain substance, looking red and inflamed, was exposed. A probe could be passed on either side into the nose; the posterior ethmoid cells were absorbed. The fronto-nasal duct could not be made out, and the probe could be passed down to the loop of the post-nasal space, the muco-periosteum everywhere being intact, except where the orbital plate had been absorbed; here the probe passed into the cheek. The sagittal sinus was intact, but the whole of the left frontal lobe of the brain was completely exposed and, if it had been desirable, could have been raised and its under surface explored. The wound was sutured with the exception of its outer and inner angles, which were drained.

Recovery was gradual, and the temperature and pulse negligible throughout until, at the end of three weeks, a pocket of pus, quite different from the original infection, formed under the scalp at the inner angle of the original incision and extended down to the cheek. This was opened, gently scraped, and swabbed out with hypochlorite solution. The patient is now quite well.

I deemed it unnecessary and inadvisable to open up any communication with the nasal cavities, as I felt that the cavity would in all probability become filled with fibrous tissue.

The case was shown at the local Branch of the British Medical Association, and I expressed the opinion then that the condition was a mucocele of the frontal sinus which had become infected. The recent Hunterian Lecture by Mr. Howarth, published in the *Lancet* of October 8th, has impressed me with the fact that the condition is not as uncommon as I at first deemed it to be; nevertheless the publication of this case may be of some interest.

The following details of the eye condition, as recorded by Mr. Potts, were supplied to me by Mr. Reed Hill:

The patient attended hospital on May 14th, complaining of slight discomfort behind the left eye. On examination, R. vision 6/6. L. vision 6/12, no hypermetropia; a small swelling was felt below the left supraorbital notch; some slight proptosis was present, and displacement of eye downwards and outwards, but no diplopia. Examination of the fundus revealed no pathological changes.

On re-examination four months later, the eye was observed to have returned practically to its normal position. The proptosis had disappeared, and there was very slight displacement of the eye downwards, the level of the left pupil being about two millimetres below that of the right. Fundus, optic disc and media were quite normal. It was found that the patient had an error of refraction which when corrected gave R.V. $\bar{c} + 1.25$D cyl. axis vert. = 6/6; L.V. $\bar{c} + 1.25$ D cyl. axis $\not$ 70° = 6/9. On testing for heterophoria the left image was found to be situated above and to the right of the right image, but they were approximately fused by a 12 Δ prism base upwards and inwards.

The extrinsic muscles appeared not to have been affected, as there was no limitation of movement of the eye. The fields showed no contraction, nor were there any scotomata to be made out with either white or colours.

SUTURE OF SEVERED MEDIAN NERVE, WITH RAPID RECOVERY OF FUNCTION.

BY

EDGAR WIRTH, M.D.Malta,

PUSEY COUNTY HOSPITAL.

A boy, aged 14, on May 28th, 1921, thrust his arm through a window pane, severing the internal and part of the external belly of the biceps and coraco-brachialis muscles, the brachial artery and vein, and the internal cutaneous and median nerves. First aid was luckily at hand, a tourniquet was applied and the boy sent to the hospital.

Examination of function revealed complete loss of power in all the muscles, and loss of epicritic, protopathic and deep sensibility in the area supplied by the median nerve. The latter was severed *en bec de flute* without irregular tags.

I ligatured the brachial artery and vein and freed the median nerve at the proximal and distal ends. By means of a fine suture of chromicized catgut exact adaptation of the ends was aimed at, with the view of bringing each proximal fibre in contact with its own distal fibre, as far as could be expected. This was obtained by rotating the ends of the divided nerve on their axes. A zigzag suture of catgut was then introduced all round the nerve, taking into each stitch-loop only the sheath, and no nerve tissue, and in such a manner that all the longitudinal threads lay on the outer surface of the nerve like a tube. For this purpose the sheath was transfixed twice at each bend of the gut, in a transverse direction, thereby minimizing the danger of cutting through.



Through the retraction of the sheath, which ensues in such cases, the protruding nerve fibres tended to slip out from between the bars of this cylindrical fence of catgut, and had to be pushed back with a probe. I did not find this method of suturing difficult, nor did it take much time. I believe that the non-inclusion of nerve tissue in the stitch and in the complete retention of the prolapsing fibres by numerous threads of catgut all round, which at the same time secured accurate adaptability of the ends, may have a lot to do with the rapid restoration of function.

A glove drain was left in the depth of the wound, the arm put up in a flexed position and at complete rest on a pillow. Healing was uneventful.

Two days after the operation I was surprised to find that the patient showed distinct improvement in some of the movements controlled by the median nerve, as, for instance, better flexion at the wrist, much better pronation of the forearm, less impairment of opposition of the thumb, and less difficulty in abduction of the thumb. There was, however, still inability to flex the terminal phalanges of thumb and index finger.

At the end of six weeks there was almost complete return of normal muscle power, the grip remaining somewhat weak. Sensation showed little improvement. For

three weeks after the healing of the wound a palmar splint and a sling were worn to ensure complete rest. Then massage and galvanism were started. Two months after the original injury trophic changes were noticed in the skin of the thumb, index, and middle fingers, consisting of an exfoliation of the outer layers of the skin. At the present time the skin of the affected fingers is perfectly normal.

On October 19th, 1921, comparative examination of the right and left upper limbs showed no difference in flexion of wrist, pronation of forearm, opposition and abduction of the thumb. There was a satisfactory grip, but still difficulty in the flexion of the terminal phalanx of index and, to a lesser extent, of that of the thumb. Deep sensibility was present all over the area of distribution of the median nerve. Epicritic and protopathic sensibilities were wanting only over the index finger.

To Dr. Chichester I wish to express my thanks for allowing me to publish this case.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE SCOPE OF SURGERY IN GENITO-URINARY TUBERCULOSIS.

In a leading article published on November 5th emphasis is laid on the generally accepted view that the only hope of dealing with a tuberculous lesion of the kidney is by nephrectomy. I have good reason for knowing that surgeons are impatient of even considering any other method, although at least one great authority states that renal tuberculosis almost always escapes detection during the period when a nephrectomy offers the greatest chance of success, and Bernstein and others do not hesitate to assert that great success has followed treatment by tuberculin injections.

The following case may not be without interest:

Captain D. consulted me in October, 1915, with a history of repeated attacks of hæmaturia. The first attack was in March, 1915, when it was accompanied with sharp, burning pain in the urethra and lumbar region. The blood disappeared in two days, leaving a dull pain in the left lumbar region. This pain has recurred with each attack ever since. His two uncles had died of phthisis, and he himself had had "consumption of the bowels" when a child. There was no history of syphilis, and an *x*-ray photograph of the lumbar region was negative. In April the urine had been most carefully examined elsewhere, the report being "All cultures sterile, no *Bacilli coli*, no tube casts, etc." Cystoscopic examination by specialists in London had shown a perfectly normal bladder and urethra, and the patient had been recommended to visit Contrexéville, as it was thought that his symptoms were the result of irritation by oxalate crystals. While at Contrexéville the pain began to radiate down the left leg, and as no relief was obtained he returned home and finally came under my care.

I found him highly nervous and complaining of much pain in the lumbar region and of frequent and painful urination. He looked pale and worn. The left testicle was atrophied, the result of an orchitis of nine years earlier. Von Pirquet's test was strongly positive. Accordingly, two days later, I gave him a further test with old tuberculin, when again the result was very positive, with both local and general reaction. On November 7th the bacteriological report by Dr. Galt of the Sussex County Hospital was received: "Tubercle bacilli plentiful and in clumps, many blood cells and few pus cells. No casts or crystals."

On November 11th injections of tuberculin were commenced with a dose of 1/50,000 mg. bacillary emulsion. There was a very slight local reaction. On November 20th a dose of 1/20,000 mg. was given; on the 24th, 1/10,000 mg.; on the 27th, 1/5,000 mg.; on December 1st, 1/2,500 mg.; on December 5th, 1/1,000 mg. By this time there was great general improvement, although there was complaint of "burning" over the region of the bladder, and some lumbar pain. The patient had put on no less than 7 lb. in weight. On December 9th, after a dose of 1/500 mg., there was considerable local reaction about thirty-six hours after the injection. No further dose was given until the 16th, when the dose of 1/500 mg. was repeated. On the 23rd, 1/500 mg. was again given; and the patient was now much improved. On the 27th, the dose was 1/120 mg., and the patient, although he still had some pain, expressed himself as feeling *very* much better. On January 15th the patient had gained 10½ lb. since treatment began.

The next five doses were all 1/150 mg., as there had been slight general reaction after the dose of 1/120 mg. This was followed by four doses, at about the same intervals, of 1/100 mg. There was no reaction after any of these doses. The patient was looking and feeling exceedingly well, with entire absence of pain and good appetite. By desire of the patient a specimen was now sent to Shorncliffe for examination by the army authorities, the report being: "Some pus cells, some renal epithelium, one clump of tubercle bacilli, fifteen in number." I then gave him, at intervals of about four days, four doses of 1/50 mg., after the first of which there was some local reaction only. On March 11th a report was received both from the army authorities and from the Brighton pathologist that the urine was quite normal. On March 13th he was given a dose of 1/25 mg., resulting in a very slight local reaction. This dose was continued at weekly intervals up to the middle of May. The patient's weight was now 11 st. 9 lb., or 21b. heavier than he had ever been in his life before. On March 29th the report from Shorncliffe was: "No tubercle bacilli, but some pus cells." On May 16th the largest and last dose of the course was given, 1/16 mg., and there was no reaction. The patient was now feeling exceedingly well, with perfect appetite and entire absence of pain, and on that date it was reported from Shorncliffe that they had found only a few tubercle bacilli beaded.

The patient was sent away for three months into the country, and on June 14th the Shorncliffe report was: "Tubercle bacilli very scanty, two only seen. Some pus cells." On July 19th report said: "No tubercle bacilli, few pus and renal epithelium cells." On September 4th Shorncliffe reported: "Tubercle bacilli *very scanty* and beaded." On September 13th the patient wrote that he was feeling quite well, had no pain of any sort, and was quite certain that he could easily go back to duty. On September 18th Dr. Galt reported: "No tubercle bacilli, no pus, blood, or crystals," and on the 29th, "No blood, pus, or casts, culture sterile, no tubercle bacilli," with note, "Urine seems to be quite normal."

The patient is still, I am informed, enjoying good health, and performing his usual army duties, and it seems to me that in this case, at any rate, the tuberculous lesion of the kidney *was* cured "otherwise than by nephrectomy."

Hove. A. H. Coffman, M.D.

ANAPHYLAXIS TO WASP VENOM.

G. W., aged 51, a farm labourer, who had always previously enjoyed good health, was stung on the ear on August 13th, 1921. He fainted after the sting, felt very ill, and had to be helped home. The ear became swollen and eczematous, and a few days later slight enlargement of the cervical glands occurred. Ten days subsequently a generalized urticaria appeared, which was followed in three days by acute general exfoliative dermatitis; this lasted for a fortnight, leaving him debilitated, and causing enlargement of the heart and accentuation of the pulmonary second sound.

He appears to have been sensitized by a wasp sting eight years ago; on that occasion he felt faint and suffered from local swelling round the site of the sting for a few days. All his life he has had a very great horror of wasps, although not at all afraid of bees.

A point of medico-legal interest in connexion with the case is that he successfully claimed sickness benefit under the Workmen's Compensation Act.

Cheltenham. J. Allman Powell, M.D.

OBSTRUCTED BREECH DELIVERY DUE TO HYDROCEPHALUS AND SPINA BIFIDA.

On October 19th, 1921, a multipara, aged 44, was confined of her ninth child. Her previous confinements had been apparently normal. One of us was in attendance, and on arrival found a breech presenting in the vagina. With a little trouble the feet were brought down, but no safe traction could produce further delivery. On the arrival of the other of us chloroform was administered, but for some minutes further traction was useless; a large head could be felt from the abdomen.

On further vaginal examination a tense "bag of fluid" could be felt high up on the dorsum of the foetus. The prospect of locked twins occurred to us, when further examination ruptured this "bag," and a large amount of serous fluid escaped. Now an irregular hollow, about 4 inches by 3, was apparent in the back of the fetus, and by traction on this and the feet the child was delivered.

The child was dead, and was full time; it had a large hydrocephalus, which apparently had collapsed and drained through the spinal opening; it was much deformed, the neck and several cervical vertebrae being undeveloped. The mother made an uninterrupted recovery.

A. J. Troughton, L.R.C.P. and S.Ed.,
J. F. Dow, M.D.Vict.

Bentham, Lancaster.

Reports of Societies.

TREATMENT OF PERSISTENT PAIN DUE TO NERVE LESIONS.

A discussion took place in the Section of Neurology of the Royal Society of Medicine, on November 10th, on the treatment of persistent pain due to lesions of the central and peripheral nervous system. Mr. PERCY SARGENT, President of the Section, was in the chair. The discussion was opened by Dr. WILFRED HARRIS, whose paper is printed in full this week at page 896.

Sir WILLIAM THORBURN emphasized the extreme difficulty of judging of the results of treatment in painful affections. The treatment of symptoms, as apart from the treatment of lesions, was, of course, always a doubtful matter, especially if the symptoms were such as were almost impossible of description and quite impossible of exact measurement. It was very easy to be misled into thinking that the pain had been cured when actually the measures adopted had been of no value whatever. He instanced the procedure—now obsolete, he believed, but at one time supposed to have great efficacy—of stretching the sciatic nerve for the relief of lightning pains in locomotor ataxia. On the other hand, people who had long suffered from painful diseases had generally degenerated into such a mental condition that they would still imagine themselves to be suffering from recurring pain, especially if they had been for a long period under the influence of drugs, after the original painful cause had without question been removed. He went on to speak, in the first place, of conditions in which the actual objective of operation was most definite and certain, and those in which a lesion rather than a symptom was attacked. The cases in which the most clearly defined pain-producing lesion had to be dealt with were those due to pressure on the nerves. In these cases, and in traumatic affections of the nerves, there was, as a rule, a clear issue. If the source of pressure was removed the pain was cured, with, however, this proviso: there was a strong probability that in old-standing cases of pressure lesions, whether due to cervical ribs or other causes, there was ultimately produced a certain amount of neuritis with cicatricial changes within the nerve, so that in such cases where a neuritis had occurred, spreading beyond the original boundary of the pressure lesion, it was not to be expected that recovery would be invariably obtained.

With regard to injuries, the most typical examples were the end-bulbs found upon nerves after amputations. Here again it was important to take into account what might be called accessory pathological changes—changes inside the nerve—in the case of a nerve which had been long exposed. In the ordinary case of a painful stump the removal of the bulbs would be generally quite sufficient to produce cure of the pain, but not always; in a certain proportion of cases pain still persisted after a thorough removal of the bulb, and even after the excision of the nerves for a distance of a good many inches above the point where the bulb was formed. These were also cases in which the removal of the original source of the trouble might be followed by a progressive neuritis. Sometimes the pain extended so far that the most extensive resection was entirely unable to bring relief, and the only recourse appeared to be division of the posterior spinal nerve roots of the affected region. What could be done in the direction of preventing the nerve-bulbs? His experience went back to a day when, apart from war surgery, amputations were a good deal more common than now, and he considered that the one definite cause of end-bulbs of the nerves was sepsis, and that if the nerves were cut high up at the time of amputation, then even if—to speak after the old fashion—the wound should be septic, end-bulbs were not in the least degree likely. He himself had never adopted special measures, such as crushing, to obliterate the ends of cut nerves, and he was not aware of any amputation of his in which there had been trouble from end bulbs forming at a later date. The nerves had been cut short, and, of course, all the precautions had been taken to make the operation aseptic. Along with these conditions, cases of causalgia had to be considered. Here resection and suture did not invariably cure; out of twenty operations in Manchester sixteen only were cured, but he would like to know from those who had practised in war hospitals at home, where, unlike war hospitals abroad, there was opportunity to treat these cases, what treatment was found most useful. Another type of pain in connexion with traumatic injuries was painful cicatrix of the scalp following on a head injury, not necessarily of a severe nature, and often taking place a long while before the pain developed. Why scalp cicatrices should present this peculiar tendency to pain he did not know; possibly it was because the scalp, which was very mobile, was anchored to the immobile skull, and the constant traction on the intervening cicatrix caused pain.

Sir William Thorburn went on to deal with cases in which the issue was a little less clear, such as pains which probably arose in connexion with ganglia, spinal or cerebral, including trigeminal and other neuralgias and the localized tabetic pains. In trigeminal neuralgia he was in the habit of dividing the operations into two great classes, namely, those which did and those which did not imperil the eye. For himself he practically always adopted Schlösser's method, or, if that failed, the method of Jonathan Hutchinson, junr., which involved the removal only of the lower two-thirds of the ganglion, and had the merit of leaving the eye quite safe. With this method he had not found any recurrence. In post-herpetic neuralgia the cases were so few that it was difficult to make any generalization. He only knew from practical experience of two types which he need mention—the supraorbital type and the spinal type. He used to think that cases of the former type were ideal for alcohol injection into the supraorbital division, but he had been disappointed more lately in the results. Pain could be cured certainly temporarily by ablation of the nerve, but he had had no good results from alcohol injection. After speaking of tabetic pains and the good results to be expected from posterior rhizotomy, he said that there was a good deal of evidence that locomotor ataxia, like many other diseases of the spinal cord, was likely to be improved considerably by the mere operation of spinal drainage.

The most doubtful group of all was that which included the ordinary brachial neuralgias and so forth. Here he was not prepared to dogmatize as to any method of treatment. By the time they came to him the great majority of these cases had had a sufficiently prolonged experience of medicinal treatment, hydrotherapeutic and electrotherapeutic methods, and injections. He did not want to be regarded for a moment as despising any of these methods, which could all claim numbers of cures, just as a good many cases were cured under the influence of rest alone. But the cases he received were those in which these methods had been tried and had failed. He liked to expose the affected nerve, or as much of it as he could get, and such an exposure would, in a certain number of cases, indicate some source of pressure which would otherwise be overlooked, and in quite a large number of cases there would be found around the nerve adhesions to surrounding structures such as did not pertain to a normal nerve. At operation these things could be seen and dealt with. A neurolysis could be done if required, and probably this operation might be combined with a certain amount of nerve stretching. At any rate, to expose the whole length of the nerve was no more risky than to practise methods of injection and the like. Finally the speaker remarked on the large number of cases of so-called neuralgia which were talked about as rheumatic and so on, but were really due to intrathecal spinal tumours, which were liable to be overlooked for a long period, until perhaps it was too late. He was quite convinced that, if not in London, there were parts of the country where, through faulty diagnosis, one of the most curable diseases of the nerve system—an intrathecal tumour of the spinal canal—was frequently overlooked.

Dr. GORDON HOLMES said that it was the teaching of English neurology that most diseases of the central nervous system which did not involve the meninges or extend to the posterior or other sensory roots ran a painless course. That that doctrine was true in the majority of cases there could be no doubt, but he was afraid it had been applied rather too widely. It was generally assumed that spinal diseases could produce pain only when the posterior roots were involved, but as a result of his war experience of gunshot injuries he thought it must be regarded as a possibility that a traumatic injury of the pain-conducting tracts within the spinal cord could

produce pain, persisting for several weeks at least. It was not so rare as it was generally assumed to be for intramedullary lesions of the cord to produce pain. Perhaps the most interesting point from the theoretical side concerned the manner in which these pains occurred. It was an old hypothesis that the lesion irritated the pain-conducting fibres, and therefore gave origin to the pain which was peripherally referred or projected. He did not think that many of them were willing to accept that explanation now. He had found in certain gunshot injuries of the spine that not merely painful or uncomfortable sensations were produced, but also an excessive sensation of what might be called pleasure on the affected parts of the body. The easiest working hypothesis in discussing the nature of central pain was to assume the view put forward years ago by Long, that the pain-conducting fibres throughout the central nervous system were represented by chains of neurons broken up repeatedly in masses of grey matter, and that the pain was due to some structural or dynamic change in portions of grey matter in which the pain-conducting fibres were normally interrupted.

Dr. S. A. KINNIER WILSON said that if it was the case that the tic movement of a tic douloureux disappeared when the neuralgia was relieved—whether it was a tic or spasm was for the moment immaterial—it seemed as though certain inveterate cases of torticollis might be treatable by the relief of the accompanying occipital neuralgia by operation on the posterior root ganglia. Torticollis was a very interesting subject, and often cases of torticollis were particularly untreatable. He also referred to the description in Dr. Harris's paper of certain patients whose pains came on only at certain times of day (for example, a woman who had the pains from 12 o'clock to 5 each day). These cases presented very interesting problems from a theoretical point of view. The view he himself took was that such cases were essentially psychogenic. He did not believe that any factor except one of that nature could produce the recurrence of pain over the same period of hours every day. He added that he had used ionization successfully in several cases of post-herpetic neuralgia when other forms of treatment had been unsuccessful.

The PRESIDENT said that his own experience of posterior root section had been extremely disappointing, and on very few occasions had it been worth doing; especially was this true of doubtful cases of persistent pain of causalgic character. Every kind of surgical treatment for the relief of these pains had been tried and all had had a measure of success, but on the whole there was more disappointment than otherwise. Unless the nerve could be dealt with at a high level and at an early stage there was little likelihood of any great result from alcohol injections, resection of the nerve, or anything of the kind, and after the pain had persisted for years, then the posterior section itself had very little influence.

Dr. WILFRED HARRIS, in replying to the point raised by Dr. Wilson as to the periodicity of the pain, would not subscribe to the opinion that the periodicity meant psychalgia. Periodic pain was familiar to many of them in other connexions. Moreover, the pain in this case had an anatomical distribution, and, contrary to the usual results in psychalgia, injection of the ganglion produced almost complete relief.

NEUROLOGICAL NOTES.

A MEETING of the Oxford Medical Society was held at the Ashurst Neurological Hospital on October 14th, with the President, Dr. E. MALLAM, in the chair. Drs. JOHNSON and RASHBROOK read the clinical notes and the pathological findings in a case of status epilepticus.

The patient had been regarded as suffering from an organic lesion, owing to the history of epilepsy, epigastric aurae, incontinence, and the fact that he had had an epileptiform seizure while alone in a house. The onset of the status epilepticus was quite sudden, and he died in a few hours, after a large number of fits, without regaining consciousness. *Post mortem*, there were found patchy thickening of the membranes of the brain, without any sign of injury, and a generalized fibrosis of the abdominal organs. The etiology of the condition was discussed by Drs. GIBSON and GOOD. Syphilis was regarded as the main factor, but in the absence of a Wassermann test or other positive indication, this must remain a supposition.

Dr. ADAMSON then opened a discussion on two early cases of general paralysis of the insane, with special reference to the importance of early signs. Among the points emphasized were:

(1) The care necessary in all cases in separating the organic from the functional nerve disorder, by consideration of the previous history and close attention to the physical signs, particularly irregularity of the pupil, alterations in reaction to light, convergence, and sympathetic stimulation; alterations in other reflexes with differences in reaction on the two sides; alterations in sensation and visceral symptoms, chiefly gastric pain and vomiting and retention of urine with loss of muscular power in the bladder. (2) There may be no mental symptoms in the prodromal stage, the superficial picture being that of neurasthenia, and where mental change does occur it may approximate to any type of mental disorder, ranging from change of disposition to dementia, and is determined in part by the localization of the disease, but chiefly by the previous psychology of the patient. (3) In the absence of sufficiently definite physical signs to warrant a clinical diagnosis, an examination of the cerebro-spinal fluid will differentiate between general paralysis of the insane, tabes, and cerebro-spinal syphilis.

Dr. SELBY-GREEN exhibited two cases showing signs of degeneration of the central nervous system.

In the first case the clinical examination suggested a parenchymatous lesion, whereas the improvement following treatment, and the result of the pathological examinations, were both in favour of an interstitial lesion. In the second case both the history and the clinical examination suggested a syphilitic pachymeningitis.

Dr. MCPHAIL'S remarks on a case of moral imbecility were illustrated by the application of the point-scale method of examination to the subject of his remarks. This patient was a stalwart-looking man who had served three and a half years in the army and showed little outward sign of defect. Dr. W. COLLIER commented on the importance of this demonstration, as probably few of the members present were competent to examine a mental defective, or had a lively conception of the issues involved. The evening closed with a short paper by Dr. RAE, entitled "From primitive to superman."

MEDICAL ASPECTS OF SEX LIFE.

A MEETING of the London Association of the Medical Women's Federation was held on November 15th at the Elizabeth Garrett Anderson Hospital, with the President, Dr. LOUISA MARTINDALE, in the chair. A discussion on "The physician's responsibility in respect of the sex life of the patient" was opened by Dr. Constance Long, Dr. Sylvia Payne, and Dr. Mary Bell.

Dr. CONSTANCE LONG said that parents often brought children to the physician with complaints about masturbation, or phases of lying or stealing, or other marks of a neurotic disposition. These characteristics formed a well known syndrome, originating in some psychic disturbance. In dealing with such a case she suggested that tactful inquiry should be made about the emotional atmosphere of the home. Investigation usually revealed some disharmony between the parents, and it was sometimes necessary to probe into the personal life of the forbears to obtain such an enlightened view as would secure an improved emotional environment for the child. She advised that older children should never be allowed to share their parents' bedroom. In regard to the significance of masturbation in children, Dr. Long defined this habit as "self-generated eroticism," and pointed out that it might arise from fantasy alone, without any friction, or from the contemplation of some representative object. The masturbation of puberty and adolescence was connected with tension, both physical and psychical. At such a time, when the sex organs were developing fast, masturbation might be physiological and act as a safety valve. Masturbation should not be punished; it would disappear with maturity—if the life were normal. Dr. Long thought that medical students should have more definite teaching on the subject of sex relations before they encountered such problems in practice. Patients who asked advice on the subject of the frequency of coitus should be told that the mutual happiness and well-being of the two partners should be their guide.

Dr. SYLVIA PAYNE said that the history of primitive races showed that the present-day attitude to sexual problems was largely the outcome of ancient taboos and customs. The advance in psycho-analytical investigation showed that the psychical side of sexuality was as important as the purely physical. Medical women in general practice were continually consulted by newly married women for dyspareunia. If no physical defect were found, the difficulty was usually due to ignorance or fear, and the treatment was psychical rather than gynaecological, combined with a few practical hints. The speaker then dealt

with the relation of self-control to repression, repression being primarily an unconscious process, while self-control was a conscious function associated with volition. In married life mutual understanding was the basis of self-control, and newly married people should be advised to discuss these matters freely together.

Discussion on the subject of the papers was carried on by Dr. MARY BELL, Lady BARRETT, Dr. HELEN BOYLE, Dr. MARY GORDON, and others.

MEETINGS of the Leeds and West Riding Medico-Chirurgical Society were held on October 28th and November 11th. At the former meeting, amongst numerous specimens and cases exhibited by members, Dr. MAXWELL TELLING and Sir BERKELEY MOYNIHAN showed a patient suffering from long-standing acholuric jaundice in whom splenectomy had been performed. Dr. MAXWELL TELLING read a paper entitled, "Psychotherapy, with and without specialism," which was followed by an animated discussion. The meeting on November 11th was held in the afternoon, at the Leeds General Infirmary, when operations were performed and cases demonstrated by members of the honorary staff. This type of meeting was a new departure, undertaken at the request of a number of members, and attracted a moderate attendance.

Reviews.

KEEN'S SURGERY.

Keen's *Surgery*[1] both in its material and style of production, is established as a masterpiece among modern encyclopaedic medical works. The first six volumes recorded the progress of surgery up to 1913. Two supplementary volumes (VII and VIII) have been recently published; they contain chapters which are in the nature of appendices to the original work, and also a good proportion of fresh matter which owes its origin to surgical experiences in the great war. As in the earlier series, a large number of contributors have been called upon to assist in the compilation. Of these, seventy in number, most are American, but some well-known English authorities have written chapters on subjects associated with their name during the war.

Volume VII is chiefly concerned with war surgery, no fewer than fifteen of its chapters being devoted to this subject. The reader of the present day has perhaps had his fill of publications on these matters, but it must be said that this volume provides an excellent review and a good bibliography of the wide field of work coming under this category. Chapters on the Administration of the American Military and Naval Services are of no little interest. They reveal the thoroughness of the American medical organization in the late stages of the war; the Englishman may well be envious when he reads that on the medical staff of every division in the field, in addition to the ordinary establishment, there was an orthopaedist, a psychiatrist, and a urologist, to say nothing of a divisional sanitary inspector in charge of a mobile laboratory. Some measure of the detail considered necessary by the naval service may be gauged from the fact that every fighting ship was equipped with an embalming outfit and sealable caskets.

In the chapter on the technique of wound treatment the author strongly extols the Carrel-Dakin methods. In general, he evinces a greater faith in the specialized methods of treatment than would be shared by many who have experienced their serial development, though it is fair to add that he gives full attention to the subject of wound-excision or "*débridement*." The article on gas gangrene by Sir Cuthbert Wallace includes some beautifully executed colour illustrations reproduced from drawings and microphotographs. The subject of gunshot fractures is dealt with very fully by Dr. Blake, and the chapter contains a great deal that should be suggestive and helpful in civil work. Three chapters are devoted to wounds of the nervous system, Sir William Thorburn being responsible for those on injuries of the spine and peripheral nerves. The latter chapter sets forth present knowledge of the subject very clearly and is accompanied by a full bibliography.

The military surgery of joints is, perhaps, mainly of interest on account of the detailed consideration of Willums' method of treating suppurative arthritis by early active mobilization. The author is strongly in favour of the procedure and does not appear to attach much importance to the fixation of joints during certain periods of treatment.

The very exceptional experience gained in blood transfusion and in the handling of traumatic shock during the war is fully related, and the chapters on both subjects contain a wealth of details which have a direct application to civil practice. It is of interest to note that Dr. Lee is opposed to the use of gum acacia solution, and relates several fatalities attributed to its use. He considers that the citrated method of blood transfusion established itself as the method of choice for field service work. A well illustrated chapter on the military surgery of the vascular system is contributed by Dr. Matas; in it he considers fully both the immediate and late treatment of injuries of the heart and large vessels.

Among the chapters constituting supplements to earlier publications may be noted that on rabies, which contains recent statistics of the incidence of the disease. Under the surgery of the skin a full account is given of the treatment of burns by means of a hard paraffin dressing. The treatment of syphilis, especially by means of arsphenamine, is brought up to date, and a careful analysis of the reactive symptoms after its administration is given. Orthopaedic surgery in civil life is dealt with by Dr. Lovett. Descriptions of Soutter's operation for flexed hip and Ober's operation for talipes equino-varus are included. The reproduction of skiagrams illustrating the bone condition in rickets are perhaps the least satisfactory of the figures in this volume.

Volume VIII contains forty chapters, most of which are in the nature of supplements detailing the most recent advances in civil surgery. At the same time, many of them are coloured by war experiences. This has involved a certain amount of overlap in the subject matter, but perhaps not more than was inevitable in a work to which there were so many contributors. The article on the surgery of the thyroid is by Charles Mayo, and for its clear comprehension a reference to the previous chapters on the subject is necessary. Two further chapters are devoted to pathological questions concerning goitre. A well illustrated article by Adson deals with the surgery of the hypophysis.

The surgery of bone disease is treated at some length by Wallasse. He is very insistent on the importance of the prompt diagnosis of acute osteomyelitis, and optimistic in regard to the results of a limited operation in cases treated early. His confidence in the possibilities of osteoplastic surgery might well mislead the inexperienced surgeon; and his statement, "Wherever bony tissue is missing it may be supplied from other sources," must clearly not be taken too literally. Under the surgery of the head, gunshot wounds are dealt with in detail, and the recent surgery of hydrocephalus receives full notice.

A French contributor, Darcissac, is responsible for the chapter entitled "The rôle of the dental surgeon in the treatment of fractures of the jaws." It is concerned largely with the grosser deformities and defects only likely to be met with under war conditions, but the methods applicable to civil practice are also clearly described and figured.

As might be expected, the treatment of the surgery of the thorax is largely based on war experience, but the methods put forward for treating pulmonary tuberculosis surgically are considered closely, and some interesting statistical information of the after-results of these procedures is provided.

There is an excellent series of articles on abdominal surgery, introduced by a short chapter from Crile, in which he emphasizes the importance of avoiding shock by the use of local and nitrous-oxide anaesthesia. The supplement to the late John B. Murphy's article on appendicitis is written by Deaver and Pfeiffer. Although it cannot be said to contain any very obviously new material it should be of great interest to every practical surgeon on account of the carefully reasoned and suggestive advice given as to the time and methods of operation in the later stages of the acute disease. The authors clearly

[1] *Surgery: Its Principles and Practice.* By various authors. Edited by William Williams Keen, M.D., LL.D. Vols. vii and viii. Philadelphia and London: W. B. Saunders Co. 1921. (Roy. 8vo, vol. vii, pp. 855, 359 figures; vol. viii, pp. 960, 657 figures; Index, pp. 182. Cloth, £6 6s.; half morocco, £7 15s., the two volumes, including Index.)

recognize that there are cases which have a better chance of survival if the surgeon holds his hand for a while, and are also very clear upon the evil effects produced by the administration of purgatives at any stage of the disease. The surgery of the gall bladder and bile ducts is discussed by W. J. Mayo and Balfour. It is noticeable that they strongly favour cholecystectomy as opposed to cholecystostomy for most morbid conditions of the gall bladder. One of the best chapters in this volume is that on the surgery of the prostate; it is by Young, and its eighty pages are full of fresh material that has not yet found its way into the textbooks.

There are several chapters on matters which are not usually classified as surgical, but which are none the less of close interest to the surgeon, such as, for instance, renal deficiency tests, physiotherapy, the technique of radium, of *x* rays, and of electro-desiccation. There is an excellent chapter on pathological blood and serum examination which might be entitled "What every surgeon ought to know about clinical pathology." The volume ends with sections on poison gas, the legal relations of the surgeon, the American Red Cross, and a note by the general editor on a practical method of dressing an artificial anus.

The production of the supplementary volumes, both as regards press and illustrations, maintains the high standard set by the original work.

HEART DISEASE AND PREGNANCY.

THE main object with which Sir JAMES MACKENZIE has written his book on *Heart Disease and Pregnancy*[2] is to direct the attention of those in charge of pregnant women to the more recent views concerning the heart and its powers. The chapters appeared originally as articles in the numbers of the *Lancet* last June. In the book thus formed we find a short and concise expression of the author's views on heart disease, special emphasis being laid on the bearing of abnormal heart conditions on pregnancy and labour. Those who are familiar with Sir James Mackenzie's writing will recognize that this book is largely a restatement of his views on heart disease, applied in the most helpful way for the guidance of those who have to deal with pregnant women.

The first three chapters are devoted to the changes in the heart and circulation during pregnancy, labour, and the puerperium. As the author points out, the feature that is dreaded in cardiac patients is the appearance of heart failure. Its significance is discussed and the earliest indications of a failing heart are dealt with in detail. This, in fact, is the keynote of the book, for in dealing with pregnant women who are suffering from heart disease the one thing that matters is that the medical attendant should understand and be able to recognize the earliest manifestations of a failing heart.

The different forms of valvular disease are discussed, and the bearing of each on pregnancy is carefully considered. Certain physical signs and symptoms have in the past caused difficulty; they belong mainly to three groups: (1) Murmurs; (2) irregular action; and (3) cardiac pain. No practitioner can hope to deal intelligently with a patient presenting one or more of these three classes of symptoms unless his knowledge is sufficient to enable him to assess accurately the significance of each abnormal manifestation.

Of the various arrhythmias, auricular fibrillation is of paramount importance, and may be looked upon as an absolute bar to pregnancy, and if pregnancy has occurred in the presence of fibrillation it may be necessary to induce premature labour. With our present knowledge, the ability to differentiate between fibrillation, sinus arrhythmia, and the irregularity due to premature beats, is called for even in an obstetrician. When the assessment of the value of many of these abnormal signs comes to be discussed stress is laid upon the importance of judging the power of the heart to meet pregnancy, by its response to effort. In other words, what must be assessed is the power of the myocardium. If the heart is normal in size and the response to effort good, then little or no attention need be paid either to a murmur, the occurrence of premature beats, or to the cardiac pain associated with the excitable heart of a neurotic woman. The chapter on mitral stenosis is one of great practical value.

Although the subject of this treatise is heart disease and pregnancy it is a book which will be read with great profit by every practitioner. It is full of sound advice and helpful statements with regard to the capacity of the heart to meet the stress and strain of life, irrespective to pregnancy, though pregnancy and labour do of necessity add a load to that which the heart normally carries. Sir James Mackenzie has given us helpful guidance as to the principles on which to assess the capacity of the heart to meet these peculiar handicaps.

THE INTESTINAL PROTOZOA OF MAN.

The Intestinal Protozoa of Man, by DOBELL and O'CONNOR,[3] forms a useful addition to the work on the amoebae living in man published by Mr. Clifford Dobell some little time ago. In the preface Mr. Dobell explains the scope of the new book, and also says why it was written. "It appeared to the present authors that such a book—touching upon the two fields of zoology and medicine—ought to be written jointly by a zoologist and a medical man: for by such collaboration many mistakes, due to the limited knowledge of either, might obviously be avoided." Unfortunately, Dr. O'Connor had to go abroad on a scientific expedition, and the completion of the work therefore devolved on Mr. Dobell himself; in consequence, the book as it now appears is different in many ways from what was originally planned. Many of the chapters are from the pen of Mr. Dobell alone: these include the introduction, the section dealing with the coprozoic organisms, the lists of synonyms, and keys for the determination of genera and species; all discussions of systematics and classifications, the references at the end of the volume, and the general bibliographic work throughout. The aim has been, while giving close attention to accuracy, to be as brief as possible, and so to produce a practical handbook helpful for the beginner and at the same time of value to the serious student in the prosecution of his studies. A point also attended to has been the compilation of full and accurate references.

The contents of the book are contained in nine chapters as follows: I, Introduction: the intestinal protozoa of man. II, The intestinal amoebae of man. III, Amoebiasis. IV, The intestinal flagellates of man: "Flagellosis." V, The intestinal coccidia of man: Coccidiosis. VI, The intestinal ciliates of man: Balantidiosis. VII, The diagnosis of intestinal protozoal infections. VIII, The treatment of intestinal protozoal infections. IX, The coprozoic protozoa of human faeces. In addition there are the references, an index, and eight plates—one a frontispiece, and seven at the end of the volume.

The intestinal amoebae of man have been dealt with, as we have said, in a separate work by Dobell—a work which has crystallized knowledge of these parasites and brought harmony into what was previously chaos; it is not necessary to linger over the part of the present book in which this subject is dealt with therefore. The remaining chapters are written with the accuracy and minute care that characterizes all Mr. Dobell's work, and students of the subject will find in them much pabulum for careful study. The scientific part needs no criticism from us; it is excellent in every way, and should form a standard for such work in the future. All the recent work on treatment also is suitably recorded. The references are full, and will prove of the very greatest value to workers on the subject, while the plates are beautifully executed and are as near perfection as anything can be. We have said enough, then, to show that this is a valuable book which doubtless will be recognized as a standard work on the subject for many a day to come. All that remains is to congratulate the authors on their success, and heartily to recommend the work to protozoologists and medical practitioners alike.

[2] *Heart Disease and Pregnancy.* By Sir James Mackenzie, M.D. F.R.C.P., LL.D.Edin. and Aberd., F.R.S. Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1921. Demy 8vo, pp. 152, 21 figures. 8s. 6d. net.)

[3] *The Intestinal Protozoa of Man.* By Clifford Dobell, M.A., F.R.S., and F. W. O'Connor, M.R.C.S., L.R.C.P., D.T.M. and H. London: Published for the Medical Research Council by John Bale, Sons and Danielsson, Ltd. 1921. (Roy. 8vo, pp. 218; 8 plates, 1 figure. 15s. net.)

VETERINARY HYGIENE.

THE need for a trained and scientific veterinary service was brought home to the people of this country in the latter part of the last century by costly and bitter experience. The outbreak of cattle plague, or rinderpest as it was called, in 1865 threatened to destroy the entire stock of cattle in England. A disaster so appalling was prevented by organized and systematic effort; and a few years later, in 1869, the Contagious Diseases (Animals) Act was passed and regulations made under that and subsequent measures of a similar character have over and over again prevented the spread of disease among animals. Many of these regulations demonstrate the importance of preventive veterinary medicine, so that hygiene has become a necessary part of the curriculum of the veterinary student, for whom Professor R. G. LINTON'S *Veterinary Hygiene*[4] is a most trustworthy and complete textbook. It is divided into seven sections dealing respectively with water, meteorology, sanitation, air and ventilation, building construction, preventive medicine, and sanitary law. In the section on sanitation the plan has been adopted of describing and picturing good and bad types of appliances such as drain traps. We wish the teaching of the author on the disposal of manure could be instilled in every British farmer and especially every dairy farmer; we might then be on the high road to producing clean milk. Solid manure, he says, should be taken out of stables and cowsheds and removed as far away as possible at least twice daily and from piggeries once daily. The liquid manure should be drained to a distant settling tank, and both should be conserved and put on the land instead of, as is too often the case, left to soak into the fold yard in close proximity to a dairy or dwelling house.

In the section on building construction only fifteen lines are given to a description of manure pits, and the importance of having them so constructed that they can be completely emptied is not emphasized. To this end a most useful arrangement is the wire front to the manure receptacle, which used to be so commonly seen in the old London mews. Equally good is the custom to be met with in some country districts of dispensing with a manure receptacle or pit altogether and throwing the manure directly into a cart; by this means also labour is saved. The flooring recommended for piggeries is cement. We should like to have found an opinion on the Chinese pigstyes as described by Dr. Reginald Farrar in a report to the Local Government Board in 1911; the boarded floor of these styes is about 18 inches above ground level, and beneath it is a large cesspit receiving the liquid excrement; the boards in the part of the pen in which the animals lie are always dry and clean; the solid manure, which is collected daily, being deposited in one corner, or at any rate on one side of the pen. "I was told," wrote Dr. Farrar, "that the pigs were readily trained in this habit, any animal transgressing being corrected with a bamboo."

In the section on ventilation it is properly assumed that buildings in which animals are housed are not on the same footing as human habitations; what is required of them is that they should protect from rain, driving wind, and excessive cold and damp, and should provide facility for feeding and attendance. Several forms of natural ventilation are clearly and accurately described, and their advantages and disadvantages discussed. Ridge ventilation finds most favour with the author. On the question of the tuberculin test as applied to dairy herds he does not express very decided views; he would seem to be in agreement with McFadyean that although the ordinary subcutaneous test with tuberculin cannot be relied upon to provoke a distinct temperature reaction in every infected animal, yet there is good reason to believe that when combined with the ophthalmic and intradermic methods the failures can be reduced to vanishing point.

PHYSIOLOGY.

PHYSIOLOGY during this century has become more and more a matter of physics and chemistry, a tendency that is found crystallized into a perfect form in the *Principles of General Physiology*, published a few years ago by Professor Bayliss. Mr. BURNS'S *Introduction to Biophysics*[5] is a textbook showing how the laws of physics and chemistry may be applied to the fluids, cells, tissues, and systems of the body, and to the body considered as a whole. The book is well written and illustrated; it is not an examination book, but should be of great interest to students of physiology and biology, as well as to the reader of general science.

Professor ROAF'S *Biological Chemistry*[6] is a book for biochemists, and perhaps also for the intelligent general reader or professional man who has something more than a nodding acquaintance with chemistry and chemical physics and wants to know more about biochemistry or the chemical processes of living matter. The subject inevitably makes somewhat stiff reading, and Professor Roaf's exposition of it is thorough and condensed, full of facts, well written, amply documented, and adequately illustrated. It is divided into three parts: The first gives the essentials of organic chemistry and physics as applied to biochemical study. The second deals with the anabolic activities of living matter, or the utilization of the sun's radiant energy in the formation of carbohydrate, fat, protein, pigment, and the like. The third part of the volume describes the catabolic processes of cells and organisms, nutrition, respiration, and excretion; the last chapter gives an account of the action of microbes. The subject of biological chemistry, as has been implied above, is constantly increasing in importance, and Professor Roaf's short textbook should be in the hands of all who are interested in its progress.

The medical student has a large and increasing number of textbooks to help him in the study of physiology and to direct his practical work in the physiological laboratory—a true embarrassment of riches, should he ever become aware of the fact. Professor BURTON-OPITZ of Columbia University has contributed two volumes to the stock from which he may draw—a *Text-book of Physiology*[7] and *Advanced Lessons in Practical Physiology*.[8] In the preface to the first of these the author upholds the contention that "medicine is physiology," and the book is admirably adapted to put before the student the medical aspects of physiology, so that in the wards he may realize the fact that at every turn he is confronted by processes of normal or abnormal physiological activity. The chemical side of physiology receives comparatively little attention in the book, and the same may be said of the physics of physiology. An attractive feature of the volume is the skill with which the author introduces discussions on such subjects as anaphylaxis, ametropia, ventilation, fever, and parturition, that do not usually find a place in physiological textbooks. We have nothing but praise for their insertion, for they serve to bridge the chasm between theory and practice that often marks the passage of the medical student as he goes on from his preliminary studies to the hospital, and prevents his return. The laboratory handbook on *Practical Physiology* consists of sixty lessons or chapters which seem to cover the ground very adequately. Professor Burton-Opitz contemplates the use of fairly simple apparatus throughout these lessons; at the end of the book he provides a summary list of thirty demonstrations, to be given in conjunction with them, in which more complicated apparatus is used or experiments are attempted. Both these books may be recommended to students and teachers of physiology who desire volumes designed and executed on rather unusual lines.

Professor BUCKMASTER'S *Course of Practical Physiology*[9] is based on his methods of teaching at University College, London, and serves to introduce students of physiology

[4] *Veterinary Hygiene*. By R. G. Linton, M.R.C.V.S., Professor of Hygiene, Royal (Dick) Veterinary College, Edinburgh. The Edinburgh Veterinary Series. Edinburgh: W. Green and Son, Ltd. 1921. Roy. 8vo, pp. 429 + xiv; 92 figures. 26s. net.)

[5] *An Introduction to Biophysics*. By D. Burns, M.A., D.Sc., with a foreword by D. Noel Paton, M.D., LL.D., F.R.S. London: J. and A. Churchill. 1921. (Roy. 8vo, pp. 445; 85 figures. 21s. net.)

[6] *Biological Chemistry*. By H. E. Roaf, M.D., D.Sc., M.R.C.S., L.R.C.P. London: Methuen and Co. 1921. (Cr. 8vo, pp. 232; 46 figures. 10s. 6d. net.)

[7] *A Text-book of Physiology for Students and Practitioners of Medicine*. By R. Burton-Opitz, S.M., M.D., Ph.D. (Roy. 8vo, pp. 1185; 644 illustrations, 63 in colours. 32s. 6d. net.)

[8] *Advanced Lessons in Practical Physiology for Students of Medicine*. By R. Burton-Opitz. Philadelphia and London: W. B. Saunders Co. 1920. (Roy. 8vo, pp. 238; 123 figures. 18s. net.)

[9] *A Course of Practical Physiology introductory to Physiology and Medicine*. By J. A. Buckmaster, M.A., D.M.Oxon., and H. R. B. Hickman, M.A., M.B., B.Ch.Oxon. Bristol: J. Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co. 1920. (Cr. 8vo, pp. 144. 5s. net.)

and students of medicine to their practical work in physiology. It is divided into three parts, the first of which is given to elementary work, and contains thirteen sections; the second part describes the advanced course; and the third part details a few chemical methods of proved utility. Professor Buckmaster wisely contents himself with brief but adequate descriptions of what the student is to do, without diagrams or figures to short-circuit his intelligence. Most of the experiments make use of the human being as object, a minority only employing the frog; as a result the medical student will find a great deal of his experimental knowledge directly applicable to his work in the wards. The book is admirable, clearly written, and may be strongly recommended to teachers of practical physiology as well as to their pupils.

The short handbook of chemical physiology, by Professor Schmitz,[10] of Breslau, consists of a series of chapters in which the chemical processes of the body are considered. The matter is in the main treated from the physiological point of view, stress being laid on the processes and methods whereby the chemical substances of the living organism are built up or broken down rather than on the chemical bodies concerned therein. Many references to the German literature of the subject are given, and the book may on that account be useful to British teachers.

DISEASES OF THE NOSE AND THROAT.

The first edition of the book on *Diseases of the Nose and Throat*,[11] by Parker and Colledge, appeared in 1906, and in the second edition, which has just been published, the opportunity has been taken of rewriting some portions and omitting others, the considerable lapse of time having modified knowledge of the subject and settled many debated points. The purpose of the book is to assist post-graduate students, particularly those attending special courses of study in diseases of the nose and throat, and to them and to practitioners who wish to keep abreast of the subject the book may certainly be commended. What faults it has are minor ones. In regard to the illustrations, for instance, the authors are undoubtedly right in recognizing that it is a fallacy that photographs make better medical illustrations than drawings; the photographs are few, and many of the illustrations are the excellent drawings from Morell Mackenzie's classical work. In some cases, however, neither the illustrations, though numerous, nor the subjects most requiring illustration are well selected from the point of view of the post-graduate student. For example, although Whillis's method of tonsil enucleation is well and adequately shown, submucous resection of the nasal septum and other operations are illustrated only by pictures of instruments. While it is an excellent idea to emphasize in one of the six sections of the book, as the authors do, the relation which diseases of the upper respiratory tract have to general medicine, this section has had a bad effect upon the orderliness of the volume. Diseases of the larynx, for instance, appear in one section, but syphilis and tuberculosis of the larynx in another. It would have been better for the authors to have made up their minds whether they preferred an anatomical or a pathological arrangement, and had had merely a chapter in the introductory section on the relation of the subject to general medicine. After all, however, these points do not greatly affect the real value of the book, and they are compensated by an unusually good index.

Dr. Douglas Guthrie's little book, *Diseases of the Ear, Nose and Throat in Childhood*,[12] accomplishes admirably what it sets out to do. It is intended to meet the demand for a concise, practical account of the diseases of the ear, nose and throat in early life, especially by general practitioners and school medical inspectors. It does not pretend to be an exhaustive treatise on oto-rhino-laryngology. The author emphasizes chiefly those matters which are of most value from the practical point of view, such as the technique of syringing the ear, the treatment of suppurative otitis, the introduction of nasal packing, and the operation of tonsillectomy, and his clear opinions——which do not depart from the orthodox teaching of the day—and descriptions are excellently illustrated by black and white drawings. The book can be recommended to the general practitioner and the school medical officer, and it is well calculated to stimulate an interest in the more intensive study of oto-laryngology.

NOTES ON BOOKS.

We have received a copy of the second edition of Mr. J. A. Crowther's *Manual of Physics*,[13] an excellent text-book for elementary students. The first edition was reviewed in the British Medical Journal of November 8th, 1919, page 600.

Professor Bosellini's book on dermatology in relation to internal medicine[14] is designed for the instruction of students and practitioners of medicine; it begins with full accounts of the anatomy and physiology of the skin. Then follow chapters on the changes produced in it by such things as circulatory disorders, inflammation and disorders of nutrition. The greater part of the volume is devoted to the effects of the organopathies on the skin, that is to say, the cutaneous manifestations in diseases of the sympathetic nervous system, ductless glands, digestive organs, and so forth. Professor Bosellini has a facile pen, and has collected a great deal of general and theoretical information for his volume; one may read many pages without encountering a single serviceable fact, however much the fancy or interest may be stimulated; the subject of treatment does not appear to be considered at all. The book may be recommended to medical readers with philosophic minds.

Professor Centanni's treatise on immunology[15] presents the student and practitioner of medicine with a general and somewhat scrappy account of the subject, developed largely on the lines of Ehrlich's side-chain theory that now suffers from a certain disrepute among pathologists and chemists alike. The author describes immunity as of three varieties: first, antigenic, that produced by vaccines and serums; second, histogenic, that due to the cells and tissues of the body; and third, stomogenic (Centanni, 1919), a variety not readily intelligible but concerned with protein-therapy, and due to substances termed stomosins that are the products of the breaking down of proteins. Professor Centanni has been an active worker in the field of immunology for thirty years, and his book contains a full exposition of the views he holds on many disputed points of theory; it may be recommended to the discriminating reader.

The fourth edition of Dr. Heitzmann's *Urinary Analysis and Diagnosis*[16] is divided into two main parts. The first of these gives an account of the chemical examination of the urine, old-fashioned, somewhat rough and ready. The second part, forming the bulk of the volume, is devoted to the microscopical examination of the urine, and is illustrated by a large number of plates drawn by the author from material coming under his own observation. Dr. Heitzmann holds strong views as to the possibilities of urinary diagnosis, to which others, perhaps, will not fully subscribe. The book is conscientious, but not always convincing.

As its title implies, an unpretentious yet most comprehensive little cookery book has been produced by Miss Mabel Baker under the title of *Cookery Simplified*.[17] In addition to more elaborate recipes, those for everyday necessities, such as the correct way in which to make tea and coffee and to cook eggs and potatoes, are included. Useful hints on cleaning utensils and cooking by gas, etc., are also supplied.

[10] *Kurzes Lehrbuch der chemischen Physiologie.* Von Dr. E. Schmitz. Berlin: S. Karger. 1921. (Roy. 8vo, pp. 551 + xv. M. 78, Geb. M. 104.)

[11] *A Guide to Diseases of the Nose and Throat and their Treatment.* By C. A. Parker, F.R.C.S.Edin., and L. Colledge, M.B., F.R.C.S. London: E. Arnold. 1921. (Demy 8vo, pp. xv + 585; 241 figures. 25s. net.)

[12] *Diseases of the Ear, Nose and Throat in Childhood.* By Douglas Guthrie, M.D., F.R.C.S. The Edinburgh Medical Series. London: A. and C. Black, Ltd. 1921. (Cr. 8vo, pp. viii + 88; 50 figs. 5s. net.)

[13] *A Manual of Physics.* By J. A. Crowther, Sc.D., F.Inst.P. Second edition. Oxford Medical Publications. London: H. Frowde, Hodder and Stoughton. 1921. (Cr. 8vo, pp. 559; 295 figures. 16s. net.)

[14] *La Dermatologia nei suoi rapporti con la Medicina Interna.* By Professor P. L. Bosellini. Milan: Società Editrice Libraria. 1921. (Roy. 8vo, pp. 616. 16 figures.)

[15] *Trattato di Immunologia.* E. Centanni. Milano: Società Editrice Libraria. 1921. (Roy. 8vo, pp. 538. 61 figures.)

[16] *Urinary Analysis and Diagnosis by Microscopical and Chemical Examination.* By L. Heitzmann, M.D., New York. Fourth revised and enlarged edition. London: Baillière, Tindall, and Cox. 1921. (Roy. 8vo, pp. 384; 131 figures. 22s. 6d.)

[17] *Cookery Simplified.* By M. Baker. Bristol: J. W. Arrowsmith, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1921. (Cr. 8vo, pp. 146. 2s. 6d. net.)

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SATURDAY, NOVEMBER 26TH, 1921.

PUBLIC HEALTH AND PRIVATE PRACTICE.

A LEAFLET has been issued by the Willesden Urban District Council concerning the charges for medical services which it decided to institute as from October 1st, 1921. By the payment of a registration fee of 2s. 6d. for each person there will, it states, be available for all mothers, and children under 5 years, resident in Willesden, and for children attending Willesden public elementary schools, out-patient medical and dental care, including specialist consultations, prescriptions, home nursing, and the benefit of the eye, throat, nose and ear, mothers', babies', and other clinics. Additional benefits are also available, including the provision of artificial teeth and surgical instruments at cost price and of spectacles at a fixed price of half a crown. Under the same heading of additional benefits comes in-patient treatment at the Municipal Hospital—the infectious diseases hospital, in fact. Confinement cases at this hospital are charged an inclusive fee of £2; the operative treatment of tonsils and adenoids is carried out for 7s. 6d.; diseases of women are treated for 3s. a day, and diseases of children (up to school-leaving age) for 1s. 6d. a day. In the case of patients whose circumstances are below the council's scale the whole of these charges, except the registration fee, may be remitted.

It is with a somewhat startled interest that the general medical practitioner must contemplate not only this scale of charges, but the whole policy of the council which underlies it, for no one can foretell whither it may lead. The Willesden Division of the British Medical Association is well aware of the significance of the matter; its last meeting, at which this policy was thoroughly considered and important resolutions were adopted, is fully reported in this week's SUPPLEMENT.

The activities of the public health service, curative as well as preventive—medical skill being supported by a staff of nurses and health visitors—are, of course, a benefit to the poorer classes of our population, where such functions can be carried out adequately. To people who can afford to pay for such services, however, the curative help of the public health official seems unnecessary and superfluous, and the burden it adds to the ratepayer is obvious. The sick person, we believe, prefers the care of a private practitioner and a private nurse to that of officials, however competent. In the regulations of the Willesden Council no restrictions as to income are to be found, and it is evident that the whole of its benefits are intended to be open to all of the inhabitants who come within its scope, without restriction. If, then, the "out-patient" care of mothers, with dental treatment and attendance upon confinements and diseases of women, the provision of specialists and nurses, and the care of all children under five years and of those who attend elementary schools—including ophthalmic and dental treatment, as well as the operative treatment of adenoids—is to be provided by the municipality, little remains to be done by the private practitioner in the average type of general medical practice. In other words, the most important work in the ordinary urban practice has gone.

If this work—no light burden—undertaken by a municipality, were to be better done, both from the individual and from the public point of view, by the public health service than by the general practitioner, general practice of this type would be undermined, and perhaps rightly so. But will it be better done? For the answer to that question reference must first be made, in the case of Willesden, to the last annual report (1920) of the medical officer of health of that borough. In regard to the study of preventive medicine, "every member of the medical staff of the authority having more routine work than he or she can reasonably perform, it is impossible to give the necessary attention to subjects of the kind I have mentioned" (p. 14). These subjects include, for example, "the study and application of measures for prevention which should proceed *pari passu* with treatment," and "the need for an intensive study of the physical condition of the child, in relation to school and home." With reference to the treatment of infectious diseases, it is stated on p. 28 that "it has been again impossible to admit to hospital all cases of scarlet fever desiring removal. Hospital removal for scarlet fever had to be curtailed in October, 1920, after which time only the more urgent cases were removed. . . . These were not all removed as soon as notified, but as and when beds were available." Again, on p. 85, we find: "The [municipal] hospital really has never had adequate accommodation since I [the superintendent] entered your service, even during the years it remained an isolation hospital purely. . . . A year ago I pointed out that the nursing staff was insufficient and it was not possible for the required amount of treatment to be carried out without imposing great hardship on your nurses. . . . The sickness rate amongst nurses has been very high." Moreover, "No hospital that I can learn of can show such a record as this, where with only 199 beds, 2,608 patients (be it noted infectious and non-infectious cases) are admitted, and yet with only two resident medical officers. . . . It is not possible for them to get adequate relief."

Yet, with this overwork of both nursing and medical staff, 1,495 non-infectious cases were admitted during the year; of these 470 were maternity cases, of which but 72 are noted as presenting any abnormality (p. 96), while anaesthetics were required in 46 cases only (p. 98); of the 81 gynaecological cases 49 only required operative treatment (p. 98). On p. 114 it is stated that "During the first eight weeks of this year [1921] more than double the number [of maternity cases] that can be accommodated have been booked for confinement at the hospital."

Turning to the consideration of the care of school children, here again the initial function of the public health service is obscured by the additional activities which are undertaken. On p. 9 of the report it is stated that "The work of medical inspection of children in the schools has been in abeyance in Willesden since December 3rd, 1915." The reason for this is that since that date "The authority has directed attention to ailing children and the provision of remedial measures for the conditions found." The significance of routine inspection lies, of course, in the provision thus afforded for the detection of every defect at the earliest possible date; omission of this inspection allows the development of conditions which might be more advantageously checked at the

very outset. Of the 16,417 medical defects which came under notice during 1920 treatment was secured for 97.1 per cent., of the total treated 88.7 per cent. were dealt with through the clinics, the municipal hospital, or home visitation, while 11.3 per cent. were dealt with by private practitioners, voluntary hospitals or other charitable institutions, or the Poor Law (p. 9).

It is obvious, therefore, from this report that, at any rate under existing conditions in Willesden, inadequate provision is available for the work with which the public health service is attempting to cope. Yet for this work the private practitioners of Willesden are well qualified, and they are eager to undertake it. An already overcrowded and overworked infectious diseases hospital is being burdened with a large number of normal maternity cases, in addition to other non-infectious cases; the school medical service is grappling, under difficulties, with the treatment of defects, the development of which might conceivably have been prevented by routine inspection; while the scientific study of preventive measures is necessarily shelved.

It is stated on p. 13 of the report that the municipal hospital and clinics established at Willesden are "much on the lines indicated in the Dawson report." One of the essential features, however, of the organization recommended in that report was the relations to be set up between private practitioners and the public health service. To the Willesden municipal hospital the private practitioner has no access. A lesson emphasized by the medical services in the war must evidently be learned afresh—that an administrative branch, a research branch, and a clinical branch of preventive medicine are all necessary, but require different qualities and different experience. All are inter-dependent, and all contribute to the strength of each; but while officials may best carry out administrative and, to a large extent, research duties, the clinical side is best performed not by the development of a class of practitioners who deal each with one small specialty, but by the doctor who brings the widest possible experience of disease in general to bear on the consideration of individual conditions—that is, by the general practitioner. Especially is this so in the treatment of women and children, and, in the long run, the national well-being reaps the benefit.

OVARIAN TRANSPLANTATION OR GRAFTING.

Professor Tuffier has had more than fourteen years' experience of ovarian grafting, and during that time he has made 230 transpositions of one or of both ovaries.[1] His purpose was twofold: (1) To maintain or to re-establish the normal state and menstruation after the removal of the ovaries and the tubes, the uterus having been left, and (2) to lessen the troubles following upon removal of the uterus and the ovaries. The great majority (214) of the transplanted organs were in a fresh condition, but a few (16) had been kept in ice; the latter were quickly absorbed. In 60 cases the grafting was done after total or subtotal hysterectomy, in 156 it was carried out when the whole uterus was preserved, and in 4 the lower two-thirds was retained; in the remaining 10 cases the kind of intervention was not noted. There was no mortality which could be ascribed to the grafting; four women died (1.8 per cent.), but the cause was the original condition (abdominal infection) which had necessitated the operation. In a single case the transplanted ovary had to be removed later on account of the trouble it set up. When the graft was without effect it disappeared, being absorbed in from six to twenty-four months.

In a few cases (20) Dr. Tuffier made a true graft, that is to say he transplanted one or both ovaries from one woman to another. This he terms homografting. In some of these cases the uterus had been retained, but in not one of them was menstruation re-established; further, in those in which both uterus and adnexa had been removed no improvement in the symptoms caused by the premature menopause followed. Tuffier gave up true grafting, therefore, as ineffective, and continued to practise only transplantation of organs in the same patient. He does not propose an explanation of the failure of grafting from one woman to another, but the experiments of S. Voronoff[2] suggest a cause. Voronoff found that heterogeneous grafting could be done if what he termed the biological conditions were present. In other words, it succeeded when the animals used were not only of the same species but were closely related, and these conditions he found among the ewes of a flock of sheep in which fertilization had been effected by one ram or its male offspring.

In the rest of Tuffier's cases (203) the ovarian transposition took place within the individual ("autografting"); in a very few cases (6) both kinds (homo- and auto-grafting) were employed. In some 71 cases the place chosen for the transplanted ovary was the subcutaneous tissue; but in most of the rest it was the subperitoneal cellular tissue. In 120 cases one ovary was used, in 18 both were transplanted, and in 65 there was no record. The gland was normal or sclerotic, sometimes it contained microscopic cysts, and it had generally been in contact with an infected focus; for the condition for which the organs had been removed was most commonly salpingitis in a state of active or passive suppuration. Most of the patients had been ill for six months or a year. Age was an important factor in deciding whether success or failure followed; thus the best result (re-establishment of menstruation for twelve years) was obtained in a woman upon whom Tuffier had operated at the age of 18 years. The grafting was not as a rule followed by pain or other symptom for four or five months; thereafter, if it were successful, the gland began to show the phenomena of periodic congestion and tenderness, then these became more marked, and, later, menstruation appeared (the uterus having been preserved, of course, either wholly or in its lower two-thirds). In 56 (76.7 per cent.) out of 73 patients in whom these conditions were present menstruation reappeared, usually in from five to seven months after the grafting. If the menses appeared two months after the grafting Tuffier regarded the phenomenon as due to the leaving behind of a small piece of ovarian tissue at the time of the operation. During the time intervening between the transplantation and the reappearance of menstruation the women suffered from the usual symptoms of an induced menopause, and these symptoms disappeared with the return of the periods. The menstruation could therefore be regarded as truly physiological and as due to the grafting. Indeed, in one case in which Tuffier had to remove the graft later, the re-established menses again stopped. The menstruation thus re-established was rarely as regular (in quantity, duration, and rhythm) as in normal circumstances, and it continued to recur for a varying period (from six months to two years in 45 out of the 56 cases).

Tuffier has founded a theory of the causation of menstruation on these clinical results; but a more

[1] *Bull. de l'Académie de Médecine* 1921, 3 S., lxxxv, 99 105.

[2] *Trans. Internat. Congr. Med.*, 1913, London, Sect. VII, Surgery, Pt. II, 551.

important matter, perhaps, is their bearing upon the state of patients who have had their tubes and ovaries removed. In such patients transplantation of the excised ovaries to the cellular tissue under the peritoneum would seem to be both a safe and a salutary procedure. Menstruation may not be as normal as it was before, and it may not last so many years as usual, but the transplantation at least would seem to prevent the sudden supervention of a premature menopause, with its attendant troubles. Bazy[1] is not impressed greatly by the results Tuffier has obtained, neither does he agree with him fully as to the necessity for ovarian grafting. He thinks the evils associated with the menopause brought about by operative means have been exaggerated—for instance, the obesity often noted is not always due to the menopause; it might occur apart from it at this time of life, and does so occur in many men; further, the ovarian or other organic extract can always be given in cases troubled with distinct symptoms. He would never transplant ovaries from one woman to another. It may be interesting to note the morbid states for which the original operation was performed in the 56 cases in which success attended the ovarian transplantation: 46 were instances of non-suppurative salpingitis, 2 were cases of salpingitis associated with ectopic pregnancy, 3 were suppurative salpingitis, 1 was salpingitis with appendicitis, 2 were cystic salpingitis, 1 was an inflamed cyst, and 1 was a fibroid of the uterus. Tuffier's communication is a sequel to one which he read in 1914 at London and published in 1915.[2]

IMPERIAL CANCER RESEARCH FUND.

The seventh Scientific Report of the Imperial Cancer Research Fund has been issued this week by the Executive Committee.[3] It contains four reprints and three unpublished papers dealing with two important aspects of cancer research, namely, the investigation of the peculiarities of cancer cells, and the study of the origin of cancer. The Director, Dr. J. A. Murray, in a prefatory note, remarks that increased knowledge in both of these directions is essential to progress, and it might be expected that the study of the origin of cancer should precede the study of the fully developed disease. Experimental investigation of cancer has, however, followed the reverse order: attention has been diverted for the present from the phenomena of tumour and tissue immunity to the fundamental physiological processes of normal and cancerous cells. The relation of water content to rate of growth and the phenomena of cell respiration are dealt with in papers by Drs. Cramer, Drew, Russell, Gye, and Woglom. These workers have purposely confined themselves to an objective presentation of their actual results and the conclusions which necessarily follow from them. The same restraint in speculation has been exercised by Drs. Murray and Woglom, in presenting the preliminary results of their experiments on the production of squamous cell carcinoma in mice by the application of coal tar, of which an account was given by Dr. Murray to the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association at Newcastle.[4] This paper is followed by one on lymphatic dissemination of cancer by Dr. Murray, and another by Dr. Da Fano on the Golgi apparatus of tumour cells. We hope to deal further with the report in a subsequent issue.

[1] *Bull. de l'Academie de Medecine*, 1921, 3 S., lxxxvi. 121.
[2] Transplantation of Ovaries, *Surg., Gyn., and Obstet.*, 1915, xx. 50.
[3] London: Taylor and Francis. 1921. price 15s.
[4] British Medical Journal, November 12th, 1921, p. 735.

POST-GRADUATE WORK IN THE PROVINCES.

Some years ago we drew attention to the post-graduate courses in applied pathology which Bristol University had organized in many towns in the West of England. During the war post-graduate work had to be suspended, but it has now been resumed. The success which attended the 1921 autumn courses in fractures, heart disease and vaccine therapy in Trowbridge, Swindon, and Dorchester has emboldened the Post-Graduate Committee of the University to embark on a wider scheme. It now proposes to extend the project to areas containing larger hospitals. In plain words, the University says to these centres: "The practitioners within twenty miles radius of your hospital are hungering for opportunities to get into touch with newer developments. They cannot leave their work to go to London or Paris, but they can and will come to your hospital to see your clinical material, and to hear lucid and practical exposition of medical scientific advances for an hour each week. It is a duty that you should make such provision. The University will place at your disposal its experience and organization for the conduct of such courses, or it will co-operate with you and issue the necessary details under its name. Here is a list of lectures which you may select from for such a course. New work on the heart, the alimentary system, renal conditions, anaesthesia, pathology, ophthalmology, and so forth—some thirty in all." The syllabus we have received contains details for the arrangement of courses, a specimen card of announcements, and the synopses of the lectures available. The project need not be confined to the West of England. It is applicable to all areas when there are hospitals of 10 to 100 beds. Of course it is not to be expected that Bristol could send its lecturers all over the country, but its proposals might with advantage be carried out elsewhere. We understand that the Director of Post-Graduate Studies, Bristol University, will be glad to send details of the scheme to any applicant.

VITAMINS AND HEALTH.

The Lady Priestley Memorial Lecture was delivered on November 16th, under the auspices of the National Health Society, by Professor Edward Mellanby, whose subject was "Vitamins and health." Much of what he said is familiar knowledge to our readers, but a concise summary of the position may be welcomed. Sir James Crichton-Browne presided, and his story of the lady who went into the grocer's shop and asked for a pound of mixed vitamins greatly pleased the audience. Professor Mellanby said that his point of view was that of a laboratory worker, and his purpose was to present evidence that certain diseases were due to apparently small dietetic changes rather than to what were vaguely called unhygienic conditions. Much of the ill health of the country was due to wrong diet, and the subject of dietetics was only now coming into its own. The discovery of vitamins had forced physiologists and medical men to recognize that the quality of the food eaten was at least as important as the quantity. A fat, lethargic, rachitic baby was far worse nourished than a thin, active, healthy one. The chemical composition of the three vitamins—fat-soluble "A," water-soluble "B," and antiscorbutic—was so far unknown. The vitamins could only be studied in their results, particularly in deficient dieting experiments on animals. The deficiency diseases in whose causation the absence of vitamins played an important part included beri-beri, scurvy, and rickets, also such conditions as defective formation and bad arrangement of teeth and a form of night blindness. A diet made up only of lean meat, white fish, bread, rice, oatmeal, vegetable margarine, tea, sugar, and jam was deficient in two vitamins, and might be expected to produce poor health, diminished resistance to disease, and, in the case of young children, rickets and bad teeth. It was specially important that

the diet of children and adolescents should contain an abundance of fat-soluble and antiscorbutic vitamins by including in its composition plenty of milk, eggs, suet puddings, fat fish such as herrings and mackerel, fruit, especially oranges and lemons, and green and other vegetables. The lecturer illustrated by means of lantern slides the investigations of Mrs. Mellanby and himself upon the importance of vitamins in the production of good bony and dental structure. In puppies he claimed to have been able to produce experimentally good or bad teeth by small alterations in diet. Certain diets containing cod-liver oil produced perfect teeth in hard well-grown jaws, and when linseed oil was substituted the teeth became irregular and the jaws soft and small. Much was said a few years ago about the necessity for cleaning the teeth, giving crusts to children, withholding sweets, and so on, but Professor Mellanby maintained that it was necessary to find out, not only what happened in the mouth itself, but what happened after the foods were absorbed. Probably the most important factor in the solution of the dental problem was the discovery of the cause of badly formed teeth. Even the housing problem took second importance to dietetics in regard to infant mortality, as illustrated in the bad housing conditions in the Hebrides and the relative robustness of the children. Given milk, egg, and orange in the diet of a child, it did not matter much, from the strictly dietetic point of view, what else was included. Professor H. R. Kenwood, in moving a vote of thanks to the lecturer, pointed out how once more science had come in and endorsed long practice and experience. Before anything was known of vitamins it was understood that scurvy was produced as the result of insufficient fresh vegetables. The vote of thanks was seconded by Sir Humphry Rolleston, who remarked upon the valuable information which became public property through the medium of these memorial lectures.

HAEMOLYSIS IN PERNICIOUS ANAEMIA.

Many of the older writers inclined to the view that pernicious anaemia depended on a faulty production of red blood corpuscles; but at the present time this hypothesis has, except for aplastic anaemia, been abandoned in favour of the conception of active blood destruction due to a haemolytic toxin. In the course of a research on transfused blood, conducted in the Department of Experimental Bacteriology of the Mayo Foundation, Rochester, Minnesota, Winifred Ashby[1] found that there is a periodic blood-destroying activity both in men and women, and that in the latter it coincides with menstruation. The removal of transfused blood probably takes place as part of a period of blood-destroying and blood-producing activity—a metabolic cycle, evidence of which is shown by menstruation in women. Patients with blood belonging to Groups I, II, or III, and suffering from conditions other than blood diseases, were transfused with blood of Group IV, and then, by diluting the blood, which leads to agglutination of the native red corpuscles but leaves the red cells of Group IV origin free, the persistence of this latter can be estimated, and the length of life of transfused blood corpuscles determined. The question whether or not there is a haemolytic toxin at work in pernicious anaemia was investigated by comparing the curves of blood elimination of Group IV red blood corpuscles in thirty-three patients (not of Group IV blood) suffering from this disease, and transfused with Group IV blood, with the curves from patients without any blood disease and similarly transfused. These observations showed that, although in pernicious anaemia blood destruction is in some cases and at certain times considerable, it is on the whole quiescent; transfused Group IV red corpuscles are, indeed, usually not eliminated so soon as they are in persons without blood disease similarly transfused. The fact that Group IV red corpuscles are not eliminated rules out the activity of any corpuscular poison during these periods; for if it be assumed that there is a poison, which, however, does not attack Group IV red blood cells, then the incidence of pernicious anaemia should be low in patients with Group IV blood; but among 189 cases of pernicious anaemia 52 per cent. had Group IV blood. The evidence brought forward is therefore against the existence of a haemolytic toxin in pernicious anaemia. The periods of active haemolysis, exceptionally seen in this disease during a course of transfusions, are probably due to activity of the blood-destroying organs of the body rather than to the intrinsic weakness of the corpuscles. The data on which the haemolytic nature of pernicious anaemia is based can be interpreted in another way: the increased activity of the bone marrow may be more apparent than real, for if there were present a factor retarding the speed of maturation and division while the physiological stimulation to erythrocyte production induced by anaemia increased the number of dividing cells, such a picture, though with a decrease in the total output of cells, might result. The increased haemosiderin in the tissues is only evidence that the iron is not in circulation, as indeed is seen in haemochromatosis, in which there is no evidence of a haemolysin. Increased output of bile pigment cannot be accepted as evidence of increased haemolysis, because Whipple and Hooper have shown that bile pigment is derived from other sources besides haemoglobin. It is therefore doubtful whether haemolysis is such an important etiological factor in pernicious anaemia as it is at present usually assumed to be.

[1] Winifred Ashby, *Journ. Exper. Med.*, Baltimore, 1921, xxxv, 127 165.

CHOLERA IN THE EARLY THIRTIES.

The introduction of cholera into England in 1831 resulted in the establishment of a Central Board of Health and of local boards in those towns in which the disease was ultimately prevalent. The cause of the disease was not then known, although its infectious nature was fully realized, and it was classed among the "filth" diseases. The preventive measures which were applied were consequently carried out on lines which, though empirical, were in accord with our present day knowledge. It is greatly to the credit of the medical profession of those days that they were able to grapple with the sudden outbreak of a disease concerning which most of them had had no previous experience, and in the absence of any organized preventive machinery. An extremely interesting account of the epidemic as it affected Sheffield and the immediate neighbourhood in 1832 has been compiled by Dr. John Stokes, one of the physicians to the Sheffield Hospital for Sick Children. With much painstaking research he has drawn up from official sources and contemporary literature an instructive and fascinating chronicle. The Privy Council had already formed a Central Board of Health in 1831, and in February, 1832, there was passed an Act of Parliament enabling the Council to make orders, rules, and regulations for the prevention of cholera, and for the relief of persons suffering from, or likely to be affected by, the disease. Local boards were constituted under the friendly supervision of the central board, and the orders and regulations of the latter body were administered by the local boards. One such order was that every medical practitioner in an infected area should send in a daily report of the condition of all his cholera cases or those affected with any other disease in any way resembling cholera; a penalty might be imposed for neglecting to send this report. The local boards had very extensive powers for the purchase and provision of medicine and for providing medical assistance, medical inspectors, and nurses. They could carry out certain sanitary improvements, such as the removal of nuisances and cleansing of drains, and could provide burial grounds and pay funeral expenses. The cost of these activities was paid for out of parish f[illegible]

The population of Sheffield in 1832 was about 90,000, and although it had the natural advantage of being built on the slopes of hills, the inhabitants were living under very insanitary conditions. There were a few rubble sewers, leaky and inefficient, the water supply was scanty and obtained from stand-pipes, and the houses were for the most part crowded together and in many instances back-to-back. The local action taken at the outset of the epidemic is worth noting. A notice was issued respectfully calling upon the inhabitants to cleanse their houses, yards, premises, etc. An address was drawn up by a committee of doctors containing directions regarding ventilation, cleanliness, infection, and habits; under the last heading the use of tobacco was condemned. The local press gave prominence to the following admirable advice: "Cholera attacks chiefly the dirty, the idle, the drunken, and the disorderly. Those, therefore, who wish to escape the disease should be sober, industrious, and steady, and keep themselves and their houses clean. If, as soon as anyone begins with the cholera, he can get a doctor to attend him, he will be likely to recover; but if he cannot get a doctor until he has been ill several hours, he will be almost sure to die."

AN INCIDENT IN THE HISTORY OF INOCULATION AGAINST SMALL-POX.

In a relatively unknown little book on the Shetland Islands,[1] written by Dr. Robert Cowie and published in 1871, a method of preventive inoculation for small-pox is described that is of considerable interest from the historical point of view. Variola appears to have wrought much havoc among the Shetland islanders during the eighteenth century. In 1720 the disease was so fatal as to be termed the *mortal pox*. The disease was very fatal in 1760 also. Inoculation was introduced, but owing to the high fee (2 or 3 guineas) of the operator only ten or twelve persons availed themselves of it. The malady reappeared in 1769, and recourse was had more generally to inoculation; practised according to the usual method it appears to have been followed by the usual results, namely, diminution of the mortality, but spread of the disease. The author continues: "The mortality continuing very great, a common, uneducated, but very able peasant, named John Williamson, invented an improved method of inoculation which, had it not been superseded by the more valuable discovery of vaccination (1796), I venture to say would have proved one of the most valuable discoveries in modern medicine. Williamson's method is thus described in 1792 by his contemporary, the Rev. Mr. Dishington: He is careful in providing the best matter, and keeps it a long time before he puts it to use—sometimes seven or eight years; and in order to lessen its virulence, he first dries it in peat smoke and then puts it underground covered with camphor. Though many physicians recommend fresh matter, this self-taught practitioner finds from experience that it always proves milder to the patient when it has lost a considerable degree of its strength. He uses no lancet in performing the operation, but by a small knife made with his own hands he gently raises a very little of the outer skin of the arm so that no blood flows, then puts in a very small quantity of matter, which he immediately covers with the skin that had been thus raised. The only plaster that he uses for healing the wound is a bit of cabbage leaf. It is particularly remarkable that there is not a single instance in his practice where the infection has not taken place and made its appearance at the usual time. He administers no medicine during the course of the disease, nor does he use any previous preparation. Mr. Dishington also informs us that several thousands have been inoculated by Williamson, and he has not lost a single patient." The principles here employed of killing off contaminating bacteria by peat smoke and camphor, and of attenuating the virus through age, are of considerable historic interest. Dr. Cowie, writing almost a century later, suggests that possibly the same principle could be applied to the viruses of scarlet fever and measles for prophylactic purposes; but, so far as we are aware, bacteriology even to-day has not advanced thus far, though possibly the experiments by Kusama as to typhus fever, and Takahashi as to scarlet fever, noted in our issue of August 13th, p. 249, may indicate a move in this direction.

[1] *Shetland and its Inhabitants*. By R. Cowie, M.A., M.D. Aberdeen: Lewis Smith; and Edinburgh: John Menzies and Co.

METEOROLOGICAL CONDITIONS AND PLANT DISEASE.

An interesting discussion on plant pathology in relation to meteorological conditions took place at the meeting of the Association of Economic Biologists on November 18th. Dr. E. J. Butler, who introduced the subject, emphasized what is still a new conception—that the relation not only of the parasite but also of the host to the prevailing temperature and humidity has to be considered. It is not sufficient to study the parasite; the host-parasite complex must be studied, too. In the spread of mildew, for example, which is said to be favoured in England by a dry year, it is not—or not merely—that the environment assists the growth of the fungus, but that it lessens the turgescence of the host. In what is known as "sore skin" in the cotton plant, parasitism is complete at a certain low soil temperature; a few degrees higher the toxin formation is still rapid and the plant growth feeble, but higher still the vital powers of the cotton plant come into play, and all that the parasite can do is to produce a scar, and at a degree or two above this point the parasite is powerless to work ill. Rust of wheat depends upon comparatively slight temperature variations, and so does potato blight, which requires a cool summer. A worm which attacks rice in India can only do so at a certain saturation of the atmosphere. Climate has the most precise and predictable effect upon foot-rot in maize and wheat, although the effects are different, and in some cases contrary, in the two cereals. Again, in the flower belts of Holland, where much is being done to combat disease by temperature control, what is right for the hyacinth is not right for the narcissus. It is significant that the modern worker in plant biology is growing sceptical of the results of field observation unless controlled and elucidated by the more exact methods of the laboratory.

SOUTH AFRICAN MEDICAL CONGRESS.

The seventeenth South African Medical Congress was held at Capetown from October 10th to 15th, and was a most successful function. The meetings were held in the buildings of the University of Capetown, and the attendance was very representative, visitors being present from all parts of the Union of South Africa and even from Rhodesia. The president of the congress was Dr. Hugh Smith, a well known physician and lecturer on dermatology in the University of Capetown. He has been an active member of the British Medical Association for many years and has served on its South African Committee. Dr. C. M. Murray was vice-president, Dr. Lindsay Sandes secretary, and Dr. du Toit treasurer. The congress was opened by Sir Carruthers Beattie, Principal of the University of Capetown.

Sir E. Marriott Cooke, K.B.E., M.B., lately a Commissioner of the Board of Control, has been appointed an unpaid Commissioner of the Board of Control for Lunacy and Mental Deficiency.

The first meeting of the Dental Board of the United Kingdom will begin at 2 p.m. on Wednesday, December 7th, at 44, Hallam Street, London, W.1, with the Right Hon. Francis Dyke Acland, M.P., in the chair.

An occasional lecture will be delivered at the Royal Society of Medicine, 1, Wimpole Street, W., on Monday, November 28th, at 5 p.m., by Dr. Guelpa of Paris on "The treatment of diabetes and gout by disintoxication." The lecture will be followed by a discussion and visitors will be welcomed.

FINANCIAL POSITION OF THE VOLUNTARY HOSPITALS.

Sir Napier Burnett, director of the Hospital Services Department of the Joint Council of the Order of St. John and the British Red Cross Society, has published in pamphlet form a report on the financial position of the voluntary hospitals of England and Wales for the year 1920. Although the hospitals in the London area, which are under the supervision of King Edward's Hospital Fund, are not included in the survey, the figures presented do help considerably to locate the hospital problem. In particular the analysis of the sources from which hospital income is derived is useful as underlining the directions in which hospital finance might be better co-ordinated and, in some areas, hitherto unconsidered sources of supply explored.

The number of hospitals reviewed is 572, out of a possible 647, and these are divided into three groups—namely, the large hospitals with 100 or more beds, the intermediate hospitals with less than 100 but not under 30, and the small or cottage hospitals with less than 30. (We refer to these groups later as A, B, and C respectively.) The first group comprises 107 hospitals and 20,184 beds; the second, 164 hospitals and 8,437 beds; and the third, 301 hospitals and 4,271 beds. The smaller hospitals evidently are not always fully occupied; in this group the proportion of available beds occupied during 1920 was 69.43 per cent., as against 81.92 per cent. in the first group. This suggests that more might be done to link up the smaller hospitals having empty beds with the larger hospitals having long waiting lists.

Hospital Income and Expenditure.

The student of hospital finance has to beware of the fallacy underlying gross incomes. How great a disparity there may be between these and ordinary incomes is shown in the following table, giving the position in 1920:

Group.	Total Income.	Ordinary Income.	Total Expenditure.	Ordinary Expenditure.	Surplus on Total Income.	Surplus or Deficit on Ordinary Income.
	£	£	£	£	£	£
A	4,060,073	2,510,968	3,408,452	2,959,029	651,621	−448,061
B	1,336,558	967,826	1,125,998	1,005,608	210,560	− 37,782
C	730,245	494,149	541,945	471,262	175,210	+ 22,887

Thus a surplus of more than a million on the total figures becomes a net deficit of £462,956 on the ordinary. The reason is that the total income includes large amounts earmarked for special purposes, which cannot be spent on maintenance, and also an allocation of £309,000 from the National Relief Fund to the first and second groups of hospitals. The deficit is rather less than in 1919, when it was £498,088 for practically the same aggregate of hospitals. Were the 112 voluntary hospitals of London included, this deficit would be doubled. Of the 107 large hospitals in this survey, only 23 had a surplus on ordinary income. The ordinary income per bed increased from £92 in 1919 to £121 in 1920, but the ordinary expenditure per bed all but kept pace. Sir Napier Burnett believes that the high-water mark of hospital expenditure was reached in 1920, and that the present year will show a reduction.

Sources of Hospital Income.

A significant feature of the analysis of sources of income is the widely varying part which workmen's contributions—that is, money from employees by voluntary weekly levies and the proceeds of the various local Saturday Funds—play in hospital income. In one hospital as much as £114 per bed was forthcoming from this source; in others, in not less populous districts, only £2 per bed. In the case of the thirteen teaching hospitals, workmen's contributions range from less than 2 per cent. of the total income up to nearly 40 per cent. Patients' payments in these thirteen hospitals range from nothing up to 18 per cent. of the income. The contributions of patients are proportionately larger in the smaller hospitals, where a weekly charge for maintenance is commonly made. On the other hand, contributions from public services are smallest in those hospitals. The proportions of ordinary income derived from the various sources are best shown in the form of a percentage table:

Group.	Interest on Investments.	Workmen's Contributions.	Payments by Patients.	Payments by Public Services.	Subscriptions.	Donations.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
A	14.07	22.43	5.95	17.37	14.25	14.01
B	14.81	21.75	12.92	12.09	13.00	12.76
C	13.13	11.48	22.19	3.46	16.73	14.55

The sum of £38,939 was received by the hospitals for services rendered to patients under the National Health Insurance Act. The total income from the public services was somewhat smaller in 1920 than in 1919 owing to the withdrawal of military patients. The total of patients' contributions, on the other hand, went up from £232,929 to £384,253, and organized workmen's contributions showed an even more impressive increase, from £518,043 to £830,533.

Hospitals Associated with Medical Schools.

Included in the group of large hospitals are thirteen with medical schools. These had 4,388 available beds last year, and treated 68,966 in-patients and 457,635 out-patients. Their deficit on ordinary income was out of all proportion to that of the others. For the whole group of 107 large hospitals the deficit was £448,061, more than half of which (£242,359) was accounted for by the deficit on these thirteen teaching hospitals. The explanation given is that these hospitals, staffed by men of special eminence, and possessing special departments with expensive apparatus, attract the more serious types of disease: also that research as well as clinical work is carried out in them. Considerable expenditure is entailed by the special facilities necessary for students. One hospital estimates that the annual cost per occupied bed is from £20 to £30 greater in the case of a hospital with a medical school attached. Of the eleven hospitals replying on this subject nine reported that they received no income towards this special expenditure from any Government authority or local medical school, and eight, that students' hospital fees formed no part of the ordinary hospital income. Sir Napier Burnett points out that in Scotland there are five hospitals associated with medical schools where the fees received by the hospitals from the students amounted to £10,795 in 1920, and that one of these has since increased the students' fees by 50 per cent. Sir Arthur Stanley, in a preface to the pamphlet, suggests that financial assistance might be obtained from the Government on the ground of the training work which is done in these institutions.

The report as a whole goes to show that there is a very generous measure of confidence on the part of the public in the voluntary system, but that there is great lack of uniformity in different parts of the country, especially with regard to the organized collection of workmen's contributions and patients' payments.

At the thirtieth French Congress of Surgery, held at Strasbourg in October, the presentation was made to Dr. Jules Boeckel, president of the congress, of a portrait medallion, in recognition of his eminence as a surgeon and of his having edited for forty years the *Gazette médicale de Strasbourg*, published in that city in the French language.

Cornell University Medical College is opening a clinic for paying patients of moderate means, which is to be held every afternoon from 1.30 to 4 p.m., and on two evenings each week. The fee will be 1 dollar for each visit for examination and treatment, but the diagnosis of cases requiring special examination and study, with group consultation and a written diagnosis, will cost 10 dollars. The physicians attached to the clinic are to receive salaries.

England and Wales.

London Hospitals' Expenditure in 1920.

King Edward's Hospital Fund for London has issued its eighteenth annual statistical report[1] on the ordinary expenditure of the London hospitals, numbering 112, which apply for grants from the Fund. During the war the admission of naval and military patients, and after the armistice the change back to civilian work, caused great fluctuations in the numbers of occupied beds and in the cost of working, and made comparison with other years difficult. These fluctuations had ceased, however, by the end of 1919, and it is possible, therefore, to make direct comparison between 1920 and 1913. In the hospitals classified in the report, together with St. Bartholomew's and the Cancer Hospital, the number of beds in average daily occupation in 1920 was 10,465, and to them 165,787 in-patients were admitted; the number of out-patients during the year was 1,482,894, and the attendances of out-patients amounted to 6,473,831. The total ordinary expenditure of these hospitals for the year, including maintenance, administration, rent, rates, and taxes, but excluding capital expenditure, interest on borrowed money, and contributions to the maintenance of convalescent homes and country branches, amounted to £2,698,921; the corresponding figure in 1913 was £1,149,106. The voluntary hospitals had thus in 1920 to provide an additional amount of £1,549,815 as compared with 1913, or an increase of nearly 135 per cent. In the effort to meet this rising expenditure the hospitals succeeded in increasing their income by 66 per cent. in comparison with 1913. Their present difficulties are, therefore, due not to any falling off in the support from the public, but to the fact that the increase of income has so far failed to keep pace with the increase in expenditure. The amount collected from the public in subscriptions, donations, etc., increased by about 75 per cent.; payments by public authorities for specific work done, which amounted to only £11,000 in 1913, brought in about £300,000 in 1920; contributions by individual patients towards the cost of their own treatment increased in the same time from £78,000 to about £240,000. The deficiency for the year 1920 was made up by the emergency distribution of £250,000 from the King's Fund, and the grants of £200,000 made by the National Relief Fund in reduction of war deficits, but neither of these grants can recur. The method of meeting the deficiency in 1921, and of re-establishing the finances of the voluntary hospitals on a permanent basis, has been surveyed by Lord Cave's Committee. A Voluntary Hospitals Commission set up in accordance with its recommendation, with the King's Fund as the Central Committee for the London district, and the hospitals themselves, are now actively engaged in working out the details of the scheme.

Liverpool Medical Institution.

The annual dinner of the Liverpool Medical Institution was held at the Adelphi Hotel on November 10th, with Dr. J. E. Gemmell in the chair. The toast of "The City and University of Liverpool" was proposed by Dr. R. W. MacKenna, who said that the link between the university and the city was already a close one, but it ought to be closer. The university owed an incalculable debt to the citizens of Liverpool and the city council, which it did its utmost to repay in the quality of the work done within its walls and the contributions it was daily making to the sum total of human knowledge. The Lord Mayor, in response, said that during his year of office he hoped to get into closer and more intimate association with the philanthropic work in which the medical profession were so conspicuous. Dr. J. G. Adami, Vice-Chancellor of the University, also responded. He emphasized the significance of the work of the Medical Institution to the corporate life of Liverpool, and to the labours of the medical profession in the city. It was too little realized what the Medical Institution meant to the university. The idea of establishing a university college originated at a meeting of the faculty of the medical school in 1877, who decided that they would consult with other bodies in the city to see if it were not possible to start a college for higher learning. The toast of "The Liverpool Medical Institution" was proposed by the Rev. J. S. Macdonald, who remarked that there were two men only whom the public called up in the middle of the night—one was the doctor and the other the plumber. In acknowledging the toast the President claimed that the Medical Institution was of benefit not only to the medical profession but to the public at large. It was now in its eighty-third year, and he was glad to say that with the restoration of normal conditions after the war their younger members were keenly carrying on the traditions of the institution.

The National Council for Combating Venereal Diseases.

At the quarterly meeting of the National Council for Combating Venereal Diseases, on November 14th, Lord Gorell, the president, delivered an address in reply to critics of the Council's policy. Lord Gorell said that the Council in recent months had had to face an organized campaign of misrepresentation. Recently an agitation had developed in favour of reducing the Government grant for venereal clinics, ostensibly on the ground of economy. It seemed obvious to him that it was more economical to treat a person at a clinic than as an in-patient at a hospital. But this agitation, under the popular slogan of economy, was really designed to press forward the policy of self-disinfection, for which the claim was made that it would do away with the need for clinics. Such an assumption needed to be examined. The public was unaware of the facts which pointed to the failure of self-disinfection. The experience of Germany, where for five years there had been an intensive campaign in favour of self-disinfection, with automatic machines for packets in some towns, as well as a broadcast distribution of leaflets, was laid before the North European Regional Conference of Red Cross Societies at Copenhagen this year. There was no evidence of any fall in the incidence. In one Dresden clinic, where in 1919 only 14 boys and 60 girls between the ages of 14 and 18 were treated, 105 boys and 116 girls were treated in 1920, and 33 boys and 61 girls in the first three months of 1921. Again, in Constantinople, where there was definite instruction in these methods, 560 out of 2,000 women examined in a recent month were found to be infected. Sir James Crichton-Browne, lecturing at Bath in August, had said that the practice of immediate self-disinfection was as easy as brushing the teeth; it was an unfortunate illustration, for the toothbrush did not avert the dentist. But the medical correspondent of the *Times* had followed Sir James's remark with the statement that immediate self-disinfection would rid us of venereal disease. It was true, within limits, that if methods of self-disinfection were properly and immediately applied by intelligent people they did disinfect. Sir Archdall Reid had said that the venereal plague could be completely stayed by simple measures, but his figures in almost all cases pertained to army units where individual instruction was possible. Lord Gorell cited the army figures given by the Secretary for War in the House of Commons on November 3rd, and also gave less recent figures for the Australian and American armies to show that self-disinfection did not reduce incidence. The War Department of the United States came definitely to this conclusion in 1917 after several years' experience. But up-to-date figures were also available from a prominent venereal disease clinic in London. During the three months from June to September last, 375 men were treated at this clinic, 190 of whom had taken precautions after exposure to risk. In 101 of these cases—that is to say, more than one-fourth of the people who came to the clinic—the methods used were those advocated by the Society for the Prevention of Venereal Disease. An analysis of these 375 persons showed that 56 of them had been infected when more or less drunk. Lord Gorell added that on the previous day he had received a circular recommending the Society for the Prevention of Venereal Disease, together with a letter from the secretary of that society, stating that its methods were carried out "with the utmost care and reverence for youth." He could not accept that statement when that society was spreading its leaflets broadcast and putting up its posters for every boy and girl to read. The Council had a difficult path to pursue, but its position was based on facts and not on

[1] *King Edward's Hospital Fund for London: Statistical Report on the Ordinary Expenditure of One Hundred and Twelve London Hospitals for the Year 1920.* London: Spottiswoode, Ballantyne, and Co., Ltd. 1921. Price 1s. 6d. net; 1s. 9d. post free.

assumptions, and it would go forward unflinchingly on its most necessary and important task. Lord Gorell also said, with regard to the experiment of ablution centres at Manchester now being carried out by the Ministry of Health, that he would propose to the Council that a committee should be appointed to collect the evidence and report to the next general meeting.

A New Physical Clinic at Sunderland.

On November 19th a specially built pavilion—the Richardson—was formally opened at the Sunderland Royal Infirmary, for that institution, for its offshoot the Children's Hospital, and for the surrounding population of 300,000 which they serve, as a physical clinic, but called the "Orthopaedic Department." The medical officer in charge is a paid officer, having under him a staff of assistants (male and female), trained and certificated in massage, medical electricity and remedial (including gymnastic) exercises. He has also under him the *x*-ray department. They work in collaboration with the physicians and surgeons. The plan of the one-storied brick building is compact, complete, and easily worked, and was designed by the senior honorary surgeon in conjunction with the architects, Messrs. W. and T. Milburn. The building includes a waiting room, cloak rooms, an office, a medical officer's consulting and examination room, dressing cubicles and rest room; a large room for massage, electrical treatments, radiant heat and light beds, remedial and gymnastic exercises, with or without mechanical apparatus, and a spray bath; four bath rooms—one for whirlpool and contrast baths, another for Plombières treatment, a third with long baths (aerated and medicated) and an Aix douche, and the fourth for Vichy and spray baths. There is also a room with paraffin wax baths for the arm and leg, and a heated linen room. It will be seen that the department includes a completely equipped hydropathic installation. The cost of the building and equipment was £9,000.

Birmingham Bequests.

The late Mr. William Morton, of Moseley, Birmingham, has bequeathed £500 each to the Queen's Hospital, Birmingham, the Birmingham General Dispensary, the Birmingham and Midland Hospital for Women, the Birmingham Lying-in Hospital, and the Children's Convalescent Home, West Kirby, Cheshire; £250 each to the Birmingham General Hospital, the Birmingham and Midland Free Hospital for Sick Children, the Birmingham and Midland Eye Hospital, the Birmingham and Midland Ear and Throat Hospital, the Birmingham Lying-in Charity, the Birmingham Royal Orthopaedic and Spinal Hospital, the Birmingham Skin and Urinary Hospital, the Midland Counties Home for Incurables, Leamington, and the Birmingham Medical Mission. He confirmed the gift of £10,000 to the University of Birmingham for general purposes, and directed the payment of any part of that sum that had not been paid already.

Scotland.

Central Midwives Board.

At a meeting of the Central Midwives Board for Scotland, held for the hearing of penal cases, with Dr. J. Haig Ferguson in the chair, a Glasgow midwife was found guilty of negligence and breaches of the rules while in attendance on two patients who died. Another midwife was charged with failure to notify a case of ophthalmia neonatorum, and, while in attendance on a patient who died, she was found guilty of negligence and breaches of the rules. In each case the Board found the charges proved, instructed the secretary to remove the name from the Roll of Midwives, and issued an order that she be prohibited from attending women in childbirth in any other capacity.

At the recent examination of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, 116 candidates appeared. Of this number 102 were successful and fourteen were rejected.

Defective Children.

The committee of the Council on Education in Scotland has amended the terms of certain articles of the regulations governing schools for the education of the blind, deaf-mute, mentally defective, or epileptic children. The most important amendment is to Article 2, which now reads as follows:

Such institutions, schools, or classes must be specially reserved for children suffering from the same infirmity, and must be recognized by the Department for the purpose; but in the case of institutions for deaf-mute children the Department may sanction the admission of a limited number of hearing children on its being shown to their satisfaction that the admission of such children is beneficial to the education and general welfare of the deaf-mute children, and the expenses incurred on account of the number of hearing children so admitted shall reckon as part of the expenditure of the institution for the purpose of the grant under Article II of these regulations.

The training provided, while continuing instruction in general subjects, must be adapted to prepare the pupil for a trade or other means of livelihood. Except with the special approval of the Education Department not more than twenty pupils are to be enrolled in a class under one teacher.

Presentation to Dr. Henry Hay.

On the occasion of his resignation of the post of medical officer to H.M. prison, Edinburgh, after nearly thirty-six years' service, Dr. Henry Hay was presented by the staffs of the new and old prisons with a silver salver, as a token of their esteem. Dr. Hay, in returning thanks, said he valued very highly the expression of goodwill from the staffs. During his long period of service he had seen many changes, mostly for the better. He had known seven Commissioners, four Governors, over twelve chaplains, six head warders, and four matrons. There had been a great improvement in prison administration during that time, which had been responded to by the condition and behaviour of the prisoners. There was what he might call a good atmosphere in the prison, for which they were indebted to the staffs.

Glasgow Royal Infirmary.

The managers of the Glasgow Royal Infirmary have appointed John F. Fergus, M.A., M.D., F.R.F.P.S.G., to be an assistant physician, and Mr. James Taylor, F.R.C.S.Ed., an assistant surgeon to the institution.

Ireland.

Medical Certification for Sickness Benefits.

In connexion with the letter reproduced in this column of the Journal of November 12th, addressed to the Irish Medical Secretary, a deputation from the Irish Medical Committee, consisting of Dr. E. Magennis, Dr. R. J. Rowlette, Dr. T. Hennessy (Medical Secretary), and Mr. C. H. Gick (Secretary), waited recently on the Irish Insurance Commission, who had asked for an interview. Sir Joseph Glynn, chairman of the Irish Insurance Commission, explained that they had been instructed by His Majesty's Government, in common with other public departments, to take steps with a view to securing a reduction in the cost of expenditure on public services which are borne out of Exchequer funds.

The deputation, in their reply, dealt with the history of the certification grant in Ireland. They pointed out that, during the passage of the Insurance Act, to meet to some extent the demands of the medical profession in Great Britain the Government made a State or Imperial grant of 2s. 6d. per insured person over and above the ordinary State grant of two-ninths of the sickness benefit. Towards this grant Ireland had by way of Imperial taxation to contribute its full share, which, however, entitled it to an equivalent grant—that is, 2s. 6d. per insured person—which approximately amounted to the total of £94,693. When questioned in Parliament the then Chancellor of the Exchequer (Mr. Lloyd George) stated that the equivalent grant coming to Ireland could be used to meet the cost of medical certification for sickness benefits, for which purpose there was required a special fund owing to the deletion of medical benefits from the Insurance Act in its application to Ireland. The Treasury agreed to allow the Irish Insurance Commission to prepare a scheme for medical certification which could be financed on the limit of 2s. 6d. per insured person. The scheme, however, prepared by the Insurance Commission only made provision that a little more than half the available grant of £94,693

would be spent on medical certification. The profession contended, through their representatives, that the entire amount of the grant, according to the statement of the Chancellor of the Exchequer, was and should be made available for medical certification and should go to the medical attendants of the insured, who were the proper persons in the first instance to issue medical certificates for sickness benefits. The Insurance Commission, apparently as the result of pressure from some quarter, however, refused to spend more than £50,000 of the grant on medical certification. The profession declined to accept that sum, with the result that there arose a deadlock, to meet which the Irish Insurance Commission appointed a certain number of part-time certifiers who examined and issued certificates for insured persons without the co-operation or consent of their medical attendants. Medical practitioners who accepted service under the scheme were severely ostracized by their colleagues. The result was that the certification scheme broke down, and the Insurance Commission resumed negotiations with the Irish profession in the autumn of 1915, and an arrangement for certification, acceptable to the profession, came into force on January 1st, 1916. The bigger portion of the grant under the new scheme was to be paid for certification for sickness benefits to the medical attendants of the insured, and the residue was to be paid to the whole-time medical referees. The Treasury agreed to this scheme, but at a later stage refused to appoint the whole-time medical referees, on the ground that every possible doctor should be made available for the war medical services. When the war was over the Treasury found, on the grounds of economy, a further excuse for not appointing the whole-time medical referees. The Treasury never kept its side of the bargain, but it managed, whilst making the Irish taxpayers pay their full amount towards the administration of the Insurance Act in Great Britain, to get every year about half the original Irish equivalent grant returned unexpended to the Exchequer.

Arising out of the increased remuneration (40 per cent.) awarded to the panel doctors in Great Britain, the Irish Medical Committee applied to the Irish Insurance Commission for a substantial increase in the fees for medical certification. That application brought forth an offer of a 25 per cent. increase, which was declined by the Irish profession, with the result that they were ultimately offered 40 per cent., which was accepted and came into force as from January 1st, 1920. Notwithstanding the 40 per cent. increase in the fees for medical certification, there still found its way back to the Treasury each year a substantial unexpended sum of the pre-war equivalent grant which became available in 1913. It is estimated that, since the Insurance Act became operative in Ireland (now almost nine years ago), approximately a total sum of £250,000 of the equivalent grant has found its way back to the Treasury. This could not have happened if the Government had adhered to its arrangements with the Irish medical profession.

In the circumstances the deputation from the Irish Medical Committee refused to be a consenting party to any reduction in the remuneration for medical certification. It emphasized the fact that the recent increase was not only met by the pre-war equivalent grant, but a substantial residue from that grant still found its way back every year to the Treasury, and therefore the question of economy in the remuneration for medical certification in Ireland was on quite a different footing from the bonuses given to civil servants in other departments. The deputation further pointed out that the proposed reduction mainly affected Poor Law medical officials, whose salaries had been recently very much reduced owing to the Government having passed legislation which attached Irish health grants to meet the claims awarded mainly to Crown forces and others who were killed or injured in the rebellion. The legislation which diverted the health grants for the purposes stated also made provision for the further attachment of moneys raised by the local authorities to meet the cost of administration of the public medical services. As the result of the drastic legislation of the Government with regard to Irish health grants there were in several counties in Ireland medical officials who were some time ago in arrears with their salaries for eighteen months, and any they got was paid to them secretively by the local boards.

Correspondence.

CLAYDEN v. WOOD-HILL.

SIR,—This important medico-legal case, tried recently at the assizes at Bury St. Edmunds, has not, so far, been reported in your columns. Briefly stated, the facts were as follows:

The patient sustained a fracture of the femur just below the small trochanter, and was treated at Beccles Hospital by methods which were in accordance with the usual surgical teaching. She was not *x*-rayed, because the apparatus at Beccles was not good enough to enable an *x*-ray photograph of the upper part of the thigh and hip to be obtained. She left the hospital at the end of eight weeks walking on crutches, and, according to Dr. Wood-Hill's evidence and that of his partner, the fracture was then in a satisfactory position and the limb ½ in. short. About ten days after her return home the leg gave way under the body weight, and considerable pain and swelling occurred.

I saw the patient fourteen days after the incident, and operated upon the fracture four days later, finding the fracture united with angulation, the shortening being 1½ in.

The allegation of negligence was based upon:

(1) A wrong diagnosis of the level at which the fracture took place, due to (*a*) the absence of an *x*-ray examination, and (*b*) failure to examine and "set" the fracture under an anaesthetic. Unfortunately, Dr. Wood Hill had been induced to commit himself to a sketch showing the probable level of the fracture, in which he placed it too low down in the femur. (2) A failure to treat the limb in an abducted position as the result of the wrong diagnosis. As a result of this, plaintiff alleged that the fracture was malunited at the time she left Beccles.

The defence sought to prove:

(1) That the fracture was diagnosed as one of the upper third of the femur; (2) that the limb was kept abducted during treatment; (3) that the fracture was satisfactorily united without angulation and with only ½ in. of shortening at the time plaintiff left Beccles; (4) that the union subsequently gave way because the plaintiff put weight upon it contrary to Dr. Wood-Hill's advice.

Actually the result of the case depended largely upon the question whether a refracture had or had not occurred. I was asked whether at the operation I found evidence of refracture, and replied that I did not, but I pointed out that the interval between the giving way of the limb and the operation (eighteen days) was sufficient for signs of refracture to have disappeared. Apart from this, both judge and jury seem to have ignored the possibility of bending of the callus, a well-known and common incident in fracture of the femur, which I endeavoured to emphasize in my evidence. Counsel, in summing up, claimed that my evidence negatived refracture, and, on the strength of this, the evidence from the Beccles Hospital that the position of the bone was satisfactory when the plaintiff left the hospital was ignored or disbelieved.

Important lessons to be learnt from this case are that every case of fracture or possible fracture should be treated as a possible medico-legal one; that careful notes made at the time should be kept; that if an *x* ray is not taken, the reason should be stated in writing; and that practitioners should not commit themselves to statements or diagrams of the nature of an injury except on *x*-ray evidence. Apart from this, the medical profession must feel considerable perturbance at a legal decision which appears to place upon them responsibility for the result of their treatment apart from their acknowledged responsibility to use recognized methods and to use them carefully, for it would appear that the mere fact that the result of the treatment of the fracture was unsuccessful was accepted as a sufficient cause of action. This seems to suggest an entirely new aspect of medical responsibility.—I am, etc.,

London, W., Nov. 21st. R. C. ELMSLIE.

A full summary of the report of this case appears in our medico-legal column this week, at p. 919. Mr. Elmslie's letter strengthens us in the belief that Dr. Wood-Hill, if an appeal has been decided on, would be supported by the general opinion of his profession.

MENTAL TREATMENT OF EX-SERVICE MEN.

SIR,—In the last number of the JOURNAL a full report is given of questions asked in the House of Commons by Captain Loseby, with the replies of Mr. Ian Macpherson, on the above subject.

It may, perhaps, be of interest to your readers to quote from a letter written by Captain Loseby which appeared in the *Times* of November 9th, 1921. One paragraph reads as follows:

"According to official returns, lunatic asylums during the past three years have held in bondage—necessarily or otherwise—the following ex-soldiers—men who, had it not been for their service, would to-day be free and happy."

My experience is that in a large number of these cases it is very doubtful, to say the least, if service in the forces was the cause of the insanity. The officers of the Ministry of Pensions, out of the kindness of their hearts, often decide that the illness was "attributable" to service, but most experts would agree that in many cases it was one of the least of the factors which led to the final breakdown. The truth is that a large number of these men should never have been passed as medically fit for the army. Captain Loseby uses the word "service" and does not state "war service," but I feel sure that most readers of this letter will conjure before their minds the picture of men driven insane by the horrors of fighting in the trenches. The fact is that large numbers of "service" patients never left England during the war. I think if Captain Loseby were to put a question in the House asking for the exact figures on this point he would be surprised.

Dr. William Robinson read a very interesting paper on the subject before the Medico-Psychological Association, and this appears in the *Journal of Mental Science*, January, 1921. Out of 140 service patients 49, or 35 per cent., never left the United Kingdom, and of these 49 in one case only was the mental disorder due to the stress of military training. Of the 140 half were cases of congenital mental deficiency. I would like to quote his summary and conclusions in full, but must content myself with one paragraph only:

"It is impossible to arrive at any other opinion than that the service patients, as a class, would, as regards the majority, have been patients in mental hospitals sooner or later had there been no war. As regards the minority, they would probably have constituted the pre-war groups of waifs and strays, and formed the inhabitants of the casual wards of workhouses and the inmates of civil prisons."

There are several other points in Captain Loseby's letter which could be criticized, but I do not wish to divert attention from the above points. The suggestion that men are "held in bondage" in "asylums," possibly "needlessly," is best left unanswered.—I am, etc.,

R. H. STEEN, M.D., F.R.C.P.

City of London Mental Hospital,
Dartford, Kent, Nov. 21st.

PERFORATION OF THE NASAL SEPTUM IN COCAINE TAKERS.

SIR,—The remarks made by Professor Dixon on the cocaine habit, reported in the BRITISH MEDICAL JOURNAL of November 19th (p. 821), induce me to call attention to the fact that, owing to the difficulties now imposed upon cocaine takers by the activities of the police, quite a number of persons is now to be met with suffering, though unavowedly, from deprivation of the favoured *coco*, or *poudre de blanc*.

Such persons usually come before their doctors as obvious neurasthenics, and detection of their special and carefully concealed proclivities is not always easy.

In one case recently admitted to my wards the diagnosis of "cocaine habit" was made, I believe perfectly correctly, by the recognition of the peculiar circular perforation of the cartilaginous nasal septum that has been described in America and on the Continent. The perforation in this particular case had been regarded as syphilitic by several competent medical men. It certainly was not so.

The perforated septum, which is relatively so frequent amongst confirmed cocaine takers, is, of course, only seen in those who take the drug as snuff—a method which, with all deference to Professor Dixon, is, I believe, far more popular than that of hypodermic injection.

This opinion is also that of Dr. Cramer (of Geneva), who has devoted much curious attention to the subject, and who last week gave a masterly exposition of it before the Medical Society of Geneva.

It would appear that at Geneva the cocaine habit has recently extended to an alarming extent, and Dr. Cramer tells me that official information from London points to a recent recrudescence of activity amongst our own traffickers in the drug. Abroad the diagnostic importance of the nasal perforation is perhaps better appreciated than, so far as I can find, is the case in London.—I am, etc.,

London, W., Nov. 19th. F. G. CROOKSHANK.

ERYTHEMA NODOSUM.

SIR,—From Dr. Gosse's letter in your issue of November 12th it is evident that in my paper on erythema nodosum as an acute specific fever I did not sufficiently emphasize the fact that this view is by no means a new one. Dr. A. A. Lendon published his well known book in 1905, under the title, *Nodal Fever (Febris Nodosa)—Synonyms: Erythema Nodosum, Erythema Multiforme*, and in his introduction he says "that the general behaviour of this disease suggests, and is in every way consistent with, the theory that it is in reality an acute specific infectious fever, and not merely an affection of the skin."—I am, etc.,

Clifton, Nov. 11th. J. O. SYMES.

SIR,—I was much struck, when house-physician twenty years ago, by the association of this disease with acute rheumatism in children, and have come across ample clinical evidence of this in private practice since. May I quote one out of other similar cases? D. G., aged three years, developed erythema nodosum, the diagnosis being confirmed by my old chief, Dr. W. B. Cheadle. I have watched this child for the last fifteen years, and seen her develop typical rheumatic endocarditis followed by a chronic double mitral murmur, duly compensated. At another period of her childhood she had an acute attack of rheumatism of the hip-joints.

It might be argued that the case was not rheumatic; but the development of mitral disease, indistinguishable from what one regards as a common manifestation of rheumatic disease in childhood, and proved so by the experiments of Poynton and Paine, certainly points to erythema nodosum being a form of acute rheumatism, and not a separate entity.—I am, etc.,

London, N.W., Nov. 21st. H. J. VAN PRAAGH.

SIR,—I have long believed that erythema nodosum is not of rheumatic origin for the following reasons:

1. It does not occur as an "alternative" manifestation in obviously rheumatic patients.
2. Its presence is not accompanied by the typical rheumatic signs.
3. It is uninfluenced by salicylate treatment.
4. It is always cured by the administration of calcium chloride associated with local sedatives and rest.

—I am, etc.,

Sheffield, Nov. 22nd. HERBERT HALLAM.

NATIONAL PROVIDENT HOSPITAL ORGANIZATION (SUSSEX SCHEME).

SIR,—I hope you will admit a brief reply to Dr. Muir Smith's letter in your issue of November 19th, in which he has courteously supplied figures in regard to fees paid by panel patients, which figures, of course, I accept without question.

First, may I make a correction? He is right in saying that this provident scheme was originated by a public-spirited physician, but wrong in supposing that it has received the "whole-hearted" support of the staffs of the various hospitals concerned.

Secondly, his figures bear out my contention that some scheme of relief to people with small incomes is demanded.

Take the case which he quotes of a man with £2 10s. a week—that is, £130 a year—who paid £39 18s. for an operation and three weeks in a nursing home. This man was required to pay considerably over a quarter, and within £3 6s. 8d. of one-third, of his whole annual income. I remain unconvinced that patients in such a financial position should be asked to pay such fees, or that medical men should be willing to accept them, still less expect them.

I am sorry to differ from Dr. Muir Smith in this matter. We have hitherto agreed. I think, upon most subjects whenever I have had the pleasure of meeting him. I am, etc.,

Bridgend, Nov. 21st. ROBERT SANDISON.

ILIO-TIBIAL BAND GRAFTS FOR THE RADICAL CURE OF LARGE INGUINAL HERNIAE.

SIR,—Mr. Hume's article on this subject (November 19th, p. 824) raises the following points:

What is the prognosis as regards radical cure of inguinal hernia by

1. Removal of sac;
2. Removal of sac + insertion of deep sutures;
3. Removal of sac + the use of some kind of "over-lapping" method;
4. Removal of sac + the insertion of a filigree;
5. Removal of sac + autogenous fascial graft?

At the present day we require to know the actual figures (years of cure with mean variation) for these operations for a patient of any given age and showing

X. A degree of bulging of the abdominal wall, taking into account the factors of muscular development and degree of distension by the abdominal contents.

Y. Size of sac.

Mr. Hume has stated the size of the sacs and the degree of muscular development, and both were in common estimation eminently unfavourable. But the mere removal of a large sac may work wonders with the mechanics of the inguinal canal.

Now it is common practice throughout the country to operate on patients with large inguinal herniae, much larger than were done, except for urgent reasons, twenty years ago, and at more advanced ages. The general opinion is that the results are good. But how good are they? With a common condition of this kind we ought not to be satisfied until we can give the patient a definite mathematical answer such as ought to be forthcoming from surgeons whose practice lies that way. It is their debt to the profession.—I am, etc.,

Aberdeen, Nov. 19th. G. H. COLT, F.R.C.S.

IMMEDIATE OPERATION IN PENETRATING WOUNDS OF THE ABDOMEN.

SIR,—Dr. Pearson, reporting a case under the above heading in the JOURNAL of November 5th (p. 747), emphasizes the importance of very early operation in penetrating wounds of the abdomen, but he does not, I think, sufficiently indicate the reason.

The importance lies in the fact that some of these cases are bleeding badly owing to severance of blood vessels in the abdomen, and will die within a few minutes to an hour or two if the haemorrhage be not stopped.

It is comparatively rarely, as Dr. Pearson surmises, that one gets the opportunity of operating on such cases within a few minutes of the accident, but such opportunities occurred fairly frequently under the unusual conditions of the siege at Kut el Amara, where, as I described in the JOURNAL in 1917,[1] cases were often received very shortly after they were hit. Recognizing the importance of operating at once on bleeding cases, we kept the operating theatre in a state of absolute readiness, and such cases as were suspected of internal haemorrhage were subjected to immediate operation, with the result that some of them were saved.

It is not, however, every case of penetrating abdominal wound that should be so treated, for there is the question of shock to be considered; and if one can feel reasonably sure that the patient is not bleeding seriously, it is often better to wait a little before adding to the shock already sustained by the victim of the injury.—I am, etc.,

CHARLES H. BALLANCE, Major I.M.S.

Mesopotamia, France, Nov. 14th.

IMMEDIATE TREATMENT OF DIPHTHERIA.

SIR,—A short time ago a medical practitioner complained in the columns of your journal that he not only had difficulty in obtaining from a sanitary authority antitoxin for the immediate treatment of a case of diphtheria, but was afterwards charged for the serum by the medical officer of health (instructed by his council). My district, on the contrary, has for twenty-five years not only supplied antitoxin free of charge but also arranges for bacteriological examination of throat swabs.

The latest mortality returns from this disease are:

Before antitoxin was used	30.39	per cent.
When antitoxin is given in sufficient quantity:		
On the first day of disease ...	0.0	,,
On the second day of disease ...	4.2	,,
On the third day of disease ...	7.0	,,
On the fourth day of disease ...	11.5	,,

The necessity for immediate treatment is self-evident. The deaths of two children from delayed treatment, due to absolutely accidental circumstances, has induced this council, on my recommendation, to further facilitate the immediate treatment of the disease by placing at four convenient points in the district a diphtheria outfit, containing one sterilized syringe and 4,000 units of antitoxin. This is for the free use of every medical practitioner practising in the district, that each may, day or night, have available the means of immediate treatment of this disease.

I gave my first antitoxin injection thirty years ago and am a strong advocate for large initial doses.—I am, etc.,

RASHELL DAVISON, M.D.,
M.O.H. Tin Mel Rural District Council.

MEDICAL BOOK CLUBS.

SIR,—My attention has been drawn to a letter in your issue of October 8th from Dr. Eric Bayley, claiming that the City of London Medical Book Society is the oldest in the kingdom, having been founded in 1821. May I be allowed to point out that the Medical Reading Society of Bristol was founded in March, 1807, and has had a continuous existence ever since. In the September number of the *Bristol Medico-Chirurgical Journal* for 1907 there is an interesting article on its history from the pen of Mr. L. M. Griffiths.

The number of members is limited to twelve. We meet on the first Wednesday in every month, and there is a fine of 1s. inflicted on members who do not arrive by 9 p.m. and of 2s. if they fail to come by 9.30. There are also the usual fines for keeping books and periodicals beyond the allotted time. A sale is held at the first meeting in the year, and on this occasion it was the custom until the war to have an annual dinner. At our ordinary meetings, however, there are always some refreshments—"a neat repast, light and choice, of Attic taste, with wine"—"whence we may rise" all the better for our pleasant social gathering, agreeing with Milton that—

"He who of those delights can judge, and spare
To interpose them oft, is not wise."

—I am, etc.,

Clifton, Bristol, Nov. 17th. W. A. SMITH.

MOTOR CARS: SPARE PARTS.

SIR,—Dr. Lionel Stretton has written a much-needed warning on this subject (p. 868), but I go further and warn my brother medicos against dealing with firms that cannot supply spare parts at all.

Only last week, on applying for spares to the London agent for an excellent French car, I was disgusted to receive a wire, "Regret cannot supply parts."

I have written to them and pointed out that, however excellent a car is, it is useless unless one can replace parts, and that in future I shall be unable to recommend their cars.

The local garage manager informs me he has the same difficulty with all makes except the Americans. Is it anything to be wondered at that our makers are given the "go by"?—I am, etc.,

GEORGE P. BLETCHLY, M.B.Lond.

Tewkesbury, Gloucestershire, Nov. 19th.

VENEREAL CLINICS: A LAY POINT OF VIEW.

SIR,—It is with hesitation that I write to your paper of venereal disease from the patient's point of view, but that is a point of view that I have not seen put forward. Your paper is read by many more people who are not medical men than the medical profession realizes. And that is because at the present time it is the only means known to many laymen by which they can follow the

[1] BRITISH MEDICAL JOURNAL, January 6th and February 17th, 1917. [2] Ibid., January 20th, 1917. "Gunshot Wounds of the Abdomen."

efforts of the Ministry of Health to deal with venereal disease. The accounts in daily papers are useless and misleading.

It must be quite obvious that, if 10 per cent. of city populations have syphilis, and probably more than half have or have had gonorrhœa, more than half our male population, at any rate, are venereals. To those people who would damn us as social outcasts the retort is obvious—it is ridiculous to maintain that half our male population are blackguards. They are not, but are merely average young men.

Of those people among whom I live in the suburbs of London the vast majority are as regular in their illicit sexual intercourse as they are in their football and cricket. And all of us know that our friends have promiscuous intercourse, but we do not damn them until they acquire venereal disease; then they are social outcasts. Sexual intercourse is condoned, but venereal disease is not. That is the ludicrous attitude of society.

Now the majority of young men in suburban London are quite decent-living, law-abiding, and hard-working citizens, but they regard sexual intercourse as a normal enjoyment to which they are entitled. To address us from the moral aspect is waste of time—we do not consider it immoral—but we are fully alive to the terrible dangers of venereal disease to us and to the State.

The next point, and a vital one, is that of treatment. We do not go to our family doctors—we prefer to attend a stranger. Many of us are cured, but many are given a syringe to take home with a bottle of medicine. Many of these go through the tortures of the damned. We are not told of the splendid venereal clinics at the London hospitals; we do not know that we can go there, as we always consider the hospitals as institutions for the indigent. It is by accident the discovery is made—usually from a friend. And what a godsend they are! My personal experience of that at St. Thomas's Hospital was a revelation—kindness, sympathy, and efficiency, with new hope and returning health. And yet so few know of it. Why is it not advertised? Why are we not told? Where are the notices in public urinals that we have heard of but never seen?—I am, etc.,

November 4th. VENEREALIST.

The Services.

WAR EMERGENCY FUND.

A GENERAL meeting of the members of the War Emergency Fund will be held in the rooms of the Medical Society of London at 11, Chandos Street, Cavendish Square, London, W.1, at 5 p.m., on Wednesday, December 7th. A report of the work of the Fund since its inception in 1916 will be presented, and the scope for its usefulness in the next few years will be outlined. It is hoped that on this occasion there will be a large and representative meeting of the subscribers, who are asked to accept this as the notice of invitation.

THE No. 55 General Hospital second reunion dinner (postponed from last May) will be held on December 8th, at 7 p.m. for 7.30 p.m., at Princes' Restaurant, Piccadilly. Old officers wishing to attend should communicate with Dr. H. B. Roderick, 17, Trumpington Street, Cambridge.

The reunion dinner of the 50th Northumbrian Division, T.A., R.A.M.C., will be held at the Central Station Hotel, Newcastle-on-Tyne, on Thursday, December 22nd, 1921, or January 12th, 1922, as proves more convenient. Officers of the R.A.M.C. who served with the Division in France, and who wish to attend, are asked to notify Dr. E. S. Simpson (Mental Hospital, Beverley) before December 8th, intimating which date is more suitable, and also stating whether they desire a bedroom reserved on the night of the dinner.

THE *London Gazette* of November 3rd, 1921, announces the retirement of Lieut.-Colonel H. E. Rowell, M.D., T.D., of the Fifth Battalion Norfolk Regiment, Territorial Army Reserve (Infantry), after serving as a combatant officer for over twenty-five years in the Volunteers and Territorial Army. He retains the rank of lieutenant-colonel, with permission to wear the prescribed uniform, and has received a letter from the Army Council thanking him for his services to the Territorial Force.

THE petition of Dr. August Wittenborg, professor of anatomy in the University of Tennessee, for nationalization in the United States has been refused on account of his failure to register for service in the war. Dr. Wittenborg, who had been domiciled in the United States for many years, is a German by birth.

Medico-Legal.

CLAYDEN v. WOOD-HILL.

In Action for Negligence.

AT the last Suffolk assizes at Bury St. Edmunds, before Mr. Justice Bailhache and a special jury, a case was heard of the utmost importance to general practitioners. Mr. and Mrs. Clayden, of Radlett, brought an action to recover damages from Dr. H. G. Wood-Hill, of Beccles, for alleged negligence in his medical treatment of Mrs. Clayden. The defendant counter-claimed for damages for alleged libel. The account that follows is abstracted from reports in the *East Anglian Daily Times*.

Sir E. Marshall-Hall, in opening for the plaintiff, remarked that it was a very serious and important case from the public point of view, because it involved the duty of a doctor towards a patient whom he had undertaken to attend. The facts of the case, according to counsel, were that in September, 1920, Mrs. Clayden, while on a visit in Suffolk, was driving in a dogcart, when the horse upset the cart, and she was thrown into the road. While Dr. Wood-Hill was being fetched from Beccles, Miss Clowes, who had been a hospital nurse, came along and had Mrs. Clayden conveyed on a milk float to her house. She was overtaken by Dr. Wood-Hill, who applied sandbags to the leg to keep it steady. A bed was prepared and everything possible done for Mrs. Clayden's comfort. Dr. Wood-Hill, who had served in the war and was highly respected in the district, examined the lady when she was in bed, but without administering any anæsthetic or opiate. He then suggested to Miss Clowes that there was a fracture of the femur, "somewhere about the middle upper third." Mrs. Clayden complained of pain in the buttocks and back, and there was a good deal of swelling at the top of the thigh. Dr. Wood-Hill, however, did not give any direction for abduction of the leg. As there was difficulty in nursing her at the house he suggested her removal to Beccles Hospital, to which he was attached as surgeon. Mr. Clayden agreed, and on September 22nd she was taken by motor ambulance to the hospital as a paying patient. Dr. Wood-Hill put a Thomas splint on the injured limb, but this was later substituted by a Hodgen splint. Counsel claimed that the shortening of 1 or 1½ inches that followed was evidence of negligence, as it showed something more than a simple fracture, and he alleged negligence in that the aid of the *x* rays was not called in. It was stated that the installation at Beccles Hospital was of weak power; but there were hospitals with efficient *x* ray apparatus at Norwich, Lowestoft, Yarmouth, etc., and an efficient radiograph could even have been brought to Beccles. Describing the subsequent course of the case, counsel called attention to the pain complained of by Mrs. Clayden, but to which, he alleged, no attention was paid by the defendant. On November 12th, Dr. Wood-Hill said that she could go home next day, as she was quite fit. She was taken home by train, and her husband wrote to the defendant enclosing his cheque and thanking him for the great kindness and ability with which he had treated his wife, and the kindness she had received in hospital. On November 22nd Mrs. Clayden's leg suddenly gave way. She went to bed, and her husband later called in Dr. Cooper, the local doctor, who ordered her removal to St. Albans Hospital for *x*-ray examination. In the meanwhile Mr. Clayden sent a sketch to Dr. Wood-Hill, asking him to mark the spot at which he had diagnosed the fracture, and he returned it marked in the middle of the upper third of the femur. The *x*-ray examination revealed that the fracture was in the neck of the femur. Thereupon Mrs. Clayden was removed to the Freemasons' Hospital, where she underwent the operation of cutting down to the fracture. It was found that the alignment was 30 degrees out of the straight. She remained there four months, and left practically cured, the leg having nearly regained its normal length.

After Mr. and Mrs. Clayden had given evidence in support of counsel's statement, and been cross-examined by Sir Ernest Wild, Dr. Edward Cooper of Radlett described the results of his examination of the patient's leg when she arrived home after leaving Beccles Hospital. He found 1¾ in. shortening; there was no sign of any new fracture. Had the operation not been done she would have been permanently lame. It was most important, he said, that the exact position of the fracture should be diagnosed, and essential that the *x* rays should be used. In reply to Sir E. Marshall-Hall, he agreed that a skilful man should have diagnosed the fracture as in the region of the neck of the femur.

Mr. R. C. Elmslie, orthopædic surgeon to St. Bartholomew's Hospital, said he saw Mrs. Clayden at the Freemasons

Hospital, and was shown a radiograph of the fracture. He found the leg about 1½ inches short, and there was some angulation. He advised an operation, which was refused, and down to the bone and the keeping of the patient at rest was carried out. He [illegible] the fracture without operation; he saw no evidence then of a second fracture. He thought it possible to have perfectly good results without the use of [illegible] though he did not think it was possible to dispense with them from a surgeon's point of view. In the course of cross-examination, he said that if he found a good alignment and extension he would not trouble to send a patient [illegible] to a hospital for [illegible]. In reply to the judge, he said that fractures of the upper third of the femur were very difficult ones. Re-examined, Mr. Elmslie is reported to have said that if he had upon diagnosis found the fracture as it was ultimately found he could have dealt with the case without operative treatment.

Mr. H. F. Dickens, opening the case for defendant, said that a charge of this kind, if proved, meant practical ruin to a medical man. He claimed that it had been shown that Dr. Wood-Hill exercised every care and ability, and everyone was satisfied until the occurrence of November 22nd, when Mrs. Clayden's leg broke down.

Dr. Wood-Hill gave evidence as to his treatment of the case, the opinions he formed, and the advice he gave. After the patient's removal to Beccles Hospital the *x*-ray apparatus was not strong enough for use. He adopted abduction of the leg. Dr. Fox saw the patient, and they came to the conclusion that an anaesthetic should not be given because the swelling was so enormous with considerable haemorrhage. The swelling subsided in about a fortnight. He took the splint away about four weeks afterwards and examined the leg, and found that union had already taken place. Extension was continued, but the abduction was reduced. On October 28th, before taking away the weight, he measured the limb with a tape and found that it was half an inch short. Advice as to what she was to do on leaving hospital was given to Mrs. Clayden many times while she was in hospital. It was collected and given to her the day before she left the hospital, so that she should not leave without a clear view of what she was expected to do. He advised her to have a bedroom on the ground floor; not to bear weight on the leg; to use crutches and not substitute sticks; to exercise the knee; and he showed her how to use the muscles of the limb. He impressed upon her that after she left the hospital it was for her to carry out the directions of her own doctor. He did not look upon her as cured, but as anxious to return home, and he thought it reasonably safe for her to do so. He told her on one occasion, when she hopped down the ward on her sound leg before he could stop her, that her leg was not ready to bear her weight. He told the husband on November 15th what Mrs. Clayden was to do when she was taken home, and drew his attention to the necessity for carrying out the instructions he had given.

Dr. G. R. Fox, partner of the defendant, bore out Dr. Wood-Hill's evidence. He added that it was a great grievance that there was not an efficient *x*-ray installation at Beccles Hospital. His Lordship expressed his opinion that this question of the *x* ray was of little importance in view of the evidence.

Miss Clowes, who saw Mrs. Clayden shortly after the accident and put her to bed, said that Dr. Wood-Hill diagnosed the fracture as in the upper third of the femur; in her opinion there was no need for an anaesthetic; when the patient was in hospital the leg was abducted, the weight being on the side of the bed. The matron of the Beccles Hospital said that Dr. Wood-Hill told her Mrs. Clayden was suffering from fracture of the upper third of the femur and indicated it to her. When the leg was put in a splint it was abducted with a weight at the side of the bed; this was properly done. She confirmed the defendant's statement as to the instructions he gave to Mrs. Clayden when she left hospital. Mrs. Clayden did not seem to like the idea of using crutches. This evidence was borne out by Miss O'Connor, a nurse, and Miss Crisp, a probationer at Beccles Hospital. Further evidence of nurses was dispensed with by the jury at the judge's suggestion.

Sir Hamilton Ballance, surgeon to the Norwich Hospital, said that Dr. Wood-Hill in his diagnosis was correct in placing the injury at the upper third of the femur. An anaesthetic was advisable in certain fractures and not in others; he had set many fractures of the femur without an anaesthetic; it must rest with the discretion of the surgeon in charge. In the use of an anaesthetic there was struggling which could not be avoided, and it increased the damage round the fracture. It was a common practice at Norwich Hospital at the end of seven or eight weeks for the limb to be taken out of splints and the patient sent out on crutches. A measurement of only half an inch shortening was a satisfactory result. Witness told the judge that lateral deformity could not always be prevented; a good deal could certainly be done to prevent shortening. Asked by Sir Ernest Wild if, in his view, defendant treated that case properly, he replied: "It is the way I should have [illegible]."

Mr. H. E. Griffiths, chief assistant in the surgical department at St. Bartholomew's Hospital, said that during the war he had enormous experience of femur fractures, as many as 300 cases were under him at a time. From what he was able to gather of the evidence he thought there was no possible doubt that in [illegible] there was a separation of the original fractured fragments of the femur. Acute bending of the femur after fracture [illegible]. In cross-examination he said he thought that Dr. Wood-Hill did everything reasonably necessary.

Mr. Harold Wilson, surgeon to St. Bartholomew's Hospital, said he found himself in general agreement with the two previous witnesses; he believed it to be a case of refracture. Sir Hamilton Ballance, recalled by the judge, and asked whether, had there been a fair union, he would have expected it to give way in the circumstances related by Mrs. Clayden, replied that he thought the union had been weakened by the weight she put upon it during the previous two or three weeks.

Sir Ernest Wild having addressed the jury for the defendant and Sir E. Marshall Hall for the plaintiff, the judge summed up. Having reviewed the evidence at length and described the importance of the case, his Lordship said that it ultimately came to whether the jury could believe Mrs. Clayden and her husband and Nurse Willimott [one of the Beccles Hospital nurses] as to the treatment the plaintiff received in the hospital. If the leg was abducted it would seem to be quite clear that Dr. Wood-Hill had diagnosed a fracture in the upper third of the femur; if he did and the leg was abducted, then his diagnosis and treatment were perfectly right; if her leg was not abducted but was laid straight out (as she and her husband said) it seemed equally clear that he did not diagnose a fracture in the upper third of the femur, because if he had he would have abducted the leg. Against their evidence was that of Dr. Wood-Hill, Dr. Fox, the matron and the nurses, with the exception of Nurse Willimott, of Beccles Hospital. If the jury concluded that he had accurately diagnosed and properly treated the case the only remaining question was whether, on her leaving, the defendant gave her necessary instructions as to her future behaviour. Mrs. Clayden had crutches; the custom varied, some doctors gave crutches and others gave calliper splints; there was no negligence there. If he (the judge) had himself to decide the case he would consider and try to find out what happened on November 22nd. If a refracture took place, then it was very doubtful whether the plaintiff had made out her case—very doubtful indeed. But if it was not a refracture, he would consider very carefully the alternative view.

The jury, after twenty-five minutes' retirement, returned a verdict for the plaintiff with £600 damages, and judgement was entered accordingly; also £150 damages to Mr. Clayden, this being an agreed sum in the event of a verdict for the plaintiff—£750 in all. The counter claim was dismissed without costs to either side.

Further reference to this case will be found in our correspondence columns this week, at p. 916.

Obituary.

PETER THOMPSON, M.D.,

Professor of Anatomy, Birmingham University.

We have to regret to announce the death, at Penmaenmawr, of Dr. Peter Thompson, professor of anatomy in the University of Birmingham, and Dean of the Faculty of Medicine, at the age of 50. Professor Thompson received his medical education at Owens College, Manchester. He graduated M.B., Ch.B.Vict. in 1894, and M.D. in 1899, being awarded a gold medal for his M.D. thesis. He made many important contributions to the subject of anatomy, particularly in embryology, and an account of his scientific career is given below. He was a member of the Central Division of the Birmingham Branch of the British Medical Association and in the Section of Anatomy and Physiology at the annual meetings of the Association at Manchester (1902), Belfast (1909), and Birmingham (1911) he was respectively secretary, vice-president, and president. He was also vice-president of the Section of Medical Education at the annual meeting at Cambridge in 1920.

We are indebted to Professor William Wright for the following appreciation:

The intimation of the death of Professor Peter Thompson must have come to many members of the profession with all the suddenness and solemnity of the first peal of a passing bell. When I first knew Thompson, some twenty-

two years ago, he was senior demonstrator of anatomy in Owens College, Manchester, a man of powerful frame and striking personality, able, forceful, and enthusiastic. No gifts of prescience were required to foretell for him a successful and brilliant career. While in Manchester he published an important work on the myology of the pelvic floor, for which he was awarded a gold medal and the degree of doctor of medicine. The work has stood the test of time, for, although various anatomists have in the intervening years continued investigations into the anatomy of this region, they have found little, if anything, either to add or to correct. After some years spent in Manchester, Thompson came to London as lecturer on anatomy at the Middlesex Hospital Medical School, where he extended and confirmed his already high reputation as an anatomist. From the Middlesex Hospital he passed in 1905 to the chair of anatomy at King's College, and when there began to take a closer and keener interest in the embryological side of his subject—an interest which was further quickened by a prolonged visit to Germany, and by work in Professor Keibel's laboratory in the University of Freiburg. While in Germany he made from serial sections a reconstruction of a human embryo of twenty-three paired somites, and on his return to this country became a leading and enthusiastic exponent of the wax-plate method of reconstruction. In embryology he studied particularly the development of the brain, and of that central region which includes the heart, pericardium, diaphragm, and liver. He produced in 1909, in collaboration with Mr. S. Ritson, a model of the brain of a 20 mm. foetal cat, and in 1910 delivered an Arris and Gale Lecture at the Royal College of Surgeons on the development of the heart, using for his purpose a 1.5 mm. human embryo.

In 1909 he left King's College to occupy the chair of anatomy in the University of Birmingham, in succession to Professor Arthur Robinson. In Birmingham he continued his embryological investigations, and edited in 1915 an important volume, *Studies in Anatomy from the Anatomical Department of Birmingham University*. His research work became, however, more and more interrupted as his health, somewhat indifferent even in London, became more and more precarious. Railway journeys and attendances at meetings were hazardous if not actually harmful, and he was seen less and less at meetings of the Anatomical and other scientific societies. Few, however, were aware that there had been any exacerbation of his illness, and few were prepared for the fateful news that he was no longer to be met in "the cheerful ways of men." *Eripitur persona, manet res* is a truth which can never be sure of anything but a chilly reception, mortals though we know ourselves to be. Still, there is some consolation when what does remain is so substantial and important as are Thompson's contributions to the subject of anatomy, contributions which will be of undoubted assistance to all who hereafter shall work in the same fields, contributions which will ever be a credit to the English anatomical school.

Perhaps Thompson's most striking mental characteristic was his enthusiasm; he could make what are frequently referred to as the cold facts of anatomy glow at times with quite unwonted splendour, and could attach to a simple descriptive statement some of the attributes of high discovery. It was this power, coupled with his unusual gift of clear exposition, which made him so impressive and stimulating a lecturer. He was singularly effective in all he did and said; his mind and hands and tongue kept ever the closest company, to a degree not a little perplexing to some of us who find this happy accord so difficult to attain. His enthusiasm was also shown in the whole-hearted fashion with which he identified himself with the various institutions with which he was associated. He was chairman of the London Old Owensian Society, Sub-Dean of the Middlesex Hospital Medical School, Dean of King's College (medical section), and Dean of the Faculty of Medicine in the University of Birmingham. He kept up his connexion with all and had warm and affectionate friends in each. By a sad coincidence the annual meeting of the Anatomical Society, which he had served as honorary secretary, honorary treasurer and vice-president, was held on the very day on which the notice of his death appeared, and expressions of affection and regret were heard on all sides. So passes from our midst one who in his relatively short life achieved much, one who, we venture to say, had he been freed from those alternating hopes and fears which in later years were so distressingly his lot, would have won for himself a foremost place not merely among British anatomists, but among anatomists of all countries.

A message of condolence has been sent from the Anatomical Society to his widow and children, but the sympathy of a much larger circle is assuredly theirs—the sympathy of all those trained in Manchester, London, and Birmingham who had the advantage of knowing him, and who will always esteem it a privilege and an honour that their first steps along the ancient *via Hippocratica* were guided by one so genial, so thorough, so unaffectedly interested in their welfare. *Ave atque vale.*

SHERIDAN DELÉPINE, M.Sc., M.B.,

Professor of Public Health and Bacteriology, Manchester.

We mentioned last week with great regret the death of Professor Sheridan Delépine of Manchester, which took place on November 13th at his house in Withington. He was born on January 1st, 1855, the son of Antoine Delépine of Paris and Henriette Mennet, a Swiss lady. He received his education at the Collège Charlemagne, the Académie at Lausanne, and the University of Geneva, where he graduated B.Sc. in 1872. His medical education was obtained in the University of Edinburgh, where he graduated M.B., C.M. with first-class honours in 1882. He received the M.Sc. from the University of Manchester in 1905. Soon after graduation at Edinburgh he went to London and became private pathological assistant to the late Sir Andrew Clark, then at the zenith of his fame. Delépine was appointed lecturer in physiology, and afterwards in pathology, at the St. George's Hospital Medical School.

In 1891, when the University of Manchester was, by the gift of £6,000 from Mr. Daniel Procter, enabled to endow a full time chair of pathology, Delépine was elected Procter professor of pathology and morbid anatomy. He had to organize the department and establish a bacteriological laboratory. At that time the professor of pathology was not a member of the staff of the Manchester Royal Infirmary, but Delépine by his geniality and enthusiasm was able largely to overcome this difficulty. From the time he got the bacteriological laboratory into working order he began to do work for the public health authorities of Manchester, Salford, and many other districts; gradually he became more and more absorbed in bacteriology and public health work, and when the University determined to establish a chair of public health and bacteriology and to erect a public health department, Delépine accepted that chair and became director of the department. Here practical classes for medical men desiring to obtain the diploma in public health were instituted, here routine work was done for the local public health authorities, and here Delépine himself carried on numerous researches. He gave much attention to questions concerning the control of the milk supply and the production of pure clean milk, and in particular to the means of preventing the conveyance of tuberculosis from infected cows to man; upon this subject he produced several reports and monographs. He also wrote upon the bearing of outbreaks of food poisoning, on the etiology of summer diarrhoea, on the purification of water, and on chemical disinfectants.

Professor Delépine was a member of the Manchester Division of the British Medical Association. He was secretary of the Section of Pathology and Bacteriology of the Annual Meeting in Birmingham in 1890, vice-president and president respectively of the same section of the Annual Meetings of the Association at Nottingham in 1892 and Carlisle in 1896. He was also president of the Section of Bacteriology at the Annual Meeting in Manchester in 1902.

At a special meeting of the Senate of the University of Manchester on November 16th the following resolution was unanimously adopted:

> The Senate desires to express its deep sorrow at the death of Professor Sheridan Delépine, and to place on record its high appreciation of the distinguished services he rendered to the University and to the sciences of pathology, bacteriology, and preventive medicine. During thirty years of strenuous work as a professor of this University he firmly established the position of pathology in the medical school, he made valuable contributions to medical science, and, by the unstinted labours which he devoted to the organization and development of the Public Health Department, he conferred lasting benefit upon the community.

During the war Professor Delépine did much work for the military forces in connexion with subjects to which he had given special attention. He married an English lady and is survived by one daughter. His last years were overshadowed by the death of his only son during the war. He leaves many friends who will miss his personal sympathy and his eager enthusiasm for all applications of scientific knowledge and scientific methods to medicine.

We regret to record the death from pneumonia of Colonel Edward St. Barbe Sladen, which occurred on November 9th, at Tunbridge Wells, in his 60th year. The son of the late Colonel Sir Edward Sladen, Edward Sladen was born in Upper Burma, and was educated at Wellington College, Caius College, Cambridge, and St. George's Hospital, graduating M.A.Cantab. in 1891, and M.D., B.C. in 1898. He acted as honorary secretary of the Cambridge Tuberculosis Commission from 1899 to 1901, and as resident scientific investigator at Blythwood Farm, Stansted, to the Royal Commission on Tuberculosis in 1902. He was the author of a work entitled *The Influence of the Milk Supply on the Spread of Tuberculosis*. He had joined the Militia in 1881, and in 1900 he volunteered for active service in the Ashanti campaign, where he served as commandant of the advanced base of the expeditionary force, with the rank of Major. Subsequently he commanded the 4th Battalion of the South Wales Borderers, of which he was afterwards honorary Colonel. In 1910—Coronation year—Colonel Sladen was invited to become Mayor of Tunbridge Wells, where he had but recently gone to reside. He held office for two years, and in 1912 received the freedom of the borough. During the war he acted as recruiting officer and as military representative at Tunbridge Wells. He was a Justice of the Peace for the County of Kent, chairman of the local justices, and for some years was a member of the Kent County Council. Colonel Sladen had not practised medicine for many years, but he was interested in every philanthropic and charitable work in the Tunbridge Wells district, where he wielded great influence, which was always exerted for the good of the people. He is survived by his widow, with whom much sympathy has been widely expressed.

We regret to hear as we go to press that Sir Sydney Beauchamp, M.B., a well-known practitioner in the West End of London, was killed in a street accident on the night of November 22nd.

Professor Erb, the celebrated neurologist, of Heidelberg, died recently at the age of 83.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a convocation held on November 19th, the degree of Bachelor of Medicine was conferred, *in absentia*, on D. G. K. T. Cross, of St. John's College.

In this column last week the announcement was made that M. H. Mackenna, B.M., B.Ch., had been elected to a Fellowship at Magdalen College. Dr. MacKeith asks us to state that the position he holds is that of Lecturer to the College, and not that of Fellow.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on November 18th, the degree of M.D. was conferred on W. V. Anderson, and the degrees of M.B. and B.Ch. on E. A. H. Grylls.

The Molteno Institute for Research in Parasitology will be opened by Earl Balfour at Cambridge on Monday, November 28th, at 5 p.m. It will be remembered that the new institute, to which several references have been made in these columns, is a gift to the University from Mr and Mrs. Percy A. Molteno.

The number of medical students in residence at the University this term is 501; of these 136 are in their first year, 138 in their second year, 152 in their third year, and 75 in their fourth year.

UNIVERSITY OF LONDON.

The following candidates have been approved at the examination indicated:

Third M.B., B.S.—Frances S. Barry, Geraldine M. Berry (University Medal), C. O. Davies, M. C. Hartley, H. C. V. Joy, D. M. Lloyd-Jones, Maud Sanderson, Kathleen A. H. Sykes, D. W. C. Thomas, Dulcie S. Adkins, J. S. Alexander, G. C. Berg, P. C. Brott, W. M. Brown, J. D. M. Cardell, Dorothy S. Chamberlain, Cecil S. Cloake, Ivy Collier, P. N. Cook, Barbara C. Dutt, G. Day, Edith M. Down, R. B. Grieve, Eleanor Harse, E. W. P. Hosford, A. S. G. J. M. Huggett, B. L. Jacobson, Alexandrie M. Jebeajian, Doris E. P. Jolly, A. N. Kingsbury, Agnes G. M. Lewis, D. J. A. Lewis, I. Lewis, K. W. Lewis, I. H. Lloyd-Williams, Muriel J. Longhi, A. McKenzie, D. Duthy M'Nair, J. A. W. Robinson, S. Rose, Ruth M. Scott, W. H. Simmons, J. E. Stacey, Ruth C. Townshend, Norah Tregear, Doris L. Veale, Gladys M. Wealthe, R. M. C. Woodman.

Distinguished in medicine.—D. Thomas, recommended for honours in medicine. Distinguished in surgery.—D. Thomas. Distinguished in midwifery.—

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The following is a list of successful candidates at the first professional examination for the diploma of Fellow, November, 1921:

W. C. Aslin, N. F. Atkey, J. C. Ainsworth-Davis, Annie Anderson, J. F. Armour, A. P. Bertwistle, D. P. Bhargava, H. C. Brayshaw, L. G. Brown, W. G. S. Brown, H. Bruce, W. K. Connell, J. A. Cowie, V. W. Dix, J. Elwood, F. N. Foster, F. P. Fordyce, A. J. Goldham, W. H. George, C. S. Gideon, G. H. Gillow-Jackson, Katharine A. C. Gillie, J. D. Grierson, K. W. Heritage, E. Holmes, J. A. James, Gwladys R. Llewelyn, N. P. L. Lumb, A. G. Lumsden, A. C. McAllister, J. Mercer-Rack, J. R. McDonald, N. Makar, W. A. Mill, C. F. N. Morgan, J. D. R. Murray, J. R. Nicholson-Lailey, Constance M. Otley, K. O. Parsons, A. A. F. Peel, R. S. Scott, H. W. Symons, G. L. Thompson, F. C. O. Valentine, G. T. Vertes, A. S. H. Walton, A. L. Walker, G. C. Welsh, D. R. Wheeler, J. G. Whitaker, P. B. Wilkinson, V. Wilkinson, A. L. Yates.

Annual Meeting of Fellows and Members.

The annual meeting of Fellows and Members of the Royal College of Surgeons of England was called for November 17th. A quarter of an hour after the time fixed for the commencement of the meeting, the President (Sir Anthony Bowlby) entered the hall and stated that a quorum had not been secured and that, therefore, the meeting could not be held. The number present at the moment was twenty-nine, and according to the rules of procedure there could be no meeting unless at least thirty were assembled within fifteen minutes after the hour. Several members appealed to the President to waive the technical objection, but he declared himself unable to do so. Suggestions were then made by members, who pointed out that in the meantime one or two others had arrived, so that a quorum was now present; moreover, that presumably some of the President's colleagues, members of the Council, were in the ante-room, and that had they come in as usual a meeting would have been constituted. The President replied that obviously a quorum was required in the room itself, and that no count could be taken of members who might be in other parts of the building; also that a quorum must be secured within the fifteen minutes' grace. He declined to reconsider the matter, and retired while the protests were still being made.

Thereupon the members, exactly thirty now being present, decided to hold a meeting, and voted the President of the Society of Members, Dr. J. Brindley-James, to the chair. A resolution was moved from the chair and seconded by Mr. Dennis Vinrace, affirming the desirability of admitting the members to direct representation on the Council of the College. The proposer said that no one outside the Council could be found to support its action in denying the just and reasonable claim of the members to representation, and the seconder quoted the replies which the Council had made of recent years, and commented upon their weakness and inadequacy. He said that ultimately the appeal must lie to the Privy Council.

Dr. S. C. Lawrence, the Secretary of the Society of Members, protested in very strong terms against the treatment meted out to the members that afternoon. The government of the College was proved to be an oligarchy, and the action of the President on that occasion confirmed everything that he had ever said about it. He thanked God that the members had had nothing to do with placing such a man in that position. He urged that it was a matter for regret that the President should stoop to the mean action of keeping his colleagues on the Council waiting outside while he himself came in to announce that there was not a quorum, which there would have been had those members made their appearance. He was preventing the exercise of the rights and privileges of the members. The members had been treated with absolute contempt. The President had taken advantage of the occasion to escape their criticism.

The resolution was carried by 22 votes to one, the dissentient remarking that the slanderous attack upon Sir Anthony Bowlby had entirely changed his sympathies, and as a protest he could only vote against the resolution and immediately withdraw, which he did.

Other speakers described what had occurred as an affront to the members, and as something which could not have happened in any other assembly, from the House of Commons to a meeting of a board of guardians. Dr. F. G. Lloyd, however, admitted that there had not been a quorum, and therefore the President, strictly speaking, was within his rights in refusing a meeting. Dr. Lloyd had charge of a resolution which requested the President and Council to nominate at least two members in general practice to represent the interests of general practitioners in the management of College affairs. He said that this was the thirty-fourth year in which this protest had been made; it had been made under discouraging circumstances and sometimes discourteously received, but he cited a long list of eminent Fellows who had agreed with the members' demands. Dr. Arthur Haydon supported the resolution, but urged that the number of general practitioners nominated should be five instead of two. Dr. David Roxburgh

thought that it was time that the Society of Members turned its activity into another direction, and he suggested that it should endeavour to get the election of the President of the College into the members' own hands. The resolution was carried, as was a further resolution requesting the President to make a detailed statement of the reasons, legal or otherwise, for the Council's refusal to allow representation, and to state also whether legal advice had been taken, and, if so, what was its tenor. It was agreed to forward the resolutions to the Council.

Medical News.

THE annual meeting and dinner of the Epsomian Club will take place in the Oak Room, Trocadero Restaurant, Piccadilly Circus, on Thursday, December 8th. The meeting will be held at 6.15 p.m. and the dinner at 7.15. Dr. H. E. Haynes will take the chair. The charge for the dinner will be 10s. 6d. without wine. It is particularly requested that members of the club intending to be present will notify the honorary secretary, Mr. S. Maynard Smith, C.B., F.R.C.S., 49, Wimpole Street, London, W.1. The list of addresses of members is still inaccurate, and the secretary will be glad to be informed of any necessary corrections.

THE annual dinner of the Medico-Legal Society will take place at the Holborn Restaurant on Wednesday, December 14th, at 7.15 o'clock. The honorary secretary is Mr. Ernest Goddard, 3, South Square, Gray's Inn, W.C.1.

TWO medical men have recently been called to the Bar—Dr. John Divine, of Lincoln's Inn, and Dr. Philip Barlow, of the Middle Temple.

THE annual dinner of the Cancer Hospital will take place at the Hotel Cecil on Thursday, December 8th. The chair will be taken by Sir Charles Ryall. Tickets (35s. each) may be obtained from Mr. Cecil Rowntree, 9, Upper Brook Street, W.1.

THE third annual dinner of the Association of Certificated Blind Masseurs was held at Pagani's Restaurant, on November 14th. The President, Sir Arthur Pearson, was in the chair, and amongst the Vice-Presidents who attended were Mr. W. G. Howarth, Dr. Murray Levick, Mr. Mansell Moullin and Mr. A. H. Tubby; the members present including soldiers blinded in the war and trained in massage at St. Dunstan's, and civilian masseurs and masseuses trained under the auspices of the National Institute for the Blind.

THE dinner of the London (Royal Free Hospital) School of Medicine for Women will be held on Friday, December 2nd, at 7 for 7.30 o'clock, at the Connaught Rooms, Great Queen Street, W.C.

THE annual meeting of the Tuberculosis Society will be held on Friday, December 2nd, at 7.30 p.m., at the Caxton Restaurant, Tothill Street, Westminster. The meeting will be followed by a supper in the restaurant, and tickets, price 4s., may be had from the honorary secretary, Dr. F. J. C. Blackmore, 39, Woodland Terrace, Old Charlton, S.E.7. The programme for the ensuing session includes the discussion on January 23rd of a subcommittee's report on the classification of tuberculosis, and a general discussion on May 22nd on the relationship of dispensaries and other institutions for tuberculosis. A provincial meeting has been provisionally fixed for June 26th at Bristol. The ordinary meetings are held at the Margaret Street Hospital at 7.30 p.m.

A MEETING of the Harveian Society will be held at the rooms of the Medical Society of London, Chandos Street, Cavendish Square, on Thursday, December 8th, at 8.30 p.m., when a discussion on "Is the anginal syndrome only of cardiac origin?" will be opened by Sir John Charlton Briscoe, Bt., followed by Sir Sydney Russell Wells, Dr. G. H. Hunt, and Sir William Willcox.

A TABLET erected in the Sir Alfred Jones Memorial Hospital, Liverpool, to the memory of the late Dr. John Grimes, who took a large part in the establishment of the hospital, was unveiled by Dr. W. B. Paterson on November 18th.

THE forty-third autumn general meeting of the Irish Medical Schools' and Graduates' Association was held on November 17th, at Pagani's Restaurant, the President, Major-General Wallace Kenny, C.B., A.M.S.(ret.), in the chair. A resolution was passed conveying to Lady Evatt the sympathy of the association with her and the family at the loss sustained by the death of the late Surgeon-General Sir George Evatt, K.C.B. In seconding this resolution the President remarked that it was a singular circumstance that since their last general meeting their society had lost two of their most distinguished members, both well known Army medical officers, Sir Peter Freyer, K.C.B., and Sir George Evatt, K.C.B. They both were students at Queen's College, Galway, and that far-off seat of learning might well be proud of having sent out two such distinguished alumni. The high esteem in which Evatt was held by the Royal Army Medical Corps (which owed its inception to his efforts) was shown by his being one of the four honoured by having their *plaques* placed on the walls of the Royal Army Medical College in Chelsea. The meeting of the association was followed by a dinner at which the loyal toasts were drunk with enthusiasm, all the company of eighty-three members and their friends standing up and singing "God save the King."

THE celebration of the seventh centenary of the faculty of medicine of Montpellier was accompanied by the inauguration of the monument of Rabelais, its most famous alumnus, by the President of the French Republic, M. Millerand, on November 4th. Many banquets and receptions were held during the celebrations, at which delegates were present from all parts of the world, and, according to the *Paris medical*, an average of a dozen orations were made each day during the four days of the ceremonies.

THE tenth Italian Congress of Stomatology was held at Trieste from October 1st to October 4th, when the following subjects were discussed: Dental service in schools, introduced by Professor Piperno of Rome; regulation of medical studies in view of the necessity of specialization, introduced by Professor D'Alise of Naples; oral sepsis, introduced by Dr. De Vecchis of Naples; modern progress in oral surgery, introduced by Dr. Cavini of Bologna. Rome was chosen for the eleventh congress in 1922.

DR. HARVEY CUSHING was elected president of the American College of Surgeons for the ensuing year at its meeting held recently in Philadelphia.

SIR GEORGE T. BEILBY, F.R.S., Sir John Cadman, K.C.M.G., and Professor J. S. Haldane, M.D., F.R.S., have been appointed to represent the medical or other sciences on the Advisory Committee for Coal and the Coal Industry set up under Section 4 of the Mining Act, 1920. Sir Andrew R. Duncan has been appointed chairman of the Committee.

A POST-GRADUATE course on oto-rhino-laryngology will be held at the Lariboisière Hospital, Paris, commencing on December 3rd, and continuing thrice weekly, comprising twenty lectures and demonstrations. The fee is 150 francs, and further information may be had from the Faculty of Medicine, Paris.

IN addition to Dr. J. W. Edwards, Minister of Health, whose appointment we noted recently, two other medical men are included in the new Canadian Ministry, Dr. L. P. Normand, President of the Privy Council, and Dr. R. J. Manion, Minister of Soldiers' Civil Re-establishment.

THE pupils and friends of Dr. J. Darier are presenting him with his bust, by Sabouraud, and a medallion, engraved by Dr. Paul Richer (famous both as physician and as artist), on the occasion of his retirement from the Saint-Louis Hospital, Paris.

A MEMORIAL was unveiled recently at Tournai, Belgium, to Brisseau, who published in 1705 the first account of cataract.

A MEETING of the Midland Tuberculosis Subgroup of the Society of Medical Officers of Health will be held at the Antituberculosis Centre, 44A, Broad Street, Birmingham, on December 3rd, at 3 p.m.

STATISTICS show that the marriage rate in Prussia has more than doubled since 1913; in that year about 15 persons in every 1,000 were married, in 1920 the rate was 28, and now it is 32. The annual birth rate has not kept pace with the increase in marriages; in 1913 it was 29 per 1,000, and in 1920, 25 per 1,000.

A BUST of the late Professor G. Galeotti is to be placed in the pathological institute at Naples, the scene of his long and distinguished labours.

THE American Red Cross has issued as postcards reproductions of some of the thirty posters made by M. Poulbot, whose drawings of children are so popular in the French press, for the Child-health Exhibition which has been touring the larger cities of devastated France since May.

THE late Mr. Richard Braithwaite Green, of Huyton, Lancs, who died on September 6th, has left net personalty of £172,954. After certain bequests, he leaves all his property to his wife, on whose decease the University of Liverpool is to receive £20,000 as an Ann Green bequest, to be applied as the council of the University may from time to time see fit, and the Liverpool Royal Infirmary £1,000.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Facilius, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

DR. S. A. MONTGOMERY (Cleethorpes, Lincs.) desires information as to the value of Condurango bark in the treatment of gastric cancer, or its use in any stage of the disease.

INCOME TAX.

"D. W. F. J." is tuberculosis physician for a county area, and inquires whether he can claim the benefit of the three years' average.

As he appears to hold an office under a body corporate or incorporate he would seem to be assessable under Schedule E, in which case the statutory basis is not applicable to the amount of the salary payable for the actual financial year.

"J. C. C. H." who resides abroad, inadvertently omitted a claim for income tax in respect of interest on war loan. He has written to the collector for repayment, but cannot obtain a reply.

We suggest that he write to the Secretary Inland Revenue, Somerset House, W.C.2, explaining the circumstances in full. It will be advisable to state the English address at which "J. C. C. H." was residing, and to quote the year for which the assessment was made, and, if possible, the assessment number appearing on the collector's receipt.

"J. F. D." took a partner this year, and the inspector declines to make separate allowance for the expense of renewing his own car or for his children.

The inspector has no option in the matter; an income tax assessment on partnership profits must be made in one sum. But, of course, "J. F. D." and his partner need not as between themselves bear the net tax charged in the ratios in which they divide the receipts of the practice. What is really wanted is a recalculation of the joint liability on the basis of separating the expenses and allowances, so that "J. F. D." and his partner may divide the tax payable correctly between themselves; the inspector may be able to assist in calculating that division.

LETTERS, NOTES, ETC.

AT the second annual general meeting of the Southend Doctors' Cricket Club the following officers were elected: President, Dr. H. Cleveland Smith; captain, Dr. T. B. Sellors; vice-captain, Dr. Gordon Hopkins; honorary secretary Dr. A. W. Holthusen. Last season the club won three games and lost six.

BIRTH CONTROL.

DR. HALLIDAY SUTHERLAND (London, W.) writes: In the JOURNAL of November 19th Dr. Marie C. Stopes states that birth control "has hitherto (erroneously) been much prejudiced in popular opinion by being supposed to be an atheistical movement originated by Bradlaugh," and points out that the origin of the movement may be traced to an earlier date. Both of these statements are true. The propaganda for artificial birth control began in 1854, when the late Dr. George Drysdale first published *The Elements of Social Science*. Dr. Drysdale was a sincere atheist. As Dr. Stopes has had the courtesy of your columns, I beg leave to quote, without comment, her opinion of the medical profession. In the course of a letter dated November 14th, 1921, and published in the *Sussex Daily News*, and in the *Midland Daily Telegraph*, Dr. Stopes writes:

> That there may be medical men who do not approve of birth control is natural, when one remembers that a doctor has to make a living, and can do so more easily when women are ailing with incessant pregnancies than when they maintain themselves in good health by only having children when fitted to do so. Opinions of medicals, therefore, must be sifted. The best doctors are with us; the self seeking and the biassed may be against us.

DR. BINNIE DUNLOP (London, S.W.) writes: Dr. Marie C. Stopes, whose valuable books I constantly recommend, protests (page 872) against the statement that the birth control movement in England dated from the trial of Charles Bradlaugh in 1877—for republishing Dr. Knowlton's pamphlet, "The Fruits of Philosophy," because the Government had interdicted it. She must admit, however, that there was no *organized* movement anywhere until Bradlaugh and the Doctors Drysdale, immediately after the trial, founded the Malthusian League, and that the decline of Europe's birth rate began in that year. It may now seem unfortunate that the pioneers of the contraceptives idea, from 1818 onwards (James Mill, Francis Place, Richard Carlile, Robert Dale Owen, John Stuart Mill, Dr. Knowlton, Dr. George Drysdale, Dr. C. R. Drysdale, and Charles Bradlaugh), were all Freethinkers; and Dr. Stopes harps on the religious and praiseworthy Dr. Trall, an American, who published *Sexual Physiology* in 1866. But Dr. Trall was not at all a strong advocate of contraceptive methods. After a brief but helpful reference to the idea of placing a mechanical obstruction, such as a sponge, against the os uteri, he said:

> Let it be distinctly understood that I do not approve any method for preventing pregnancy except that of abstinence, nor can I admit reasons for producing abortion on the ground that it is to all intents and purposes physiological. It is only the least of two evils. When people will live physiologically there will be no need of preventive measures nor will there be any need for works of this kind.

A COPPERFIELD.

J. EDWARD J. DOMVILLE, while searching for information on another subject, came across the enclosed announcement in a West Country newspaper of August 9th, 1786:

> "We hear from Holdsworthy (Devon) that last week a man of that town, after experiencing for many days the most excruciating labour pains, was safely delivered in his own garden, by the anus, of three small, hard, inanimate lumps, one of which, when cleaned, bore strong marks of the human face. This, though wonderful, is really a fact, which can be attested by the principal inhabitants of the place; and the curious may be favoured with a sight of the offspring, by applying to Mr. Collins at the White Hart, Holdsworthy, who will preserve them for that purpose."

It would seem that the eighteenth-century host of the White Hart would not have had much to learn from a twentieth-century advertising agent.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, 32, 33, and 34 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30 and 31.

THE Home Secretary announces a vacancy for a medical referee under the Workmen's Compensation Act, 1906, for the Preston and Chorley and Lancaster County Courts in Circuit No. 4. Applications to the Private Secretary, Home Office, by December 14th.

THE appointments of certifying factory surgeons at Newton Abbot (Devon) and Cardigan (Cardiganshire) are vacant.

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A Lecture
ON
VARICOCELE IN THE FEMALE.

GIVEN TO GRADUATES AT ST. MARY'S HOSPITAL, MANCHESTER
NOVEMBER, 1921.

BY
PROFESSOR W. E. FOTHERGILL.
HONORARY SURGEON TO ST. MARY'S HOSPITAL, HONORARY GYNAECOLOGICAL SURGEON, MANCHESTER ROYAL INFIRMARY.

A RECENT writer remarks that perhaps no subject in the field of gynaecology has been so thoroughly neglected as varicose veins in the female pelvis. He rightly says that there are but a few important clinical reports on the topic in the literature, and he mentions those by Winkel in 1886, by Dudley in 1889, by Miller and Kanavel in 1905, also Skene's textbook written in 1895. As these communications are not easily available for reference I may mention that I referred to the subject in my *Handbook of Diseases of Women*, published in 1910, and gave a clinical lecture on it which appeared in the *Clinical Journal* on March 31st, 1915. Further, a paper by J. A. Wall was printed in *Surgery, Gynecology, and Obstetrics* in 1916 (vol. ii, p. 61). The recent writer I have quoted is L. A. Emge, whose paper is in *Surgery, Gynecology, and Obstetrics* for February, 1921. As it would seem that the subject is not yet stale I propose to bring it more or less up to date in this lecture.

Anatomy.

Anatomists describe five plexuses of veins in the pelvis: The vaginal, the uterine, the vesical, and the haemorrhoidal, which drain into the inferior hypogastric vein, and, last but not least, the pampiniform plexus. This drains into the ovarian vein; and it must be noted that the right ovarian vein opens direct into the vena cava, its entrance being guarded by a valve which is said to be the only one in the pelvic venous system. The left ovarian opens into the left renal vein, with nothing to prevent venous backward pressure.

The vaginal, uterine, vesical, and haemorrhoidal plexuses of veins are all embedded in the subperitoneal pelvic tissue, which, besides connective tissue of varying density, contains plenty of non-striped muscular tissue. Thus these veins are well sheathed and supported. But the pampiniform plexus is made up of two masses of veins, one above and one below the ovary, and these lie simply between two layers of peritoneum without any other support. The ovarian vein itself is merely covered by peritoneum and is not embedded in connective or muscular tissue.

It follows from these considerations that the veins in the broad ligaments, and especially those of the left side, are, of all venous structures in the female body, the most liable to distension. Bunches of varicose veins in the broad ligaments are, indeed, a familiar sight to all who are in the habit of exploring the pelvis, even in the Trendelenburg position, through abdominal incisions.

Etiology.

It must be made perfectly clear that varicose veins in the pelvis are often seen in connexion with fibroids and other new growths, in cases of old pelvic infection and also in cases of marked retroversion. These secondary venous distensions do not concern us at present. They have nothing to do with the case, and are managed by treating surgically the primary conditions to which they are secondary.

The varicosities in question are not secondary to any other pelvic lesion, and their causation is just the same as that of varicose veins in the legs and in the vulva. Like other varicose veins, those in the broad ligaments are made worse by pregnancy and by occupations that keep the patient standing during long hours. They are common in teachers, shop assistants, and post-office officials.

Pathology.

Congestion and oedema of the ovaries are constantly observed in these cases, and numerous small cysts are often seen after prolonged venous congestion. Overgrowth of fibrous tissue follows if the congestion is excessive. In some cases the internal secretion of the ovary would seem to be increased, at least for a time, for menorrhagia is a common symptom. But in other cases there is relative amenorrhoea, which suggests sclerosis of the ovaries and atrophy of their essential tissue.

Emge says that

> "With progressive distension the units of the pampiniform plexus are gradually affected until ultimately the uterine and other plexuses of the pelvis are involved also by virtue of their intimate relation through the anastomatic uterine vein."

No doubt this may be the course of events in some cases. But we see cases of extreme varicosity in the vulva or vagina, in the bladder, in the uterine sinuses, and also in the rectum, which is not extension of varicosity of the pampiniform plexus.

Symptoms and Course.

The leading symptom is dull aching pain in the left side low down; it is often felt on both sides, and sometimes is confined to the right side. Young girls do not complain of this pain, but its onset is often preceded by a few years of congestive dysmenorrhoea. The pre-menstrual and menstrual aching prolongs itself into the intermenstrual period, until the gnawing pain is practically continuous except when the patient is lying down. The condition may begin to be troublesome after marriage or after parturition, and is seldom relieved by either event. It is usual to say that the pain is made worse by constipation, and this is true in the sense that curing constipation relieves pelvic congestion. But there are some women in whom a loaded rectum is habitual, and seems to support the varicocele in some degree, for they state that they are more free from pain when the rectum is comfortably full than when it has been emptied. The natural cure of the condition comes, in many cases, with the menopause, for there is then a marked reduction of the pelvic blood supply, often accompanied with the deposition of much fat, which may support the veins in some degree.

It will be said that many men have varicocele without pain, and that many varicose veins in the legs do not ache. No doubt, also, there are innumerable women with varicocele in the broad ligaments which does not enter consciousness in the form of pain. The sensitiveness of the nervous system plays its part. The hyperaesthetic woman will feel as severe aching a degree of venous distension which the ordinary woman would only describe as a feeling of weight in the pelvis or a bearing down, and the stolid woman would not feel it at all. This is borne out by the fact that the pain often vanishes when a woman is in good health, only to return whenever she becomes run down, as, for example, after an attack of influenza.

Diagnosis.

The condition is suspected as soon as the patient has described her symptoms and given her history. But the diagnosis is only made after excluding the conditions—new growths, retroversion, and the results of infection—which can produce secondary varicocele or can complicate the primary form. If bimanual examination shows the pelvic organs to be normal in size, shape, consistency, and position, the leading symptom is sufficient to establish the diagnosis if there is no history of venereal or septic pelvic infection. I have previously written that the bunches of veins cannot be felt by the examiner; but Emge says that this is because the patient is examined in the recumbent posture, and in this position the veins are well drained and not palpable. He states that if, during examination by the recto-vaginal touch, the patient is asked to drop her legs and assume a sitting posture, it is often as easy to feel these veins in the female as in the male. As they fill up they form "an easily compressible and doughy tumour that is much less tender than either an inflamed or an ectopic tube." The tumour will disappear when the patient lies down again. This is quite correct. The presence of varicose veins in the legs of a patient gives a useful hint.

The condition of varicocele in the female is generally diagnosed as ovaritis. A student who mistook varicocele in the male for orchitis would rightly be referred for a period of further study, and he should suffer the same punishment for making the same mistake in the female patient. When the pain is confined to the right side it is possible to mistake the condition for appendicitis, and both

may, of course, be present in the same case. When there is doubt, examination in the sitting or standing posture should clear up the point.

Prognosis.

Many women with constant pain in the sides have healthy children one after another and have good health in other respects. The pain generally disappears at the change of life, but until that in reached there is no prospect of permanent relief in pronounced cases. The slighter cases are amenable to treatment in some degree. The important factor is the patient's nervous system. The hyperaesthetic woman, especially if she has a kind husband and sympathetic relatives, is likely to transfer her patronage from one doctor to another until, after descending a scale of faith-healers and quacks, she ends up a hopeless neurasthenic, bereft of her appendix and both her ovaries. The ordinary patient, after having her discomfort explained by a wise medical adviser, will adjust her life according to his instructions, take care of her general health, keep her bowels loose, and put up with the aching when she cannot avoid it.

Treatment.

A careful and sound prognosis is the essential element in the treatment of this condition.

Unfortunately the diagnosis of ovaritis has often led to mistaken treatment of varicocele. For the word ending in "itis" suggests inflammation. The idea of inflammation suggests the use of hot douches and glycerin plugs, which make the patient much worse. Who would blister the scrotum for varicocele and who would remove the testis? Yet square yards of blisters have been used and multitudes of ovaries have been excised for the same condition in women.

Bunches of dilated veins in the broad ligaments have often been tied and excised with temporary benefit; but the pain generally returns sooner or later, with disappointment as the result. It must be allowed that there is at present no local or surgical treatment available. The patient should be told to keep her bowels loose and to avoid standing, but to take plenty of active exercise—work or play. The most useful drugs in my experience are the two old-fashioned mixtures—cascara, belladonna, and strychnine; and quinine, iron, and Epsom salts. Many patients find peace by taking a small saline aperient every morning. A change of employment often works like a charm.

ON FORECASTING.

A CONTRIBUTION TO THE PROGNOSTICS OF SOME ANOMALIES OF THE HEART AND OF THE URINE.

BY

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FORECASTING is a treacherous business, especially when chronic affections are at issue. But we cannot escape it; for a patient's interest in the remoter future of his health is only second to his interest in being cured outright, and, when a cure appears to be unattainable, the problem of the future fills his field of vision.

Moreover, forecasting is potent for good or for evil, according as it is judicious or the reverse. Well men have been made sick men by ill-judged interpretations of unimportant anomalies, and sick men have been made much better by well-chosen yet honest prophecies; for "there are ways and ways," as the saying goes, of breaking bad news. I have heard it said of a well-known physician, no longer living, that a patient, consulting him for, say, Bright's disease, would leave with the conviction that Bright's disease was reserved only for the luckiest among men. Surely the height of compliment—or so it seems to me.

I will assume, then, that the first essential of a judicious prognosis is a correct interpretation of abnormal findings.

The second is, that the observer should have access in his mental library to a good supply of apposite life-histories on which to base his forecast. But these are hard to come by. We are taught certain standards of physical health, standard interpretations of physical abnormality, and standard forecasts of disease, and spend the rest of our lives amending them in the school of experience. In this slow school we learn, among other things, two lessons which are vital to breadth of view. The first concerns the number and extent of the departures from standard normality which are compatible with health. The second is that standard prognosis is but the vaguest generalization, and necessarily leaves out of account the one factor which more than all else determines the event—namely, the response of the individual to the disease he carries. This factor is itself one of the utmost variability, moulded as it is by a hundred subtle influences—heredity, temperament, success or failure, labour or ease, sobriety in living or its reverse, and who shall say what other accidents of change and chance? So we need not wonder that standard prognosis of chronic affections helps us little, nor that forecasting should be, in practice, so difficult as it is.

The third essential to judicious forecasting is optimism—strained to the furthest limits of honesty, except in the case of the patient whose native hopefulness is such that nothing short of a good fright will make him take the precautions necessary for his safeguarding. Fortunately, if I may judge by my own evolution in this matter, experience makes for optimism, on the whole. Perhaps in one's early days one's view is coloured by recent memories of many autopsies, in which were revealed the fatal end-results of diseases, but not the conditions of life and the long intervals of time which had been required to develop them to their lethal pitch. Certainly I am more sanguine now than I used to be.

I have said that apposite life-histories upon which to base a reasoned forecast are hard to come by. It is only the old in years and experience who have had the opportunity to collect at first hand an abundance of facts on this important subject. Even at second hand precise data are not very accessible, though a wealth of them must be reposing in the memories of the fathers of our craft throughout the country. So I have been tempted to record in this essay a few facts which have a bearing on the prognosis of some abnormalities of the heart and of the urine, together with some tentative opinions.

Most of the facts are drawn from experience gained during the last sixteen years at the headquarters of a large life assurance society. It is a form of experience which gives a good insight into "the normal," for a very large majority of the people who submit themselves for examination believe themselves to be well. At all events they are active and busy members of society, and represent the average of the workaday non-invalid community. Moreover, owing to the fact that the same individual is occasionally re-examined at intervals of years for fresh assurances, one is able sometimes to date approximately the emergence of disease and to mark its progress and duration. Lastly, the examiner in this sphere of medicine has the advantage of an instructive custom somewhat favoured by the rejected of insurance offices, or such of them as prefer not to die punctually of their disabilities. Their custom is to revisit the scene of their sentence years after its delivery, and to flaunt their continued well-being before their judge or his successor. This practice, however doubtful in taste, serves a very useful purpose in correcting preconceptions.

For a good many of the facts that follow I am indebted to Dr. W. E. Risdon, until lately my senior colleague at the Sun Life Assurance Society, who has been good enough to put at my disposal instances drawn from an experience probably unique in its extent. To him, and to the directors of the society for permission to make use of records, I wish to express my acknowledgements.

ABNORMALITIES OF THE HEART.

1. *Of the Impulse.*

All things considered, the position of the heart's impulse is wonderfully constant in adult life. If it is in the fourth space it tends to be in the nipple line, but if, being in the fifth or sixth space, it is displaced outwards even a little, one is entitled to be suspicious. Yet occasionally a slight outward displacement in these spaces seems to be no more than a physical idiosyncrasy. I have met it a good many times in circumstances which offered no explanation of it. For instance—a man, aged 35, had an impulse in the nipple line in the sixth space; no increased

force, no murmur, no albumin. He had previously been charged an extra rate by another office on account of his heart. He was re-examined on four occasions within the next eleven years, and at the age of 46 was in good health and physically unaltered. On the other hand, I believe that a nipple-line impulse when combined with any increase of force must be regarded as pathological, whether it be in the fifth space or the sixth. It is a singular thing that most athletes, even those who have indulged largely in the most taxing sports, such as rowing, do not exhibit any palpable increase in the force of the heart's impulse. A sixth-space impulse within the nipple line is not infrequent in them, but its force is average. I am driven to conclude that in the healthiest hearts the increased efficiency demanded by violent exercise is met by a physiological reserve which spares the necessity for gross hypertrophy; and that when in such people hypertrophy does occur to a palpable extent, it is evidence that the heart has overdrawn its balance. If this be a correct inference, then the so-called "athlete's heart" is a heart which has proved unequal to the strain put upon it.

2. *Abnormalities of Rate.*

(*a*) *Hurry.*—All grades of hurry are met with, some being so extreme as to make examination of the heart sounds impossible. Minor degrees of hurry are of no account, being merely an expression of the mild panic into which the prospect of a medical examination throws plenty of healthy people. But it is otherwise with the extreme grades. At least, there is some evidence that hearts which habitually race on small excuse may do damage both to themselves and to the vascular system in course of time. For example:

A man, examined for the first time at the age of 24, was noted as having "very neurotic heart sounds," but no murmur nor albumin. Five years later, when he was 29, the heart's impulse was "a little too forcible and extensive." There was still no albuminuria. Eighteen years after the first examination, when he was 42, the impulse was in the nipple line and increased in force, and there was albuminuria.

In this connexion I may mention the case of a woman who said that she began to suffer from palpitation of the heart at the age of 18. This lasted for some seven years and then ceased. Eleven years later, in her thirty-sixth year, it recurred. At 38 she developed an enlargement of the thyroid gland and a few months later exophthalmos. When I saw her at the age of 40 she was an example of severe exophthalmic goitre, with a pulse rate of 144 at the end of the examination. At about this time a hemithyroidectomy was performed on her by Mr. James Berry. I examined her again seven years later, when she was 47. She was practically free from thyroid symptoms, her pulse rate was 80, and her general condition good; but her heart was greatly hypertrophied and her systolic blood pressure high (165 mm. Hg). There was no albuminuria.

(*b*) *Slowness.*—The habitually deliberate pulse is commonly taken to make for longevity. The belief is reasonable if there is truth in the adage that it is the pace that kills, and is supported by cases like the two last mentioned if the inferences I have drawn are to be trusted. I have one fairly complete record of a slow pulse. A man had at the ages of 31 and 35 a pulse rate of 48. He was re-examined at intervals throughout his life. At the age of 46 his pulse rate was 68, at 60 it was 54, and at 67 it was 58. He died in his 72nd year from heart failure.

3. *Abnormalities of Rhythm.*

Occasional extra-systoles are common at all ages. In young and otherwise normal people, when the presumption is against degenerative affections of the heart, one can disregard them with an easy mind. But as age advances and the presumption becomes more and more in favour of an organic basis for cardiac abnormalities, it is not so easy to take a lenient view. Nevertheless, irregular hearts in people who have passed middle age may be capable of years of good service. For instance:

A man was first examined at the age of 47. His heart was normal, and he was in all respects well. A year later, at 48, he exhibited extra-systoles in some abundance. Four years later again, at 52, the irregularity persisted, but no other fault could be found. He was still alive at the age of 64, sixteen years after the first appearance of the irregularity.

A man, aged 58, who had an impulse in the nipple line, but not increased in force, exhibited an arrhythmia not of the common extra-systolic type. In other respects the heart sounds were natural, and he was unaware of the irregularity till it was brought to his notice. Examined again five years later, at the age of 63, he gave a history of two attacks of gout in the interval. His heart was again irregular and apparently unaltered. He was still living, in his 70th year, twelve years after the first detection of the arrhythmia.

4. *Abnormalities of Sound.*

(*a*) Systolic murmurs at the pulmonary orifice are, of course, very common among sick people, and are considered, rightly, as of little account. But they are also common among well people, and are sometimes so loud and harsh as to raise a strong suspicion of their gravity. On several occasions I have felt constrained to advise the imposition of an extra rate for these exceptionally harsh pulmonary murmurs. Yet I do not recall a single example of an untoward ending to such cases, and incline to think that even the harshest of them, in the absence of symptoms, has no ominous significance.

(*b*) Apical systolic murmurs are common, especially when the heart is emotionally disturbed. Some of these appear only at the height of inspiration, and others can only be dismissed by forced expiration. But I have had no reason to believe that these murmurs which are influenced by respiration are of any consequence. There are others about which it is hard to form an opinion as to whether they represent a leak at the mitral orifice or not. Every observer has his own standard of the quality which establishes in his mind the conviction that an apical murmur is organic, and I do not think it permits of description. But I have twice in after-years re-examined hearts which I had previously regarded as being the seat of mitral regurgitation, only to find them normal. This experience is common among sick people, but it is unexpected among those well enough to be about their business. I conclude that relative incompetence of the valve, due to lack of muscular tone in the heart, is not confined to the obviously debilitated and those suffering from recent infections, and that it is well not to be too positive as to the permanency of this murmur. Here are the instances:

A man examined at the age of 22 had what I considered to be a definite organic mid-systolic murmur, without any history of precedent illness. Ten years later his heart appeared to me to be perfectly sound.

A man was declined for life assurance, on the score of his heart, at the age of 25. The following year I examined him and considered that he was suffering from leakage at the mitral orifice. I re-examined him two years later and could find no fault in his heart beyond a suggestion of increased force in the impulse.

I have notes of a third case. At the age of 32 a man was considered (by a very experienced examiner with whose standard I am well acquainted) to be suffering from mitral regurgitation. His heart's action was excited, but this was specifically discounted in the record. There was a systolic apical murmur, audible also in the left posterior axillary line. Twenty-three years afterwards I examined him, at the age of 55, and could detect no fault. The original examiner, seeing this man again at the age of 61, passed his heart as healthy.

(*c*) There is occasionally to be heard over the base of the heart a loud, almost humming, systolic murmur—very striking indeed. This murmur is banished by a deep breath and shows no disposition to recur. I do not know its explanation, but it is of no consequence. Conversely, there is another murmur called into being by deep inspiration. It is systolic in time, and heard immediately below the clavicles—a harsh murmur, resembling that heard over a traumatic aneurysm. It is of no moment, and is due, I fancy, to distortion of the great vessels at the root of the neck by the muscular or fascial tension set up by deep breathing.

(*d*) It is well known that mild mitral regurgitation may be regarded favourably, especially when it can be definitely ascribed to rheumatic fever in the remote past. I have notes of a man who had rheumatic fever at the age of 19. When I saw him, at the age of 51, his heart was the seat of a pronounced apical regurgitant murmur without hypertrophy. This, it is to be presumed, had been in existence for 32 years—that is, since his rheumatic fever—and had given no trouble, nor promised any. Another had been rejected at the age of 32. I examined him when he was 40. He then had mitral regurgitation. Thirteen years later I examined him again. He was then 53, and his heart had undergone no perceptible change and was behaving well.

(*e*) Aortic valvular disease is justly regarded with more apprehension, yet even here there is room for optimism,

prudently applied; and many victims of the lesion in its milder degrees live comfortably for indefinite lengths of time if they can look after themselves and have reasonably good luck. For instance:

A man who, at the age of 30, had been accepted as healthy, was examined by me twenty years later. He was then 50, had a jerky pulse, an impulse in the sixth space, just within the nipple line, a loud double aortic murmur, and albuminuria. I was intimidated and rejected him. But fourteen years after, at the age of 64, he asked that I might be made aware that he was still alive and well.

I have another note of a man, aged 75, whose mother (probably) and four brothers and sisters had died of phthisis. This man was said by his doctor to have had slowly advancing phthisis of both lungs for fifty years, and to have a systolic aortic bruit, developed within the last twelve months. Nevertheless, he was still living and "well" eleven years later, at the age of 86.

ALBUMINURIA.

Albuminuria has long been a battleground, and has caused many hard things to be said of doctors who examine for life assurance by doctors who do not. The current teaching of the laboratory is that when globulins are preponderant the symptom is negligible. But for the present this is little more than an *ex cathedrâ* dictum, awaiting the test of time.

Meanwhile, it is certain that some albuminurias do not affect health visibly, even after many years. For example: A man, aged 49, had been found albuminuric at the ages of 17, 31, and 41; yet at 49 his urine was normal, and so was his vascular system. This may be taken to represent the probable upshot of adolescent albuminuria. But one is reminded occasionally of ominous possibilities. A man, aged 22, had been declined on account of albuminuria one year previously. I examined him, and noted nothing amiss except that the impulse was under the sixth rib, yet inside the nipple line. Three years later, at the age of 25, he died of "chronic nephritis."

But on the whole I have been more impressed (in this sphere of the presumably healthy) by the longevity of albuminurics than by the reverse event. A man, weighing more than 17 st., and subject to winter bronchitis, was albuminuric at the age of 54. Here was a case surrounded by every circumstance of prognostic gloom, except that he was temperate in alcohol and came of long-lived stock. Yet (thanks to these saving clauses perhaps) he persisted in being alive fourteen years later at the age of 68. Another was consistently albuminuric on four occasions between the ages of 55 and 66, and seemed none the worse for it. Yet another was albuminuric on three occasions between the ages of 31 and 42. This last, as I understand the modern view, ranks as a probable nephritic; for his urine, though giving a pronounced reaction with cold nitric acid, gave none with cold dilute acetic acid. None the less he declined to be damaged by his albuminuria, served with infantry during the war, and returned still albuminuric and apparently nothing the worse. His systolic blood pressure at age 42 was 120 mm. Hg.

Even when accompanied by glycosuria albuminuria may be relatively benign. A man who at the ages of 46 and 54 passed both sugar and albumin, was alive at 60 and had every outward appearance of health. At this age the glycosuria had gone; but albuminuria persisted, and signs were not wanting that his vascular system was beginning to suffer.

Albuminuria due to, or at least associated with, intemperance can be conquered by faithfulness in sobriety, even when the case looks black. A man who was grossly intemperate between the ages of 32 and 40 was albuminuric at 32 and 37, tremulous, and grossly obese. He stood 5 ft. 9 in. and weighed 18 st. 11 lb. when, at the age of 40, he gave up alcohol. Four years later he was healthy to the eye, no longer albuminuric, and had lost 2 st. in weight. So the struggle was worth while.

GLYCOSURIA.

Glycosuria, like albuminuria, is a symptom hard to appraise, at all events within the limits of the tests admissible in life assurance work. It may be that blood-sugar estimations will throw an enduring light on this dark quarter. But here again some years must elapse before we can safely accept without reserve conclusions drawn from this source. Certain it is that some people pass sugar in fairly early life, and pass it for years without being appreciably the worse.

A man whom I examined at the age of 71 gave the following history: At the age of 30 he was told that he was suffering from diabetes by the senior physician of a London hospital. He was treated for three months, during which period sugar was found, he believed, on many occasions. It then disappeared for good, and there was no glycosuria when I examined him forty-one years later.

Another, aged 36, and of average physique, passed urine which caused some reduction of Fehling's solution and yielded osazone crystals. He was examined again at the ages of 42 and 45, when his urine was found to be exactly as before. Yet later in the same (43rd) year of his age he passed a specimen free from sugar.

Another, of average physique, reported that sugar had been found in his urine when he was 30 years old. He was examined at 37, and was definitely glycosuric on two occasions. But at 38 and 39 no sugar was to be found.

The fat "alimentary" glycosurics who make little of their disability are well illustrated by one who, at the age of 58, passed a urine of which one drop sufficed to reduce the Fehling's solution used for the test. He came of long-lived stock, and is still living eighteen years later, aged 76.

Another fat man, at the age of 40, passed a urine which caused slight reduction of Fehling's solution. At 50 he passed a urine giving a similar reaction and yielding osazone crystals. He was almost an abstainer, and seemed well.

Another, of the same fat type, at the age of 60 passed sugar on two occasions, and on one of them albumin also. Yet he lived for twenty-two years longer, dying at 82.

But there is a reverse side to this picture, and glycosuria, apparently of the "alimentary" type, is capable of becoming malign.

A fat man was held up for life assurance on account of sugar at the age of 38. At this time, and very likely on this account, he became a total abstainer. Seven years later, at the age of 45, he was still grossly obese (5 ft. 6½ in., 15 st. 10 lb.), but his urine was free from both albumin and sugar. Yet he died of diabetes and gangrene of the scrotum at the age of 54.

This case, with others of the same sort, leads me to believe that inheritance plays an important part in determining the outcome of glycosurias of middle age. This man's mother had died at 63 of diabetic coma. Another, whose mother had died of diabetes at the age of 66, passed a reducing substance at the age of 61, but no osazone crystals could be recovered from the specimen. The reaction was accordingly disregarded, but he died of diabetic coma eleven years later, aged 72.

That there is a relation between glycosuria and arterio-sclerosis is well recognized, and in cases of this sort it is generally the vascular lesion which counts. A fat man of 56 was glycosuric, and remained so in spite of dieting. Yet he lived for sixteen years, and died at 71, not from diabetes, but from renal cirrhosis and arterio-sclerosis. Another very fat man had sugar in his urine at the age of 52, and lived nineteen years, to die of Bright's disease at 71.

It will be understood, I hope, that this little series does not claim to represent the average behaviour of the abnormalities concerned, but it gives some insight into the possibilities, especially the more favourable ones. This is the most that can be looked for, since, as I have said already, the behaviour of chronic affections is swayed by factors of too much diversity to admit of ready averaging. Take, for example, senile atheroma of the aorta, and consider the extent to which the local incidence of the lesion (which we may call chance) dictates the patient's future. Place the lesion where it spares the origins of vital arteries, and then, even though the aortic valves should suffer, the process remains relatively benign; but let it encroach upon the coronary arteries, and how different does the prognostic picture become!

The same element of chance is apparent everywhere. A fit of rage, a race for a train, a bad cold, a heavy lunch, or any one of a thousand such incidents, may disconcert a forecast legitimate enough on the physical merits of the case. And conversely, when circumstances shelter them and give them peace, lives that are damaged may remain perched—and not uncomfortably—upon the very edge of the grave for surprising lengths of time, confounding all surmises. Indeed, the longevity of invalid annuitants has passed into a proverb.

It is not to be expected, then, that even the cleverest prophet in this field will escape without stumbles, but we can do something to secure our feet. So I hope that others will be prompted to amplify this attempt to provide much-needed information on an elusive subject.

THE RELATION OF CARCINOMA TO INFECTION.

BY

W. FORD ROBERTSON, M.D.,

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With Special Plate.

BETWEEN the years 1905 and 1909 I published, in some instances in association with co-workers, a number of papers on cancer, recording observations on the ground of which it was maintained that the disease is due to some form of infection. Two of these papers I wish specially to recall. The first, published in the *Lancet* of January 25th, 1908, was entitled a "Note on the presence and significance of certain rod-shaped bodies in the cells of carcinomatous tumours." In this paper I claimed that the rod-shaped bodies revealed by the palladium methyl-violet method in cancer cells were living organisms and at least a phase of a parasite that causes the disease. The second paper, published in the same journal on June 5th, 1909, was entitled "Experimental evidence of the infective origin of carcinoma and of the transmissibility of the disease from the human subject to the mouse." In this paper it was recorded that carcinomatous tumours developed in seven out of thirty mice fed with incubated fluid from the pleural cavity of a case of malignant pleurisy, and with similar fluid from the abdominal cavity of a case of malignant peritonitis. On the ground of this result it was contended that a living virus had been transferred from the human subject to the mouse, and that cancer was therefore of infective origin. This is all I need say about these previous investigations, and I pass to the results of new investigations to which I have devoted any spare time I could snatch from official and other necessary work during the past two years.

The method of research is to test an hypothesis. By induction from a few established facts, we can discern, more or less accurately, where the next important truth lies, and we set out to look for it. If, after a thorough search, we cannot find it, we conclude it is not there, and we abandon the hypothesis. If, on the other hand, our search proves successful, we claim that we have established the hypothesis that we set out to test. This is the method I have followed.

In the course of many years of bacteriological work applied to therapeutic immunization I developed some special culture methods, and, with their aid, observed some facts regarding the behaviour of bacteria which, although not altogether new, have attracted little attention. One of these facts has already proved of paramount importance for therapeutic immunization, because, unless it is taken into account, the bacteriological analysis upon which the success of therapeutic immunization primarily depends must very often be incomplete. This fact is that many bacteria that we regard as aerobes commonly assume, when their attack is prolonged, an anaerobic habit of growth, and can be cultivated only under anaerobic conditions. This applies, for example, to such important pathogenic species as *Micrococcus catarrhalis*, the gonococcus, *Streptococcus pyogenes*, *Streptococcus faecalis haemolyticus*, and several types of diphtheroid bacillus. Now suppose that an anaerobic bacterium of this kind gets within a living cell, what will happen? For the present we may consider the question only in regard to epithelial cells. In all probability these cells, like the mesoblastic elements, have a mechanism of defence against foreign invaders, but that this mechanism, if it exists, is sometimes overcome can be clearly demonstrated. Suppose then that a bacterium establishes itself within an epithelial cell and multiplies. What will happen? The first possibility is that the cell will die on account of the toxic action that must ensue. It is impossible that the cell can remain unaffected by the invader, but it is far from likely that in every instance it will succumb. We know that one action of many bacterial toxins upon cells is to stimulate growth. It is possible that some types of bacteria, if established within an epithelial cell, would have chiefly this effect. The cell would be stimulated to divide, and would go on dividing, so long as the foreign element producing the toxin remained within it. It might even, after some thousands of divisions, acquire the habit of continued proliferation independently of the presence of the parasites.

With these few facts and possibilities before me, the hypothesis suggested itself that the rods I had observed within cancer cells by means of the palladium methyl-violet method might be anaerobic bacteria that had established themselves within the epithelial cells, and that the continued proliferation was due to the action of these bacteria. This is the hypothesis that I have been trying to test during the past two years, and, extravagant as it may seem on first view, the evidence that can already be brought forward in support of it is, to put it quite mildly, sufficient to arrest attention. There are at least four distinct methods by which the validity of this hypothesis may be tested. They correspond to four distinct classes of possibly procurable evidence that may serve to establish or to refute it.

The first is the method of direct examination of cancer cells. We can make microscopical preparations of carcinomatous tissues, and endeavour to determine if we can observe in the epithelial cells any bodies corresponding in their general characters to bacteria. A thousand negative observations of this kind are valueless before one set of positive observation made by a special technique that consistently gives the same result when widely applied. Many years ago I worked for months endeavouring to discover a process that would give a positive result, and at last elaborated the palladium methyl-violet method. It gave its answer, and I demonstrated the results before scientific societies and published a paper. The method is a permanent one, and the sections, some of which are under the microscopes to-day, are as clear as they were fourteen years ago. The bodies observable are minute rods, resembling bacilli; there is evidence that they occur chiefly within the nucleus, and that when they are thrown out into the cytoplasm, as they may be during division of the cell, they display a chemiotactic attraction towards the nucleus. The infected cells occur in special areas; throughout the greater part of the tumour it may be impossible to observe any of these rods. On the ground of these results, obtained fourteen years ago, I maintain that the evidence of the method of direct examination supports this hypothesis of epithelial cell infection.

The second method is that of artificial cultivation of the supposed bacteria. If there are living micro-organisms within cancer cells, it may be possible to obtain growths of them by suitable methods. Here again thousands of negative results are valueless against a positive demonstration by a special technique that gives consistent results in a series of cases. The evidence of this kind that I have obtained is, perhaps, not so decisive as that of each of the other three methods, but it is, I think you will admit, sufficiently striking. The results suggest that it is necessary to widen the hypothesis that is being tested. They would seem to indicate that not one species of bacterium but several species belonging to a group are capable of causing cancer.

It is necessary that you should understand the methods I have used. Only those now found to be of most service need be mentioned. I use haemoglobin agar slopes of various degrees of acidity, set up anaerobically by the pyrogallic acid method. This mode of culture is, however, only of limited service. An anaerobic fluid medium is essential. The one that I have now used for several months is prepared as follows: One part of fresh serum of the sheep is added to 5 parts of sterile normal salt solution in a large test tube and incubated for twenty-four hours. If the fluid remains clear, it is next decanted into small tubes, which are filled to about 1 in from the top. With the cotton-wool plugs inserted, the tubes are placed together in a suitable bottle, and the air in this is exhausted by means of the Geryk pump for two days. The tubes are then taken out and immediately sealed by dipping the plugs in melted hard paraffin and replacing them. The tubes are next incubated for ten days at least. They are then numbered, and the fluid in each is decanted into a series of similar tubes, which are immediately sealed with paraffin. The number of the original tube is written on each. A small amount of the deposit remaining in each original tube is then examined microscopically by the staining method used in the subsequent

A paper read in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association held in Newcastle-on-Tyne, July, 1921.

study of cultures, and the decanted fluid in the tube with the corresponding number is passed as fit for use, only if the deposit gives a negative result as regards the presence of micro-organisms. After a few days' further incubation the decanted tubes, if they remain clear, are put aside in the cold and are ready for use.

Cultures are best made from scrapings of a freshly cut surface of the tumour. Incubation of the solid and fluid media has generally to be continued for from two to six weeks. Any colonies appearing on the solid media are examined in the usual manner. Growth in a fluid medium shows itself as a deposit or as minute white particles adhering to the glass. Before examination the fluid is centrifuged. The tube is then unsealed by heating the plug in a Bunsen flame. The fluid is decanted into another tube, which is immediately sealed with paraffin. It is of advantage to wash the deposit with distilled water and to centrifuge a second time. The deposit is then stained and examined. I have found Gram-neutral red staining the most serviceable, but some of the bacteria studied have required heating of the stain in order to obtain a satisfactory result.

I have made cultures chiefly from mammary cancers removed by the surgeon. For most of the specimens I am very greatly indebted to Mr. W. J. Stuart. For others I have to thank Professor Alexis Thomson, Mr. Alexander Miles, Mr. J. M. J. Hartley, and, I believe, one or two others who forgot to give their names when sending me the specimens by post. In several instances, as might be expected, the tumours showed common bacterial sepsis. *Streptococcus pyogenes*, staphylococci and aerobic diphtheroid bacilli were the most frequent contaminating micro-organisms. By far the larger number of specimens were, however, free from anything that can, I think, be rightly regarded as bacterial contamination. In many instances tissues that appeared sterile under aerobic conditions yielded colonies of diphtheroid bacilli, and less frequently of staphylococci, under anaerobic conditions. On first view these growths might also be regarded as the result of simple contamination, but, as I shall presently explain, they may have a different significance. A large proportion of the tumours yielded no growths on surface media, either under aerobic or under anaerobic conditions, but gave a positive result in an anaerobic serum broth, or in an anaerobic serum salt solution medium. The actual number of cases examined does not matter at this stage of the investigation, because many of the earlier observations were tentative and carried out with a technique that has been abandoned. The following is a summary of the positive results to which, in view of the testimony of the other three methods, I believe there is reason to attach importance.

From eight carcinomata of the breast removed by the surgeon I have obtained, under anaerobic conditions in a serum broth, or in a serum salt solution medium, growths of bacillary bodies resembling the rods observed by means of the palladium methyl-violet method in sections of similar tumours. These micro-organisms would not grow on a haemoglobin agar surface, either aerobically or anaerobically. Stained by the heated Gram-neutral red method they appear as minute granular rods incompletely Gram-fast. Stained with an acid solution of methylene blue, they are seen to contain minute metachromatic granules. On this account they must be classed as bacilli of the diphtheroid group.

From twelve carcinomata of the breast removed by the surgeon I have obtained colonies of anaerobic diphtheroid bacilli upon a haemoglobin agar surface. Similar growths have been obtained from five other carcinomatous tumours, including a rodent ulcer recently excised by Mr. Miles. The rule has been that only one of these two forms has been obtainable from a tumour. The only other bacterium that has been found with any frequency in anaerobic cultures from what could be regarded as uncontaminated tumours has been a staphylococcus, not *pyogenes*, but one belonging to the mannite non-fermenting subgroup. Such results tell us nothing as to the relation of these bacteria to the growth of the tumour. As will be seen, however, they furnish an important link in the chain of evidence.

The third method is that of the experimental production of cancer. If this hypothesis that I have set out to test is correct, it may be possible to show that the bacteria isolated from human carcinomata have the power to produce tumours in lower animals. I have sought the evidence of this method under no small difficulty. On account of the limited facilities at my disposal, I have been obliged to work only with mice. My experiments are still in progress, but already they have yielded many positive results.

A consideration that should, I think, be kept in mind in this connexion is that there must be a certain natural power of resistance to bacterial attack on the part of the epithelial cell, and that it may be only occasionally that this can be overcome. In the mouse, as in the human subject, there may be important factors that weaken the resistance of the epithelial cell to such attack.

I have varied my experiments in many ways, endeavouring to find a method by which it may be possible to produce tumours in a high percentage of animals. Simple hypodermic injection of the living cultures, injection into the mammary region, feeding, inoculation by scarification and genital tract infection have all been tried. Many of the experiments set up have not yet yielded their complete results. I should say that I have a large number of control animals, and that none of them have so far developed any tumour. The following are some of the results already obtained:

One of six mice inoculated by scarification in the ear with an anaerobic diphtheroid bacillus, isolated from a case of inoperable epithelioma under the care of Dr. Arthur Wilson, after about six months developed a large tumour at the junction of the neck and chest. It proved to be a rapidly growing carcinoma, probably arising from mammary gland tissue.

Four female mice were injected in the mammary region with a culture of an anaerobic diphtheroid bacillus isolated from a mammary carcinoma. Two of the animals were lost through the carelessness of a temporary custodian when I was on holiday. Of the two that remained, one died after five months; it showed no tumours. The remaining one developed great abdominal swelling, and was killed about ten months after the commencement of the experiment. It was found to have a large solid tumour of the pancreas. Both ovaries were also converted into large solid tumours, and there were secondary nodules in the liver, spleen, lung, and anterior mediastinum. All of these tumours have the same structure, that of rapidly proliferating epithelial cells without adenomatous arrangement.

Four female mice were injected in the mammary region with a culture of an anaerobic diphtheroid bacillus obtained from another carcinoma of the breast. No. 2 began to show abdominal swelling after nine months, and was killed two months later when in a moribund state. In the position of the left horn of the uterus there was a large abscess which had destroyed most of the tissues that might have previously occupied its site. There was a small tumour in the lung, and I suspected that the abscess had been superimposed upon a tumour of the ovary or uterus. Investigation of the tissues behind the abscess revealed the presence of adenomatous tissue, such as might have arisen from the epithelium of the uterus. The tumour of the lung has the same adenomatous structure. I think the evidence conclusively shows that this was a case of carcinoma of the left horn of the uterus that had become infected by a coliform bacillus. Mouse No. 1, after about twelve months, developed a very rapidly growing tumour of the neck similar to that already described in another mouse. The other two, which were killed and examined, showed no tumours.

Eight female mice were the subjects of the next experiment. Nos. 1 and 2 were injected in the mammary region with cultures of an anaerobic diphtheroid bacillus obtained from a carcinoma of the breast. No. 3 was similarly injected with a culture of a mannite non-fermenting staphylococcus. Nos. 4 to 8 were injected with both micro-organisms. After fourteen months nothing has happened to Nos. 1, 2, and 3. No. 6, after seven months, developed a rapidly growing tumour of the buttock and was killed about nine months after the experiment began. This tumour has the structure of an adeno-carcinoma. No. 4 was observed to be sickly after about twelve months, and was killed with chloroform. It was found to have a large tumour of the right kidney and a smaller one of the left. Both are rapidly growing epithelial tumours, with distinctly adenomatous structure. No. 8 was noticed to have a palpable tumour in the abdomen. This gradually increased in size and the animal was found dead about a

year after the experiment began. It had a tumour in the abdomen of the size and shape of a date stone, evidently taking origin from the pancreas. There was a secondary nodule in the spleen. Both tumours are composed of epithelial cells of the character of those that might be expected in a malignant tumour arising in the pancreas. The remaining two mice were noted for several weeks to be greatly swollen about the abdomen, and hard tumours were felt in both. The animals were recently killed, and both were found to have great enlargement of the uterus, with nodular swellings. In each case the structure is that of an adeno-carcinoma. The results of this experiment would suggest that the association of a particular species of anaerobic diphtheroid bacillus and of mannite non-fermenting staphylococci has some special potency in the production of tumours. It will be observed that all of five mice subjected to this method of experiment developed cancer.

The nipples of a mouse with suckling young were smeared with the centrifuge deposit from an anaerobic serum broth culture containing a diphtheroid bacillus of the kind that will grow only in an anaerobic fluid medium. This growth was derived from a carcinoma of the breast. The idea underlying the experiment was that the bacteria might reach the mammary gland through the lacteal ducts. No mammary cancer developed, but, after about nine months, the mouse was found to have a large fungating tumour over its sternum. This tumour has the structure of a squamous epithelioma.

Several other experiments have not yet had time to yield their final result. On April 6th six mice (three adults and three half-grown ones) were injected hypodermically in the back with a primary serum salt solution culture of an anaerobic diphtheroid bacillus obtained from a carcinoma of the breast. Two of the three young mice died from pneumonia within eight weeks, and cannot be reckoned in the experiment. Of the four that remained, two have already developed carcinomatous growths. Two months after the commencement of the experiment, mouse No. 2 was observed to have a small fungating tumour of the skin at or near the site of the injection. This tumour steadily enlarged. Five weeks later the animal was found to be in a moribund condition, and it was therefore killed under chloroform. The tumour of the skin has the structure of a squamous epithelioma. The illness on account of which I was obliged to terminate the experiment was clearly dependent upon a remarkable lesion of the kidneys, both of which organs were enlarged, granular on the surface, and extremely pale. On microscopical examination I found that, scattered among the tubules, there were numerous small masses of rapidly proliferating epithelial cells. That the lesion is of the nature of an early carcinomatous one is, in my opinion, certain, but whether the new growths are primary or secondary to the squamous epithelioma of the skin is not clear. Mouse No. 1 was killed under chloroform two months after the experiment began because of an abscess in the region of the ear, which probably had nothing to do with the inoculation. The right ovary was found to be enlarged to about ten times its normal size. It shows a tumour, composed of large epithelial cells, rapidly proliferating. One of four mice, inoculated by scarification in the back with a culture of an anaerobic diphtheroid bacillus isolated from a rodent ulcer excised by Mr. Miles, has developed a spreading ulcer at the seat of inoculation, which after ten weeks has attained the breadth of about a quarter of an inch and a length of half an inch.

The fourth method of investigation is that of focal reaction and therapeutic immunization. If cancer is associated with bacterial infection it is possible that the injection of an exact dose of the corresponding bacterial toxin will be followed by a focal reaction in the tumour, and that upon the occurrence of such focal reactions there may be based a successful method of therapeutic immunization. In regard to this method of investigation also there is a consideration that requires to be borne in mind—namely, that, if this hypothesis is correct, it may be taken as certain that it is not always the same bacterial species that is at work, and that, consequently, a stock vaccine may fail to produce a focal reaction, simply because it is not the right one for the case.

Notwithstanding this limitation of the possibilities of success, positive results have been obtained in several cases. I shall briefly relate some of the most striking facts observed. Dr. Arthur Wilson, who was the first to observe focal reactions of the kind I am about to describe, has permitted me to make use of the two following observations.

A gentleman, about 50 years of age, suffered from an epitheliomatous growth within the meatus of the ear. It was operated upon, but soon afterwards recurred. A more extensive operation was undertaken, as the glands in the neck had become involved. Again recurrence took place, and further operation was considered out of the question. From the discharge from the ulcer I obtained an anaerobic diphtheroid bacillus of some vigour, and from this I prepared the vaccine that was used by Dr. Wilson. When treatment was begun there was a long scar, consequent upon the second operation, extending from behind the ear downwards. In the line of this scar several hard secondary growths had developed. In addition, underneath the angle of the jaw there were two large nodules, each the size of a walnut. Discharge continued from the meatus. With each dose of vaccine the patient had temporary aggravation of pain and increased discharge tinged with blood. With continuation of the injections the amount of pain he suffered gradually diminished. The nodules in the line of the scar disappeared. One of them broke down and suppurated. It was swabbed out with iodine, and healed absolutely by first intention. The two large nodules in the neck, in front of the scar, also disappeared. The prospects in this case seemed exceedingly bright, when unfortunately the patient developed erysipelas in the wound, and from this he died. In view of the accumulation of observations pointing to the infective origin of cancer it is of considerable interest to know a tragic sequel to this case. The patient's wife nursed him through his illness and daily dressed his wound. Up till nine months after his death she was apparently in good health. She then sought advice on account of symptoms that required a pelvic examination. It was found that she had cancer of both ovaries and large secondary growths involving the intestine. Her death occurred a little over a year after that of her husband.

Dr. Wilson's second case in which therapeutic immunization has been tried is that of a lady who was discovered to have a carcinoma of the rectum, which was regarded as inoperable. Colostomy was performed. Dr. Wilson informs me that he has now given ten injections. The vaccine used was one prepared from a serum salt solution culture from a scirrhous cancer of the breast. Each dose has been followed by a general and a focal reaction. The general reaction has manifested itself simply in malaise, lasting generally for about two days. It has been found impossible to increase the dose above 0.04 mg. A focal reaction has been evidenced by a sensation of fullness in the rectum and by increase of discharge of mucus which has been tinged with blood. The patient has now gained nearly a stone in weight. The most gratifying feature of the case is, however, the abatement of her sufferings, which were acute up to the time when therapeutic immunization was begun.

Mr. W. J. Stuart has kindly given me notes of observations made in three cases treated by vaccines. Two were carcinomata of the breast with extensive recurrence after operation. In both of these it was clearly observed that a vaccine dose was followed by increased tenderness of the affected glands. No distinct improvement was noted as the result of treatment. The third case was one of carcinoma of the rectum, in which colostomy had been performed. In this patient there was a distinct general reaction after each dose, manifested by feelings of malaise and chilliness. The patient also reported signs of a focal reaction consisting in "a greater feeling of rectal drag and more rectal discharge on the second day." His general health remains good, but the rectal tumour seems to be growing. At a discussion on this subject that recently took place in Edinburgh, Dr. A. Graham Ritchie described violent focal reactions he had observed in several cases of advanced carcinoma under his care.

Through the kindness of the physicians of the West House, Royal Edinburgh Asylum, I have had an opportunity of making an observation in a case of ulcerating carcinoma of the breast in a female dement. Last summer injections were given of from 0.1 mg. to 0.26 mg. of a vaccine prepared from an anaerobic diphtheroid bacillus obtained from a breast cancer. Four successive injections were each followed next day by severe congestion of the tumour, accompanied by profuse haemorrhagic discharge. The most severe reaction followed the fourth injection of 0.26 mg. It was distinct after twenty-four hours, but subsequently increased in severity, lasting four days and terminating with severe haemorrhagic effusion from the ulcer. In all, ten injections were given. During this time the tumour and the ulcer diminished in size. The patient has gained weight, and though senile, remains in fairly good physical health. The tumour has ceased to grow.

In a case of uterine cancer, under the care of Dr. Robert Robertson, a vaccine prepared from one of the more vigorous strains was also used. The injections began

with 0.02 mg., and the dose was gradually increased to 0.08 mg. Haemorrhage had never been a symptom in this case. Each of the first four injections was followed next day by profuse haemorrhage from the tumour. The patient seemed to improve. The fifth injection was, however, followed, not by haemorrhage, but by severe malaise, which continued for many days. The injections were stopped and the patient was sent to Longmore Hospital for Incurables. What became of her I do not know. The interest of the case lies chiefly in the distinct focal reactions following the injections.

Two cases observed by Dr. Alexander Dey of Wooler are also of interest. He used a vaccine prepared from a primary serum broth culture of an anaerobic diphtheroid bacillus obtained from a case of carcinoma of the breast. The strength was only 1 c.cm. = 0.1 mg. The following is Dr. Dey's report on the first case:

> A woman of 50, whose breast had been excised, and who, eighteen months later, had recurrence in the cicatrix and in the armpit, was feeling so generally ill that she spent most of her time in bed. After she had had three or four weekly doses she got such a general feeling of well being and strength that she was able to be about with comfort. She always had, about thirty-six hours after the dose, what she called feverishness and discomfort, but after that, for the rest of the week, she was wonderful. The swelling in the armpit ceased to grow and the cicatrices looked healthier. I attempted to increase the dose slightly, but the reaction was so pronounced that I had to go back to the original dose (0.2 c.cm.), and on the last two occasions she had such severe headache and throbbing in her head that she became so alarmed that she would not let me give her any more. She admits, however, that she feels so much better that she knows the vaccine has done her good. So far the growth is certainly arrested. . . . The case, I consider, is highly encouraging on account of the definite arrest of the growth and the feeling of well-being the patient got after the reaction stage had passed. It was peculiar that the reactions got severer with repeated injections.

I have heard that this case afterwards relapsed, and terminated in the usual way. The sudden or gradual increase of sensitiveness to the vaccine in this case and the preceding one are remarkable features which it may be difficult to explain. I have occasionally observed a similar occurrence in the course of other forms of therapeutic immunization. In these cases it can be satisfactorily met by simply diminishing the dose to about one-tenth, and it is probable that, when it occurs in cases of carcinoma, the same remedy will be found to be applicable. Dr. Dey's second case is more encouraging. He reported to me on February 24th last as follows:

> The case was that of a working man who had been through the war, about 54 years of age, whom I sent to Mr. G. Grey Turner of Newcastle, suffering from what I considered cancer of the rectum, in the autumn of 1919. Mr. Turner operated and verified the diagnosis microscopically. Last May I sent him back to Mr. Turner, who found what he thought a recurrence, and sent him back to me to watch for any secondary growth before doing a colotomy. After I got the vaccine, I thought he was a good case, and have given him weekly doses till January, having increased the dose very slightly. In January I sent him to Mr. Turner, who examined him very carefully, and the recurrence which he found in May had disappeared, leaving a small nodule which Mr. Turner considered to be cicatricial tissue. . . .

The last case I wish to refer to is that of a large rodent ulcer in a female demented at the Royal Edinburgh Asylum. This patient has recently had six injections of a vaccine prepared from the anaerobic diphtheroid bacillus obtained from the rodent ulcer excised by Mr. Miles. To each of the first four injections she reacted in the tumour with congestion and increase of discharge, and after all except the first injection (which was probably too small) there was haemorrhage from the whole circle of the edge of the growth. The ulcer has now assumed a healthier appearance than it has ever been observed to have before. The formation of crusts has entirely ceased.

The results obtained by pursuing these four separate lines of investigation warrant, I think, the statement that there is strong evidence in support of the hypothesis that cancer is dependent upon cell infection by anaerobic bacteria. If this hypothesis can be accepted, a number of important interpretations of phenomena observed become possible, and with a word or two about these I will conclude.

There would appear to be a race of anaerobic bacteria comprising several species belonging to the large diphtheroid group and the closely allied streptothrix group, which [illegible] of infecting epithelial cells and maintaining within them a parasitic existence. Many facts point to the conclusion that we have to deal with a group of the higher bacteria that appear in several forms. There are some rounded or oval bodies that may occasionally be seen in the cultures which cannot be called either bacilli or micrococci, but which are not incompatible with the known polymorphism of some of the higher bacteria, especially the streptothrices. The interpretation of these bodies, already seen and described by several observers, will probably become clear as the result of further cultural and experimental work.

It is probable that bacteria of other groups are capable of acting in the same way. If this is so, cancer may have to be regarded as dependent upon a special mode of bacterial attack, rather than upon a specific infection. The effect upon the epithelial cell is to stimulate it to proliferate, and the result is a tumour varying in character in accordance with such factors as the type of epithelial cell, the bacterial species, and the reactive qualities of the host.

There are important conditions that render the epithelial cells more vulnerable and permit the initial invasion. Exposure to infection must be very common. Successful attack on the part of the bacterium must be comparatively rare; it is probably rendered possible only by the operation of some cause that weakens the resisting power of the cell. Long-continued proliferation of epithelial cells from any cause must render them more easily invaded by bacteria of the kind I have described. Many well known clinical facts are in harmony with this view.

Tumours that have developed to any considerable size are not uniformly infected; there remain only foci of infection, and the difficulty of obtaining successful cultures is increased by this circumstance. Invasion of the cell would appear to be effected, as a rule, by bacteria of comparatively vigorous growth and easy to cultivate, but when these bacteria adapt themselves to purely parasitic intracellular growth they become comparatively feeble and extremely difficult to grow in culture media. They cease to be capable of growth on any surface medium yet tried, but they can generally be cultivated in an anaerobic serum diluted with normal salt solution. Tumours can be produced in mice by both the vigorous and the feebly-growing strains. Focal reactions can be obtained in some cases, success probably depending upon the vaccine having been prepared from the same species as that in the case. The possible diagnostic value of such reactions is a question for future investigation. The prospect of being able to exercise some control over the growth of cancer by means of therapeutic immunization is distinctly good.

My attention has recently been drawn to the work of Loeb upon the influence of the endocrine glands on the growth of cancer in mice. It seems to me, however, that his results tell us nothing regarding the cause of cancer, although they may prove of much importance for its treatment.

DISCUSSION.

Dr. JAMES A. MURRAY (Director, Imperial Cancer Research Fund, London) said that he would state the objections that occurred to him against the argument that Dr. Ford Robertson's diphtheroid bacillus was the cause of cancer. In the first place, mammary tumours in mice were common. It was interesting that none had occurred in Dr. Robertson's controls, but that did not exclude the possibility of their spontaneous development in the inoculated animals. It was well known, however, that any form of chronic irritation might give rise to cancer, and Dr. Murray was quite prepared to admit a non-specific relation between tumours and bacteria. A point against the specificity of Dr. Robertson's organism was the very great variability in the length of the incubation period in the experiments—that is, from a few weeks up to eighteen months.

He had seen the bacteria-like structures in the tumour cells when they were demonstrated at Oxford fourteen years ago; he held then, as he still did, that they were not bacteria. There were so many intracellular structures, such as mitochondria, which could be mistaken for organisms, and under pathological conditions the intracellular appearances might alter considerably. No evidence had been forthcoming to prove that the rod-like structures were bacteria. Dr. Murray mistrusted metallic impregnation methods for the demonstration of special structures.

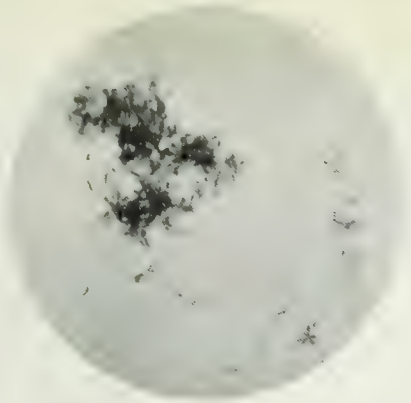


FIG. 1.—Rod-shaped micro-organisms in serum salt solution culture from a cancer of the breast. Ziehl-Neelsen staining. (× 1,000.)

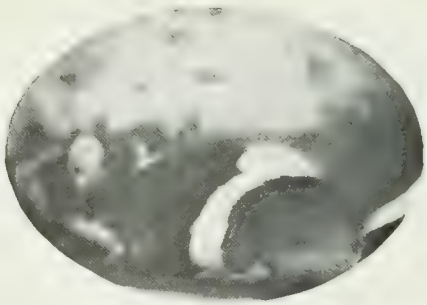


FIG. 2.—Mouse showing tumour of buttock, seven months after subcutaneous injection with anaerobic diphtheroid bacillus isolated from a cancer of the breast.

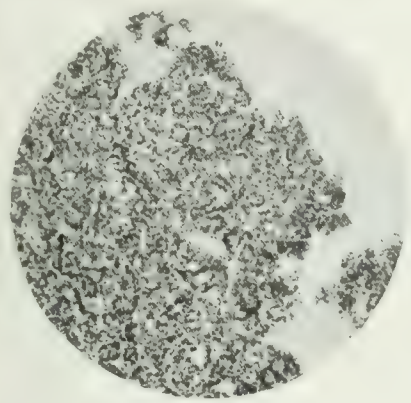


FIG. 3.—Section of tumour shown in Fig. 2.

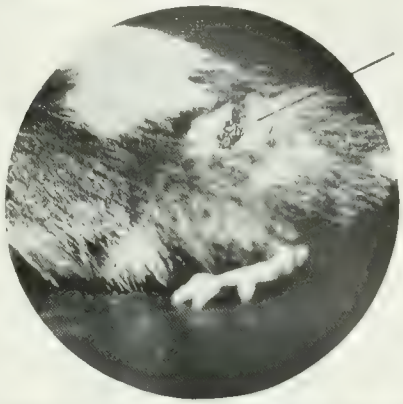


FIG. 4.—Spreading ulcer on back of mouse, eight weeks after inoculation (by scarification) with culture of an anaerobic diphtheroid bacillus isolated from a rodent ulcer.

A. G. GIBSON: PATHOLOGY OF GASTRIC AND DUODENAL ULCER.



FIG. 1.—Section from the liver of a monkey the subject of an experimental infection, showing a patch of endophlebitis in one of the branches of the portal vein.

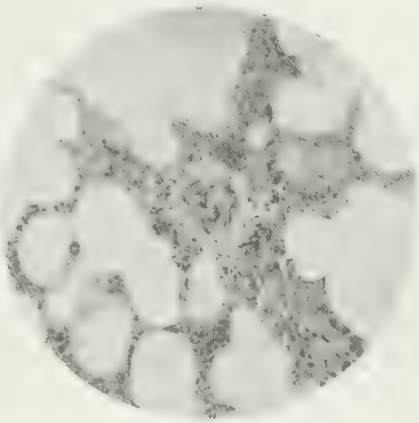


FIG. 2.—Section of the lung of a monkey the subject of an experimental infection, to show the almost complete obliteration of one of the branches of the pulmonary artery in the neighbourhood of one of the haemorrhages.

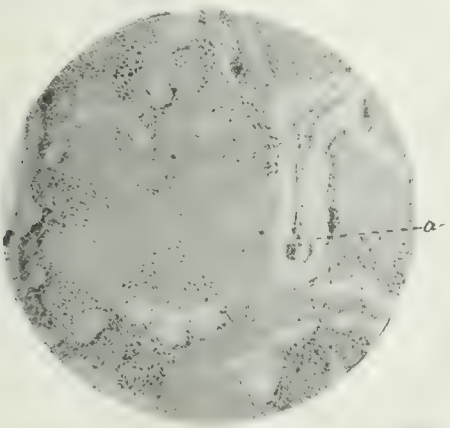


FIG. 3.—Section of the spleen from a monkey the subject of an experimental infection, to show the great increase in the number and size of the trabeculae and a vein (*a*) showing endophlebitis.

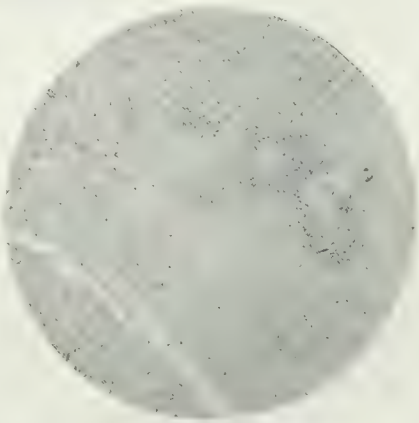


FIG. 4.—Section of the spleen from a normal monkey to compare with Fig. 3.



FIG. 1.—View from the north end of the machine-room, showing (*a*) the radial crane for handling bales of infected materials; (*b*) a machine for automatically feeding wool from the bales into the first process machine with duct by means of which dust is extracted from the automatic machine and conveyed to the boiler furnaces; (*c*) the range of disinfecting machines beginning with the three first process bowls.



FIG. 2.—View showing the two second process bowls of the disinfecting machine in which wool is submitted to the action of formaldehyde. The two bowls are completely closed in by means of a glazed cover. The duct for conveying dust from the automatic feeding machine to the boiler furnaces is also shown, and in the distance the three first process bowls.

They were very uncertain in their action. One never knew whether the whole or only part of a structure would be impregnated. One part of a section might stain beautifully, while similar tissue near by might be only partly coloured or not at all. Much concerning the minute structure of cells was still obscure. A combination of morphology and staining reactions was needed in deciding histological questions. Another point against Dr. Robertson's theory was that there was no constant relation between the site of inoculation and the site of the tumour. Scarification of the ear did not, for instance, explain the occurrence of a tumour in the mammary gland or uterus. Dr. Murray thought that the failure of the site of the tumour to correspond in all cases with the site of inoculation, together with the variability in the incubation periods, was strong evidence that Dr. Ford Robertson's bacillus was not a specific cause of cancer.

Mr. McAdam Eccles (Surgeon, St. Bartholomew's Hospital, London) said that Dr. Ford Robertson's paper was of the greate t importance, and was another link in the chain of evidence of the infective origin of carcinoma. As an operating surgeon frequently dealing with carcinomata, such scientific investigation of the cause of carcinoma was of particular and practical importance. All the material investigated appeared to have been from a neoplasm which might have been infected from the surface, the mamma through the ducts in the nipple, the rodent ulcer, etc. If similar results were to be obtained from a carcinoma which had arisen in a "buried" organ, say a testis, it would be a very striking fact.

The infection of and subsequent development of an epithelial growth in so many mice was of the greatest value. He ventured to throw out the suggestion that because mice were the animals most easily infected with later growths, might they not be a possible source of the bacteria which infect the human, seeing also that they were with us everywhere, and did not hesitate to run over and help themselves to our food? Had any of the tumours arising "spontaneously" in the mammae of mice shown any of these distinctive bacterial-like structures?

Dr. Ford Robertson, in reply, said he desired to acknowledge the kindliness with which Dr. Murray had criticized views that were completely at variance with those advocated by him for many years. The evidence he had put before them, and that of the twenty-one microscopical preparations laid out in another room, remained, however, untouched by anything that had been asserted.

THE PATHOLOGY OF GASTRIC AND DUODENAL ULCER.*

BY

ALEXANDER G. GIBSON, M.D., F.R.C.P.,

HONORARY PHYSICIAN TO THE RADCLIFFE INFIRMARY, OXFORD, AND LECTURER ON MORBID ANATOMY IN THE UNIVERSITY.

[*With Special Plate.*

One aspect of the production of gastric ulcer has recently come before me in doing experimental work with an organism mildly pathogenic for monkeys. The organism, a streptothrix of the species actinomyces, was obtained from a case of acholuric jaundice, and has been described in the *Journal of Pathology and Bacteriology, Edinburgh*, 1920, xxiii, 357. If a culture in broth be injected intraperitoneally into a monkey (preferably not rhesus) the animal suffers no inconvenience for a month or two; subsequently, however, it becomes less active, tends to sit crouched in a corner, and gradually fails in health during a period which may be as much as a year. There is not, so far as my observations go, any anaemia, but the animal is certainly paler in the late stages, may be puffy under the eyelids. The appetite is preserved throughout. Rigors are sometimes seen. There is usually some tenderness elicited over the spleen, and this may be enlarged and tender.

One of these monkeys, a male callithrix of moderate size, was injected on three occasions intraperitoneally with a broth culture of the streptothrix. The animal preserved its condition and kept up its weight for seven months, after which it quickly failed, and was killed thirty-two weeks (224 days) after the first injection. During the period of observation the animal was more apathetic than the controls, and for the last four months sat crouched in one corner of the cage. On palpation of the abdomen tenderness was first noticed six weeks after the first injection, and, except on one occasion, could always be elicited, more usually over the spleen, sometimes over the liver, and once or twice elsewhere. The spleen was felt throughout, but could never be said to be enlarged.

Blood counts, taken several times during the experiment, showed a gradual increase in the red cells and a slight increase in haemoglobin, not in excess of the control animals. An increase in the mononuclear count was also shown in this and the controls. The fragility was not raised. The necropsy, made immediately after death, showed no peritoneal abnormality. The spleen was extremely small and shrunken. On opening the gut the contents were black and pultaceous, mostly in the caecum and first part of the colon. There were several circular ulcers of the stomach with sharp borders not confined to any area, measuring up to nearly a centimetre across, showing blood altered by gastric juice. The black substance in the colon gave the reaction for occult faecal blood. The small intestine showed several hyperaemic and haemorrhagic patches, and a similar patch on the point of ulceration was found in the appendix. There was ulceration of the first part of the ascending colon. The spleen was in a marked condition of fibrosis with thrombotic changes in some of the veins. The liver was very pale and fatty, and showed towards the edge in one part two small areas suggesting contracting infarcts, and on the under surface were two shrunken, slightly haemorrhagic patches suggesting an area of ischaemic atrophy. On section the liver showed general fatty change and much bile staining near the bile passages. The lungs showed numerous haemorrhagic areas, and small haemorrhagic areas were also to be seen in the mesentery. Cultures made from the spleen, liver, and lung, heart blood and pericardial fluid, were negative. Shortly, this animal showed a chronically inflamed and fibrotic spleen with thrombo-phlebitis, multiple gastric ulcers, and haemorrhagic embolic lesions of the liver and lungs.

The venous blood from the spleen may return to the portal vein by two channels, either by the splenic vein or by the vasa brevia of the stomach wall; this latter channel is probably the normal one for a large amount of splenic blood. In fact, Mayo quotes 30 per cent. as the proportion of splenic blood that returns in this way (W. J. Mayo, *Contributions to Medical and Biological Research*, dedicated to Sir William Osler, ii, 991). The gastric veins must therefore be freely open to any substances, embolic or not, that may emerge from the spleen. If emboli are infective, it is not difficult to imagine that some may attach themselves to the wall of the vessel and produce a weakening and haemorrhage from it.

Acholuric jaundice is a condition that usually gives rise to no gastric symptoms beyond vomiting, and I have only been able, so far, to find one reported case that suffered from haematemesis (Box, *Proc. Roy. Soc. Med.*, Clin. Sect., 1913, vi, 8); but acholuric jaundice is very nearly related to splenic anaemia, and both are undoubtedly due to an infective agent whose site is the spleen. Why in the one type we should see progressive inflammation of the spleen with anaemia and jaundice, while in the other there is anaemia and haematemesis is not known. Be that as it may, the facts are that from an inflammatory lesion in the spleen both types follow, for splenectomy in the earlier stage cures both diseases. In the clinical group of cases known as splenic anaemia there is an enlarged inflamed spleen and a tendency to periodic gastric haemorrhage which may be so great as to be fatal. The origin of the bleeding is sometimes from dilated oesophageal varices, sometimes from lesions in the stomach which are described as erosions; such lesions, however, give rise to such blanching haemorrhages that we must presuppose a leakage from one of the large vessels of the stomach wall. It is curious that clinically such haemorrhages are seldom followed by the symptoms that we have come to look upon as characteristic of gastric ulcer, and must be related to

* A paper read in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association held in Newcastle-on-Tyne, July, 1921.

the fact, now sufficiently well observed, that in an otherwise healthy stomach ulcerative lesions produced by destruction of the mucous membrane quickly heal.

The gastric ulcers commonly met with clinically have very different causation in different cases; experimental work has shown that ulcers arise in the stomach in a variety of ways. In bringing the present observations before your notice I do not wish it to be thought that even a small proportion of clinical gastric ulcers are produced in this way. For this we must suppose a general or an intestinal infection or some such mechanism as Charles Bolton has so admirably worked out for a specific gastro-toxin. But we know rarely of the origin of ulcer in septicaemia, pyaemia, endocarditis, and a large number of other infective processes, both general and local, in which emboli or metastatic infective material may be brought to the stomach wall and produce an amount of necrosis of the mucous membrane that may give rise, after action of the gastric juice, to macroscopic ulceration.

In the instance here described we have a similar process. The spleen in the experimental animal, as in the human disease, shows a thrombo-phlebitis, as has been drawn attention to especially by Dock and Warthin in human cases of splenic anaemia. In some cases of the human disease this phlebitis is so massive as completely to obstruct the portal vein. In other cases, however, it is merely sufficient to thicken the efferent channels. The presence of thrombo-phlebitis in the splenic venules produces from time to time emboli which, travelling by the main splenic vein, are held up by the liver. That this is so is proved, first, by the evidence of what appear to be minute infarctions in the liver of the monkey. Unfortunately, I have so far not been able to get definite evidence of recent phlebitis in the radicles of the portal vein in the liver, owing to my desire to obtain as much material as possible for culture. But in Fig. 1, a section from the liver of a monkey the subject of a similar experiment, there is seen a localized area of phlebitis in a venule in the liver almost blocking the lumen. In this last experiment I have obtained a pure culture of the streptothrix from the spleen pulp.

On these grounds, remembering also that 30 per cent. of the splenic blood returns via the vasa brevia of the stomach, the assumption cannot be avoided that the same process evident in the liver is present in the stomach, a thrombo-phlebitis and inflammation of the neighbouring parts of the inner lining membranes of the stomach, with necrosis and consequent erosion by gastric juice of the area so affected. Histologically the gastric ulcers show the ordinary appearance of acute ulcer with a few minute thrombi in the veins of the periphery which might be seen in ulcer from other causes.

The lungs bear out the view of the presence of a shower of emboli leading to haemorrhages. We know that minute emboli are not stopped by having to pass through a capillary system, and the minute anatomy of the lung shows a marked degree of arteritis of the pulmonary arteries, with obliteration of their lumina (Fig. 2). The spleen in this case is atrophic and shows in a marked degree fibrosis and absence of Malpighian bodies, with phlebitis of the venous channels (Fig. 3). Patches of intense inflammatory reaction are to be found here and there. The difference between this and the spleen of a control animal may be seen by reference to Fig. 4, where the fibrosis is not evident and the Malpighian bodies of normal aspect may be seen.

In conclusion, I submit that in this experimental animal an inflammation of the spleen with thrombo-phlebitis has given rise to infective emboli, evident in their effects in the stomach, producing ulcers and haemorrhage, in the liver and lungs producing haemorrhagic lesions, and that in splenic anaemia, and more rarely in acholuric jaundice, the gastric haemorrhage may be due in a proportion of cases to septic embolism and consequent inflammation of the branches of the vasa brevia.

DISCUSSION.

Mr. D. P. D. WILKIE (Edinburgh) believed that the type of ulcer described by Dr. Gibson was probably that due to retrograde venous embolism. Attention was first directed to this type by von Eiselsberg, who suggested that the haematemesis which occurred some days after abdominal operations in which portions of omentum had been ligated was due to the separation of a small portion of thrombus in an omental vein, the embolus thus produced being side-tracked into a gastric vein and arrested in the venous plexus of the gastric submucosa, causing there a zone of thrombosis, a devitalized portion of mucosa and thus an ulcer. Experimentally he himself had found that such a succession of events was possible, but in the human subject he had only met with two cases in which this appeared to be the cause of gastric ulceration. The cause of the ordinary peptic ulcer of the stomach and duodenum was now considered by most surgical pathologists to be due to arterial embolism, and the researches of Rosenow would indicate that streptococci borne by the blood stream from a primary focus in the teeth or tonsils were the causal organisms. Whilst he had failed in his efforts to confirm Rosenow's results experimentally he had repeatedly confirmed the presence of streptococci in such ulcers. The difficulty of isolating and growing on culture these strains of streptococci made the close co operation of surgeon and bacteriologist a necessity in this line of investigation.

THE BONE GRAFT.*

BY

MARCUS MAMOURIAN, F.R.C.S.Ed.,

SURGEON TO THE DISTRICT INFIRMARY, ASHTON-UNDER-LYNE.

THE bone graft is now universally recognized as a most effective means of bone repair and the most important modern development of orthopaedic surgery. The subject has been taken up with great keenness and enthusiasm by many, both from its practical and experimental aspects, with the result that the literary output has attained formidable dimensions.

The question of the part played by the bone graft remains undetermined, and Ollier and Macewen may still be considered as leading counsel for the claims of the periosteum and bone respectively. Both sides believe in the survival and growth of the graft, differing only in their interpretation of the process of its development. In England, Groves and Wheeler, while supporting Macewen in theory, are Franco-American in practice, as they advocate whole-piece, autogenous, periosteum covered grafts and rigid fixation. The success of the "inlay" technique and the claims of Albee, McWilliams and others seemed to silence all opposition until Murphy advanced the view that the graft was "osteo-conductive," acting as a scaffolding.

In July, 1918, in a short paper contributed to the BRITISH MEDICAL JOURNAL, I expressed the opinion that all that the graft did was to supply the biochemical stimulus or irritant which had been abolished by trauma or infection, the new bone being formed by the diaphyseal ends, by periosteal and bony remains in the shaft zone, and, in the young, by epiphyseal lengthening, and I supported Murphy's contention that the graft becomes absorbed. I adhere to that opinion, which has been strengthened by my recent work, the radiographic record of which shall be submitted to you.

I do not intend to weary you with lengthy descriptions of various histological and experimental observations, as they are mostly inconclusive and often contradictory. Suffice it to say that they veer in the direction of proving that growth—whether from periosteum, cambium or bone—is mainly subperiosteal, the rest of the graft showing atrophic changes.

We must admit that when a piece of tibia is used as a graft, logically speaking, we cannot expect it to grow, either in length, thickness, or density, to a greater extent than the parent bone, especially when we bear in mind the precarious nature of its blood supply. But it does grow, so we are told, and it grows by virtue of Wolff's law, which conveniently also explains the absorption of a graft when implanted in a region where there has been no bone before. In every contribution on the bone graft Wolff's law is the pivotal argument. Wolff has laid down the law and the bone conforms! And what is this law? It is nothing else than the universal law of organic strengthening under

* A paper read in the Section of Surgery at the Annual Meeting of the British Medical Association held in Newcastle-on-Tyne, July, 1921.

CASE I.



FIG. 1.—Tuberculous disease of radius with mixed infection.

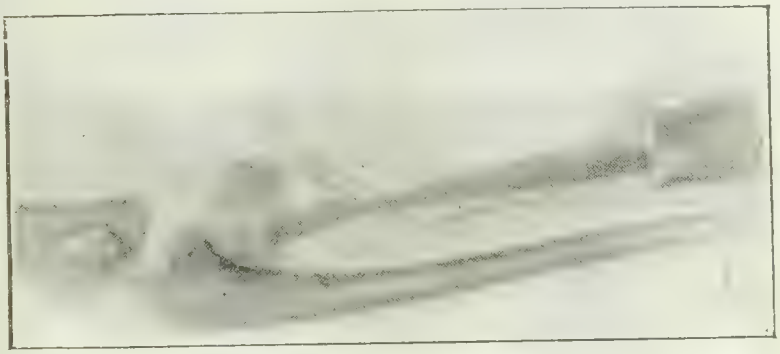


FIG. 2.—Shows bone graft in the space of excised portion of diaphysis, drainage tubes used owing to profuse suppuration.

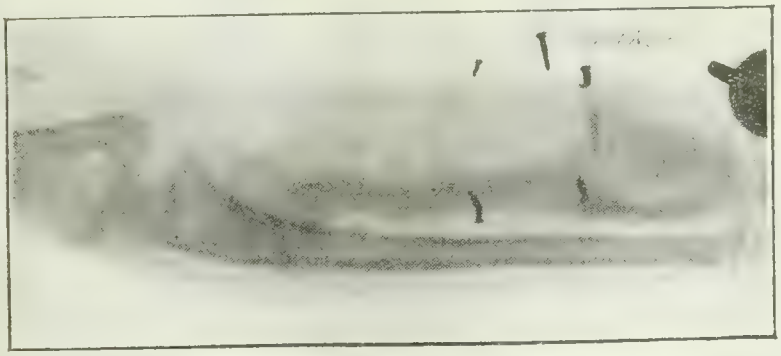


FIG. 3.—Shows active osteogenesis. Note loss of definition of the bone graft.

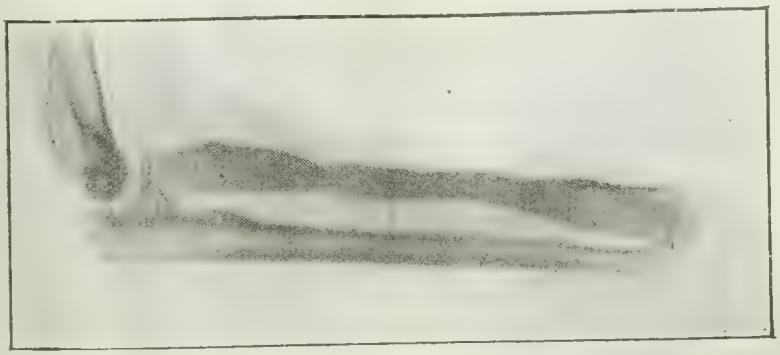


FIG. 4.—The completed radius.

CASE II.



FIG. 5. Tuberculous disease of first phalanx of thumb.



FIG. 6.—Bone graft in periosteal sheath of excised phalanx.



FIG. 7.—Shows bone growth around graft, which is losing density in consequence of absorption.



FIG 8.—The completed phalanx.

CASE III.



FIG 9.—Whitlow of thumb with necrosis of phalanges.



FIG. 10.—Bone graft equal in length to the excised phalanges *in situ*.



FIG 11 Note the vascularization of bone graft and segmental reformation of the two phalanges two months after operation.



FIG. 12.—Three months after operation. Disintegration of bone graft is now marked.

CASE IV.



FIG. 13. Myeloma of radius.

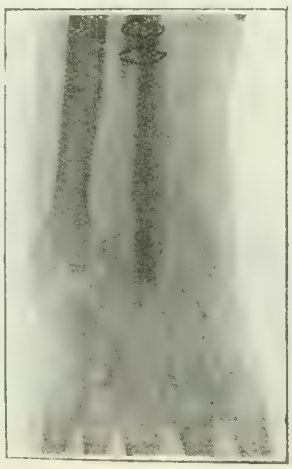


FIG. 14 Tumour scraped out and transplant placed in cavity.



FIG. 15 Invagination of bone graft by bone growth from shaft.



FIG. 16.—Commencing canalization of the reformed shaft.

stress and strain as seen in all plants, in muscle, and in bone. This is the law that is supposed to regulate the growth and shape of the bone graft.

The effect of stress and strain upon bone is undeniable. A limb immobilized with its blood and trophic nerve supplies practically intact, and interposed between the epiphyses of a missing tibia, will thicken and in the course of many years may attain half the thickness of the missing bone. In speaking of the influence of Wolff's law we must retain therefore a sense of proportion. I am surprised that no one has attributed the shape and development of the bones of an embryo a few months old to intrauterine movements! The influence of this law is exaggerated, and the reasonings based thereon are unsound as far as the bone graft is concerned.

After a grafting operation a limb is immobilized for six, eight, twelve weeks or longer. We are all familiar with the condition known as disuse atrophy. A splinted limb wastes and there is wastage not only of the soft parts but actually of the bones, and Woodburn Morison of Manchester tells me that the degree of rarefaction and loss of density can be demonstrated by *x* rays. While the recipient bone is wasting in consequence of enforced rest, growth is claimed for the bone graft.

Albee, for instance, gives the following directions for after-treatment: (1) Place the limb in a position to relax displacing muscles; (2) immobilize the limb with plaster-of-Paris; (3) in desperate cases some support should be continued for three or four months. Obviously enough, his very directions are intended to abolish all stress and strain, and yet he speaks of firm unions and grafts acquiring the thickness of shafts in a few weeks' time. I do not question his results, but I question his interpretation.

Macewen pins his faith on the bone. His views may be summarized as follows: (1) Bone grows from bone; (2) the periosteum acts only as a limiting membrane. His famous case of the reconstructed humerus by the use of small homoplastic grafts is medical history. The patient was 2 years old. The epiphyses were not damaged. He considered the periosteum destroyed, planted his bones in the anatomical line, and attributed the formation of the new diaphysis to the growth and coalescence of his transplants.

I have had similar cases: flail limbs, soft limbs which showed no sign of bone formation for long periods, no vestige of bone in the line of the wound, but the radiographs revealed bone nests, numerous enough in some cases to indicate the alignment of the excised shaft. The absence of osteogenesis does not prove that the osteo-periosteal fabric is destroyed in its entirety—it never is—and should be considered as evidence of arrested or inhibited function. Furthermore, Macewen does not explain how he obtained limitation and growth to shape in the absence of a periosteal sheath.

The intramedullary graft has very few advocates nowadays. Here we have a transplant which can be applied with fairly easy technique according to the established canons: firm fixation, extensive bone contact, surface as well as medullary blood supply. Yet it fails, and fails because it induces pressure atrophy in the very shaft ends which are the main builders of the bony bridge, and because it obstructs the marrow from taking part in the osteogenetic process. Vacuolation and rarefaction can be seen around the penetrating segments. A non-rigid intramedullary graft (as the sliding graft in the femur) may succeed, a tight one never does. I am waiting for a satisfactory explanation from the Ollier-Macewen school of surgeons of the failure of the intramedullary graft.

Another noteworthy point is that sclerosed bone is not looked upon favourably for bone-grafting purposes. Thus Wheeler states: "In old and ununited fractures, with false joints, the bone near the critical area (near the seat of fracture) is sclerosed and avascular, and makes an unsuitable soil for that portion of the graft in contact with this area. Growth in the graft is impeded by the surrounding sclerosis, as dense sclerotic bone has no osteogenetic power." This statement is somewhat contradictory, as he expects growth both from the graft and the shaft end. If the graft were capable of a separate existence it should live even though its connexions with the diaphyseal ends were fibrous. But in my experience the sclerosed bone does respond, granted that the graft is not under pressure and growth in length is always from the proximal stump. Singularly enough, the same condensation of bone is seen at the attenuated end of the lengthened proximal segment.

The explanation is that on the introduction of a transplant two forces are evolved, acting simultaneously—the osteoblastic and the osteoclastic. If the former exceeds the latter in degree, the shaft is completed before the graft is absorbed, and, contrariwise, you may have the reconstructive process little advanced when the graft disappears from the field, the osteoclasts being the dominant force. As a rule, active osteogenesis is seen in the proximal and osteoclasis in the distal sector.

The appearance of callus on a broken graft has been hailed as proof of the survival of the graft. I look upon it as evidence of greater local stimulation. I may say at this juncture that I consider the periosteum as possessing stimulating properties of a high order, and I believe that before long the Delaginière technique will take the place of the exquisite joinery we are all disposed to practise at present.

There is no limit to the resourcefulness of the enthusiast. Albee's grafts always live and functionate, and when he discovers that his transplants of compact bone become cancellous in the spine, he sticks to his guns with some show of power, and his final salvo is the explanation that the bone graft is capable of histological as well as morphological adaptability. In Pott's disease the patient is splinted, but, more important still, there is intense muscular spasm of a reflex order; there is voluntary rigidity as a result of what may be termed kinephobia (fear of movement). The cry is for fixation, for compact bone. There is no physiological demand for this metaplasia. The cancellous bone originates from the spinous processes. Delbet, on the other hand, sees his graft unaltered in a cancellous environment. His peg of compact bone lives in the neck of the femur for years without change, as many a screw does. I still maintain that if a graft remains identifiable for six months or longer the case is one of necrobiosis.

Faith in the immortality of the graft has produced its corollary in the shape of a belief in its power to resist infection, and this has met with general acceptance. Everybody says it, but no one with less ambiguity than De Courcy Wheeler:—"The bone graft has inherent bacteria-resisting properties." What is really meant is that a piece of bone in anatomical and physiological isolation is a bad culture medium. True, the graft does play its part in the presence of sepsis—not owing to its inherent bacteria-resisting properties, but because the concomitant infection is *per se* a stimulant to bone-forming structures.

A zone of new bone—an involucrum—is thrown out in almost every case of osteomyelitis, but this reaction is absent in tuberculous and neoplasmic diseases of bone, as these are not only purely destructive processes but actually osteo-depressant. The consolidation of a grafted ununited fracture in the presence of infection illustrates a type of union brought about by two stimulating agencies, the graft and the infection.

I agree with Heitz-Boyer and Scheikevitch that Texier's method of securing bony ankylosis by introducing mild infections into flail joints is a measure deserving of serious consideration in the treatment of these cases. But I go further, and I say that the cellular activity resulting from the implantation of a bone graft has a marked inhibitory effect on all infective processes, and to this I attribute the fact that throughout my experience with the bone graft, and particularly during the war—with infection lurking beneath every scar, with tissues devitalized by and studded with shrapnel—I have not lost a patient, I have not had to amputate a limb, nor have I seen a case of virulent infection, though medullary cavities and Haversian canals were gaping open, seemingly ready for any catastrophe. Encouraged by this lesson, I have never hesitated to insert grafts in the presence of mild and, recently, actually of acute infections. This is demonstrated in the radiograms.

Case 1 (Fig. 1) was a case of tuberculous disease of the radius, with mixed infection; the skin was riddled with sinuses. In Fig. 2 the bone graft is shown in the space of the excised portion of the diaphysis; the excellent splinting effect of the transplant and the maintenance of correct alignment may be noted; scales of bone are still adherent to the periosteum, and there is a tuberculous cavity in the proximal diaphyseal stump. In Fig. 3 active osteogenesis

is demonstrated; the loss of definition of the bone graft should be noted. Fig. 4 shows the completed radius.

Case II (Fig. 5) was a case of tuberculous disease of the first phalanx of the thumb. Fig. 6 shows the bone graft in the periosteal sheath of the excised phalanx: it should be noted that the articular cartilages have not been interfered with. Fig. 7 shows bone growth round the graft, which is losing density in consequence of absorption. In Fig. 8 we have the completed phalanx.

Case III was a whitlow of the thumb with necrosis of the phalanges. In Fig. 9 there may be observed the enormous swelling of the soft parts owing to virulent suppuration and poulticing. Fig. 10 shows the bone graft, equal in length to the excised phalanges *in situ*. In Fig. 11 there should be noted the vacuolation of the bone-graft and segmental reformation of the two phalanges (two months after operation); suppuration has greatly diminished and the soft parts are acquiring a normal outline; there is good movement at the metacarpo-phalangeal joint. Fig. 12, three months after operation, shows disintegration of the bone-graft more marked; the thumb is almost normal in appearance, the sinuses have healed up, and there is improved movement at the metacarpo-phalangeal joint. This case is still under observation.

Case IV was a myeloma of the radius; in Fig. 13 the osseous outline of the growth may be noted. In Fig. 14 the tumour is scraped out and the transplant placed in the cavity; there is an "inlay" contact with the healthy end of the shaft. In Fig. 15 invagination of the bone graft by bone growth from the shaft is demonstrated; ossifying lamellae in the "egg-shell" cavity should be noted. In Fig. 16 is shown commencing canalization of the reformed shaft; it should be observed that bone of normal density occupies the space originally filled by the growth.

I am satisfied that the new bone and cellular life generally which result from the stimulating effect of the transplant are capable of overcoming pyogenic and tuberculous infections (Cases I, II, III) and of reviving normal osteogenesis in bones affected by neoplasmic formations of low malignancy (Case IV).

My thanks are due to Dr. Woodburn Morison of Manchester and Dr. Brice of Dukinfield for the radiograms.

GENERAL ANAESTHESIA AND THE ATMOSPHERE IN THE OPERATION THEATRE.

BY

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IN 1908[1] a note was published on the administration of ether by the open method in which the possibility of using a valved container was described, the valves being placed between the container and the face-piece. This was in the early days of "open" ether. Since that time the adoption of Hewitt's principle of using wide-bore tubes, which tends to abolish stimulation of the respiratory effort and so to lessen stridor and cyanosis, and the provision of a larger evaporating surface for the ether, have given us various pieces of apparatus for the same purpose. One of the best known of these is the Anson and Caldwell-Smith inhaler. Such an apparatus produces as good an anaesthesia as is obtained by the true open ether method, and at the same time considerably lessens the loss of the drug due to direct evaporation into the atmosphere. In any such piece of apparatus at first about 50 per cent., and, when anaesthetic equilibrium is established, 100 per cent. of the ether used is discharged into the theatre. In fact, at the present time it is not unusual for those engaged in operative work to be surrounded by unpleasant and deleterious vapours which would neither be tolerated nor permitted by law to exist in any ordinary factory. The chief sufferer is the anaesthetist, and next to him the surgeon and those in greater or less proximity to the patient's head. Some persons are more readily affected than others. As later results gastritis and anaemia are not unknown. In field work and in some cases where small rooms are used the effect on the staff is serious. This is notably the case when a flame, a glowing fire, or an electric heater is exposed to the vapour of chloroform, which is transformed into phosgene gas, and is one of the main reasons why operation theatres are heated by steam or water piping. In small and repeated doses this gas produces anaemia. In larger doses it leads to a feeling of tightness and constriction in the chest, most marked about twelve hours after the exposure, and followed by bronchitis of a varying degree of severity.

The "open" ether method, especially when combined with the use of narcotic and other drugs, is very safe, a fact which has undoubtedly had great weight in causing its almost universal adoption as an anaesthetic of choice for the great majority of operations.

We have thought for some years that it ought to be possible to generate the vapours outside the theatre entirely, to deliver them to the face-piece through a wide tube and to remove them by a similar channel, so that the atmosphere of the theatre need never be materially contaminated. One of us (G. H. C.) mentioned the point to an anaesthetist in 1907, but the matter did not materialize. We are not at present proposing to experiment in this way on any large scale, but we wish in this preliminary note to mention the chief points which seem to us important and which will undoubtedly require consideration in theatre construction in the future, as our trials demonstrate. In this way we hope to interest others who are conversant with the varied conditions existing in different parts of the country. It may be noted that the principle of removing the source of anaesthesia to a distance has been put into practice for some years past in cases in which a preliminary laryngotomy or tracheotomy is performed and the tube connected to a distant "tambour."

At the outset there will be a difference in plan according as to whether the operation is to be performed in an operation theatre or elsewhere. In the case of a theatre a permanent plant could be established just as illuminating gas is laid on. From the generator the tubes would be brought through the floor near the table, with taps, unions, and flexible connexions there, so that the apparatus suitable to the case could be connected to the main supply and exhaust. In some cases a single generating station might be arranged to supply to and exhaust from several theatres. But when the operation is to be done in a private house a portable apparatus would have to be employed and adapted on arrival to the local conditions. This could be made a simple thing, as we propose to show.

In the second place, the source of ether vapour should not allow any loss to occur to the outside air, partly on the ground of expense and partly to avoid contaminating the atmosphere near the theatre, bearing in mind the ever-present risk of explosion from a spark from an electric motor or other cause. To ensure this it would be necessary to generate the vapour at some distance from the air entrance, and perhaps to put a valve stop and fine wire gauze mesh behind it. The strength of the vapour could be regulated by a tap or throttle or other contrivance controlled from the operation table.

Thirdly, there should be a heater for the vapour and a quick-movement thermometer in the face-piece to show the temperature at which the anaesthetic vapours reach the patient. The face-piece itself would comprise an inlet and an outlet valve, but these might be provided for elsewhere and at a distance if found more convenient and if the CO_2 content of the system were not too great. In case any friction should arise in the system it will be necessary to maintain an exhaust at the exit of the fairway of such a degree that the valves would act with the minimum of differential pressure, and so that there would be hardly any deviation from atmospheric pressure inside the face-piece.

Fourthly, it will be necessary to arrange for the delivery to the fairway of nitrous oxide, ethyl chloride, chloroform, oxygen, or other agent as required, and the apparatus should preferably be adaptable to intratracheal methods.

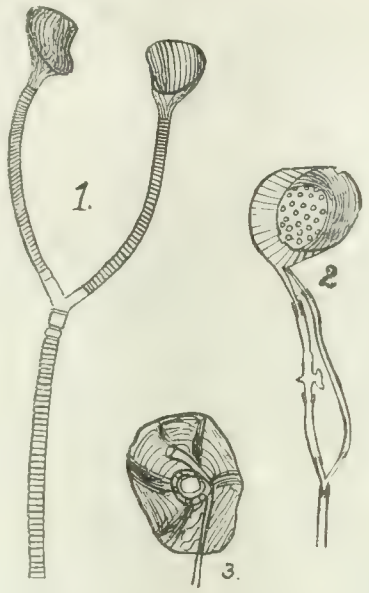
Lastly, the expired vapours should be trapped in a suitable solvent from which the chief ingredients could be recovered by distillation or otherwise.

It seems to us that this proposal is the ideal that will have to be taken into account in the future in the construction of any operation theatre, and that its adaptation to existing theatres will only be a matter of time. There is little doubt that the initial outlay would soon be wiped out by the saving of the cost of the drugs recovered.

The present system of ventilation in theatres is often imperfect, neither does it deal with the source of origin of the trouble.

In order to test some of the principles involved in our proposal we have carried out the following trials:

(a) Messrs. Down Bros. constructed for us the apparatus shown in Fig. 1. The point was whether it would be possible to collect the major portion of the ether by maintaining an extraction current of air close to the patient's mouth. The two cups are stream-lined and lie on each side of the mouth under the gauze used for open ether. The amount of ether vapour caught in this way appears to be negligible, as judged by the smell.



(b) A coil like a gas-ring was placed under the gauze. The result was better.

(c) Fig. 2 is an illustration of a rough and ready apparatus made from tin and gas-piping. Around the rim, which fits the face, and which consists of a wider tube outside and a narrower one inside, there are two series of holes. One series opens outside the face-piece but inside the "cone," and one opens inside the face-piece. By plentifully covering the cone with wool the smell of ether was lessened, and by adding a small extraction gas-ring (Fig. 3) at the top and covering the top of the cone with sheet rubber, except for the central hole through which ether was dropped, the smell was still further reduced.

(d) Messrs. Down Bros. lent us their experimental model of the Anson and Caldwell-Smith inhaler, and to the exit valve we attached our suction apparatus. Unfortunately the combination proved unwieldy, but we were able to note that the chief loss of ether was from the vaporizing bag, and that it was steady and continuous, so that clearly the solution of the difficulty lay in having a closed system with valves. We were not able to command the use of a Kelly's apparatus, and in Rutherford's the bore of the tubes was too narrow for our purpose. Messrs. Down Bros. therefore made us an inhaler like Silk's, but without the shelf, and fitted it with inlet and outlet valves.

(e) The inlet valve of this apparatus was connected, as shown in Fig. 4, to an ether supply by means of a light flexible tube made of coiled aluminium wire and colotomy tubing. The exit valve was similarly connected to an ordinary rubber gas bag. The other end of this was led off by narrower tubing to a wash-bottle containing alcohol, and a steady stream of air was kept up through this by means of a filter pump. It will be seen that this is a simple system, fulfilling the essential conditions for open ether, but the system is a closed one, and the only vapour that escapes is from the lumen of the inlet tube of the ether bottle. By placing the inlet valve here instead of on the face piece even this source of atmospheric contamination could be avoided, and if the capacity of the system were not too large there would be no objection to doing this. If it were so large, owing to the length of the connexions, that expired CO_2 became a factor, an additional valve could be introduced at the open end of the inlet pipe.

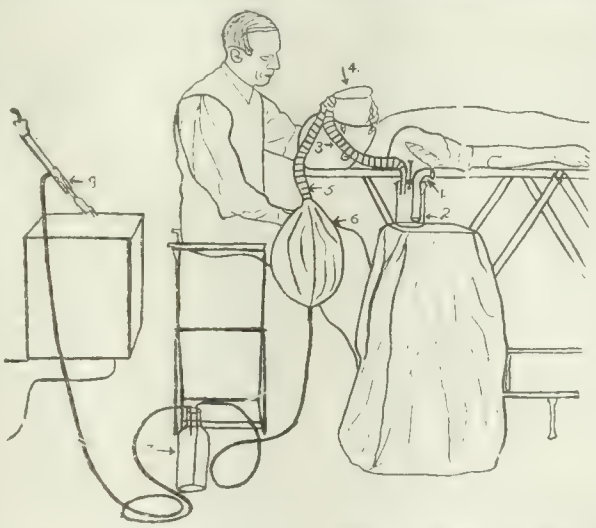


FIG. 4.—1, Air inlet; 2, ether supply; 3, flexible connexion to mask; 4, [illegible]; 5, flexible connexion to bag; 6, expiratory bag; 7, wash-bottle; 8, filter pump with tap [illegible].

The trials with this system were very satisfactory. While anaesthesia was maintained there was not the least odour of ether in the neighbourhood of the patient. It was noted that the respirations were not so laboured as is sometimes the case with ordinary open ether, the degree of muscular relaxation was better, and the fatigue of operating, which in many cases seems to be due to the inhalation of ether, was notably absent. Fatigue in operating depends on several factors, and at least one-third, if not more, of the ease and facility of an operation depends on the success of the anaesthetic procedure.

The chief point about the use of the wash-bottle is that it traps the ether vapour and prevents it from being sent down the drain, where it is a source of danger. The alcohol evaporates also, and a better system would be to have a second wash-bottle of water in the exhaust circuit. In actual practice the total amount of ether let down the sink during one operation would probably not be dangerous, so that for use in a house it would not be necessary to employ a wash-bottle, but if it were it should be a single one, small and made of metal. The use of a wash-bottle necessitates a slightly stronger exhaust. Alternatively, by leading the filter pump exhaust outside the house, the use of the wash-bottle becomes unnecessary.

For use in private, or as a temporary measure in a theatre, we conceive that a relatively short but wide ether bottle would be led off to the right-hand side, or alternatively the chin end of the mask. The mask would be reduced in height as much as possible, as it is notable that the unwieldiness of anaesthetic apparatus depends directly on its height, and its capacity should be minimal to avoid the CO_2 factor. In preference it should contain a Ticehurst system[2] for the self-warming of the ether vapour, itself an enormous advance on current practice, and the expired air should leave through the left hand side, or alternatively the forehead end, of the mask direct through an exit valve to the bag. The other end of the bag should be led off by tubing to a filter pump operated from the nearest sink or garden tap. Convenient tap unions are in common use for hose pipes, and this method has given us satisfaction provided a safety tape is attached from the union to the tap. We think that the filter pump should be made of metal. In permanent installations, and in cases where there are suitable conveniences, a motor driven air pump will replace the more simple arrangement.

The only serious difficulty that we foresee others will have is in providing for the use of an artificial airway. It might be possible to arrange a window in the lower portion of the mask and to make the join a sliding fit with a bead edging of leather to accommodate one of the patterns of airway in use.

The whole question is important at the present day and offers some degree of scope to those interested. There can be little doubt that a successful system would be a great boon to the anaesthetist, surgeon, and theatre staff generally. We are at present engaged on the details of a small portable apparatus.

REFERENCES.

[1] BRITISH MEDICAL JOURNAL, July 25th, 1908, p. 195. [2] Ibid., June 25th, 1921, p. 935.

DECAPSULATION OF THE KIDNEYS IN BRIGHT'S DISEASE.

BY

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It is usually difficult to state when the first definite step towards any new procedure has taken place. Often the idea develops in the minds of more than one person acting from different points of view. It seems to me this has been the case with regard to decapsulation of the kidneys as a treatment for nephritis. The pioneers were Harrison, Edebohls, Israel, and Pousson, with many others, the two first mentioned apparently taking precedence. The history is as follows: The late Reginald Harrison in 1896 published in the *Lancet* three cases of acute nephritis cured by incision or puncture of the kidney for relief of tension. Later in the same year he contributed an article to the BRITISH MEDICAL JOURNAL proposing incision of the kidney for: (1) Acute nephritis with tenderness on pressure in the loins; (2) suppression of urine; and (3) for slow disappearance of casts. In 1901 he published in the BRITISH MEDICAL JOURNAL three cases in which he had incised the kidneys to relieve tension. These publications appeared to have attracted little notice; certainly they caused no great stir, and his suggestions were not generally followed.

Edebohls, in reviewing the clinical records of the patients on whom he had performed nephropexy by reflecting the caspule and stitching it to the lumbar muscles in the manner which is associated with his name, found that he had five times operated on patients suffering from chronic nephritis. He remarked that in three of these patients there was a "complete and permanent disappearance of albumin and casts," and "restoration to perfect and enduring health." Weighing this in his mind, he came across a sixth case in which both the kidneys were loose and the patient was suffering from chronic nephritis. On January 10th, 1898, he reflected the capsule and fixed the kidneys in this case, and claims that this was the first operation undertaken on the kidneys with the deliberate object of curing Bright's disease. In May of 1901 he went a step further and performed decapsulation, the kidney being in place, for the sole purpose of curing chronic nephritis, and later in the same year he published an article in the *New York Medical Record* reviewing 18 cases of chronic Bright's disease in which he had in the earlier cases reflected and later excised the capsule of the kidney, with the result that 8 of the patients were cured. He stated that after ten days there was an increased flow of urine.

It is interesting to note that these two authorities had a different object in view. Harrison incised or punctured the kidney for relief of tension, in the hope that it would lead to the absorption of the inflammatory products, allow the passage of urine down the tubules, restore the blood supply, and revive the tubular epithelium. The object of Edebohls was temporarily to relieve tension, but by bringing the kidney substance into contact with vascular tissue to increase its blood supply and allow a steady progress towards cure. They both agreed that the fibrous capsule formed an impassable barrier, one to expansion, the other to vascularization. These views were attacked on several grounds.

Physiologists pointed out: (1) That the renal arteries are end arteries and terminal; (2) that the blood supply from the capsule is insignificant; (3) that renal tissue once destroyed does not regenerate; and (4) that chronic nephritis is the local expression of a general disease, and a cure must remove the cause. Experiments were made on animals and the following results demonstrated: (1) That a new capsule was formed in a few weeks thicker and denser than the normal capsule; (2) that there were fewer vessels in the new than the old. Injections were made into (1) the renal arteries and (2) the aorta with the renal arteries tied. The general opinion as the result of these experiments was that there was but slight communication.

Stursburg, however, found on injecting into the aorta with the renal artery tied that the injection penetrated even to the papillae. Martini found new vessels in the new capsule and also that dogs survived an operation upon the renal vessels if the kidneys had been previously decapsulated, but died if this had not been done. Siter in 1913, in the *Journal of the American Association of Genito-Urinary Surgery*, gave results of experiments on cats and dogs. The kidney decapsulated and wrapped in omentum increased in size, new capsule formed immediately, new collateral circulation in ten days. This new collateral circulation, he held, was sufficient to allow the kidney to functionate when the renal vessels were tied. This many of his colleagues held to be impossible.

Pathological Reports.

Edebohls, in 1904, admitted the conflicting experimental evidence, but claimed that Dr. Larkin had demonstrated the existence of vascularization in two kidneys four months after decapsulation. Boyd and Beattie, in the *Edinburgh Medical Journal* in 1905, reported on the kidneys of a patient who died four months after decapsulation, and found the capsule vascular and containing vessels which appeared to anastomose with the vessels in the superficial part of the cortex of the kidney; they were, however, in doubt as to whether these vessels were more than those normally found between the renal and perirenal tissues ruptured by decapsulation. Gatti, in 1903, performed double decapsulation. The patient died twenty months later; the result of necropsy was that a capsule thicker than usual, with only a few blood vessels, was found. Boinet, in 1905, reported on the kidneys of a patient who died twenty-eight months after double decapsulation, that the new thick capsule was but little vascularized.

From the physiological and pathological standpoints the outlook therefore appears disappointing. From the clinical aspect, however, the result is quite different. Case after case is reported, mostly after months of exhaustive medical treatment of every description, including tappings after operations undertaken *in extremis*, in uraemia, eclampsia, suppression of urine, or when complet ly waterlogged, with astonishing results. The uraemic patient is restored to consciousness, the suppressed urine commences to flow, the oedema disappears. Patients apparently doomed have returned to work, many have subsequently passed an examination by the highest authorities and have been pronounced completely cured.

Edebohls, in his manual of the surgical treatment of Bright's disease, published in 1904, reports seventy-two cases. Seventeen are claimed as completely cured; many who were extremely ill were living in comparative health and comfort; nine cases operated on at death's door were alive and well. Sir Thomas Horder, in the BRITISH MEDICAL JOURNAL of November 13th, 1920, reports four cases with two cures demonstrated by most exhaustive examination, the other two being improved. He states his opinion as follows: "There is a clinical type of nephritis in which decapsulation becomes a definite indication and promises satisfactory results." Frank Kidd, in the BRITISH MEDICAL JOURNAL of March 12th, 1921, reports four cases, "one of which four years after operation appears to be perfectly well; the others improved in varying degree."

Crawford Burns, in the *Edinburgh Medical Journal* of September, 1916, reports a case, a female child, aged 6, operated on by Mr. Miles. She was oedematous; the vulvae distended; both kidneys were decapsulated at one operation. A fortnight after the operation urine became copious and dropsy disappeared. Operation was in February; she got up on March 25th and went home on April 8th, "lively and in good health." In the same journal of February, 1921, there are two cases published by Boyd: *Case 1:* A miner, aged 41, with swelling of the abdomen and legs, and oedema of lungs, was in a critical condition; operation was performed in January and the patient discharged on February 3rd. After a short time at home he returned to work; he has since worked uninterruptedly for three years. *Case 2:* A lad admitted for Bright's disease, later became uraemic with convulsions. When operated upon a fatal termination appeared imminent; five months later he enjoyed apparently good health.

Case.

The case I have to report is that of a man, aged 30, admitted to the Weymouth and District Hospital on September 24th, 1920. He had been on active service in the navy. Swelling of the feet and legs was first noticed in January, 1919. He was about that time in Haslar Hospital for five months.

On admission the legs and abdomen were swollen; he complained of weakness and shortness of breath. As regards the urine, specific gravity was 1020, the reaction was neutral, and it was full of albumin. The patient was treated during September and October on medical lines—jalap, diuretics of varying sorts, citrate and acetate of potash, diuretin, etc. Later he was given hot-air baths, pilocarpin in ½-grain doses. He had a vegetable and salt-free diet. Fluid was cut down to two pints and subsequently less daily. The urine varied between 30 to 45 ounces. With reference to the albumin, 3, 7, and 12 parts per 1,000 Esbach, with lesser variations, were recorded.

In November his condition was such that he could not lie down. His legs were enormously distended, his abdominal wall was oedematous, he had ascites and oedema of the lungs. On November 10th Southey's tubes were put into the right leg and 46 oz. were drained away; on November 13th tubes were put into the left leg and 147 oz. drained. On the 14th, 17th, and 20th other Southey's tubes were introduced and further drainage resulted.

As a result he improved. On November 22nd the note is: "Lung condition relieved, but dropsy still obstinate. Urine about 50 oz., albumin 12 parts Esbach per 1,000, but has been down to one-half part per 1,000. In December, 1920, he was given hot-air baths daily, and at intervals dry cupping to the loins. The diet was milk and vegetables. The urine had increased to from 40 oz. to 60 oz. On December 14th, 15th, and 16th the albumin was 8 parts per 1,000 Esbach, but has been down to one half part per 1,000. During January this treatment was continued and varying drugs were tried without any result. The oedema continued about the same. The patient could not lie down. Towards the end of January I saw him and made half a dozen incisions into his legs, which were then wrapped up in fomentations; 16 pints of fluid were quickly caught and this continued for some weeks. The dropsy diminished considerably, but by the end of January the note says: "Dropsy returned after the incisions had ceased draining; general condition much the same."

At this stage I proposed an operation to him, which he gladly accepted, and on April 29th I decapsulated the right kidney, which was very much enlarged, soft, friable, and pale in colour. At the end of the week his urine had risen to 62 oz. and the Esbach measurement was one-quarter part per 1,000. On May 15th the patient's general condition was much improved. The oedema had disappeared from the legs except the ankles, and completely from the arms. The legs were being massaged daily, and on the 28th the oedema had all gone from the legs, including the ankles. The legs were daily bandaged with soft crêpe bandages.

During this time I was away on my holiday, and on my return I found the patient walking about. With difficulty I persuaded him to have the left kidney decapsulated. Before consenting he went home, and returned for the operation on an arranged date free from all oedema, but with his urine loaded with albumin. I decided, however, to proceed, and the left kidney was treated in the same way as the right. On June 15th the urine was now clear to the Esbach test, but boiling showed the presence of a trace of albumin; the average amount of urine was 50 oz. daily. The patient subsequently left the hospital and returned home.

My attention was drawn to this procedure by an unusually sad case, an only child who was suffering from chronic nephritis. She was completely waterlogged, and the parents were anxious for anything possible to be done. I saw her several times in consultation with a friend and we decided against operation. After watching this case and studying the literature more thoroughly I now believe an operation would have been her best chance, as she died after a painful and prolonged struggle.

The published cases demonstrate that success is possible even *in extremis*, and some remarkably complete recoveries are recorded. Although the physiological and pathological findings are adverse, the clinical results prove that from the patient's point of view the outcome is often satisfactory. My patient is quite settled on this point. Moreover, he is probably characteristic of many in that, though not completely cured and possibly doomed eventually to die of the disease, the operation has been justified by the result.

The operation deserves consideration under two conditions:

1. As an emergency in eclampsia, uraemia, suppression of urine, etc. The more desperate the extremity the more certainly it should be discussed, and cases have been snatched from apparently impending dissolution.

2. In chronic cases, when medical treatment has failed after a thorough trial. In both the above classes the heart and arteries should be reasonably sound, which probably means that most success will be obtained in the first half of life.

DURING the last ten years the Japanese population in the United States has increased by 53.8 per cent., or more than all the other nationalities who have entered that country.

D

THE PASTEURIZATION OF THE MILK SUPPLY

BY

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LARGELY as the result of the persistent efforts of one of her citizens, New York has had a safe milk supply for the past five years. It is illegal there for milk to be sold for human consumption unless (*a*) it is from a herd of cows found by the tuberculin test to be free from tuberculosis; (*b*) contains less than 30,000 micro-organisms per cubic centimetre; and (*c*) is free from *Bacillus coli* in each of two samples=10 c.cm. each, or else *has been pasteurized.* Other milk may only be sold for commercial purposes, not directly to the public for food.

Milk may be classified thus: (1) Fresh pure raw milk: A living fluid, clean, free from tubercle bacilli and all other pathogenic organisms. (2) Pasteurized: The freshest and purest obtainable, heated to 145°–160° F. for twenty to thirty minutes in the same vessels in which it will be sealed and retailed. (3) Sterilized: Heated to boiling point for longer or shorter periods. (4) Dried: A form of milk in powder, obtained either by pouring ordinary milk over slowly revolving steam-heated cylinders or spraying it into a chamber against a current of hot dry air. (5) Last and worst, the form as vended among the public day by day.

The first grade is the ideal. It is scarce and costly; the total quantity available in England is insufficient for a single large town. Pasteurized milk offers the best prospect of a safe and satisfactory supply.

Sterilized milk is objected to from varying standpoints. Perhaps the fact that many persons dislike its cooked taste so much that they will not consume it is the most important. Again, it is alleged that infants fed on it develop scurvy, rickets, or Barlow's disease. These allegations are founded upon the conception that essential food factors are destroyed in the process of sterilization.

Dried milk has substantial advantages over ordinary milk in that it keeps indefinitely if properly stored, can readily be transported for long distances, can easily be stored, and is safe. The investigation carried out for the Minister of Health by Dr. Francis Coutts established that. On the other hand, the product does not permit of perfect reconstitution by the addition of water, however great may be the care exercised in the process. Not infrequently the butter fat appears in small globules rather than as cream. From time to time close examination reveals that the powder has a faint sub-rancid odour. On only one occasion during an experience of its use extending over twelve years has the writer found this condition so pronounced as to call for rejection of the supply. The makers readily and willingly replaced it, and expressed regret at the occurrence. It is costly. To some palates its taste is not agreeable. The "vitamin content" calls for investigation.

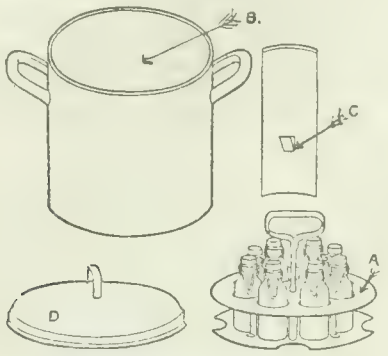
The process of pasteurization has made a place for itself in the United States of America which will repay careful examination. Reference has been made to the position in New York City. Similar statutes are in force in Chicago and in Cleveland, while in 95 per cent. of the cities of over 100,000 in the States pasteurization is approved and enjoined, though not enforced. The process calls for definition. A considerable proportion of milk sold in the ordinary way in large English cities is put through an operation called pasteurization, in order to delay souring, and so avoid the heavy losses entailed by milk becoming unmarketable, especially in hot weather.

There are various makes of apparatus on sale for this purpose, many originating in Denmark.* Milk flows through them in a continuous stream, entering at room temperature, passing through, or between, steam-heated coils, or chambers, and emerging at a temperature of 170° F. There need be no doubt that they adequately serve their purpose from the commercial point of view. But it is objectionable to call such apparatus "pasteurizers." The essential characteristic of the process devised by Pasteur to secure sterilization without alteration of essential

* A sample recently collected by the writer from such a machine, operated in good faith by a large co-operative society, gave a temperature of 170° F. at its point of emergence. It yielded abundant growth on culture.

properties of the fluids treated was the *maintenance* of a moderate temperature (145–170° F.) for a sufficient period (twenty to thirty minutes). We would anticipate that milk treated by the "flash" method referred to above would either be like sterilized milk in its characteristics (if the temperatures were high enough to render it free from micro-organisms) or, alternatively, would not be sterile.

In New York these methods are regarded as being ineffective imitations of a real safeguard. Properly pasteurized milk, such as has been distributed at less than cost from the Nathan Straus dépôts, is a satisfactory and safe supply. Mr. Nathan Straus devised a home pasteurizer, simple both to construct and to operate. It is not patented, and any tinsmith can readily construct it from the specification. There are no gauges to read. Only the proper quantity of boiling water applied for the indicated period is needed. Its effectiveness depends upon the specific heat of water in relationship with that of milk and to the respective quantities of each. The correctness of the calculations has been tested experimentally and verified by experience.



	Size I. Eight 3 oz. Bottles.	Size II. Eight 6 oz. Bottles.	Size III. Six 8 oz. Bottles.	Size IV. Six 16 oz. (pint) Bottles
Height of pan ...	10⅜ in.	10⅜ in.	12 in.	14 in.
Diameter of pan	10⅜ in.	10¼ in.	10⅜ in.	10½ in.
Distance of top of bracket from bottom of pan	3 1/16 in.	4⅜ in.	4¾ in.	6⅜ in.
Amount of water	5 quarts	6¾ quarts	7½ quarts	9 quarts

Directions for the Use of Milk Pasteurizer—System Nathan Straus.

1. Only use fresh filtered milk which has been kept cold, and proceed as follows:
2. Set the bottles, after they have been thoroughly cleaned, into the tray A, fill them to the neck, and put on the corks or patent stoppers.
3. The pot B is then placed on a wooden surface (table or floor) and filled to the three supports C (inside section, showing bracket for tray in the pot) with boiling water.
4. Place tray A, with the filled bottles, into the pot B, so that the bottom of the tray rests on the three supports, and put cover D on quickly.
5. After the bottles have been warmed up by the steam for five minutes remove the cover quickly, turn the tray so that it drops into the water. The cover is to be put on again immediately. This manipulation is to be made very quickly, so that as little steam as possible can escape. Thus it remains for twenty-five minutes.
6. Now take the tray out of the water and cool the bottles with cold water and ice as quickly as possible, and keep them at this low temperature till used.
7. Before use warm the milk—in the bottles—to blood heat. Never pour it into another vessel.
8. The milk must not be used for children later than twenty-four hours after pasteurization. Never use remnants.
9. The advantages of pasteurization over other systems, such as sterilization or boiling, consist in the lower degree of heat applied, which is sufficient to kill all noxious germs, while the nourishing quality and good taste of the milk are retained.

Pasteurization on the large scale calls for an equipment not readily described, nor understood, without the aid of complicated plans and diagrams. It is sufficient to say that milk after being placed in sterile receptacles is kept at the indicated temperature for twenty to thirty minutes by means of steam. The receptacles are then closed and sealed, refrigerated, packed in ice (in hot weather), and dispatched.

The experience of Mr. Nathan Straus extending over a period of twenty-eight years in New York, his continued and ever-increasing confidence therein, but above all the formal endorsement thereof by the municipality, justify the proposition that the pasteurization of milk supplies, with the exception of such as reaches the standard of "Grade 1, Certified," should be the immediate aim of all who are interested in public hygiene.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ERYTHEMA SCARLATINIFORME.

DR. ANDERSON MURRAY'S memorandum in the BRITISH MEDICAL JOURNAL of November 12th (p. 796) raises an old question—namely, whether these cases of scarlatiniform rashes which follow septic wounds are not to be regarded as cases of scarlet fever, mild or severe, and hence whether they ought not to be isolated as such. Books vary in the significance their authors attach to "surgical scarlatina": Goodhart and Still, as well as Edmund Owen, pronounce the condition to be scarlet fever proper—with emphasis. The eighth edition of Osler's *Medicine* is more equivocal.

I have had three cases in the last twelve months similar to those mentioned by Dr. Murray. All three followed septic wounds of the type one has been taught to associate with streptococcus and which are seen often in erysipelas—that is, septic superficial wounds with a little thin pus and little or no surrounding local reaction. In one case, that of a little girl, there was a very intense rash with high temperature and vomiting; wholesale desquamation followed, and an axillary abscess; the original wound was on the hand. In the second case, of a lady aged 60, there was a small septic crack between the toes which gave rise first to lymphangitis up the leg and later to the scarlatinal rash. Desquamation was slight in this case. The third case, of a little boy, showed a bright rash with a temperature of 100° F.; after sixty hours he was free from any symptoms and signs except the original wound. No case had any tonsillitis, but in all the palate shared the rash and the tongue was of the "strawberry" type.

Now, scarlet fever is associated with the streptococcus, and the question arises: "When does a streptococcal case become infective for scarlet fever?" I do not think many would wish to dogmatize on such a point, but I submit that, once a septic focus—tonsil, middle ear, or wound—has given rise to a scarlatiniform rash, there is ample justification for regarding the patient as infectious for scarlet fever, and he should be isolated until the septic focus is no longer septic, and until any desquamation has ceased. The absence of septic tonsillitis is no diagnostic criterion; scarlet fever usually includes septic tonsillitis, probably because it is from the tonsils that the infection commonly becomes generalized; when, however, the generalization comes from a wound I would not expect a tonsillitis.

The severity of scarlet fever is said to have been reduced very greatly of late years by efficient isolation of mild cases, and I believe that in surgical cases of this kind all terms such as "septic rashes" and "erythema scarlatiniforme" would be better abolished, the cases being isolated and treated as scarlet fever until all signs of possible infectivity have ceased. I am encouraged to express this opinion by the fact that others far more experienced than myself share it. On the other hand, I know that there is a large body of opinion in favour of less arbitrary distinctions in these cases. It is in the hope of eliciting further information born of experience that I venture to send these notes.

Broadstairs. MARTIN O. RAVEN.

INGUINAL HYSTEROCELE.

THE patient whose case is described below was a female infant ten weeks old, whose mother was a primipara; delivery was at full time and the confinement normal. The mother noticed a "rupture," and two days later (August 16th, 1921) brought the baby to the King Edward VII Hospital, Cardiff, on her doctor's advice.

On admission the infant was well nourished and in no apparent pain. Examination revealed an ovoid swelling, the size of a small plum, situated in the left inguinal region. On palpation this was found to be fluctuating, somewhat tense, containing a small round movable body, corresponding in size to the infant ovary. All attempts to reduce the swelling failed. A diagnosis of irreducible hernia of the left ovary was thereupon made, and immediate operation deemed advisable.

Operation.

This was performed by Mr. Geary Grant. The hernial sac was large, and, on being opened, was found to contain the left tube and ovary and the fundus of the uterus; very slight further traction produced the right tube and ovary; the neck of the sac was very constricted, rendering the return of its contents difficult. The redundant portion of the sac was then removed, and the opening closed with two interrupted catgut ligatures. The external oblique was sutured with a continuous catgut ligature and the skin with horsehair. The operation was completed in twenty minutes. Recovery was uninterrupted, and the infant was discharged from the hospital with the wound soundly healed.

The above case is one of interest, inasmuch as hernia of the uterus is somewhat of a rarity. Da Costa in his *Modern Surgery* (1915 edition) describes it as a surgical curiosity, and in 1905[1] only 37 cases had been reported. Hernia of the uterus is most often found in middle-aged women who have borne children. In half the reported cases it was associated with malformations and defects, for instance, uterus bicornis, bipartitus, absence of one ovary, or hermaphroditism. It is more often on the left side in inguinal hysterocele, and is usually irreducible. In 8 reported cases it was associated with pregnancy.

F. T. Andrews, of Chicago, has made the most complete collection of hernia of the female pelvic organs: 366 cases were investigated, and of these 46 showed a hernia of the tube alone, 80 of the tube and ovary, 176 of the ovary alone, 43 of the non-gravid uterus, and 30 of the pregnant uterus. In the 46 cases of hernia of the tube alone, 27 were inguinal, 14 femoral, and 2 obturator; in the remaining 3 the variety is not stated. The ages of the patients ranged from birth to 46 years.[1]

With regard to the etiology of inguinal hysterocele in infants, it seems reasonable to believe that the relative shallowness of the infant pelvis (compared with that of the adult) is an important factor, inasmuch as pelvic organs in the adult tend to become intra-abdominal in the infant and are therefore much more likely to be herniated. Mr. Geary Grant had previously operated on a case of double hernia of the ovary alone in a child of 4 years, and he diagnosed the present case prior to operation as a hernia of the ovary. I am much indebted to him for permission to publish the notes of this case.

C. C. R. DOWNING, M.R.C.S., L.R.C.P.,
House Surgeon, King Edward VII Hospital, Cardiff.

A CASE OF QUADRUPLET PREGNANCY.

ON Thursday, November 10th, just before midnight, I was sent for to a woman, aged 38, who had been married ten years, but had had no family; she had had a miscarriage at five months on January 31st of this year.

She complained of pains in the abdomen, and being pregnant thought that she was in labour. Her last menstrual period had ceased on June 21st, but on palpation I found the uterus as big as if it were at the full period of gestation. After questioning the patient with regard to her menstrual history, I came to the conclusion that, as I could palpate the parts of more than one foetus, I was dealing with a miscarriage of a twin pregnancy with hydramnios.

On vaginal examination the os was well dilated and a premature foetal head was presenting in the normal position. The pains went steadily on and the patient delivered herself of a male foetus. An examination was made and the second was found well in the vagina in the occipito-posterior position, and this was delivered with the next pain, also a male. With the next pain two feet of a third protruded from the vagina still in their bag of membranes, and on delivering this it was rapidly followed by the two feet of a fourth; both of these were also males.

On placing my hand on the uterus a violent contraction took place and expelled the placenta, which was about the size of an average full time placenta, and had all four umbilical cords inserted close to the centre. There was one chorion and four amniotic sacs. There was very little haemorrhage and not a great quantity of liquor amnii.

The patient, who is a small dark haired, fresh complexioned, bright woman, did not seem at all exhausted and said that she felt quite well enough to get up. She has made an uninterrupted recovery.

Walkden, near Manchester. HENRY BATESON, M.D.

[1] Keen: *Surgery*, vol. iv.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

EAST YORK AND NORTH LINCOLN BRANCH.

A CLINICAL MEETING of the East Yorks Division was held in the board room of the Hull Royal Infirmary on November 11th, with Dr. H. L. EVANS in the chair, when Dr. F. C. EVE showed a series of interesting cases.

CASE I.

A case simulating cervical rib. A female, aged 28, ten days after a normal confinement had a sudden onset of pallor and coldness in the right hand, and also pain in the hand and ulnar forearm which had persisted ever since (six weeks). There was no swelling. Examination showed a very weak grip, wasted thenar and hypothenar muscles, slight patchy ulnar anaesthesia and a very small right radial and brachial pulse; the heart was normal. Although two *x*-ray photographs showed no cervical rib, mechanical pressure on the artery and lower brachial plexus seemed assured and operation was advised. Mr. Upcott found no cervical rib or fibrous band, and could only assume that the nerve and artery were stretched owing to a low origin relative to the first rib. He excised half an inch of the first rib to ease the situation. Two days later the right radial pulse was much better though not equal to the left, and the pain in the hand and forearm had disappeared. The ten-day interval at the onset excludes anaesthetic palsy, but is rather suggestive of thrombus formation; this, however, would not explain the nerve symptoms.

Mr. HAROLD UPCOTT, in commenting on this case, showed four specimens of cervical rib, and mentioned another case in which he had resected a portion of the first rib to relieve pressure on the brachial plexus. The diagnosis between cervical rib and first rib pressure could only be made by *x*-ray examination.

CASE II.

A case of injury to the left cervical sympathetic nerve and right lower brachial palsy by direct violence had the following history: A bag of meal weighing 14 st. fell 18 feet on to the neck of a strongly built, youngish man who was stooping slightly. He was able at once to walk 100 yards, bearing strongly to the left in spite of strong contra-pressure; he was not unconscious. No bruising or swelling appeared, but there was pain and weakness in the right fore-quarter. Examination a few days later showed: (1) Injury to the left cervical sympathetic nerve, evidenced by smaller palpebral angle, larger pupil, increased left facial sweating, and by pupil reaction to cocaine. The adrenaline eye test indicated a preganglionic lesion. (2) Injury to the right first thoracic nerve was evidenced by weak intrinsic muscles of the hand. The tentative diagnosis was a simultaneous injury to those two nerves at their emergence by a temporary forward subluxation of the spine at this level. Partial anaesthesia of the right thumb and index finger extending up that side of the arm was not explained. *X*-ray examinations were negative, and there was no muscular wasting. The case showed improvement after five weeks.

CASE III.

A case of disseminated sclerosis, improved by salvarsan, was that of a healthy young man with a negative Wassermann reaction. The onset of weakness in the legs was insidious; three years before. There was no obvious cause. Recently he became unable to walk. His reflexes showed a spastic paraplegia, and there was no pain or evidence of spinal pressure. The writing was much more shaky than before. Hence disseminated sclerosis was diagnosed, although nystagmus, intention tremor, and scanning speech were absent. Two weeks' rest in hospital did no good. Then six intravenous injections of N.A.B. (0.15 to 0.60 gram) made his legs much stronger. He could not walk yet. Two more injections are due.

CASE IV.

A case of melancholia, improved by thyroid extract, was that of a woman, aged 53, past the menopause, formerly bright and active, but now for six months silent, brooding and self-accusative. Thyroid was suggested by the full and unwrinkled condition of the forehead skin. Thyroid extract (gr. 3, t.d.s.) has made this and her general condition much more normal, though by no means cured.

Dr. EDMUND BARKER mentioned a case of neurasthenia associated with psoriasis which was treated with thyroid extract. The patient improved under this treatment, and the psoriasis disappeared.

Dr. E. S. SIMPSON gave statistics of cases of melancholia in the East Riding Asylum, where thyroid extract had been tried (20 grains thrice a day). Generally speaking, there was some improvement in adolescent and adult cases, but none after the climacteric.

CASE V.

A case of splenic leukaemia, in which the spleen was very large, contracted wonderfully after six *x*-ray exposures; but the

soon relapsed when his bronchitis appeared to become putrid, and he was now moribund. Besides the usual myelocytes, his blood showed 10 per cent. of leucoblasts and 3 per cent. of lymphoidocytes; this latter cell, regarded as the common ancestor of both red and white cells, was demonstrated from a slide and from sketches prepared with panoptic stain by Dr. Knyvett Gordon.

Reports of Societies.

THE ARSENOBENZOL TREATMENT OF SYPHILIS.

A DISCUSSION on the arsenobenzol treatment of syphilis took place at the meeting of the Medical Society of London on November 21st, under the presidency of Mr. JAMES BERRY.

Colonel L. W. HARRISON, who introduced the subject, confined his remarks to a comparison of the different arsenobenzol compounds and methods of administration, the toxic effects following upon such administration, and the extent to which arsenobenzol should be employed in the treatment of syphilis. He considered that the modern "606" was not nearly so effective therapeutically as the preparation first given out in 1910. The latter was certainly more toxic, but the elimination of this toxicity seemed to have been accompanied by some loss of therapeutic effect. The modern "606," however, was superior in efficacy to "914," and sodium salvarsan seemed to be between the two. Silver salvarsan was probably what it claimed to be, about twice as effective as "914" in similar doses, and he remarked on its effect upon the cerebro-spinal fluid in syphilis of the central nervous system. The method of administration influenced the therapeutic effect of all these substances, and he described some excellent results following from the subcutaneous use of sulfarsenol, which he would not recommend for intravenous injection. Given subcutaneously, it offered a hope of treating syphilis over long periods without fear of toxic effects.

The vasomotor symptoms which followed intravenous injections of these compounds seemed to depend upon the physical state of the solution when injected. He found "606" much more prone to cause vasomotor symptoms than "914," and silver salvarsan could almost always be relied on to upset the patient unless it was given fairly well diluted. Of the "914" class of preparations, those which dissolved with difficulty were more liable to upset the patient when given concentrated than the less soluble. Dermatitis as a toxic effect had become less frequent since the war, possibly because the average patient was now less exposed to climatic vicissitudes. If dermatitis was to be avoided, warning should be taken from small signs of intolerance. He did not agree with the injection of a dose of arsenobenzol week after week according to a set programme, without a careful scrutiny of the patient before each dose. Jaundice following salvarsan administration resembled in many respects the liver disturbance caused by trinitrotoluene poison; fatal jaundice had occurred in little groups resembling small epidemics, and this seemed to point to some adjuvant factor in causation. The subject was obscure, and he hoped that the biochemists would evolve a practical test of liver intolerance, or even a preventive treatment, so that as much arsenobenzol as was necessary to cure the syphilis could be given without fear of the hidden danger of serious hepatic disturbance later.

It was frequently held, said Colonel Harrison in conclusion, that arsenobenzol was useful for getting rid of symptoms, but that mercury was the remedy which cured, or that, after all, mercury was the only specific. Thus there had grown up a custom in this country of giving arsenobenzol and mercury to render the reaction negative and then continuing with intermittent mercurial treatment until the end of two years. The reliance placed on this continued treatment with mercury after the Wassermann reaction had become negative was not justified, in his opinion, and he believed that if mercury were our only remedy to-day, instead of treating cases for two years, we should be treating them for four or five. Nobody knew how much activity was hidden behind the veil of a negative Wassermann reaction; it might be considerable. One was not justified in thinking that when the Wassermann reaction had been rendered negative, mercury would complete the cure. If arsenobenzol were only a symptomatic remedy—that is, one which hid the symptoms without affecting the parasite—its use in the routine treatment of syphilis would be condemned. It would be similar to giving a pneumonia case strong sedatives to get rid of the cough, or a typhoid case astringents to stop the diarrhoea. Arsenobenzol preparations were the strongest specific remedy we possessed, and he upheld the principle of chronic intermittent administration, not of mercury only, but of mercury and arsenobenzol, throughout the whole period of treatment. He thought it not difficult to show that arsenobenzol was a specific rather than a symptomatic remedy, because it caused the spirochaete to disappear rapidly from the secretion of early lesions, and also rapidly converted the Wassermann reaction to negative. By these two criteria he thought it must be granted that the arsenobenzol was immensely more powerful than the mercury.

Experimental Work on Jaundice.

Professor H. MACLEAN referred to some experiments he had been carrying out on the combination of jaundice and toxic symptoms which were found, not so very frequently, on the exhibition of arsenobenzol. He had first of all to find a test with which it was possible to demonstrate liver defect, and after rejecting some which were not sufficiently delicate, he found the laevulose test answer the purpose admirably, for laevulose, unlike other sugars, did not cause a rise in the blood-sugar content, provided the liver was efficient, but if the liver was inefficient there was a rise at once. For the last two years he had been using this test for liver inefficiency, trying it in various cases of toxic jaundice, with very marked results. This led him to make investigations, not only in those cases where the toxic condition was well established, but in those where one single dose of arsenobenzol had been given, and it was a remarkable fact that in a number of these cases, if one took the test at a suitable time, there was definite evidence that the liver had been affected. The change was not very great, but it was sufficiently marked to indicate that the arsenobenzol compounds had a definite tendency to affect the liver even in very small doses; and this, combined with individual susceptibility, and perhaps with the results of syphilis itself, combined to produce those toxic symptoms of which Colonel Harrison had spoken. The test was frequently of value also in estimating the prognosis. It had happened, for instance, that a case in which the clinical symptoms were unfavourable showed by this test that the liver condition was not so grave, and such a patient did well; the converse also held good. Another curious point was that so many cases of catarrhal jaundice appeared to have been treated at some time in the past with one or other of these arsenobenzol compounds. It was quite difficult to get cases of catarrhal jaundice which had not been so treated.

Professor Maclean went on to ask whether, having ascertained that the liver was exceedingly liable to the deleterious action of these compounds, one could protect the liver in any way against this action. There was some evidence that the liver cells were much more likely to succumb to toxic effects when they did not contain much glycogen. Graham, in the United States, had found puppies exceedingly resistant to chloroform poisoning until he removed the glycogen, whereupon puppies of the same litter as those which had survived the chloroform for four or five hours lost all resistance and succumbed within ten minutes. If it was the case that the liver cells were much more likely to be poisoned when they did not contain much glycogen it did not seem justifiable to give treatment by arsenobenzol compounds to patients who might not have had food for some time before coming for treatment—who were in fact suffering from the effects of hunger. It was very possible that at the clinics patients might come up who were actually starving, and it might be well in such cases to give them 50 grams of a sugar such as glucose half an hour before injection. This would make toxic effects less likely to occur.

Toxic Effects following Administration.

Dr. J. W. MCNEE remarked that, among some 75,000 patients treated for syphilis at the centres in one year, only ten deaths were reported as being due to arseno-

benzol compounds, together with 77 cases of ill effects. The variety of these ill effects reported was considerable, but the total number was small. At the same time, these figures could not be taken as strictly accurate. Deaths might be reported as being due to acute yellow atrophy of the liver and other conditions, for to say on the death certificate that death was due to arsenobenzol was equivalent to saying that it was a case of syphilis. The speaker went on to deal particularly with dermatitis as a toxic effect following administration. In cases with dermatitis which ended fatally there were practically always other changes affecting the endothelium—blood changes, with haemorrhages in many situations, especially in the lungs. There could be little doubt that these haemorrhages in the lungs were the cause of the fatal issue in the majority of these cases, for in that haemorrhagic area a fatal bronchopneumonia might be set up.

At Johns Hopkins Hospital two cases of dermatitis were recorded as ending fatally from aplastic anaemia, which, it seemed, might be a rare complication of arsenobenzol treatment, both in cases with and without dermatitis. With regard to encephalitis haemorrhagica, he doubted whether the term was a correct one. There was no evidence of inflammatory change in the brain in these cases; the damage occurred to the endothelium of the small cerebral capillaries, resulting in haemorrhage of the brain, and thus the cases were not true encephalitis. As for the liver condition, he mentioned that in Germany many outbreaks of jaundice had occurred since the war began, and a whole series of inquiries had been reported recently in the periodicals. The writers were of opinion that jaundice, both in cases which had been treated with arsenobenzol and others which had not, was very much on the increase, owing to the deficient and ill-balanced nourishment which the German population received during the war. Jaundice and acute yellow atrophy were evidences of one and the same condition. The onset of acute yellow atrophy in cases of jaundice had been ascribed to an infection, but to the pathologist the condition of the liver in such cases was quite different from that of an infection by a micro-organism, and much more strongly resembled some general toxic picture.

Pathological Changes in the Liver.

Dr. R. L. MACKENZIE WALLIS described certain investigations which he had made on comparatively small pathological changes in the liver. The three tests he selected for this purpose were the laevulose tolerance test, the lipolytic activity of the blood serum, and the cholesterol blood content. The first of these had proved to be of much value. It showed that the greatest damage to the liver occurred three months after the last treatment with the arsenobenzol compounds. Many of these cases were followed up further, and it was found that six months afterwards the ingestion of laevulose was no longer followed by any rise in the blood sugar, or was followed by very much smaller rise than had taken place earlier. The injection of arsenobenzol compounds appeared to throw a considerable strain on the liver, which was felt most acutely three months afterwards. It was inadvisable to give a second course of injections three months after the last course, unless these tests had been applied. The toxic action seemed to be confined to the liver, and to produce changes in the nature of local necrosis in almost every case. If the liver was capable of doing so, and was given an opportunity, it recovered its functions fairly rapidly without untoward consequences. In view of the hepatic strain involved, it might be advisable to give arsenobenzol on an empty stomach, and to prescribe a light protein and carbohydrate diet on the day previous to injection and the day after.

Early and Late Syphilis.

Dr. HENRY MACCORMAC said that in estimating treatment it was important to divide the disease into the primary, secondary, and late stages. Very little could be done as regards the Wassermann reaction in the late stages of syphilis. The disease then could not be cured, though much could be done for the symptoms. In the primary and secondary phases it was different, and here the object in view was the cure of the disease as well as the prevention of infection. No very clear distinction could be drawn between primary and secondary cases, which were very much of the same nature from this point of view. The whole question turned on the date of infection, and, apart from this, it did not really matter very much what the clinical manifestations might be. Nor should any sharp line be drawn between primary syphilis with a negative Wassermann and primary syphilis with a positive. Syphilis should be divided into two classes: early infection, including both primary and secondary stages, and late infection. The action of salvarsan was compared by the speaker to the action of water on a fire, whereby the fire was reduced to a smoulder. The subsequent treatment of syphilis by mercury was capable of dealing with any spirochaetes that might have escaped the destructive powers of the salvarsan, and therefore he thought that the mercurial treatment should be followed up for two years, in the primary and secondary cases, after the salvarsan treatment had been discontinued. It was necessary to ensure the cure by means of the mercury as far as possible. The late cases presented a different problem; here the attempt must be simply to treat the symptoms, for the disease itself could not be cured. A short course of salvarsan and then a short course of mercury should be given, after which all treatment should be stopped, and the patient should be seen six months or possibly a year later to determine whether another course was required or not. The speaker produced charts and tables showing the considerable extent to which salvarsan was pushed in the treatment of the likely cases at the Middlesex Hospital.

Experimental Tests on the Compounds.

Dr. H. H. DALE agreed with Colonel Harrison that it was a pity that they could not definitely, by the test for the toxicity of these substances, exclude the possibility of those rather alarming and unpleasant vasomotor reactions. But he described the dilemma in which they stood: if the toxicity were lowered beyond a certain point, they were subject to complaints that the therapeutic efficiency had been unduly lowered also. From the experimental standpoint, the experiments being based on mice infected with a trypanosome, it appeared that silver salvarsan was the most efficacious of the compounds they had handled, next came the old "606," then sodium salvarsan, then the neosalvarsan, and, lastly, the substance called sulfarsenol.

With regard to the toxic effects themselves, he thought that there was a good deal of evidence to show that the vasomotor reaction was not in the main a true toxic action of salvarsan as such. It was one of a group of reactions which could be obtained from various substances when they fell rapidly out of solution in the blood. When this happened, certain insufficiently explored colloidal changes took place in the blood, giving to the blood temporarily a kind of toxicity, and producing the reaction which had become familiar as anaphylactic shock, though it had nothing to do with true anaphylaxis. The toxic action on the liver fell into a different category. This acute process was not known, so far as he was aware, as the effect of administering inorganic arsenic. On the other hand, there was a close similarity between the liver effects after a prolonged course of salvarsan and the cases of acute yellow atrophy of the liver from exposure to trinitrotoluene during the war. He thought there was a good deal of reason to suggest that in these cases of acute yellow atrophy they saw the most characteristic effect of the salvarsan molecule as a whole; it was not properly a case of arsenical poisoning, but of something due to the complex organic molecule itself.

The Toxicity of Salvarsan.

Sir WILLIAM WILLCOX believed that fatal cases following treatment with salvarsan were much more frequent than was commonly supposed. He had seen a considerable number himself, although they were not always recorded as such in the death certificate. The toxic effects of salvarsan were very comparable to those of tetrachlorethane and trinitrotoluene. He agreed that inorganic arsenic did not produce the intense liver effect called acute yellow atrophy. In his own firm opinion the cases of acute arsenical poisoning which were put down as cerebral in type were not due to the toxic effect of the arsenic at all, but were autointoxications, such as one got in the case of other poisons which destroyed the liver function and caused an accumulation of toxins. In salvarsan and similar poisonings, if the liver were examined in the early stages, it would be found that the liver cells

were swollen and engorged with fat. A certain number of cells died, there was necrosis, and the liver shrank. It used to be thought that the symptoms of salvarsan poisoning in acute cases were due to the effect of the poison on the brain. He thought he himself was the first to disprove that, because eight or nine years ago he examined several cases of salvarsan poisoning, both animal and human, and found no arsenic in the brain or spinal cord. The cerebral symptoms were not due to arsenic in the nerve tissue, but were indicative of true autointoxication. With regard to the secretion of salvarsan, he had worked it out on several cases, and found that after a dose of 0.6 gram of salvarsan one could readily detect arsenic in the urine up to about the twentieth day; therefore the effect was somewhat prolonged.

Colonel HARRISON, owing to the lateness of the hour, said a few words only in reply. He thought it necessary in the administration of arsenobenzol to introduce intervals, which he did after the third and fifth day. He could not agree with much that Dr. MacCormac had said, but Dr. MacCormac and he must fight it out in private.

SYPHILIS OF THE STOMACH.

DR. GUSTAVE MONOD'S "occasional lecture" at the Royal Society of Medicine on November 23rd was on syphilis of the stomach. Sir JOHN BLAND-SUTTON, president of the Society, was in the chair.

Dr. MONOD, who said that the subject of syphilis of the stomach was very much under discussion in France at the present time, gave copious references from French and German literature. He remarked that nearly all the literature was French, German, or American. In British textbooks the subject occupied a very small place; in the *System of Medicine* by Allbutt and Rolleston, for instance, it was given only half a page, and it had an even scantier reference in other standard works. With regard to the frequency of the condition, he confessed himself unable to give any figure, although he believed that the percentage of cases was higher than was commonly supposed. He mentioned various estimates, including one by a French authority, based upon some 7,000 cases of all kinds of stomach trouble, that there was syphilis of the stomach in one-third of 1 per cent.; the 7,000 cases included slight dyspepsias, and so forth. Seeing that syphilis might produce its lesions at either end of the alimentary canal, he did not see why the stomach should be regarded as exempt. He then went on to deal with the clinical features of gastric syphilis. In the secondary stage of syphilis the main feature indicating stomach trouble was dyspepsia; there was nothing very definite about syphilis of the stomach at that stage. In the tertiary stage, however, patients more strongly complained of dyspepsia which was not amenable to ordinary treatment or dieting, and here any one of four types of syphilitic stomach might be manifested. The first and most frequent of these was gastric ulcer, which had the characteristic of being apparently amenable to treatment and then tending to relapse. Next came the cancerous type. Here he told of a French peasant who, afflicted with cancer of the stomach for which his doctor could do nothing, visited a quack with a reputation for dealing with this trouble, and, sure enough, returned home with his symptoms cured. The quack, it appeared, employed only one method of treatment, and that was to put a large mercurial plaster on the stomach of his patients. The third type was stenosis, in which *x*-ray examination with bismuth proved to be so useful. Dr. Monod regarded all hour-glass stomachs as highly suspicious of syphilis, while a double stenosis, he thought, was the signature of syphilis almost beyond question. The last of the four clinical types was the small plastic stomach, suggestive of linitis, or what was described later by one of the speakers in the discussion as the "leather bottle"; this also, he thought, might be a syphilitic manifestation.

Hereditary syphilis seemed to react on the stomach very frequently, but in adults the stomach conditions might take any of the four types he had discussed in connexion with the tertiary stage of the acquired condition. It was very difficult from the clinical point of view to say whether a syphilitic stomach in an adult indicated hereditary or acquired syphilis. In infants, however, the case was different. Here there were two specific types—the gastric haemorrhage of the newborn, with congestion and ulceration of the mucosa, and another type in which frequent vomiting was the main feature.

After a reference to gastric crises in tabes, in some cases of which there was marked lesion of the stomach, Dr. Monod went on to speak of diagnosis, and recalled that he himself was a student in Paris under an old Scottish doctor, who earned for himself the nickname of "Gastro-syphilis" because he followed the teaching of the French masters to such an extent that in absolutely every stomach case he would turn round and ask, "Is it syphilis?" Dr. Monod urged that the possibility of syphilis should always be kept in mind. Chemical analysis did not yield much result, nor did he know of any recorded case of spirochaetes being found in the contents of the stomach. With regard to treatment, he said that, apart from surgical treatment, the old remedies appeared to be the best—mercury and iodide, especially iodide.

In the brief discussion Dr. J. W. MCNEE described one case of syphilitic stomach—the only case he had seen—in which the spirochaetes had actually been found in an area where the diseased process appeared to have been very acute. He had brought the specimen to the meeting for examination. All syphilis of the stomach rested upon the morphology of the spirochaete. Dr. A. F. HURST said that his own impression was that the disease must be extremely rare. He had been definitely on the look-out for it in every obscure gastric case for fifteen years, and he had had only two cases in which the condition might have been due to syphilis, and in these the obstruction and symptoms cleared up under antisyphilitic treatment. At the same time, he believed that there was such a thing as syphilis of the stomach, and that its existence should be remembered.

Mr. A. J. WALTON said that it was an important matter for them to determine whether this was a pathological curiosity or a condition relatively so frequent that they must always have the thought of it in their minds. In his own clinical experience the cases which might have been syphilitic were very rare, and he thought it was necessary to be on one's guard against accepting, without a definite pathological examination, an ulcer occurring in a known syphilitic as necessarily a syphilitic manifestation. Dr. H. M. TURNBULL said that the only real proof of a syphilitic ulcer was the presence of the spirochaete. He had not himself come across a case which might be accepted histologically as syphilis, though he was engaged at the moment on one doubtful specimen, the work on which was not yet completed.

GLYCOSURIA IN PREGNANCY.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on November 3rd, with Professor HENRY BRIGGS, president, in the chair, Dr. R. L. MACKENZIE WALLIS read a paper on glycosuria in pregnancy. He divided the cases into two groups—namely, the intermittent or transitory glycosurias and diabetes mellitus. The first group presented characters of particular interest; the investigation of the urine was confined largely to the question of the nature and amount of sugar present, the presence of lactose being always excluded, and it was often a matter of some difficulty to decide whether the reducing substance present was sugar or not. In collaboration with Dr. P. J. Bose a method had been elaborated of detecting and estimating sugar in the urine in both normal and abnormal amounts. This method depended upon the removal of all interfering substances by means of a solution of phosphotungstic acid, and the identification and estimation of the sugar present in the clear filtrate. By means of this test it was possible to determine the nature and amount of sugar present in normal urine, and in pregnant women it was possible by this method to determine variations in the amount of sugar in the urine. The blood sugar examination was done simultaneously, and used to determine the nature of the case as well as to watch the effects of the treatment in a severe case of glycosuria in pregnancy.

By plotting the curves together it was found that the glycosuria in pregnancy gave curves identical with those in hyperpituitarism. In this group cases of marked obesity, acromegaly and intermittent glycosuria could be included on the results of the sugar tolerance test, and this was a

point worthy of further investigation in view of the part played by the pituitary body during pregnancy. Observations showed that 500 grams of glucose could be tolerated without the occurrence of sugar in the urine, and in consequence this type of case was best treated by leaving it alone. Attempts to restrict the carbohydrates in the diet generally made the patient worse, and the appearance of acetone bodies in the urine was likely to be misleading in such circumstances. The results of investigation showed that the two types of glycosuria met with in pregnancy required to be clearly differentiated, since in one type no treatment was required, yet in the other type the greatest care in the dietary became necessary.

In the discussion that followed, Sir WILLIAM WILLCOX said he thought that in addition to excessive activity of the pituitary gland attention should be directed to the increased activity of the thyroid. He considered the carbohydrate tolerance in patients with diabetes mellitus the determining factor as to whether pregnancy should be allowed to continue or not. If below 20 grams, pregnancy should be terminated, but above 50 grams, with special care it might be allowed to continue.

Dr. GEORGE GRAHAM differed from Dr. Wallis only in his interpretation of the blood sugar curves. He regarded the glycosuria of pregnancy in the same light, and thought that the strain of pregnancy showed a temporary diminution of the sugar tolerance.

Dr. CAMMIDGE said that Dr. Mackenzie Wallis appeared to think that glucose and lactose were the only sugars met with in the urine in pregnancy. Analyses in cases he had seen during the last fifteen years showed that glucose was present in abnormal amount in only 52 per cent., while lactose alone was found in 22 per cent. In the remaining 26 per cent. the reducing substances were either laevulose or pseudo-laevulose. The latter cases did badly on ordinary diabetic treatment, but did well on an abundance of carbohydrate. The most difficult cases to treat satisfactorily were those with a mixture of glucose and pseudo-laevulose.

Mr. A. E. MORTIMER WOOLF exhibited a specimen of a uterus showing double ruptured interstitial ectopic pregnancy. He had performed a subtotal hysterectomy, and the patient made an uneventful recovery.

Dr. W. J. O'DONOVAN showed a specimen of a gold button contraceptor which had been introduced in New York some months previously. The instrument consisted of two diverging arms which lay within the uterine cavity, and were attached to the button close to the external os. It had given rise to irritation of the patient's vulva. Dr. ARTHUR GILES said he had found some time ago that these instruments were advertised as the latest cure for sterility. Mr. NORMAN HAIRE said they were in common use in America and Germany. He was informed that they did not prevent conception, but if conception did occur abortion followed, which was often septic. He considered them most dangerous.

Dr. G. CRANSTOUN read a short communication on cystic adenoma of the uterus, the cyst formed having filled the whole abdomen; panhysterectomy was decided upon. The formation of the huge cyst appeared to be due to central degeneration of the adenomyoma, which had distended the upper part.

DETERMINATION OF RESPIRATORY EXCHANGE.

AT a meeting of the Royal Medico-Chirurgical Society of Glasgow, on November 18th, Dr. G. B. FLEMING made a communication on "The practical application of the determination of the respiratory exchange in health and disease." He outlined what was meant by the respiratory exchange as studied by physiologists and pathologists and explained the principles of direct and indirect calorimetry. The latter method was that used by him in his observations, when he employed a closed circuit apparatus, connected with which was a movement recorder, as described by Benedict and Talbot. In order to fix a standard by which to gauge the metabolism the basal metabolism was determined. After much investigation, this had been fixed for adults at 28 calories per kilo per twenty-four hours, or 950 calories per square metre of body surface per twenty-four hours. The difficulty in the case of infants was very great, and the figures for very young children might not be strictly accurate, but were near enough for practical purposes. Tables were shown illustrating the basal metabolism at various ages and the influence of various factors upon this.

In considering the practical application of examination of the respiratory exchange Dr. Fleming referred to Cathcart's studies of food requirements in the recruit while in training, and then compared the caloric requirements of men engaged for eight hours a day in various industrial pursuits with the requirements of an active boy from one year old till the age of 15 years. The more arduous the occupation the higher the metabolism. In certain diseases careful studies had been made and some valuable facts ascertained. In diabetes mellitus the respiratory quotient was low, and this proved that in spite of a hyperglycaemia sugar could not be metabolized. It had been shown also in diabetes that the metabolism was carried on at an extravagant rate. Consequently as full a diet as possible should be given, other factors which might contraindicate this always being taken into consideration. In exophthalmic goitre the metabolism was carried on at an excessively high rate, while in myxoedema and cretinism the metabolism was very low. The thyroid internal secretion seemed to have the power of stimulating metabolism. In a cretin under Dr. Fleming's observation there was a basal metabolism of 378 calories per twenty-four hours before thyroid treatment; after eight days' treatment with thyroid extract its basal metabolism had risen to 482 calories per twenty-four hours.

Recently the speaker had been studying infantile atrophy on similar lines, and he outlined various conceptions as to the cause of this condition, explaining how he tested the hypothesis that the fats, although absorbed, might not be utilized. From the figures obtained it was proved that the atrophic child could burn fat. Diagrams were shown which appeared to prove that the metabolism was not carried on at an extravagant rate. In adjusting the figures it was found that the actual weight of the marasmic child, when used for the calculation, gave erroneous results, and that, up to a point, the calculated weight for age was the correct figure. This was accounted for by the fact that until 35 per cent. of expected weight had been lost the wastage was at the expense of metabolically inactive tissue, fat, and carbohydrate, but that below this figure there was actual tissue wastage. It also showed that infants should be given quantities of food suitable for their expected weight; that was, for their age rather than their actual weight. Reference was also made to observations of heat output in fever, and to the making good of loss by feeding.

In conclusion, Dr. Fleming claimed that the study of the respiratory exchange allowed us to prescribe a diet suitable for various forms of industrial or athletic activity, and to the varying requirements of the human organism from extreme youth to old age. In disease it had afforded us knowledge concerning the derangement of metabolism in diabetes, exophthalmic goitre, myxoedema, infantile atrophy, and fever, and no doubt further use of these methods would throw additional light on other morbid conditions.

In the discussion which followed, Professor CATHCART referred to the importance of the study of the respiratory exchange. In America the method had caught on, but unless it was well and thoroughly done it was not worth doing and was valueless. All the apparatus in use had flaws and some many flaws. Of the apparatus recently introduced for general clinical use most was of very little use and only of limited application. For accurate results methods like the closed circuit or gas analysis had to be used. Physiologists believed this study to be one of the most fundamental. It gave clues to changes taking place in the living organism and enabled us to learn more completely what was the normal and what abnormal. In Professor Cathcart's opinion the new methods would throw much light on many problems, but would not be adaptable to clinical use on a large scale.

Dr. LEONARD FINDLAY said he was glad that Dr. Fleming's work was being done in the department in which he was specially interested. Dr. Fleming came to that department at a time when the condition known as infantile atrophy specially interested them. From observations they had made they had come to certain conclusions as to the cause of the condition, which were shown to be wrong

by Dr. Fleming's observations. Dr. Fleming did experiments in a case of obliteration of the bile duct in which there was practically no steatorrhœa of fat. In this condition the respiratory quotient was lowered by the fat, showing that free fat interfered with carbohydrate metabolism. In understanding questions of nutrition the study of the respiratory quotient was of very great value. Finkelstein taught that an infant should be fed according to expected weight and not according to actual weight, and Dr. Fleming's results showed that this was correct. No doubt other theories and other problems in nutrition would be helped by these studies.

Stovaine Anaesthesia.

Mr. JAMES TAYLOR, speaking on stovaine anaesthesia, described the method of giving stovaine and the care to be taken in its administration, limiting his account to his own experiences in something over 500 cases. He used only the heavy variety, and, while believing some of the other drugs were safer, he considered that none gave such a perfect muscular paralysis, and this was of great importance in abdominal cases. He always used stovaine and glucose, and all his injections were given in the lumbar region. He considered stovaine to be the most perfect method of blocking the afferent nerves and protecting the patient from shock—in other words, of obtaining anoci-association. A fall in blood pressure occurred just after the injection, and this was but rarely alarming.

In his opinion, operations which were associated with much shock could be more successfully performed under spinal anaesthesia than with any other anaesthetic. In ten disarticulations at the hip after intrathecal injection all the cases recovered except one, where the collapse, after a railway smash, was extreme. Another group of cases which supported his contention was 12 consecutive cases of Wertheim's operation without a death, in one of which the whole rectum, from the pelvic colon downwards, was also removed. Another group of cases where stovaine had definite advantages over general anaesthetics was intestinal obstruction where there is much abdominal distension. The abdominal muscles were so completely paralysed that the difficulty of closing the abdomen so often experienced was completely done away with, and, moreover, there was not the same tendency to paralysis of the involuntary muscle of the intestine.

Mr. Taylor then referred to several of the disadvantages of the method, such as the trouble of injection, which was usually slight, and the difficulty of getting, during the operation, the proper mental atmosphere; this, however, induced less strain on the operator than that experienced when the anaesthetist using the inhalation method was not highly skilled. In any case the administration of morphine and hyoscine sent the patient to sleep during the whole operation. The greatest objection to stovaine was the initial fall in blood pressure and apparent collapse. This might be overcome by injection of pituitrin or inhalation of a little ether. In elderly and feeble people and in those with serious renal disease, and those suffering from recent loss of blood or anaemia, the condition of the patient might become alarming. While realizing this it might often be worth while to take the risk. The duration of the anaesthesia was variable, and the higher up the site of the operation the shorter time it lasted. In the upper abdomen it lasted about half an hour, and about twice that in the lower abdomen. Fifteen minutes after the administration of stovaine and glucose no further extension upwards took place.

A MEETING of the West Kent Medico-Chirurgical Society was held on November 11th at the Miller General Hospital, Greenwich, when Mr. PAUL BERNARD ROTH read a paper on the "Treatment of fractures," illustrated by *x*-ray photographs and plates. He emphasized the importance in all injuries to bones and joints of having a radiogram taken in two planes, anterior and lateral; screening, he considered, was not sufficient. The treatment he advised for fracture of the clavicle was a fortnight in bed, flat on the back without a pillow. There was no resultant deformity in this method, while Sayer's method left a deformity and often produced paralysis of the hand. Tying the wrist to the opposite side of the neck was the way to treat most fractures of the upper extremity, and in Colles's fracture the wrist had to be kept flexed or the deformity reappeared. The less splinting there was in the treatment of fractures the better, and instead of ordinary massage gentle stroking from the distal end towards the body, as introduced by Lucas-Championnière, was successful in promoting normal function. In fractures of the femur the application of a plate and screws was the sure way of avoiding deformity.

Reviews.

THE MECHANISM OF LIFE.

THE first 150 pages of Professor JOHNSTONE'S interesting book on *The Mechanism of Life*[1] consist of an excellent introduction to the general study of animal organization. Stress is rightly laid on the importance of looking at organisms as complete integrated units. But we must also remember that an individual apart from its environment is also an unreal abstraction. As would be expected from the title, prominence is given to the doctrine of energy in the treatment of the subject, and this is heartily to be approved of. Careful perusal detects very few errors, even in matters on which physiological knowledge is only of recent date. The account of the secretion of urine is scarcely up to the standard of the rest of the descriptions, while the view that food materials become part of the chemical structure of protoplasm before being burned up is held by few at the present time.

If any more general criticism of this part of the book is to be made, it is perhaps that a somewhat disproportionate space is taken up with the anatomy and physiology of the central nervous system. This is probably to be accounted for as necessary for the correct understanding of the more original pages which make up the rest of the work. Here we pass on from physiology to psychology and to philosophy, not to say metaphysics. Nevertheless, it is somewhat of a surprise to find no account of the "conditioned reflexes" of Pavlov, although they throw light on some of the difficult questions discussed. This omission is, however, excusable in view of the fact that meagre space, if any, is given to them in most physiological textbooks. It is to be regretted that so detailed an account is usually given of the anatomy of nerve tracts, adequately described in other places, to the neglect of essential facts of their function.

The reviewer finds it difficult to express opinion on the philosophical part of the book. He feels sometimes uncertain whether his acquaintance with the language used suffices to enable him to grasp the meaning properly. So much of what has been written on questions of this kind is made more obscure by the use of words in what seem to be unusual senses or even in different senses at different times. One is inclined to wonder whether attempts are not made to make statements about matters for which our mental nature is not equipped. The author himself appears to be in some doubt as to this, for we read on p. 234, "But, again, it seems quite possible to hold that this question of the relativity of the life passage and the environmental nature passage is one that has no meaning." It is unfair, however, to take a statement away from its context, and perhaps some idea of the problems discussed may be given by a few critical remarks. Much is made of the apparent gradual failure of determinism when we follow the behaviour of animals from the amoeba up to man. Apart from the fact that no scientific treatment is possible unless we assume determinism, is it not as reasonable to hold that we do not yet know all the factors controlling the phenomena as to say that these phenomena are essentially indeterminate? Our author holds that the former position becomes dogmatism if we say that we should be able to predict the results if we knew all the factors. But since decision is at present impossible and may always remain so, it is equally dogmatic to affirm the latter as the true view. It is surely as philosophic to take either position so long as no interference with our scientific work is permitted. This is the danger from which the vitalist has to guard himself. Michael Foster is quoted as saying that periods of domination of mechanistic conceptions have been the most fertile; those of vitalistic views, sterile.

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[1] *The Mechanism of Life in Relation to Modern Physical Theory.* By James Johnstone, D.Sc., Professor of Oceanography in the University of Liverpool. London: Edward Arnold and Co. 1921. (Demy 8vo, pp. 248; 53 figures. 15s. net.)

It is interesting to note that Professor Johnstone takes the view that consciousness is something that accompanies the physico-chemical processes in the brain, and that it has no part in the energy transformations. These would, he thinks, be the same whether consciousness were present or not. One may be inclined to feel some hesitation in accepting, as the essential concept of life, the retardation of the degradation of energy that occurs in living processes. Surely the frequent occurrence of free energy being seized, as it were, before its transformation to heat has been pointed out before as more or less characteristic of vital reactions. But it is not peculiar to these. It occurs also in some photochemical reactions and elsewhere.

But enough has been said to excite the interest of those who are attracted by thoughtful biological speculation. To them the book may be highly recommended.

W. M. BAYLISS.

AMBROISE PARÉ.

AMBROISE PARÉ five years before his death (in 1590) published his *Apologie et Traité contenant les voyages fait en divers lieux*, which constitutes his title to lasting fame. The book is a French classic, written in a racy style, in the vernacular of the time. It gives a sketch of interesting campaigns with many stories, both strange and gruesome, and exhibits Paré as a great exemplar of an army surgeon. Dr. PACKARD, in his *Life and Times of Ambroise Paré*,[2] has made an excellent translation, and has prefaced this by an account of Paré's life, which was set in the midst of a particularly attractive period of the history of France. Dr. Packard is a rather indiscriminating admirer. Paré is a great figure in the history of surgery, and, as often happens in such a case, achievements have been attributed to him which really belonged to other men, and he has been endowed with qualities he did not possess.

After his death, Paré's voluminous writings failed to maintain their interest; during the eighteenth century he was almost forgotten. With the nineteenth century his great successor, Larrey, referred to him; in 1812 Vimont received for an *Éloge* a prize given by the Medical Society of Bordeaux; in 1840 a statue by David d'Angers was erected in Laval, a town which had overgrown Paré's birthplace, the village of Bourg-Hersent. His memory was definitely revived by Malgaigne's edition of Paré's *Oeuvres*, to which in 1885 Le Paulmier made important additions from various archives. Mr. Stephen Paget's most interesting account of Ambroise Paré and his times appeared in 1897.

If we confine consideration to Paré's place in the history of surgery an explanation may be required of the opposition he met with in his lifetime from the Faculty of Medicine and the reasons for the subsequent neglect of his writing. Paré was a most extensive copyist from French and Italian surgeons who had written in Latin; he wrote in a diffuse vernacular, using instead of Greek and Latin derivatives strange words dragged in from the country dialects, which even as so used were exceedingly ill defined. It was a retrograde procedure, which the Faculty of Medicine was well justified in opposing; German and English surgeons imitated him with equally confusing consequences. In copying from his predecessors he did not, in many instances, select the best, and what is good is obscured by irrelevant stuff. His *Anatomie Universelle*, 1561, of which Malgaigne only knew of two extant copies, is taken from the *Fabrica* of Vesalius, along with many of the illustrations. His account of tumours seems to be copied from Tagault, who in turn had copied from Guy de Chauliac, as also from Dalechampe's translation of Paulus Aegineta. Introductions, many ideas and phrases, and also heads of chapters, follow closely on Philippe de Flessèle's work published in 1547. The accounts of wounds, injuries to the head, fractures and dislocations, present no advance upon those contained in Hippocrates and Celsus. His midwifery is derived ultimately from Soranos, but is intermingled with superstitions and old wives' tales. His treatise on monsters, terrestrial and marine, with illustrations of curious and imaginary creatures like the unicorn, is taken from the mediaeval Bestiaries, together with scraps from Aristotle. Gourmelen said that Paré had included things about generation, midwifery, and monsters to create interest for fear that his surgical writings would soon be forgotten. Paré replied that he had included such matters to bring to light the treasures of the ancients which should serve as posts of observation (*eschauguettes*) from which a wider view might be taken.

He had learnt from Da Vigo to pour boiling oil into wounds, but, the supply running out, he used a "digestive" composed of yolk of egg, oil of roses, and turpentine. Later he obtained, after much trouble, the recipe for a vulnerary, his ol. cattorum, or kitten oil, made by macerating two kittens or puppies in oil of lilies and adding worms from a rainwater tank. Later still he came to use chiefly turpentine and brandy, but he ignored the lead lotions and collyria so largely used in Roman times, as noted by Celsus and Dioscorides, and which were the best for wounds before the antiseptic period. He cited, as evidence that gunshot wounds were not poisoned, that soldiers stirred up gunpowder in water and drank it as a protective. Taking poisoning of a gunshot wound in a wider sense, it is arguable that boiling oil followed by a dose of opium was better as a primary treatment than the septic vulneraries adopted as alternatives.

In substituting the ligature for the cautery when amputating, he neither selected the best methods previously described, nor supplied pertinent reasons from authority. Bertapaglia in 1490 said that a bleeding artery or vein should be drawn forward with a hook, separated from surrounding tissue (*excarnare*) and tied with linen thread. A better and firmer way was to transfix the mouth of the vessel so separated by a needle carrying the ligature, which was then knotted on each side. Benivieni in 1506, when treating a monk who had cut off his penis, seized each bleeding vessel separately and applied a ligature. Paré's quotation from Hippocrates has reference to the use of the ligature in the treatment of fistula in ano. Celsus and Galen had in view a punctured wound of an artery, especially that occasioned in the temporal artery when performing arteriotomy, after which a ligature was applied on each side of the bleeding point and the artery divided between. Unfortunately Paré described a ligature *en masse* which, when applied in the course of amputating the arm, tended to include the nerve, and the suffering endured by Lord Nelson is a classical example of the result. When this was combined with a tight drawing of the skin over the stump by his crucial suture, the objections made by his opponents can be understood. More than two hundred years later, Larrey saw the evil effects of the tight crucial suture among the Saxon wounded in Dresden. Paré's ansa haemostatica for secondary haemorrhage, a deeply inserted square or mattress suture, knotted over a pledget of lint applied to the bleeding point, was better, but the particular authority he quoted (Galen) had stated that the ligature should be applied in the course of the artery, on the side nearer the heart.

As to his midwifery, Philomenos and Soranos had described podalic version on the living child; Paré only referred, with Celsus, to podalic version for the extraction of a dead foetus. He did not mention the rectification of a head presentation by cephalic version, the bimanual manipulation described in Hipprocrates. He denied the existence of the hymen, believed that the pubic symphysis separated, and he opposed Caesarean section on the living. Although Paré himself does not mention it, Guillemeau states that he had seen Paré perform dilatation of the cervix, accouchement forcé, and that Paré's own married daughter had been so delivered. The procedure, including the use of a three-bladed dilator (ἡ μήλη), is noted in Hippocrates. Paré does say that being called to a woman in labour he went away without delivering her—as he remarked, "leaving the matter to Nature and commending her to God."

A few original observations by Paré may be disinterred. In the treatise on distillations and embalming he noted of a suffocated infant who had breathed that the lungs were full of air. He followed Paracelsus in affirming the inheritance of syphilis, and apparently for the first time stated syphilis to be a cause of aneurysm. He was the first to mention fracture of the neck of the femur, under

[2] *Life and Times of Ambroise Paré (1510-1590).* With a new translation of his Apology and an Account of his Journeys in Divers Places. By F. R. Packard, M.D. New York: P. B. Hoeber. 1921. (Roy. 8vo, pp. 297; illustrated. 7.50 dols.)

the healing "De la fracture soit près le joint ou dit os." He angered the physicians by going outside the province of a surgeon and writing about fevers. He had had special experience of bubonic plague, and he advised a surgeon who had to be isolated along with the plague patients to purify his body with an arsenic theriac and to wear a sachet over his heart containing the same in the form of a powder, for a protection against insects transmitting the plague. W. G. S.

MICROSCOPICAL METHODS.

Professor Gatenby has edited a new edition of Lee's *Microtomist's Vade Mecum*.[1] The book is so well known as the standard work on microscopical technique that only the differences between this the latest (eighth) edition and its predecessors need be noted. Though Dr. Lee's original arrangement of the subject matter has been largely retained, the improvements are many. The various sections of the book have been thoroughly overhauled—and in some instances entirely rewritten—in the light of recent advances in microscopical technique. Nor is this all: two additional chapters from the Editor's pen, entitled "The cultivation of tissues *in vitro* and its technique," and "Agenda for students of micrometry," have been inserted, to the advantage of the reader.

The chapter on cytological methods has been entirely rewritten by Professor Gatenby. It is, in our opinion, the best summary of technique in this highly specialized subject as yet published in any language. The exposition is a model of clarity, while its value is enhanced by the excellent tables on the differentiation of the various elements of the cell by means of specific histochemical tests. The other sections are equally serviceable. Those that are of medical interest comprise two excellent chapters by Dr. da Fano on histological methods for use in the examination of the nervous system. They have the advantage of being thoroughly up to date and should be of genuine value to the neurologist. Excellent also is the section on the histochemical recognition of intracellular fat, from the pen of Dr. Cramer, while Professor Bayliss has contributed an admirable introductory chapter on the principles of staining. Finally, Dr. Drew's contribution on protozoological methods should be of value to the pathologist, though the arrangement of the subject matter is somewhat confusing in places. The group "Haematozoa," for instance, has no zoological significance and inevitably overlaps with the section entitled "Haemamoebae."

The book is surprisingly free from misprints for a manual of its size. But statements regarding the "fibrillar structure" of the cytoplasm, as on p. 301 (and elsewhere), should be revised in future editions in view of recent advances in our knowledge of the colloidal structure of protoplasm.

This new edition of the *Microtomist's Vade Mecum* should become a standard book of reference in all laboratories. Especially will pathologists and neuropathologists find it useful. We congratulate Professor Gatenby on the general excellence of the work, and his collaborators on the genuine merit of the special sections.

FRACTURES OF THE VERTEBRAE.

The thesis written for the degree of M.D.Leyden by J. W. Loos,[4] on fractures of the vertebrae, contains a general account of the subject; he relates details of 52 cases observed by himself between 1912 and 1918, and has very thoroughly examined the literature. His collection of 558 cases shows that the vertebrae most commonly fractured are those of the lower cervical and lower thoracic and lumbar regions; fractures of the first eight thoracic vertebrae are comparatively rare. One of the patients fractured the fifth lumbar vertebra at the age of 21, and, as Maxwell records, the twelfth dorsal and first lumbar when he was over 60; another, a coachman, fractured all his dorsal vertebrae from the third to the eleventh. The list contains 25 cases in which the twelfth dorsal and first lumbar vertebrae were fractured together. In 182 out of 357 instances the fracture was complicated by compression of the spinal cord, and in 93 the fracture was confined to the laminae.

The treatment indicated varies with the site and extent of the fracture. In many cases immobilization in plaster, with or without reposition, is indicated; in others laminectomy is necessary, particularly when signs of pressure on the spinal cord make their appearance. Loos recommends that the bony injury and loss of bone to which the fracture and laminectomy give rise should be made good by the transplantation of bone taken from the tibia or scapula in patients under 40 years old. This should be done by use of the methods and special instruments advised by Halstead (1915) or Albee.

Tabulation of the final result in 375 cases shows that 10 patients recovered completely and 40 more almost completely, slight defects were left in 73 cases, gross defects (causing from 60 to 100 per cent. invalidity) in 113; 88 patients died as the result of the fracture; 9 of the 52 cases observed by Loos himself proved fatal. The thesis contains much practical advice, and may be warmly recommended to the attention of surgeons, any one of whom may have to deal with cases of vertebral fracture.

PROSTHETIC DENTISTRY.

In writing his book on *Prosthetic Dentistry*[5] Mr. Gabell has dealt only with the needs and difficulties of the dentist at the chair-side, the technique of the workroom is entirely, and purposely, omitted. He begins with an interesting chapter on the indications for and against artificial teeth, whether plates or bridges, remarking that it is desirable that there should be enough teeth to provide the normal and timely physiological stimulus to gastric digestion, insisting on the paramount necessity of cleanliness of the artificial teeth, and condemning the great majority of bridges as uncleansable. The preparation of the mouth for artificial teeth involves the filling of carious teeth, extraction of roots, scaling, and the cure of "pyorrhoea." Mr. Gabell finds that the cure of neighbouring inflammatory conditions will usually remedy the hypersensitive palate that can endure no touch of a foreign body. Incidentally he suggests as a possible cause of *tours palatinus* the vacuum chambers commonly used to retain an upper denture, the inflammatory thickening to which they lead eventually becoming calcified.

In the author's discussion of the aesthetic desiderata of artificial teeth we find little support for the widespread view that the shape of the front teeth bears a direct relation to the shape of the face. Mr. Gabell, indeed, appears to admit its validity, but adds that only frequent observation will ever educate the dentist to select the right teeth. On the vexed question of flat *versus* long-cusped molar teeth as giving the better biting powers, Mr. Gabell has no difficulty in deciding in favour of the cusped teeth, but spoils his argument by a gross diagrammatic exaggeration of the drawback of the flat tooth (p. 142). In discussing the means of retention of dentures, suction discs are condemned as futile abominations. Certainly, if retention by what Mr. Gabell calls "surface tension" (a term we think he should have left to the scientist)—that is, the adhesion produced by a continuous viscous layer of mucus between plate and palate, for the attainment of which he gives useful and practical directions—can be achieved, we agree; but large numbers of discs are used, and many would be grateful if Mr. Gabell would produce a less abominable form of suction disc.

Mr. Gabell writes well and clearly, except at two points. We cannot picture to ourselves a gum surface forming "arcs of a circle with a common centre either in one direction only, or, worse still, in two directions" (p. 29); nor can we follow the description of the small plastic operation described on p. 31.

The book is of sterling worth, and should take its place as a standard work on the subject. Mr. Gabell is to be congratulated, and his teachers and colleagues of the Royal Dental Hospital, to whom the book is dedicated, may well be pleased at his graceful compliment.

[1] *The Microtomist's Vade Mecum: A Handbook of the Methods of Microscopical Anatomy.* By A. Bolles Lee, Hon. F.R.M.S. Edited by J. B. Gatenby, B.A., B.Sc., D.Phil.Oxon., D.Sc.Lond., F.R.M.S., with the collaboration of W. M. Bayliss, M.A., D.Sc.Oxon., F.R.S., F.R.M.S., C. da Fano, M.D., F.R.M.S., A. Drew, D.Sc.Lond., F.R.M.S., W. Cramer, Ph.D., D.Sc., M.R.C.S., F.R.M.S., and J. Thornton Carter, F.R.M.S., F.Z.S. London: J. and A. Churchill. 1921. (Demy 8vo, pp. 600; 193 figures. 21s. net.)

[4] *Over Wervelbreuken.* By J. W. Loos. Leyden: E. Ijdo. 1921. (Cr. 8vo, pp. 175.)

[5] *Prosthetic Dentistry.* By Douglas Gabell, L.R.C.P., M.R.C.S., L.D.S., Dental Surgeon, Royal Dental and Charing Cross Hospitals, Lecturer on Dental Mechanics to the University of London at the Royal Dental Hospital. London: Henry Frowde, and Hodder and Stoughton. 1921. (Demy 8vo, pp. 247; 58 figures. 12s. 6d. net.)

CHEMICAL DISINFECTION.

THE textbook of *Chemical Disinfection and Sterilization*[6] by Dr. S. RIDEAL and Dr. E. K. RIDEAL, contains, in reasonable compass and attractively presented, a large amount of miscellaneous and out-of-the-way information about the killing of parasites of all sorts, that should be of service to a multitude of readers. For the benefit of those who wish to learn more the authors provide bibliographies at the end of each chapter. The first six chapters contain accounts of the disinfection of air, food, water, public disinfection, and personal disinfection, the latter dealing with the use of antiseptic ointments, dressings, and the like. Non-bacterial parasites, both animal and vegetable, and the preservation of wood against decay receive special consideration, and the authors throughout write in a practical spirit and with an obvious command of the literature dealing with the various topics they discuss. The next five chapters are given to the chemistry and physics of the substances or processes used in disinfection, and are full of interest to the chemist, the bacteriologist, and the laboratory worker.

The last chapter in the book deals with the methods of analysis and testing, and more particularly with the bacteriological methods of standardizing disinfectants. A full description of the Rideal-Walker test is given in this chapter; first devised in 1903, this standard method boasts an extensive literature of its own. The authors show that the killing of bacteria by antiseptics cannot be regarded as a simple chemical action regulated by the laws of mass action.

The subject treated in the volume is one the authors are particularly well fitted to deal with; their book may be warmly recommended to bacteriologists, medical officers of health, sanitation experts, and all who are interested in the practice of disinfection.

NOTES ON BOOKS.

THE edition of the *Medical Directory*[7] for 1922, the seventy-eighth annual issue, has just been published; it contains some fifty pages more than the edition for 1921. The increase may in part be accounted for by the growth of the number of names; this year the volume contains 45,586 names, or 660 more than in the edition for 1921. The number of names in the section for London is practically stationary and the increases in the rest of England and in Scotland are very small. In the Welsh section there are 20 more names than last year and in the Irish 62. In the section for practitioners resident abroad there are 409 more names, which is, perhaps, only what was to be expected; but it is rather surprising to find an increase of 121 in the number of names of officers serving in the Naval, Military, Indian, and Royal Air Force Medical Services. We have not attempted to analyse the list in order to ascertain the reason, but one explanation may be the retention of the names of a good many retired officers in this part of the *Directory*. A new feature is the publication of a list of the honorary secretaries of Local Medical and Panel Committees in England, Scotland, and Wales. We have not found a list of the medical officers employed in the Insurance Department of the Ministry of Health. The notes upon the principal British spas and climatic health resorts are retained, but the medico-legal notes have not been restored, an omission which some users of the *Directory* will regret. The value of this annual is too well known to the profession to make it necessary to say anything in its praise; its completeness and its remarkable accuracy are fully appreciated on all hands.

The title of *The Gateway to Health*[8] is taken from a letter addressed some years ago to its editor, Mr. C. E. HECHT, by Professor Irving Fisher, an American economist who used the phrase as a description of the human mouth. What the title covers in the present connexion is more difficult to state, despite the fact that Mr. Hecht has supplied a long introduction. This, however, is rather in the way of an indictment of the errors of British cookery, and of the relative national neglect of the teeth of the rising generation than an exposition of the purpose of the book and summary of its conclusions. We take it, however, that in essence the purpose of the book is to serve as propaganda for reform in the two directions indicated and to provide an account of the conference held at Manchester early last year under the auspices of the Food Education Society, a body which now represents the original National Food Reform Association. The subject of this conference was the prevention of diseases of the teeth, and, as our readers will remember, a great many well-known medical men and dental surgeons contributed papers, or took part in the discussions. Only about the middle third of the volume, however, is devoted to this particular topic; the rest is devoted to two long "leaflets" which it was proposed to issue before the conference in question, and to reprints of articles which have appeared in the general and professional press at various dates, either on the subject of the conference itself or in support of the general aims of the Food Education Society. The book will no doubt fulfil the purpose we have ventured to ascribe to its publishers. In some respects, however, it is not as easy reading as might perhaps be expected. Its editor has a talent for devising striking "headings" and "side headings" that would be envied by many newspaper sub-editors, and uses them with a frequency and aptness somewhat calculated to obscure the main theme of the scientific statements in course of perusal. This, however, does not detract from the usefulness of the book to those in search of suggestions for addresses on the subject.

The thirtieth edition of *The Annual Charities Register and Digest*[9] is a classified register of charities that is indispensable for all those who are engaged in charitable work of any sort, particularly in the metropolis. It gives details of all the institutions, societies, and bodies that can be appealed to for relief in all kinds of affliction or distress, temporary or permanent. Beginning with a review of the finance of these institutions for the year 1919, so far as information is available, it goes on to give a brief account of the Charity Organization Society; the main bulk of the volume is devoted to a classified list of the many thousand associations or establishments that can afford relief. The book is supplied with an unusually good index and should be in the hands of all charitable workers.

Professor MATTOLI'S[10] essay on the surgery of the colon is a report presented at the twenty-seventh Congress of the Italian Surgical Society. It contains descriptions and discussions of ten operations on the colon, together with a tabulation of sixty-four operations performed by the author and a general discussion of these cases.

Professor LAUBENHEIMER'S[11] handbook of microphotography is designed for the use of men of science and amateurs alike, though somewhat stiff reading for the latter. It begins with a rather mathematical account of the microscope and its accessories. Then follow chapters on the camera and its use, on the varieties of light that may be employed, on the preparation of objects to be microphotographed, and on the details of producing negative and then positive pictures. The last chapter deals with photography in natural colours, using Lumière's autochrome plates. The book is practical, though overweighted with scientific matter that should be confined to manuals of optics. It may be recommended to the consideration of microphotographers.

The fifth edition of FRÄNKEL'S[12] large volume on the synthesis of drugs is a book for chemists, pharmacists, and physiologists interested in the artificial production of drugs, their fate in the body, and in the relations that can be traced between chemical structure on the one hand and physiological action on the other. The book contains a great deal of chemical information, and is provided with excellent indexes.

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[6] *Chemical Disinfection and Sterilization.* By S. Rideal, D.Sc.Lond., and E. K. Rideal, D.Sc.Lond., M.A.Camb. London: E. Arnold. 1921. (Demy 8vo, pp. 319. 21s. net.)

[7] London: J. and A. Churchill. 1922. 36s.

[8] *The Gateway to Health: Prevention of Diseases of the Teeth.* Edited by C. E. Hecht, M.A. London: Published for the Food Education Society by the St. Catherine Press. 1921. (Demy 8vo, pp. 442. 12s. 6d. net.)

[9] *The Annual Charities Register and Digest.* Thirtieth edition. London: Longmans, Green, and Co., and the Charity Organization Society. 1921. (Demy 8vo, pp. 574. 7s. 6d. net.)

[10] *La Chirurgia del Colon.* Dott. Prof. A. Mattoli. Roma: Stabilimento Poligrafico per l'Amministrazione della Guerra. 1920. (Med. 8vo, pp. 137.)

[11] *Lehrbuch der Mikrophotographie.* Von Dr. med. K. Laubenheimer. Berlin and Vienna: Urban and Schwarzenberg. 1920. (Double cr. 8vo, pp. 228; 6 plates, 116 figures. M.72; bound, M.100.)

[12] *Die Arzneimittel-Synthese.* Von Dr. S. Fränkel. Fifth edition. Berlin: Julius Springer. 1921. (Sup. roy. 8vo, pp. 913, M. 276; bound, M.306.)

ANTHRAX PROTECTION.

With Special Plate.

STATION FOR THE DISINFECTION OF WOOL AND HAIR AT LIVERPOOL.

WE referred in the JOURNAL of November 9th, 1918, to the report of the Departmental Committee appointed by the Home Office to inquire into the whole question of anthrax in industries using wool and hair. The Committee recommended the immediate establishment of a small trial disinfecting station in Great Britain to carry out the method recommended. The station is now erected and has commenced operations. The site is about 340 ft. long and 65 ft. wide, on land adjoining the existing wool warehouses of the Mersey Docks and Harbour Board at Liverpool. It has been decided to commence with the disinfection of East India goat-hair and Egyptian wool and hair.

Provision is made in the station for (1) warehousing material, (2) disinfection, (3) rebaling, and (4) recovery of grease. The principle of the process of disinfection worked out is first to place the possibly infected material under conditions in which not only is the natural protection of the anthrax spores removed, but the spores themselves also become susceptible to the destructive effect of certain disinfectants. The material then passes into the second or disinfecting stage of the treatment in which the organisms are destroyed with comparative ease. In the practical application of this process the material is submitted first to the action of an alkaline solution of soap maintained at a temperature of 102° F. for 30 minutes in three stages of 10 minutes each; and secondly, in the disinfecting treatment, to the action of a 2 to 2½ per cent. solution of formaldehyde, also at 102° F., for 20 minutes in two stages of 10 minutes each. It is then dried, cooled, and rebaled.

Though not actually a wool-washing process, the preliminary treatment is of such a character as to enable the material to be washed clean without much additional expense, and it is proposed to utilize it for this purpose, so that disinfected material will be freed from all dirt and foreign matters.

The photographs (see Special Plate), reproduced by courtesy of the Director of H.M. Office of Works (which has built the station) illustrate the disinfecting process. Fig. 1 shows the radial hoist for lifting the bales on to the travelling platform of a specially devised automatic feeding machine, which delivers the wool or hair into the disinfecting machines, the feeding mechanism being enclosed and provided with an exhaust fan in order to prevent dissemination of dust. The dust removed by the fan is delivered into the boiler furnaces through a device automatically controlled in such a way as to divert the air into the base of the chimney stack, should the furnace doors be opened or the boiler dampers closed. The disinfecting plant consists of five baths, each 33 ft. long and 4 ft. wide, which are fitted with squeezing rollers and mechanism of the harrow type for causing the material to pass through the liquids. The first three baths are used for the preliminary treatment, and incidentally for washing the material, and contain a slightly alkaline solution of soap and water. The last two of the five baths (Fig. 2) are used for disinfection; they contain a 2½ per cent. solution of formaldehyde. In order to prevent escape of formaldehyde vapour the two baths, including the mechanism, are entirely enclosed by airtight glazed covers or hoods. When it is necessary to empty the baths or purify the disinfecting solution, the latter is run by gravity into storage tanks, from which it can be pumped back to the machines, connecting pipes being so arranged that all displaced air passes from the tanks to the machines and vice versa.

The strength of the solution must be maintained by the addition of strong formaldehyde at intervals. In order to do this the machines are provided with a measuring device connected by pipes to a blowing egg arranged in connexion with a storage tank containing undiluted formaldehyde solution. When the requisite quantity of formaldehyde solution has been measured the shutting off of the supply automatically permits discharge of the compressed air from the blowing egg into the hood of the disinfecting machinery and the flow of more strong formaldehyde solution into the egg. The solution in the disinfecting baths is heated by means of exhaust steam passing from the steam engine through coils arranged on the bottom of the bath, below a false floor, along which the material travels.

The material passes from the disinfecting machine into an ordinary wool-drying machine (shown in Fig. 2), specially arranged to prevent the escape into the room of air conveying formaldehyde vapour, in which the material is dried in a current of hot air. From the drying machine it is automatically conveyed into a cooling machine, in which it is cooled in a current of cold air, so as to enable it to be rebaled immediately.

In order to guard against infection, overalls are provided for all workmen. A cubicle containing separate accommodation for overalls and ordinary clothing, and a hot and cold water shower bath is also provided for each workman, in addition to the hot and cold water lavatory accommodation.

The trial station is built to accommodate two units of disinfecting plant, each having an output of approximately 1,000 lb. of clean disinfected material per hour. The disinfecting station is to be self-supporting, a charge being levied on the materials disinfected to cover the cost.

The process is generally spoken of as the "Duckering" disinfecting process, adopting the name of Mr. G. Elmhirst Duckering, Secretary of the Anthrax Committee, who devised the process, and to whom its success is mainly due. He is now director of the station.

RESOLUTION OF INTERNATIONAL LABOUR CONFERENCE.

The disinfection of wool affected by anthrax spores was one of the subjects on the agenda at the International Labour Conference held in Geneva last month to consider a draft for a Convention proposed by the International Labour Office.

It very early became evident, however, that misconception existed not only as to the efficiency of the method of disinfection which had been worked out and the extent to which it had already been practised at the Liverpool Station, but also as to the kinds of wool to be subjected to the process. A quite erroneous idea was prevalent that all wool (even Australian and New Zealand) would require disinfection. Members of the Anthrax Commission, therefore, unanimously came to the conclusion that the question of compulsory disinfection of wool infected by anthrax had not yet been sufficiently studied to justify the adoption of the draft Convention. Instead, they recommended that the question of international action in this respect should be made the subject of further investigation and examination by an advisory committee.

The following resolution was unanimously carried in plenary session on November 14th:

> 1. This Conference, while recognizing the important advance made by the British Government towards a solution of the problem of satisfactory disinfection of wool and hair infected with anthrax, considers that the question of universal compulsory disinfection in its economic and humanitarian aspects has not yet been sufficiently studied to justify the conclusion of an international Convention.
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> 2. This Conference therefore requests the governing body of the International Labour Office to appoint members representing the chief producing and manufacturing countries to serve on an advisory committee, which should be instructed to examine the question in all its bearings, and present a report to the governing body in time for consideration by the Conference in 1923, and is of opinion that meanwhile the proposal for an international Convention should be postponed. . . .
>
> 3. This Conference, while accepting disinfection as the only effective means at present available for protecting industrial workers against infection from certain classes of material, regards the eradication of the disease among animals as the ultimate solution of the problem, and is accordingly of opinion that the committee referred to in the second paragraph should be further instructed to make full and careful inquiries as to the most practical and effective methods of preventing infection, and to make a separate report for consideration by the 1923 session of the Conference.
>
> 4. This Conference wishes to place on record that the danger to workers of infection by anthrax from hides, skins, and other materials is also serious, and deserves careful study and investigation.

THE *Revista Médica de Chile* states that in 1920 7,939 cases of typhus fever were recorded in Chile, with a mortality of 19.90 per cent.; in Santiago alone there were 1,457 cases, with a mortality of 31.64 per cent.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE MOTOR CYCLE SHOW.

The seventh international show organized by the Cycle and Motor Cycle Manufacturers' and Traders' Union closes at Olympia, Kensington, on Saturday night. At the one extreme the exhibits embrace pedal bicycles and a few examples of motor scooters, and at the other, eight makes of cycle cars of the three-wheel type. What is, mechanically, the most important development under this head is, nevertheless, one that is not directly of interest to medical men—namely, the introduction by Morgan, the pioneer and the only firm of world-wide repute in connexion with the marketing of this class of machinery, of an 8-h.p. J.A.P. engined sports model, with somewhat shorter wheelbase than the standard type. The water-cooled T.B. tricar, with full cantilever rear springs, is the only other type of three-wheeler that has succeeded in climbing the Nailsworth Ladder. The 10-h.p. New Hudson has a water-cooled engine and is the type of machine that did notably well in the London-Edinburgh run, being well designed and finished. The Castle Three is also fitted with a water-cooled engine of the four-cylinder type, the body-work being on the car principle with dickey seat. The fifth example of a three-wheeler make which has been previously introduced to the public is the Yorkshire built L.S.D., the improvements embodied in which include the use of a new "kick" starter and the fitting of better bodywork. The three other three-wheelers shown are new makes of no particular interest in their present stage to the medical profession—namely, the Day, the Economic, and the Xtra. The Scott Sociable also figures as a cycle car of the three-wheeled sort. It is built, however, on side-car lines.

Suspension and Accessibility.

In regard to motor cycles proper, perhaps the two most noteworthy developments of the year do not strictly concern doctors. I refer, on the one hand, to the use of engines of practically 1,000 c.cm. capacity, which is now one of the notable car types, as instance the 8-h.p. four-cylinder overhead valve engine Talbot capable of 55 m.p.h. introduced at the recent passenger car show; and, on the other, to a number of motor cycle sports models with engines of any capacity ranging from 300 c.cm. to 600 c.cm. These latter are sold with guarantees of speeds up to 75 and 80 miles an hour. Of course one litre machines bring 100 miles an hour within range of accomplishment in racing. But in the smaller categories we have very interesting work done by A. J. Stevens, of Wolverhampton, who won most of the blue ribbon events of the motor cycle world this year, including both tourist trophy races, the senior one with a machine of so small an engine size that it came within the junior category. The new A.J.S. types are rated at 2¾-h.p. and have side valve engines, the sports version being capable of speeds of a mile a minute. These mounts are interesting by reason of the application of the motor-car principle of braking, in that the back wheel has an internal expanding shoe pattern brake controlled by a pedal and the front wheel has the same type of brake controlled by Bowden wire lever. The front fork spring schemes on these motor bicycles are interesting. Suspension, indeed, has received attention by most designers, as instance the wide use of leaf springs. There are numerous examples of the furnishing of very deep valances to mudguards, as instance the Harley-Davidson. This was a development that began some years ago. An interesting variant, however, is furnished by the two-stroke 3-h.p. Omega with a wide type of pressed mudshield that permits of an extra draught impinging on the beehive type of cylinder used while, nevertheless, protecting the rider completely from mud no matter what the position in which the front wheel is turned for the purposes of steering the vehicle. On this machine, too, the new telescopic pattern fork fitted is immune from side play and is controlled by the action of a single-coil spring. The vertical rods act as oil reservoirs; buffer springs are fitted in the top of the side members; and the movement is in the same line as the steering head. Tyre changing is facilitated by the quickly detachable rear guard on the two-stroke, as well as on the twin-cylinder, Enfield models, wherein the carrier is supported at the lower end by two hexagon nuts disposed one on either side. By loosening them with a spanner the slotted ends of the stays can be lifted clear of the studs, and the curved forward end is released from the socketed lugs fixed to the back stays. Carrier and mudguard complete can then be lifted forward, leaving the rear tyre accessible for repairs.

An unusual feature is furnished on the twin-cylinder Zenith model with Bradshaw engine, wherein the space between the upper surface of the power plant and the under surface of the fuel tank is used to accommodate a silencer specially designed to ensure safety as well as coolness, so that under all conditions of service the rider can place a bare hand on it without discomfort.

Some Light-weight Types.

Chater Lea introduces a two-speed 2½-h.p. light-weight model at 50 guineas, which is little more than the pre-war price, yet the quality and finish are up to this firm's high standard. Raleigh makes two interesting contributions to the light-weight category, the larger being rated at 3 h.p. and capable of employment with a light side-car. The lesser is a solo mount of 2¾-h.p. rating. The crankshaft used for the single cylinder power unit employed in each case is in one piece, balance weights being bolted to it. The big end bearing is a split bronze bush. New Imperial introduces a light-weight with loop frame, the engine and gearbox being a unit assembly. The rear brake is of the internal expanding type, which is increasing in popularity. The 1922 P. and M., with forward inclined engine, has a new type of frame wherein, nevertheless, the power unit forms part of the frame member, the head anchorage being ingenious. The lubrication of the fork plunger as well as of the fork rocker details in this machine is on motor-car principles and in most accessible fashion. The two-stroke engine constitutes the down tube, the fuel tank the main member, and a stay the third member of the triangular frame on the Peters machine. A simplified frame is employed for the new 6-h.p. twin-cylinder B.S.A. model. A Barr and Stroud sleeve-valve type of engine is furnished to one of the new Beardmore-Precision models, while another model has a double purpose four-stroke 4½-h.p. machine made by a firm hitherto concerned with two-stroke practice. A *de luxe* 2¼-h.p. New Hudson model has all-chain drive and upswept footboards and leg-shields. The new 4-h.p. Calthorpe solo mount shows evidence of attention to suspension details, and is so designed that it can be used, at option, with a side-car. The chief Triumph novelty is a 3½-h.p. single cylinder solo mount, with four overhead valves and light Ricardo aluminium slipper piston. The chief interest to medical men consists in this firm's well-proved products already on the market, a remark which also applies to the Humber and Rover exhibits, which embrace, incidentally, a 75 m.p.h. sporting model by the former firm and a 75/80 m.p.h. type by the latter. The range of Brough models is supplemented by a 3½-h.p. type, incorporating the firm's distinctive engine design with a cylinder built up of four parts—the barrel, the detachable head, and the two valve ports. The manner in which the wheelbase of this machine is kept short, despite the use of a horizontally opposed twin-cylinder engine, is ingenious.

Guarding the Rider.

At the recent Paris Motor Cycle Show there were some interesting examples of the use of pressings, notably by firms hitherto engaged in the aviation industry. There is not much evidence of this development at the present show in London; but in this connexion mention may be made of the Hagg, which can be used at option as a tandem mount, the passenger being accommodated in an aluminium bucket seat sliding in grooves attached to the valances of the pressed steel rear mudguard. In face of the evidences of striving after originality of construction on the part of Continental makers, it is interesting to note that the only non-freakish type that gets away from ordinary motor cycle practice at this show is of British origin, namely, the single cylinder Ner-a-Car, an example of which, ridden by a lady, has lately been put through a 1,000 miles road trial by the Auto Cycle Union. The makers

claim that this is the link between the car and the motor bicycle. But though it differs notably from general motor bicycle constructional practice, nevertheless it is essentially a motor bicycle. Considerable use is made of pressings. The very wide front mudguard does not move with the wheels, but is of ample width to cover the wheel in any position in which it may be turned for the purposes of steering the vehicle. Pressings are used in other ways to protect alike the rider and the mechanism completely from mud, the single cylinder alone projecting between the rider's legs. No front forks are used, the wheel being supported separately within the hub. The steering column is connected to the wheel by means of a short arm and a tie rod; this detail admittedly follows motor-car practice, save that the problem is to deal with one wheel only, as distinct from an axle and two wheels. The suspension details are well thought out.

In regard to side-cars a deal of attention has been paid to sporting types, and, in one or two cases, to goods carrying types, such as chemists' vans. Of interest to medical men is the Royal Enfield side-car, wherein either a quantity of luggage or several tins of fuel can be carried, and more luggage, or fuel, can be disposed on the horizontal lid. Tools are accommodated under the seat. This firm's family side-car is improved in design to provide several inches more leg-room by taking the upholstery of the rear seat quite to the back of the body and carrying the luggage on a folding grid. A stool seat, provided with this side-car, can be bolted in any position desired. The Matchless tandem two-seater type side-car has, of course, the windscreens disposed one behind the other, and is distinctive in that the floor boards for the front seat are collapsible.

Miscellaneous Exhibits.

It is plain that this year motor cycle builders and users alike have thoroughly grasped the point that it is economical as well as comfortable to fit a mount with the largest pneumatic tyres it will take. To meet the demand tyre makers are producing a variety of oversizes. Buyers have become educated to the point of being quite willing to pay the extra initial outlay needed to acquire them, because they appreciate that in return these are relatively immune from punctures and other troubles and have more than proportionately longer wearing life. Of course all the tyre makers claim that their particular pattern of tread is the best to prevent skidding, and it is observable that the number of varieties of patterns employed does not diminish. It may be pointed out, however, that the engineering principle involved is that the use of circular or fluent curves only is not as efficient as a design wherein the principle of as sharp angles as possible is exploited.

In addition to ordinary motor cycle tyres, the Dunlop Rubber Company introduces a series of heavy covers, to suit flat base rims, with car type beads, the whole being built up on the lines of car tyres. These are available in 26 by 2½ in., 26 by 3 in., and 28 by 3 in. sizes. Dunlop Magnum tyres are now made to suit the following rims: 650 by 65 mm., 700 by 80 mm., and 26 by 3 in. in cord. The Magnum cover takes the form of large staggered studs with rows of small studs on the outside, there being a central longitudinal ridge round the moulding. In regard to electrical apparatus, apart from Maglitas for single and for flat twin-cylinder engines, the M.-L. Magneto Syndicate introduces in the E. type of this apparatus a design suitable for light-weight motor cycles. Several advantages not embraced in earlier models are combined in the new pattern switch gear for use in connexion with the Maglita apparatus, a more compact battery unit being also shown.

SMALL CAR DEVELOPMENTS.

In connexion with the large number of small cars shown at the recent motor-carriage exhibition at Olympia and at the White City, the display was not, of course, completely representative of all the makes introduced to the home market. Therefore the present opportunity may be taken to mention that a novelty from Italy is the four-cylinder, overhead valve engine, 12.1-h.p. Treasury rating, £13 tax, 70 by 120 mm., 1,847 c.cm. Ansaldo, wherein the cylinder heads are detachable. The ignition is by magneto. An electrical engine starter is standardized. This machine follows in sundry details the main tendency of high grade English middle size car productions, the power being transmitted through a disc clutch to a gearbox giving three speeds forward, whence the drive is passed through the back axle by spiral bevel gear. Steel disc wheels are used. The suspension is by half elliptic springs fore and aft. In regard to cars of sizes of interest to medical men which were staged at the recent exhibition, but which were not mentioned in the review at the time owing to the exigencies of space, it may be pointed out that the £13 tax, 12–14-h.p., four-cylinder 70×120 mm., 1,847 c.cm. De Dion-Bouton chassis has been little altered. There are, however, changes in the wheelbase and track, both of which have been increased by a matter of four inches. Moreover, the foot brake now acts on drums attached to the rear wheels, and the hand brake on the cardan shaft, thereby meeting the ever-increasing demand for brake control which shall be according to the instinctive principle. A speedometer drive is now fixed to the front end of the propeller shaft. Some of the coupé and the cabriolet coachwork schemes standardized by this firm are interesting.

VOLUNTARY HOSPITAL FINANCE.

AT a meeting on November 9th the president and general council of King Edward's Hospital Fund for London adopted a resolution affirming that the condition attached by the Treasury to the temporary assistance voted by Parliament to voluntary hospitals requiring that fresh money should be raised pound for pound, and expressed the opinion that the application of this condition, which was not recommended in the report of Lord Cave's committee, nor separately considered (much less expressly enjoined) by Parliament, will lead to great difficulties and probably to great injustice as between different hospitals in the distribution of the grants. It has therefore asked that the condition should not be pressed. The Chancellor of the Exchequer has replied that the pound for pound basis is absolutely fundamental, adding that, in view of the present financial position, it should be made perfectly clear that the £500,000 grant is the limit of Government assistance to voluntary hospitals.

ROYAL MEDICAL BENEVOLENT FUND.

THE following is a summary of some of the cases considered at the last meeting of the Committee; twenty cases were considered and £262 voted to eighteen applicants.

M.R.C.S.Eng. and M.D.Boux., aged 49, suffer from epilepsy and is at present in hospital. Owing to his infirmity he has had no practice for seven years. His wife's income of £50 per annum is all that they have to depend upon. Voted £25 in twelve instalments.

Widow, aged 67, of L.R.C.P.Edin. who during the war served as a ship's surgeon, and was drowned in a collision in 1917. Applicant has been living on a small legacy and £100 granted her by the owners of the ship. These funds are now exhausted, and she is now living on proceeds of sale of jewellery and is very ill at the end of her resources. She is willing to take a post if suitable but is unable to support herself, but finds her age against her. Voted £18 in twelve instalments.

Daughters, aged 57 and 49 of L.S.A. who died in 1903. Owing to ill health they are unable to support themselves. Their joint income amounts to £62. Relieved by the Fund thirteen times. Voted £18 in twelve instalments.

Widow, aged 73, of M.B.Aber. who died in 1912. All savings were used up in expenses connected with late husband's and daughter's illness and applicant was left without means, and owing to ill health is unable to work for a living. Voted £18 in twelve instalments.

Widow, aged 49, of L.R.C.P.Edin. who died in 1916. Applicant was left with four children with an income of about £95 per annum; the children's ages now range from 7 to 15 years, and they are all at school. Apart from the income of £95, she received this year £7 10s. towards education, and £5 from a charity. Voted £18 in twelve instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, at 11, Chandos Street, Cavendish Square, London, W.1. The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for secondhand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

British Medical Journal.

SATURDAY, DECEMBER 3RD, 1921.

THE ASSOCIATION IN 1921.

THE work of the British Medical Association must necessarily reflect the external conditions of any given period. It is well to keep this fact in mind in examining the record for 1921. For the most salient characteristics of the year have undoubtedly been exhaustion and disappointment—economically, politically, and socially. Unemployment and trade stagnation, with wages falling to the level of subsistence, mark the breakdown of the economic system. Established institutions have proved inadequate under the strain of transition, and some more recent formulas have failed to stand the test of practical application; witness the collapse of the newer industrial unionism with the "Triple Alliance," the substitution of economy for reconstruction as a political watchword, and the postponement of a programme of constructive reform to the immediate provision of partial and temporary amelioration. At such a time to advance might well seem hopeless, and not to have failed a valid title to success.

Such are the external conditions under which the work has been done. What, then, is the general impression left by a scrutiny of the actual record? In the first place there emerges from the mass of detail the impression of stability and vitality. The ultimate goal remains unchanged; the methods are those proved by experience through evil and through good report, but capable of variation and modification to suit special circumstances by virtue of the local freedom and initiative inherent in the democratic scheme of organization. The absence of effective opposition at a time when all authority is questioned is sufficient testimony to this adaptability. This general effect owes something to the character of the background. The impression is, however, heightened by a closer study. The resources of the Association have been increased by the operation of the increased subscription, and in a wider sense by an increase in membership hardly affected by the heavier material contribution demanded. The increase in membership—which is shown graphically in a chart in this week's SUPPLEMENT—is limited to no one section of the profession and to no particular locality, but it is partly conditioned by successful service for particular groups, as in the case of the 116 members of the I.M.S. recently enrolled.

Whilst the membership has increased, the records of the central office show a parallel increase in the volume and complexity of the work undertaken for the individual member. Information and advice given by the office, on such widely differing subjects as the assessment of income tax and the fees payable for expert evidence in the courts, have resulted in pecuniary advantage to the inquirer. In spite of falling wages and in the teeth of an indiscriminate campaign for economy, it has been possible, in the majority of instances, to counter any infringement of the Association's minima for public health posts. Such devices as the public advertisement of a post at the accepted rate, and its subsequent offer to the successful candidate at a reduced rate, have been successfully met; conditions of service have been readjusted, and remuneration unfairly withheld either through error or intention has been secured. Neither distance, as in the case of the Colonial Medical Services, nor service restrictions as in the R.A.M.C., have prevented such aid being effectively given. Fees have been raised in a certain number of cases, amongst which may be cited the fee for medical examination of civil service candidates, the remuneration of Admiralty surgeons and agents, and the terms for medical examination of school children in a Scottish district. In an increasing number of cases the ethical machinery of the Association is utilized by members (and by non-members, too) for the adjustment of disputes. The renewed mandate of the Insurance Acts Committee is sufficient indication of the validity of the Association's claim to provide for the needs of the insurance practitioner.

The work for the individual, essential though it is, must remain dependent upon and subordinate to the work for and through the local unit of organization and the group or section on whose behalf collective bargaining can be conducted. Hence the extension and consolidation of the divisional or branch machinery is of equal importance with the extension of membership. New Branches in Mesopotamia and Fiji show vitality in this respect, whilst a first step has been taken towards the readjustment of relationships within the Association by provision for incorporation of overseas Branches and the formal recognition of the Dominions Federal Committees. In the matter of remuneration the period has, from the nature of the economic situation, been one of consolidation rather than advance; but in the matter of conditions of service the final attainment of security of tenure for public health officers, achieved in one out of a total of twelve private members' bills which reached the statute book last session, calls for notice.

The agreement with the Colonial Office as to the transmission of information and the consideration of representations has materially increased the capacity of the Association to promote the interests of the Colonial Medical Services in the general reorganization of Colonial administration now in progress. Finally, and subject to the consent of the local units of organization, a means has been devised for meeting the particular needs in the matter of self-determination within the Association of so small and so remote a group as the medical officers of the Indian railways.

As the work of the Association for the individual is conditioned by its work for the group, so the service rendered to the group is, in the long run, conditioned by its service to the profession as a whole. Here also there is progress to record. The long deferred restoration of the notification fee must not be omitted from the tale, but the work done in connexion with the Dangerous Drugs Regulations requires more detailed consideration, for it is of significance as an illustration of effective service at short notice. It is still more significant as illustrating the utility, in the interest alike of the public and of the profession, of recognition of the Association for purposes of consultation as a preliminary to administrative action. To such recognition we owe the fact that blunders of this nature are comparatively rare.

The value of notification fees and Home Office regulations is easy to assess. More complex, and incomparably more significant, is the work initiated in connexion with the development of the public health services. The conferences of committees on the subject of municipal clinics and hospitals and the relation of the private practitioner to the system are a distinct, if belated, step towards healing the breach between preventive and curative medicine

which threaten to destroy the unity and impede the progress of medical science. No less important for the future development of medicine is the fact that during the present year the Association has succeeded in concentrating the attention of those concerned upon the medical aspects of the hospital problem. To central action in these matters local action is an essential complement: Willesden in 1921 has followed Bradford in 1920 in an effective vindication of the claim of the local profession to consultation in the interests of the public.

The work of the Association has so far been presented as a contribution to professional needs, but the year is marked by the development of another aspect of the work, an aspect which cannot be long ignored. For as the Association exists for service of the profession, so the profession exists for service of the community through science, and an essential condition of such service is the active co-operation of the community. But the condition of such co-operation is the concentration of professional opinion on matters of public importance, and its exposition by accredited representatives. Government departments, local authorities, voluntary organizations — vocational, scientific, and philanthropic—show an increasing tendency to invite the help and co-operation of the Association on matters in which medical opinion is of weight. The response of the Association is measured only by the extent to which the state of professional opinion makes an authoritative answer possible. Its readiness to respond to this method of co-operation and to develop in the public interest is illustrated centrally by the work of the Medico-Sociological Section and the experimental appointment of the Medico-Sociological Committee; locally by the action of the South Essex Division in co-operating with other local organizations in matters of common interest.

It is usual in a summary of recent progress to give some space to current criticism. In this case we may anticipate the critic in a reference to the reduction of the insurance capitation fee as evidence that the Association had failed to secure effective organization of the profession. The facts of the case may be described in their appropriate setting as follows: In 1921, at a time of great social distress, when wages and the salaries of public servants had suffered drastic reduction (and even the police, whose bonus had just been reduced, had voluntarily offered to work overtime without payment as a contribution to public economy), insurance practitioners, through their accredited representatives, and with certain reservations, accepted a reduction of remuneration. The alternative to this reduction was the abandonment of a public service which, in the opinion of a majority of those engaged in its conduct, was beneficial to the community and capable of improvement and expansion in the public interest.

Turning to the other main aspect of the Association's work, we may note that the Annual General Meeting, held at Newcastle-upon-Tyne in July, under the presidency of Professor David Drummond, was highly successful. The attendance at the sections was well maintained and the discussions reached a high level of interest. In his address on the future of the medical profession, the President showed where the weak places in medical education might be strengthened. He emphasized the importance of the special training of students in the recognition of the early stages of disease, and the value of post-graduate institutions. A reference in the course of the address to the need of greater facilities for *post-mortem* examinations was made too much of in the daily newspapers; it was by no means its leading feature. Sir Thomas Oliver delivered a special address on the subject which he has made peculiarly his own—the rise, progress, and opportunities of industrial hygiene—and he showed how its importance has grown with the ever-enlarging sphere of industrial enterprise. The popular lecture on evolutionary wounds, by Sir Arthur Keith, was one of the striking features of the meeting. In his own words, he "stood back a little from his laboratory bench to try and make his audience realize the miraculousness of the mechanics of embryonic evolution," and in doing so he fascinated the lay section of his audience not less than the members of the Association.

At Newcastle, as at Cambridge, some of the sections met on three days, others on two, and others again on one only; this precedent will probably, we understand, be followed at the Annual Meeting next year at Glasgow. Demonstrations were given in connexion with most of the sections during the afternoons, and were well attended. The Section of Medicine devoted its first discussion to the subject of visceral syphilis, a subject so wide as to appeal to nearly every branch of medicine and surgery. The section had the advantage of hearing the subject opened by Sir Clifford Allbutt, and the debate was kept by subsequent speakers to the high standard he set. Asthma and allied disorders was the subject discussed on the next day, followed on the third day by a joint discussion with the Section of Pathology and the Section of Physiology and Pharmacology on the subject of encephalitis lethargica. In the Section of Surgery, presided over by Professor Rutherford Morison, the main subjects for discussion were, on successive days, acute pleural empyema, compound fractures of the thigh and leg, and the diagnosis and treatment of injuries of the intestines.

The Section of Pathology and Bacteriology held on the first day a discussion on haemochromatosis, while on the second day a number of interesting and important shorter papers were read; its pathological museum had a large and varied exhibition of interesting specimens on view. The Section of Preventive Medicine with Industrial Diseases included in its proceedings discussions on the effect of health legislation upon the health of the people, and on the importance of industrial medicine to the community. The Section of Orthopaedics and Diseases of Children had a long programme; the first discussion, on the early diagnosis and treatment of anterior poliomyelitis, was opened by Mr. A. H. Tubby, who was followed by eminent orthopaedists, not only from this country, but from America; next day blood diseases in children were discussed, and on the third day the general principles of treatment in tuberculosis of bone in children. The Section of Neurology and Psychiatry had as its chief feature a discussion on the diagnosis and treatment of borderland cases, and on the second day a number of shorter papers on various neurological topics were read. The Section of Ophthalmology discussed the causes and prevention of blindness, and the treatment of corneal ulcers. The Section of Oto-Rhino-Laryngology had a very full and successful programme; on the first day it discussed problems in connexion with meningitis occurring in aural cases, and on the second the problems presented by haemorrhage in tonsil operations. The proceedings of the Section of Physiology, Pharmacology, Therapeutics, and Dietetics included a number of short papers and demonstrations on subjects coming within the wide purview of the section. In the Section of Venereal Diseases the first day was given to the discussion of the treatment of syphilis, and the

second to the treatment of gonorrhoea. The place of Caesarean section was the opening subject for discussion at the first meeting of the Section of Obstetrics and Gynaecology, and on the second day the neurasthenic element in midwifery and gynaecology received consideration

The remaining sections of the meeting, which met on one day each, included the Section of Ambulance and Red Cross, at which several interesting demonstrations were given, and the Section of Proctology, which discussed the surgical treatment of internal haemorrhoids; the Section of Dermatology discussed, among other subjects, the association of skin tuberculosis with other tuberculous manifestations. In the Section of Medical Sociology a debate took place on the relation of the medical profession to local authorities. In the Section of Radiology and Electro-Therapeutics a number of important subjects were discussed, including the changes induced in blood constituents by radiation. The Section of Urology had short discussions on cystitis, prostatectomy, and other urological subjects.

The British Medical Association lectures, arranged at the request of individual Divisions or Branches, have proved very popular, and in other directions there has been a welcome revival of the clinical and scientific work of the Branches and Divisions throughout the country, as the following examples—taken at random from different districts—show. Thus the City of London Division is holding monthly meetings throughout the winter at which demonstrations on practical subjects of everyday use in medical work are given, while other clinical meetings are held in conjunction with the Aesculapian Society. The programme of the South Middlesex Division includes, in addition to ordinary clinical meetings, monthly meetings at which discussions on such practical subjects as "minor disabilities of the feet" and "the early diagnosis of tuberculosis" are opened by well known physicians and surgeons. The Brighton Division has arranged a series of nine clinical demonstrations on medical and surgical cases, children's diseases, tuberculosis, and on neurological and special cases, at the different hospitals in Brighton. The Bath and Bristol Branch makes a feature of the scientific papers at its ordinary meetings, and also includes clinical meetings in its programme. The Leicester and Rutland Division has had discussions on such subjects as the cause and treatment of asthma and the place of the Wassermann reaction in general practice, and is holding clinical meetings. The Halifax Division has monthly meetings at which the exhibition of cases and specimens is followed by discussions on subjects of everyday importance. The East Yorkshire Division similarly has monthly meetings to discuss subjects of practical interest in medicine; the speakers at these meetings have included Dr. B. H. Spilsbury of St. Bartholomew's Hospital and Sir William Thorburn of Manchester. The Edinburgh Branch, in addition to its ordinary meetings, holds every winter, in association with other Scottish Branches, a special clinical meeting in the Edinburgh Royal Infirmary. Last year at this meeting, which was most successful, demonstrations were given in the wards and special departments of the infirmary; papers were read by a number of authorities, including Dr. J. S. Haldane of Oxford, on their particular subjects, and a pathological museum was arranged. Similar activity on the scientific side of the work of the Association is in full vigour at Birmingham, Newcastle-upon-Tyne—the North of England Branch has always made a feature of its clinical meetings—and elsewhere.

CLAYDEN V. WOOD-HILL.

WE publish elsewhere in this issue (p. 967) a letter asking for subscriptions to a fund which has been started to reimburse Dr. Wood-Hill for the very heavy expenses incurred by him in defending an action brought against him for alleged negligence in the treatment of a fractured femur. The signatories to this appeal—Sir Robert Jones, Mr. G. E. Gask of St. Bartholomew's Hospital, Mr. R. C. Elmslie, who operated upon the case after a second fracture, Sir John Lynn-Thomas, Sir Hamilton Ballance of Norwich, and Dr. Wilson Tyson of Lowestoft—do not hesitate to express the opinion that a grave miscarriage of justice has occurred. We believe that those who read the report of the trial in our issue of last week (p. 919), together with Mr. Elmslie's letter in that issue (p. 916), will agree with the distinguished signatories of the letter published this week. Attention may be specially directed to the observations of Mr. Elmslie, who operated upon the patient between two and three weeks after the incident which happened when the patient had been ten days at home. He points out that there was a distinct conflict of evidence on matters of fact regarding the treatment applied during the eight weeks the patient was in the Beccles Hospital; these methods, he states, were in accordance with the usual surgical teaching. The judge and jury appear to have been largely influenced by Mr. Elmslie's answer to the question whether, at the operation, he found evidence of refracture. While stating that he had not found such evidence, he pointed out that the interval between the giving way of the leg and the operation—eighteen days—was sufficient for signs of refracture to have disappeared. In his letter last week he pointed out that both judge and jury seem to have ignored the possibility of bending of the callus, a well known and common incident in fracture of the femur, and a possibility he emphasized in his evidence. We believe that the profession generally will agree with Mr. Elmslie's further observation that the decision in this case shows a tendency to extend medical responsibility for the results of treatment beyond the acknowledged responsibility to use recognized methods and to use them carefully; for it would appear that the mere fact that the result of the treatment of the fracture was unsuccessful was accepted as a sufficient cause for action. The signatories of the letter we publish this week state that abundant evidence was produced at the trial that as regards splinting, extension and position of the limb, the fracture was treated in accordance with modern methods while the plaintiff was in the Beccles Hospital. The decision being on a matter of fact does not, we understand, constitute a precedent in law, but sooner or later the underlying principle will have to be tried out. Acting in accordance with the recommendations of his legal advisers, Dr. Wood-Hill does not intend to appeal, so that the matter cannot be reargued in a court of law; but the profession can at least show its view of the matter and its sympathy with Dr. Wood-Hill by subscribing liberally to the fund now. As will be seen, Sir Hamilton Ballance, All Saints Green, Norwich, has undertaken to act as treasurer.

THE CALCUTTA SCHOOL OF TROPICAL MEDICINE.

THE Calcutta School of Tropical Medicine and Hygiene began work on November 15th, when the director, Lieut.-Colonel Megaw, I.M.S., sent a telegram of congratulation to Sir Leonard Rogers announcing that the first lectures had been given. The Carmichael School of Tropical Diseases was opened a few days later. The history of the foundation of the school and of the many delays it has encountered has been related from time to time in our columns. The scheme of the school was worked out by Sir Leonard Rogers some eleven years ago, and it is some years since the staff was sanctioned by the Secretary of State, though the appointments remained in abeyance until the conclusion of the war. After the

scheme in its original form had been sanctioned, extensions to include research and the teaching of hygiene were worked out, and the scheme in its complete form was approved by the Sanitary Reorganization Committee of the Bengal Government nearly two years ago and submitted to the Government of India, which suggested certain modifications with regard to pay. The scheme was forwarded to the Secretary of State for India for his approval early this year, and by him referred to the newly appointed Indian Minister of the Bengal Government; he appointed a committee, which approved of the full scheme, but objected to the reduction in salaries proposed by the Government of India. It was then finally approved by the Government and once more submitted to the Secretary of State; his sanction was, we understand, given last October, and the Bengal Government consequently agreed that the school should begin work at once. The hygiene section of the school has not yet been sanctioned and its staff has not been appointed. The research section, however, has been in working order for a year under the direction of the governing body of medical men set up under the scheme. The research fund subscribed by the public in response to Sir Leonard Rogers's appeal yields an annual income of a lakh of rupees, and is administered by this governing body. Important work in the diagnosis of kala-azar and the treatment of leprosy has already been done. It is not too much to hope that before many years have elapsed the full staff will have been sanctioned by Government; it will number 42 and include well qualified medical assistants. We may be permitted to express to Sir Leonard Rogers on behalf of the profession its congratulation on the completion of an undertaking which will worthily commemorate his great services to India and to tropical medicine.

INDUSTRIAL MEDICINE AT THE INTERNATIONAL LABOUR CONFERENCE.

THE International Labour Organization, which was established by Part 13 of the Treaty of Versailles, and the members of which are the States composing the League of Nations, held its third Conference at Geneva from October 25th to November 19th. The problems of medical interest which have come before this assembly relate to the prohibition of white lead in painting, the disinfection of wool infected with anthrax spores—to which we refer elsewhere this week—and the compulsory medical examination of children and young persons employed at sea. On this last subject a Convention—which is an agreement to take in each country such legislative and administrative action as may be necessary to establish an international equivalence—providing for the medical examination of children and young persons employed at sea was adopted by 96 votes to none, with one abstention. In regard to lead poisoning, a questionnaire was addressed to the various Governments, asking whether, in view of the fact that it is now possible to replace white lead in painting by efficient substitutes, they were of opinion that a draft Convention prohibiting its use should be submitted to the Conference. Seven governments replied in the affirmative, six others in the affirmative with limitations or reservations, and the remainder made reserved or ambiguous replies. The reply of Great Britain was to the effect that further investigation was needed, especially because quite recently further evidence had been submitted as to the results with leadless paints, and this appeared to throw some doubt upon the conclusions arrived at by the two committees set up by the Government in 1911 which recommended the total prohibition of paint containing more than 5 per cent. of its dry weight of a soluble lead compound except for certain special uses. Until this evidence had been carefully examined the British Government regretted that it could not express any decided opinion as between prohibition and regulation. The draft Convention submitted to the Conference prohibited white lead or any specialized product containing white lead, but admitted certain exceptions, as, for example, in artistic painting and fine lining, and also in painting work, other than on buildings, which is to be permanently exposed to the open air, such as on carriages. Any exemptions which might be granted by the Governments, however, were not to cover the employment of women or young persons. The report pointed out that plumbism is not only responsible for a number of deaths but causes a high rate of sickness among painters, and makes them less capable of resisting infectious disease. The German Government was of opinion that white lead should be prohibited only for interior painting at present, and made three recommendations for better protection against plumbism: (1) That white lead should only be sold when ground in oil; (2) that all vessels containing lead paints or compounds for sale should bear an indication that they contain lead and are dangerous to health; (3) that all painters who use lead paints should be subjected to periodical medical examination. The two questions, of white lead in painting and of anthrax in wool, were those which excited most controversy. Each was responsible for several inconclusive discussions, both in committees and in the full assembly. The Convention on the prohibition of white lead as originally drafted has been amended, and in its final form, as adopted by the Conference by 76 votes to 3, prohibits the use of white lead or lead sulphate and all pigments containing these substances for interior painting, except in the case of railway stations and factories, where lead paints may be considered necessary by a competent authority. The prohibition is to come into force six years from the statute of the recent Conference. With regard to the disinfection of wool, the article published elsewhere gives full particulars of the decisions of the Conference and of the considerations which led to their adoption. The Conference took special note of the disinfecting station at Liverpool, illustrations of which we publish on a special plate this week.

THE ANTHROPOMETRY OF SCHOOL CHILDREN.

THE annual report, covering the two years 1918 and 1919, of the Principal Medical Officer to the Department of Education, New South Wales, contains, with other items of interest to the medical administrator, an important contribution to the statistics of height and weight at school ages. In all more than 200,000 children were examined; the majority—over 180,000—were pupils in the State schools, while most of the remainder came from schools connected with the Roman Catholic religion. The principal results of the analysis were these: In respect of weight, boys are heavier than girls between the ages of 5 and 11; girls are heavier than boys from 11½ to 15; boys then regain the lead. In respect of height the same sexual relation is observed. When a comparison is instituted between the school children of the capital, of the larger country towns, and of the rural districts, it is seen that the rural children are heavier and taller than the city children at every age, and somewhat superior to the children from the country towns. When children are classified by parentage it appears that those both of whose parents were Australian are heaviest and tallest; next come children with one parent Australian, while the children of two "foreign" parents are the smallest. Mr. F. A. Mecham, statistical officer to the department, who is responsible for the analysis, has illustrated the tables with a series of excellent graphs. Dr. Harvey Sutton, in his discussion of the results, calls attention to the importance of such surveys in providing data for a scientific appreciation of the problems of nutrition and to the need for extending them—as, for example, by recording other measurements, such as vital capacity, area of cross-section of the chest, dynamometer grip. Dr. Sutton says truly that we are at present quite unable to assess the

respective shares in the etiology of malnutrition due to such probable factors as lack of fresh air and dental caries. In commenting on the latter, Dr. Sutton writes that it is "probably a contributory rather than a main cause of child malnutrition. The worst sets of teeth tend to be found in the ill-nourished, while good teeth are most commonly confined to the children above standard. This and the future risks fully justify the fullest dental treatment for school children, but by no means solves the problem of nutrition." Mr. E. C. Rhodes, of the Galton Laboratory, University of London, states in a recently published memoir that he has found little correlation between the state of nutrition and the condition of the teeth, but notes the extreme difficulty of reducing to a common standard the findings of different medical officers. Dr. Sutton's appeal for further knowledge and Mr. Rhodes's comments on the need for standardization of medical judgements ought to be considered together. We fully endorse Dr. Sutton's contention that such knowledge is required, but we think that in a populous country like Great Britain it must be obtained by the method of sampling rather than by that of exhaustive enumeration. Far more value would attach to a survey of every tenth, or even of every hundredth, child of school age made by a small number of trained investigators than can ever be accorded to the *omnium gatherum* of routine inspections made by persons all, no doubt, keen and intelligent, but of varying grades of training and experience.

ERLANGEN.

The claims of the Erlangen school in the treatment of cancer by radiotherapy have been referred to several times in our columns of late (August 20th, 1921, p. 290; August 27th, 1921, p. 331), and they were discussed in the Section of Radiology at the Annual Meeting of the British Medical Association at Newcastle. In this country the leading authorities have expressed the opinion that the time has not yet come when radiotherapy may be regarded as the first choice, in place of surgery, in the treatment of cancer; but that, in spite of somewhat extravagant claims, the Erlangen school has made a real contribution to progress, and that its methods are worthy of serious attention. The requisite apparatus, which has been much "written up," is now made by several firms in this country. A few years ago the name Erlangen conveyed little to medical men outside Germany, but now the rush from all quarters of the world to study actinotherapy at Erlangen is said to have become so large that its gates have been closed to most newcomers. We have reason to believe that this difficulty of access was temporary, and political in origin. Many English medical men and physicists have visited Erlangen lately, and they are alive to the possibilities of the treatment carried out there. In Germany the reputation of Erlangen has suddenly eclipsed even that of Freiberg and Berlin. Yet Erlangen is a comparatively small provincial university town, dominated by only two concerns—the university with its woman's hospital and the firm of Reiniger, Gebbert and Schall. This firm has representatives all over the world, from Norway to the Argentine and Japan, and has not let the grass grow under its feet. In *Hospitalstidende* for July 20th and September 28th Dr. Severin Nordentoft tells how he succeeded in getting from Denmark to Erlangen, and how he was not only successful in running the blockade, but also in getting first-hand information from the Erlangen authorities. In response to his first effort to reach Erlangen he was served with a circular from Reiniger, Gebbert and Schall, in which it was stated that medical visitors could not be received on account of the congested state of the town. His next rebuff came from the passport authorities, who were willing to visa his passport to Berlin and Hamburg but not to Erlangen. Dr. Nordentoft, however, had friends at court, and through Professor Hans Meyer, Editor of *Strahlentherapie*, he received an introduction from Professor Wintz, who intimated that he would receive Dr. Nordentoft. So his passport was visaed only for Berlin, whence the journey to Erlangen proved unobstructed. According to Dr. Nordentoft's account, the results achieved at Erlangen are due to the intimate co-operation of the university authorities and the firm mentioned above. A third partner in this collaboration is a firm of *x*-ray apparatus manufacturers in Hamburg. The engineers and technical experts keep constantly in touch with the hospital, the staff of which is kept *à jour* with the experiments of the firm. After giving a long and technical account of the apparatus Dr. Nordentoft supplies some general information on the subject, and winds up his paper with a caveat addressed to the amateur radiologist who, in a small provincial hospital and with faulty apparatus, essays the *x*-ray treatment of cancer and so runs the risk of favouring instead of checking its malignancy. We have made arrangements which we hope will enable us to publish at an early date further particulars with regard to the latest work done under the direction of Professor Wintz, who, while he believes that the methods in use at Erlangen constitute a move in the right direction, himself strongly deprecates sensational publications which can only raise false hopes in the minds of patients suffering from cancer.

THE HUMANITIES IN SCIENTIFIC TEACHING.

A plea for humanism in scientific education was put forward by Professor Cecil H. Desch at a meeting of the Royal Anthropological Institute on November 23rd. He deplored the lack of knowledge of science on the part of responsible men in this country, whose education had been based upon literature, and more particularly upon classics, but at the same time expressed his regret that through the enormous extension of scientific and technical education of recent years large numbers of men were being sent out into responsible positions in industry without being touched in any way by the humanities. The outlook of such men might be as narrow as that of the men whose education had taken no account of science at all, and they might prove even less capable of administering human material than men trained under the old classical system. The science teaching of the present day was taken to include mathematics, physics, chemistry, biology, sometimes a little psychology, and such parts of the study of mankind as related to prehistoric races and primitive civilizations. But as long as the study of the higher civilizations was excluded science remained too narrow a discipline. Mere training in technology made for a hard and selfish efficiency, and commercial training aggravated this fault. On the other hand, to introduce a certain number of courses in literary subjects into the science training, like the introduction into the literary course of a certain limited instruction in science, would, under present university conditions, overload the curriculum without any corresponding advantage. The important point was to make the student realize that knowledge was one thing and not an aggregate of disconnected subjects. In some way the science student must be given the synthetic outlook upon the universe. Professor Desch urged that the science course should be completed by sociological study, not limited to the primitive races, but embracing civilization as a whole. Were this done, science and humanism could no longer be said to be in conflict. He looked forward also to more of the historical spirit in science teaching. The student in science should be taught how his subject grew, he should know the lives of its founders, and be acquainted with their original writings, which would afford him a better insight into the subject than many textbooks. He should also learn the relation of each discovery in pure science to the state of intellectual development at the time it was made. As for linguistic study, Professor Desch agreed that the science student

would not have time to follow this with any thoroughness, but there was no reason why ignorance of the ancient languages should imply ignorance of the ancient literatures. This country was fortunate in having translations which themselves ranked as literature. There were educationists who despised all translations, but to them it might be pointed out that there were two literatures with which every person in this country made acquaintance through the medium of translation—namely, the Old and New Testaments. He pleaded for a recognition in humanistic education of translations of old classical writers. Classical education was not necessary to scientific writing; one of the most eloquent and also one of the most accurate of modern English writers was Huxley, who had no education in the classics. Professor Desch commented adversely on the loose English and the jargon which found their way into many scientific periodicals to-day, but he urged that it was quite possible, if the science student was instructed in the use of his own language, and encouraged in clear expression, to present scientific facts in simple and direct English, like that of Faraday, for example. Dr. Charles Singer, in the discussion which followed, while expressing his agreement with Professor Desch in his main thesis, held that there was more to be said for linguistic study than Professor Desch had admitted. It must be a great help to be able to compare one's own language with another, and Latin alone among languages—he would not even add Greek, nor would he regard French as a modern equivalent—supplied the required "norm."

VACCINES IN CATARRH.

SURGEON COMMANDER D. H. C. GIVEN, in the October issue of the *Journal of the Royal Naval Medical Service*, publishes the results of an investigation of considerable interest on the use of an anticatarrh vaccine in a limited number of cases. He found that in the Royal Navy chronic catarrh and repeated colds seemed to be particularly prevalent among the personnel in destroyers. Many men stated that they had not previously been subject before joining destroyers, and no doubt the crowded mess decks and the limited supply of fresh air, particularly at sea, were important predisposing causes in that type of ship. At first the mistake was made of inoculating all comers without selection, with the result that many men came for inoculation who were either in the initial or convalescent stages of a cold. In such cases the vaccine was found to be very potent, and only aggravated the complaint. A further discouragement was the fact that a senior officer—who was a particularly susceptible subject and had had a similar attack after inoculation against influenza—was rendered extremely ill by one dose and was confined to bed for three days. Notwithstanding these initial calamities, though they had a serious effect on the number of volunteers, the final results were remarkably good, and Surgeon Commander Given was greatly impressed with the potentialities of an anticatarrh vaccine if given in selected cases and in more gradual dosage. In the cases under his observation inoculation was distinctly beneficial in from 55 to 65 per cent. of the men in different batches. The vaccine employed was "Prophylactic Anti-Catarrh Vaccine B," supplied by the Edinburgh Royal College of Physicians through Messrs. Duncan Flockhart and Co. It is well to bear in mind, however, that the first line of defence in prophylaxis against colds is fresh air and sunshine, thorough ventilation and cleanliness in living spaces, and prevention of dampness. The second is hygiene of the upper respiratory tract; an unhealthy condition of the nose and throat, due to mouth-breathing or nasal defects, seems to be as prevalent in the Royal Navy as bad teeth used to be. Under tolerably healthy conditions and in the absence of organic defect an anti-catarrh vaccine would appear to be a most important accessory in the prophylaxis of respiratory infections.

THE NEW POOR.

THE Professional Classes Aid Council is the new title of the organization which, under the name of the Professional Classes War Relief Council, rendered valuable service to thousands of persons belonging to the professional classes who were deprived by the war of their means of livelihood. During the past six and a half years some 12,000 applications were investigated and dealt with. First among its activities was the maternity home which was established in a house lent at Prince's Gate, where 547 babies were born in the four and a half years of its existence, and where also the general offices for the Council were situated. Educational assistance was next organized, and over £34,000 was expended on schooling for the children of professional people up to March, 1921. The war threw out of employment a large number of singers and other musicians, and by its organization the council was at once able to find work for them and to provide much-needed entertainment in hospitals and other institutions during the war. The influence of the war on the professions is far from being at an end even now, and hundreds of professional men and women will not be able to recover from its effects for years. Conferences have been held with the numerous societies interested, and as a result the War Relief Council was reconstituted and renamed. Representatives of the Council of the British Medical Association satisfied themselves that there was no likelihood of the work of the Professional Classes Aid Council overlapping with the work of the medical benevolent organizations, and that co-operation with it might in some instances be of considerable benefit. Accordingly, as was reported in the SUPPLEMENT of October 15th (p. 147), Dr. G. E. Haslip, Treasurer of the Association, was nominated as its representative upon the Professional Classes Aid Council, whose offices are now at 251, Brompton Road, S.W.3.

FELLOWSHIP OF MEDICINE.

DURING the coming year the Fellowship of Medicine and Post-Graduate Association contemplates putting into operation a series of courses for medical graduates. These will be of two kinds—instruction in general medicine and surgery of the nature of "refresher" courses, and instruction in some special subjects, such as gastro-enterology, children's diseases, etc., for those desiring to devote special attention to them. In January a six-weeks' course will be commenced in medicine; in order to fulfil one of the admitted needs of the post-graduate, which is to separate his instruction from that of undergraduates, this course will be carried out at various special hospitals, and will include work in neurology, pulmonary diseases, diseases of the heart, children's diseases, fevers, infant welfare, and other subjects. Such institutions as the Brompton Hospital, the Cancer Hospital, the Hospital for Heart Diseases, St. Peter's Hospital, and the Hospital for Nervous Diseases, Maida Vale, have offered to take part in the programme. The meetings have been so arranged that, as far as possible, the work will be carried out each day at hospitals close to one another in order that the graduates' time may not be wasted in travelling to different parts of London. A provisional time-table for the course in general medicine is in preparation.

WE have received from the National Council for Combating Venereal Diseases a letter, signed by a number of physicians and surgeons, medical officers of health, and officers in medical charge of venereal disease clinics, who state that they have reviewed the whole subject and have formed their opinion on the question of self-disinfection after careful consideration. The conclusion which they come to is that the policy of promiscuous propaganda as to the security conferred by personal self-disinfection among the civilian population is likely not only to fail in its object in decreasing the amount of venereal disease but also may actually lead to an increase in the gross number of cases.



THE UNIVERSITY, GLASGOW.

NINETIETH ANNUAL MEETING

of the

British Medical Association,

GLASGOW, 1922.



CITY OF GLASGOW.

THE ninetieth Annual Meeting of the British Medical Association will be held at Glasgow next summer under the presidency of Sir William Macewen, LL.D., F.R.S., Professor of Surgery in the University, who will deliver his Address on the evening of Tuesday, July 25th. The sectional meetings for scientific and clinical work will be held, as usual, on the three following days, the mornings being given up to discussions and the afternoons to clinical and laboratory demonstrations. The University Court has granted the use of the University buildings for the scientific and other purposes of the meeting. The Annual Representative Meeting will begin on the previous Friday, July 21st. The provisional programme for the work of the sections is being drawn up by an Arrangements Committee, consisting partly of Glasgow representatives and partly of members elected by the Council. The last day of the meeting, Saturday, July 29th, in accordance with the custom of previous annual meetings, will probably be set apart for excursions to places of interest near Glasgow and in the neighbouring West Highlands. We publish below a note on the City of Glasgow, being the first of a series of descriptive and historical articles on Glasgow which it is hoped will prove of interest to members of the Association. The Association met last at Glasgow in 1888 under the presidency of Sir William Gairdner.

GLASGOW: AN IMPRESSION OF THE CITY.

The appeal of Glasgow to the stranger depends greatly upon the weather. Under grey skies it is duller and more depressing than most cities, but in the summer sun of July it takes on a gallant air, and justifies the pride that its people have in their city.

A position of supremacy in commerce and industry, drawing as it does the attention of the trading world to the "Second City of the Empire," has in a measure dimmed an earlier distinction, for Glasgow is a cathedral city. The cathedral was built in the twelfth century on the site where, in the sixth century, St. Mungo, patron saint of the city, had set up his Christian cell, and part of the present fane dates from 1175. It has played its part in romance as well as in history, for Sir Walter Scott made of the dower church a rendezvous for his Highland reaver, Rob Roy. Other ancient buildings stand in Glasgow, but the cathedral is the first of them all, bearing its years bravely in stately austerity.

The College is of ancient foundation also, although the University buildings are modern. They stand on a noble eminence overlooking the fine Kelvingrove Park and a bend of the River Kelvin, from which one of the University's most famous professors took his title. Ranking next in age to St. Andrews University, Glasgow takes precedence of Edinburgh and Aberdeen, having been founded in 1450 by a Bull of Pope Nicholas V. The first students

were taught within the cathedral, and later in the town residence of the Laird of Luss. Ultimately the College was established in the High Street, where it flourished for three hundred years. The foundation stone of the present University buildings—designed by Sir Gilbert Scott—was laid by King Edward VII when Prince of Wales, in October, 1868, and two years later the class-rooms were occupied. Many notable additions have been made to the original structure, among which a sentimental interest attaches to the Gatehouse, in which are embodied window corbels, crowsteps, and other portions of the old College. From the tower of the University, under favourable conditions, Ben Lomond may be seen, and the famous Rock of Dumbarton, standing sentinel where the River Clyde broadens into its majestic estuary.

Of the University and its famous alumni John Mayne writes:

> "Here great Buchanan learnt to scan
> The verse that mak's him mair than man;
> Cullen and Hunter here began
> Their first probations;
> And Smith, frae Glasgow, formed his plan—
> 'The wealth o' nations.'"

With that of Lord Kelvin, the name of Lord Lister stands pre-eminent among its teachers, and there studied here in their time John Knox, Zachary Boyd and Tobias Smollett, James Watt the engineer, John Gibson Lockhart, "Christopher North," and Archibald Campbell Tait, afterwards Archbishop of Canterbury. It was in the forehall of the old College in 1662 that the Committee of the Privy Council met, under the Earl of Middleton, and, restoring Episcopacy, instituted the persecution of the Covenanters.



MUNICIPAL BUILDINGS AND GEORGE SQUARE.

The Botanic Gardens, perhaps the most pleasant of the parks belonging to the Corporation, are near the University, and at their eastern end stands Queen Margaret's College, where the women students of the University are instructed.

There is some remarkably fine architecture in Glasgow, to which, among men of the past, "Greek" Thompson was a notable contributor, while among architects of to-day Sir John Burnet, whose London work at the British Museum and elsewhere is well known, is represented by the Western Infirmary, the old Art Institution—now a drapery store—and a notable savings bank.

The city has splendid shops, and its hotels are well equipped and up to date, though another modern hotel would be a boon at conference seasons. While its restaurants are good, its teashops are without equal, and are a source of especial pride to the citizens of Glasgow. There are excellent theatres and concert chambers, and music-halls and picture theatres are innumerable and luxurious.

As befits a city which has given its name to a school of modern painting, Glasgow possesses magnificent art galleries, where the pious pilgrim will find Whistler's "Carlyle" and Rembrandt's "Man in Armour," along with many examples of the Glasgow School. Its libraries and museums are worthy of the city, and medical men will find in the Hunterian Museum at the University an interest beyond the ordinary. In the Municipal Buildings, within a maze of marble staircases and corridors, is the great banqueting hall, with mural decorations by Lavery, Roche, Walton, Henry, and others of their school.

It is a commonplace, at least in Glasgow, that "Glasgow made the Clyde and the Clyde made Glasgow," and the claim is made—with all due reverence, as becomes a kirk-going race—that the River Clyde of to-day, with its wide docks and clamorous shipyards, is an improvement on the original handiwork of the Creator. Kipling's Macandrew, it may be remembered, knew it "from Govan to Parkheid," and to its harbourage come argosies from the seven seas. Where, less than a century ago, apple orchards stood beside a quiet stream, there is now a thronging centre of human activity.

The communal services of the city are a marvel of enterprise and efficiency. Any guide-book will furnish details of the tramway system that has been a pattern to the world; tramcars carry the tourist a score of miles away to the banks of Loch Lomond. The city's water supply is drawn from Loch Katrine, in the neighbouring region of beauty, the Trossachs, so gloriously depicted by Scott in his "Lady of the Lake." Nor must reference be omitted to Glasgow as a starting point for excursions upon the Firth of Clyde and to the Highlands. A veritable fleet of pleasure steamers plies up and down the Firth, fares are astonishingly low, and to the citizens of Glasgow, Rothesay, Dunoon, and Arran are as familiar as Sauchiehall Street. For those whose pleasure is golf there are excellent links all around, among the most enjoyable being the new courses at Gleneagles, which are open to visitors. It is evident, therefore, that relaxations are not lacking for those who intend to take part in the deliberations of the British Medical Association when it meets in Glasgow at the close of next July. They can be assured, too, of a hearty Scottish welcome from their colleagues in the city and its neighbourhood.

THE RULES OF THE ROAD.

THE problems of the road raised by the astonishing increase of swift motor traffic are continuously in the public mind, both in town and country, but discussion on them is roused to greater intensity at irregular intervals by some serious accident or by the report of some one of the numerous committees which have been appointed from time to time to deal with different aspects of the subject. The last report is the third interim report of the Departmental Committee on Lights on Vehicles. The problem before it has been to define some method of avoiding dazzle, more particularly from head lights, while at the same time providing a safe driving light. "Dazzle" the committee defines as "such an intensity of light reaching the eye of an observer as to cause material interference with his normal vision under the conditions existing at the time of observation." What is a safe driving light from a driver's point of view depends, in the opinion of the majority of the committee, upon the speed of the vehicle, its effective braking capacity, and the existing atmospheric and road conditions. The representative on the Committee of the Cyclists' Touring Club, Mr. Howard Gritten, M.P., considers that the speed should depend on the light, not the light on the speed, the chief condition of safe driving being that a driver should be able to bring his vehicle to a standstill within the distance illuminated by his headlights. All the members of the Committee would apparently agree that a safe driving light varies with the class of vehicle, so that in this respect the report does not take us much further. With regard to dazzle, the committee, while considering its prevention under every condition and circumstance, at present unattainable consistently with a safe

driving light, makes certain recommendations: the principal are that the lower edge of the light should impinge upon the road not more than 50 feet from the face of the headlight, and that the upper limit should not exceed 4 feet from the ground. It recommends, however, that in addition to the main beam there should be a field of diffused light with a range of forward illumination on the road not exceeding 50 feet or less than 25 feet, and apparently unlimited upwards. How to attain these ends has not yet been determined, and more experiments are being made; but meanwhile the committee recommends that each headlight should be provided with frosted glass or some other device so that "it shall not give a range of forward illumination in excess of 150 feet at any point more than 4 feet above the ground." Such a headlight may give a reasonably soft illumination throughout its whole surface when viewed from a point more than 4 feet above the ground.

The publication of this report has provoked various writers to express their opinions, and one of them goes so far as to suggest that pedestrians should be compelled to indicate their presence by means of lamps or small reflecting discs slung over the shoulder, and adds that "all users of the road, pedestrians or otherwise, should be legally compelled to keep the rule of the road." Another writer has hinted a doubt as to what the rule of the road for pedestrians is; he observes that, since the time of Dr. Johnson, at all events, most people have recognized that pedestrians meeting should keep to the right. He wisely regards walking at night on the left side of a road without a side path as a risky procedure.

All the dangers of the road are intensified by darkness, but they exist during the day, and no section of the population is more interested than the medical in the formulation and enforcement of reasonable rules of the road. The Chief Constable of Hertfordshire recently addressed a letter to the county magistrates, and since it has been circulated by the Automobile Association it may, perhaps, be taken to express the hopes of motorists. It is an offence under the Motor Car Act to drive a car upon the road to the public danger, but the Chief Constable asserts that there is no law compelling a person to keep to any special side of the road, and that no man has any prescribed right to any particular part of the road. We suspect this to be an over-statement, for the rule of law seems to be that the pedestrian has the first right to the road, and that drivers must give way to him. Further, the immemorial rule in this country that drivers of vehicles of all sorts should keep to the left-hand side, at least when passing one another, has been recognized by the courts, as also the rule that in overtaking a driver should keep to the right. The courts, as the Chief Constable admits, will presume that a man who violates these rules has been negligent. But beyond this we cease to be on any sure ground.

Many years ago a member of the British Medical Association wrote a letter to the *Pall Mall Gazette* advocating the adoption of a single, simple rule of the road in all towns—a rule which he stated to be applicable to, and to provide rights and duties for, all road users, whether drivers or pedestrians. He suggested that in the roadway everybody should be made responsible for avoiding collision with vehicles or pedestrians on his right. A pedestrian stepping off the kerb would have the duty of seeing that no vehicle was approaching from the right; he should be entitled to be safeguarded from the risk of collision with a vehicle on his left. No driver should turn from one road into another across the bows of a vehicle on his right. To draw out from the kerb without looking to see that no vehicle is coming up from behind would be an offence. Cutting in from the near side as taxicab drivers so commonly do would be heavily punished in the event of a collision. It was contended that this rule was so simple that it could be impressed upon children and so safe that accidents would be reduced to a minimum. The suggestion to make a driver or pedestrian responsible for what is happening on his right has recently been supported by Viscount Knutsford in a letter to the *Times*, and is so far favoured by the Chief Constable of Hertfordshire that he says "vehicles approaching one another on roads of equal importance which cross should give way to the vehicles approaching from their right hand and pass behind."

We are informed that the recognition of such a rule was suggested to the Safety First Committee, but have been told that it was opposed by the Metropolitan Police; on what grounds we do not know. Nevertheless, it is possible that a demonstration of its effect might be of use in elucidating the problem of safety in towns; and we have yet to hear of circumstances to which it is inapplicable. When the letter to which we have referred was published the motor correspondent of the *Pall Mall Gazette*, searching for what he called a "limiting case," could only produce that of four vehicles approaching one another at cross roads. Observance of the rule, he suggested, would lead to a halt by all four cars. In towns this objection is to be met, and can only be met, by police control; in the country a driver should slacken at cross roads, and all good drivers do. If cross roads are blind a driver should go dead slow, and most good drivers do so, although the Chief Constable of Hertfordshire says that an attempt is being made to set up a rule that every driver of a vehicle debouching from a lesser road on to a greater has the onus upon him of taking every care and precaution against accident. Lord Knutsford argues that such a rule would be absurd on the ground that nobody knows which is a main road and which is not. His objection might, perhaps, be diminished if not removed were county councils and municipal authorities to take to marking side roads as such, with warning triangles fixed one every two hundred yards back, as is now sometimes done in the worst places.

THE MOLTENO INSTITUTE.

OPENING CEREMONY AT CAMBRIDGE.

THE opening of the Molteno Institute for Research in Parasitology took place on the afternoon of November 28th at Cambridge. The new institute is situated on the Downing site which adjoins Downing Street, being thus closely connected with the medical, physiological and other scientific schools of the University, and consists of eight large research rooms, one of the best features of which are the large windows with single panes which enable the maximum of lighting to be obtained. The research rooms all face towards the north, while the south side of the building contains the library, offices and various types of preparation rooms. The research rooms occupy the ground and first floors, while the top story is mainly devoted to a large museum in which the opening ceremony took place.

The chair was taken by the Vice-Chancellor of the University, Dr. PEARCE, Master of Corpus, who opened the proceedings by welcoming Mr. and Mrs. Molteno, to whose generosity the building is due. He at the same time expressed the great regret of all present at the illness of Professor Nuttall, which prevented him from taking part in the opening of a building which was the culmination of many years of work and planning. It was to Professor Nuttall's eloquence that the generosity of Mr. and Mrs. Molteno had been directed to a result of such far-reaching importance to the prevention of disease. Congratulations had been received from General Smuts, High Commissioner of South Africa, the Director of the Pasteur Institute of Algiers and the Pasteur Institute in Paris, as represented by Drs. Roux, Calmette and Mesnil.

In the absence of Professor Nuttall Dr. WARBURTON welcomed in his name Professors Caullery and Langeron, representing the Pasteur Institute, and representatives from the War Office, Colonial Office, Ministry of Health, and many other public bodies. He referred to the history of the department—the Quick Professorship of Protozoology was formed in 1906, and Professor Nuttall was the first professor. The department had worked for fifteen years in temporary rooms in the medical school under considerable disadvantages. The protozoology of disease-producing protozoa had been the chief study of the department. He referred to the valuable library already installed in the building, consisting largely of Professor Nuttall's own large collection of books and journals dealing with parasitic diseases, supplemented by a valuable gift from Mrs. Churchill, given in memory of her brother, Walter Myers, an early worker in the department, who died of yellow fever while investigating that disease in South America. He claimed that the institute was unique, none other being entirely devoted to parasitology.

Mr. Molteno also expressed his great regret at the absence of Professor Nuttall, and congratulated him and all concerned on the splendid building which had been erected. From much experience in South Africa he had long realized the importance of the splendid work Professor Nuttall had been doing and the difficulties under which he worked. Many parts of Africa could not be occupied without solving the problem of the maintenance of the health of both men and animals. Development and the movement that this implied had rapidly spread disease, and this spread threatened to arrest progress. All parts of the empire had been benefited by the work of Nuttall and his pupils, who had gone to all parts of the empire. He was much gratified that Earl Buxton was present to open the institute, and he also welcomed Lord Pentland.

Earl BUXTON stated how glad he was to open the institute founded by his old friends Mr. and Mrs. Molteno. Their name was well known in South Africa, where Mr. Molteno's father, Sir J. Molteno, was the first Prime Minister of the Cape Province, and Mrs. Molteno was the daughter of Sir Donald Currie, who had helped so much in the development of the country. He especially admired their generosity in coming forward with a second supplementary gift when circumstances arose which made their first inadequate for fully carrying out the project of the institute. He joined in the deep regret at the absence of Professor Nuttall. His six years' experience as Governor-General of South Africa had brought home to him the dreadful ravages of diseases caused by parasitic insects. South Africa suffered not only from the plagues of Egypt but from many others in addition, which play a large part in the economy of the country. Many people in South Africa were full of gratitude for the work Professor Nuttall had done. He had, with very inadequate facilities, provided the stimulus for work all over the empire. Lord Buxton hoped that soon a time would be reached when the tick, the louse, and the mosquito would be relegated to the ranks of the unemployed. Many parasitic diseases were now acknowledged to be preventable, and the agent of disease was known; it was only a matter of time for their prevention and cure. He wished that another bacillus—that of public extravagance—could be discovered, so that those suffering from this disease should become cured. In South Africa and elsewhere, owing to modern facilities of communication and movement, many diseases once localized had now become continental, but he thought that, owing to modern discovery, the balance of progress was on the right side. Tropical countries were becoming habitable owing to medical research. New areas might thus be said to have been added to the British Empire. The conditions of the native population had also been enormously improved. During the war in many regions our men suffered more from insects than from bullets—for instance, in East Africa—and dysentery might have turned the scale in Gallipoli. In Egypt and Palestine also research could claim a considerable share in winning the war. A centre was required for training men in a broad and thorough way, so that they might be fully trained before going on scientific expeditions. Funds were necessary to keep such men at work for a sufficient time without financial worry. The new institute would attract men from all parts of the empire. He concluded by expressing the gratitude of all concerned to Mr. and Mrs. Molteno for their munificent gift, and then declared the institute open.

Professor CAULLERY then expressed the good wishes of the Institute Pasteur for the new institute. Parasitology was a subject that had become so large and assumed such importance that it was almost a special science. The institute would attract many workers and give them the opportunity of a full study of this science. He was delighted to find his former pupil, Dr. Keilin, established with Professor Nuttall and with others producing such valuable work. [illegible] zoologists that both nations had drawn close together in science as well as on the battlefield. Every occasion such as this was to be welcomed, as it made the [illegible] two nations closer.

Sir ARTHUR [illegible] expressed the thanks of Cambridge [illegible] had braved tedious and foggy journeys to [illegible] opening ceremony. He mentioned that Cambridge had a habit of growing, and that there was already [illegible] necessity for further endowment if such institutes [illegible] were started, were to continue to develop.

England and Wales.

VICE-CHANCELLORSHIP OF BRISTOL UNIVERSITY.

THE announcement was made at the meeting of the University Court, held on November 18th, that Principal Thomas Loveday, of Hartley University College, Southampton, had accepted the invitation to become Vice-Chancellor of the University of Bristol. The Court decided to award the titular distinction of an Honorary Fellow of the University upon Sir Isambard Owen, M.D., who relinquished his position as the Vice-Chancellor at the end of last session. No more fitting recognition of the splendid services Sir Isambard Owen has rendered to the University of Bristol and the area it serves could have been devised than by making him the first Honorary Fellow of the University which he has so well established. The honour is not only the expression of the gratitude of the Court, the Council, and the Senate, but also of Convocation, where originated the desire to mark in this way the esteem in which Sir Isambard Owen is held.

MIDWIVES AND THE ADMINISTRATION OF OPIUM.

At the last meeting of the Surrey County Council, held at the County Hall, Kingston-upon-Thames, the following report of the Maternity and Child Welfare Committee was submitted:

Dangerous Drugs Act, 1920.

A circular letter has been received from the Ministry of Health forwarding a copy of an Authority issued by the Secretary of State under the above Act enabling certified midwives who have notified to the local supervising authority their intention to practise to be in possession of, and to administer, preparations containing opium so far as is necessary for the practice of their profession or employment in such capacity, subject to the condition that they shall forthwith enter in a book to be kept for the sole purpose particulars of all supplies obtained, including the date, quantity, and name and address of the person from whom obtained. Your committee understand that the Authority in question was issued by the Secretary of State without prior consultation with the British Medical Association or the Society of Medical Officers of Health. Your committee are advised that it is both unnecessary and undesirable that midwives should be empowered to be in possession of and to administer preparations containing opium, and they have declined to issue any instructions to the midwives in the county on the subject.

This report was approved unanimously by the Surrey County Council.

LEEDS MEDICAL SCHOOL.

The thirty-eighth annual dinner of past and present students of the medical school of the University of Leeds was held on November 16th, with Dr. W. H. Maxwell Telling in the chair. The toast of "The Staff" was proposed by Mr. F. Clegg, a student, in an amusing speech, and Dr. Telling responded. He said that all was going well with the Leeds School of Medicine, and he did not think there was any school in which practical medicine was more efficiently taught. The teaching of the staff was a great deal better than it was when he first came to Leeds, but he indicated ways in which it might be improved. Leeds had been a school of the most brilliant surgery for a hundred years, and in recent years the teaching of medicine had made a great advance. Dr. T. Wardrop Griffith proposed the toast of "Past and Present Students," saying that he spoke with over thirty-eight years' experience of the school. On that day he had waited with Sir Berkeley Moynihan upon the University Council to urge them to appoint whole-time tutors on the medical and surgical sides. Mr. R. W. Lee responded.

VOLUNTARY HOSPITALS COMMITTEES.

The Voluntary Hospital Commission announces that Lord Cave, whose report on the voluntary hospitals led to the present scheme for assisting the hospitals, has agreed to serve on the Local Voluntary Hospital Committee for Surrey as one of the members nominated by the Hospital Commission. Considerable progress has now been made in the establishment of Local Voluntary Hospital Committees in various parts of the country, and steps were taken last week by the Commission to arrange for the preliminary meetings of the Local Committees for Cornwall, Derbyshire, Glasgow, Monmouthshire, Salop, Staffordshire, Surrey, Warwick, and Worcestershire.

Scotland.

Financial Position of Voluntary Hospitals in Scotland in 1920.

Sir Napier Burnett, M.D., Director of the Hospital Service to the Joint Council of the Order of St John and the British Red Cross Society, has presented a report on the financial position during 1920 of the voluntary hospitals in Scotland. It supplements previous reports on similar institutions in England and Wales and the reports of King Edward's Hospital Fund on the 112 London hospitals, and is a valuable contribution to the better understanding of the general subject. There are 94 voluntary hospitals in Scotland and Sir Napier Burnett deals with 78 of them, the remaining 16 being omitted either because they do not publish annual reports or because the reports were received too late for review. As these 16 hospitals provide only 375 out of a total of 6,981 available beds, it will be concluded that there is sufficient material for a complete and satisfactory review of the voluntary hospital system in Scotland. We are indebted to Sir James Galloway for permission to reproduce the following extracts from a memorandum on the report which he has prepared at the request of the Council of the Order of St. John and the British Red Cross Society:

Sir Napier Burnett's attention is specially directed to 78 hospitals and the details concerning them. These details form the basis of his report. Running through the report, there are clear indications showing the differences which must result in the finance and administration of large hospitals in contrast to the smaller institutions.

In order to simplify the study of these differences the 78 hospitals are divided into three classes: Class A, 18 hospitals with 100 or more available beds; Class B, 21 with 30 to 99 beds; Class C, 39 with under 30 beds. In Class A there are 5 hospitals with 2,933 beds attached to the medical schools of Scotland. The administration and finance of these five hospitals present special difficulties and special peculiarities; they are referred to repeatedly in the report as being in a special category.

The year 1920 was one of very great economic difficulty, and the report shows very clearly how hardly these difficulties have pressed on voluntary hospital administration. In Scotland the 78 hospitals already referred to show a total ordinary income of £793,988 and a total ordinary expenditure of £872,146; the excess of expenditure over income was thus £78,158. An unfavourable balance of this character, depressing though it is to members of hospitals councils, was expected. The only expression of relief and sympathy which I can offer to our colleagues in Scotland is that we are worse off in England, and still worse in London. Showing the relative differences of expenditure and the relative amount of deficit, reference is made to the 5 hospitals attached to medical schools; 4 of these 5 hospitals had an excess of ordinary expenditure over ordinary income of £47,763, while the fifth hospital had a surplus of £2,686, the net deficit of the 5 medical school hospitals was £45,077, or 57.67 per cent. of the deficit for the whole group of 18 large hospitals. On referring to Table "R," one of the series of exceedingly valuable statistical tables with which this report is furnished, it is shown that the hospital showing a surplus had an ordinary income per *occupied* bed of £152.40 with an ordinary expenditure of £149.33. The school hospitals have an expenditure necessariiy higher than those without medical schools, and they show a relatively greater deficit. The public are well aware that these hospitals are not only places of healing for the sick, but the schools where doctors and nurses receive the chief part of their training. They are not only hospitals for the sick but training places for those who care for the sick. They are, therefore, invaluable as centres of medical education. It is a matter for astonishment that this education is given at so small a cost in excess of the expenditure in hospitals without medical schools. It seems clear that special efforts should be made by municipalities, or the State, and by private munificence, for the greater development of this essential form of higher education.

Special reference must be made to certain new sources of income, which begin to make an important showing in the accounts of voluntary hospitals—namely, income from or on behalf of patients. In Sir Napier Burnett's analysis this source of income fall under the following headings: Interest from investments, workmen's contributions, patients' contributions, payments from public services. During the year under review no less than 48.27 per cent. of the total ordinary income of these 78 hospitals came from this source. Till recently the proportion was much smaller, but within the last year or two the amount of the income from workmen's contributions, from associations, clubs, or guilds, and the amount from patients' contributions show a steady increase. The amount from public services is considerable in the meantime.

New sources of income for the voluntary hospitals are thus being exploited—in some cases with great success. The hospitals are no longer institutions entirely dependent on voluntary contributions and donations, as was the case until a very few years ago. With this change in the finances, followed as it must be by changes in the organization and administration of the voluntary hospitals, it is clear that there must also be a change in the position of the medical services which have hitherto been given freely to the hospitals as voluntary work on the part of the medical profession to a very great extent.

One of the most important benefits likely to follow from the publication of reports such as this is the adoption of a simplified system of hospital accounts which may be uniformly applied throughout the country. King Edward's Hospital Fund has already brought about this desirable change in London; it will not be long before this beneficial change occurs throughout England and Wales. From the report it appears that comparison between individual and otherwise comparable hospitals is exceedingly difficult in Scotland, owing not only to diverse systems of account keeping, but also owing to the varying of dates adopted for the fixing of the close of the financial year. From experience gained in London the hospitals themselves will gain great benefit from such a reform. It may be stated in a compendious manner that the want of the unified and comparable system of accounts causes the hospitals to level up their expenditure to the standard of the most rashly conducted and the most extravagant hospital, whereas the existence of such a system compels competition in efficiency with economy.

Sir Napier Burnett speaks with the authority of knowledge gained from Red Cross administration during the war when he emphasizes the good likely to arise by establishing a system of co-ordination for the treatment of all patients within county areas, and of finding some common ground for the reduction of expenditure along the lines of co-operative buying. The standardized and simplified system of account keeping would lend itself to economy of administration in this direction, as well as in many others.

Sir Napier Burnett's report will not fail to make hospital managers in Scotland anxious as to the future of their hospitals, and it will tend also to encourage efficiency of administration. In hospital management, especially under a voluntary system constant care and watchfulness must be exercised on the expenditure side of the account. The gathering in of money, the placing of such money to capital account, is a much more alluring and interesting task, but the hospital stands or falls by the zeal of those who guard the expenditure rather than by the energy of those who gather in the funds.

One of the most interesting points brought out in this report is the following remarkable fact: In the group of 78 hospitals, although a considerable excess of expenditure over income is shown for the year 1920, the total of receipts over expenditure actually amounted to £305,071. This excess, however, represents a considerable percentage of money that was specifically ear-marked, and thus not available for the hospitals to apply towards the ordinary maintenance expenditure except in the form of interest derived from invested funds. Such a result is the best testimony to those who with energy have devoted themselves to the collection and to the capitalization of the funds so collected for the use of the hospitals in Scotland. Notwithstanding, I would commend to the hospital councils the zeal of those who laboriously control the outgoing of their money. This state of affairs, showing this wonderful balance of total receipts, does, indeed, suggest a very generous measure of confidence on the part of the public of Scotland in their voluntary hospital system. Not even the most hardy supporter of a State hospital service is blind to the great advantages to the individual sufferer of the voluntary hospital system. To the majority of the people of this country the voluntary hospital system appeals as the plan best adapted to our social condition and our needs. There is no fear of its failing if capable administrators give their brains and time to the hospitals voluntarily, just as the medical staffs already do. What is wanted is businesslike administration of the funds in every way, but especially on the side of expenditure. Sir Napier Burnett's most helpful report shows how little removed the voluntary system was from being a success in Scotland, even in the bad year 1920.

Ireland.

ULSTER MEDICAL SOCIETY.

THE second meeting of the present session of the Ulster Medical Society was held in the Medical Institute, Belfast, on November 17th. The President, Dr. Robert Hall, occupied the chair. One Fellow and seventeen members were elected. Professor T. Walmsley, M.D., read a paper on prehistoric man, and pointed out that as there had been innumerable experiments in organic life from the beginning, and that only a few of these survived; so with man there had been many experiments, and many tentative forms evolved which eventually had come to nothing. He briefly described the various skulls and skeletons which had been found, and assigned them to their geological and glacial epochs. Such evidence of their social development as were available, was detailed, and the relation of some to the present races of man proved; others were evidently extinct types or species; they had branched off from the main stem, but had proved unfit; they were predecessors, not ancestors. In the brief discussion that ensued some questions were asked, and Professor Walmsley replied.

CANCER RESEARCH FUND.

The announcement was made last week that a Cancer Research Fund for Ireland is in process of inauguration in connexion with the City of Dublin Skin and Cancer Hospital, which was established in 1911. The Lord Lieutenant, Viscount Fitzalan, is patron of the fund. The chairman of the London Committee is Mr. J. MacVeagh, M.P., and the honorary treasurer is Dr. Frederick Spicer.

New South Wales.

PROPOSED HOSPITAL FOR CANCER PATIENTS.

THE Home for Incurables at Ryde, near Sydney, has provided for many years past for a large number of cases of incurable disease, but has not taken in any cases of cancer. The large number of applications from patients suffering from this disease which are continually being received has impressed the committee so much that at the last annual meeting of the charity an appeal was made to the public for funds to establish a special hospital for this class of patient. To this end an appeal for £25,000, an amount which it was stated was required to carry out this project, was launched, and was warmly supported by His Excellency the Governor, and the Chief Justice, Sir William Cullen, the President of the Institution. His Excellency pointed out that the proposed extension of the home to accommodate cancer patients must commend itself to every one. The home depended solely on voluntary subscriptions for its income, and the income and expenditure were almost evenly balanced at about £9,000 a year; when it is stated that there are 90 beds in the home it will be seen that it is managed very economically. Sir William Cullen supported the proposal and pointed out that until medical science found some remedy for this disease it would be the duty of the public to provide a home for the unfortunate sufferers from cancer.

HEALTH WEEK.

"Health Week," which has been organized by a number of bodies directly concerned with public health matters, has been successfully carried through. On the Sunday a number of addresses on health questions were given in the churches by medical men, and throughout the week various lectures and addresses were delivered to different gatherings. One of the most effective means of creating a sense of individual responsibility in health matters is the display in the windows of a number of the large shops of a comprehensive range of exhibits. In one of the largest establishments in the city there was a complete exhibit from Queensland by Dr. Sawyer of the work of the hookworm campaign which is being carried on in that State. Another shop window made a display of curative industries for returned soldiers. With the approval of the Education Department teachers in the State schools are giving special lessons on health subjects. Another noteworthy feature of the week's activities has been the specially prepared hygienic lunches at the city restaurants. These have consisted of whole wheat meal flour in some shape or form, lettuce, tomatoes, cucumbers, etc., various rice croquettes, macaroni, and fruit, with milk and soda or barley water as beverages.

Some idea of the extent of the organization of this health week can be gained by the number of addresses and lectures given. Thus Brigadier General R. E. Roth gave a series of lunch-hour lectures and demonstrations at the Town Hall on swimming, health and life saving; Dr. Harvey Sutton, the chief medical officer of the Education Department, addressed an audience of nearly 3 000 teachers and students of the Technical College on "How to keep fit"; Professor Harrison, formerly assistant director of sanitation in Mesopotamia, lectured on "Flies and disease"; Dr. J. S. Purdy gave an address on health in relation to building, at the Master Builders' Rooms; Professor Wilkinson, professor of architecture in the University of Sydney, lectured on material environment and health, at the Women's Service Club, and Dr. Harvey Sutton lectured on health and efficiency to the girl students at the Technical College.

Correspondence.

RESEARCH DEFENCE.

SIR,—I much want to interest a wider public in the Research Defence Society, and to induce more people to become members of it. What is it? Surely, Research needs no defence? That is the sort of answer that one gets. It is true that Research needs no defence. But Researchers need defence, because there is a set of people who are for ever preaching that Researchers are callous and cruel, and that experiments on animals are not only painful but utterly useless. It is the aim of this society, of which I happen to be chairman, to answer and refute these attacks on Researchers and their work. It costs only 10s. a year to be a member of the society, or 5s. to be an associate member.

After some thirty years of work in connexion with hospitals, I have found that all the general public cares about is the curing of diseases which have actually got hold of them. It is very difficult to interest the general public in preventive medicine. To your readers I need not insist on the fact that preventive medicine can make no progress without research, and that many branches of research involve experiments on animals.

The public is always ready to believe ill of anyone, and these experiments are described by "antivivisectionists" in language as forcible as untrue. To prejudice ignorant people against the work of our men and women of science, antivivisectors impudently say that nothing has come of these experiments; that germs do not cause diseases; that Pasteur and Lister were all wrong and very cruel; that diphtheria antitoxin is useless; that the protective treatments against typhoid, paratyphoid, tetanus, and rabies are useless; that vaccination against small-pox is useless; that Malta fever was not due to the drinking of the goat's milk; that the protective treatment of sheep and cattle against anthrax is useless; and so on and so forth. I had almost written "so froth." This sort of talk is not only calculated to rouse hatred against science and practice; it is a national danger and a general nuisance.

It was nobody's business, till we started the Research Defence Society in 1908, to answer antivivisectors. We have already brought about a better understanding of the facts of the case. But antivivisection has wealth on its side, and, so long as it has money to spend, we cannot expect it to leave off. One hope is that as their various societies quarrel so much amongst themselves they may end by cutting each other's throats.

I appeal confidently to your readers to become members or associate-members of our society.—I am, etc.,

KNUTSFORD.

Research Defence Society,
11, Chandos Street, Cavendish Square,
London, W.1, Nov. 26th.

CLAYDEN *v.* WOOD-HILL.

SIR,—The facts of the case of Clayden *v.* Wood-Hill, recently decided at the Suffolk Assizes, a report of which appeared in your issue of November 26th, when a verdict of £750 damages was given against a medical man for alleged negligence in the treatment of a fractured femur, should be studied by all medical practitioners.

The plaintiff was thrown out of a trap and sustained a fracture of the upper third of the right femur. Two days later she was moved to the Beccles Cottage Hospital, in Suffolk, where Dr. Wood-Hill of Beccles attended her. The fragments united, and in eight weeks she returned home to Hertfordshire, with strict instructions from Dr. Wood-Hill that no weight was to be borne by the limb without the permission of her family doctor. A week later, when standing in her room at home, she felt the limb give way and she fell on to a sofa.

Abundant evidence was produced at the trial that as regards splinting, extension, and position of the limb, the fracture was treated in accordance with modern methods while the plaintiff was an inmate of the Beccles Cottage Hospital.

The verdict of the jury largely turned on the question as to whether, at the second accident nine weeks after the first, a giving way of the previously united fragments took place. By very adroitly drawing from one item in the medical evidence bearing on this question an inference which, from a medical point of view, was entirely unjustifiable, counsel for the plaintiff induced the jury to bring in a verdict for the plaintiff with damages as stated.

Many of those who watched the case throughout its course are convinced that a grave miscarriage of justice has taken place, and for this reason a fund has been started to reimburse Dr. Wood-Hill in the very heavy expenses incurred by him, which, we are informed, will amount, with costs, to about £1,600. Naturally the question of appeal has been very carefully considered, and Dr. Wood-Hill has been advised against this course by both his counsel and his solicitor.

It is true that at the time of the trial Dr. Wood-Hill was not a member of one of the medical defence societies, but this, although showing a lack of foresight on his part, is no reason for refusing to help him in this emergency. The fund will also serve as a token of the respect and esteem in which Dr. Wood-Hill is held in Beccles and the neighbourhood.

The following subscriptions have already been promised:

	£	s.	d.
Mr. Hugh P. Helsham, Beccles ...	26	5	0
Mr. John H. Allden, Beccles... ...	20	0	0
Mr. Christopher T. Helsham, Beccles	10	10	0
Sir Robert Jones, Liverpool	10	10	0
Mr. George E. Gask, London ...	10	10	0
Mr. R. C. Elmslie, London... ...	10	10	0
Dr. Samuel J. Barton, Norwich ...	10	10	0
Dr. F. W. Burton-Fanning, Norwich...	10	10	0
Sir Hamilton Ballance, Norwich ...	10	10	0
Dr. Wilson Tyson, Lowestoft ...	10	10	0
Sir John Lynn-Thomas, Cardiff ...	10	0	0
Dr. H. Muir Evans, Lowestoft ...	5	5	0
Dr. C. B. Ticehurst, Lowestoft ...	5	5	0
Dr. D. W. Boswell, Lowestoft ...	5	5	0
Mr. J. C. Mead, Lowestoft	5	5	0
Mr. S. H. Burton, Norwich	5	5	0
Mr. Donald D. Day, Norwich ...	5	5	0
Dr. Sydney H. Long, Norwich ...	5	5	0
Mr. A. J. Blaxland, Norwich... ...	5	5	0
Dr. R. W. Mullock, Southwold ...	5	5	0
Dr. D. H. Hutchinson, Lowestoft ...	3	3	0
Mr. E. W. Everett, Norwich... ...	2	2	0
Dr. H. J. Starling, Norwich	2	2	0
Mr. S. F. Smith, Beccles	2	2	0

Subscriptions should be sent to Sir Hamilton Ballance, All Saints Green, Norwich, and will be acknowledged from time to time in the medical press,—We are, etc.,

ROBERT JONES, Liverpool.
GEORGE E. GASK, London.
R. C. ELMSLIE, London.
JOHN LYNN-THOMAS, Cardiff.
HAMILTON A. BALLANCE, Norwich.
WILSON TYSON, Lowestoft.

Norwich, Nov., 26th.

SIR,—After reading the account of the above case in yesterday's JOURNAL, also Mr. R. C. Elmslie's letter, surely two thoughts should occur to most of us?

1. We should assure Dr. Wood-Hill of our sympathy with him.

2. We of this generation should consider it our bounden duty, as a profession, to see to it that such a judgement is not allowed to pass unchallenged, both in our own interests and in the interests of those that come after us.

It therefore follows that subscriptions should be raised to defray all the expenses of an appeal. How can this best be done?—I am, etc.,

Cranborne, Salisbury, Nov. 27th. CHAS J. GIRLING.

SIR,—The case of Clayden *v.* Dr. Wood-Hill, as reported in the BRITISH MEDICAL JOURNAL of November 26th, makes one wonder if one can really afford to practise medicine and surgery—if after employing all the methods one was taught as a student and doing one's best for a patient (as Dr. Wood-Hill evidently was), to be suddenly savagely penalized to the extent of nearly £1,000 is enough to make any humble general practitioner pause before he tackles a difficult fracture. It is evident that if this verdict is allowed to stand the position of the medical practitioner becomes one of great risk and insecurity, as the whole question of what constitutes malpraxis is changed from what it was before. This being so, is not this a case which should be fought tooth and nail by the Association? If a subscription list were opened I am sure many would avail themselves of the opportunity of rectifying a serious miscarriage of justice.—I am, etc.,

Burwash, Sussex, Nov. 27th. A. W. S. CURTIES.

SIR,—I trust our Association and the profession at large do not mean to take the decision in this case "lying down." That such a verdict in face of the weight of evidence can be considered as final is unthinkable. No practitioner is safe now, it would seem, from the risk of ruin after he has done everything he possibly could or in reason be expected to do for his patient. It is a very serious position for every one of us to consider.

I have always understood that all that was required of a practitioner—apart from the expert—was that he should have shown all ordinary skill and competence. Dr. Wood-Hill, in my view, did so, and possibly more; and we have the evidence of an expert in Sir Hamilton Ballance, who said Dr. Wood-Hill's treatment was just what he himself would have done. What can judge or jury want beyond this?

Mr. Elmslie's letter is of the highest importance as showing that both judge and jury seemed to have ignored or imperfectly understood some parts of his evidence which had an important bearing in favour of the defendant.

I hope an appeal will be lodged, and that it will have the whole weight of the Association and the profession at large behind it, and, further, that a fund be opened at once to meet the expense.—I am, etc.,

Felton, Northumberland, Nov. 28th. ROBT. A. WELSH.

PULMONARY CIRCULATION.

SIR,—In the JOURNAL of November 12th Dr. S. W. F. Underhill gives the results of tying the left pulmonary artery, which, he states, has no effect on the aortic pressure. In these experiments the work of Lichtheim is repeated with similar results. Landgraf in 1892 showed quite clearly that the apparent absence of change in the aortic pressure was due to the artificial respiration, and this view is supported by Leonard Hill in Schafer's *Textbook of Physiology*. The recent work of Sharpey Schafer shows what an important part alveolar pressure plays in the causation of respiratory variations in the blood pressure. Similar objections may be put forward regarding like experiments of Bainbridge and Underhill in the *Proceedings of the Physiological Society* of March of this year.

The experiments of Underhill, if carefully analysed, are far from convincing, indeed it is difficult to see how he arrives at his results from them. It may be that his examples are unfortunately chosen. In A. and B. there is a definite fall in aortic pressure after ligation of the left pulmonary artery. That this is obtained during artificial

respiration is all the more striking as such respiration would tend to mask the effect, as pointed out by Hill in regard to Lichtheim's experiments. In B, also, the fact that a minute output of 378 c.cm. does not raise the blood presure so much as an output of 288 c.cm. may be taken to indicate a variable factor which renders the experiment fallacious.

The anaesthesia is a weak point in all the experiments, and probably could be best avoided by the use of decerebrate preparations. It is difficult to see how a constant level of anaesthesia was guaranteed when enormous changes were made in the ventilation, and especially when a change was made from artificial to natural respiration. For example, in F 2, where the aortic pressure actually rose after tying the left pulmonary artery, circulatory depression (72 mm.) at the beginning of the experiment is suggested, but as urethane and atropine were given also, several factors have to be considered. On comparing the results of Bainbridge and Underhill given in March with the results of the present apparently similar experiments, there are some striking differences, for which no reason is given, while in drawing conclusions the work of Krogh and Shaw Dunn could with advantage have been considered

I do not wish to dispute the findings of Dr. Underhill unduly, as they are evidence of much work, but I do think there are several points worthy of further consideration and explanation before the results can be accepted.—I am, etc.,

R. J. S. McDOWALL.

Physiological Laboratory,
University of Leeds, Nov. 16th.

DESTRUCTION OF LICE ON HAIR CLAD AREAS.

SIR,—As an aural surgeon who sees a considerable number of out-patients in a slum area and as a certifying surgeon I have an opportunity of seeing some 2,000 more or less lousy heads per annum, mostly in children at school or in "young persons" coming straight from school to factory life.

I was accordingly very interested in Mr. A. Bacot's article headed "Wood tar oils for the destruction of lice on hair-clad areas" in your issue of November 19th, the more so as I had myself attempted some experiments last year with a view to finding a treatment for this condition that would be "cheap, safe and efficient."

I was disappointed to find absolutely no mention of the one essential to safety in any mixture that is to be prescribed for home use—namely, non-inflammability.

When one considers the ingrained carelessness of the class for whom such treatment is usually required, and the almost universal practice of girls drying their hair at the fire, one must refuse to prescribe a dangerous mixture such as olive oil and paraffin for *home* use, though it is very effective for institutional use. But I for one would not consider that I had been a public benefactor if, in the course of five years I had succeeded in getting 10,000 girls to cleanse their hair, and in that time one girl lost her life through carrying out my prescription.

Any mixture which contains (*a*) a substance which will kill the louse, which is not difficult, as the paraffin does in the above, and (*b*) a heavy oil which will block up the blow-hole of the nit and so prevent him from getting out of his capsule, a feat which he performs by means of air pressure—a true *vis a tergo*—will be effective. It would probably be in vain to look for a substance which would dissolve the cement without injuring the hair, but a fine tooth comb and goodwill work wonders.

What is required is to discover such a mixture which will be cheap, non-inflammable, non-injurious to the skin and hair, and fairly easily removable from the hair afterwards. This should not be impossible and one hopes that Mr. Bacot or some of our laboratory workers will tackle it seriously with a perception of the real problems involved.—I am, etc.,

E. S. BURT HAMILTON, M.B., F.R.C.S.Ed.

Manchester, Nov. 21st.

IMMEDIATE TREATMENT OF DIPHTHERIA.

SIR,—In view of the increase of cases of diphtheria in London, it might be of interest to your readers to know the results of treatment of this disease in two of the largest settlements in connexion with Dr. Barnardo's Homes—namely, the Boys' Garden City, Woodford Bridge, and the Girls' Village Home, Barkingside. There are over 2,000 children in residence, and the population is constantly changing.

In the past seven years there have been 205 cases of which I have record, with two deaths, under 1 per cent. During the past two years 96 cases, with no death. This good result I attribute mainly to two factors: (1) The cases are seen early, usually on the first day, and are immediately taken into hospital under skilled nursing. (2) Any case of sore throat which is sufficiently suspicious as to call for a swab being taken for bacteriological examination is immediately given an intramuscular dose of antitoxin of 2,000 to 6,000 units, according to its apparent severity. Thus by the time the report is known the exudate often shows signs of abating. If the result is positive, valuable time is gained; if negative, no harm has been done.—I am, etc.,

G. GUSHUE-TAYLOR, M.B., B.S., F.R.C.S.

Barkingside, Essex, Nov. 21st.

MEDICINE IN BAGHDAD.

SIR,—I notice in your issue of October 1st, 1921, an annotation on the work of the Baghdad Medical Society, wherein it is stated that this body "has been converted into the Baghdad Division of the Mesopotamian Branch of the British Medical Association."

This is a misapprehension. The two societies have and will have an entirely separate existence.—I am, etc.,

GORDON SPENCER, B.A., M.D.,
Honorary Secretary, Mesopotamian Branch,
British Medical Association.

Military Hospital, Baghdad,
Nov. 5th.

Obituary.

SIR SYDNEY BEAUCHAMP, M.B., B.CH.CANTAB.

WE announced briefly last week the tragic death of Sir Sydney Beauchamp, as the result of a street accident in London on the night of November 22nd. While walking with a friend he was knocked down by a motor omnibus in Pall Mall, and died soon afterwards in Charing Cross Hospital. It was only last year that he was knighted in recognition of his services as resident medical officer with the British Delegation during the Peace Conference in Paris. He had practised with very great success for many years in William Street, Lowndes Square.

Sydney Beauchamp was born in 1861, the son of the late Henry H. Beauchamp of Bexley, Kent. He began his medical studies at Gonville and Caius College, Cambridge, graduating B.A. in the Natural Sciences Tripos in 1887. He then went to St. Bartholomew's Hospital, and two years later obtained the M.R.C.S. and L.R.C.P. diplomas. He took the M.B. and B.Ch. degrees in 1890, and became M.A. in 1896. During his early days of practice he acted as clinical assistant in the Electrical Department at St. Bartholomew's.

Sydney Beauchamp's personal qualities very soon began to bring him success in what is still called "West End" general practice. He was an indefatigable worker, methodical and thorough, with the gift of inspiring confidence in his patients and their friends. He was a man of the world, equal to every occasion professional or social, with a singularly tactful and charming manner. The art of handling men, women and children came to him by nature and was perfected by long experience. This quality of entering into the minds and feelings of his patients is indicated by his friends and colleagues, whose appreciations we print below.

During the war Dr. Beauchamp acted as medical officer of the Wrest Park Military Hospital, and gave the benefit of his large obstetrical experience to the Officers' Families Fund, to whose lying-in hospital he was physician. He married in 1891 Edith, daughter of Henry Morton Sharp. The funeral took place on November 25th, the first part of the service being held at Holy Trinity Church, Sloane Street.

Lord DAWSON OF PENN writes:

Sydney Beauchamp held a place of his own in the practice of medicine. For more than thirty years he laboured unceasingly, forgetful of self and intent that his many patients should have the best he could give and obtain for them. To this end he shaped his life. His holidays were few, his working days were long and began

before a large part of the world was astir. As a doctor he had the gift of grasping the essentials of a case, and although suffering, whatever its cause, inspired him to help, he quickly perceived if it was only of transient importance or, on the other hand, foreboded serious illness. Though his intuition was quick to appreciate symptoms and appraise their value in each individual patient, he at the same time availed himself of every scientific method which would further sound diagnosis and treatment.

Beauchamp was especially skilled in obstetrics, and his increasing reputation and occupation in this branch of work had led him to give up general practice, and he had, so to speak, begun a new career, which was pre-eminently suited to his abilities and tastes. Here he was helped by his devotion to children, who, on their part, always sought him out with that sure instinct for those worthy of admission to their world. Among the important chapters of his life were the many months he worked in Paris as physician to the British Delegation at the Peace Conference, where he was not only the doctor but the trusted friend of a large and varied community, and it was after this that his work was recognized by the bestowal of a knighthood.

Of Beauchamp's personal qualities it is a privilege to speak. His character was one of singular beauty; his tender sympathy enabled him at once to understand the difficulties and struggles of many who sought his aid. To be his patient was to be his friend; he was never heard to say an unkind word to anyone or of anyone; worldly advantage he accounted but little; to him the need was sufficient inspiration for service; his pervading cheerfulness was not a veil for a light-hearted carelessness, but was born of faith and courage. For the many from far and wide who to-day feel bereft Sydney Beauchamp—his work, his understanding heart, his wise counsel, and his ever-present friendship—will be an abiding memory. His labour of love has ended but our love for him will endure.

WE are indebted to Dr. G. F. STILL for the following personal tribute:

The world is the poorer for the loss of Sir Sydney Beauchamp. The dreadful tragedy that took him from us on Tuesday last has brought sorrow to many a family, for he was not merely the professional adviser, he was a friend, and a friend beloved, to all his patients.

It is thirty-six years ago since I first met him as an undergraduate of Caius College, Cambridge, and in those days he had the same winning charm that drew people to him in later life. Some of us at Caius used to call him "the lovely B.," and lovely he was in the sense of being lovable and loving. I can fancy that, like Abou Ben Adhem, he might have said to "the angel writing in a book of gold":

> "I pray thee, then,
> Write me as one that loves his fellow men."

He was one of those rare souls that find a joy and inspiration in "the common round, the daily task." Only a few days before he died I called upon him one morning when he was just getting up after having been at work most of that night and all the previous night, and to my sympathy he replied, "I love my work, it is simply a joy to me." To his patients he brought comfort and confidence; he was of those who "passing through the Valley of Weeping make it a place of springs," and grievously will his patients miss him.

In his earlier days he was engaged in general practice, but his leaning had always been to obstetrics, and latterly he had devoted himself more and more exclusively to this branch of his profession; but whether in the anxieties of obstetric work or in the heavy labours of a war hospital, or in the peculiar responsibilities of his position at the Peace Conference in Paris, Beauchamp never spared himself; he was a man who gave himself not grudgingly but joyously for others—and surely this is life's ideal.

"L. G. B." writes: As one whose friendship with Beauchamp dates back some twenty-five years may I be permitted to add a word of tribute to his memory. Beauchamp started practice in South Kensington thirty years ago, and through his professional ability, charming personality, and great love for his profession, he built up a very large general practice. It was only during the past few years that he gave up general practice and confined himself to the branch of the profession in which he took most interest, namely, obstetrics and gynaecology; in this he was very successful owing entirely to his great experience, sound judgement and technique; his gentleness in the application and use of forceps was extraordinary—an example which might well be followed and imitated by others. His kindness and hospitality to young and struggling practitioners was proverbial; the writer received many such kindnesses during his long friendship for which he will always feel grateful. Beauchamp was ever ready to lend a helping hand at some difficult medical or maternity case, whether his services would be remunerated or not. To him it was immaterial; his only object was to help a colleague and to alleviate distress. The profession has lost a member whom it can ill afford to spare, his professional friends a lovable and loyal colleague, and his patients a sound and capable practitioner. Jealousy was unknown to him. His sympathetic nature, cheering disposition and charm of manner endeared him to all patients, who will sadly miss him.

G. S. ELLISTON, C.B., M.R.C.S., V.D.,

Formerly Medical Officer of Health, Ipswich.

WE much regret to announce the death of Colonel George Sampson Elliston, C.B., which took place at his residence in Felixstowe, on November 20th. Born in 1844 at Ipswich, the son of a well-known physician, Dr. William Elliston, he received his medical education at Guy's Hospital. He qualified with the diplomas of M.R.C.S.Eng. and L.S.A. in 1866, and after resident appointments at the Royal Free Hospital and the East Suffolk Hospital he commenced practice at Ipswich. In 1875 he was appointed the first medical officer of health for the county borough and port of Ipswich, and later appointments included that of medical officer of the Isolation Hospital and of the Samford Hundred. He held office for the long period of thirty-two years, and under his wise guidance great improvements were effected in that time in the public health arrangements in Ipswich. Dr. Elliston became a volunteer in 1862, and served with unflagging enthusiasm until the age limit necessitated his retirement in 1912. He was a member of the War Office Committee responsible for the scheme of the Royal Army Medical Corps (T.F.), and he was appointed the first A.D.M.S. of the East Anglian Division of the Territorial Army. He was created C.B. in 1911, and was one of the first recipients of the Volunteer Decoration. On his retirement he went to live at Felixstowe, where he became a member of the Urban District Council.

Dr. George Elliston was an old member of the British Medical Association, and in 1900 was vice-president of the Section of Navy, Army, and Ambulance at the Annual Meeting. He was a brother of Dr. W. A. Elliston, who was President of the Association when it met at Ipswich in 1900, and uncle of the late Mr. Guy Elliston, for sixteen years Financial Secretary and Business Manager of the Association. The funeral took place on November 24th in the presence of a very large gathering of friends. The British Medical Association was represented by Mr. P. L. Giuseppi, honorary secretary of the Suffolk Branch.

Colonel E. C. FREEMAN, C.M.G., writes: The late Colonel George Sampson Elliston, C.B., was one of those in whom the military spirit is strong, although their lot is cast in civilian life. Elliston joined the old Volunteer Force even before he began his medical studentship at Guy's. Later on he took an active part in the formation of the brigade bearer companies which marked the first effort of the Force towards medical efficiency. He was appointed A.D.M.S. of the East Anglian Division at the inception of the Territorial Force and I joined him as his D.A.D.M.S. in 1907. The situation was then somewhat problematical, as we had but few medical officers and only some twenty men (the wreckage of brigade bearer companies) wherewith to form four field ambulances and the regimental medical service of a complete division and mounted brigade. However, Elliston's enthusiasm, hard work, and bonhomie triumphed, and very soon the infant cadres began to show healthy growth. He had an intimate knowledge of men and matters in East Anglia, and always knew the right men to get hold of and where they

were to be found. He devoted himself to the work and was most regular in his attendance both in office and in camp, and, although an enthusiast, was most delightful to work under, full of old-fashioned courtesy and kindness. He was broadminded and welcomed new developments, such as the formation of the cadre of a general hospital, the formation of a training school for R.A.M.C., the addition of a D.A.D.M.S. Sanitation. He also took great interest in the training of the V.A. detachments in the divisional area, so that they could be relied on to work in concert with the R.A.M.C. in case of emergency. One is glad to think that he lived to see the organization which he had initiated successfully pass the test of actual war in Gallipoli, Egypt, and Palestine as the R.A.M.C.T. of the 54th Division. Elliston was awarded the C.B. on retirement; he was also a Knight of Grace of the Order of St. John of Jerusalem—a well-deserved recognition of the sterling work he did for St. John Ambulance in East Anglia extending over a period of many years. He has died honoured and at a ripe age, and we have lost a good friend, a good patriot, a good organizer, and one in whom the sense of duty was always supreme.

We are indebted to Dr. MICHAEL BEVERLEY for the following appreciation: To know George Elliston was to love him. These few words express what we who were thus privileged felt on reading of his death. During the greater part of my professional life I was intimately associated with the two brothers William and George Elliston of Ipswich. I therefore readily comply with the request of his family to write a short appreciation of the one who has now joined his brother in the "Great Beyond." Little, however, can be added to the words with which I commenced. George Elliston was highly esteemed by all who were brought into contact with him, either professionally or otherwise. Adhering strictly to the etiquette and dignity of his profession, especially in his public work, which often demanded great tact and judgement, he was able to accomplish great things in improving the sanitation of the districts committed to his charge, and although he implicitly adhered to the axiom, "Sanitas, sanitas, omnia sanitas," he never allowed the utopian schemes of faddists to influence his judgement. His long connexion with the St. John Ambulance Association was to him a labour of love. How much appreciated that devoted work was, the well deserved honours he received abundantly testify. It was once my good fortune to witness a practical illustration of this: Chancing to be passing near the Horse Guards on the occasion of one of the Victorian celebrations—the crowds were enormous, and many were taken ill—I recognized the tall figure of my friend in the midst of it with his stretchers and ambulances; through his personal help and superintendence it was wonderful to see how quickly the fainting and incapable were removed and order restored before the approach of the Royal cortège; it made a great impression on me at the time. An English gentleman of the true type, his old-world courtesy and natural bonhomie, made George Elliston a *persona grata*—indeed, *gratissima*—in the circle in which he moved; friends he had in legion, enemies none.

SIR JOSEPH REDMOND, M.D.,

Physician to the Mater Misericordiae Hospital, Dublin.

THE death of Sir Joseph Redmond, M.D., F.R.C.P.I., took place at his residence in Dublin on November 26th. For the past year he had not enjoyed his usual health, and latterly suffered from heart trouble with the more common complications. Sir Joseph Redmond was the son of the late Mr. Denis Redmond, Sandford, Ranelagh, Dublin. He received his early education at the Jesuit School, Belvedere College, Dublin. He became a Licentiate of the Royal College of Physicians in Dublin in 1878; he was elected a Fellow in 1884, and was President from 1906 to 1908. He was senior physician, Mater Misericordiae Hospital, Dublin; consulting physician, National Hospital and Coombe Hospital, Dublin. He was also a Fellow of the Royal Academy of Medicine in Ireland, and was an ex-president of the Section of State Medicine. He was censor and examiner of the Royal College of Physicians and the Conjoint Board. He read many papers at the meetings of the Medical Section of the Royal Academy of Medicine. Sir Joseph Redmond was very popular amongst the members of his profession, and was a highly esteemed citizen of Dublin.

WILLIAM STOKER, F.R.C.S.I.,

Surgeon to Jervis Street Hospital, Dublin.

THE death of Mr. William Stoker, F.R.C.S.I., which occurred recently at his residence in Dublin, caused much regret amongst the profession in Dublin and a large circle of friends. Mr. Stoker was born in Dublin seventy-eight years ago and came of a family which has been very long connected with the medical profession, to which it gave many well known and distinguished members. He graduated in arts in the University of Dublin and was admitted in 1873 a Fellow of the Royal College of Surgeons in Ireland. He was only a short time qualified when he was appointed surgeon to Jervis Street Hospital, a post he held down to the time of his death. He was a lecturer in the Old Ledwich School of Medicine, and when that body was taken over by the medical school of the Royal College of Surgeons he was appointed Professor of Surgery in that College. He was for many years a member of the Council of the Royal College of Surgeons in Ireland and never failed in the annual elections to be returned amongst the first in the list. Amongst many other offices he was examiner in surgery under the conjoint schemes of the Royal Colleges of Surgeons and Physicians, Ireland, and examiner in forensic medicine in the old Queen's University. He was a man of fine physique and enjoyed such very good health up to the time of his death that he looked a much younger man than his age. In his student and younger days he was devoted to athletics, particularly to rowing and cricket.

WE regret to record the death of Dr. WILLIAM MUNN HUNTER, which took place on November 10th at Eckington, near Sheffield, at the advanced age of 94. Dr. Hunter was educated at the University of Glasgow, where he graduated M.D. and C.M. in 1862. After a short period of medical practice in Paisley, with his brother, the late Dr. J. B. Hunter, he went to Eckington, where he built up a large general practice, and was highly esteemed by all classes of the people, retiring from practice only a few years ago. He was an old member of the British Medical Association. His wife predeceased him some thirty years ago, but he is survived by nine of his eleven children.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Scholarships.

A WAR Memorial Scholarship of £100 per annum is offered for competition at University College on December 6th, and is confined to intending medical students.

Scholarships in Natural Science, most of which are open to intending medical students, are offered at University, Balliol, Oriel, Lincoln, Magdalen, Christ Church, and St. John's, examining in combination on December 6th, and at Jesus College on December 17th.

Appointment of Examiners in Medicine.

The following appointments are announced:—In Organic Chemistry: Edward Hope, M.A., Fellow of Magdalen College. In Human Anatomy: Professor Arthur Thomson, M.A., Student of Christ Church. In Human Physiology: Martin W. Flack, B.M., M.A., University College. In Materia Medica and Pharmacology: Reginald St. A. Heathcote, D.M., New College. In Pathology: Professor Henry Roy Dean, D.M., New College. In Forensic Medicine and Public Health: Francis J. Stevens, D.M., Exeter College. In Medicine: Harold Batty Shaw, M.D.Lond. In Surgery: Sir William Thorburn, M.D.Lond. In Obstetrics and Gynaecology: George H. A. Comyns Berkeley, M.B.Cantab.

UNIVERSITY OF GLASGOW.

THE University Court announces in our advertisement columns that forms of application for permission to commence the study of medicine in April, 1922, may now be obtained from the Registrar of the University, to whom they must be returned not later than February 13th, 1922.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

FIFTEEN medical entrance scholarships and exhibitions, of an aggregate total value of about £1,300, tenable in the Faculty of Medical Sciences of University College and King's College, and in the medical schools of Westminster Hospital, King's College Hospital, University College Hospital, the London (Royal Free Hospital) School of Medicine for Women, and the London Hospital, will be offered for competition on Tuesday, June 27th, 1922. Full particulars and entry forms may be obtained from the Secretary of the Board, S. C. Ranner, M.A., the Medical School, King's College Hospital, Denmark Hill, London, S.E.5.

Medical News.

THE next social evening of the Royal Society of Medicine will take place on Wednesday next, December 7th, and not as stated last week, on November 30th. At 8 p.m. the President and Lady Bland-Sutton will hold a reception, and at 9 p.m. Sir Berkeley Moynihan will deliver a short address on medicine in art, which will be illustrated.

AMONG the honours conferred in connexion with the inauguration of the new system of government in Malta was the knighthood conferred upon Sir Philippo Sciberras, M.D.Malta. The first Minister of Health in the new government of Malta is Professor Mifsud, M.D.Malta.

A MEETING of the subscribers to the War Emergency Fund will be held on Wednesday, December 7th, at 5 p.m., in the rooms of the Medical Society of London at 11, Chandos Street, Cavendish Square, W.1, when a report upon the work of the fund since its foundation will be presented.

THE Council of Epsom College will shortly award a St. Anne's Home Scholarship of £42 a year to the orphan daughter of a medical man between the ages of 7 and 12. Full particulars can be obtained from the Secretary at the office, 49, Bedford Square, London, W.C.1.

THE National Council for Combating Venereal Diseases, 80, Avenue Chambers, Southampton Row, W.C.1, has issued the first number of *Health and Empire*, its new monthly journal; the price is 6d. Introductory notes are signed by the President, Lord Gorell, and Sir Malcolm Morris.

WE have recently been informed that post-graduate courses have been held in Vienna during October and November, and that a new course began on December 1st. The subjects dealt with include anatomy and physiology; medicine, surgery, orthopaedics and the diseases of children; eye and ear diseases; skin diseases; venereal diseases; urology and the use of *x* rays in the diagnosis of diseases and injuries of the head. Full particulars can, we understand, be obtained from Professor Wenckebach, 1, Medizinische Univ.-Klinik, Lazarettgasse 14, Wien IX.

ON the occasion of the centenary celebrations of the birth of Louis Pasteur, there will take place from May to October, 1923, an inter-allied exhibition of hygiene at Strasbourg, the city where Pasteur spent his life from 1849 to 1854, as professor of chemistry. This exhibition will be organized under the auspices of the Pasteur Institute of Paris, and of the city and the University of Strasbourg. Individuals and societies interested in the Urban Public Health Section of this exhibition may obtain further particulars from l'Exposition interalliée d'hygiène, Strasbourg 1923, 2e section (Hygiene urbaine), 1, Quai Lezai-Marnésia, Strasbourg.

A SUCCESSFUL reunion dinner of the Prince of Wales's Hospital and North-East London Post-Graduate College was held at the Trocadero Restaurant, with Dr. Arthur Giles in the chair, on October 27th. It was unanimously decided that a Reunion Association be formed in connexion with the Hospital and Post-Graduate College, and a committee was appointed for this purpose. Dr. Jenkins Oliver, 1, Devonshire Place, W., and Mr. S. O. Rashbrooke, 15, Gordon Street, W.C., agreed to act as honorary secretaries, to whom all inquiries and communications should be addressed.

ACCORDING to *La Medicina Contemporanea*, the number of deaf-mutes in Portugal amounts to 75 per 100,000 inhabitants, a higher proportion than in any other European country.

THE annual address of the Newcastle-upon-Tyne and Northern Counties Medical Society will be delivered in the library of the Royal Victoria Infirmary on Friday, December 9th, at 4.45 p.m., by Mr. Herbert Tilley, F.R.C.S., Surgeon to the Ear and Throat Department, University College Hospital, London. Mr. Tilley's subject is "Some common diseases of the ear, throat, and nose." The annual dinner will be held the same evening in the Grand Assembly Rooms, Barras Bridge, at 7.15 p.m. Price of ticket 15s. Application to be made to Mr. Norman Hodgson, 14, Jesmond Road, Newcastle.

A MEETING of the Association of Economic Biologists will be held at 2.30 p.m. on Friday, December 9th, in the Botanical Lecture Theatre of the Imperial College of Science, South Kensington, S.W.7. The chair will be taken by the President, Sir David Prain, F.R.S. Professor J. H. Priestley, of the University of Leeds, will open a discussion on "The resistance of the normal and injured plant surface to the entry of pathogenic organisms."

AT the meeting of the Hunterian Society to be held on Wednesday next, December 7th, at 9 p.m., at Sion College, Embankment, E.C.1 (close to Blackfriars Bridge), Sir Henry Gauvain will read a paper on "Surgical Tuberculosis," which will be illustrated by lantern slides. All members of the medical profession are cordially invited to attend.

THE next New Zealand Medical Congress will begin at Wellington on February 27th, 1922. It will be opened formally by His Excellency the Governor-General (Viscount Jellicoe). The Section of Medicine will hold its session on February 28th; the principal discussion, on "Medical treatment of diseases of the alimentary tract," will be introduced by Dr. W. Marshall Macdonald. The Section of Midwifery and Gynaecology will meet on March 1st, when a discussion on "Maternal mortality" will be opened by Dr. Henry Jellett. The Section of Surgery will meet on March 2nd, the chief subject for discussion being "Cancer of the large bowel," which will be introduced by Dr. Robertson. The Congress will continue until March 3rd, when, in the evening, the annual dinner will be held.

THE *Times* announces that as a result of recent negotiations the control and distribution of help for Russian scientists has been entrusted to the Finnish official representative in Petrograd. So far some 90 tons of foodstuffs have been delivered from Finland for this purpose.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscera, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"G. M.," a medical woman, has a nominal salary of £517 per annum, but from this £130 is deducted for board and lodging. She asks if she is liable on the £517?

On the facts stated, yes. If the terms of the appointment were that the salary was to be £387, *plus* board and lodging, the result would be the same so far as "G. M." is concerned, but the legal position would be different and the income tax liability would be on £387 only.

"S. B." has been separately assessed to tax on a fee of £3 3s. received from a medical board for acting as substitute for his chief.

If, as the word "chief" implies, "S. B." is acting as an assistant, the assessment is technically correct, the reason being that there are apparently no "profits," as distinct from the remuneration of employment, into which it can fall as a sundry receipt. With regard to "unexpected outlays incurred during the year," these would be allowable only where the income is assessable on the current year's basis—as in the case of an emergence of a new class of earning. We cannot say to what extent it is the practice to make such small separate assessments as the one in question.

"D. M." inquires, "What is the last day on which I can claim any further expenses for 1921-22," and "Can the purchase price of a car be deducted?"

The return already made is presumably based on the profits—that is, the excess of the receipts over the expenses—of the past three years. The expenses in the financial year

itself do not seem to affect the assessment. The expense allowable in the case of the purchase of a car is the net cost of buying a car similar in power and quality to the one discarded.

"T. G. H." bought a car for £300, and in 1920 sold it for £420 and bought a car of the same make and horse-power for £759. What deduction can he claim?

Assuming that the displaced car was new when he bought it, the appropriate deduction is £759 - £420 = £339. The local inspector has apparently overlooked the official statement made before the Royal Commission on the Income Tax to the effect that the allowance is to be based on the actual replacement cost notwithstanding rise in price.

LETTERS, NOTES, ETC.

Chaulmoogra Derivatives.

In a recent article upon the treatment of leprosy (BRITISH MEDICAL JOURNAL, November 19th, 1921, p. 851, reference was made to the history of the chaulmoogra oil derivatives, and it was stated that Dean and Wrenshall had recently isolated chaulmoogric and hydnocarpic acids, and had assigned formulae to them. Dr. T. A. Henry has written to us pointing out that Dr. Power and his co-workers in the Wellcome Chemical Research Laboratories, isolated the above acids seventeen years ago and assigned them to chemical formulae. We regret that through inadvertence we should have failed to give credit to Dr. Power and the other workers concerned for this very important advance in the chemistry of chaulmoogra oil.

Motor Cars: Spare Parts.

"REGIUS" writes, with reference to this subject, on which several letters have appeared in our correspondence columns: My experience has been similar to that of your correspondent, Mr. Lionel Stretton. A short time ago I ordered by letter a spare part costing £10 10s., enclosing a cheque for that amount with my order. After waiting five days I wired the firm, asking if my letter had been received. Only after this was the part sent on. Finding that an additional spare part, costing 30s., was necessary to complete the repair, I wired the firm on a Friday, asking them to dispatch the part by passenger train on Saturday so as to save postal delay at the week-end. I got no reply till Tuesday afternoon, when I received a letter demanding payment of the 30s. first. This latter "spare" held me up for seven days, during which I could not use my car. I hope medical men will take note of the shabby treatment served to some of their colleagues by British motor firms which claim to sell ideal cars for doctors and treat our urgency orders for spare parts with such scant courtesy.

DR. G. W. MIDDLEMISS (Settle) writes: Dr. Stretton and Dr. Bletchly have been unfortunate in their choice of make of motor car, and the latter's experience of inability to obtain spare parts for a foreign-made car is not uncommon. An old-established and reputable firm of British motor car makers create no difficulties, and send spare parts the same day on receipt of telegram, or by return of post on receipt of letter, asking for payment within a month, being as prompt as any American firm. I have an Arrol-Johnston car, bought new in 1912, and spare parts have always been sent to me by return of post, and this firm is as courteous regarding payment as it prompt in dispatch. If motor car users would deal with sound British firms they would have no difficulty in this matter of spare parts.

Varicella and Herpes Zoster.

DR. P. W. BLACK (Criccieth) writes: I have been attending a middle-aged lady for chicken-pox. I asked her if she had been exposed to any infection. She replied "No." I then asked her if she had been near anyone with shingles. She replied, "Oh, yes, I have been nursing a friend of mine." She then told me she had had a letter from a friend in Australia who was suffering from shingles and went to stay in a house where there were a lot of children, and all the children developed chicken-pox. I think as many of these cases ought to be reported as possible.

Acute Otitis Media in Infants.

MR. M. R. SONI, M.B., Ch.B.Edin. (Stepping Hill Hospital, Stockport), writes: This note is written with a view to expressing my belief that the mastoid cells, antrum, and middle ear on both sides should be explored as a routine measure when performing a *post-mortem* examination on the body of an infant. This is particularly so in medico-legal cases and in those in which no other apparent cause of death can be discovered.

J. D., a fine healthy child, aged 6½ months, admitted into the hospital for nursing, as his mother was ill at home. He took the bottle well, and gained weight each week, till one afternoon he was suddenly taken ill with vomiting. He vomited about six times, and rapidly became exhausted. He was constipated, and everything administered was rejected. The neck was not retracted, and no evidence of meningeal trouble was present. He gradually sank into a comatose condition, and died in thirty hours. A diagnosis of gastritis was made, suggested by persistent vomiting, sunken fontanelles, apparent tenderness of abdomen, etc. At the necropsy no cause of death was discovered till the antrums and middle ears were explored, when they were both found full of pus. The drums were unruptured, but bulging outwards. The mucous membrane of the stomach and intestine was normal.

There is no doubt that death was due to acute septicaemia set up by inflammatory process in the middle ear. The vomiting, in my opinion, was purely of reflex origin. The remarkable thing about the case is that there was no local lesion in the form of a discharge from the ears or swelling over the mastoid process to draw my attention to the source of trouble. On more than one previous occasion have I found pus in the middle ear when its presence was not even suspected.

Stray Thoughts.

DR. THOMAS CARRUTHERS (Kilbarchan, Renfrewshire) writes: Here are one or two of the stray thoughts of a general practitioner. Who is it who sees wonderful recoveries? I never do. A wonderful recovery is the result of a wonderful prognosis. Why should it be that the measles rash comes out first about the face and neck and the scarlet fever rash about the chest, and why should they differ in character even then? "O, I would like to ken . . . the reason o' the cause and the wherefore o' the why." Why anything, in fact! Such questions are oppressive and betray our awful ignorance. A specialist is a useful man apt to lose the sense of proportion. Prognosis depends a great deal on knowing what has been going on before (προγινοσκω!). Those who pay pay and those who don't don't, charge what you like. Can anyone give the chain of reasoning whereby I prescribed spectacles for fortnightly menstruation? The key was via the nervous system, and the cure was absolute.

The M.B. of the University of London.

"M." writes: The medical student entering hospital with the idea of ultimately taking his M.B., B.S.Lond. degrees has a long and expensive time before him. If he is hard working and "has the luck" to get through all his examinations the first time he enters for them he qualifies for the degree in the scheduled time. If he comes down, however, in the Second M.B. in June he has to wait till the following March before having a chance to go up for the examination again. Surely there should be an examination about December. He would then have a chance to enter upon his real hospital studies, if he passed, at the commencement of the year, instead of missing a whole winter session. There is no doubt that a number of students who fail in the Second M.B. in June take the Second Conjoint in the September following and pass straight on to their hospital work. Some of these may take the Second M.B. in the following March, but a good many very probably drop it altogether. Surely it is only fair for the University of London to hold a Second M.B. examination between June and the following March.

X-Ray Photography.

KODAK, LIMITED (of Kingsway, London), have issued a 50-page booklet, entitled *X Rays*, which they are distributing free to members of the medical profession. It does not claim to be a handbook of radiology, but simply to give a lesson or two in the art of obtaining technically good *x*-ray negatives. A very clear description of elementary *x*-ray physics is given, and then the technique of exposure and development is described, more especially from the point of view of the user of *x*-ray plates and films, although every dabbler in photography might learn something new from these pages. At the end there is a price list of *x*-ray accessories supplied by this firm.

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 54, 55, 56, 57, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 52, 53, and 54.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Mitchell Banks Memorial Lecture

ON

THE SURGEON AS PATHOLOGIST.

DELIVERED BEFORE THE UNIVERSITY OF LIVERPOOL ON NOVEMBER 10TH, 1921,

BY

C. J. BOND., C.M.G., F.R.C.S.,

HONORARY CONSULTING SURGEON TO THE LEICESTER ROYAL INFIRMARY; HONORARY COLONEL A.M.S.; VICE-CHAIRMAN, MEDICAL CONSULTATIVE COUNCIL, MINISTRY OF HEALTH.

AFTER reading the addresses delivered by Sir Henry Morris in 1908 and by my lifelong friend and fellow-student the late Sir Victor Horsley in 1914, and after consulting other notices of the life and work of Sir William Banks, the outstanding impression left upon my mind is a sense of the thoroughness and the zeal with which Banks tackled any problem with which he was concerned, and of his dissatisfaction with all half-measures and makeshift procedures in surgical work.

Dissatisfied with the disappointing results which had followed the partial operations practised by surgeons prior to 1877, and influenced by the earlier writings of C. Moore of the Middlesex Hospital, Banks commenced to work out on sound lines his more radical procedure for the removal of cancer of the breast. Partly as the result of his early training in anatomical and histological methods under Goodsir at Edinburgh, Banks was enabled to bring about a great advance in surgical practice in this important field of mammary cancer because he was a pathologist as well as a surgeon. I venture to think that careful inquiry into the methods and principles which have underlain the work of all the great masters in surgery will show that the better results and the revolutions in surgical practice which they have brought about have been due to a deep grasp of physiological and pathological principles which other surgeons have failed to appreciate, rather than to mere mechanical dexterity, important as this may be.

But although we are deeply thankful for the brighter outlook brought about by the pioneer work of Banks and other surgeons in the surgical treatment of cancer of the breast, everyone will, I think, agree that there is still room for improvement in regard to the surgical treatment of malignant disease in all parts of the body. In Banks's words, we are still "dissatisfied with the ineffectiveness, as a curative remedy, of the surgical treatment of cancer." We shall not, I fear, get much further with the conquest of cancer in its various forms until we know more fully than at present the life-history of the cancer cell, the influences which start it on its irregular course of development, and the conditions which favour its multiplication and growth.

We must, in fact, be pathologists, or rather physiologists, as well as surgeons, if we are to take full advantage of the many opportunities which the practice of surgery provides of observing the earliest beginnings of disease in the human body.

It is because I feel strongly on this point that I propose on this occasion to ask your attention to some facts of physiological significance which have come to my notice in the course of surgical work during the war.

THE "RETURN IMMIGRATION" OF LEUCOCYTES IN RELATION TO DEFENCE AND INFECTION.

In the early days of the war the question of the action of strong antiseptics on the tissues and the desirability of using these reagents in the treatment of wounds, was a still unsolved problem. I happened at the time to be engaged in operating on recruits for the removal of hernia, varicose veins, and other disabilities which prevented them from joining Kitchener's army. In some few of these cases it was desirable to introduce a small wick of gauze, or other material, as a temporary drain, and advantage was taken of this to impregnate the wick drain with some sterilized and insoluble pigment, such as indigo, which would serve to indicate the activity of the phagocytosis in the wound and the fate of the leucocytes which had ingested the pigment particles.

Observations on Aseptic Closed Wounds.

The result of a number of observations carried out on wounds in the human subject and in animals served to show that a cotton thread or other fibre impregnated with sterilized indigo or some pigment insoluble in the body fluids is rapidly cleared of its pigment granules by the leucocytes which crowd into it from the walls of the wound, and that these again re-enter the blood stream or the tissues with their loads of pigment.

In these aseptic wounds no pus is formed, and the leucocytes which in an infected wound would be killed by the organisms or their toxins and thrown off as pus cells still remain living and active after ingesting the pigment particles, and carry these pigment loads back with them when they re-enter the blood or lymph stream or the intercellular tissue spaces in the walls of the wound or the blood clot in its cavity.

The only effect of a strong antiseptic—such as carbolic acid 1 in 20, or mercury bichloride 1 in 1,000—in such an aseptic wound is to kill, by chemical action, as the knife kills by mechanical injury, a few more tissue cells and leucocytes, and these either escape along the wick drain or are dealt with by the still living phagocytes on the walls of the wound. If, however, the chemical antiseptic used is too concentrated or its volume too great, then it may bring about a collection of devitalized cells and dead fluid which is too large for these living cells to deal with.

These findings in aseptic wounds in the human subject are confirmed by observations on experimental wounds in animals. Sterilized threads impregnated with indigo or carmine were inserted aseptically into the tissues of guinea-pigs. Sections of the testis at some distance from the site of an implanted indigo thread showed that the fibroblasts and the wandering phagocytes around the blood and lymph vessels, in the spaces between the seminiferous tubules, were crowded with indigo grains. In the muscular tissue of the thigh carmine-loaded leucocytes could be seen lying on or in the walls of capillaries at a distance of several millimetres from the pigmented thread.

Such observations, however, dealt only with closed tissues in which the blood and lymph circulation was in active operation, and it became desirable to ascertain to what extent this re-immigration of pigment-loaded phagocytes occurred from the surface of granulating wounds.

Observations on Open Granulating Wounds.

The presence during the war in our base hospitals of large numbers of stumps in which reamputation became necessary provided abundant opportunities for the study of this problem of the re-entry of leucocytes into the tissues of granulating wounds. An inch or more of the protruding shaft of the femur in such a stump, with its core of living marrow, ending in a cap of granulation tissue, was dressed with gauze impregnated with sterilized indigo. After reamputation some days later, examination of the marrow cells higher up the shaft of the reamputated bone showed the presence of pigment particles in the marrow cells and in the polymorph leucocytes.

In some cases the granulating surface of the stump was dressed with sterilized rice starch. Sections of such granulating tissue made at right angles to the surface and stained with iodine revealed the presence of starch grains in the wandering cells and in the connective tissue cells, both in the deeper layers of the granulation tissue and in the cicatricial fibrous tissue at its base.

The fact that the transported pigment was absent from the capillaries and lymph vessels and the tissue spaces, while it was present in all situations in cells from the surface of the wound to the deeper layers of tissues, strongly suggested that the wandering phagocytes were the chief agents in the transportation. But under these conditions it was still impossible to eliminate entirely the influence of the circulation, and a further attempt was made to reproduce wound conditions in excised portions of living tissues and in blood clots outside the body.

Observations on Blood Clots and Excised Tissues.

Blood was drawn direct from the finger into a sterilized tube, centrifuged, and allowed to clot. After shrinkage of the clot from the sides of the tube, pigment (generally powdered carbon) was mixed with the serum in which the clot was floating, and by gentle rotation was brought in contact with the whole surface of the clot. The tube was then incubated for several hours to give the leucocytes time to ingest the pigment grains and to re-enter the clot. The clot was then fixed and hardened, and

paraffin sections showed not only the layer of carbon on the surface but also the presence of carbon-loaded leucocytes in all situations, from the surface to the centre of the clot, especially in the fibrinous clear zone and in the area of the white cells brought down by the centrifuge.

Here, then, in the absence of any blood or lymph circulation, we find the leucocytes taking up the pigment grains which cover the surface of the clot and transporting them to the interior.

The same migratory movement of loaded phagocytes can be shown to take place from the surface to the interior when portions of granulation or other tissues are incubated with blood or blood serums to which pigment has been added. By altering the pigmented fluid in which the clot is immersed the conditions under which this "return immigration" takes place can be controlled and varied. Thus the clot or the piece of granulation tissue can be incubated either in native or in foreign pigmented serum, or in other artificial fluids.

From these, and many other observations of a like kind, we may take it as an established fact that pigment laden phagocytes do re-enter blood clots and excised tissues when incubated in contact with them under suitable conditions.

It is true that only comparatively few of the many leucocytes which emigrate from a drop of blood when coagulation takes place re-enter the coagulum. Some fall into the surrounding serum, some adhere to the sides of the vessel. The size of the pigment grains which form the load also influences the result; thus cells which contain minute particles of carbon penetrate the clot more freely and to a longer distance than cells which have ingested the relatively larger rice starch grains.

It seems clear, however, that in the living body, from centres where pigment and other foreign substances are deposited, and from the surfaces of wounds, a to-and-fro stream of cells constantly flows, by which phagocytes of the wandering class pass to the focus of deposit or outwards to the surface and, after feeding on the pigment or the organisms as the case may be, return (in so far as they escape destruction as pus cells) with their ingested loads to the blood or lymph stream or to the intercellular spaces.

The Significance of Return Immigration.

It will, of course, be recognized that a large part of this description of a to-and-fro stream of phagocytes passing outwards to the surface and inwards to the tissue spaces and the lymph stream is an old story. Metchnikoff, in his classical researches on infection and immunity, showed many years ago that such a migration of wandering phagocytes occurs under normal conditions both in vertebrates and in invertebrates, from the tissues to the body cavities, and back from the body cavities to the tissues and the circulation. In the mucous linings of the alimentary and respiratory canals Metchnikoff, Macullum, and others have shown that the white blood cells pass up between the epithelial cells to the surface of these mucous membranes and ingest fat or other food particles, and return thus loaded to the tissue spaces, or by way of the lacteals and the lymph stream to the lymph glands and the general circulation.

But this normal physiological "to-and-fro" migration which goes on in health is intimately related to the pathological processes by which pathogenic organisms invade the body in disease. Calmette, in his very important work, *L'infection bacillaire et la tuberculose chez l'homme et chez les animaux*, in the section on the mechanism of tuberculous infection, says:

> "Cases of tuberculosis arise by the lodgement of the tubercle bacillus on the abraded skin or on the mucous surface, when the organisms are englobed, but not digested, by leucocytes, which convey them by way of the lymph or blood stream to the neighbouring lymph glands, where the leucocytes are in their turn devoured by mononuclear endothelial cells. These again by fusion form the multinucleated giant cells, and thus bring about the first stage in the formation of a tuberculous nodule."

This surely is a restatement of the problem of the "return immigration" of leucocytes in a manner suited to the pathological problem of infection. According to Calmette, the most important agent concerned in the transportation of the tubercle bacillus from the invaded mucous surface of the throat or alimentary or respiratory canal is the wandering polymorph leucocyte. A very essential element in the picture is the capacity of these germ-laden phagocytes to traverse the healthy mucous membrane on their way to the lymph glands or the deeper tissues without injury to the membrane, and without leaving any damage in their train by which the site of invasion by the infecting organism can be subsequently located. Thus it comes about that the pharyngeal or intestinal mucous membranes which have been traversed by leucocytes loaded with the tubercle bacillus during childhood may remain healthy while the lymph glands to which the phagocytes have passed, and where they are arrested, become the seat of active disease.

Other observers, notably Still[1] and Cobbett,[2] hold that the pulmonary route is accountable for many cases of tuberculosis in childhood. Apparently the mediastinal bronchial glands are not often affected by extension of the infection from tuberculous cervical glands, while Cobbett's careful observations on a series of unselected hospital cases in children seem to show that the bronchial glands are affected more commonly than the cervical or the mesenteric.

But whatever may be the real facts as regards the relative frequency of invasion by the pulmonary, the pharyngeal, or the intestinal route, the *method* of invasion, the means by which the tubercle bacillus reaches the lymph stream and the lymph glands would seem to be much the same in all cases. In this process transportation of the bacillus by wandering phagocytes appears to play an important part.

Calmette thinks that the tubercle bacilli ingested by the leucocytes escape intracellular digestion because they are protected by a capsule or envelope of lipoid material. The effect of the toxin liberated by the imprisoned bacillus is to bring about the death of the leucocytes which are aggregated together in the tuberculous nodule, and the setting free of the contained and still active organisms. The nasal mucous membrane is rarely affected, because the phagocytosed tubercle bacilli are caught in the mucus which bathes the nasal passages, and are swept away by ciliary action and the respiratory air currents.

The importance of the part played by mucus in the defensive mechanism of the body has not, I think, been sufficiently appreciated. In a post-graduate lecture[3] on the mucous channels and the blood stream as alternative routes of infection, delivered in London in 1913, I recorded some observations which seemed to show that different samples of mucus might vary greatly in suitability as culture media for bacilli of the coliform type. It would seem, indeed, probable that mucus may play a biochemical as well as a mechanical part in the protection of mucous membranes against infection by pathogenic organisms.

Such, then, are the facts concerning this to-and-fro migration of phagocytes in relation to the invasion of mucous surfaces by organisms such as the tubercle bacillus.

It is, however, upon the occurrence of "return immigration" in wounds and from granulating surfaces that recent observations, especially during the war, have shed an interesting light. Since under suitable conditions phagocytes ingest large numbers of organisms from the surfaces and in the walls of wounds, we are in a position, if we substitute the germ-laden for the indigo-laden leucocyte, to appreciate what goes on in a fairly healthy wound, and the opportunities that arise there, not only for the conveyance of organisms killed and digested by the phagocytes, but also for the transportation of organisms, which though ingested are *not* killed, and which, when the general resistance is lowered, may become liberated and start a fresh focus of infection or a "recrudescence of the local sepsis."

Latent Infection and Recrudescent Sepsis.

As I have already pointed out when speaking of Calmette's work, latent infection forms a very important feature in tuberculous disease. The tubercle bacilli become incarcerated in the polymorph leucocyte or in the endothelial or the giant cell. Surrounded but not killed, they may be permanently isolated by a barrier of fibrous tissue, or they may remain in a condition of suspended activity, ready, years later, when the vitality of the host has been lowered from any cause, to break out into renewed growth.

The same is true of the malaria parasite, the typhoid bacillus, and other organisms. It has long been known

that some injury to the spleen may determine the onset of a typical attack of malaria in a patient who has been free from symptoms of that disease for some years. I have recently seen a patient who had been in good health since recovery from an attack of typhoid fever some months before, in whom the typhoid bacillus was recovered in pure culture from a subperiosteal abscess over the tibia.

The development of syphilitic disease of the nervous system years after the initial infection by the spirochaete is another case in point. Examples might be multiplied. There is no doubt that organisms of many kinds which have gained access to the body do dig themselves in and become incarcerated in tissues and in situations outside the reach of the blood stream.

We do not yet know what the local and the general conditions are which favour this occurrence, or what happens to the organisms during the period of imprisonment, which may be spread over many years. It would seem, however, that latent infection may occur in most diseases of microbic origin, and that the process of finally ridding the body of any kind of organism which has once gained access to the tissues is more difficult and more intermittent than we have supposed. The experience of the war has shown, at any rate, the frequency with which invading organisms, both anaerobic and aerobic, may remain quiescent in the tissues around wounds and may break out into renewed activity under favourable conditions.

When in the early days I ventured to draw attention to the tendency of previously infected but healed war wounds to light up under the stimulus of a slight injury or surgical operation,[1] many surgeons of experience were reluctant to admit "latent infection" as a cause, and were inclined to attribute the recrudescence of the sepsis to a fresh infection. The fact, however, that these violent reactions frequently occurred after a slight injury or after surgical interference which did not involve a fresh wound proved too strong, and the occurrence of recrudescent sepsis in healed or healing wounds became recognized as a very important factor in the treatment of war wounds.

Latent infection and recrudescent sepsis were, in fact, the great features which distinguished wound treatment at the base hospitals from wound treatment at casualty clearing stations and front-line posts. They added enormously to the anxieties and seriously limited the opportunities for medical officers working in base hospitals both at home and abroad.

What, then, has this question of the "return immigration" of leucocytes which we are now considering to do with latent infection and recrudescent sepsis?

The work of Peyton Rous, F. S. Jones, and other observers has shown[2] that organisms (pneumococci, for instance) may be ingested by phagocytes and conveyed to the blood stream, and so reach the liver, spleen, and other organs, where they are destroyed. Mere *ingestion*, however, by leucocytes, without subsequent intracellular *digestion*, is not enough to ensure the death of such organisms. The internment within the cell may, in fact, actually protect the organisms against the lethal effect of the antibodies circulating in the blood.

Knowing, then, that organisms are ingested in large quantities by phagocytes in wounds; knowing, also, from observations on the feeding of leucocytes with pigment grains, that such loaded phagocytes *do* return from the surfaces and walls of wounds to the deeper tissues, we can form some picture of what takes place in the scar tissue which ultimately replaces the granulation tissue in previously infected wounds.

"Latent infection" is essentially a question of the incarceration of organisms in cells or among cells. The factors which set free the imprisoned organisms and bring about the recrudescent infection are such influences as interfere with the vitality of, or disturb the arrangement of, the cells which form the enclosing barrier.

These may be mechanical such as trauma, or chemical as by the injection of antiseptics and irritants, or thermal as by the application of extreme heat or cold. There is also reason to believe that they may be of a more general character, such as all conditions which depress the health and vitality of the body as a whole.

Whatever may be the importance of "return immigration" of phagocytes as a factor in the causation of "latent infection," it is certainly true that the interned organisms are located in the scar or barrier tissue which takes the place of the granulation tissue in infected wounds when healing occurs.

Surgeons of experience know that such operations as involve the opening up of scar tissue and the fibrous envelopes which surround foreign bodies and pieces of necrotic bone are more liable to be followed by a "flare up" in the wound than incisions through healthy tissues at a distance.

This suggests that it is not the organisms that find their way into the blood stream that produce the result, unless, indeed, these are in great numbers, sufficient to constitute a massive infection. It is the organisms which lie embedded in or amongst the leucocytes and the fibroblasts in the neighbourhood of the wound or foreign body which are so liable to take on renewed activity in tissues which were at one time granulation tissue and the site of cellular migration and proliferation. This fact is significant when considering the problem of return immigration of phagocytes and the transportation of organisms from the walls of wounds to the deeper tissues.

The Iodophil Reaction:
In Leucocytes and in Epithelial and Cancer Cells.

Passing now from this problem of the return immigration of leucocytes and its bearing on latent infection and recrudescent sepsis, I propose to say a few words on another problem of cell activity—one which, in its relation to the life-history of the epithelial cancer cell, has a direct bearing on the pioneer work of Banks in the treatment of breast cancer.

In a paper on the presence of an iodophil substance in the white blood corpuscles in health and in some other cells, and on the relation of this substance to phagocytosis and immunity,[3] I described a colour reaction with iodine which occurs under certain conditions in leucocytes and certain epithelial and cancer cells. I did not at that time identify this substance, which has such a strong affinity for iodine, with glycogen, because I did not wish to prejudge the question of its chemical composition. It has, of course, long been known that the polymorph leucocytes give a mahogany colour with iodine similar to that given by glycogen, and most observers (Gulland and others) have regarded this reaction as an indication of degeneration of the cell.

There are, however, facts which point in an opposite direction. Thus, if one or two drops of blood be drawn direct from the finger into a closed paraffin or plasticine cell and incubated for one hour, on washing away the clot and the red cells with a gentle stream of normal saline a film of living leucocytes is left adherent to the slide. If this is treated with a 1 per cent. solution of iodine in normal saline, and examined immediately with a high power, a number of the polymorphs will show just within the cell or still attached to its outer edge globules of a mauve-coloured substance which has exuded from the cell. In some cases these little beads become detached from the leucocyte and float away in the surrounding medium like drops of coloured oil, which soon dissolve and disappear. Even in the case of freshly emigrated living cells the mauve colour is distinct from the brown port-wine or mahogany colour shown by glycogen in cells like muscle cells.

Not only do living white blood cells of the polmorph type give this mauve reaction with iodine, it is shown also by living pus cells—that is to say, by leucocytes from an abscess cavity or a serous cavity, or from a granulating wound, which are still active and have not been killed by the virulence of the infection. In these emigrating or living pus cells the exuded iodophil substance gives a richer stain with iodine which may be brown or port-wine in colour, like that given by glycogen. In such cells the iodophil substance is less soluble and does not so readily exude from the cell into the surrounding medium.

There are certain facts which suggest that the presence of lime salts in some form favours the elaboration of this substance just as lime salts are essential for the formation of the blood clot.

The presence of the iodophil substance also affords a valuable indicator of the vitality and activity of the leucocyte. Thus, in a sample of pus from a pneumococcal empyema before drainage, the great majority of the cells gave only the yellow stain with iodine characteristic of

dead cells, while in the discharge from the pleural cavity of the same patient four days later, after incision and drainage, most of the cells showed this iodophil reaction.

Leucocytes from a well-drained wound or healthy granulating surface, or from a mucous membrane which is recovering from infection, give a well-marked reaction, while the pus cells from an unopened abscess or from a foul wound, or from the urethra in acute gonorrhoea, only give the yellow stain. If a dried smear of the urethral pus from a case of acute gonorrhoea be treated with the vapour of iodine and then mounted in iodine gum the picture will vary according to the virulence of the infection and the damage done by the gonococcus and its toxins to the leucocytes and the epithelial cells. In the acute stage both leucocytes and epithelial cells will appear as dead cells, stained a pale yellow with iodine. In the subacute stage the proportion of leucocytes and epithelial cells which give the mauve colour or port-wine colour will increase. In the recovery stage, when the discharge becomes less purulent and more mucoid in character, most of the leucocytes and many of the younger epithelial cells will show this iodophil reaction.

The ingestive capacity of the phagocytes for pigment varies also in the same way. Smears were taken from the urethral discharge of a patient in the subacute stage at hourly intervals after a preliminary injection into the anterior urethra of a suspension of sterilized indigo in normal saline. The first smears showed the indigo grains floating free in the muco-pus. Later smears, from the first hour to four hours after injection, showed a considerable number of leucocytes crowded with indigo grains and some also containing gonococci; on staining these films with iodine vapour many pus cells also gave the iodophil reaction. The cells which contain the iodophil substance do not as a rule ingest the pigment particles, and conversely the cells which are loaded with pigment grains do not give the iodine reaction. The same seems also to hold good of the cells which contain gonococci.

The absence of the iodophil substance in leucocytes which are actively phagocytic may be due to the fact that cells so engaged do not elaborate this substance, or it may be due to the escape of the substance into the surrounding medium at the time of ingestion of the pigment or organisms.

In the paper referred to I spoke of a possible association between the elaboration of this substance by the leucocytes and the defence against infection. It seemed as if the reaction might be a kind of defensive mechanism at long range, by which antibodies or opsonins were discharged into the medium surrounding the cell.

The amount of this glycogenic substance which is exuded from pus cells may be quite considerable. Thus in a case of acute gonorrhoea a drop of the urethral muco-pus mounted in iodine gum showed in a few days large numbers of droplets of this mauve-coloured substance floating free in the gum medium. These spherical globules often have a characteristic notched appearance suggesting crystallization, and they turn brown with age in the presence of iodine. So far I have not been able to detect any collection of this substance in the cytoplasm surrounding ingested foreign bodies or organisms, and there is at present no clear evidence that it takes any part in intracellular digestion.

It has long been known that tuberculous deposits in lymph glands and in other situations are rich in iodine. If, as we now find, the leucocytes massed in such areas are elaborating a substance with a strong affinity for iodine, this may explain the high iodine content of the tissues in such foci. In a number of dry smears, stained with iodine vapour, taken from degenerating and extending tuberculous deposits, iodophil substance has been noticed in the form of mauve-coloured extracellular droplets.

In Epithelial Cells.

Reference was made in the paper mentioned to the occurrence of this iodophil reaction in certain cancers of epithelial origin. Later investigation has shown that this tendency to elaborate a substance giving a mauve or port-wine colour with iodine is characteristic of many normal epithelial cells which line the mucous cavities of the body. If, for instance, a cotton-wool swab, moistened with normal saline, be gently rubbed over the mucous surface of the tongue or tonsil or conjunctiva, or the rectum just within the anus, the epithelial cells adhering to the swab can be transferred to a drop of 1 per cent. iodine solution on a slide and examined as a wet preparation, or the dry smear can be treated with iodine vapour and examined with an oil immersion lens. Many of the living younger cells will show the mauve or port-wine colour in varying degrees of intensity, while the dead and desquamating cells will show the ordinary iodine yellow stain. The healthy urethral mucous membrane is normally coated with large numbers of these iodophil cells. They can be readily obtained by introducing a sterile and moistened swab just within the meatus.

Imbedded paraffin sections of portions of mucous membrane from various situations, fixed while living in absolute alcohol, show that these iodophil epithelial cells have a definite distribution in the mucous membranes, and also that they are arranged in a stratified manner in the membrane at any one situation. The iodophil cells in the mucous membrane of the lip and tongue are arranged in horizontal lines in the Malpighian and upper layers, and in columns between the papillae. In normal conditions an orderly succession of these waves of mauve-coloured or red-brown cells passes from below upwards parallel to the surface of the membrane.

So far I have only found these cells in the mucous membranes which line the inlets and outlets to the body. They are present in the mouth, throat, nasal passages and conjunctiva, the genito-urinary canal, urethra, bladder, vagina, uterus, and the rectum. In the bladder the cells have been obtained from an inflamed mucous membrane in a case of bilharziosis. They have not been obtained from the stomach, intestine, or gall bladder. This does not necessarily mean that the epithelial cells in these situations do not elaborate any glycogen-like substance. There is some evidence that the composition of the substance may vary in different cells, being more soluble and more easily exuded and therefore lost in some situations than in others.

In Cancer Cells.

The part played by these iodophil cells in cancer of epithelial origin is a problem of considerable importance.

In a series of sections from a case of epithelioma of the lip, frozen and cut immediately after removal, and after hardening in absolute alcohol and imbedding in paraffin, the following condition was found:

> The mucous membrane at some distance from the growth showed a normal arrangement of the epithelial covering, with a normal stratification and arrangement of the iodophil cells. Nearer to the cancerous area, as the thickness and growth of the epithelial layer became more irregular, the iodophil cells became fewer in number; they no longer lay in successive layers from the summit of the papillae to the surface, but were collected in irregular groups and in some places were found in detached little cell nests wholly composed of mauve or red-brown cells. In the cancer area itself the whorls of flattened cells which form the typical cell nests are themselves composed of these iodophil cells, and stand out as red-brown islands amongst the rest of the yellow-stained epithelial cells.

The iodine, by picking out these iodophil cells, differentiates these from the rest of the epithelial cells, and thus gives a differential staining reaction in epithelioma.

What is the meaning of this fact that the cell nests are formed of iodophil cells? In view of the irregular growth of the epithelial cells in cancer, upwards to the surface and downwards in the underlying tissues, it is likely that the iodophil cells would also show some irregularity of growth and distribution. It may be that the departure from normal growth characteristic of cancer may primarily affect the iodophil cells.

This irregular distribution of the iodophil cells may be merely an accidental accompaniment of the irregular cell growth and increased cell division in the epithelial layer, or it may have a deeper significance and indicate a struggle for existence among the epithelial cells themselves in cancer, during which the iodophil cells get walled up and interned by the rest of the epithelial cells.

Smears taken from fresh sections of the lymph glands draining the cancerous area throw some light on this problem. The infected cervical glands in epithelioma of the lip show islands of cancer cells giving all shades of colour with iodine, from a pale mauve through red to brown, and in some cases a blue-black.

The epithelial cells which find their way into the lymph glands in epithelioma of the lip and grow in these

situations and form the secondary deposits are largely iodophil cells. But this does not necessarily mean that the iodophil cells are more abnormal, more cancer-like, than the rest of the epithelial cells. In view of the fact that iodophil epithelial cells are normally found in healthy mucous membranes, it may mean that these cells have retained some part of their original function of elaborating this iodophil substance, even when growing in the lymph gland. And this brings us to the subject of cell heredity in cancer.

In Sarcoma.

So far these iodophil cells have only been seen in the myeloid form of sarcoma.

Dry smears taken from the freshly cut surface of a myeloma from the lower end of the femur in a young man of 23 showed numerous cells which gave the mauve or port-wine colour reaction with iodine. The reaction was confined to the large singly and multinucleated myeloid cells and was not present in the spindle cells comprising the ground tissue of the growth.

Films from the red marrow of the lower epiphysis of the femur in the same patient also gave the same colour reaction with iodine. This is interesting in view of the similar ancestry of these cells.

The normal cells of the red marrow and the abnormal cells of the myeloma arise from the same group of mother cells as those from which the polymorph leucocytes originate. All these are capable of elaborating this iodophil substance, and leucocytes and myelocytes are also able to ingest foreign particles. This latter capacity has not yet, apparently, been noticed in abnormal myeloma cells.

The presence of an iodophil substance in myeloma cells affords another instance of the retention of some portion of original function by malignant tumour cells. Further investigation along the lines of cell heredity in cancer will probably throw fresh light on the obscure problem of the stage in the life of the cancer cell at which abnormal growth and reproductive activity first make their appearance.

So far, both in sarcoma, or cancer of mesoderm origin, and in epithelioma, or cancer of ectoderm origin, iodophil cells have only been found in the primary tumours or the secondary growths which arise in situations and in mucous membranes which normally contain such iodophil cells. This is true of the secondary deposits which arise in serous membranes like the peritoneum, provided the primary growth also arises in an iodophil cell area.

The Nature of the Iodophil Substance and its Relation to Glycogen.

In the paper previously mentioned I discussed the question of the identity of this iodophil substance with glycogen. One or two further facts must now be mentioned bearing on this point.

The normal polymorph leucocyte while circulating in the blood stream, if fixed and examined immediately, does not as a rule give the reaction. As soon, however, as it leaves the blood stream, whether it be to emigrate from the incubated blood clot or to enter the leucocyte trap in the aseptic wound, or to permeate the wall of an abscess as a pus cell, then it tends to give a colour reaction with iodine which varies from mauve to a red-brown, according to age and other conditions.

The difference in colour seems to depend on the solubility of the iodophil substance and the ease with which it exudes from the cell. In epithelial cells the substance exudes very little, and such cells often give a red-brown or port-wine colour with iodine. The addition of a diastatic ferment such as ptyalin does away with the colour reaction.

On these and other grounds there can be little doubt that this substance in leucocytes, marrow cells, certain epithelial cells, and some cancer cells which give a mauve or port-wine colour with iodine is either glycogen, or some substance closely allied to glycogen. The fact that epithelial cells containing glycogen line the cavity of the mouth, constantly bathed with the saliva, provides another example of the capacity of cells to live and grow and elaborate secretions in a destructive medium so long as they retain organic connexions with the underlying tissues and the lymph and blood streams.

The Association between the Iodophil Substance and Capacity to Resist Infection.

In the paper referred to I gave some instances which showed that there is some association between infection and the amount of the iodophil substance formed by the white blood cells. We have now seen that the pus cells which flow from a well-drained abscess also give this marked colour reaction with iodine. The same is true of epithelial cells. The reappearance of iodophil epithelial cells in the urethral discharge during recovery from an attack of gonococcal urethritis has been alluded to. The iodophil substance does not seem to play any important part in intracellular digestion. There is other evidence that the power to elaborate this substance is independent of the capacity of the cell to ingest foreign substances. Thus, while the leucocytes which emigrate on to the slide from the incubated blood clot give the reaction, the leucocytes which adhere to the slide when defibrinated blood is incubated do not give it, although they preserve unimpaired their capacity to ingest foreign substances and their capacity for amoeboid movement.

Further inquiry is necessary to determine whether the presence of this glycogen substance in cells is merely an expression of vigour and active cell development, or to what extent it must be regarded as a secretion which, in the case of the leucocyte, is shed into the surrounding medium, and in the epithelial cell also may have some relation to immunity against infection.

Flexner[7] has shown that the nasopharyngeal mucous membrane varies markedly in individual monkeys in its capacity to resist infection by the organism of poliomyelitis. It would be interesting to know whether the distribution of the iodophil epithelial cells show any corresponding difference of distribution in these animals.

Conclusions.

The following are the main conclusions that seem to follow from these observations:

1. That a capacity to elaborate a substance or substances closely allied to, if not identical with, glycogen is possessed by leucocytes, myelocytes, and certain epithelial cells.

2. In the case of the white blood cells this capacity is in the main limited to the polymorph leucocytes when they emigrate or escape from the blood stream.

3. In the emigrated leucocyte this glycogenic substance takes the form of a colloid liquid which is rapidly exuded from the cell, and gives a delicate mauve colour with iodine.

4. In the myeloid cells of the red marrow and in some myeloma cells this substance is also present and is somewhat evanescent.

5. In certain epithelial cells of the mucous membranes which line the orifices of the digestive, respiratory, and genito-urinary canals, this iodophil substance is present in a more granular and less soluble form. It is more closely incorporated with the cell cytoplasm, and stains a red or red-brown colour with iodine.

6. The same or an allied substance is also constantly found in certain cancer cells of epithelial origin.

7. In the primary growth it is present in the cells which form the cell nests. In common with the irregular growth of the epithelial cells in the cancer area the disposition of the iodophil epithelial cells also undergoes a change. These are reduced in number, and are collected in irregular groups rather than in stratified layers.

8. This iodophil substance is also present in the epithelial cancer cells found in the lymph glands and in other secondary deposits.

9. The presence of this capacity for elaborating iodophil substances by cancer cells in secondary deposits is an indication of the retention of some degree of original function by these cells in their abnormal situation, and is associated with important problems of cell heredity.

10. Myeloma cells have a genetic relation with red marrow cells on the one hand, and polymorph leucocytes on the other. All these cells elaborate an iodophilic substance in a characteristically staining and soluble form.

11. The high glycogen content in mammary tumours of certain strains in mice[8] seems to be connected with the strain—that is, the hereditary origin—rather than with a high degree of malignancy in the cells of such cancers.

12. The proportion of iodophil cells in the epithelial covering of the endometrium varies greatly, both in different individuals and in different areas of the same uterus. This may probably be connected with the periodical changes in cell metabolism which occur in this organ. A systematic examination of the glycogen content of the uterus in different species of mammals, and in different phases of activity of the organ, would probably throw light on the metabolic changes in epithelial cells.

13. There are some facts which suggest an association between activity in glycogen formation and resistance to infection. In leucocytes the iodophil substance seems to be exuded into the surrounding medium on the disintegration of the cell.

In epithelial cells the iodophil substance is present in a less soluble form, and remains in closer association with the cytoplasm of the cell. The fact that the distribution of the iodophil cells varies both in the mucous membranes of different individuals and in different areas of the same mucous membrane may be associated with a varying power to resist invasion by pathogenic organisms.

In concluding, I fear imperfectly, the task allotted to me, I wish to thank you, Mr. Vice-Chancellor, and the Senate and Council of the University, for the honour they have conferred on me in inviting me to deliver the Mitchell Banks Memorial Lecture.

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TREATMENT BY INFLATION WITH OXYGEN OF TUBERCULOUS AFFECTIONS

OF THE ENCLOSED CAVITIES, ABSCESSES, CARIES, SYNOVITIS, AND FIBROUS ANKYLOSIS.

BY

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SINCE my first report in the *Indian Medical Gazette* of September 9th, 1920, under the title of "Preliminary note on the treatment of tuberculous affections of the enclosed cavities, abscesses, and caries, by inflation with oxygen," the treatment has been further extended in its applications, with very remarkable results, warranting a more extensive trial.

The treatment was originally applied to eight cases of tuberculous affections, four cases of psoas abscess, one of tuberculous peritonitis, and three of tuberculous joints. Since then the treatment has been applied to six cases of psoas abscess, three cases of tuberculous peritonitis, seven cases of tuberculous joints, one case of infection of compound fracture by *B. aerogenes capsulatus*, two cases of multiple pyaemic abscesses, three cases of chronic synovitis of the knee-joint, and two cases of fibrous ankylosis of the knee-joint.

A Potain's aspirator is fitted with a stopcock, needle and branch tube, or better with a two-way stopcock, one tube leading to the aspirator and the other to the oxygen inflation apparatus. The latter consists of an oxygen cylinder with pressure tubing leading to a wash-bottle containing hydrogen peroxide and a blow-off safety valve, so that the gas is made to bubble through the hydrogen peroxide and is led off by pressure tubing to a glass tube containing cotton-wool; this is suspended in water at a temperature of 100° F., and its exit leads, by a further length of pressure tubing, to the aspirating needle. The whole arrangement, from the wash-bottle attachment of tubing, including the aspirating needle and aspiration attachments, is sterilized together.

After aspirating the fluid from the cavity to be inflated (whether it is pus from an abscess or joint, or clear or turbid fluid from the peritoneal cavity or a joint) the stopcock is turned, shutting off the aspiration and connecting with the inflation portion of the apparatus. The oxygen cylinder is turned on: the apparatus has previously been tested to see how easily it can be accomplished and to test the blow-off of the wash-bottle and the rubber pressure tubing joints, the amount of the pressure of the gas required for the case being adjusted on the safety valve. The gas, in passing through the wash-bottle, is freed from any particles and is rendered nascent, and its rate of flow can be seen. In the passage of the gas through the cotton-wool tube it is warmed and rendered sterile. As soon as the cavity has been inflated to the desired extent the stopcock is turned off and the cock of the oxygen cylinder closed. The surgeon then applies a purse-string suture around the entrance of the needle or cannula in the skin, and pulls the suture tight while withdrawing the needle or cannula, whichever is used.

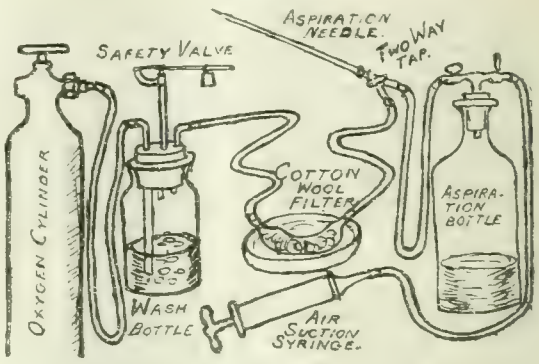


Diagram of apparatus for treatment by inflation with oxygen.

This process may be modified in dealing with certain types of cases, as, for example, when it is desirable first to flush out a cavity with a saline solution, a solution of sodium bicarbonate or weak tincture of iodine. In such cases it is desirable to use an entrant and an exit cannula and to apply the purse-string sutures around each first, and the exit cannula should have a slightly larger calibre than the entrant cannula. The flushing may be done through the same cannula as the inflation apparatus cannula, the aspiration tube being dispensed with and the flushing tube taking its place. When the flushing is completed the flushing tube is detached, and when the fluid has been expressed from the cavity through the exit tube the latter may be removed and the purse-string suture tied; the inflation may then proceed.

The following are the details of the twenty-four cases on which this treatment has been applied.

Tuberculous Peritonitis.

Laparotomy had previously been performed on these cases and the diagnosis was evident. It is advisable to perform laparotomy in every new case in order to ascertain the condition of the peritoneum and gut; a small incision is sufficient for this purpose. If the disease has advanced to the stage of adhesion of the gut to the abdominal wall and of the folds to one another, then it is always necessary to make a small incision and to use a rubber tube in place of the cannula or needle; the tube may be of considerable length, and this is advisable if the fluid is turbid or if it is desirable to run in saline for the purpose of removing the fluid. Very gentle handling is necessary owing to the great ease with which the gut may be injured, particularly in advanced stages of this disease. Where, however, the disease is in its early stage, and where there is plenty of fluid in the peritoneal cavity, then a trocar or needle of Potain's aspiration set may be used without making an incision.

CASE 1.

A Burmese trader, aged 35, confined to his bed for three months, was suffering considerable pain in the lower portion of the abdomen, particularly on the right side, where large hard masses could easily be felt; the abdomen was distended with fluid and the man emaciated.

Laparotomy was performed and the peritoneal cavity well irrigated with saline, masses of enlarged glands and caseating tuberculous material were found, and many loops of the intestines were adherent. He had been operated on before the oxygen method of treatment had been devised: the inflation method was applied fourteen days after the laparotomy operation by making a small incision in the right iliac region, and opening the peritoneal cavity sufficiently to ensure that there was no adhesion of the intestine to the abdominal wall.

A Potain's aspirator was introduced with the finger towards the caecum and a suture inserted along the peritoneal opening so as to enclose the trocar, two ends being left through the

wound so that they could be pulled tight on removing the trocar. The abdominal wall was closed in the usual way, with the exception of the peritoneal suture round the trocar, and, finally, a purse string suture was inserted around the trocar in the skin and left to be tied tight on completion of the inflation.

The abdomen was then inflated, the anaesthetic being stopped before the inflation was commenced. The gas was allowed to enter very slowly and the diaphragm carefully watched, the respiration was not interfered with and a considerable tympanitic note was obtained, the abdominal cavity being blown out like a drum. Two hours later he said that he had no discomfort whatever and that he felt greatly relieved. The tympanitic note subsided in three days, and the temperature, which had been hectic, became normal.

A fortnight after this his condition had very greatly improved, many of the masses that had been easily felt through the abdominal wall could not be found. He had put on weight and was attending to his business at his home. He came into hospital again for another inflation, which was done on the left side with a similar result. A month later he had improved so much that I could hardly recognize him. He had two more inflations in his house after this and his improvement continued. Although his house was only a bamboo hut, we had no difficulty in applying the method, as it is quite suitable to private practice.

CASE II.

A Mohammedan boy, aged 18, had suffered for several years; the abdomen was distended, and the temperature very variable. Laparotomy disclosed matting of the intestines and particularly large masses in the neighbourhood of the caecum. Inflation was performed by the open method; the abdomen was flushed out with saline on account of thick masses of inflammatory lymph. An india-rubber tube was inserted through a small incision in the right iliac fossa and a purse-string suture applied as in the former case. Three hours afterwards the abdomen was highly tympanitic, but the lad said he felt quite comfortable. The tympanitic note remained for five days, but the temperature continued to be normal and he complained of no pain or discomfort.

On the twenty-first day the process was repeated, the open method being again adopted, and the intestines were found to be no longer adherent and the ascitic fluid was clear. At the end of the eighth week the direct method of inflation was adopted and was repeated again twice at a month's interval, after which the lad said that he felt perfectly well and had no complaint to make. The abdomen was tumid and no masses could be made out; there was no distension, no pain, and no tenderness; the lad ran about and appeared to be quite well.

CASE III.

A Burmese woman, aged 22, an early case where there was no matting of the intestines, was given two injections of oxygen, the first by the open method, no irrigation being resorted to, and the second by the direct method, after an interval of three weeks. All the symptoms disappeared, and I heard three months later that she was feeling well and had nothing to complain of.

It would appear that gas has the property of separating surfaces which are adherent by plastic lymph in chronically inflamed conditions of the peritoneum, and that this is brought about by the ability of gas to reach areas where fluid cannot replace other fluid; in other words, it has the property of replacing fluids or semi-fluids and prevents adhesion. Internal pressure prevents exudation of synovial fluid, reduces blood supply to inflamed areas, and reduces pain, by the separation of the same. It is probable that the oxygen exerts some inhibitory effect on the pathogenic process.

Psoas Abscess.

The effect of inflation of a psoas abscess is very marked, for the gas appears to find its way up the tortuous sinuses in the sheath of the psoas muscle and to reach the actual area of disease. It was in the treatment of one very hopelessly infected case that had been erroneously opened that I was first led to try the gas.

CASE I.

A Burmese boy, aged 12, had been admitted to hospital with a history of a fall and that two Indian doctors had reduced a dislocation of the hip. Under chloroform a large abscess was found in the thigh, and there being no history or sign of psoas abscess, the same was opened as it was thought to be associated with rough handling. This abscess soon became diffusely distributed throughout the thigh, and on a second examination under an anaesthetic was found to be a psoas abscess. The boy rapidly became worse, with high exacerbations of temperature, and was developing a progressive toxaemia.

It was then that the oxygen gas was tried; the tube from the oxygen cylinder was led into one of the sinuses and the other openings were closed as much as possible. In this way the sinuses were "washed out" twice a day; from the first day of application the temperature never rose above normal again, and the boy made a very rapid recovery. In fourteen days all the sinuses had healed up, but the knee-joint became infected, and after this had been aspirated and inflated with the gas, no further treatment was required. He rapidly gained in weight and, after one month, walked out of hospital without assistance. I had at this time several psoas abscess cases under observation.

CASE II.

A married woman was in an advanced chronic condition of spinal caries, with double psoas abscess. The method used in this case was as follows: The part having been prepared as usual for operation, and an anaesthetic having been given, a Potain's aspirator with a side attachment was introduced and about four pints of pus drawn off; eusol solution was then injected and again drawn off, and the cavity was inflated with oxygen in the way described. The temperature remained normal, the pain in the thigh disappeared, and the swelling in the left iliac region was greatly reduced; the part remained tympanitic for seven days.

This patient has had seven inflations, at intervals of about fourteen days, and each time the amount of pus withdrawn was much less, so that on the last occasion no pus was drawn out at all. Her health improved considerably, and she gained in weight.

CASE III.

A Chinaman, aged about 35, was a very obscure case of pain in the right groin, the thigh remaining flexed. After repeated search, eventually a small track of pus was found in the psoas muscle, and after this had been inflated the flexion and pain were very much better. He had three inflations and then left the hospital.

CASE IV.

A Hindu girl, aged 5, had a large psoas abscess on the right side, which completely disappeared after two inflations, there being no signs of the original disease.

CASE V.

A Mohammedan child, aged 14, had a large psoas abscess from which 10 pints of pus were aspirated, and the cavity was inflated with gas as described. He also had tuberculous caseation in both apices of the lungs. He had three inflations of oxygen gas and on the fourth occasion no pus was found, so the oxygen was not injected. The condition of the lungs improved very remarkably, the active symptoms disappearing, so that there was no cough and the temperature became normal.

This is very important as showing how the improvement in one pathogenic process causes an improvement in the whole system, and the cessation of the toxaemia which must result from such a large accumulation of pus within the body, must also greatly inhibit the progress of the tuberculous process in the lung.

Tuberculous Joints.

For some years previously I had been using a method of flushing tuberculous joints combined with Bier's treatment; without this new oxygen addition this had given very satisfactory results, but I had never had a case of tuberculous joint treated in this way that had been cured by one application of the flushing. The tendency to fibrous ankylosis in tuberculous joints that have apparently recovered, as far as any evidence of active disease is concerned, is the usual experience of everyone, and one has been satisfied with a stiff joint so long as the disease has remained quiescent; but a perfectly useful joint after infection with tubercle is an innovation.

In applying this treatment to a joint the method is somewhat different, as has been already explained, and in the case of the knee-joint the entrance cannula or needle of Potain's aspirator is best introduced into the subcrural bursa, while the exit cannula is best inserted after the joint has been fully distended with fluid, at the most favourably bulging part on the outside of the joint. Iodine solution (one drachm to the pint) is then run through the joint, which is moved about and kneaded; this process is continued until the escaping fluid is quite clear. The purse-string sutures are then introduced under the skin around the cannulas, and the exit cannula is withdrawn, the suture being tied tight. The entrant cannula is then connected with the inflation apparatus by opening the cock, and the joint distended to its fullest capacity; the entrant cannula is then withdrawn and the suture tied tight. The oxygen generally takes ten to fourteen days to become absorbed from the knee-joint.

After the inflation there is a great relief from pain, and the limb can be moved about and massaged without any discomfort whatever, so that the only after-treatment required is to encourage passive movements and general movements of the limb, which may be allowed to rest as the patient desires. The distension of the joint by gas prevents the apposition of inflamed surfaces; it prevents the pouring out of serous fluid by internal pressure to the secreting surfaces; and it has a direct action on the pathological process which it is able to reach. By the cessation of pain and the partial use of the limb the muscular tone is restored, and the general condition of the patient greatly influenced.

Of the seven cases in which this treatment was applied, four were to the knee-joint, two to the elbow-joint, and one was a multiple case of the wrists and finger-joints. These cases all rapidly improved even after one inflation, but the inflations were continued in some cases, as required.

In the case of the smaller joints it is desirable first to distend the joint with fluid by means of a syringe, before introducing the exit tube, if flushing is resorted to, and to introduce the entrant cannula before the fluid has escaped from the exit cannula. In this way the difficulty of hitting a small joint is greatly facilitated.

Chronic Synovitis.

Three cases of chronic synovitis were treated by this method; one inflation only was used, and it was unnecessary to repeat the process. The gas was absorbed at the end of the fourteenth day, after which all three patients walked and used the limb without a recurrence.

Fibrous Ankylosis.

In fibrous ankylosis the inflation treatment is a most valuable adjuvant, because, after breaking down the adhesions, it prevents their re-formation and enables the patient's limb to be utilized directly afterwards. This is particularly noticeable in severe ankylosis, where usually the breaking of adhesions is followed by painful recurrences, and the progress of the case is so slow. By this method there is a very rapid recovery, no after-treatment being necessary beyond use and massage.

Pyaemic Abscess.

In pyaemic abscess cases, where the patient is very weak, this treatment is ideal, as it precludes the necessity of an anaesthetic and of the after-treatment by drainage. In one case on which it was done the patient was *in extremis*, with seven large abscesses; the rapid cessation of toxaemia produced a very quick change towards recovery.

Infected Compound Fracture of Radius.

In a case infected with *B. aerogenes capsulatus* the gas was used as a flush similarly to the first case of psoas abscess treated, and it appeared to have a very rapid sterilizing effect.

It would appear, therefore, that this form of treatment may be divided under three heads: (1) Where it has a mechanical effect only, as in synovitis and fibrous ankylosis; (2) where it has a therapeutic effect only, such as in the flushing of wounds and in the treatment of psoas abscess; and (3) where it has both a therapeutic and a mechanical effect, as, for example, in the treatment of tuberculous joints and tuberculous peritonitis. The cleanliness of the method, the ease of its adoption and its simplicity make it eminently suitable to the general practitioner.

PERSISTENT CLOACA WITH IMPERFORATE ANUS AS A CAUSE OF FOETAL ASCITES.

BY

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CASES of foetal ascites have been recorded from time to time, but in the literature of the subject attention has been directed more particularly to the obstetrical complications of the abnormality than to the developmental and anatomical aspects of the condition. The case herein recorded presents some features of interest, both from the obstetrical and from the embryological points of view.

Clinical History.

The mother was a healthy looking, fairly well developed, primiparous single girl, 21 years of age, who was admitted to the Glasgow Royal Maternity and Women's Hospital on February 18th, 1921, under the care of Dr. James H. Martin. Her previous health had been good and menstruation had been regular till October 1st, 1920, since when there had been amenorrhoea. She was therefore, according to her dates, about four and a half months pregnant. For the first three months there had been fairly constant morning sickness, and during the month preceding admission to hospital there had been very striking and excessive enlargement of the abdomen for the stage of the pregnancy.

On admission, labour had been in progress for about twenty-four hours and the membranes had ruptured. The circulatory, respiratory, and digestive systems showed nothing abnormal. The abdomen, however, was enlarged to full-time dimensions, the foetal head was not palpable, and, although foetal movements were made out, the foetal heart was inaudible. The pelvis was fairly roomy, and the os admitted two fingers. A soft tumour-like mass presented. Posterior to it two small feet and legs could be made out, while higher up, above the swelling, the arms and the ribs could be distinguished. The mass was punctured and a large quantity of fluid (several pints) escaped under high pressure. After the collapse of the mass, the foetus was delivered without further difficulty. The placenta (one and a half pounds in weight) with the cord (twenty inches in length) and the membranes complete was expelled spontaneously ten minutes later. The placenta was normal in appearance, but was not preserved for pathological examination. The puerperium was without incident. The Wassermann reaction of the mother's blood, examined the day after delivery, was negative.



The foetus, showing the enormously distended abdomen.

Pathological Report.

External Appearances. — The foetus, a male, had a total length of 21.5 cm., weighed 935.5 grams, and showed commencing superficial maceration. The thorax appeared small relatively to the large abdomen, but was not out of proportion to the head and limbs. On the left side of the abdomen, just below the ribs, there was a lacerated incised wound 3 to 4 cm. in length, communicating with the abdominal cavity. A rudimentary penis was present but no scrotum, and no vestige of an anus or even of an anal depression could be made out.

Centres of Ossification.—No centres of ossification were present in the mesosternum, astragalus, os calcis, upper epiphysis of tibia, or lower epiphysis of femur, indicating that the stage of development was prior to the sixth lunar month. The epiphyseal lines at both ends of the femur were regular.

Further Examination.—The abdomen obviously had been enormously distended before the evacuation of the fluid at birth, so that the parietes now hung loosely over the abdominal viscera. Most of the abdominal organs showed the effects of pressure. A thickened mass was felt behind the peritoneum of the lower half of the posterior abdominal wall. On closer investigation there was found in this situation a large collapsed and retracted sac, wholly retroperitoneal in position. It had muscular walls varying in thickness up to 5 mm., and was lined with a smooth serous membrane. Microscopical examination confirmed the naked-eye appearances—the muscle proving to be unstriped. The lower end of this sac extended into the pelvis, and was attached by a short thick band of fibrous tissue to the pelvic floor just below the tip of the coccyx. On the internal aspect of the sac, opposite this attachment, there was a minute dimple, but no opening. Passing forwards, the sac blended with the anterior abdominal wall at the umbilicus, which formed a translucent zone separating the recti muscles in this situation. The umbilical vessels from the cord passed outwards and backwards in some gelatinous tissue on the lower surface of the sac. In the upper part of the sac, near the posterior abdominal wall, there was an opening, admitting a fine probe, which was found to communicate with the large intestine. From there the large intestine was normal in form and position, measuring 23.5 cm. from the opening to the ileo-caecal valve. It was filled, but not distended, with meconium. A short distance below and to the left of the entrance of the large intestine there was an irregular incision, corresponding in position with the similar incision on the lateral abdominal wall just below the ribs on the left side.

The caecum, the small intestine, and the stomach were normal in form and position. The kidneys were in their normal position, but were much flattened. The ureters, which were irregularly dilated throughout their course, could be traced downwards till they entered the posterior aspect of the sac above described near its upper end, but below and on either side of the entrance of the large intestine. These orifices were patent, and a fine probe could be passed into them. There was no bladder, and from the rudimentary penis an imperforate fibrous tissue cord passed back in the perineal tissues to blend posteriorly with the sac below the coccyx. The suprarenals (left weighing 0.5 gram, right weighing 0.7 gram) showed nothing of note. The pancreas (0.6 gram) showed early maceration. The liver (47 grams), pale and friable, was found in the usual situation, but much flattened from above downwards—its greatest thickness being 20 mm. It lay in close apposition to the anterior abdominal wall and the

* Working on behalf of the Medical Research Council in the Research Department of the Glasgow Royal Maternity and Women's Hospital.

diaphragm. The spleen (2 grams), pale and soft, was similarly flattened and pressed against the parietes on the left side of the upper abdomen.

The heart (5 grams) showed some congestion of the coronary veins and capillaries. The lungs (left 3.8 grams, right 4.0 grams) were wholly unexpanded, and showed early maceration. The thyroid (0.25 gram) was small and soft, and the thymus (1 gram) showed early maceration. The brain (87 grams) was soft, and showed slight congestion of the meningeal veins and capillaries. The pituitary (0.04 gram) showed nothing of note.

Histology.—Examination was made of brain, lung, liver, spleen, kidney, suprarenal, thymus, thyroid, testis, umbilical cord, anterior abdominal wall, and a portion of the sac wall. Beyond commencing maceration in most of the abdominal organs nothing abnormal was found. Portions of lung, liver, spleen, kidney, suprarenal, and the wall of the retroperitoneal sac were examined for spirochaetes by the method of Levaditi, but with negative result.

COMMENT.

The case above described, while one of "foetal ascites" from the clinical point of view, cannot be regarded as such in the true sense of the term. It is possible, certainly, that some degree of true ascites was present, but there can be no doubt that the greater part, if not the whole, of the abdominal enlargement was produced by the enormously distended bladder-like structure described. A brief consideration of the stages of development of the hind end of the body is sufficient to lead to the conclusion that this muscular-walled sac, lying behind the peritoneum with the relations already detailed, must be a *persistent cloaca.*

In the human embryo the gut, in its earliest stage, ends blindly in the coccygeal region. From the ventral part of the primitive gut in the cloacal region the allantois arises as a pocket or sacculation, which passes forwards as it develops.

The term "cloaca" is defined by Kiebel and Mall[10] as that part of the intestinal bay which lies caudal to the point where the allantois is given off. Into it there open from above the hind gut and the allantois. It is a blind sac, oval in transverse section, and its ventral surface, which is compressed to form an angle, is in contact and fused with the ectoderm of the surface of the body. This area of fusion is known as the cloacal membrane. From the ridge of tissue between the cloacal opening of the intestine and that of the allantois there grows down the septum uro-rectale, which divides off a dorsal portion of the cloaca—the rectum—from the remainder of the cloacal cavity. This division remains incomplete for some time, so that there is a small passage the cloacal duct immediately above the cloacal membrane by which the rectum communicates with the ventral remains of the cloaca. The uro-rectal septum ultimately fuses completely with the cloacal membrane, so that the latter becomes divided into an oval membrane which closes the rectum, and a urogenital membrane which closes the ventral remains of the cloaca. The bladder in man is formed chiefly from the ventral portion of the cloaca, but is, in part, of mesodermal origin.

The condition present in the case here described is, then, a primitive one. Development has been arrested before the cloacal duct has been obliterated by the complete fusion of the uro-rectal septum with the cloacal membrane.

Etiology.—Of the origin of *true* foetal ascites it need only be said that it is generally due to a chronic (occasionally an acute) peritonitis. Very rarely does it arise from portal obstruction. The origin of such abnormalities as were present in the case described in this communication is obscure. The occurrence of some inflammatory process at an early stage of embryonic life may be suspected, though its nature and extent cannot be demonstrated. Syphilis can be excluded in the particular case under consideration, but it is probably the chief predisposing factor in many instances. Mall, in a series of 163 malformed human embryos, found in every case evidence in the chorion of uterine inflammation. This he regards as the commonest cause of foetal malformations. Adami[1] states that failure of union of the great thoracico-abdominal fissure is frequently associated with persistence of the cloaca. It is unfortunate that the placenta and membranes were not submitted to detailed examination in the case herein described. The presence of vomiting (apparently abnormal in severity) in the early months of pregnancy is certainly suggestive of the occurrence of some intrauterine disturbance.

"*Foetal Ascites.*"—The term "foetal ascites" has been used not infrequently to describe cases such as this, in which the abdomen of the foetus has been distended with fluid. True foetal ascites does occur, and corresponds more or less to ascites in later life. Peritoneal inflammation can frequently be demonstrated, but in the case under consideration histological examination failed to reveal any inflammatory reaction in the peritoneum.

The subject is dealt with at some length by Ballantyne,[2] who points out the frequency with which abdominal distension from other causes has been placed in the category of foetal ascites.

Fordyce[7] gives a comprehensive review of the subject and of its literature up to the end of last century. He includes in his communication a table analysing a number of publications, and showing the relative frequency of the commoner developmental anomalies associated with abdominal distension in the foetus. Since that time much work has been done on the development of the hind end of the body, and has helped to a better understanding of the abnormalities of development found in this region, but the subject is one the details of which are still matters of controversy.

Keith[9] examined and classified 114 specimens, and discussed certain aspects of their etiology. His paper raises many points of interest in connexion with the type of case herein considered.

Cases have been described, and are referred to by Fordyce,[7] in which abdominal enlargement in the foetus has been produced by distension of the bladder and often associated with distension of the ureters and the renal pelvis. In these cases the anus was patent.

There is another small group of cases, also mentioned by Fordyce, in which abdominal enlargement in the foetus was due to the presence of a large intra-abdominal sac which was regarded as the distended bladder. The large intestine was described as opening into this sac, and the anus was imperforate.

In view of the advances in the study of the embryology of the hind end of the body since these descriptions were published, the suggestion may be permitted that in at least a proportion of this second group the abnormality was due not to a distended bladder but to a persistent and distended cloaca.

Summary.

1. A case is described in which extreme abdominal distension in a four and a half months' foetus led to dystocia.
2. From the *post-mortem* findings it is concluded that the apparent "foetal ascites" was due to the presence of a greatly distended persistent cloaca.
3. The presence of imperforate anus and other anomalies is demonstrated, and a sketch of the embryology of the parts affected is given.
4. The etiology is discussed and a short review of the literature is made.

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CURETTAGE AND THE TREATMENT OF UTERINE HAEMORRHAGE.*

BY

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In a short paper it is, of course, neither possible nor advisable to attempt even a brief survey in all its aspects of a subject so comprehensive as the treatment of uterine haemorrhage. It will be more profitable to focus attention upon a few of those conditions where haemorrhage is an important symptom, and where some difficulty arises in assigning a cause, even after curettage has been performed. I propose, therefore, to omit from consideration cases of uterine bleeding directly dependent upon the presence within or without the uterus of a fertilized ovum. Pregnancy introduces problems of its own and opens up a field far too large for discussion on this occasion. The cases where the problem in diagnosis and treatment is greatest are those where gross physical signs are absent, and where haemorrhage may almost be termed functional in type. It is to this group that I particularly wish to draw your attention.

Much of the difficulty in connexion with bleeding of uterine origin arises from two facts. In the first place, we have to deal with a bodily system where haemorrhage is a physiological function, and, moreover, where variations

* A paper read in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association held in Newcastle-on-Tyne, July, 1921.

between the normal and abnormal are so common and often so fine that it is not easy to define always where physiology ends and pathology begins. Secondly, the endometrium is frequently but a reflector of the genital endocrinic system as a whole, as well as being an organ which forms an important link in the chain. Much attention has been given within recent years to the anatomical study of the endometrium in the human female, both during the state of rest and during the phase of actual menstrual activity. These phases are now well known and generally recognized, and I need not refer to them in detail. Upon the correctness of our conception as to the anatomy and physiology of menstruation depends, however, to a very large extent, an explanation of the causes underlying pathological haemorrhage, as well as its diagnosis and treatment.

The views that I hold are based upon the results of an inquiry into the subject made during the years 1910–14 and published in 1914.[1] Since this date additional facts have been forthcoming,[2] and hitherto I have had no reason to alter the opinions then expressed. The menstrual function in the human female I regard as being analogous to the pro-oestrum of animals, the menstrual discharge consisting of the products of digestion of minute coagula formed in the endometrium and uterine cavity, mixed with secretion of the uterine glands. Under normal conditions haemorrhage from the menstruating endometrium is a slow ooze, and there is ample time for the blood to be brought into relation with the stroma cells which contain the thrombotic elements, and secretion of the uterine glands which effects thrombolysis. Thrombo-kinetic power of the endometrium is present both in the non-menstruating and menstruating uterus, and clinically the phenomenon is often evident during curettage. It is well known how rapidly blood clots when mixed with curetted fragments of endometrium, and to obtain tissue unmixed with clot it is necessary to receive the curetted material into some such solution as sodium citrate.

The Menstrual Theory.

There can be little doubt, both on clinical and experimental grounds, that the prime factor in the production of menstrual haemorrhage is the ovary. Removal of both organs causes permanent cessation of the function, and subsequent grafting of ovarian tissue is followed on occasion by its restoration, until the grafts undergo fibrosis. Atrophy of the ovaries is associated with diminution and finally cessation of the menstrual discharge. Hyperplasia of the organs leads to excessive uterine bleeding, and in animals increase of blood pressure in the ovaries produces symptoms of pro-oestrum. The stimulus is chemical rather than nervous, since the function is maintained in the case of various paraplegias. It is also probable that the stimulating action of the ovarian secretion is of a quantitative nature, and that a certain degree of concentration in the blood must be reached before the physiological effect is produced. If this concentration is excessive the surplus may be stored in the blood until the next period, and so account for those cases in which menstruation occurs for a short time after double oöphorectomy.

Evidence is not wanting also that the ovarian secretion is unable to act by itself, but requires the addition of some sensitizing agent which enters into combination with it. It is possible, I think, that this substance is calcium. In cases of calcium insufficiency amenorrhoea is usually present and is curable by the administration of calcium salts. On the other hand, excess of calcium produces severe uterine bleeding. During periods when special demand is being made upon the calcium metabolism, as in pregnancy and lactation, menstruation as a general rule ceases, although there is no reason to think that the ovarian function is suppressed.

I do not propose on this occasion to enter into a discussion of the relation of the thyroid, posterior pituitary, mammary, and suprarenal glands to the endometrium, as this has been very fully dealt with by many workers—notably Blair Bell, Swale Vincent, and Bandler. To-day we are concerned more directly with the endometrium. Evidence is gradually accumulating to show that this structure also must be regarded as a ductless gland producing its own hormone and having a specific action upon the sexual economy. It is intimately associated with the function of the ovarian internal secretion, and Bond believes that the two are antagonistic. Certainly the uterine secretion is profoundly influenced, both in its physical and physiological properties, by the presence of the ovary. In rabbits, I found that if the ovaries were present the uterine secretion when injected into the veins of other animals stimulated oestrum. In castrated animals, on the other hand, the uterine secretion was inert. It appears, therefore, as though the uterine hormone stimulated and controlled by the sensitized ovarian secretion is absorbed, and produces that dilatation of vessels characteristic of the late stages of pro-oestrum and favouring fertilization. In the human female the local congestion associated with sudden outpouring of the glandular secretion containing the excess of calcium is associated with rupture of capillaries and production of endometrial oozing which we term menstruation. This haemorrhage is an unnecessary adjunct, and Nature has endeavoured to limit its amount to the minimum by providing an elaborate machinery to control it, and also the means of removing the products of such bleeding as occurs. Menstruation, in other words, is Nature's aid to fertilization and pregnancy, and owing to the elaborate means she takes to achieve this purpose, it is not surprising that the balance is so easily upset, and that one so frequently encounters anomalies of function.

Clinical evidence is not wanting to prove the correctness of the views expressed. First, with regard to the question of the menstrual clot, many women habitually pass small disintegrated clots in the course of a normal period without pain or discomfort. This fact is easily confirmed by inquiry, or, better still, by investigation of the menstrual discharge. Quite recently a well-marked instance of reversion to the more primitive type of menstruation was brought to my notice in the case of a girl of 18, who for two years, since the onset of the menstrual function, has passed only a complete and typical menstrual clot at each period. These clots are passed without pain or discomfort of any kind, and in every other particular the girl is fully developed. In a case of this kind treatment is quite unnecessary, as the functional anomaly is purely atavistic, although most interesting from the point of view of evolution.

Another functional abnormality bearing upon the same problem is seen in some cases of so-called functional amenorrhoea. If such are closely investigated it will be found that amenorrhoea in the true sense does not exist. The uterus is normal in size and the endometrium normal in appearance. The monthly hyperaemia, however, is not sufficient to produce rupture of capillaries, and diapedesis of a few red cells into the stroma is all that occurs. The menstrual discharge consists in these cases solely of the secretion of uterine glands. The usual menstrual molimina are present, but the uterine discharge is not red. It is often disregarded by the patient and considered as being leucorrhoeal in nature. In exactly the same way anomaly may and does occur in the opposite direction, leading to intense congestion of the endometrium and very profuse haemorrhage. To this I shall refer shortly.

The Cessation of Menstrual Haemorrhage.

As to the factors which normally cause cessation of the menstrual flux—factors which are also all-important in the production of pathological haemorrhage—the machinery involved is undoubtedly complex. First and foremost, if we accept the quantitative theory of ovarian secretion, it will be readily understood that when the fixed degree of concentration is reduced, the stimulus is removed and the menstrual flow must cease. Similarly, if we regard the ovarian hormone as a complex body requiring for its physiological action the aid of calcium, a stage must be reached when it will become inactive, owing to the outpouring of calcium salts by the uterine glands.

Furthermore, we have to consider the thrombokinetic function of the endometrium. As soon as the uterine glands stop secreting, the thrombolytic factor ceases, and the endometrial vessels are immediately closed by rapid physiological thrombosis. Finally, the uterine muscular contractions which take place during "menstrual labour" exert some influence in controlling the haemorrhage by limiting and regulating the supply of blood to the endometrium. Periodicity of the function is probably entirely dependent upon general metabolism in which the whole

"sex complex" takes part. It is the product of heredity, evolution and environment, and is comparable to the age of puberty or of the menopause, or to the fact that life's span is "three score years and ten."

Pathological Uterine Haemorrhage.

It has been a legacy and for many years customary to group excessive uterine haemorrhage under one of two headings: menorrhagia and metrorrhagia. If the bleeding occurred at what was normally the active period of the menstrual cycle, the loss was termed menorrhagia. If, on the other hand, haemorrhage took place during the so-called quiescent period, it was designated metrorrhagia. From a clinical standpoint this classification is unsatisfactory, and does not cover the varieties of bleeding met with in practice. For some time past my practice has been to group cases under one of the following headings:

1. *Menorrhagia.*—A term limited to excessive haemorrhage relating simply to the quantity of blood lost at a menstrual period.

2. *Menostaxis.*—Denoting excessive menstruation as regards duration of the flow. The loss in this case may actually not be excessive, but simply a long-drawn-out period, the discharge consisting chiefly of the secretion of the uterine glands.

3. *Epimenorrhoea.*—A term introduced by Blair Bell to signify too frequent menstruation—in other words, an alteration of rhythm. When a combination of (1) and 3 exists, Blair Bell has suggested the term epimenorrhagia.

4. *Metrostaxis.*—Denoting uterine haemorrhage apart from and having no relation with menstrual bleeding. It includes not only all haemorrhages before puberty and after the menopause, but also all irregular bleeding during a woman's active sexual life.

This classification I have found very useful in practice as it divides one's cases into well-defined groups, and affords a basis for investigation and treatment along rational pathological lines.

I cannot assert too strongly that excessive haemorrhage is, after all, merely a symptom and sign of some underlying pathological cause. Some of these conditions we understand, some we do not. This being so, it is but a confession of ignorance to state that such and such a patient is suffering from menorrhagia, epimenorrhoea, or metrostaxis, and proceed to treat it as a disease. It is just as rational to consider haemoptysis or haematemesis diseases, and to treat these symptoms on general principles, as to bombard a patient with ergot, or curette her uterus without carefully investigating the tissue removed. All excessive uterine bleeding is due either to general or local causes. Speaking generally, the former predominate in young patients and the latter in married and elderly women. The rule is, of course, by no means absolute; but from a useful and practical point of view it is advisable to consider the subject from an epochal standpoint.

By far the greatest number of cases of haemorrhage requiring attention occur either at the commencement or towards the close of active sexual life; in other words, during periods of physiological instability. Since the amount of bleeding is to a large extent under control of the endometrium, a knowledge of its normal microscopical appearances at different stages of the menstrual cycle is essential. It is upon the recognition of abnormal appearances of the fragments removed by the curette that the diagnosis of the cause of pathological bleeding is based. Briefly, three abnormal states of the endometrium occur which demand consideration: (1) Hypertrophy, diffuse or localized; (2) atrophy; and (3) hyperactivity.

Hypertrophy of the Endometrium.

In minor degrees hypertrophy is not uncommon and gives rise to pure menorrhagia. It is commonly a late result of septic infection of a parous uterus, but it also occurs quite independently of this factor. In multiparae it sometimes supervenes upon rapidly repeated pregnancies, and in nulliparae it may be associated with chronic pelvic congestion from various sources and hyper-oöphorism. The condition is really what might be termed an excess of zeal on the part of one element in the sexual chain. Occasionally the hypertrophy is extreme, the tissue measuring a quarter of an inch or even more in thickness. The enlarged glands are easily recognizable to the naked eye, and the whole cavity of the uterus is occupied by a thick creamy-like mass of tissue. Such extreme hypertrophy is at times associated with hyperplasia of the ovaries. If this is the case, curettage is merely a palliative measure, and no radical cure can be expected until the ovarian secretion is diminished, either by the action of radium or by double partial oöphorectomy. It is a characteristic feature of this type of haemorrhage that, although severe in amount, clots are very rarely passed. The "loss" consists, so to speak, of the products of intra-uterine digestion with the profuse secretion from the hypertrophied glands.

The diagnosis of endometrial hypertrophy is readily made by means of curettage and an investigation of the uterine discharge as to the presence or absence of clots. Treatment must depend upon the cause underlying the hypertrophy. In some instances curettage alone effects a cure. In others the intrauterine application of radium, partial oöphorectomy, or even hysterectomy, may be required. The localized type of endometrial hypertrophy is familiar as the simple or adenomatous uterine polypus. By some this is regarded as an entity, but investigation of a long series reveals all grades and types in evolution, culminating in the diffuse extreme form just described.

The origin of these small localized hyperplasias is obscure, but they almost invariably, when large glands are present, give rise to prolonged and severe haemorrhage. The cause of bleeding is, I believe, similar to that described, and lies in a solution of thrombi by the glandular secretion. Curettage is, of course, essential in the diagnosis of this cause of haemorrhage, and incidentally cures the condition.

Atrophy of the Endometrium.

Just as a hypertrophic endometrium bleeds owing to hyperactivity on the part of the uterine glands, so atrophy produces haemorrhage because of the absence of endometrial stroma with its associated thrombokinase. Under normal circumstances, as the blood escapes into the tissues it is brought into contact with a tissue favouring rapid clotting. If this tissue is deficient, clotting is delayed or absent, and very profuse and prolonged haemorrhage occurs, which of course is liable to continue after the ovarian stimulus is withdrawn. The condition, in fact, bears a close resemblance to the oozing from a wound in a haemophilic subject.

Atrophy of the endometrium may be suspected when severe bleeding associated with the passage of large clots occurs in a woman approaching the menopausal age. It is largely a matter of inco-ordination between ovaries and endometrium. If the ovarian hormonic action ceases before the endometrium atrophies, all is well, and a normal menopause is encountered. If, however, the endometrium antedates the ovaries, then some floodings must and do occur. It is exactly what is to be expected. The presence of clots is significant in this type of haemorrhage, especially in the case of a patient who habitually is free from the same, and serves to distinguish the condition from hypertrophy of the endometrium. Atrophy of the endometrium is often associated with chronic metritis and fibrosis uteri. Subinvolution, on the other hand, and true uterine hypertrophy, such as occurs in single women about the age of the menopause, are commonly combined with hypertrophy and oedema of the endometrium.

The diagnosis of endometrial atrophy is, of course, confirmed by curettage. If with the curette small shreds of tissue only can be removed, and the instrument comes down immediately upon hard dense uterine wall, it can be concluded that atrophy is the cause of the haemorrhage. It may also be recognized that mere curettage will not suffice to control the bleeding, and steps should be taken at the same sitting to control it permanently, either by the intrauterine application of radium or by hysterectomy. Curettage alone gives but very temporary relief in this type of severe menopausal haemorrhage.

A precisely similar state of things exists at the commencement of sexual life if the ovarian function is established before the uterus is completely developed. Fothergill was quite correct at the Liverpool meeting of the British Medical Association when he attributed these haemorrhages of puberty to lack of development, but he confined his remarks to the musculature of the uterus. This is one factor, but I believe that the endometrial factor is equally important. In the case of these haemorrhages of puberty Nature in the vast majority of cases regulates the mechanism, and we only have to wait for the endometrium to develop its full function. This may sometimes

be accelerated by curettage in really severe cases calling urgently for treatment. The other alternative, of course, is to administer an antidote to the ovarian hormone, such as extract of thymus or mammary gland. Radium is also of use in this connexion, but care must be taken to regulate the dosage accurately, or sterility may result.

Radium in the Control of Uterine Haemorrhage.

Time will not permit me to consider in full detail the action of radium in controlling uterine haemorrhage. There is no doubt, however, that in radium we have a very valuable agent for controlling uterine haemorrhage due to ovarian and endometrial inco-ordination. Personally, in those instances where I have employed radium—cases of severe haemorrhage due to hypertrophy or atrophy of the endometrium—I have so far been entirely satisfied with its effects. I can certainly say that had it not been for radium I should have performed hysterectomy in some of these cases.

Dr. Miles Phillips of Sheffield has very kindly placed at my disposal sections of uterus and ovaries removed from two cases in which radium had been used some months previously. My original intention was to speak upon these specimens to-day, but I think it will be better to issue a separate report at a later date upon a subject so important, but which is perhaps a little foreign to the subject now under discussion. I will confine my remarks to-day to observing that as far as the endometrium is concerned, radium appears to produce atrophy, both of glands and stroma, but especially of the former. Hence its great value in checking haemorrhage due to hypertrophy. There is considerable inflammatory reaction as shown by leucocytic infiltration, but there is no evidence of thrombosis of vessels. As regards the ovaries, radium appears to destroy the Graafian follicles, but does not interfere with the stroma. This is a point of considerable interest, as it has a bearing, of course, upon the origin of the ovarian hormone. In checking haemorrhage at puberty and the menopause radium must exert its peripheral action on the ovaries, as the endometrium is inactive from undevelopment or atrophy respectively.

Hyperactivity of the Endometrium.

If sections are taken from various parts of a normal menstruating endometrium and examined under the microscope, it will be found that all present practically the same appearance, both stroma and glands corresponding to the actual stage of the "period." On the other hand, if curettings are examined from some cases of metrostaxis or prolonged menstruation during active sexual life, it will be found that all portions of the endometrium are not affected in the same manner at the same time. To this abnormality I think that the term "hyperactivity of the endometrium" may be applied. The term can, of course, be but relative, since the endometrium is but the reflector of activity of the ovarian and other hormones.

In some cases of uterine haemorrhage lasting from ten to fourteen days the actual loss is often not severe, but the very fact of the period continuing for so long is a source of alarm to the patient. Curettings from such a case show that part of the endometrium is in the pre-menstrual stage and part post-menstrual. There has been a tendency to regard this appearance as a definite lesion of the endometrium and to call it by that long-suffering term "endometritis." There is no evidence of inflammation in the ordinary pathological sense of the word, and the appearance is, I believe, produced by the ovarian hormone acting in small quantities over a lengthy period and stimulating the endometrium to activity in sections.

Clinically, such cases not infrequently follow labour and abortion, and account for many of the examples of menostaxis occurring at intervals remote from pregnancy, but apparently dating from the same. Unless the amount of blood lost at each period is in the aggregate excessive, producing anaemia and debility, no very active treatment need be employed. The actual length of a period is no criterion of the amount of blood lost any more than is a patient's statement. A blood count at the end of the period and investigation of the actual uterine discharge will give a much more reliable basis for treatment. Thyroid gland is useful in treating this type of haemorrhage, possibly by stimulating the calcium metabolism and sensitizing the ovarian hormone. Curettage will always give a clue to the cause of the bleeding if care is taken to examine several portions of the endometrium. It also serves as a temporary check to the haemorrhage, although this is probably unnecessary.

Endometritis as a Cause of Uterine Haemorrhage.

Moynihan has observed that "the wealth of teaching in the textbooks represents rather a legacy flowing from one's ancestors than a fortune newly won by hard endeavour." This is indeed very true of "endometritis," and even to-day we hear the term used much more frequently in connexion with curettage and uterine haemorrhage than is correct or even justifiable. In the older teaching much that was normal and some that was abnormal were grouped together under the term "endometritis." Now "endometritis," in the true sense of the word, a definite inflammation of the endometrium such as may be set up by an infecting agent, bacterial or otherwise, is not so common as is generally supposed, and it is not by any means necessarily associated with uterine haemorrhage. The one cardinal symptom of true endometritis is the occurrence of a discharge, but it is of a muco-purulent or purulent nature. It is true that inflammation may eventually lead in some cases to hypertrophy or atrophy of the endometrium, but it is the very hypertrophy or atrophy that is the cause of the abnormal bleeding and not the inflammation underlying it. "Glandular" and "atrophic endometritis" as such do not exist, and in my opinion the terms should be removed from our phraseology.

In 50 cases classed clinically as "endometritis" by different observers, in which I was able to examine the curetted material, the following results were obtained:

33 patients gave a history of menorrhagia or menostaxis.
17 patients gave a history of metrostaxis.

31 showed hypertrophy of endometrium, especially of the glandular elements.
12 showed atrophy of endometrium, with diminution of both glands and stroma.
7 showed marked leucocytic infiltration and plasma cells.

In other words, 43 exhibited evidence of those changes which recent investigation has shown to be due to many factors other than inflammation. Endometritis of septic origin, in my opinion, does not appear to produce uterine haemorrhage, with one or two exceptions. Thus in a series of 15 cases where curettage was performed for the relief of discharge and pain, the endometrium was infiltrated with plasma cells and leucocytes. Haemorrhage was not a feature of these cases. In fact, in one instance where the discharge was very foul and the clinical diagnosis of "putrid endometritis" made, thrombosis of vessels in the endometrium was present.

The exceptions to which I have referred relate to those instances of acute ascending infections of the genital tract, specially gonorrhoeal, where immediately preceding extension to the Fallopian tubes and peritoneum a sharp uterine haemorrhage sometimes occurs. This is particularly prone to happen if a menstrual period is due. The haemorrhage in such cases may be due to the intense pelvic congestion as a whole, as I have seen it occur in extragenital inflammation, such as acute appendicitis and even in severe influenzal infections.

The Value of Curettage.

In conclusion, may I say a word in favour of curettage? On previous occasions I have more than once entered a protest against the practice of indiscriminate curetting for all cases of obscure uterine haemorrhage. The operation may do good, but the chances are equally against it if the cause of bleeding is not directly dependent upon pregnancy. As a diagnostic procedure, however, curettage is of paramount importance, especially when the microscopical appearances of the endometrium are considered in relation to the history of the case and the character of the uterine discharge.

To curette a uterus and throw away the curettings is comparable to treating haemoptysis without examining the sputum. Another point is, who should examine and report upon the curettings? I unhesitatingly assert that no report is of value unless it is submitted by a pathologist who is conversant with gynaecological pathology, and especially with the endometrium in all its phases. The average pathologist is content if he reports to the effect that "Chorionic villi are present" or absent as the case

may be; that "Decidual cells are present"; or that "There is no evidence of malignancy." This may all be very interesting, and in certain cases, of course, all that is required. It is not sufficient, however, when the cause of an obscure case of uterine haemorrhage is at stake.

If we employ the services of a specially trained pathologist, however, and expect a report that will be useful, we also must follow a strict routine. In the first place, the type of bleeding should be submitted with the specimen to the pathological laboratory, whether it is menorrhagic, menostaxic, epimenorrhoeal, or metrostaxic. The pathologist should also be informed as to the date in the menstrual cycle when curettage was performed. Finally, the tissue submitted should be selected at the time of operation by the surgeon and transmitted to the pathologist as free as possible from blood clot in an appropriate fixing solution. More than one specimen should, of course, be examined. If these precautions are taken curettage becomes a valuable diagnostic asset. My own practice is to examine or have examined without exception all material removed by the curette. Even when the cause of haemorrhage is apparently obvious, surprises are sometimes in store. An apparently simple adenomatous polypus has shown under the microscope malignant characters, or what appeared to be a placental polypus has turned out to be chorion-epithelioma. Hypertrophy, atrophy, or hyperactivity of the endometrium can, of course, only be diagnosed by curettage, although previously suspected from the history.

As a therapeutic measure curettage for uterine haemorrhage must, of course, depend upon the cause of the bleeding. If this is due entirely to the uterus then it may be curative, such as when a simple localized hyperplasia of the endometrium or the products of a gestation are removed. If, on the other hand, it is the result of incoordination of various hormones, it will be but palliative, or fail completely, as in the case of diffuse hypertrophy or atrophy of the endometrium respectively. Under these circumstances, curettage must be combined with other therapeutic measures designed to combat the primary cause. Treatment, to be effective, must depend upon accurate diagnosis. Much of the disappointment and failure that has attended and still attaches to the treatment of uterine bleeding arises because we are content to rely upon empirical methods which sometimes, but not always, prove effective.

Haemorrhage from the uterus is a symptom of such diverse conditions involving the whole realm of medicine that no one panacea such as curettage can ever be expected to prove effective in all cases. It is only by approaching the problem in a logical and routine manner that we can hope to be successful. If, on the other hand, we fail, we at least have the satisfaction of knowing that we have made an honest attempt.

REFERENCES.

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DISCUSSION.

Dr. W. R. GROVE (St. Ives) said that in the course of investigations as to calcium deficiency in ulcers a reference had been made by Dr. Vines and himself (in a paper read before the Therapeutic Section on "The etiology and treatment of varicose ulcer") to one case of catarrhal trouble of the uterus in which calcium deficiency was present. He pointed out that calcium salts administered by the mouth were not absorbed into the blood, the whole dose being recoverable from the faeces. They were a good intestinal stimulant, and in large doses an excellent treatment for intestinal parasites. He stated that calcium deficiency was remedied by parathyroid extract—tab. gr. 1/10 daily (Parke, Davis)—administered by the mouth, and that any good result obtained by thyroid extract was probably due to contamination by parathyroid. He also referred to intramuscular injection of calcium chloride with a view to increasing the clotting power of the blood as a palliative treatment in all haemorrhages (BRITISH MEDICAL JOURNAL, July 9th, 1921).

Mr. GORDON LEY (London) congratulated Dr. Beckwith Whitehouse on his excellent paper. He could not agree that menstruation was entirely dependent on ovarian secretion; he had seen many cases in which menstruation had continued after the removal of both ovaries; these cases were too numerous to be explained by imperfect removal owing to the presence of accessory ovarian tissue.

Professor RANKEN LYLE (Newcastle) said that he was in agreement with other speakers that, owing to the highly scientific nature of Dr. Beckwith Whitehouse's paper, it would be very difficult to discuss it without first having the opportunity of studying the whole paper in detail; and he therefore looked forward with the greatest interest to the reading of the paper when it was published.

THE POSITION OF THE MEDICAL PRACTITIONER CALLED IN TO ATTEND A CASE OF PROCURED ABORTION.

BY

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THE medical profession desires to prevent crime in the interests of the individual and of the community. The question as to how this can best be done is an important and interesting one, because the medical practitioner has a dual identity. He is both a citizen and a trusted adviser of the patient. As a citizen it is incumbent upon him to prevent crime and to aid in the detection of criminal offences. As a doctor he is bound to preserve the secrets of his patients, in accordance with the rule which has been observed by the medical fraternity from time immemorial. Without the fullest confidence in the integrity of the medical man the patient will not tell him the truth and the whole truth. Unless she does so he will be at a great disadvantage in arriving at a correct diagnosis and in formulating a proper scheme of treatment. Reticence on the part of the patient may be a serious disadvantage to her. Hence in most cases of criminal abortion the doctor will find himself on the horns of a dilemma. His duties as a citizen and his obligations to the patient will clash with one another. He must be prepared to make up his mind as to whether he will, in his capacity of citizen, disclose the fact that a crime has been committed, or whether he will maintain professional secrecy and confine his activities to the proper treatment of the case.

In practice the medical profession as a whole rightly puts the patient's interests first and justifies the confidence reposed in it, although this course gives the doctor a feeling of mortification that he is precluded from exposing a crime. Thus by observing the obligation of professional secrecy the medical man will be disregarding his duty as a citizen. He will shield the criminal who committed the offence, the woman who was a willing victim, and those who instigated her to have the operation performed or helped her to procure the services of the abortionist. The doctor's position in these cases is an unpleasant one, but a medical man as such is concerned solely with the proper treatment of the patient, and the fact that she has been a party to a criminal transaction can have no place in regulating his conduct. His duty is to endeavour to save life regardless of the moral character of the patient.

There are three sets of circumstances under which medical men become cognizant of crime of this kind:

1. Before the crime has been committed the doctor may become aware of the intention to have an illegal operation performed.
2. After the crime has been committed but a fatal result to the woman has not occurred.
3. When the crime has been committed and a fatal result has followed.

1. When a doctor becomes aware that a criminal operation is contemplated he can do nothing. Not only is he bound to keep the secret of the patient, but his evidence would be uncorroborated. In a small country town a prominent and influential man seduced a girl of the working class and asked the local doctor to perform an illegal operation. When the doctor refused, the man was very indignant and taunted him with the fact that he knew where he could have the operation done. He subsequently

A paper read in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association held in Newcastle-on-Tyne, July, 1921.

took the girl to a neighbouring city and had the operation successfully carried out. The doctor was naturally much annoyed that he was unable to expose the crime, but he had been consulted by the man in confidence, and, even if he had decided to abuse that confidence, he had nothing but his own uncorroborated testimony to offer. The crime remained undetected and unpunished, but the doctor had pursued the only course open to him.

2. A medical man most frequently comes to know that a criminal abortion has been accomplished when he is called in to treat the woman for haemorrhage or sepsis. The patient, in her anxiety to give the doctor full particulars, usually discloses the whole circumstances under which the operation was performed, giving the names of those who directed her to the abortionist, of the abortionist, and often also of her paramour. Here the doctor is bound to maintain professional secrecy and allow the criminal and those who aided and abetted the crime to escape. There is no other course open to him.

3. When a doctor is called in to attend a woman who is about to die as a result of having had an illegal operation performed, he is bound to maintain professional secrecy so long as the patient is alive. Her death, however, breaks the contract as to secrecy, and he can then notify the coroner of the circumstances under which the woman died and can assist the authorities in bringing the criminal to justice. It might be argued that the obligation of professional secrecy exists even after the death of the woman. This position can hardly be seriously maintained. The great reason for professional secrecy in these cases is the fact that publicity would injure the future position and prospects of the patient. Her death does away with this reason and allows the punishment of the person whose action caused her death to become the important consideration.

It would seem to be clear that when a doctor in his capacity of a trusted adviser becomes aware of the intention to have a criminal operation performed, he must keep silent. It is equally clear that when he becomes aware that the crime has been committed, he must be silent so long as the patient is alive. It is only after her death that the obligation to remain silent is removed. Consequently the medical profession can only assist in the detection of crime in a small minority of cases of criminal abortion.

Arising out of the consideration of the question of criminal abortion is the relation of the law as at present administered towards those who have been accessories to the crime. Punishment is awarded to the chief culprit whose hand caused the death. Those who put the woman into communication with the criminal operator go free. The person who supplied the money to ensure the performance of the operation also remains unscathed. In a recent case the woman's lover, who was responsible for her trouble, himself employed and paid the operator. Nevertheless, while the operator received a severe sentence, the paramour was allowed to escape with a few admonitory remarks from the judge. In this case the lover was really the most guilty party. He suggested the operation to the girl, although there was no reason why he should not have married her. He tempted a drunken criminal operator with a fee. He paid the fee and sent the operator to the girl's house. Her lover was the primary cause of her death, yet he escaped punishment.

In other cases women friends of the patient have instigated her to have the operation done. They have brought her into touch with the abortionist, and have sometimes afforded facilities for having the operation performed. Of these people the law takes no cognizance, and they remain unpunished. Such a state of things surely requires to be remedied. Until those who administer the law see that just punishment falls upon those who aid and abet the commission of the crime, as well as upon the chief criminal by whose hand the deed is done, criminal abortion will remain one of the great blots on our civilization.

DISCUSSION.

Dr. W. ROBINSON (Sunderland) said he had rarely, to his knowledge, attended a case of procured abortion. He pointed out that a woman, married or single, who took drugs to procure abortion, whether successful or not, legally committed a crime just as much as those who used instruments. He knew of no drug which was efficacious in terminating pregnancy. He knew of one married woman who successfully gave herself an intrauterine injection of glycerin, and another who had used a crochet needle; both recovered. In such cases the great personal danger and the immorality of the act must be pointed out. In the case of a single woman brought into hospital, for whom an abortionist had procured an abortion by operation, he persuaded her to make a statement on oath to a justice of the peace; the latter sent it to the Home Office, but no legal action was ever taken. The patient recovered. Another single woman, upon whom he performed an autopsy, had dosed herself with matches and had died of phosphorus poisoning without aborting. There was an epidemic of similar cases at that time. A practitioner should inform the nearest relative and call in a brother practitioner or consultant in all cases of procured abortion. If a consultation be refused he should give up the case. Should a woman die of a procured abortion no certificate of death must be given and the coroner must be informed. Every practitioner who was called to attend an abortion and "knew" that it had been induced, was *legally* bound to inform the police; if he did not, he would be guilty of concealment (misprision) of a felony, and be liable to legal proceedings (though apparently these were now never taken) or to censure by the judge, if the case came into court. In court, if ordered by the judge, a medical practitioner must state what he knew of the case. There was no law to save him from doing so, neither was there in the case of a solicitor or a priest; only custom in these two protected them.

Dr. J. D. DAVIES (Llanelly) did not agree with Dr. Campbell upon some points. Surely, he said, a man who went to a doctor and asked him to procure an abortion did not come under the protection of professional secrecy. He believed that in all cases where professional abortionists (non-medical) were concerned the medical man called in should do his best to assist in cutting short the career of these individuals, even going to the extent of refusing to attend unless information was given to the police. In these cases the patient was never prosecuted. Where the abortion was self-procured the duty of the doctor was to be silent.

Professor RANKEN LYLE (Newcastle) said that although the views expressed by Dr. Campbell were held by a number of practitioners, he was not in agreement with him. The question of professional secrecy was all very well when no criminal question was involved, but in cases of procured abortion, where a medical man was called in, the reputation of that medical man was at stake, and if any legal question arose, then the medical man would probably be made a party to the crime in a case in which he had concealed the facts. It must be remembered that a doctor's reputation was his most valuable asset, and it was essential that that reputation should be above suspicion, and that he should do nothing that would endanger it in any way. He was of opinion that no medical man should attend such a case without first obtaining the consent of the patient or the patient's friends to inform the police, and if this was refused, he had a perfect right to refuse his attendance on the case. Let them for a moment consider what would happen if the practitioner adopted the other course, that of secrecy. The abortionist would very soon become aware of this, and he would recommend his victims one after another to call in that practitioner, knowing that he would not tell, and he would then be able to carry on his criminal work by the aid and assistance of that practitioner. He might say that he had adopted this rule for many years in Newcastle, and so had many other men, with the result that all the abortionists in that neighbourhood had been run to earth, and any person now desiring an illegal operation had to travel many miles in order to have it performed. He was convinced that if the whole profession adopted this attitude the operation of criminal abortion would almost immediately cease to exist in this country.

A PAMPHLET received from Dr. de Almeida gives the clinical history of a case of syphilitic infection of the chin acquired at a barber's shop from a dirty razor. Such infections are not extremely uncommon, and the author gives a general account of their occurrence and treatment.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CAESAREAN SECTION IN A CASE OF PROLAPSED CORD.

A PRIMIPARA, aged 29, sent for me on October 18th about midday. She was at full time, and the membranes had ruptured whilst she was engaged in her household duties. It was evident that a large quantity of fluid had come away. The os was not dilated, labour pains had commenced; the child was large and the presentation a breech. I saw her again about 5 p.m. The os was dilated to the size of a five-shilling piece, and was rather rigid. Several coils of the cord were presenting, and pulsation was present. Meconium was present in the vaginal discharge. From the general condition of affairs the prospect of delivering a living child *per vias naturales* seemed hopeless. Replacement of the cord was not practicable at the time, and if I had waited would most likely have been unsuccessful in any case. Delay would also have increased the risks of a successful Caesarean section.

I put the facts of the case before the patient, namely the prospect of either a dead child with a normal delivery, or a good chance of success with abdominal section but greater risk to herself. She chose the operation, which I performed with as little delay as possible. The child, a boy, weighed over 9 lb. He is healthy and thriving. Extraction of the child was rather difficult owing to its size and the contraction of the uterus round it. The mother made a practically perfect recovery. The placenta was situated on the anterior wall.

Prolapsed cord is not usually mentioned in textbooks as an indication for Caesarean section, but under the heading of "Prolapsed cord" Berkeley and Bonney recommend Caesarean section as being more likely to give a living child than any other method of treatment. In this case it was undertaken entirely for the sake of the child, and has been completely successful. The technique which I have used in cases of Caesarean section is that detailed by Berkeley and Bonney, which to my mind leaves little room for any improvement.

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A METHOD OF SKIN GRAFTING.

THE surgeons of Queen's Hospital, Sidcup, have done good service in drawing attention to the importance of pressure in securing the permanent adhesion of skin grafts by Thiersch's method. The method of taking an accurate mould and applying it over the graft appears very successful.

An alternative method and one which involves less trouble is to apply very firm pressure, with the ball of the thumb covered by a swab, on the grafts when applied. If this is done evenly and with care they neither adhere to the swab nor slip on the wound surface. Ambrine is then applied carefully with a spray and brush. This serves both as a splint and dressing. For some years in the Kashmir Mission Hospital this method has in our hands proved successful.

Bromley. ERNEST F. NEVE.

OESOPHAGEAL TUMOUR OF THYROID TISSUE.

THE following case, which was shown at the Royal Society of Medicine on November 4th, is believed to be unique.

In the late afternoon of September 13th, 1921, a married woman was admitted to the London Temperance Hospital with the history of having swallowed a fish-bone. The existence of slight pyrexia and a suspicious fullness in the neck suggested the possibility of perforation into the cervical fascial planes, with the dread sequela of infective mediastinitis. Accordingly no time was wasted, and next morning at 8.30 an endoscopic examination was made.

On passing a Brüning's tube no bone was found. But at the level of the second dorsal vertebra a tumour was discovered, attached to the mid-line of the dorsal surface of the oesophageal lining. The protuberance was paler than the surrounding mucosa of the gullet; in size it was smaller than a cherry, but much larger than a pea; in contour it was moriform; and its attachment was by a broad pedicle. Brüning's tube was now discarded, and Mosher's, with distal illumination, was substituted, and by means of Irwin Moore's forceps it was easy to remove the small tumour entire.

I thought to have met with that rare neoplasm, an oesophageal papilloma, but the report of the pathologist, Dr. Sanguinetti, showed that the growth here found was even more rare, for its histology was that of unmixed thyroid tissue in all stages of development. Professor Shattock, who has not seen Dr. Sanguinetti's report, corroborates it in detail, and writes: "Although such aberrant formations have been encountered higher up in the pharynx, their occurrence in the oesophagus does not appear to have been as yet recorded."

It should be added that the patient, who remains so far in perfect health, shows no evidence of thyro-glossal duct remains, either in the neck or in the tongue.

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Laryngologist to the Hampstead General and the London Temperance Hospitals.
London, W.

HYPERTROPHIC PYLORIC STENOSIS.

IN connexion with the articles on congenital hypertrophic pyloric stenosis in the BRITISH MEDICAL JOURNAL of November 26th, p. 889 et seq., I would like to record the impressions left by reflection on several such cases in my experience during the past twenty years.

If they can be tided over the sixth month the spasm relaxes and the children get well; not only so, but in physique and mental development they become above average. My opinion is that the pyloric spasm and hypertrophy result from hypersensitiveness of the nervous mechanism controlling the muscular wall of the stomach and pylorus. I put this to the proof two years ago in a very severe case. I gave nepenthe (Ferris) one-sixth of a minim before food. I thus bluffed the nerves of the stomach, the food stayed down; at four months the infant would easily have taken first prize at any baby show. Another infant is at present doing well on the same lines.

West Kirby, Cheshire. ADAM MOSS, M.D.

THERAPEUTICS OF PARATHYROID GLAND.

THE remarkable power of quinidine sulphate in the relief of auricular fibrillation, as proved by Sir Thomas Lewis and his co-workers and reported in the BRITISH MEDICAL JOURNAL of October 1st, 1921, has induced me to place on record the virtue of parathyroid gland in a case of paroxysmal tachycardia. Of all distressing conditions to witness few equal those of a severe case of this ailment. The patient is stricken helpless in a moment. While the paroxysm lasts—and it may do so for an hour or two—death is longed for. It resembles a cardiac epilepsy, instead of a cerebral epilepsy.

I had a lady under my care some time since who, when free from a paroxysm, which recurred once or twice a week, passed as a normal healthy woman, and with a sound heart. I used all the usual drugs, without any mitigation of her suffering. What impelled me to give her parathyroid gland 1/10 grain three times a day I cannot call to mind now, but the effect was dramatic at the moment, and by continuing the tabloid she has been for some years free from her distressing paroxysms. I only place the fact on record that it may be further tested.

I have another patient, aged 67, to whom parathyroid was also of great value. She was listless, continually sighing, and was evidently not thriving. She was a very bad feeder, unable to take milk or puddings of any sort; no fat, except butter, and no fruit or salad. She lived mainly on white bread and butter; any other food she could eat was very small in quantity. I came to the conclusion that her restricted diet did not provide sufficient lime salts for the needs of her system, so I gave her calcium lactate, which considerably improved her condition. This being the case, I thought parathyroid gland, from the way it controls calcium metabolism, would prove still more efficient, and so it turned out. She takes 1/10 grain every evening. Her listlessness and sighing have disappeared, and now she is her former self, bright, cheerful, and energetic.

CLEMENT DUKES, M.D., F.R.C.P.Lond.,
Honorary Consulting Physician to Rugby School.
Rugby.

Reports of Societies.

DIAGNOSIS OF ABDOMINAL DISEASES.

A SPECIAL meeting of the Manchester Medical Society was held on November 23rd, in conjunction with the members of the Liverpool Medical Institution, in the Medical Society's reading room, University of Manchester, with Dr. T. A. GOODFELLOW, President of the Manchester Medical Society, in the chair.

Dr. R. J. M. BUCHANAN, in his paper on "Points of clinical interest in the diagnosis of abdominal diseases," emphasized the importance of definite pain as a sign of organic disease. Such terms as "neuritic" and "neurosis" in relation to abdominal disease were mostly wrong and certainly unsafe. So-called functional disease was the last to be sought. He drew attention to abdominal pain caused by disease in the thorax—for example, empyema, pulmonary syphilis, pericarditis, and spinal diseases, and pointed out that pleuritic effusion was an early herald of malignant disease in the abdomen. Too little attention had been paid to careful auscultation of the abdomen, and especially in localizing peritonitis, and the speaker emphasized the value of light auscultation of the abdominal aorta for a bruit which he found present in pathological conditions in which the aorta was pressed upon, especially in malignant disease. This physical sign should be tested as occasion arose. Delay in recuperation of the blood after haematemesis favoured a diagnosis of malignant disease. Profound anaemia often accompanied malignant disease of the caecum. Venous thrombosis was prevalent in malignant disease, and he considered that in any case of thrombosis the viscera should be examined for it. There was an exacerbation of symptoms with pyrexia in cases of leaking gastric and duodenal ulcer. He advocated that all cases in which x rays were used a complete "watch through" should be done; disease of the appendix could easily be revealed even to the demonstration of concretions, and in such cases the caecum was often distended, a Jackson's membrane present, and plication called for. He drew attention to the tender spots present on the back in the region of the suprarenals in Addison's disease.

The address was illustrated with water-colour drawings, radiographs, and lantern slides, the former by Mrs. Lowe, and the photographs and slides by Messrs. Holland and Berkeley.

Carcinoma of the Large Intestine.

Mr. G. P. NEWBOLT read a paper upon the diagnosis and treatment of carcinoma of the large intestine, based upon 60 cases upon which he had operated. Of these, 26 occurred in the sigmoid colon, 11 in the splenic flexure, 11 in the caecum, 8 in the hepatic flexure, and 4 in the transverse colon. Out of 33 resections done up to 1917, 12 were alive at present. Sigmoid and splenic growths were, he thought, most favourable, and he emphasized the importance of an early diagnosis in these cases if a successful result was to be obtained, pointing out the difficulty in diagnosis where the growth was small. Radiology had done a good deal in helping the exact location of some of these growths. He considered that the three-stage operation of caecostomy, then excision of the growth with direct union, followed later by closure of the caecostomy, was the ideal operation in the absence of obstruction. Paul's operation was the best in cases where obstruction was present. Caecostomy should be done in patients who were very ill in consequence of acute obstruction. As 37 out of the 60 growths were situated in the sigmoid and splenic regions, he advocated incision on that side in cases in which the situation of the growth had not been exactly diagnosed. Where obstruction existed he advocated exploration from the right side with the view of localizing the growth, and then doing caecostomy, freely removing the growth later when the intestines were empty. He suggested that the median incision was rarely necessary.

Acidosis in Children.

Dr. MURRAY BLIGH read a paper on acidosis in children, in which he referred to the lack of practical assistance in the diagnosis of the condition and in the estimation of its degree; the varieties occur with greater frequency in children. Not only is it met with in a higher proportion of all children admitted to hospital, but it is present also in many attending the out-patient clinics of children's hospitals. He considered there was urgent need of means to precisely measure the extent of the acidotic state in children. He referred to the practice of limiting the amount of food or of actually starving children immediately before operation, and the tendency of the anaesthetic, whether ether or chloroform, to convert a relatively mild ketosis into a severe intoxication. The custom of postponing operations because the tested urine showed the presence of acetone, of saturating the child with sodium bicarbonate, and inflicting a second period of starvation was based on unsound knowledge. The qualitative test for acetone indicated nothing more than that acetone, diacetic acid, and oxybutyric were present in the blood and were being eliminated in the urine. The presence of acetone in the urine of children was misleading as evidence of the depletion of alkali reserve in the blood. It suggested the possibility of dangers which did not exist, and it led to uncontrolled treatment with alkalis. He recalled the experiments of Professor Haldane and his co-workers, in which the eating of large quantities of alkali led to a state of alkalosis, as evidenced by diuresis, increased alveolar air CO_2, and diminution of the ammonia in the urine, but acid bodies also appeared in the urine. Acidosis also occurred without acetonuria, and incidentally with acetonuria, but the result of some other state than excess of acetone bodies.

The causes of acidosis were multiple. Physiologically it was a diminution below certain limits in the alkalinity of blood plasma. Clinically such a condition might result from bacterial infection from fermentation and its resultant lactic acid production; from internal asphyxia with accumulation of CO_2 in the tissues as the result of impeded circulation, from imperfect fat metabolism, from elimination by the kidneys of alkali in excess from any renal defect which inhibited the elimination of acid sodium phosphate and its consequent accumulation in the blood. The physiological changes brought about had been made the basis of methods for the diagnosis of acidosis and the estimation of its degree, but none of them were quite satisfactory. The estimation of CO_2 tension in the alveolar air of infants and young children was not an easy procedure. The apparatus required expert manipulation, and was difficult to use in routine work in private and in hospital. True acidosis was associated with, but was not always due to, the presence of acetone bodies, and the common cause of it seemed clinically to be the result of excess of sodium phosphate in the blood. It was the function of the kidney to excrete it, and it did so normally in considerable quantity. Failure resulted in retention and consequently diminished alkalinity. In most infantile diseases there was an associated pyrexia, and urinary secretion was diminished sometimes to the point of anuria; renal function was inactive even without the existence of true renal disease. Impaired renal function was of high importance as a factor in the production of acidosis; it was frequently associated with ketosis, but the latter was usually of lesser importance.

After the meeting the visitors were entertained to dinner by the members of the Manchester Medical Society.

UNDESCENDED TESTICLE.

A MEETING of the Liverpool Medical Institution took place on November 17th, with the President, Dr. J. E. GEMMELL, in the chair, when Mr. R. C. DUN read a paper on "Undescended and misplaced testicle," reviewing the experimental and clinical work done on the etiology, physiology, and pathology of the condition. The evidence regarding the spermatogenic and internal secretory powers of the undescended and displaced testicle was sifted and the effect of these functions on the various operative procedures was discussed. The technique of the many operations suggested for this condition was detailed, and the results of operations in the author's cases were given.

The following conclusions were drawn: (1) Early operation was not advisable on account of the natural tendency which undoubtedly existed for a testicle, undescended at birth, to descend into its normal position during the first years of life. (2) The associated presence of a hernia did not call for early operation. (3) The age selected for

operation should be from 8 to 10 years. Testicles undescended at that age were unlikely to descend naturally, and symptoms—pain and attacks of orchitis—very frequently developed at this period. (4) Retained testicles which could not be palpated should not be subjected to operation. (5) An undescended testicle should never be removed, on account of its possible spermatogenic power and its certain internal secretory power. (6) Abdominal replacement was not to be recommended, as it was proved experimentally to destroy the spermatogenic function, should any be present, though the internal secretory power was retained. (7) Transplantation into the scrotum was the operation of choice. It could be successfully performed without endangering the vitality of the organ in the majority of cases where an undescended testicle was palpable.

Dr. JOHN HAY related three cases of "Spontaneous pneumothorax," in each case the patient being a male in the early twenties, while the pneumothorax was left-sided; recovery was uneventful, there was no effusion and no pyrexia. He discussed the question of diagnosis, pointing out its extreme difficulty in some cases in the absence of an *x*-ray report. In his opinion this was due to the frequent absence of the more dramatic physical signs so definitely associated with pneumothorax. In a closed dry pneumothorax there was a different grouping of signs, and thus recognition was less easy than in a case where amphoric breathing, metallic tinkling, and metallic echo were present. The character and description of the pain in these cases was discussed, and reference was made to its remarkable similarity to cardiac pain.

Dr. HAWARD BYWATER read a short paper on malarial eye complications.

DISINTOXICATION IN DIABETES AND GOUT.

AT the Royal Society of Medicine on November 28th Dr. GUELPA, of Paris, delivered an "occasional lecture" on his method of disintoxication in the treatment of diabetes and gout. Sir JOHN BLAND-SUTTON presided.

Dr. GUELPA described how the experiments, twenty-five years ago, of Dr. Dujardin-Beaumetz on the correspondence between the rise and fall of body weight in typhoid fever and aggravation or amelioration of the general state, inspired him to seek for a safe and rapid method of disintoxication. He found that success, especially in grave asthenic cases, followed upon vigorous and fearless purgation, accompanied by periods of fasting lasting from one to six days. He attributed the partial failure of his methods on the other side of the Atlantic to the fact that fasting was not associated with the purging; the two were inseparable. He described the results of this treatment as sixfold: (1) Almost complete elimination of the intestinal flora, together with marked attenuation of the virulence of micro-organisms, such as staphylococci, in other parts of the body; (2) fall in blood pressure and regularization of pulse; (3) reduction in volume of the principal viscera, especially the heart and liver; (4) progressive loss of weight, which could be regulated at will; (5) marked improvement or cure of painful joints, muscular stiffness, and respiratory difficulties; (6) general sense of well-being and increased mental alertness. The remainder of Dr. Guelpa's lecture was almost wholly occupied with an account of some twelve cases of diabetes and gout benefited by his methods. The first case in which he applied them was that of a man, apparently in good health, who was passing 100 grams of sugar. After two days' purgation and fasting the sugar disappeared, and on the third day he was passed for life assurance; two years later, he died from another complaint, not diabetes. Another case was that of an army medical officer, with pyelitis and albuminuria, passing 200 grams of sugar, and in exceedingly feeble health, who, after two months' treatment, was able to resume his duties. Disintoxication was conspicuously successful in cases of diabetic gangrene. One of two cases described by Dr. Guelpa was that of a country doctor who, after having had one of his legs amputated for diabetic gangrene, was attacked with gangrene in the other. Disintoxication resulted in recovery, and he was able to continue the use of the limb. While diabetes illustrated the acid type of intoxication, Dr. Guelpa's view was that gout was characterized by an alkaline intoxication with an excess of precipitated earthy salts. Thus it was found that in diabetes an alkaline dietary was indicated, and in gout a diet free from calcium, with a minimum of fruit without vegetables. He described several cases of cure of gout. One was the case of a dignitary in the Roman Catholic church who had swelling and ankylosis in all his joints, so that for six months he was unable to kneel to celebrate Mass. On the twelfth day of treatment, after having had two periods of starvation and purging of four days each, he was able to kneel. The final case, of which Dr. Guelpa showed illustrations, was that of a man of 72, very gravely ill, with a subicteric tint, dyspnoeic at the least movement, who had an enormous aneurysm of the arch of the aorta 13.5 cm. in diameter. Dr. Guelpa considered that aneurysm was a gouty manifestation of the arteries, and therefore a vigorous treatment for gout was undertaken. In three months the man had lost 15 kg. in weight, his acute trouble had disappeared, and the aneurysm had diminished to about 8 cm. The man was to-day in a satisfactory state of health. Dr. Guelpa added that the full details of his treatment were embodied in his book *La Méthode Guelpa*, a copy of which he presented to the society.

Sir WILLIAM WILLCOX said that he thought Dr. Guelpa had scarcely received in this country the praise which was his due as the father of one of the greatest advances in modern medicine.

Dr. PARKES WEBER urged that a history of this treatment, so far as it had extended in all countries, should be written, and thought that no one was better fitted than Dr. Guelpa to compile it. He mentioned that Dr. Guelpa had been anticipated by Bret Harte with his shipwrecked sailor, who, accustomed to secret gluttony, recovered his health through compulsory starvation.

Dr. E. G. GRAHAM LITTLE said that he had had some opportunities, very restricted as yet, of estimating the value of combined purging and fasting. There was no serious discomfort in the application of the method, or at least it was remarkable how soon a patient became amenable to the treatment, and he was quite persuaded that it offered an exceedingly valuable means of rapid elimination of toxic products in the system, which products generated a multitude of bewildering eruptions often difficult to class and still more difficult to cure.

THE TREATMENT OF ANTE-PARTUM HAEMORRHAGE.

AT a meeting of the Sheffield Medico-Chirurgical Society on November 24th Mr. W. W. KING opened a discussion upon the treatment of *ante partum* haemorrhage. From an analysis of various hospital reports, covering nearly 60,000 deliveries, he found that the incidence of this complication of childbirth was 2.5 per cent., whereas the usual estimate was 0.2 per cent. The speaker confined his remarks to that variety of *ante partum* haemorrhage which resulted from placenta praevia, and showed that upon theoretical grounds haemorrhage, shock and sepsis should be the three great dangers which would threaten the life and health of the mother. Prematurity, haemorrhage and direct results of treatment were the corresponding causes of foetal death. In the 898 cases of placenta praevia analysed, 7.6 per cent. of the mothers and 55.3 per cent. of the children lost their lives. The figures were identical with those published twenty years ago, and showed that there had been no improvement in the results of treatment during all these years. A study of the maternal mortality showed that 15.9 per cent. of the total deaths were in women who were admitted to hospital in so grave a condition that they died undelivered. "Too late" was the only comment upon these cases. Out of fifty-eight patients who were delivered, 15.7 per cent. died of haemorrhage, 18.9 per cent. of septicaemia, and 51.7 per cent. of shock. Considering the nature of the disease it was surprising that haemorrhage had caused so few of the deaths. This would appear to show that the methods in common use for the arrest of haemorrhage were efficient at least in this respect. They could not shut their eyes to the fact that most, if not all, of the deaths from septicaemia were the result of faulty technique and should therefore have been avoided. Tissue-trauma in the presence of haemorrhage was the great cause of shock, and the need for the gentlest manipulation, and, above all, of avoiding rapid delivery, did not appear even yet to have been fully realized. More than

half the total deaths were due to this cause, and, in the majority of cases, it was clear from the records that death had resulted from the too hasty extraction of the child. The other deaths were not of obstetrical importance with the exception of one from rupture of the uterus. In one other case this catastrophe was recorded, but the patient recovered.

Turning from the general principles to the details of treatment, Mr. King advised palliative treatment in the interests of the premature child when the haemorrhage was slight and the conditions suitable. With severe loss and the patient not in labour Caesarean section was generally the best treatment. In cases in which the patient was in labour Champetier de Ribes's bag should be used in the interests of all living and viable children. Version should only be used for the dead and non-viable. Rupture of the membranes was only safe when the haemorrhage was slight and the os at least half dilated. By adopting palliative treatment in suitable cases under proper conditions, by Caesarean section and by the use of Champetier de Ribes's bag, it should be possible to reduce considerably the enormous foetal mortality of placenta praevia. The maternal death rate would be reduced by early treatment, careful asepsis, and gentle manipulation and slow delivery. Morphine and intravenous glucose were advocated in the prevention and treatment of shock. Strychnine was useless and pituitary extract dangerous.

In the discussion which followed, in which many took part, the PRESIDENT said that his practice had always been to effect the delivery as soon as possible, irrespective of the life of the child. Mr. P. E. BARBER stated that in his experience version was the most satisfactory method of treatment. He asked what evidence was there that patients died of shock. He thought that haemorrhage was the most common cause of death. Professor PHILLIPS, while agreeing upon the whole upon the main propositions of the paper, thought that Caesarean section should be more commonly performed for placenta praevia. He emphasized the danger of rapid delivery and of even slight *post-partum* haemorrhage. Mr. CHISHOLM related his conversion from rapid delivery to the saner method of slow extraction.

SPASMODIC STRICTURE OF THE UTERUS.

A MEETING of the North of England Obstetrical and Gynaecological Society was held at Sheffield on November 18th, with the President, Mr. CARLTON OLDFIELD of Leeds, in the chair.

Mrs. M. A. DOBBIN CRAWFORD (Liverpool) read a short paper on "Spasmodic stricture of the uterus," having adopted this term for the condition previously known as "contraction ring," "Schroeder's ring," or "active retention of the foetus by the uterus." After a brief outline of the history, etiology, and mortality of the condition—the mortality being quoted from Hedley as 40 per cent. to 50 per cent. maternal and 60 per cent. foetal—she described the following case recently under her care:

> The patient was a 4-para, with a previous history of difficult labours, all prolonged and terminated by forceps; two children were stillborn. Labour started at midnight, pains were slight for some hours, and morphine gr. ¼ was given at 8 a.m. The patient was in great agony at 11 a.m., the child's head presenting by the vertex but unfixed; the pelvis was roomy, the os three-quarters dilated, and the membranes intact. The membranes were now ruptured artificially and chloroform was given for two hours. The head still remained unfixed, and intra-uterine examination under deep ether anaesthesia showed a tight ring of muscle around the child's neck and holding up the shoulders. There was no distension or ballooning of the vagina or the lower uterine segment. Anaesthesia was continued with chloroform, and this was followed by spontaneous delivery of a living child one and a half hours later.

The following points were emphasized: (1) The difficulty, danger, and high mortality of active interference; (2) the only abnormality present is a spasm of the uterine muscle; (3) deep anaesthesia diminishes spasm; (4) repeated examinations increase spasm; (5) in the case reported deep and prolonged anaesthesia alone resulted in the spontaneous delivery of a healthy child. The speaker therefore considered the correct treatment of this condition to be deep surgical anaesthesia, prolonged if necessary, and nothing else. Caesarean section would be required only in a few obstinate cases which failed to respond to that treatment.

The PRESIDENT showed a specimen of ovarian pregnancy which he had recently removed. The symptoms were those usually associated with a tubal pregnancy of subacute type.

Professor PHILLIPS (Sheffield) demonstrated a very rare specimen of cystic growth of the cervix uteri. The uterus was bicornuate, with single cervix, and the growth involved the right wall of the latter. Microscopically the growth showed cysts of varying size lined by epithelium of transitional type, and in Professor Phillips's opinion was probably of Wolffian origin.

FIBROIDS AS OBSTETRICAL COMPLICATIONS.

AT a meeting of the Glasgow Obstetrical and Gynaecological Society, held on November 16th in the Faculty Hall, Glasgow, Dr. J. BALFOUR MARSHALL delivered his presidential address on "Fibroids complicating pregnancy, labour, and puerperium," with illustrative cases. Since his undergraduate days great changes had come in the management of pregnancy, parturition, and the puerperium in those cases complicated by uterine fibromyomata. Then it had been the teaching and the practice to induce abortion in many of the cases, and he had personally treated cases in this manner. With the development and present-day comparative safety of laparotomy, Caesarean section, and hysterectomy, the management was now revolutionized. Women suffering from fibroids were frequently sterile, and this was particularly true of the submucous and interstitial varieties of these growths. Cases of multiparous women who unaccountably became sterile often proved due to fibroids. Pregnancy could occur in cases of submucous and even polypoid fibroids, and, although there was a tendency to abort, such pregnancies might proceed to term. One case was recalled in which a colleague had mistaken a fibroid for the head of a small second twin. It was generally accepted that the subserous variety of fibroids had little influence in the production of abortion and premature labour, but the submucous type were particularly apt to lead to such a termination. He had met with abortion due to all varieties of fibroid.

For the further consideration of his subject Dr. Balfour Marshall divided the growths into three classes:

A. Cases which might safely proceed to term.
B. Cases requiring operation, but suitable for myomectomy.
C. Cases requiring hystero-myomectomy.

A. It was doubtful if there was any justification for the induction of abortion, as so many apparently hopeless cases proceeded to term. Large fibroids which had almost occluded the pelvis occasionally rose with the growth of the uterus, aided no doubt later by the development of the lower uterine segment, and normal delivery followed. In the Class A cases the main complaints to be feared were pain and haemorrhage. Rest, sedatives as indicated, and general treatment usually met these cases, which, if not improving, led into Class B.

B. The indications for myomectomy were torsion of a subserous fibroid with necrosis, prolapse or impaction of a subserous fibroid in the pelvis, an anterior fibroid causing retroflexion likely to cause abortion, or incarceration and excessive pain. The cases suitable for this line of treatment were of the subserous type. It was not advisable to remove an interstitial fibroid of any size during pregnancy, because of the haemorrhage attendant, the weakening of the uterine wall, and the frequency of abortion following. In three cases he had performed this operation, two proceeding later to term, the third aborting on the third day.

C. In this class of case the fibroids were generally very extensive and the patient had extreme pain. Rest and the usual methods did not ease her.

In regard to fibroids complicating parturition, the majority of cases which went to term terminated spontaneously, but one had to be prepared to meet more than usually severe labour pains, uterine inertia, malpresentations; and, in neglected cases, rupture of uterus would follow. He recalled a case in which a fibroid in the pouch of Douglas had to be pushed past the brim to permit delivery, and he

felt that had this been impracticable a posterior colpotomy might have been practicable. The correct line of treatment was Caesarean section, in cases of obstruction, provided the patient was otherwise in a state for this operation. In the case of a fibroid which might be removed later by myomectomy, it was best to perform that operation at a later date, but in the presence of extensive fibroids or possible infection, Caesarean hysterectomy was the ideal line of treatment. Under proper supervision craniotomy should never be required, and pulling a child past an obstructing fibroid with forceps was condemned, the results to mother and child being disastrous.

In regard to fibroids complicating the third stage of labour and the puerperium, *post-partum* haemorrhage, both primary and secondary, was apt to occur in a uterus the seat of submucous and subserous fibroids. The possibility of these complications should not be forgotten and means to combat them should always be at hand and used promptly. Another danger, a more serious one, was sepsis. Pressure or injury during parturition might lead to degeneration and subsequent sepsis, or the tumour might be injured during forceps delivery and later become infected. In conclusion, Dr. Balfour Marshall remarked on the extraordinary shrinkage noted in uterine fibroids after a pregnancy; in some of his own cases he had known such diminution in size as to render it impossible for the tumours to be appreciated by bimanual examination.

Professor J. M. MUNRO KERR congratulated Dr. Balfour Marshall on a very interesting and complete communication. In view of the great tolerance of the uterus and of patients to fibroids, he almost felt inclined to look upon pregnancy, labour and the puerperium as the complications. In the past year he had seen four cases in which hysterectomy had been contemplated, but two of these had been carried safely to full time, when the patients had living children by Caesarean section. In some cases only one tumour of several caused the trouble, and often this could be removed by myomectomy. This operation was a simple one in pregnancy, rupture of the uterus was rare after it, and cases were recorded in which operators had gone down as far as the decidua without disturbing the pregnancy.

Dr. W. D. MACFARLANE had seen many cases, and was glad to say that many which had appeared hopeless went to term. He was in agreement that stimulation of the excretory organs was of great advantage. Dr. J. LINDSAY thought that the negative standpoint might not be without interest. He spoke from the experience of the general practitioner, whose attitude was to give pregnancy the preference to fibroids. He had never seen abortion follow fibroids, and in cases where fibroids had been appreciated in early pregnancy, he had not experienced any difficulty in delivery. Dr. CRAIG had had examples of abortion and sterility resulting from fibroids. In one case he had found a small fibroid in the pouch of Douglas; at the second confinement difficulty was experienced, and at the third induction proved necessary. Growth continued, and hysterectomy was ultimately required.

In reply, Dr. BALFOUR MARSHALL expressed satisfaction at the importance laid on the medical treatment of fibroids. The pregnancy was the all-important thing, and every effort must be towards its preservation. He felt disinclined to accept myomectomy with its attendant risks, and in cases in which operation was unavoidable he greatly preferred hysterectomy.

Dr. D. MCINTYRE demonstrated a specimen of a uterus showing placental polypus with interstitial fibroids. The patient, aged 34, gave a history of six weeks' amenorrhoea, succeeded by ten weeks' bleeding. The haemorrhage for a few days before operation had been profuse. The uterus had been removed by Dr. Shannon, to whom he was indebted for the specimen.

A LAW has been passed in Haiti requiring that the doctor or other person attending the birth of a child shall cause it to be vaccinated within one to three months after birth; free vaccination is to be provided by the public health service and the public hospitals and dispensaries; vaccination must be repeated every seven years.

DURING the year 1920 in the birth registration area of the United States 1,508,874 births were reported, corresponding to an annual rate of 23.7 per 1,000 of population; in the same area 836,154 deaths were reported, corresponding to a rate of 13.1 per 1,000.

Reviews.

CAMBRIDGE WAR LIST.

The War List of the University of Cambridge, 1914–1918, has now appeared in the form of a handsome volume of more than 600 pages.[1] The editor, Mr. G. V. CAREY, Secretary of the University Press, deserves great credit for the skill and loving care with which he has compiled this record of the war service of nearly 14,000 Cambridge men. In the introduction he explains that his work is founded upon the labours of Mr. J. A. Fabb, printer of the *Cambridge Review*, who continued his efforts to keep the list up to date until December, 1919, when the publication of an official list was undertaken by the Syndics of the University Press. Mr. Carey and his helpers (to whom he gives generous praise) have since then checked every name with the official Service lists. The first principle laid down in compiling the record was that it ought to include only those who were Cambridge men at the time of their war service, with one exception—namely, that those who had been admitted for the Michaelmas Term of 1914, and were prevented from coming into residence in that term only by the fact of having joined the forces at the outbreak of war, should not be omitted. The second principle adopted was that only those who served in some branch of His Majesty's Forces prior to the armistice of November 11th, 1918, should be included. The book is arranged by colleges, and at the end there is a complete index of names. There is also a summary showing in tabular form the numbers in the various colleges of those who served, fell, obtained distinctions, etc. In regard to this the editor writes: "If any lover of statistics should feel tempted to test the accuracy of the summary I sincerely hope that the temptation may be too strong for him." The number of those who were killed in action or died of wounds was 2,162, and 308 more were killed accidentally or died of illness. The wounded numbered 2,902. Ten Cambridge men won the V.C., 442 received the D.S.O., 34 with bar and 2 with second bar; 1,531 received the M.C., 122 with bar and 5 with second bar. The D.S.C. and D.F.C. were won by 34 and 21 respectively, and of these 1 each was awarded a bar. Mentions in dispatches numbered 3,810; foreign decorations, 676. In the case of those who won the V.C. extracts are given in full from the *London Gazette* describing the act for which it was awarded. Testing the volume at random, we have been able to find no inaccuracies. A single instance (the choice is ours) will illustrate the method in which the entries are made:

> CAREY, G. V. Major, Rifle Brigade; Major (Ad.), R.A.F.; S.O. 3, Air Ministry. (W.) *M. Belgian Croix de Guerre.* 1906

Reference to the list of abbreviations shows this to mean that Mr. Carey matriculated at his college (Caius) in 1906; that he served in an administrative post as major in the Royal Air Force after holding field rank in the Rifle Brigade; that he was employed at the Air Ministry as staff officer of the third grade; that he was wounded once, mentioned once in dispatches, and received a Belgian decoration. Reference to the title-page shows that he is now a Fellow of Clare. The paper and type and the general appearance of the pages are alike excellent.

PALAEOPATHOLOGY OF EGYPT.

AT first sight it may seem rather strange that the late Sir MARC ARMAND RUFFER'S *Studies in the Palaeopathology of Egypt*[2] should be published by the University of Chicago Press, but the explanation is that these collected papers have been edited by Dr. ROY L. MOODIE, associate professor of anatomy in the University of Illinois, who has in the press a monograph on the palaeontological evidences of disease, to be dedicated to the memory of the late Sir M. A. Ruffer. Although there are several large memoirs with a considerable space devoted to an account of ancient pathology, the present collection of papers, which is an

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[1] *The War List of the University of Cambridge, 1914–1918.* Edited by G. V. Carey, M.A. Cambridge: At the University Press. 1921. (Demy 8vo, pp. xiii+615. 20s. net.)

[2] *Studies in the Palaeopathology of Egypt.* By Sir Marc Armand Ruffer, Kt., C.M.G., M.D. Edited by Roy L. Moodie, Ph.D. Chicago, Illinois: University of Chicago Press. 1921. (Sup. roy. 8vo, pp. 372; plates 71; photos 2. 7.50 dollars; post paid 7.75 dollars.

attempt to take the place of the book Sir M. A. Ruffer intended to bring out, is at present the only separate volume entirely confined to a discussion of palaeopathology. It starts with a short biographical sketch slightly modified, or rather expanded, from a memorial notice by Dr. F. H. Garrison in the *Annals of Medical History* (1919), which shows that Ruffer began the study of pathological lesions in mummies in 1908, and that though Fouquet, who began the study of the subject in 1889, must be reckoned the pioneer, Ruffer made it his own by his technical skill in overcoming the inherent difficulties of satisfactorily cutting and staining the hard and brittle tissues. Of Ruffer's seventy-four published papers nineteen are included in this volume, and of these the first, "On the Histology of Egyptian Mummies," a note describing the technique adopted to obtain macroscopic sections appeared in our columns in 1909, seven others (two of them posthumous) appeared in the *Journal of Pathology and Bacteriology*. Attention has from time to time been called in our columns to Ruffer's papers on this new branch of pathology; the last occasion was in connexion with his posthumous paper communicated to the Historical Section of the Royal Society of Medicine in 1919, on the physical effects of consanguineous marriages in the royal families of ancient Egypt; this paper does not lend any support to the popular view that in-breeding tends to cause degeneracy. The extremely interesting essay on dwarfs and other deformed persons in ancient Egypt contains many attractive references to classical sources; some Egyptologists, instead of regarding dwarfs as pathological, have looked on them as pigmies imported from Central Africa, but Ruffer carefully examined hundreds of illustrations of people depicted in ancient Egyptian monuments without finding a true pigmy, all dwarfs figured in tombs being pathological. He proved that achondroplasia in its present form has existed for at least five thousand years. This article also refers to Pott's disease, on which there is a separate paper, written in conjunction with Professor G. Elliot Smith in 1910. The critical study on prehistoric trephining forms a valuable source of reference, and is one of the articles published after Ruffer's untimely death by enemy action on his way back in 1917 from Salonica, where he had gone to reorganize the sanitary service of the Greek Provisional Government. The printing, and especially the reproduction of the plates, in this beautiful and attractive work deserve the highest praise.

A FRENCH TREATISE ON NEUROLOGY.

UNDER the title *Traité de Pathologie Médicale et de Thérapeutique Appliquée*[8] a new French system of medicine is gradually appearing. Volume V is the first of two devoted to neurology, and the authors concerned in its production are to be congratulated on having issued an attractive textbook which should be a useful investment to the British medical reader with a knowledge of French.

The arrangement of the book is good, being based for the most part on a clinical classification. The first criticism we would make is that the subject of the anatomy and physiology might have been treated more adequately and more as a whole; the second criticism is the relatively small amount of space devoted to morbid anatomy and pathology.

The first volume is divided into nine chapters as follows: I, Diseases of the cerebral hemispheres; II, Diseases of the pons, medulla and mid-brain, and cerebellum; III, Cerebral tumours; IV, Diseases of the spinal cord; V, Diseases of the spinal roots; VI, The acute meningitides; VII, Haemorrhages into the meninges; VIII, Chronic meningitis; IX, Epilepsy.

There is quite an adequate index. Such a division of the subject is of course open to criticism. Why, for example, should disseminated sclerosis be classified as a disease of the spinal cord? Again, in this section (diseases of the spinal cord) the whole subject of subacute spinal degeneration is dismissed in one brief paragraph, surely a curious error of omission in view of the increasing amount of attention which this disease has obtained in recent times. As might be expected in a work emanating from the French school, the subject of aphasia receives very full attention, and considerable space is given to the views of Marie and others; this section is a good and clear exposition of a difficult subject. There is an excellent chapter on hemiplegia, where the numerous clinical varieties of this disturbance of function receive full treatment; the subject gains by being treated first as a whole, separate remarks on the different pathological causes being added subsequently. A short but useful chapter is that on contractures; in it the general neurological aspect of this condition is fully discussed.

Some of the more recent advances in neurology are embodied in two chapters on the pathology of the corpus striatum and on encephalitis lethargica. There is a good chapter on cerebral tumours. It is at first sight surprising that the section devoted to the diseases of the spinal cord should be so short, but this is largely accounted for by the fact that none of the syphilitic affections are described in this volume, a place being accorded to them in a special volume dealing with syphilis only. We confess that we are unable to accept the account of disseminated sclerosis as adequate to the importance of the subject. Acute poliomyelitis is not mentioned, and is presumably treated in another volume, though why epidemic encephalitis should be included and poliomyelitis left out it is difficult to see. There is a useful chapter on the affections of the spinal nerve roots.

No less than twelve different authors have contributed to this volume, and, as usual in such case, the different contributions are unequal. Perhaps the most valuable attribute of the book is the stress laid on the general principles of neurological diagnosis. On the side of therapeutics it has little fresh information to add to what is found in the ordinary textbooks.

The second volume, to which twelve authors have contributed, maintains the same high standard as the first, though its sixteen chapters vary in value. M. Froment's account of paralysis of peripheral nerves is adequate and is illustrated by some quite good figures. The various forms of neuralgia, including causalgia, are treated in a separate chapter and are well described. In the section on polyneuritis, which is quite good, especially in the description of its various clinical forms, no mention is made of beri-beri; this is perhaps unfortunate, even although a full description of the disease was not to be expected in the present volume. There is a chapter on the vascular lesions of the brain and spinal cord, part of which is inevitably somewhat a repetition of the section on hemiplegia in the first volume. M. Crouzon contributes a long and excellent chapter on the familial diseases of the central nervous system, in which the various forms of myopathy are included. In this chapter there is a particularly useful account of the different familial diseases of the eye. A somewhat unconventional but highly practical chapter is that on vertigo. The subject of paralysis agitans occupies an unusually extensive space and in no part of the book is the French school better represented than in this very masterly description of the clinical aspects of the disease; the symptomatology is illustrated by a wealth of detail and a felicity of expression which makes the chapter a pleasure to read. We notice with interest that the author, M. Souques, does not accept as proved Ramsay Hunt's view that the anatomical site of the lesion is in the corpus striatum. The subject of hysteria is presented in an elaborate and well classified chapter filling sixty pages. Neurasthenia, as commonly described in British textbooks, is not even mentioned. Mental diseases are not included in this volume. There is a special chapter on the so-called "reflex" or physiopathic nervous disorders, a condition not generally accepted in this country as a separate entity, apart from the ordinary wasting of muscle which is found round a diseased joint. This so-called reflex disorder is, of course, that to which MM. Babinski and Froment have especially drawn attention.

MM. Roussy and Lhermitte contribute a short chapter on the neurology of the war, which forms a satisfactory digest of our recently acquired experience. A brief chapter on the surgery of the nervous system completes the volume.

These two volumes form an excellent and interesting production, well worth study by the British reader. Their

[8] *Neurologie*. Tomes I and II; being Vols. V and VI of *Traité de Pathologie Médicale et de Thérapeutique Appliquée*. Published under the direction of Emile Sergent, L. Rebaudeau-Dumas, and L. Babonneix. Paris: A. Maloine et Fils. 1921. (Demy 8vo. Tome I, pp. 861; 93 figures; Fr. 30. Tome II, pp. 692, 4 plates, 115 figures; Fr. 35.)

chief virtue probably lies in the full and vivid clinical descriptions of the diseases with which they deal, a quality we have learned to expect from our French colleagues and to appreciate very highly.

MENINGOCOCCUS INFECTIONS.

PROFESSOR DOPTER of Paris, already well known as a writer on cerebro-spinal meningitis, has recently published a comprehensive volume entitled *l'Infection Méningococcique*,[1] in which he brings into special prominence the fact that the meningococcus often infects other parts of the body besides the meninges. The early chapters of the book deal with the history, epidemiology, and bacteriology of these infections; the author enumerates the types of the meningococcus as they were recognized in 1914, that is to say, as four in number—namely A, B, C and D. Meningococcus A is the typical meningococcus, while B, C, and D are parameningococci. Coming next to the clinical aspects of meningococcal infections, Professor Dopter begins with the meningococcal coryza indistinguishable from the common cold, and giving rise to similar complications, including bronchopneumonia. Next he describes meningococcal septicaemia, with its variable symptoms and numerous complications, the "malignant purpuric fever" described in Ireland by Stokes in 1866. Here the commonest complication is no doubt arthritis with purulent exudation into the affected joints; further superficial or deep inflammations of the eye are not rare. The occurrence of cerebro-spinal meningitis in this variety of meningococcal infection is recognized as frequent and generally simultaneous. The third form of meningococcal infection described by Professor Dopter is cerebro-spinal meningitis, and he gives an exhaustive discussion of its types, symptoms, complications and diagnosis that covers more than two hundred pages.

The last hundred pages of the volume are devoted to treatment, with particular reference to the use of anti-meningococcal serum. The author's own serum, prepared in 1908, was effective only against infections by meningococcus A, which were almost the only sort met with in France at that time. In 1912 he added a polyvalent anti-parameningococcal serum; up to 1915 only 4 or 5 per cent. of the cases of cerebro-spinal meningitis met with were due to parameningococcal infections. During the war the latter increased to 45 per cent. of the total number, and Professor Dopter describes the various antiserums prepared by Netter and others to meet the new types of infection. It is said that the use of meningococcal vaccines is often definitely useful in cerebro-spinal meningitis, particularly when associated with the production of a fixation abscess. Professor Dopter has made full use of the literature dealing with meningococcal infections, and his book is adequately illustrated; it contains three coloured plates, and not two, as is stated on the title-page. It is without doubt the standard work on the subject with which it deals.

THE SYMPATHETIC SYSTEM.

PROFESSOR ANDRÉ THOMAS'S study of the pilomotor reflex[5] is an elaborate investigation of the main reflexes that may throw light upon the condition of the sympathetic nervous system in health and disease. These are the pilomotor reflex, the reflex of the mammilla and areola, and the scrotal reflex: the author also considers reflex contraction of the oblique unstriped muscle fibres of the skin, and of the muscle fibres connected with the sweat glands. Most of the book is taken up with observations on the changes in these reflexes met with in cases of lesions involving the spinal cord, peripheral nerves, and central nervous system, with particular reference to the pilomotor reflex. The author sums up by stating that this sympathetic reflex may be excited either peripherally, particularly when the cutaneous nerves are stimulated, or centrally by such emotions as terror. It is closely connected with the more complicated reflexes of blushing or sweating.

Professor André-Thomas expresses himself with considerable caution when assessing the value of these reflexes in diagnosis, or the interpretation of their presence or absence in any given instance. His book is the outcome of much patient research, and should interest the physiologist and neurologist.

THE PRODUCTION OF CLEAN MILK.

THERE are few industries in which the bacteriologist can render greater practical assistance than that of dairying. Many of the difficulties attending the production of milk, of butter, and of cheese, which baffled the dairy farmer of the past, are overcome in the present day through scientific research. A very clear exposition of the subject is given in Professor ORLA-JENSEN'S *Dairy Bacteriology*.[6] Less than a third of the book is concerned with bacteriology, the remainder dealing with the production of clean and pure milk, the preservation and the grading of milk, the making of butter, and the ripening processes of different cheeses. It should prove of service, therefore, not only to dairymen and those who have to deal with milk and dairy products, but also to medical officers of health, and especially those whose work lies in dairy farming counties.

"Systematic cleanliness is the golden rule in dairy practice." Very detailed instructions as to the achievement of this golden rule are laid down in the second part of the book, and definite reasons are given for the adoption of certain methods in preference to others. Soda or lime are recommended as cleansers, because with their use the casein is dissolved and the fat is emulsified. The great importance of cleanliness in the act of milking is emphasized in the statement that the most troublesome sources of milk infection are the udder and teats of the cow and the vessels with which the milk comes into contact; compared with these contamination from the air usually plays quite a minor part. The dairyman is reminded that the feeding of a cow is an important factor in determining the consistency of the dung, and that the thinner the dung the dirtier the cow. Moreover, the feed will directly or indirectly determine the nature of the bacteria predominating in the dung, and thus the nature and number of bacteria in the milk. Milking machines are not looked upon with favour by the author. He considers that their numerous corners, cavities, and rubber tubes are so difficult to clean and to sterilize that they require far more intelligent and conscientious attention than they are likely to receive at the hands of the average milker.

The book is very well illustrated, and there is an excellent index. Mr. Arup has performed his task as translator in a manner which would not have been possible if he had not been so intimately acquainted with the subject. He has rendered a service to English readers which we feel sure will be greatly appreciated.

AN EAST-END PIONEER.

IT is some three years since the biography of Canon Barnett,[7] written by Mrs. BARNETT, was first published in two handsome volumes; a notice of the book appeared in our columns on December 28th, 1918, p. 718. The three editions which were issued of the biography were rapidly exhausted and now the publishers have issued a cheaper but unabridged edition at the price of six shillings. Mrs. Barnett's intention is that the book should get into the hands of those numerous people who were interested in her eminent husband but were unable to buy a biographical work at its previous price of twenty-eight shillings. Correspondents from such distant places as China and Uganda had written to her, expressing the wish that the book could be in their mission libraries, and the same wish was expressed by many training colleges and club secretaries in England. University and college "settlements" in the poorer districts of East and South London are now well recognized and the excellent work which they do is greatly appreciated, but the history of their inception, and of the foundation of Toynbee Hall and other kindred establishments, is not so well known. These and many other organized schemes for the betterment of the lives of

[4] *L'Infection Méningococcique*. Par le Dr. Ch. Dopter. Paris: J. B. Baillière et Fils. 1921. (Roy. 8vo, pp. 534; 97 figures, 3 plates. Fr. 48.)

[5] *Le reflexe pilomoteur: Etude anatomo-clinique sur le système sympathique*. Par le Dr. André-Thomas. Paris: Masson et Cie. 1921. (Roy. 8vo, pp. vii + 242; 74 figures. Fr.25 net.)

[6] *Dairy Bacteriology*. By Orla-Jensen, Ph.D., Professor of Technical Biochemistry in the Polytechnic College, Copenhagen. Translated from the second Danish edition, with additions and revisions by Paul S. Arup, B.Sc., F.I.C. London: J. and A. Churchill. 1921. (Royal 8vo, pp. xii + 180; 70 figures. 18s. net.)

[7] *Canon Barnett: His Life, Work, and Friends*. By his Wife. Cheap edition. London: J. Murray. 1921. (Demy 8vo, pp. xxiv + 805; illustrated. 6s. net.)

the poor have taken practical shape since 1873, when the Rev. S. A. Barnett and his newly married wife decided to exchange their comparatively easy-going work at St. Mary's, Bryanston Square, for the frequently disheartening labour in the squalid surroundings of St. Jude's, Whitechapel. The story of this work is related in the present volume, introduced by a new preface by the authoress and by a letter by the Archbishop of York.

NOTES ON BOOKS.

DR. BORIS SIDIS, the author of *Symptomatology, Psychognosis, and Diagnosis of Psychopathic Diseases*,[8] has mainly devoted his attention to dissociated states, and his views would appear to be a development of those formulated by Janet in his earlier works. In this volume he explains his hypothesis of the subconscious and describes his method of treatment by mental exploration in the hypnoidal state. The aim is to reassociate systems which have become dissociated from the personal consciousness. On the whole the book is somewhat confusing and the symptomatological basis of classification here adopted fails to give the reader a clear impression of the various clinical pictures which psychopathic disorders present. The attention given to isolated symptoms is not well proportioned, and it is difficult to understand why a book concerned mainly with the psychoneuroses should contain a hundred pages on hallucinations and about four pages on obsessions and morbid impulses. Dr. Boris Sidis is a strong opponent of psycho-analysis, but his criticisms are too sweeping to have much weight.

In *English for the English: a Chapter on National Education*[9] Mr. GEORGE SAMPSON, with the force derived from twenty-five years' experience in elementary schools, pleads for reform in national education. Of the fifty years since the Education Act of 1870, he considers that the first half was spent in an unconscious demonstration of what education is not, and the second portion in eager attempts to decide what education is. The science of education has its proper place, but it is not the art of teaching, and elementary teaching has failed because too much attention has been paid to the children's heads and too little to their souls. The adaptation of education, at least up to the age of 14 years, to the practical means of gaining a livelihood is controverted, and the importance of a humanizing influence and of instruction in good English is eloquently advocated. The great and immediate means of humane education is, Mr. Sampson contends, English and not an alien language, modern or ancient.

The Little Death[10] is a translation by Mrs. HENRY HEAD of *Der kleine Tod*, by MRS. IRENE FORBES-MOSSE, the widow of an English officer and the granddaughter of Goethe's Bettina Brentano; it consists of the diary-like letters of a young German woman to her rather glorified lover, who, however, never comes on the scene. The tone is perhaps a little strange, at any rate at first, to an English ear, but the literary style is so good that its charm grows on the reader. The volume is prefaced by a poem beginning, "If I could only die the little, little death," but otherwise the connexion with death is not, to say the least, obtrusive in the text, though there is an underlying touch of rather pleasant melancholy. For its attraction the English text no doubt owes much to Mrs. Henry Head, who shows her skill in the delicate art of translation.

General readers interested in the development of science, and more particularly in the growth of Louis Pasteur's genius and its influence on the progress of scientific thought and method during the last sixty years, cannot do better than read *Pasteur: The History of a Mind*,[11] translated in America from the French of his pupil and colleague DUCLAUX. As an exponent of the experimental method Pasteur has never been surpassed, and the literary skill of Duclaux is admirably displayed in these pages, in which Pasteur's aims, discoveries, failures, and triumphs over difficulties are most clearly and sympathetically set out. The volume is well illustrated, and the translators have provided at its end a series of brief biographies of the men of science and others mentioned in the text. The book may be recommended strongly to the wide circle of general readers.

Mr. WHITBY'S exhaustive book on *Plantation Rubber and the Testing of Rubber*[12] is a practical manual dealing with an industry that extends over almost the whole world and is of ever-increasing importance. About 70,000 tons of rubber were produced in 1910; in 1919 the production was estimated at over 200,000 tons. Many references to the scientific and technical literature of the subject are given, and the book may be recommended to technologists.

The Passing of the Great Race,[13] by Mr. MADISON GRANT, was noticed on its first appearance in our issue of August 18th, 1917. A fourth and revised edition, with a documentary supplement, has now been published, with short prefaces by Professor Fairfield Osborn. The supplement consists of 100 pages and the author's purpose in printing it is "to meet an insistent demand for authorities for the statements made in the body of the book."

[8] *Symptomatology, Psychognosis, and Diagnosis of Psychopathic Diseases.* By Boris Sidis, A.M., Ph.D., M.D. Edinburgh: E. and S. Livingstone. 1921. (Demy 8vo, pp. xix + 418. 21s. net.)

[9] *English for the English: a Chapter on National Education.* By George Sampson. Honorary M.A.Cantab. Cambridge: At the University Press. 1921. (Cr. 8vo, pp. 112 + vii. Price 3s.)

[10] *The Little Death.* By Irene Forbes-Mosse; translated by Mrs. Henry Head. London: George Allen and Unwin, Ltd. (Cr. 8vo, pp. 252. Price 7s. 6d.)

[11] *Pasteur: The History of a Mind.* By E. Duclaux. Translated by E. F. Smith and Florence Hedges. Philadelphia and London: W. B. Saunders Company. (Med. 8vo, pp. 395; 22 figures, 13 plates. 21s. net.)

[12] *Plantation Rubber and the Testing of Rubber.* By G. S. Whitby, Ph.D., M.Sc., A.R.C.Sc. London and New York: Longmans, Green and Co. (Demy 8vo, pp. 575; 8 plates, 48 figures. 23s. net.)

[13] *The Passing of the Great Race, or the Racial Basis of European History.* By Madison Grant. Fourth revised edition. London: G. Bell and Sons, Ltd. 1921. (Med. 8vo, pp. 509; illustrated. 14s. net.)

APPLIANCES AND PREPARATIONS.

Instrument for Measuring the "Bridge" in Mastoid Operation.

MR. T. B. JOBSON (London, W.) writes: This instrument, which I have named the Pontimeter, is for measuring the depth of the "bridge" in the mastoid operation. It is a



sliding callipers made in the shape of the Dundas Grant probe, with the Heath ribbed type of handle, which gives great delicacy of touch. In use the slide is drawn up so that the points are about an inch apart. The point A is inserted in the aditus and the slide lowered until the point B rests on the bridge. The depth of the bridge A B can then be read off instantly on the scale, which is graduated in millimetres. The instrument can be used as an ordinary mastoid probe when the points are approximated. It is made by Messrs. Mayer and Phelps.

THE PROPHYLAXIS OF DIPHTHERIA.

THE SCHICK METHOD.

THE Ministry of Health has issued, as Report No. 10 of the "Reports on Public Health and Medical Subjects," a paper by Dr. S. Monckton Copeman, F.R.S., on methods of prophylaxis, with a general introduction by Dr. G. S. Buchanan, C.B.[1]

The immediate occasion of Dr. Copeman's inquiry was an outbreak of diphtheria in the children's ward of the Southmead Infirmary (Bristol). The actual circumstances of the outbreak, which produced forty-nine cases, five fatal, presented no very exceptional features, but an opportunity was afforded of testing some of the methods originated by Schick and widely employed in America. In the first place, Dr. Copeman epitomizes the original observations of Schick leading to the conclusions—

> (*a*) that the susceptibility of an individual may be gauged by a simple cutaneous reaction; that, at birth, most infants are immune, but
>
> (*b*) the survivors subsequently tend to lose this immunity, the curve of immunity as a function of age taking a more or less characteristic form and implying that a considerable proportion retain a natural immunity throughout life.

From these results the practical inference was drawn that it might be possible to identify the susceptible

[1] H.M. Stationery Office, 1921. Through any bookseller. Price 9d. net.

individuals and, either in presence or anticipation of an outbreak, immunize these either actively or passively. Dr. Copeman then describes the technique of active immunization as used by Park and Williams, and the results of Park in applying the Schick test to children in New York. These latter are in fair agreement with those of Schick, indicating that the percentage of persons susceptible to diphtheria is greatest between the ages of six months and four years.

Dr. Copeman next details his own observations, and makes the following points:

1. It is necessary to have command of a reliable standard toxin.

"It would obviously be of importance," he writes, "before the test could be recommended for adoption on a large scale, practically as a routine method for the purpose of estimating the presence or absence of immunity to attack by diphtheria, that arrangements, if necessary under Government auspices, should be made for the provision of a reliable standard toxin which should always be available for distribution, and with which should be issued explicit directions for its storage, dilution and use."

Dr. Copeman himself used a reliable toxin prepared by Dr. O'Brien of the Wellcome Research Laboratories. A convenient dilution is 1/50 of a minimum lethal dose for a 250 gram guinea-pig in 0.2 c.cm. of normal saline.

2. It is essential that the injection should be made intradermally, not under the skin. A sharp needle of fine calibre accurately fitted to the barrel of the syringe must be used, the needle being passed nearly parallel to the skin within its substance. A control injection of toxin heated to 75 C. for ten minutes should be made on the opposite arm.

3. A positive reaction appears at the site of injection in about twenty-four hours, attaining its maximum on the fourth or fifth day. The usual type is a circumscribed area of redness accompanied by slight infiltration of the skin, which will usually measure from one to two centimetres in diameter.

4. A pseudo-reaction often occurs in older children and adults which is thought to be a consequence of irritation by the autolyzed proteins of the bacillus, necessarily present in small amounts in the test solution. Such a pseudo-reaction appears at a much earlier stage than the true reaction, being usually well marked after the lapse of eighteen hours and reaching its maximum in twenty-four. The area of redness is not definitely circumscribed and tends to merge gradually into the colour of the surrounding skin.

"These pseudo-reactions, however, may vary considerably in intensity, and, in some instances, even at the end of four days may show a well-defined area of reddish-brown pigmentation. It is in such instances that the value of a control test, carried out with heated toxin on the opposite arm, becomes specially apparent, as without such a control it may prove exceptionally difficult to arrive at an accurate determination of the true nature of the reaction obtained." Dr. Copeman found that a proportion (5.3 per cent. of his observations) "may show a *combined* or *pseudo-positive* reaction, representing a combination of a positive and pseudo-reaction. In this event the true nature of the reaction should, in our experience at Bristol, be capable of identification by the end of the fourth day, a well-defined positive reaction at the site of the test then contrasting with a partly faded pseudo-reaction at the site of the control injection."

Dr. Copeman then discusses the method of active immunization, and notes that although a much smaller amount of toxin-antitoxin solution was used than by Park, the reactions at Bristol were sometimes severe. On the other hand, of ninety-eight children in the Mitcham schools receiving inoculations only three reacted so severely as to render it advisable to keep them in bed for twenty-four hours. At least three inoculations, of 0.05 c.cm., 0.25 c.cm., and 1.0 c.cm., were given.

The concluding section of the report is devoted to the subject of "carriers." Dr. Copeman writes:

"All the available evidence goes to show that the virulence of the organisms recoverable from 'carriers' varies enormously, some strains being, so far as in the light of our present knowledge it is possible to judge, completely avirulent, a condition most frequently observed in the case of 'contact carriers.' The question whether, and under what circumstances, and to what extent, these apparently harmless strains are capable of regaining virulence requires further study. American observers appear unanimous in the opinion that once virulence is lost it is never regained."

From a review of the published facts the conclusions appear to be that "the diphtheria bacilli in a majority of otherwise healthy carriers are non-virulent; non-virulent bacilli cannot cause diphtheria; there is no proof that non-virulent bacilli are a menace to others or to the community at large."

In an appendix to his report Dr. Copeman describes methods of carrying out experimental tests for virulence, particularly the intracutaneous method of Zingher and Soletsky as modified by O'Brien. This plan effects a considerable economy in the number of guinea-pigs required.

Clinical and Administrative Applications.

In his preliminary note Dr. Buchanan discusses the bearing of the results upon administrative and clinical practice. He considers that

"it would be premature to advise that in English communities general immunization of persons susceptible to diphtheria should be attempted on the New York scale. More information and experience would be necessary before this could be recommended, and it would be necessary to be satisfied that equally good results cannot be obtained by extension and improvement of the methods of diphtheria prevention on which we rely at present."

But there are circumstances in which a more positive expression of opinion is justifiable.

"For example, a parent who for one or another cause is specially anxious that his child should avoid all possible risk of contracting diphtheria may ask whether medical science cannot now provide a means by which, if the susceptibility is great, the child can be protected for at least some years without any substantial risk, and with at most only a transient and insignificant disturbance of health, as the result of the inoculation. A similar question may be asked by nurses and others likely to come much into contact with diphtheria cases, or, again, by medical officers of residential schools and other limited communities at a time when diphtheria is epidemic."

Dr. Buchanan thinks there is good warrant for answering both questions affirmatively, but he emphasizes both of Dr. Copeman's warnings as to the need of a standardized toxin and the occasional severity of the constitutional reaction. Dr. Buchanan observes that the basing of administrative measures upon a routine bacteriological report is not satisfactory.

"These earlier and simpler conceptions have now in large measure been abandoned with the growth of knowledge as to the frequency of the carrier condition (in other diseases as well as diphtheria) and of the very definite distinction which we have now to make between virulent and non-virulent diphtheria bacilli, although these are morphologically and culturally indistinguishable. Moreover, it is generally realized that, in practice, the results of swabbing are materially affected both by the thoroughness of the swabbing itself and by the method of examination and reporting which is followed in the laboratory. In all these circumstances it is important not to attach undue importance to a ritual of routine bacteriological examinations and reports, and not to regard such examinations and reports (as usually obtained in present practice) as the one and only basis of preventive action against diphtheria."

Dr. Buchanan further points out the undesirability of notifying carriers presenting no clinical signs as cases of diphtheria. He says: "Statistically it leads to much confusion; indeed, comparisons between diphtheria notification rates in different areas and in different parts of the country have for some years been rendered very unreliable by reason of uncertainty in this respect. Administratively, the effect may be equally unsatisfactory." Attention is also directed to the substantial danger which may result from depending exclusively upon a bacteriological criterion. Dr. F. Thomson and others have insisted upon the unsatisfactory results of the delay which may be caused by a medical attendant waiting for a report on swabs sent to the bacteriologist before administering antitoxin.

Dr. Buchanan also mentions that the experience of those Metropolitan Asylums Board hospitals which do not carry out routine bacteriological examinations of discharged convalescents is not less favourable in the matter of return cases than that of those institutions which adopt a rule that two or more negative swabbings must be obtained before a patient is discharged.

With regard to schools he says, "the risk of return of a virulent carrier may be greatly lessened without recourse to bacteriological tests, by making sure that the convalescent is clinically recovered, is free from nasal discharge and has a normal throat."

AN ANTIVIVISECTIONIST KNIGHT ERRANT.

WE have received from a correspondent in the United States of America an official report, printed at the Government Printing Office, Washington, of a hearing before a subcommittee of the Committee on the Judiciary, United States Senate, called to consider Senate Bill 758, "to prohibit experiments upon living dogs." The bill was introduced by Senator Myers, and the subcommittee sat for the purpose of hearing anyone who had anything to say in favour of or in opposition to the enactment of the proposed measure. Now, it so happened that Dr. W. R. Hadwen of Gloucester, England, was in the States during the sessions of the subcommittee, and when Senator Myers met Dr. Hadwen (who is president of the British Union for the Abolition of Vivisection, and was once widely heard as an opponent of vaccination) what more natural than that Senator Myers should desire to present him as a witness before the subcommittee? The report before us consists almost entirely of Dr. Hadwen's evidence, given on June 30th, 1921. It is a long time since anything so entertaining has come to our notice in an official document. It appears that copies of the evidence are rare, therefore we will try to display to our readers a few of its gems.

Dr. Hadwen began quietly on the "moral" note. He considers that we have no right to do evil that good may come; that it is wrong to take advantage of the weak in order to gain some alleged benefit. Hence he pressed the subcommittee to accept the contention that dogs who cannot speak for themselves should be the very first to receive consideration on the part of a constitution such as that of the United States. Dr. Hadwen considered that mankind can pay too much for knowledge, and that we are not justified in gaining knowledge if it can be bought only at the cost of the blood and torture of living creatures. So far the witness was expressing on a moral issue an opinion which he is perfectly entitled to, though the senators may have disagreed as to the importance of dogs to the U.S. constitution. He then went on, however, to quote sentences torn from their context, from writings or evidence by Dr. Slosson, Professor Starling, Dr. Klein, Professor Metchnikoff, and others. On these quotations Dr. Hadwen based a number of *ex cathedra* statements which suggest that his emotions ran away with his judgement. For example, a remark of Dr. Slosson that "a human life is nothing compared with a new fact in science," is quoted to show that animal vivisection has led on to human vivisection; and an apparently baseless inference that Dr. Slosson advocates human vivisection is claimed to show that animal vivisection has proved a failure. Next we find the pronouncement, without qualification, that it is "admitted by the leading vivisectors all over the world that you cannot possibly conduct this work apart from the question of pain." Government inspectors are of no use; Dr. Hadwen has no faith in and no sympathy with a Government inspector whose whole vested interest lies in the practice of vivisection.

In the next stage of the evidence the subcommittee was informed that the whole practice of experimentation upon living animals is totally unscientific. "Anatomically and physiologically the condition of the lower animal life is such that you can produce no definite solution of a problem; you cannot argue from animals to man." It is at this point that the real fun of the proceedings began by the interposition of remarks and questions by Senator Ashurst, a member of the subcommittee. The senator, who confessed that he was not a physician but a "jackleg" lawyer, knew that "when you are experimenting you would better experiment upon the pine than upon your mahogany." He likened the pine to the dog and the mahogany to the human being. He suggested to Dr. Hadwen that the testing of human blood and the discovery of the use of pituitary extract were brought about by experiments on animals. Dr. Hadwen, who is evidently well trained in the tricks of debaters when faced by a difficult question, seemed disposed first to gain time by saying, "I will deal with that in a moment," and then to drag a red herring across the trail, and finally to dispose of the question with one of his dogmatic statements. The senator said that an overwhelming proportion of medical witnesses had stated that operations on dogs had proved of incalculable benefit to human beings. As a "humble medical man," Dr. Hadwen inferred that his opinion was exactly the opposite. He is quite prepared to take the position of considering himself right and all the rest wrong; in fact, he knows that he is right, and he knows that they are wrong. One opinion is as good as another. A consensus of 60 or 600 or 6,000 men makes no stronger evidence than the opinion of one single man, because the opinion depends upon the best brain in that majority—that is, one to one. So that settles the question. Let me see, says Dr. Hadwen in effect, what were you saying? Oh, blood pressure. That is a thing everybody knows. "A dog is very greatly different in structure from a human being and different in every particular." And the pituitary gland? "There is a great deal of exaggeration with regard to the pituitary gland, as I know by practical experience." The pituitary gland is nothing more than a by-product of the slaughter-house; assuming that you eat meat (Dr. Hadwen of course does not), it is only a question of getting the pituitary gland, taking it into your chemical laboratory, and finding out its chemical constituents; and then making your preparation. "It is absolutely unnecessary to have carried out any experiments whatever upon animals to have arrived at any scientific result." "Supposing you tested it upon a dog, could you be sure that it would have the same results upon a terrier bitch as it would have upon a human female? No, sir." How that "No, sir," clinches the argument which has been displayed with so much clarity!

We now pass to what Dr. Hadwen describes as an aphorism stated by Professor Starling before the Royal Commission, that the last experiment must always be on man. This, says the witness, is a confession by the leading vivisector that the last experiment must be upon man. "Now, sir, if the last experiment must always be on man, the first scientific experiment must be on man. If the first scientific experiment must be on man, then it stands to logic and common sense that all the previous experiments upon these lower animals must have been at least inconclusive if not misleading," which is as clear as mud in a wineglass. When asked what was the object of an experiment by Dr. Carrol, Dr. Hadwen replied, "I should like to know myself. I am quite sure Dr. Carrol does not." He believes that a great part of vivisection is done out of mere scientific curiosity, with no valid benefit of any kind in contemplation. "We are never told what the results are." "It is something like the brain experiments in surgery—it was a very successful operation, but the patient died." Transplantation experiments and grafting Dr. Hadwen can call nothing but a "mass of arrant tomfoolery from beginning to end." After this Dr. Hadwen asked to go off the line for a moment. "Derail the train," said the chairman; and the witness proceeded to expound the physiology of the nervous system. "The sense of hearing in dogs is much more acute than yours. Or you have your little cat on your lap." "No, no," said the chairman, "I am not fond of cats." Dr. Hadwen: "You are not? Well, I am." And he had noticed that his cat hears mice quicker than he does himself. When, however, he suggested that hawks gather together like tiny specks in the sky, waiting until a body lying upon the ground is dead, we suspect that Dr. Hadwen was confusing this bird with the vulture.

At this point Senator Ashurst interposed again. He had been hurt by the suggestion (made by Senator Myers) that he was indifferent to suffering and the sacrifice of animal life. In order to rebut this charge he stated that for years he had taken a paper called *Dumb Animals*, the motto of which was "Be kind to dumb animals." He wished to raise the matter of rattlesnakes. They exist in large numbers in Arizona, and frequently bite horses and dogs. By making experiments on horses and dogs veterinary surgeons had been able to relieve animals who had been bitten from great pain. Did Dr. Hadwen think that you should wait until a spirited and splendid horse was bitten before you take any precautions in learning how to treat that horse? Would he say, "I am going to a place where rattlesnakes are numerous and my horses may be bitten and may die, but because I am an anti-vivisectionist I will not make an incision two inches long in order to learn how to treat horses?" To this Dr. Hadwen replied: "I can see that you are a careful and thoughtful man, and a man of the world, and I am positive you would never put your best horse out where rattle-

snakes would be likely to attack it." "Great!" said Senator Ashurst: "Doctor, you live in England where there are no rattlesnakes, except those on exhibition in museums. I am not surprised at your answer, and I am not surprised that your friends applauded, because you know nothing about rattlesnakes."

Dr. Hadwen was then questioned on the subject of skunks. Out West the bite of these animals frequently produces hydrophobia, and it is the custom to examine the brain of the skunk to see if Negri bodies are present. In replying on this procedure, Dr. Hadwen said that these bodies, which were supposed to be a sure indication of rabies in the animal, have turned out to be present in everybody's brain, and the whole theory has been given up, "so that all your medical men down Arizona way are out of date." This answer seems to have staggered the senator for a moment, but he still insisted that treatment in the Pasteur Institute was preventive if taken in time. To which the witness replied that this was merely a *post hoc ad propter hoc* argument, and that the treatment was comparable to hanging a toad round one's neck for the prevention of plague. It would appear that the senator was decidedly one up on the rattlesnakes, but that on the skunk issue the hole was divided, both sides being too dogmatic on a matter which is still *sub judice*. Dr. Hadwen next gained some advantage from an admission by Senator Ashurst that there are physiological idiosyncrasies in all animal life; but Dr. Hadwen's illustration of this fact by the instance of the goat, which can flourish on a diet of hemlock, was countered by Senator Shortridge, who said that a goat can flourish on anything.

These arguments led on to an exposition of Dr. Hadwen's views on pathology. Having admitted some similarity in anatomical structure between a bird and a man, Dr. Hadwen said that you can talk about a bullock's heart and a human heart, but that when a human being gets a bovine heart it is a very different matter; it is a curiosity, and you cannot argue from one to the other! The climax of distortion and of mediæval pathology was reached when the subcommittee came to discuss the germ theory of disease. Having said that this theory "presupposes that there are certain specific germs which are the causes of specific diseases, and that they inhabit the atmosphere, ready to pounce upon the human being and bring about the disease," Dr. Hadwen added: "I personally deny the whole germ theory of disease." The author of the theory and his successors have been challenged again and again to "get one of these germs from the atmosphere . . . they have not yet accomplished it." Dr. Hadwen has a much better theory of infectious disease, and we may conclude our summary of his delightful evidence by attempting to represent it. Germs are the friends, not the enemies of man; they exist for the purpose of disintegrating morbid material and splitting it up into its primary elements, and so converting that which is bad into that which is good. Consequently they are always found in the excrement of the human body; they are the result of disease and not its cause. The zymotic diseases to which these germs bear special relations and the diseases which are supposed to be infectious invariably arise from insanitary conditions—pollution of the soil, air, or water—which bring about miasmatous conditions, which we inherit and are now striving to throw off in some form or other of zymotic disease—apparently a vicious circle. "I do not consider that there is such a thing in the world as disease. I would rather call it 'condition of disease.'" To this Senator Shortridge could only reply, "Well, men die." Dr. Hadwen does not think that there is any evidence that plague is infectious. Plague, he holds, is a condition of disease brought about by Nature for the purpose of ridding communities of an awful insanitary state of things. Thus, the Hindus live in mud-built houses, and the soil beneath these houses becomes polluted. In these houses they have plague rats, which are great friends of the natives; they live with them, eat with them, and are very friendly. When the soil poison begins to rise, the rats, being the smaller creatures, are the first to be attacked. As soon as the natives see the rats dying they go right out into the open air. They know that the place is doomed; and it is only our bacteriological scientists who talk about rats and fleas and microbes and "all this kind of nonsense," instead of realizing the great truth that the rat is the friend of man and that by his death the native is given a chance to escape.

Dr. Hadwen made some other sweeping assertions about infections, and the general theory he put forward would seem to have been somewhat as follows: Insanitary and unhygienic conditions produce atmospheric conditions which poison the constitution, and the effect produced is according to the strength of the poison and the condition of the individual. When the former is sufficiently strong and the environment (*sic*) of the individual sufficiently weak, you get plague, sweating sickness, and black death. As sanitary conditions improve and the poison is of a less severe type, you will probably get small-pox. With still further improvement and a still lighter poison, you get measles, scarlet fever, and whooping-cough. This shows that the origin of all these diseases—or are they conditions of disease?—is a chemical poison resulting from insanitary conditions affecting the soil and the atmosphere; and if only the medical officer of health knew all this, his work would be greatly simplified.

When Dr. Hadwen came to the anopheles mosquito, he seems to have been unable to find any use for it as a friend of man, though we are quite certain that, like the Bishop of Blois in the *Ingoldsby Legends*, Dr. Hadwen would not take the life of a flea—or a mosquito. He adopted another line of argument. After pointing out that in the view of his medical opponents the anopheles mosquito, before it produces malaria in a healthy man, must feed upon a man who suffers from malaria, Dr. Hadwen triumphantly asks, "Where did the man who supplies the mosquito with his pabulum get his malaria?" Another case of the egg and the chicken, as Senator Shortridge pointed out. "I cannot prove this," says Dr. Hadwen, "but I expect that a mosquito is something like a bluebottle fly that lays its eggs in a piece of effete matter, upon which they feed, and finally succeed in bringing up that effete matter and restoring it, by feeding upon it, to a healthy condition; and I guess the mosquitos do exactly the same thing." So perhaps, after all, the mosquito is like the bluebottle, a friend of man.

The subcommittee then turned to the subject of leprosy—but at this point in the evidence there was a call for a quorum on the floor of the Senate, and the examination of Dr. Hadwen was not resumed, so that the senators will never know what he thought of leprosy.

HOSPITALS IN THE RECONSTRUCTED TERRITORIAL FORCE.

THE Army Medical Department, in organizing the medical service of the reconstructed Territorial Force, has turned its attention to recruiting for the general hospitals, thereby raising the question of the continuance of the *à la suite* system. Last March a letter was sent from the War Office to the Chancellors of the Universities, setting forth a new scheme for hospitals and asking whether the universities and civil hospitals in the same towns and areas as the proposed Territorial general hospitals would be willing to afford the Army Council assistance in the formation of these units. This letter led to correspondence between the Senate of the University of London, through its Academic Registrar, and the War Office; and from this correspondence, as published in the *London University Gazette*, we propose to indicate the views of the two bodies concerned.

The Army Council designs to establish twenty-three Territorial Force general hospitals, situated as follows: Four in the Scottish Command—one at Aberdeen, one at Edinburgh, and two at Glasgow; five in the Northern Command—at Newcastle, Leeds, Sheffield, Lincoln, Leicester; two in the Eastern Command—one at Cambridge and one at Brighton; three in the Western Command—at Liverpool, Manchester, and Cardiff; five in the Southern Command—at Birmingham, Bristol, Oxford, Bath, Gosport; four in the London Command—two in connexion with the City, and two with the County of London. Each hospital will have an establishment of 1,200 beds. On mobilization eight of the hospitals will be capable of expansion to 2,400 beds. The staff of a 1,200 bedded hospital will consist of thirty-two officers and 114 of other ranks. In addition, each general hospital of 1,200 beds will have a surgical team consisting of one surgeon, one anæsthetist, one sister, and one operating-room attendant; hospitals with 2,400 beds will have two teams. The whole of the personnel must be medically fit for

general service, and must take the obligation to serve overseas.

In the event of an emergency arising which requires such overseas service, the hospital personnel will be mobilized as a unit. This condition therefore necessarily entails the abolition of the *à la suite* system. All the medical officers on the staffs of these hospitals will be shown on a general hospital list. Nothing is said in the correspondence with regard to the age limits for these officers, nor with regard to any relationship of age with rank. But certain conditions are laid down for eligibility for appointment to the General Hospital List. The officer must have undergone training in the work of a field ambulance or casualty clearing station, or have served as a battalion medical officer; he must have reached the rank of captain, and he must have completed three and a half years' service. The training referred to is, we presume, annual training for the period customary throughout the Territorial service. But Territorial officers who have been promoted to the rank of captain after six or twelve months' service in the war are eligible for this rank on the general hospital list. The records of officers on the General Hospital List will show their special qualifications and their civil hospital appointments. Specialists' pay without special rank will be attached to certain appointments—for example, medical and surgical specialist, radiologist, pathologist, etc.

The twenty-three general hospitals, while located in the vicinity of universities and civil hospitals, will be distinct establishments, possessing separate administrative headquarters and equipment for training in peace time. The appointments to the staff of each hospital will be in the hands of the Army Council on the advice of the Director-General, Army Medical Service. There will be no differentiation as regards the training of the staffs for administrative and professional work, all officers being expected to undergo training in both branches. No details are given regarding the internal organization of a general hospital; but the general impression may be gathered that a hospital will be constituted very much as was the *à la suite* hospital at the beginning of the war, with a C.O. and a registrar as administrative officers, the rest of the staff being occupied in professional work. Normally the limit of promotion for officers on the staff of a Territorial hospital will be at the rank of lieutenant-colonel; but it is possible that a member of the Territorial Force may be promoted to colonel or major-general. No arrangements are indicated for the formation of a board familiar with the professional status and competence of Territorial officers to advise the Army Medical Department on the appointments to the medical staffs of the hospitals. The formation of hospitals for home service only, staffed by officers who by reason of age or medical category, are not eligible for service overseas, is still under consideration.

To the scheme thus outlined the Senate of the University of London has declined to lend its co-operation. The scheme is regarded as "planned not with a view to greater efficiency of medical and surgical practice, but merely to secure a certain amount of training in military exercises and administration." In the view of the Senate, in all units behind field ambulances—clearing stations, stationary and base hospitals—detailed knowledge of military administration is not necessary for officers other than those who actually carry it out—namely, the commanding officer and his second in command. When the Senate asked what regard would be paid, from the point of view of seniority, to professional status and skill in comparison with administrative experience, the answer of the War Office was "None." Yet the personnel of the hospitals and medical schools affiliated to the University consists of highly skilled physicians and surgeons. In the opinion of the Senate, professional skill and efficiency of these men contributed largely to the high level of medical and surgical treatment reached during the war; and it was to such men that administrative officers had constantly to refer for guidance. Professional skill and status should be taken into account in the matter of seniority, and it is absurd to rank a surgeon to a well known hospital and a medical practitioner with no such experience simply by the length of their Territorial service. The neglect of the advice of skilled physicians, surgeons, and pathologists by administrative officers is ruinous in the long run; but "no lesson is so hard for administrative officers, constantly under the pressure of the combatant branch, to learn as that to delay hospital treatment on the one hand or to return men to duty too soon on the other does not save fighting strength but wastes it."

To this statement of its views the Senate adds the opinion that if the civilian profession is to be employed in war time to the best advantage it is essential that there should be at the War Office an advisory board familiar with the professional status and competence of Territorial and temporary medical officers.

In the absence of more detailed information with regard to the organization of the proposed Territorial General Hospitals it would be unwise to enter at this juncture into any detailed criticism either of the War Office scheme or of the Senate's objections. But with a view to assisting both sides to arrive at a conclusion beneficial to the country and to the army, it may be permissible to recall some of the debatable questions which were raised during the war. Thus, the War Office states that the staff of each hospital with 1,200 beds will consist of thirty-two medical officers. We gathered that in most hospitals, owing to the necessary inclusion of many slight cases of accident, wound, or disease, so large a staff was not required. Especially was this said to be the case in those Territorial General Hospitals in which the staffs consisted entirely of highly trained physicians and surgeons. Possibly the War Office may contemplate introducing amongst the thirty-two medical officers a certain number of officers of the standing of house-surgeons. But if so, this does not appear in the scheme, since a fixed staff of thirty-two might have the very unsatisfactory result of a major or lieutenant-colonel being house-surgeon to a captain. Might not a possible solution be found in attaching to each hospital a smaller expert staff, and drafting younger men, lieutenants or captains, from amongst field ambulance or battalion officers to hospitals for four or six months' training as house-physicians and house-surgeons?

Again, we are not sure that the question of specialist's pay has been properly considered. While it might be satisfactory to the individual who obtained a post to which such pay was attached, we are under the impression that it gave rise to some anomalies. Has the War Office taken evidence on this point? Moreover, may there not be in this connexion a possible solution of some of the difficulties raised by the Senate of the University of London? We are not sure that that body has considered fully the difficulty of adjusting the relationship between the professional and the administrative medical officer. In an organization such as the army a co-ordinating authority is necessary; and it is very difficult to imagine an administrative and a professional head with equal status existing side by side without occasional friction. The Senate of the University of London offers no plans whereby the professional status may be recognized, except in the suggestion that professional skill and status should be taken into account in the matter of seniority. How is it proposed that in a military unit such as a general hospital an officer whose professional status has raised him to the rank of lieutenant-colonel, though he is possessed of no administrative skill, should work with an administrative officer of similar or lower rank? It is a difficult question; but perhaps a partial solution could be found in the matter of pay. In any case we should be glad to see this matter as propounded by the Senate more fully gone into, together with the question of the amount of knowledge of military administration necessary for medical officers of units behind field ambulances.

Finally, we would commend to the Army Medical Department for consideration the suggestion made by the Senate for the formation of a board to advise on the distribution of officers taken on to the Territorial General Hospital List. While such a board may not be necessary in times of peace, is it certain that it can be dispensed with if any need for expansion arose? One of the chief complaints that reached us during the war was in connexion with the distribution and use of the temporary medical officers. Would a board, mainly appointed from the civilian profession, be of use in preventing the occasion for such complaints? If so, would it not be well to institute it during the formation in peace time of Territorial general hospitals, so that it may become versed in the kind of work it would be called upon to undertake in war time?

HEALTH OF SECONDARY SCHOOL CHILDREN.

THE most noticeable section of the report of the Chief Medical Officer of the Board of Education for 1920 is that which deals with the medical inspection of children attending secondary schools. Medical inspection of these pupils became compulsory on the local education authority on the first day of April, 1920. Previous to that date a considerable number of these authorities had included in a more or less complete manner the inspection of secondary school pupils in their general scheme of medical inspection. Despite the difficulties of extending arrangements for inspection last year, 108 out of the 145 county and county borough councils have made satisfactory arrangements. There are no fewer than 1,383 secondary schools recognized by the Board, with a nominal roll of pupils of 378,000. The order of the Board directed that inspection should take place during the first term after the admission of a pupil and each year after the age of 12 has been attained. In regard to the treatment of defects discovered, a circular of the Board pointed out that, "as a rule, the parents and pupils would be able to make their own arrangements, but that, nevertheless, in regard to particular types of defects, it might be desirable, if not necessary, to make available the arrangements already in force for the treatment of children in the elementary schools." Stress is laid on the advisory character of the work of the medical officer of these schools: he should be able to advise as to the health of the pupils as a whole, the hygiene of the school, and in particular on the character of games, drill or other physical exercises, and the educational problems concerned in over-pressure, eye-strain, and home work. Reports from the local authorities show that the medical inspection is welcomed by parent and teacher, and mention is made of the interest taken by the pupils.

A valuable table is given comparing the results of these inspections with those made of children in the elementary schools. There are some striking differences in the two sets of returns. The pupils in the secondary schools show an excess in defects of vision and of hearing, in heart disease both functional and organic, anaemia, and deformities such as spinal curvature. The same set of pupils show a lesser degree of defect in nutrition, cleanliness, squint, otitis media, and adenoids and enlarged tonsils. That there should be any uncleanliness in the pupils of the secondary schools is a matter for remark, indeed the figures indicate that there is considerable room for improvement in this respect. That there should be as high a percentage as 2.37 with unclean heads (and we take it that the return is from somewhat equal proportions of boys and girls which would in effect double the percentage) is serious, and further there were found cases of unclean bodies and scabies.

A very complete examination was made of these children in Cumberland by Dr. Kenneth Fraser. The examination was severe; all children were stripped to the waist, and the slightest defect noted; even a single defective tooth put the child amongst the defectives. Nevertheless, amongst 1,464 children he found no fewer than 369 with no defects of any kind. On the other hand, 110 had teeth so bad as to preclude the possibility of their being in a fit state of health; also there were a number of cases of extremely serious eye defects, one or two children being threatened with blindness, and there were a large number of cases of spinal and other deformities, some of which had reached an incurable stage. He found that directions for treatment were readily responded to, and this made the work much more interesting than inspection at an elementary school; the pupils were interested and able to appreciate the need for physical fitness and the relationship of defects to their future occupation. Dr. Fraser adds:

"It is gratifying to be able to say that I found a progressive improvement in the physique, physical condition, and general health of the children among the higher forms. That is to say, in spite of the physical and mental strain of travelling long distances, increasing pressure of home work, examination, etc., physical fitness is most marked among the older children."

The report attributes this satisfactory state of affairs to the high standard of personal hygiene maintained in most of the schools, the excellent midday dinners provided, the organized games and physical training, and the careful supervision of home work. "The balance between work and play is very well adjusted." On account of complaints that travelling and home work prejudicially affected the health of certain of the pupils a careful comparison was made in one school of children living locally and those travelling from a distance, and, as a matter of fact, there were fewer cases of defect such as anaemia, debility, lung weakness, among the latter than the former group. It should, however, be remembered that children suffering from defects of this kind are less likely to be sent to a secondary school if living many miles distant than if close at hand.

Dr. Fraser makes out a strong case for a preliminary medical examination before children are admitted to these secondary schools.

"The places in these schools are valuable, very valuable, and I regret to say there are a number of children filling places who are quite unfit to benefit by the educational facilities provided."

He mentions children who are practically stone deaf and partially blind, and many with defects which reduce the value received from the education provided, and which could have been remedied prior to admission. He comments on the bearing of these findings on the selection of candidates for the teaching profession.

"I doubt if it is generally realized that one finds many parents complacently proposing to send their children into the teaching profession, either through college or not, as the case may be, with discharging ears, with their mouths full of abscesses, with vision so defective as to be half blind, and with many other classes of defects, without the slightest intention of having these defects remedied even when they are pointed out."

London returns show that 15.1 per cent. of the secondary school children required treatment for defective vision as compared with 12.9 per cent. of the 14-year old children in the elementary schools. In a country district the corresponding figures were 11 per cent. and 5.3 per cent. In the Northampton girls' school the frequency of flat-foot was noted and also that some of the girls wore more or less habitually flat canvas and rubber shoes intended only for the gymnasium.

Commenting on these findings the Chief Medical Officer says that they dispose once for all of the idea that has been expressed from time to time that secondary school pupils, coming as they do for the most part from "better class" homes, need little or no medical supervision. Indeed, though the findings vary according to the area from which each report comes, and no doubt in part according to the observer, one of the most striking features is the extent of defects found.

The chief person upon whom reliance must be placed for seeing that the necessary treatment of children found to be defective is carried through will be the head teacher of the school. Experience shows that he or she has been glad to undertake this responsibility. It will rest with the head of the school even when the school doctor sees the parent, or when there is some special teacher, such as a gymnastic instructor, who might directly carry out the duty. So far it appears that the results have been good, and that a large measure of treatment has been secured. This can be provided more readily by the medical practitioner than in the case of the elementary school child, since the parent is in a sufficiently good position to pay for what is needed. But it is stated that much will depend upon the area: the larger the secondary school provision in proportion to the population, the higher is likely to be the proportion unable to pay the full cost of private and often specialized treatment.

* The Annual Report of the Chief Medical Officer of the Board of Education, 1920. London: His Majesty's Stationery Office. 1921. (Pp. 223. Price 6s. net.)

A BUILDING to contain consulting rooms and clinics for the use of medical practitioners is to be erected by a company at Fort Dodge, Iowa, at a cost of 125,000 dollars.

FIVE hundred Japanese medical men who have studied in Germany have subscribed 490,000 marks for the German medical faculties.

THE number of new cases of tuberculosis reported in New York City in 1920 was 14,035, which contrasts with 14,570 new cases reported in 1919, a decrease of 435 cases, or 4 per cent. During 1920 a total of 23,240 patients attended the tuberculosis clinics of the department of health, but of this number 15,065 were discharged as non-tuberculous.

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SATURDAY, DECEMBER 10TH, 1921.

THE DIPLOMA IN PUBLIC HEALTH.

ONE of the most important matters brought before the autumn session of the General Medical Council was a Report by the Public Health Committee on revision of the course of study and the examinations for diplomas in Sanitary Science, Public Health and State Medicine. The report was received by the Council after a short debate, reported in the SUPPLEMENT to this issue, and is to be sent down to the medical schools and diploma-granting authorities in order that their criticisms and their views on the whole subject may be placed before the Committee in sufficient time to enable the matter to be finally dealt with at the next session of the Council six months hence. The President of the Council dealt with the question both in his opening address and in closing the discussion. In the meantime it is clear that a very decided advance along the whole line of D.P.H. instruction and examination for the Diploma in Public Health is contemplated by the Council, and it is well that the more outstanding features of the proposed scheme should be noted by all concerned.

At present the student may, if he satisfies the necessary tests, obtain a Diploma in Public Health within nine months or a year after his name first appears upon the *Medical Register*. It is proposed that this be no longer possible, and that at least two years must elapse between the two events. This, it should be observed, would not prevent a candidate from taking his laboratory work immediately after registration and going up for the first of the two D.P.H. examinations as soon as he pleases thereafter, but under the scheme he will not be admitted to the second examination in less than two years from registration. As explained in the discussion, the view is that a new graduate in medicine will be the better qualified to take up the special duties of public health administration if he has become somewhat more mature in his thoughts and in his general outlook than an ordinary medical student is likely to be immediately after obtaining a qualification. The change seems wise. The Council does not specify how the candidate is to pass such part of the two years as is not devoted to study for the Diploma in Public Health, but it is probably hoped that, either through hospital or private practice, the youth may in most cases have learnt something of the proper relations of the public health official alike to the public and to the general practitioner. Harmony and co-operation between the two sets of men is good both for their own work and for the general welfare. It may be assumed that even at present a good medical officer of health who accepts pupils for practical training for the Diploma in Public Health takes the opportunity of impressing on them the need in all circumstances to appreciate the point of view of the general practitioner in regard, for example, to notification of doubtful cases of infectious disease. Yet some experience of the difficulties which a practitioner may meet with is best obtained in actual practice. In that connexion it may be noted that the General Medical Council has under consideration the revision of the whole medical curriculum, and within such revision a prominent place is foreshadowed for the practice of preventive as distinguished from curative medicine. When that result is achieved the foundation for co-operation between the public health official and the private doctor will have been well and truly laid. Meanwhile the proposal of the Council's Public Health Committee as here indicated is a step in the right direction.

In the next place the curriculum for the Diploma in Public Health is to extend over not less than twelve calendar months, and looking to the course of study suggested it is quite likely that "not less than" may commonly come to mean "more than." If so, of course there will be the less time for hospital or other practice within the two years, and the result may be that more than that period will often elapse between registration in medicine and registration in public health. The minimum of twelve calendar months is to include at least five months' laboratory work in bacteriology, parasitology, and chemistry and physics. Not less than 100 hours' instruction (the word "lectures" is not used) is required in various subjects whose relative importance is indicated by the time suggested for each—the Principles of Public Health and Sanitation 30 hours, Epidemiology 20, Sanitary Law and Administration 20, Sanitary Construction and Planning 12, Vital Statistics 10, and Meteorology and Climatology 8. Three months' post-graduate practice in an infectious diseases hospital is also needed, and the minimum of attendances during that period is specified as 60.

It is evident from the proposed regulations that the General Medical Council would attach special weight to practical training under a medical officer of health. The present six months will no longer be reducible to three by substitution of courses of systematic instruction or by resident appointment in an infectious diseases hospital. The training, moreover, is to embrace specific items in the administration of the newer activities of public health departments—maternity and child welfare, school medical services, venereal disease and tuberculosis services, industrial hygiene, and inspection and control of food. It is to be particularly noted that there is no requirement here that the future health officer shall himself be a clinician capable of treating either the ailments of school children or venereal disease or tuberculosis. All that the General Medical Council asks is that he shall be trained as an administrator—and indeed, though all medical knowledge is of use to the official, it would be out of the question in any practicable scheme to include more than organizing and administrative requirements as necessary for a Diploma in Public Health. That is not to say that certificates of special knowledge in special directions, if granted by reputable and responsible bodies, may not be of value in aiding a public authority in making a choice among candidates for an appointment; but in all that connexion the position and experience of the general medical practitioner as family doctor should be borne in mind, and he must not be needlessly ousted from his own sphere of work. It may, we think, be said that the scheme on the whole suggests that this aspect of the matter has not been forgotten.

If the programme presented to the General Medical Council by its Public Health Committee is finally adopted, the responsibility of a health officer who accepts pupils for D.P.H. training will be very real, and no mere formality either of attendance by the student or of certification by the instructor will suffice. How many pupils a medical officer might be able to undertake to teach would depend on

circumstances, but it seems not in the least necessary that the practical instruction should be given only in the public health departments of large cities where there are medical schools. The material available must vary somewhat as between place and place, but throughout the country as a whole, including urban and rural areas alike, there should be no lack of the necessary facilities. Such tuition, however, is bound to be so closely related to, and so dependent on, the arrangements for the daily routine of official work, that the General Medical Council would do well to ask the views not only of the medical schools and licensing authorities but also of the British Medical Association and of the Society of Medical Officers of Health.

The general report by Dr. Bruce Low, who has conducted the recent inspection of examinations in public health throughout the country, is a valuable document, and must have been of the greatest use to the Committee and the Council. Ample testimony was borne to this during the discussion reported this week; the report will be of equal value to the medical schools and licensing authorities when dealing with the subject.

THE PREVENTION OF DIPHTHERIA.

WE print elsewhere in this issue a summary of Dr. S. Monckton Copeman's valuable report on prophylactic measures against diphtheria, which not only brings within a narrow compass much scattered information but also records new observations. To this is prefixed a general survey of the field by Dr. G. S. Buchanan. Dr. Buchanan's judicial analysis of the case is informed with the cautious sagacity which has always characterized the school of epidemiologists, founded by Sir John Simon and including—to mention only those who have passed away—such distinguished students of this particular subject as Sir George Buchanan, Sir William Power, and Sir Richard Thorne-Thorne. The purely administrative aspects of diphtheria we shall not discuss, but some reflections of general interest may be noticed. The first plan of campaign against an infectious disease has always been to concert measures for the segregation of the infective, or potentially infective, from the rest of the community or to prevent the entrance into an uninfected community of porters of disease. The stringency of these measures, at least on paper, was great, their success doubtful for many generations. A plausible explanation of this failure, or partial failure, was the fact that our ancestors had no knowlege of the specific causes of the various diseases, and therefore no means of differentiating the epidemiological goats from the sheep.

So soon as the microbic cause of a disease was isolated—and in no disease was this more satisfactorily achieved than in diphtheria—it was natural to expect that the old system, no longer applied with an undiscriminating harshness mitigated by corruption, might succeed. But the progress of knowledge has shown that the problem is, in its most general form, still unsolved. We have learned that the number of goats in the sheepfold is very much larger and their precise degree of goatishness much less easy to determine than we had supposed. We have also learned that something more than the presence even of the most bearded goat is required to ensure serious harm to the sheep. What the other enemy may be is not clear. Tracts of likely country have been subjected to a tremendous bombardment with biometrical, periodo-grammatical, and historical high explosives, the soil has been ploughed up and the sheep scattered, but the enemy has not yet been located. All that is quite certain is his existence.

In the Milroy Lectures of 1891, after drawing attention to the relation in time and place between ill-defined throat illnesses and epidemic diphtheria, Sir Richard Thorne-Thorne said: "It may be suggested that many of these mild and ill-defined attacks are but cases of ordinary catarrhal sore throat such as is met with everywhere, and this quite irrespective of diphtheria. Or again, it may be assumed that they are cases of true but mild diphtheria in which the more typical symptoms have been so evanescent as to have escaped detection. There is some truth in both these contentions. . . . But I feel convinced that neither of these views fully explains the true relation of the throat-sickness in question to diphtheria occurrences." The clinico-epidemiological problem here stated remains unsolved, and deserves the attention of field workers.

But if we must recognize that the general epidemiological problem of diphtheria is unsolved and that the hopes excited by the first-fruits of bacteriological research have been disappointed, this is not to say that such research has been in vain. On the contrary, it has been perhaps the most rewarding of any laboratory investigations. Of the benefits conferred upon mankind by the introduction of antitoxin it is needless to speak, they form one of the great triumphs of modern medicine. But it is opportune to emphasize the potential advantages of the system based upon Schick's researches. We do not lose sight of the imperfections in the statistical evidence summarized by Dr. Copeman or suggest that the experimental results have been adequately controlled; but we conceive that Dr. Buchanan's opinion that there is a distinct case for the application of the American method in this country, especially perhaps in institutions, is justified by the evidence already available. We also think that the possibility of either a mutation towards or the continuous development of virulence (a possibility which will occur to readers of our quotation from Sir Richard Thorne-Thorne) must be further considered. But there is manifestly some danger of a rigid adhesion to the ritual of bacteriology being accompanied by a neglect of its scientific essence; Dr. Buchanan, in fact, points out that this is a very real danger.

The publication of Dr. Copeman's report is opportune and should provoke a discussion which will do good both in furthering genuine team work and putting various aspects of the problem of epidemic diphtheria and its prevention into the right perspective.

BASIS FOR INCOME TAX ASSESSMENT.

IN the SUPPLEMENT to the issue of November 19th there appeared a note of an interview at Somerset House between one of the principal inspectors and two officials of the British Medical Association. It may, perhaps, be useful to add one or two comments. It is clear that the apprehension which had not unnaturally arisen as a result of the action of inspectors in different parts of the country was not based on official inspiration from Inland Revenue headquarters. Reference was made to the fact that the central office in Somerset House is not always able to secure uniformity throughout the country because the ultimate authority on such questions rests with the District Commissioners of Taxes. While this point has some theoretical importance, in practice the inspector is usually in a position to adopt any reasonable method of calculation likely to produce a fair result with a minimum of trouble to all concerned, and the district commissioners may be assumed to be very unlikely to take the initiative in

disturbing a practice which has worked satisfactorily for many years. It should be emphasized that the cash basis method is an approximation only, and that, while it is sufficiently close for most purposes, there are occasions when it breaks down, because the result which it gives does not fairly represent what, after all, is the real thing to be charged—that is, the income of the practice, whether realized in cash or standing on the books as good debts. This qualification applies mainly where there has been a change in the proprietorship of the practice, in which case the cash receipts of the successor do not adequately reflect the income he is earning. For this reason the cash basis is generally refused by the inspector during the first three or even five years of any particular proprietorship. That this point is not fully appreciated in the profession is shown by the fact that in such cases there is sometimes put forward the suggestion that the retiring practitioner should continue to pay tax on the cash receipts coming to hand after his retirement. Of course, such a specific arrangement *may* be an entirely reasonable ingredient in the whole of the terms for the transfer of the practice, but it is certainly not the logical sequence to an adoption of the cash-basis method. For example, the tax on an assessment based on the cash receipts of the three years 1918, 1919, and 1920 is paid in respect of the earnings of the year ending April 5th, 1922, and it is the person who is entitled to those earnings who should be assessed and pay the tax. The principal inspector naturally expressed a preference for a system which takes into account the increasing or decreasing value of debts on the practitioner's books. Where that value can be ascertained with reasonable accuracy it does undoubtedly introduce a closer approximation to the theoretically correct liability, but it may be doubted whether in the long run much difference would arise either way. During the war years practitioners adhered to the cash basis, though in many cases it then appeared to operate to their disadvantage; if the last two years have, through any increase in fees generally, supplied the converse case, the Revenue authorities may reasonably be expected to acquiesce in the continuance of a system which needs "the long run" to prove equitable.

THE VENTILATION OF PUBLIC HALLS.

DURING 1918 to 1920 complaints were made of the unsatisfactory ventilation of certain Johannesburg theatres and cinema halls, and the town engineers asked the medical officer of health, Dr. Charles Porter, to ascertain whether the amount of carbon dioxide gas in the atmosphere of these places transgressed the limit permitted by the Council's by-laws—namely, 12 parts per 10,000 of air at about 5 feet above the floor level. Dr. Porter replied that modern research had seriously discounted the value of the carbon dioxide test, and that suitable air-movement, temperature, and moisture were now accepted as the essential factors. To this there was a request for specification of "guiding principles," and later the Works Committee resolved that the medical officer of health should be asked to submit a report in this connexion. This has now been done, and the paper we have before us[1] gives a clear and succinct account of the gradual development of knowledge in the matter of ventilation up to the most recent work of Haldane and Leonard Hill. Working on these lines, the authors, Dr. Porter and Professor Cluver, proceeded to make a detailed investigation into the state of the atmosphere in a number of the city theatres and cinemas, and incidentally of the City Hall also. The results, which they tabulate, form a most complete and interesting record of what such an investigation should be. The various halls were visited during the performances, without any previous notice, and without disturbing the performance. Determinations were made on the several floors of the halls and also in the open air for comparison. They measured the cooling rate by means of Leonard Hill's dry and wet "kata-thermometer"; the readings of the ordinary wet and dry bulb temperature in degrees of Fahrenheit; the carbon dioxide content by means of Haldane's portable apparatus; the suspended dust on a few occasions; the feeling of comfort or otherwise experienced by the observers present, using Winslow's scale; and lastly, the degree of fullness of each house in terms of its seating capacity. Both European and native halls were investigated. From these investigations they conclude that, in South Africa at any rate, the carbon dioxide standard is entirely unsatisfactory as a test of efficient and comfortable ventilation. A further conclusion is that the New York standards for au toria of relative humidity, temperature, and air movements require separate measurement, and are not so serviceable for that reason as Leonard Hill's "kata-thermometric" method whereby the combined effects of these can be accurately and easily gauged. For the Johannesburg theatres they find that a "dry-kata" figure of not less than five and a "wet-kata" of not less than sixteen indicate a reasonably good condition, and that of these records the "dry-kata" figure is, for sedentary gatherings, the more important. But in no case should the "dry-kata" figure be required to be higher than 1.5 below that obtained in the open air immediately outside the house; an important reservation in a climate where there are hot and sultry nights. They found that suspended dust was not excessive or deleterious; it consisted of skin débris, face powder, and fine silicious material. Their investigation of the cinema halls as regards the production of eye-strain was confined to a consideration of the 1919 report of the Committee of the London County Council and the Illuminating Engineering Society—a report which they found of great value. The halls passed the test very well, and it has been decided to recommend that the Municipal Building By-laws in regard to places of public amusement should be amended to embody, for application to new cinema halls, the requirements as to seating specified by the London Joint Committee.

[1] The Ventilation of Theatres and Cinema Halls in Johannesburg, and Cinema Eye-strain and its Prevention. By Charles Porter, M.D., M.O.H., and Lustace Cluver, M.A., M.B., Professor of Physiology, University College, Johannesburg. A Report to the Public Health and Works Committee of the Municipal Council of Johannesburg.

PHYSICAL INSTRUCTION IN SCHOOLS.

AT a meeting of the Medical Officers of Schools Association, on November 29th, the President, Mr. R. C. Elmslie, F.R.C.S., gave an address on the status of physical instruction in schools. Physical education was, in his view, one of the most important of the branches of preventive medicine. Very different conceptions of what constituted physical education were held among people engaged in educational work, but it might be defined as education in movement. To a large extent it was a natural process, starting immediately after birth, if not before. The earliest grasping movements of a baby were efforts to learn what he could do with his muscles and limbs. When he grasped an object he was co-ordinating his movements with vision. Presently he began to take notice of sounds, and, turning his head, co-ordinated his muscles with hearing. It was quite a mistake to suppose that an infant sat up as soon as he had sufficient strength in his back muscles; he sat up when he had attained a sufficient power of co-ordinating and controlling his movements to bring those muscles into action. It was not a question of strength, but of control. Since physical education was education in movement it was an education not of the muscles, but of the central nervous system. The muscular strength developed by physical education need not necessarily be great, but it must be properly balanced. The efficient physical instructor should have a knowledge of anatomy and physiology, as well as some acquaintance with the psychology of the young person at different ages. There were physically backward just as there were mentally backward children. Games were

most valuable if properly selected and taught, and should certainly not be taught only to those who were good at them. Physical instructors in elementary, secondary, and public schools should be as well paid as any other teacher. In the public schools he considered that physical instruction was at its worst. Too often they still relied upon the gymnasium sergeant, who was, as a rule, quite unfitted to deal with the scientific side. It would help greatly if there were a university degree in physical education, as there was in some countries, and any wealthy man who endowed a chair in this subject would be doing great service to the community. The medical profession also required education in this matter, and a course might well be set up in medical schools, while post-graduate courses for school medical officers would be an additional advantage. In the course of the discussion Dr. Lempriere, medical officer of the Haileybury College, said that it was true that the bulk of the public schools depended upon the old army gymnasium instructor, but such an instructor was now a highly trained person and bore no resemblance to the old drill instructor. Strength was a valuable asset to the English boy, and the pendulum had, he thought, swung too far in depreciation of mere muscle. The school medical officer was, of course, the proper person to supervise the instructor. Dr. E. Nash said that the average public schoolboy despised what he called "physical jerks," but the old-style drill sergeant would die very hard. At this meeting appropriate reference was made to the death of Sir George Evatt, who was practically the association's founder.

THE ROYAL SOCIETY.

THE 259th anniversary meeting of the Royal Society was celebrated on St. Andrew's Day, November 30th, when the President, Professor C. S. Sherrington, M.D., delivered the customary address reviewing the year's work. At the present time there was, he said, an element of considerable anxiety in the minds of those interested in the prosperity of science, for much of the reconstruction the country needed was being abandoned, and it was doubtful how science would fare. While the newer universities had shown admirable energy and had made their scientific laboratories places of research, the Universities Grants Committee had reported last February that universities could not meet their existing responsibilities or the legitimate demands upon them for the future; it was therefore a matter of grave concern that the Government grant to the universities was to be heavily cut down. In this country scientific research, taken broadly, depended for its main existence upon a combination of three chief groups: (1) Scientific and professional societies and some institutions entirely privately supported; (2) universities and colleges, with their scientific departments; (3) institutions directly subventioned by the State, such as the Medical Research Council, the Development Commission, and the Department of Scientific and Industrial Research. Though this triple system might seem a somewhat haphazard and inco-ordinate assembly, it was in reality an organization with much solidarity, and its co-ordination was becoming more assured. One of the strengths of this organization was that it interlocked with the educational system of the country. The cost of investigation was higher than it had been, but endowment funds went less far, and private benefactors were less and less capable of showing voluntary generosity. Withdrawal of the Government's financial support on any large scale must therefore at the present time be most seriously crippling. To pull down under emergency what had been built up through years of careful experience, and was proving efficient, could hardly, Professor Sherrington said, be ultimate economy. Were the financial provisions for research too severely cut down it would be impossible to continue various investigations now in progress, and there must be a reduction in the number of competent investigators, the number that made a fair volume of team work possible. Curtailment of the State aid—relatively small in this country—given to scientific research must harm the scientific production of the country. At the same time it had to be recognized that some curtailment seemed to be unavoidable, but research was an indispensable factor in the rebuilding of the national life and sacrifices should not be required from it disproportionately greater than from other services of an essential kind. Perhaps the best policy would be to avoid the extension of buildings, equipment, and personnel, maintaining broadly the *status quo* ready for expansion when that once more became feasible. Professor Sherrington was re-elected president. Among the members of Council elected were Sir Frederick Andrewes, Dr. H. H. Dale, Sir William Leishman, and Dr. J. T. Wilson, Professor of Anatomy in the University of Cambridge. The treasurer of the Society is Sir David Prain, C.M.G., C.I.E., M.B., director of the Royal Botanic Gardens, Kew.

CHORDOMA.

CHORDOMAS, or tumours derived from the relics of the primitive notochord, are rarely recognized, and from their histological structure are easily mistaken for myxochondromas or colloid carcinomas. The remains of the notochord may be visible in the intervertebral discs as pulpy masses composed of rather large, rounded or slightly oval, acidophil epithelial cells with vacuoles containing mucin. Growths of notochordal tissue are most common at the spheno-occipital synchondrosis, at the upper end of the notochord behind the pituitary body, and in the sacro-coccygeal region. Many so-called chordomas are small benign masses of this tissue forced out of the bone during early development, and may with probability be regarded as analogous to other examples of tissue displacement. Malignant chordomas, however, occur and are extremely fatal, for from the difficulty of diagnosis and their tendency to infiltrate the regional fasciae extensively, operation is rarely more than palliative. Dr. N. D. C. Lewis[1] has minutely analysed four American cases of malignant chordoma arising in the sacro-coccygeal region. The symptoms were rectal, and various diagnoses as to the nature of the growth were made. The duration of life after the onset of symptoms varied from four months to two years; three of the patients were operated upon. The case of shortest duration occurred in a lunatic. The author believes that these tumours are much more frequent than was formerly supposed, that they have sometimes been classified as other forms of malignant disease, and that they are of much more clinical importance than has hitherto been recognized.

PUBLIC HEALTH AND THE GENERAL PRACTITIONER.

IN the November number of *Public Health*, the official organ of the Society of Medical Officers of Health, is an article extremely to the point at the present time, by Dr. Charles E. S. Flemming, on "The Public Health Services in Relation to the General Practitioner." Dr. Flemming is of opinion that the development of the Public Health Service has been retarded by the want of association between the various departments of medicine. Preventive medicine has been separated from curative, and the various departments of curative medicine have worked independently of one another; their interdependence is neither recognized nor developed. The dissociation of various sections of medical practice is, he thinks, largely due on the one hand to the individuality of the medical practitioner, and on the other to the prevailing want of appreciation of the fact that the interest of the individual was the same as the interest of the community. When of recent years treatment by public authorities ceased to be restricted to infectious

[1] N. D. C. Lewis, *Arch. Int. Med.*, Chicago, 1921, xxviii, 451–452.

cases which the practitioner was glad to be rid of, and which it was obvious could not be properly left in their homes, but was extended to the treatment of school children, persons suffering from venereal disease and tuberculosis, and those attending maternity and child welfare clinics, then, says Dr. Flemming, the general practitioner became seriously alarmed, and irritated with, and suspicious of, not the medical officer, but the public health authority. Thanks to the tact of medical officers of health, the clinician's common sense, and the appreciation by both of the need of the community, both sides are now realizing that they are as essential the one to the other as are the navy and the army the one to the other—that they are the fighting force of the community in its battle for health. We may fairly say, he continues, that all medicine is in a sense preventive, and, admitting that, we admit that every practising medical man is, in fact, in the public health service. "How obvious," he says, "is the need for co-operation between the public health service and the family doctor; but can it be said that under the present arrangements the State gets the best and fullest value out of the general practitioner? Consider his knowledge of the history of disease in his individual patients, in their families, and in the community in which he practises; his acquaintance with his patients' surroundings at home and at work, their conditions of work, their conditions of life, their habits his experience of the manner in which and extent to which these things influence them in health, in disease, and under treatment. No official can ever have the same intimate knowledge of the life-history of the patient, the same opportunity to detect disease in its earliest stages, or—and this is even more important—the tendency to disease. Surely there must be some means by which this unlimited supply of invaluable information can be used in the interest of the community more effectively than it is at present." It is to be hoped that the significance of these remarks of an experienced general practitioner will be realized. The tendency of public health policy in certain quarters to-day was commented upon in a leading article in our issue of November 26th, p. 908. The general practitioner has no quarrel with the medical officer of health. He recognizes that, although sometimes he may not see eye to eye with regard to his methods, in every case he is working for the good of the community. What the general practitioner wishes to-day is in no case to break off relations with the medical officer of health, but to offer him his own experience—which can be gained only in the type of medical work in which he is engaged—to augment and support the advance of preventive medicine.

SEROLOGICAL STANDARDS.

A CONFERENCE upon serological problems, convened by the Health Committee of the League of Nations, will be held in London on Monday next, December 12th, and following days, under the presidency of Professor Madsen, Director of the State Serological Institute of Denmark, who is the president of that Committee. Distinguished workers from laboratories in the following countries will be present at the conference: Austria, Belgium, Denmark, France, Germany, Great Britain, Italy, Japan, Poland, and Switzerland. It is hoped that the President of the Office International d'Hygiène Publique and an American representative will also be present. The British delegates will be nominated by the Medical Research Council. The meetings will take place in the Ministry of Health. The conference will be occupied with a consideration of existing methods of standardizing serums and the possibilities of attaining an agreed international system of serological standards. It will also take account of the methods used in leading laboratories for the serum diagnosis of syphilis. Arrangements for such new investigations as may be necessary for the objects in view will be discussed.

A PROPOSED NATIONAL INSTITUTE OF INDUSTRIAL MICROBIOLOGY.

THE day has passed when we regarded bacteria as having been created for the annoyance of mankind. A wider acquaintance with them has revealed the fact that only an extremely small section of bacteria attempt to live as parasites on living beings. The vast majority unobtrusively pursue their varied activities and perform work which is essential to the continuance of plant and animal life on this planet. In recent years many successful attempts have been made to take advantage of the good offices of bacteria for the manufacture of substances useful to man. Chemical transformations laboriously accomplished in the laboratory or factory may be effected extremely rapidly by the bacterial cell. The importance of bacterial ferments is recognized in the dairy industry and by agriculturists, and, as is well known, micro-organisms are used for the manufacture of vinegar, citric acid, and alcohol. During the war acetone was manufactured by the agency of bacterial ferments. In an article appearing in *Nature*, December 1st, Mr. Chaston Chapman, F.R.S., appeals for the foundation of a "National Institute of Industrial Microbiology." He points out that if some central laboratory were established for the study of the applications of microbiology to industry the many independent researches at present being conducted in isolated institutions might be co-ordinated, with far-reaching benefits to industry. He suggests also that the proposed institute might become the home of a collection of pure cultures of organisms found useful for industrial purposes so that types could be preserved under expert supervision. Such a museum of micro-organisms of importance in medicine exists in the national collection of type cultures at the Lister Institute under the supervision of Dr. Ledingham. We understand that the scope of this collection has been extended to embrace organisms found to be responsible for diseases of plants. In appealing for the study of the applications of microbiology to industry Mr. Chapman very wisely draws the attention of the public to a branch of science possessed of almost unlimited possibilities.

THIRD INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE.

THE third International Congress of the History of Medicine will be held in London, under the presidency of Sir Norman Moore, from July 17th to July 22nd, 1922. Meetings will be held at the Royal Society of Medicine, the Royal College of Physicians, the Royal College of Surgeons and the Wellcome Historical Museum, where there will be an exhibition of objects connected with the history of medicine, surgery, and the allied sciences, including manuscripts, early printed books, pictures, sculptures and engravings, old surgical instruments, medals, etc. The subjects suggested for discussion by the International Society of the History of Medicine are: (1) The principal seats of epidemic and endemic disease in the middle ages, including plague, gangrenous ergotism, leprosy and malaria. (2) The history of anatomy. Further information may be obtained from the General Secretary, Dr. J. D. Rolleston, 21, Alexandra Mansions, King's Road, London, S.W.3.

CLAYDEN v. WOOD-HILL.

IN addition to the letters published last week, we have received others urging the British Medical Association to support an appeal against the verdict in the case of Clayden *v.* Wood-Hill, of which a report appeared in our issue of November 26th at p. 919. As the matter is under the consideration of the Medico-Political Committee, it has been deemed inadvisable to publish these letters.

England and Wales.

THE WELSH NATIONAL MEDICAL SCHOOL.

THE Welsh National School of Medicine is making an appeal for subscriptions to a fund of £100,000 for the endowment and further equipment of the school, which has been at work since the beginning of this winter session. This must be raised before August next in order to qualify the school for the Treasury grant of £5,000 a year, which will be paid only if the school succeeds in raising by public subscriptions an annual income of that amount or a capital sum which will yield it. The Premier has signed the following appeal, which has the support of the Pro-Chancellor and the Vice-Chancellor of the University of Wales. Mr. Gwilym Hughes is acting as organizing secretary, and cheques payable to the Welsh National School of Medicine Appeal Fund, and crossed Barclay's Bank, Queen Street, Cardiff, should be sent to him at the National School of Medicine, Newport Road, Cardiff, or to the Pro-Chancellor, Lord Kenyon, or the Vice-Chancellor, Dr. A. H. Trow.

The Appeal.

The Welsh National School of Medicine, established in connexion with the University of South Wales and Monmouthshire, was opened last October. It has two great aims set before it: 1. To realize the intention of its promoters, from Viriamu Jones in 1886 to its latest benefactors, that it should be a national institution in fact as well as in name; and 2. to carry on its work on what is known as the hospital unit system, whereby university training and research in the medical sciences are brought into the closest relation with the clinical work of the hospital. To enable the school to give a complete training in all branches of medicine and surgery on this system will, after the first year or two, require a yearly expenditure of at least £25,000, to meet which the grants available from public sources and fees will be quite inadequate. If success is to be assured it is necessary to raise a further sum of £100,000. By the generosity of Sir William James Thomas, Bt., the late Miss Talbot, and Major David Davies and the Misses Davies, a new physiological block and a department of public health have been or are being built, and chairs of preventive medicine and tuberculosis have been founded. Further expenditure on equipment in the shape of laboratories and apparatus is absolutely necessary, and an endowment fund is required to provide the full complement of professors, lecturers, and trained staff which the unit system requires.

The King Edward VII Hospital at Cardiff have placed all their beds at the disposal of the school for tuition purposes, and nothing except money is now needed to make this one of the foremost schools of medicine in the country. Welsh students, who at present have done preliminary training at the University College of South Wales and Monmouthshire, have had to pursue their further training for the final degrees at University College (London), Edinburgh, Liverpool, or elsewhere. It is confidently hoped that this will no longer be necessary, and we therefore appeal to Wales to endow and equip a national school of their own, without which neither their ideal of autonomy in education nor their other schemes for the advancement of public health in Wales can be fully realized.

D. LLOYD GEORGE.

BRISTOL MEDICAL SCHOOL.

The annual dinner of the Bristol Medical School was held on November 28th, with Mr. W. R. Ackland in the chair. A large number of past and present students attended, as well as representatives of the university and medical men practising in Bristol and the neighbourhood. The guest of the evening was Sir Henry Gray, K.B.E., C.B., C.M.G., of Aberdeen, who in his speech proposing the health and prosperity of the medical school, expressed his pleasure at meeting again so many men with whom he had been associated in his surgical work in France. He urged the present generation of students not to demand too much spoon feeding in their medical education, but rather to cultivate the spirit of independent observation and a capacity for doing things for themselves. The chairman, in his response, welcomed Sir Henry Gray, and reminded him that Aberdeen had laid Bristol under a deep obligation when it sent Greig Smith to become surgeon to the Bristol Royal Infirmary. The memory of Greig Smith would form a lasting bond of union between the two schools.

The Long Fox Memorial Lecture was delivered in the Physiological Lecture Theatre of the University on November 28th by Mr. Hey Groves, on the subject of "The repair of bone injuries." The chair was taken by Sir Henry Gray of Aberdeen. After referring to prehistoric examples of the treatment of fractures, the lecturer gave a demonstration of certain general principles relating to the experimental repair of bone injuries by means of metal plates, intramedullary pegs, and traction appliances. Some of the experimental evidence relating to the practical details of bone-grafting was then given. Emphasis was laid on the fact that success in bone-grafting required that a graft should be of ample size, and that it should be firmly fixed and have wide contact with the host bone. The clinical application of these principles was then demonstrated in relation to a number of patients recently treated by bone-grafting methods.

CENTRAL MIDWIVES BOARD.

The Central Midwives Board for England and Wales met on November 17th, the Chairman, Sir Francis Champneys, presiding. Both the penal and the ordinary monthly meetings were held. At the former, one midwife was struck off the roll and two other cases were put under probation for reports in three and six months. With reference to the training of pupil midwives in Guernsey, the Board expressed itself as prepared to consider favourably a suitable scheme for such training and for the inspection of the same, and invited Sir Edward and Lady Ozanne to submit a scheme.

The Director of the Division of Nursing, Public Health Department, New Zealand, desired to know the terms on which midwives trained in New Zealand and registered under the New Zealand Act, after passing the State examination, may be accepted for registration in England under Section 10 of the Midwives Act, 1918. It was decided to reply: That in the opinion of the Board the standard of midwifery training in New Zealand is not equivalent to the standard adopted by the Board, inasmuch as it is not essential: (1) That all pupils shall attend a course of at least twenty lectures delivered by a registered medical practitioner; (2) that the course of lectures shall extend over a period corresponding with the period required by the Board; (3) that the medical practitioner who delivers the course of lectures shall be approved by the midwifery authority. The Board will be glad to hear that the standard of training in these respects, in New Zealand, can be brought up to the standard required by the Board and also to hear that in the event of reciprocal arrangements as to registration being entered into, the New Zealand authorities will recognize the certificate of the Board obtained by passing the Board's examination, without regard as to whether the training of the holder is institutional or private.

The Medical Secretary of the British Medical Association had written to inform the Board that exception had been taken by the members of the Association to midwives administering opium, except under the direction of a medical man, and that he had been instructed to bring the matter before the Board and the Minister of Health. He also stated that the Association was of opinion that pituitrin was, without doubt, a drug which should not be used except under the supervision of a medical man, and asked for the Board's observations on the use of the drugs mentioned. It was decided to reply that the Board had always declined to schedule drugs except so far as stated in Rule E.19. In its experience of nearly nineteen years, it had never had a case before it in which a midwife had been found to have administered a drug improperly.

VITAL STATISTICS OF ENGLAND AND WALES.

According to the last quarterly report of the Registrar-General for England and Wales, marriages and births in this country both continue to decrease in number. The number of persons married during the second quarter of 1921 showed a decrease of 9,392 from the preceding quarter, and was 74,745 less than in the second quarter of 1920; it corresponds to an annual rate of 15.1 per 1,000 of the population. The births registered in the third quarter of 1921 were 10,466 fewer than in the preceding quarter, and 15,017 fewer than in the third quarter of 1920; the 214,850 births registered during the quarter correspond to an annual rate of 22.5 per 1,000 of the population. The births of males numbered 110,056, and those of females 104,794. There were 9,898 illegitimate births during the quarter, or 751 less than in the corresponding period of 1920. The natural increase of population in England and Wales last quarter, by excess of births over deaths, was 115,716, against 54,265, 86,220, and 136,177 in the third

quarter of 1918, 1919, and 1920. The deaths registered in England and Wales in this period were 9,337 fewer than than in the preceding quarter, but were 5,444 more than the third quarter of 1920. The total deaths, 99,134, correspond to an annual rate of 10.4 per 1,000 of the population. Influenza was stated to be either a primary or contributory cause of death in 528 cases, or 0.5 per cent. of the total deaths registered in the quarter. The infant mortality, measured by the proportion of deaths under 1 year of age to registered births, was equal to 83 per 1,000, which was 15 per 1,000 below the average in the corresponding quarter of the ten preceding years.

Scotland.

Edinburgh Chair of Midwifery.

At a meeting of the Curators of the University of Edinburgh, held on November 29th, it was reported that the University Court desired that the teaching of gynaecology should be combined with the duties of the Chair of Midwifery. In view of this intimation the Curators adjourned their meeting until December 16th to consider names of gentlemen qualified to hold the appointment. It is understood that the combined salary under the new arrangement will be £1,200, and that the professor may undertake practice.

Health Instruction.

On November 24th Sir Napier Burnett, honorary president of Glasgow University Medico-Chirurgical Society, delivered his presidential address in the Students' Union, on the subject of "The Doctor as a teacher or instructor of health." He advocated greater education in the way of preventive medicine. The doctor of to-day relied too much on the apostolic injunction that "the whole need not a physician, but those who are sick," but to-day that doctrine should be modified to the effect that the "whole" need the physician of health, and the "sick" the physician of disease. Sir Napier Burnett pointed to the fact that formerly, unless in the case of clubs and societies, practitioners derived their income from people who consulted them in sickness; under the Insurance Act they now depended for the greater part of their income on people who remained well. He appealed, first, to students to seek to equip themselves with the knowledge necessary for them to be efficient teachers of the principles of health. In the second place, he appealed to the Council of the British Medical Association that, just as they had so successfully defended the interests of the profession on many occasions, so they should likewise take up a constructive and forward policy in this matter of the prevention of disease. For example, the wide field of industrial hygiene had scarcely been touched in this country, and immense results might be secured through a forward policy inaugurated by the British Medical Association in a campaign for the attention of employers to the doctrine that the health of the workers meant wealth not only to the employee but also to the employer. And, third, he advocated that a short course of lectures on what might be termed social medicine, or advanced hygiene, might be instituted in medical schools, to be taken by the student either before or immediately after qualification.

Ireland.

Tuberculosis in Belfast.

In the annual report which he has recently issued as chief tuberculosis officer for Belfast, Dr. Andrew Trimble says that further opportunities for observation of patients who claimed that their tuberculosis began as an attack of influenza leads him to affirm again that as a provocative of tuberculosis influenza has proved less potent than was apprehended. He agrees with Fishberg that many of the physical signs found in the lungs after an attack of influenza simulate to a remarkable degree the signs of pulmonary tuberculosis. The constitutional symptoms also are very like those of tuberculosis—namely, lack of energy and loss of appetite, sometimes lasting for weeks and months. The admission, however, that the "lighting-up" disease was classical influenza must be guarded against carefully, though it may really have been the preliminary fever which often heralds the onset of tuberculosis. One of the things which struck Dr. Trimble forcibly in the course of examinations both of civilian and military patients was the large number who seemed to be suffering, or to have suffered, from the hilus form of pulmonary tuberculosis. In some cases where the disease seemed to have been confined to the hilus few signs were found, but manifest symptoms were reported. In others the disease had travelled towards the periphery, manifesting itself in pleurisy and fibrosis, while *x*-ray examination demonstrated a good deal of bronchial infiltration. Amongst these cases was found a large majority of chronically progressive, retrogressive, or apparently arrested disease. It would seem, he says, a reasonable hypothesis that the disease in a great many cases begins as a hilus infection in childhood, and by the time adolescence is reached the activities of physical growth seem to release the tubercle bacilli hitherto held imprisoned in the hilus and allow them to escape towards the periphery of the lungs. In these cases one must not be deceived by not finding the usual physical signs of tuberculosis in the lungs; the signs are rather to be sought, he agrees with Riviere, in the narrowing of the resonant area above the apices, and in the demonstration of the condition by *x* rays.

Ulster Medical Society.

The third meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on December 1st; the president, Dr. Robert Hall, occupied the chair. Dr. J. C. Rankin introduced a discussion on the value of the Wassermann reaction in the diagnosis and treatment of syphilis. As officer in charge of the venereal department in the Royal Victoria Hospital, Belfast, he emphasized the importance of medical men becoming acquainted with the later methods of diagnosis and treatment, and said that it was not the intention of the authorities to confine the treatment of syphilis to clinics and experts; students were not sufficiently instructed. He then gave the result of his experience in cases of syphilis without the Hunterian chancre, Colles's law, dosage, etc. Dr. J. A. Smyth, assistant in the laboratory of the hospital, gave a demonstration of the three methods—Harrison's, Fleming's, and Dreyer's—and pointed out the difficulties, fallacies, and the necessity for the greatest manipulative care; the latter was a quantitative test. Dr. T. Houston, director of the laboratories, referred with appreciation to the work of his assistants, past and present—Drs. Norman Graham, George Rea, J. A. Smyth, and Boyd Campbell. He explained an advance that Dr. Rea had made in the testing of blood for transfusion. The Wassermann reaction had now become so accurate that it had survived all the stringent tests to which it had been put, and where two tests were employed and all doubtful results retested, the percentage of error fell to 1 per cent. A large number of slides were shown, giving the results of the laboratory work and dealing with doubtful and disputed points. He leant strongly to the view that cases without any clinical symptoms but with a positive Wassermann should be treated; such cases often ended in heart disease and nerve trouble. He had made over 5,000 tests, but reserved comparison till he had a sufficient number of Dreyer's. Where both Harrison's and Fleming's were positive there was little doubt. Observations were made and questions asked by Drs. MacIlwaine, Boyd Campbell, Calwell McKisack, and W. W. D. Thomson; and Dr. Houston replied.

New South Wales.

Royal Prince Alfred Hospital.

The report of the Royal Prince Alfred Hospital for the past year shows that the number of patients treated reached the total of 8,000—a number larger than that recorded in any other general hospital in Australia. The number of attendances in the out-patient and casualty departments was 91,200, the individual number of patients being 35,556. Like nearly all other hospitals all over the world, this institution is faced with a heavy deficit in its finances in consequence of the increased demands upon its

accommodation and upon its resources in every direction. of the high rate of wages to be paid to the employees under the basic wage, and the high price of food, drugs, and surgical appliances and dressings. The financial position at the end of the year was actually £8,000 worse than at the end of the previous year, and the deficit was only kept as low as it was by utilizing all bequests and legacies as income instead of investing them as capital. As it is, the Government contributes very largely towards the support of the hospital by means of a large bed subsidy and by special donations, and it is obvious that unless the general public subscribe much more largely in the future than in the past the hospital must become more and more dependent upon the Government for financial support. The urgent need for an isolation block has been impressed upon the board for a number of years past, but there is no possibility of its being erected in the near future. The Government has recognized the necessity for this building, but the shortage of money is said to be the cause of the delay in its erection. An important addition to the hospital work is the establishment of a dental clinic, under the guidance of Professor Fairfax Reading, Professor of Dentistry in the University, with the assistance of two honorary dental surgeons. Owing to the importance now attached to the hygiene of the mouth, the work of the dental clinic will be specially directed to this subject.

RED CROSS AND WAR CHEST HOME FOR BOYS.

The committees of the New South Wales Red Cross Society and of the War Chest are co-operating in an important movement to provide for the orphans and neglected children of ex-soldiers of the Australian Expeditionary Force. The War Chest has contributed £3,500 towards these homes, and it is intended to establish one home for boys to contain twenty-five beds and another for girls to provide for the same number. A house has already been purchased in a healthy part of Sydney, and it is intended to convert this into a home for boys. It is hoped that at an early date another house will be purchased at Randwick as a home for girls. It has been ascertained that there are quite a large number of children of ex-soldiers in New South Wales who are either orphans or are living under very undesirable conditions, and it is considered an urgent matter to rescue these children from their environment and place them under such conditions as will conduce to their becoming useful citizens. A representative committee has been formed to supervise the working of these homes; an experienced matron will be put in charge, and the ladies of the committee will be responsible for a large amount of visiting. Provision will also be made for the religious and secular education of the children.

Correspondence.

THE SUSSEX PROVIDENT SCHEME.

SIR,—In view of the fact that some doubts have been expressed as to the economic soundness and financial stability of the Sussex Provident Scheme, it may interest some of your readers to hear the results of the first eleven months' working.

It was decided to make the first financial year one of eleven months in order that the associated hospitals might receive what was owing to them before the last quarter day of the current year. The financial arrangement which was agreed to when the scheme was initiated was that for the first year the income of the scheme should be divided into forty parts, and that these should be allotted beforehand to the associated hospitals, in a varying proportion, based upon the work which each might be expected to do. This was, of course, a purely experimental arrangement and subject to being changed in the light of the first year's experience, but the results which have been attained will be of value in the future whether the scheme maintains its existence or not.

One satisfactory result is that, although some hospitals have been favoured more than others, they have all been paid in full for the cost of the services which they have rendered to the members of the scheme during the year; but beyond this 100 per cent. the percentage of payment to the cost of the work done varies very considerably.

One hospital which, so far as can be ascertained, has not been called upon for any service to the members of the scheme, has been paid one-twentieth of the total income, and of the others the percentage varies from 1C5 at the Brighton, Hove, and Preston Dispensary to 307 at the Sussex Throat and Ear Hospital. At the New Sussex Hospital for Women and Children and the Stephen Ralli Memorial Laboratory it reaches 168, while at the Royal Sussex County Hospital it amounts to 117.5.

The Dental Hospital has been paid at the rate of 15s. 4d. a visit. The visiting consultants have been paid a fee of £3 3s. for each consultation, while one-eighth of the total income still remains in hand.

The percentage of members who are recorded as having received in-patient treatment during the eleven months is 2.083, and the percentage of those recorded as having received out-patient treatment (including dental, massage, and *x*-ray case) is 8 5.

Although no definite conclusion can be drawn from these figures they are suggestive and encouraging. The number of members of the scheme is still small and for a large proportion of them the services will be available without further payment during part of next year. On the other hand, as the scheme is becoming more generally known, the number of new members joining every month is showing a steady increase, and if this should continue there cannot be a doubt that the success of this year will be repeated and increased in the future.—I am, etc.,

SELBY,
Honorary Secretary Sussex Provident Scheme for Hospital and Specialized Medical Services.

Brighton, Dec. 5th.

AMBROISE PARÉ.

SIR,—Your issue of December 3rd, in a review of Packard's *Life and Times of Ambroise Paré*, contains some interesting observations by W. G. S. which are in some respects, I think, unjust to Paré.

Was it indeed, as W. G. S. says, a retrograde procedure to write in the vernacular? No doubt the same was said of the pioneer Galileo when he began to lecture in Italian, as it was certainly said of another Paduan, Mercurio, when he wrote his *Comare* in the vernacular. Mercurio replied that he wrote in a language which could be read by those for whom it was intended, and the same reply might have been made by Paré, writing of surgery and obstetrics, which were then largely in the hands of barbers and midwives.

"As to his midwifery," writes W. G. S., "Philumenos and Soranos had described podalic version on the living child; Paré only referred, with Celsus, to podalic version for the extraction of a dead foetus." There is some doubt, according to Farbender, whether Philumenos described podalic version of the living child; there is no doubt at all that Paré did so. His chapter describing the operation is headed: "La manière de tirer les enfants hors le vêtre de la mère, tant morts qui vivâns." He gives a detailed technique of the operation, including the sott loop for the foot "made of ribbon with which women bind their hair, or such like," and warns of the precautions to be taken in version with twins lest the lives of the mother and children should be lost.

W. G. S. suggests that it was a fault that Paré believed that the pelvic bones separated. Well! he had seen it, and "seeing's believing"; also that he opposed Caesarean section, at a time when (and for nearly three centuries afterwards) the operation was almost uniformly fatal.

In midwifery the great and indisputable merit of Paré is that, though perhaps not the first to mention the operation, he introduced and described podalic version for the delivery of the living child after the operation had been neglected for about fourteen centuries.—I am, etc.,

London, W., Dec. 5th. HERBERT R. SPENCER.

PERFORATION OF THE NASAL SEPTUM IN COCAINE TAKERS.

SIR,—It seems to me that Dr. F. G. Crookshank's letter in the issue of the BRITISH MEDICAL JOURNAL of November 26th, p. 917, may create a wrong impression as to the relative frequency with which cocaine, used as a snuff or spray, produces perforation of the nasal septum.

As I read it, the main suggestion of his letter is that when one meets with a clean cut, button-hole perforation of the septal cartilage we should not forget that such a

lesion is often produced by the local application of cocaine. This seems to be his meaning when he says:

"Abroad the diagnostic importance of the nasal perforation is perhaps better appreciated than, so far as I can find, is the case in London."

My own experience would suggest that there are many other factors which account for the majority of these perforations, and possibly the most frequent of all of them is slow ulceration caused by the irritation of dust collecting on a "spur," "crest," or other irregularity of the cartilaginous septum. When the little ulcer happens to be on the area which corresponds to the usual site of bleeding in epistaxis, its destructive influence will be at its maximum.

The irritation caused by the ulceration often induces "nose-picking" or violent rubbing of the nose, and by such means a crust is removed, which provides a fresh surface for further irritation, and ultimately the typical perforation is produced. *Such irritation may lead to the cocaine habit.* The septal perforation is well known amongst workers in the irritating and dust-laden atmospheres of stone-masonry, and it is peculiarly liable to attack the employees in chromic acid factories and salt mines.

Rhinologists often observe the perforation of the septal cartilage in chronic tuberculous lesions of the nose, while a smaller number of cases is met with after enteric fever, and in such debilitating diseases as diabetes.

Jonathan Hutchinson was the first to point out that the simple button-hole, smooth-bordered perforation was not necessarily of syphilitic origin. The former is limited to the cartilage, while the specific lesion frequently destroys the adjacent bony elements of the septum and the hard palate, so that a large and irregular perforation is produced.

I am in entire agreement with the timely diagnostic warning conveyed in Dr. Crookshank's letter, but venture to suggest that if inexperienced readers concentrate too fully on the cocaine factor in such cases, a good deal of unfounded suspicion and trouble may be caused thereby.—I am, etc.,

London, W., Nov. 26th. HERBERT TILLEY, F.R.C.S.

SIR,—Dr. Crookshank, in your issue of November 26th, p. 917, raises the question of nasal septum perforation and its diagnostic importance in cocaine takers.

As nose specialists see this condition frequently in their out-patient clinics, in people from the poorest walks of life and industrial occupations, who never had access to cocaine, its presence in takers of this drug must be regarded as a coincidence and not in the relationship of cause and effect.

For many years septal perforations were considered diagnostic of syphilis, and patients who had them were labelled and treated accordingly, until Jonathan Hutchinson opposed the view and pointed out that two types existed—that is, the syphilitic and non-syphilitic. The latter is much more common than the former, and is due to simple inflammatory causes, and it is to be hoped that the possessor of such a harmless nasal affection, having already been rescued from one unmerited diagnostic reproach, is not going to have a fresh stigma cast upon him by our medical friends from abroad.—I am, etc.,

London, W., Nov. 26th. JOHN F. O'MALLEY.

AN OIL IMMERSED X-RAY TUBE FOR INTENSIVE THERAPY.

SIR,—The introduction from Erlangen of intensive methods of radiotherapy—referred to in a note in the BRITISH MEDICAL JOURNAL of December 3rd—has brought the question of suitable apparatus very much to the fore in this country. For the purpose of carrying out the Erlangen technique it is necessary to excite a tube at a potential of 200,000 to 230,000 volts for some hours on end. Much attention has been given to the apparatus for generating the necessary current, and the therapeutic dose has been carefully worked out. Less care appears to have been bestowed upon certain subsidiary but still important matters.

These are: risk of tube breakage with injury to patient; risk of spark jumping to patient; efficient "screening in" of the tube so that stray radiations do not reach the room; optimum running conditions, securing longest possible life for tube.

I believe that these desirable ends can best be secured by immersing the *x*-ray bulb in oil contained in a tank lined with thick lead. A suitable tank, filled with oil, weighs about 500 lb., and is therefore non-adjustable, unless by very elaborate machinery comparable with that which works a passenger lift. The alternative is to make the tank stationary and to move the patient. At my request Messrs. Schall and Son have constructed such a tank. It is 4 ft. long, weighs with oil just under 500 lb., and is mounted on a massive wooden table built to stand a load of 15 cwt. The lead lining of the tank is pierced by several zinc windows, which are covered by lead "blinds" when not in use. Adjustable tubular diaphragms permit of cones of radiation being obtained at various angles. The patient lies on a special couch capable of horizontal and vertical adjustment. No bare wires are used. The current is conveyed partly by thick brass rods, partly by heavily insulated cables, and enters the top of the tank through insulated rods 16 in. long by 1½ in. in diameter. Hence there is no "brushing," with its bad effects upon the air of the room.

The stand and tank may be touched at any point without any sensation being discerned. Even a hysterical patient cannot harm herself or the apparatus. If the tube should break, the parts fall harmlessly to the bottom of the tank; the oil, of course, being non-inflammable. But the tube is unlikely to break, because the glass can never get hot, and no spark can jump to the bulb, piercing it, because of the oil. Neither is the tube subjected to any of the jars which assail it when mounted in an ordinary movable stand. The tube employed by the present writer is a new model Coolidge, 31 in. long and 8 in. in diameter. But a gas tube with a hollow target stem down which the oil could travel might equally well be used. I should be happy to furnish details and plans to anyone interested. A considerable amount of the work could be carried out locally by an intelligent combination of joiner and plumber. The lid of the tank, with its insulated rods and tube supports, also the adjustable tubular diaphragms, call for expert handling.—I am, etc.,

London, W.1, Dec. 1st. F. HERNAMAN-JOHNSON, M.D.

SUICIDE IN BORDERLAND CASES.

SIR,—It was with great appreciation from the practical side of neurology and psychiatry that I read Professor G. M. Robertson's opening paper to the Section of Neurology and Psychiatry, at Newcastle-on-Tyne, in July, 1921 (printed in the JOURNAL of November 19th, p. 827). To all those medical men who have had the care of a large number of borderland cases during a period of years, his words must recall many incidents where precautions taken to guard against suicides were not adequate.

The difficulties one personally experiences arrange themselves into four classes:

1. The inability of the patient to afford special nurses.
2. Isolation of the cases, with special nurses and attendants, from other patients who are not similarly affected.
3. Being overruled by the patient's strong objection to having a guard over him.
4. Last but not least, the fear on the part of the physician of taking drastic action and so precipitating the very calamity which he is trying to guard against.

There are many other minor difficulties, and possibly the most marked of these is to induce relatives to impart full details concerning the history of the patient, and when a patient is under treatment to refrain from writing or visiting.

Personal experience has shown the early morning to be the most critical time. Perhaps after a restless two or three hours he has been able to get a little natural sleep and so temporarily forget his troubles, and for the first few minutes after waking he is fairly free, and then with a rush there comes back to him the dreadful reality of his position and utter helplessness and hopelessness. He then becomes mentally panicked, all sense of right or wrong seems lost, and he is temporarily not responsible for his actions; unless well attended, this is the time that he will make the attempt to bring his miserable existence to an end.

The earlier such cases are treated the more rapid the success, and the younger the patient the sooner does he

recover. Experience shows that every five years of age makes a slight difference to the period of recovery. It is better if one can get patients direct from their homes and without any attempt having previously been made to treat the illness. Frequently repeated failures, owing perhaps to want of proper understanding of the condition, render the treatment very difficult and the prognosis decidedly worse.

When a case is first seen the difficulty in diagnosis is so often complicated by the above-mentioned withholding of facts on the part of the relatives, and it is always better to take the most guarded views rather than listen to the mild history that is given.

When interviewing relatives regarding a patient who is unable to concentrate his mind at the time he is seen, and therefore cannot give any connected story of his own, I have found it satisfactory to request the relatives to give me the very worst possible impression they can of the case. It is difficult for the doctor who has been attending the patient in his own home to be fully aware of the patient's worst behaviour, for the reason that he is unable to be present more than a few minutes at a time, and that during such few minutes the patient will generally pull himself together and present the best possible front.

As an illustration of the above difficulty I would quote the case of a Dr. "A." I had under my care some years ago:

He was admitted to a private home suffering from mild melancholia without any definite delusions, but with very definite exaggeration of facts. These facts were some minor family difficulties which dated back four and a half years. Owing to stress of work and having to deal with these family difficulties at the same time, his last support namely, sleep had given way, and he was forced to seek advice and treatment. At that time I was not fully aware how necessary it was to follow out Professor Robertson's advice, and this patient was allowed to occupy a room without a night nurse. He made some slight progress in the first fortnight, but as he did not show sufficient signs of improvement his relatives were again questioned as to his family history. The information they gave was that the family history was absolutely satisfactory. This patient cut his throat in the early hours of the morning three weeks after his admission, and I was called in about 7.30 a.m. to find the patient dead. His relatives subsequently informed me that his father and his brother had both committed suicide.

The point one wishes to illustrate in the above case is that it is better never to trust to the information given by relatives, but to rely entirely on one's own judgement. After the case quoted above I make it a rule never, under any condition whatsoever, to take the slightest risk of a repetition. There is no doubt that early diagnosis and early treatment is the ideal. The history of most of the cases prior to the war generally dated back from one year up to five years.

Having a case under treatment early, the risk of suicide is not so great. One is dealing with a patient who still has a good reserve of self-control, and his outlook is not so hopeless. In other words, the patient himself feels that, given proper conditions, there is a good hope of his recovery. On the other hand, patients whose history dates back two or three years have fewer powers of recuperation. They have exhausted many remedies in their effort to recover, and the whole aspect of the case is more difficult from the physician's point of view.

I feel that Professor G. M. Robertson's statement—

"Were I asked to deliver one lecture and one only on psychiatry, that lecture would be on melancholia and its treatment. Were my audience to forget all I said, with the exception of the one statement that practically every patient suffering from melancholia is a potential suicide at one stage of his illness or another, then my lecture would not have been given in vain."

—is the true interpretation of the feelings of every physician who has had the care of patients so afflicted.—I am, etc.,

Oulton, nr. Leeds, Nov. 25th. P. G. PHILLIPS.

ANTE NATAL TREATMENT OF CONGENITAL SYPHILIS.

SIR,—Dr. Leonard Findlay, in his paper in your issue of November 26th, concludes that four or five intravenous injections of neo-salvarsan *plus* mercurial inunction suffice to ensure, probably, destruction of all spirochaetes in the uterine tissues, and, certainly, a succession of two, three, or four non-syphilitic children.

No doubt Dr. Findlay would nowadays advocate a more extensive course of neo-salvarsan, though his results, as far as they go, could hardly be better; but it is obvious that sufficient time has not elapsed for one to be certain: (1) That these apparently healthy children will not yet develop symptoms of lues tarda; (2) that subsequent offspring will be free from infection.

Results similar to Dr. Findlay's were possible in the old days of mercury and potassium iodide, but a much longer course of treatment was necessary; in which connexion the following case-history is of interest:

Mrs. A. had four pregnancies, all miscarriages; husband admitted previous syphilis. Mrs. A. was then subjected to a course of oral administration of mercury and potassium iodide extending over two years, in the middle of which her fifth pregnancy occurred. Since then she has had no treatment, but all the subsequent pregnancies have resulted in live children born at full time. The fifth child is now aged 18; no signs nor history of syphilis; Wassermann reaction negative in 1921. The sixth is now aged 15; no signs nor history of syphilis; Wassermann reaction negative in 1921. The seventh died when 10 months old of bronchopneumonia. The eighth died within twelve hours of birth. The ninth, now aged 10, healthy until keratitis developed at the age of 8; Wassermann reaction strongly positive in 1921. Mrs. A. is now apparently well, but the Wassermann reaction is now weakly positive.

It is to be hoped that in cases treated with neo-salvarsan a similar reappearance of syphilis in later progeny and, presumably, a return of the spirochaetes to the uterine tissues, do not occur.—I am, etc.,

Glasgow, Nov. 26th. ROBERT FORGAN.

VENEREAL CLINICS: A LAY POINT OF VIEW.

SIR,—I find it difficult to see how either the profession or the world at large is benefited by the letter of "Venerealee," published in your issue of November 26th. Everyone knows that there are those who, as he says, are "as regular in their illicit sexual intercourse as they are in their football and cricket," and who profess, with your correspondent, not to "consider it immoral." All this we know just as we know that others do not think it immoral to indulge in other pursuits so consonant with human nature as the defrauding of their mothers or the robbing of poor-boxes. Everyone equally knows that these supermen, who regard themselves as above the laws governing us ordinary individuals, are going to do these things whether they regard them as immoral or not, for the very simple reason that they like them. And again, everyone knows that civilization cannot be run on the lines that each shall do exactly what he likes at all times irrespective of anyone else.

As I say, I see no particular reason why you have permitted "Venerealee" to air his superior views in your pages; but if you thought otherwise, surely it would have been wise to add an editorial suggestion that he should deign to consider the welfare of others at least during the more acute phases of his venereal attacks.

He states that he is condemned by public opinion. That is so; hence he remains anonymous. But he complains that he is condemned for his malady, not for his conduct. That is nonsense. Does the public ostracize ill health? Why does he write, "We do not go to our family doctors—we prefer to attend a stranger"? Patients do not seek a strange doctor or attend a secret clinic when they suffer from, say, haemorrhoids. Clearly he is condemned for his conduct, which society stigmatizes as immoral. And he may be doubly condemned for his philosophy, with its exaltation of his own opinion and its lofty disregard for the tradition of civilized society or the welfare of his fellow creatures.—I am, etc.,

London, W., Nov. 28th. REGINALD MILLER.

SIR,—That the "majority of young men in suburban London" are as bad as they are painted by your correspondent I simply do not believe, but that those of his acquaintance may be is possible. Let me say to them through him that if they could realize the sorrow and suffering caused to innocent women and children through their "normal enjoyment to which they are entitled," they would at least refrain from marriage. It is the least they can do for their country if they cannot be continent. That many of them "go through the tortures of the damned" I am glad to hear. If they have a spark of manhood in them let them see to it that they have no wives to go through the same. To my mind your correspondent is just as much a social outcast whether he had escaped venereal disease or not. But as he admits that to

address him from the moral aspect is waste of time, let me assure him from a social aspect (and he appears to be sensitive about social outcasts) that he is *a*social.

The public is led to believe that syphilis is curable. Many of these so-called cures, with a negative Wassermann reaction, in fact their wives and have children, who show signs of congenital defect, such as being below weight markedly at birth, below the normal birth length, immature, having abnormal ossification of the skull, wasting, etc. These children are weaklings, unable to resist disease, and though they may show no definite symptoms of syphilis succumb to the first wind that blows. Many of them die of pneumonia, fits, rickets, etc. Only by their histories does one know them to be specific.

Only yesterday a poor woman told me her husband "played Hamlet" when she contracted syphilis on his return from France, as he said he was cured in the army and she must have been infected elsewhere. She had herself since then had two years' treatment and was afraid to go back for further treatment when she had a recurrence, for fear of upsetting him again.—I am, etc.,

Leeds, Nov. 26th. MARION E. MACKENZIE.

* We have received several other letters to the same effect.

ON THE OPERATION OF PROSTATECTOMY.

SIR,—Everyone must have noticed the storm which Freyer's death has raised as to priority in the enucleation of the prostate. Some of it pays a compliment to Freyer after the fashion of "Lady Candour" in *The School for Scandal*; most of it implies that Freyer was not straight in his claims, and all of it is unsavoury at this hour. "There is nothing new under the sun." Ideas are as plentiful as blackberries, but few of them come to anything. Americans would be amused if we asserted that their citizens—the Wrights—pirated their ideas about aeroplanes from the *Mahabharata*, which describes the use of aeroplanes in the great Indian war!

I knew Freyer, and I doubt if many of the writers would have tackled him if he were alive, as he was a sharp controversialist. Freyer was a big man who will live as one of the landmarks of surgery. He was quite a big enough man to do prostatic enucleation on his own initiative. I am confident that he was not a walking encyclopaedia, and that there were many of the "kings of Israel," such as Fuller, McGill, etc., whom he knew not. His school in India before he went to London was his hospital, where he had plenty of material of all kinds. Such men are far too busy with their interesting material to become walking encyclopaedias.

There is no doubt in the mind of the average common-sense surgeon that Freyer's work established the enucleation of the enlarged prostate for all time. We are not convinced that without Freyer the enucleation of the prostate would have been more advanced to-day than it was fifty years ago.

Freyer was an honest man. Freyer was a courageous man. His name will stand out in the history of the surgery of the prostate as the towers of Palmyra stand out in a wilderness.—I am, etc.,

HENRY SMITH, C.I.E.,
London, S.W., Nov. 18th. Lieut.-Colonel I.M.S.

"STIMULANTS."

SIR,—In a paper by Dr. Harry Campbell on "The blood and the nervous diathesis," published in the BRITISH MEDICAL JOURNAL of November 19th, the following words occur:

"Mankind all the world over shows a liking for stimulants in one form or another. . . . When the blood is well provided with nerve stimulants and not overcharged with nerve depressants, there is no craving for extraneous *stimulants, such as alcohol*, tea, or coffee."

No popular fallacy is harder to kill than the fallacy that alcohol is a stimulant, and it will perhaps be centuries before it is exorcised from the mind of the general public. But at least one might expect that it would not be perpetuated in a scientific address before the British Medical Association by a physician of high standing. In that most lucid review, entitled "Alcohol, its action on the human organism," which was issued by the Advisory Committee appointed by the Central Control Board (Liquor Traffic) to investigate the physiological action of alcohol, it is clearly proved that alcohol is a narcotic and *not* a stimulant. The *apparent* stimulation is shown to be accounted for "by exciting influences of the environment," in the presence of diminished control of the intellect and the will over the emotions, this blunting of the highest centres being the first effect of alcohol on the nervous system. If alcohol is taken when all such exciting influences are absent—as, for instance, in the privacy of one's room—no such period of apparent stimulation is observed. Under such conditions its true effect as a narcotic and depressant of the nervous system becomes manifest. It is, perhaps, hardly necessary to add that the present writer is not concerned with anti-alcohol propaganda, but simply with the question of the real nature of the action of alcohol on the human organism.—I am, etc.,

Alderley Edge, Cheshire, Nov. 22nd. E. WEATHERHEAD.

OPIUM SMOKING.

SIR,—It is with considerable surprise that I read Professor Dixon's remark with reference to opium smoking of "the comparative ease with which this habit is cured." I have had to deal with many opium smokers in the East, and in no case did the miserable patient's attitude appeal to me as one of "comparative ease"; on the contrary, more often than not the patient was in such agony of craving for his smoke, that he escaped the watchful supervision of his nurses and went back to his vice.

In Formosa, where I worked for several years, all opium smokers must have a licence from the Japanese Government. If a man reforms his habit, it is very difficult for him to induce the police to receive back his ticket, for they know from experience the comparative ease with which the late drug-addict reverts to his former habit.—I am, etc.,

G. GUSHUE-TAYLOR, M.B., B.S., F.R.C.S.
London, E., Nov. 21st.

SPINAL ANAESTHESIA FOR URGENCY OPERATIONS IN THE AGED.

SIR,—I was very interested in the paper by Mr. Southam, of Manchester Royal Infirmary, in your issue of October 15th, as it confirmed what I had already suspected when I was home on leave last year, that spinal anaesthesia was not so generally popular as a routine as it deserves.

In 1911 I wrote a short note to the *Lancet* (October 21st) giving the statistics of operations performed at Kasr-el-Aini Hospital, the Cairo School of Medicine, and I should be interested to know if there is any hospital in England that can now compare with those statistics in the realms of spinal anaesthesia.

Mr. Southam describes an admirable technique, and if he made it the rule instead of the exception to give stovaine I am sure he would be delighted with its advantages. Without going into complicated statistics, I may briefly say that out of 404 major operations performed this year 146 of these have been under stovaine anaesthesia, and I have had no complications.

I would therefore emphasize the advantages of spinal anaesthesia not only "for urgency operations in the aged," but for all operations below the belt on young or old, man or woman.—I am, etc.,

H. E. S. STIVEN, M.D.

Egyptian Government Hospital,
Port Said, Nov. 19th.

TREATMENT IN TUBERCULOUS DISEASE OF BONES AND JOINTS.

SIR, In his splendid paper opening the discussion on this subject (JOURNAL, November 26th, p. 877) Sir Henry Gauvain, when speaking of local treatment, mentions the therapeutic injection of Beck's paste into sinuses. I tried this some time ago and was very disappointed with the results. I then tried bipp with a similar result. Later I used a paste mentioned by F. Calot. It contains:

Camphorated naphthol	6 parts
Camphorated phenol	6 "
Iodoform	20 "
Creosote	8 "
Crystallized guaiacol	7 "
Lanoline	50 "
Spermaceti	50 "

This paste must be prepared under aseptic conditions. It is solid at body temperature, but becomes liquid at 104.5° F., and is injected in this state and retained with

swabs until solid. The injections are repeated every fifth day until the last sinus heals. If a sinus persists after three months of such treatment the process is discontinued for the next three months; during this time the sinus often closes; if not, the injections are restarted. In the treatment of tuberculous sinuses free from gross secondary infection I have had distinctly encouraging results with this paste, combined with immobilization of the diseased part and judicious use of heliotherapy.

Bipp and Beck's paste appeared to be treated as foreign bodies by the tissues, but this paste was not, perhaps because it has an animal fat as its base, while the base of bipp and Beck's paste is of mineral origin.—I am, etc.,

Margate, Nov. 28th. STUART ROBERTSON.

THE FIRST OVARIOTOMIST.

SIR,—Dr. Finlayson Fleming's statement (November 19th, p. 866) regarding Dr. Robert Houston of Glasgow, who performed ovariotomy successfully in the year 1701, is accurate. In the second edition of my *Manual of Gynaecology* I drew attention to Houston's case.

In addition, it is not generally known that Houston almost had the distinction of being the first surgeon to operate on a case of extrauterine pregnancy. The patient refused operation and carried the extrauterine foetus for four and a half years. The literature dealing with the cases referred to above is mentioned by Dr. Fleming in his communication.—I am, etc.,

Glasgow, Nov. 21st. SAMUEL J. CAMERON.

SIR,—I notice in your issue of November 19th that Dr. J. F. Fleming is the latest of the many able supporters of Houston of Glasgow as "the first ovariotomist"; but surely it is rather late in the day to seek to bring the honours (I had almost said "the ashes") once more back over the water from the Kentucky home of McDowell.

Houston, in his own title of his own report on the operation, only claims to have cured by *a large incision* made in the left side of the abdomen.

The facts of the case cannot be more clearly or concisely stated than they are by the late Greig Smith in his *Abdominal Surgery*, vol. i, p. 177, fifth edition. He writes:

"It is right to say that Tait, who had made special inquiries into the subject (*Dis. of Ovaries*, 1883, p. 259), claims for Houston the honour of having been the first ovariotomist. Now an ovariotomy is not complete unless the tumour is removed and the pedicle secured. In Houston's account of his case there is not a suggestion he did either. It seems to me scarcely credible that a surgeon who could describe, as minutely as Houston did, the somewhat trivial expedient adopted for removing the glairy fluid should leave unmentioned the far more important proceeding of removing the tumour and dividing and securing the pedicle. 'I then squeezed out all I could of the contents and stitched up the wound in three places.' If between the squeezing and the stitching the grand measures of removing the tumour and securing its pedicle really did occur, I think he must have at least mentioned them. Houston says the tumour was of the left ovary, but the only proof he adduces in support of this is that it lay on the left side. The after-history of the case is in no way inconsistent with his having incised an ovarian growth."

—I am, etc.,

Stafford, Nov. 20th C. M. MITCHELL.

MEDICAL EDUCATION.

SIR,—The baronets and knights have had their say on medical education, but in these days of medical politics may it be permitted to a commoner to tender some criticism?

Two and a half years are too long before the possibility of a student entering the wards for clinical work. An M.D. who had experience of partners and assistants once assured me he preferred the Conjoint man, on the ground that he was more practical; he said the early years spent by the London University man on theory "ruined" him. Sir Sydney Russell Wells's contributions, as always, were statesmanlike; but of Sir Arthur Chance and Dr. Caton I would ask, Can it be proved in life that the hare is better than the tortoise?

Dr. Macdonald remarks that "the way men were sent out to practise midwifery was a disgrace." Why, most of them have never applied the forceps! But it is not limited to midwifery. The surgeons monopolize the major and minor operations, and unless the student has held a house-surgeon appointment his opportunities are few. I heard once of an F.R.C.S. who had never done an operation on the living subject. And is there anything more pitiable than a recently qualified man turning up in the practitioner's surgery for the first time, where two-thirds of his cases will be medical?

I notice the majority of the speakers are still obsessed with examinations. It is a relief to see St. Bartholomew's Hospital has appointed Mr. McAdam Eccles to the new chair of clinical applied anatomy. In conclusion, may I quote the late Samuel Gee on the London University? "For fifty years it has been an examining university; for another fifty years it may be a teaching university; perhaps at the end of that time it will become a learning university." But Gee was the good physician — a Humanist.—I am, etc.,

Willesden Green, N.W., Dec. 7th. RICHARD GILLBARD.

WHITE BREAD DYSPEPSIA.

SIR,—Since midsummer I have seen twelve cases of severe dyspepsia caused by white bread. At first they appeared singly and at intervals, and their cause was not recognized; later on, when they turned up in crops of two or three at a time, it became less difficult to trace them to their source. None of the patients found out for themselves that white bread was responsible for their illness. Some of them thought little of their indigestion, and were under the impression that their hearts, nerves, or brains were going wrong. The secondary disturbances distressed them much more than the stomach disorder.

The dyspepsia itself and its attendant symptoms have been of such severity as seriously to alarm the patients and, while the condition lasted, to impair their capacity for work. All suffered more or less pain or discomfort in the region of the stomach, increased after meals with which white bread was taken. Some had sharp pain in the oesophagus in swallowing or at the cardiac end of the stomach. Flatulence was a prominent complaint in all the cases.

The pains, which started in the stomach, radiated in all directions, some round the left lower ribs to the back and others upwards behind the sternum to the throat and nose and to the back of the shoulders and down the arms. Tenderness over the epigastrium was very common; it extended frequently over the lower part of the left side of the chest. In one case the tenderness was on the right side over the liver, and was much increased on exertion. One patient stated that the pain in the stomach was continuous night and day and made sleep impossible. A few described the pain as very severe and alarming. Sickness was not present in any case, and the appetite was not much affected; a few were afraid to eat on account of the pain set up by food. Dryness of the mouth and throat in the morning was complained of in a few cases.

Several patients thought they were suffering from heart disease. In two the pulse rate was 140. Another was roused at night by violent palpitation, and suffered from shortness of breath on exertion, and giddiness. Another had two peculiar attacks after breakfast—he felt as if all power over the voluntary muscles had gone. Two patients considered they had gastric ulcer, and dicted themselves strictly, but in each case without improvement, as they continued to eat white bread in the form of toast.

Several of the men stated that they had to make great efforts to keep at their work, as they soon got exhausted. There was pronounced depression in all the cases. Almost all complained of insufficient sleep, and some of loss of memory, irritability, and diminished power of concentration. As many men as women were affected, but not a case was seen among children.

The patients' digestion returned to normal within a week after one of the finer kinds of wholemeal bread was substituted for the ordinary white bread in their dietary, and the mental, nervous, and cardiac symptoms then disappeared. It is probable that white bread is responsible for much of the slighter forms of dyspepsia and for many obscure cases of neurasthenia.—I am, etc.,

London, N., Oct. 4th. SIMON FRASER, M.B.

SCIENCE IN RUSSIA.

An Appeal to British Scientists and Physicians.

SIR, I know that many of you have acquaintances and even friends among Russian scientists. Christmas is approaching, which Russian scientists will once more keep in hunger and cold in a régime of unprecedented slavery and terrorism. Remember your friends and acquaintances, and send them your Christmas greeting. Your sympathy will support them in the hardest time that Russian science has ever had to endure, because in Russia, as elsewhere, science dies when deprived of liberty.

The American Relief Administration (67, Eaton Square, London, S.W.1) receives contributions in money, and, from its famine relief stores in Russia, will guarantee to deliver a parcel of foodstuffs to any person designated, and will forward a receipt from the latter.

If anyone finds a difficulty in selecting a particular Russian scientist, the parcel may be addressed simply to the Rector of the University of the city in question, or to the President of the Military Medical Academy at Petrograd, or the Academy of Sciences, for distribution among the scientists of the respective institution.

If necessary, I can furnish information as to the whereabouts of a number of Russian scientists remaining in Russia. I am, etc.,

V. KORENCHEVSKY.

Formerly Professor of the Military Medical Academy.

Lister Institute of Preventive Medicine,
Chelsea, S.W.1, Nov. 28th.

Obituary.

W. H. IRVIN SELLERS, M.B., C.M.EDIN., J.P.,

Honorary Surgeon, Preston Royal Infirmary.

WE regret to record the death of Dr. Irvin Sellers of Preston, which occurred suddenly on November 12th, at the age of 64 years. Dr. Sellers was educated at the Preston Grammar School, and subsequently spent some time at Leipzig and Lille, proceeding for his medical studies to the University of Edinburgh. He graduated M.B., C.M.Edin. in 1880 and obtained the diploma of M.R.C.S.Eng. in 1881. After qualifying he occupied the post of house-surgeon at the Royal Southern Hospital, Liverpool, and subsequently was a resident assistant at the Coombe Maternity Hospital, Dublin. He commenced practice in Preston in 1885, in partnership with the late Dr. Arminson, and soon established himself as a reliable and valued practitioner. He was later appointed to the staff of the Preston and County of Lancaster Royal Infirmary, and at the time of his death was one of the senior surgeons of that institution. He took a great interest in ambulance work and was for many years head of the Preston division. During the war he organized and dispatched numerous units for service in the R.A.M.C., besides serving as surgeon to the Moor Park Voluntary Hospital. His duties in this respect entailed a good deal of night work, and there is no doubt that his labours for the soldiers was a contributory cause to the heart affection to which he succumbed.

He was an old member of the British Medical Association and was the first Representative to the Representative Body from Preston; he also served as honorary secretary of the Division for three years and afterwards as chairman, which post he held at the time of his death. He was very devoted to the welfare of the profession, and in his capacity of secretary and president of the Preston Medico-Ethical Society he contributed largely to the establishment and maintenance of the friendly spirit which is a marked feature of medical life in the town. When the Preston Insurance Committee was formed in 1912 Dr. Sellers became a member and remained on the committee till it was reconstituted in September last. At one time he was vice-chairman of the committee and for many years was chairman of the Local Panel Committee. He served also on the Preston Corporation joint committee on tuberculosis.

Dr. Irvin Sellers was a man of high ideals up to which he consistently lived, and the respect and affection with which he was regarded were testified to by the extraordinary demonstration on the occasion of his funeral. Christ Church, in which the funeral service was held, was crowded by people of all ranks in life, and the adjacent thoroughfares were lined by people anxious to pay him a last tribute.

THE death took place on November 24th, at the age of 49, of Dr. HERBERT E. CORBIN, M.O.H. for the County Borough of Stockport. He received his medical education at St. Mary's Hospital, London, where he gained the senior university scholarship and was appointed senior demonstrator in physiology. He graduated B.Sc.Lond. in 1897 and took the diplomas of M.R.C.S. and L.R.C.P. in 1903 and the D.P.H. in 1905. After holding the appointments of house-physician to St. Mary's Hospital and to the Bethlem Royal Hospital, and clinical assistant at the East London Hospital for Children, Shadwell, he became assistant medical officer and bacteriologist to the Croydon Borough Hospital and the Croydon and Wimbledon Joint Small-pox Hospital; later, he was assistant M.O.H. Willesden Urban District Council, and medical superintendent at the London Fever Hospital. He was appointed M.O.H. of Stockport in 1908. During investigations which he conducted he was successful in tracing the infection of certain cases of small-pox to imported cotton. He was joint author of Corbin and Stewart's popular *Handbook of Physics and Chemistry*, of which the fifth edition was published last year. Dr. Corbin's health was seriously affected by war service. For some time before the war he had been medical officer of the Manchester Artillery; he was mobilized on the eve of the declaration of war, and appointed specialist sanitary officer of the 66th East Lancashire Division. In 1916 he went to Mesopotamia in command of a field ambulance, with the rank of lieutenant-colonel. He took part in the advance, and from 1917 to 1918 was military medical officer of health of the city of Baghdad, whence he was invalided home. He was demobilized in December, 1918, and at once returned to his duties as M.O.H. for Stockport. He was president of the Stockport Medical Society in 1913–14, and in the social life of the district he was a very popular figure. An able administrator, Dr. Corbin's relations with the medical profession, with officials, and with the public were of the most cordial, and his early death is greatly regretted. He leaves a widow and two sons.

DR. WILLIAM LAING CULLEN of St. Boswells died suddenly on November 22nd. He was born in the West Highlands in 1861, and graduated M.B., C.M. in the University of Edinburgh in 1884. A few years later he settled in St. Boswells, and soon became identified with the life of the Roxburghshire town, taking both a part and an interest in its affairs. He was parochial medical officer for St. Boswells, Maxton, Merton, and Bowden. He had a large private practice, and in 1912 he became a Fellow of the Edinburgh Obstetrical Society. He was the author of an article on "Pregnancy in a bicornuous uterus," which was published in the BRITISH MEDICAL JOURNAL in 1889. For many years Dr. Cullen was one of the most active members of the South-Eastern Counties Division, British Medical Association, of which in 1906 he was an exemplary chairman. He took a keen interest in politics, both general and medical, and on the National Insurance Act coming into operation he was elected chairman of the Roxburghshire Panel and Local Medical Committees, and was appointed a representative on the county Insurance Committee. Perhaps the last important public duty he was able to perform was to attend the Annual Meeting at Newcastle as Representative of his Division. Dr. Cullen was an able public speaker, and his services could always be depended on in aid of any good cause. During the war he was much overworked, giving unstinted help to neighbours on service, and he himself served for a period as surgeon to a hospital at Dunkirk. He was also president of the local Volunteer Training Corps, and used his great influence with much effect to stimulate recruiting over a wide area. As a practitioner he was extremely conscientious, and while his bonhomie and kindly manner rendered him universally popular, his unfailing devotion to his patients' interests and his skill made him a trusted and valued friend in every emergency.

WE regret to announce the death, on November 13th, of THOMAS MCGEOCH, M.D.Glasg., D.P.H.Edin. and Glasg., M.O.H. and Parochial Medical Officer of Girvan, Ayrshire. He became suddenly ill, and died in a few hours, while visiting a friend. Dr. McGeoch was born fifty-six years ago in the parish of Colmonell, Ayrshire, at Barbae, a

small estate which had belonged to his forbears for over a century. He graduated M.B., C.M. at Glasgow University at the age of 21, and became assistant to Dr. Millar of Wishaw. A few years later he started on his own account at Girvan, where he built up a large practice and made for himself a wide circle of friends. In spite of his busy life his studious disposition was not to be suppressed, and he graduated M.D.Glasg. in 1910, and two years later gained his D.P.H.; later he was appointed medical officer of health of the burgh. Dr. McGeoch was professionally a very sound man, courteous, considerate, and peculiarly unostentatious. He was also a sportsman, being a good shot, a keen angler, a golfer, and a bowling champion. In addition to holding several public appointments in the district he was a past president of the Ayrshire Division of the British Medical Association. At a Branch Council meeting, held on November 16th in Glasgow, a resolution was passed instructing the secretary to convey an expression of sympathy to his widow.

WE regret to announce the death of Dr. DAVID LIVINGSTONE DAVIES of Criccieth, which took place suddenly on November 11th in his 57th year. Dr. Davies received his medical education at Owens College, Manchester, and qualified with the diplomas of M.R.C.S., L.R.C.P. in 1891. He was formerly assistant medical officer at the Borough Asylum, Nottingham, and had been in practice at Criccieth for some thirty years. He took a large share in the life of the district, was lecturer to the Red Cross Society and St. John Ambulance Association, and medical officer to a number of public bodies. He was a J.P. for the county of Carnarvon. Dr. Davies took much interest in the work of the British Medical Association; he was a former chairman of the South Carnarvon and Merioneth Division, and at the time of his death was a member of the Council of the North Wales Branch. He was the contributor of a number of articles to this and other medical journals. He was widely respected as a practitioner, and had for many years been medical attendant to the Prime Minister and his family.

THE death is announced of Dr. CLAUDE PHILIP LE QUESNE, which took place at Southampton on November 18th, as a result of cellulitis, by which he was attacked in the exercise of his professional duties. He was educated at St. Bartholomew's Hospital, and took the diplomas of M.R.C.S.Eng. and L.R.C.P.Lond. in 1890. He was a member of the Southampton Division of the Southern Branch of the British Medical Association, and had filled several offices in the Division. He was a man of wide sympathies, with all the attributes that distinguish the successful general practitioner, and he was as popular with his profession as with his patients. He leaves a widow and one son, who have received widespread sympathy.

WE regret to record the death of Dr. WILLIAM HERBERT SMART, which took place on November 5th. Dr. Smart was the only son of the late Sir William Smart, K.C.B., M.D., R.N., and was educated at Blundell's School, Caius College, Cambridge, and St. Thomas's Hospital. He obtained the diploma of M.R.C.S.Eng. in 1885 and graduated M.B.Cantab. in 1886. After holding resident appointments at the Royal Hants County Hospital and the East London Hospital for Children, Dr. Smart went into general practice at Polesworth, Warwickshire, where he remained for over thirty years, holding the appointment of medical officer of the Polesworth district of the Atherstone Union. An accurate clinical observer, possessing a charming personality and kindly manner, his death has cast a gloom over the whole district in which he worked. He leaves a widow and one son, a member of the medical profession.

DR. ALFRED TEMPLE PERKINS died recently at Wellington, New Zealand, at the age of 63. After studying medicine at Guy's Hospital, he qualified with the diplomas of M.R.C.S.Eng. and L.R.C.P.Edin. in 1882. He went out to New Zealand in 1886. He was for some time a member of the honorary staff of Wellington Hospital, and throughout his professional career he was a well-known member of the New Zealand Branch of the British Medical Association.

DR. JAMES DAVIDSON WYNESS, of Aberdeen, died on November 24th at the age of 76. He was a native of Inverurie and graduated M.B., C.M.Aberd. in 1872 and M.D. in 1874. After graduating he commenced practice in Schoolhill, Aberdeen, but afterwards removed to Union Street and later to West Craibstone, where he had a large practice, which he only disposed of a week previous to his death. He was a member of the Aberdeen Division of the Aberdeen Branch of the British Medical Association. He was twice married, and is survived by a daughter, his only child, who resided with him.

THE death took place, in his 52nd year, of Dr. RUPERT WHEATLEY, at Torquay on November 14th, after a short illness. Dr. Wheatley received his medical and dental education at the Middlesex Hospital and the Dental Hospital, and took the diplomas of L.D.S.R.C.S.Eng. in 1893, and M.R.C.S. and L.R.C.P. in 1895. In the latter year he commenced practice as a dental surgeon in Torquay, where he was very successful. Unfortunately ill-health obliged him to retire in 1912. He is survived by his widow and one son.

THE death is announced of Dr. DWIGHT H. MURRAY, of Syracuse, New York, at the age of 60. He was a Fellow of the American College of Surgeons, a well known proctologist, and Speaker of the House of Delegates of the American Medical Association.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on December 1st the degree of Doctor of Medicine was conferred upon W. H. Butcher, St. John's.

UNIVERSITY OF CAMBRIDGE.

THE State Medicine Syndicate has appointed Dr. G. S. Graham-Smith, Dr. G. H. Orton, and Dr. S. Melville to be members of the Committee on Medical Radiology and Electrology for a period of three years. The Syndicate has also appointed Dr. L. E. Shore, Dr. C. S. Myers, F.R.S., and Sir German Sims Woodhead to be members of the Managing Committee for the Diploma in Psychological Medicine for the same period.

Dr. Graham-Smith, Mr. G. E. Wherry, and Mr. F. W. Doetson have been appointed members of the Special Board for Medicine until the end of next year. The following have been elected by representatives of departments to serve on the Board for the same period: Mr. G. Stead, Dr. T. S. Hele, Dr. H. Hartridge, Mr. S. M. Wadham, Dr. Louis Cobbett, and Mr. Arthur Cooke.

An election to a research studentship for the degree of Ph.D. will be made at Trinity College in July next and in every subsequent year.

At a Congregation held on December 3rd the following medical degrees were conferred:

M.D.—C. J. Stocker.
M.B., B.Ch.—F. P. N. Parsons, R. S. Scott, G. W. Theobald.
M.B.—J. M. Higginton, R. B. P. Lansdown, G. P. N. Richardson.

UNIVERSITY OF LONDON.

A COURSE of post graduate lectures (supplemented by a course of clinical instruction) on mental deficiency has been arranged by the University of London Extension Board in co-operation with the Central Association for the Care of the Mentally Defective. The course is intended for medical practitioners and will be of two weeks' duration, from June 12th to June 24th, 1922. The fee is five guineas, with a registration fee of one guinea; intending students are asked to make early application. Full particulars may be had from Miss Evelyn Fox, University of London, Imperial Institute Road, South Kensington, S.W.7.

Sir Cooper Perry has been reappointed one of the representatives of the University on the Central Council of the Federated Superannuation System.

It has been decided to hold the ceremony of Presentation Day in 1922 in the Royal Albert Hall.

Sir Wilmot Herringham and Sir William Willcox have been appointed respectively chairman of the Graham Legacy Committee and of the Physiological Laboratory Committee.

Five lectures on recent researches on the biology of bacteria will be given at the Royal College of Surgeons, Lincoln's Inn Fields, W.C., by Mr. F. W. Twort, Superintendent of the Brown Animal Sanatory Institution, on December 12th, 13th, 15th, 19th, and 20th, at 4 p.m. Admission is free without ticket.

Professor A. E. Boycott, F.R.S., has been reappointed Director of the Graham Medical Research Laboratory for one year from January 1st, 1922.

UNIVERSITY OF DURHAM.

ON the nomination of the Senate the following appointments have been made by the Chancellor, the Earl of Durham, for the years 1922–23: Vice-Chancellor, Dr. Arthur Robinson, Professor of Logic and Psychology. Pro-Vice Chancellors, Mr. J. S. G. Pemberton, formerly M.P. for Sunderland; Dr. David Drummond, Professor of Medicine; and Sir Theodore Morison, Chairman of the Council of Armstrong College.

UNIVERSITY OF LIVERPOOL.

THE University Court has appointed Dr. Richard Caton, C.B.E., M.D., Emeritus Professor of Physiology, to be one of the two Pro-Chancellors of the University in succession to the late Dr. J. W. Alsop.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the last business meeting of the College, held on December 2nd, the President admitted to the Licences in Medicine and Midwifery the following candidates who had passed the Conjoint Final Examination of the Royal Colleges of Physicians and Surgeons:

E. S. Becker, E. J. Benson, W. H. Browne, J. F. Cleary, L. J. Cline, A. Doran, W. C. Dwyer, J. F. Enright, M. W. Fraser, J. J. Fitzsimons, J. MacF. Gray, M. P. P. Higgins, C. S. Hillis, J. H. Lawlor, Matilda G. Neill, R. H. Nightingale, J. O'Leary, G. S. Rutherford, T. G. Whiteroft.

The following have passed the Conjoint Examination for the D.P.H.:

V. L. Glover, H. L. Mooney, J. A. Musgrave

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY: †H. Amin, †J. L. Delicati, E. D. Foster, †J. S. Lewis, †J. A. Marriott.

MEDICINE:—A. G. L. Brown, †S. Colney, †W. E. F. Davidson, *M. T. A. Elnakeeb, *R. Erskine-Gray, *†E. D. Foster, *†S. A. Hayes, †R. Henein, †M. Hilmy Eid, †C. F. Long, D. Menzies, †A. Mishriky, †S. Sedaros, †L. Spira, R. S. Thomas.

FORENSIC MEDICINE: A. G. L. Brown, M. T. A. Elnakeeb, E. D. Foster, R. Henein, C. F. Long, C. Martiny, L. Spira, H. M. White.

MIDWIFERY: J. I. Cahill, A. G. L. Davidson, M. T. A. Elnakeeb, E. D. Foster, A. Mishriky, C. A. Nicholl.

* Section I. † Section II.

The Diploma of the Society has been granted to Messrs. W. E. F. Davidson, J. L. Delicati, E. D. Foster, R. Henein, M. Hilmy Eid, C. F. Long, and D. Menzies.

The Services.

HEALTH OF THE ARMY IN 1914.

THE Director-General's Report on the health of the troops at home and abroad for the first seven months of 1914 has now at long last been published.* It is submitted to the Secretary of the War Office by the present D.G., Lieut.-General Sir James Goodwin, K.C.B., who during the period under review held the rank of Major. He explains in his introductory letter that the war has delayed the preparation of the report and that for the same reason the tables on the medical examination of recruits have had to be omitted because complete returns from the various recruiting centres could not be obtained. In the circumstances it is inevitable that there should be an air of ancient history about this report and its wealth of statistical tables. It is divided in the customary manner into a number of main sections dealing, respectively, with the health of the troops serving in the United Kingdom, those serving in India, those serving at other stations abroad, and those serving on board ship.

SOUTH AFRICAN WOUNDED SOLDIERS.

THE last of the South African soldiers who were wounded in the great war will shortly be repatriated, and, in view of this, the High Commissioner for the Union of South Africa, at the request of his Government, has addressed to the Army Council an appreciation of the skill, care, and attention accorded to all such soldiers in auxiliary and other hospitals in the United Kingdom since the outbreak of the great war. As most of the hospitals have now been closed and their staffs dispersed, the Army Council makes public announcement of this appreciation in the hope that it will be brought to the notice of all concerned.

In acknowledging the letter of the High Commissioner, the Army Council has taken occasion to convey to the South African Government, through the High Commissioner, an expression of its gratitude for the care and attention bestowed on sick and wounded British troops while in hospital in South Africa.

DEATHS IN THE SERVICES.

Surgeon-General Sir William Deane Wilson, K.C.M.G., Army Medical Service (retired), died at Westfield, Sussex, on October 19th, aged 78. He was educated at Trinity College, Dublin, where he graduated M.B. in 1866; he took the L.R.C.S.I. in the following year and entered the Army Medical Department as assistant surgeon on October 1st, 1867; he served in the 107th Foot in the old regimental days. He attained the rank of surgeon-colonel on July 18th, 1894, and surgeon-general on October 3rd, 1898, retiring on January 1st, 1904. He had a long list of war service—Afghanistan, 1878-80, medal; Egypt, 1882, medal and Khedive's bronze star; Sudan, 1884, battles of Teb and Tamai, mentioned in dispatches in *London Gazette* of May 6th, 1884, two clasps; and specially promoted to rank of lieutenant-colonel; South Africa, 1899-1902, as principal medical officer, advance on Kimberley, operations in the Transvaal, Orange River Colony, and Cape Colony, mentioned in dispatches in the *London Gazette* of February 8th and April 16th, 1901, and of July 9th, 1902, Queen's medal with three clasps, King's medal with two clasps, and K.C.M.G. He subsequently received a Good Service Pension in 1907.

* *Report on the Health of the Army for the Year 1914.* Vol. lvi. 1921. London: To be purchased through any bookseller or directly from H.M. Stationery Office. 10s. net.

Medical News.

THE Council of Epsom College will shortly be awarding "France" pensions of £50 a year to medical men not under 55 years of age whose income, independently of any allowance from the College, does not exceed £100 a year. Forms of application can be obtained from the secretary, 49, Bedford Square, London, W.C.1.

A MEETING of the North-Western Tuberculosis Society will be held at the Public Health Laboratory, York Place, Manchester, on Thursday, December 15th, at 3 p.m., when Dr. Arthur Sellers will read a paper on "Complement fixation tests in the diagnosis of tuberculous infections." Medical practitioners interested in tuberculosis are invited to attend.

AT the meeting of the Zoological Society of London on November 22nd, Dr. A. Smith Woodward, F.R.S., exhibited the human skull and other remains from Broken Hill, North Rhodesia, upon which he had founded the species *Homo rhodesiensis*. In comparing the Rhodesian skull with a Neanderthal skull from La Chapelle, Dr. Smith Woodward stated that the former may prove to be next grade after Neanderthal in the ascending series.

THE second annual dinner and dance arranged by the Panel Committee for the County of London will be held at the Holborn Restaurant on Thursday, December 15th, at 7 o'clock. Tickets, price 21s. for gentlemen and 15s. for ladies (exclusive of wine), may be obtained from the Secretary of the Committee, Dr. R. J. Farman, Staple House, Chancery Lane, W.C.2. All medical practitioners, whether on the panel or not, will be welcomed.

ON November 20th a special service was held at St. Werburgh's Church, Derby, when a memorial tablet to the men of the 2/1st North Midland Field Ambulance R.A.M.C.(T.F.), who gave their lives in the great war, was unveiled by Major-General Sir Richard Luce, K.C.M.G., C.B., F.R.C.S. On the memorial, which is a handsome marble tablet, appears the crest of the R.A.M.C., the title of the unit, and the names of twenty-nine men.

THE annual dinner of the London (Royal Free Hospital) School of Medicine for Women was held on Friday, December 2nd, at the Connaught Rooms. The chair was taken by Mr. James Berry, consulting surgeon to the hospital, who was supported by a large company. The Chairman, in proposing the toast of "The Hospital and School," gave a short review of the year's work, referring particularly to the gynaecological and obstetrical unit recently established with Dr. Louise McIlroy as its director. Mr. Berry referred also with satisfaction to the linking up of the school with St. Mary's other hospitals and with the St. Pancras Infirmary in order that the students might have larger opportunities for gaining clinical experience. He regretted the loss of two features in the work of the hospital—the weekly consultations and the annual exhibition of museum specimens. The health of the visitors and guests was proposed by Dr. Haldin Davis, who mentioned in particular the presence of Mrs. Berry, Dr. C. M. Wilson of St. Mary's Hospital, Dr. Hamer, and Dr. Thackeray, Medical Superintendent of St. Pancras Infirmary. Of Professor Keith, the principal guest, Dr. Davis said that he had made the magnificent museum of the Royal College of Surgeons more useful than it had ever been before. Sir Arthur Keith, in responding, first expressed his thanks to the hospital and school for letting him participate in its family business, and his respect for the chairman, whose reputation as a surgeon and researcher was international. He then opened out on some of the medical and sociological aspects of sex differences.

A MONUMENT was inaugurated by M. Léon Bérard, Minister of Instruction, on December 4th, at the Faculty of Medicine of Bordeaux, to the memory of former students of the faculty killed in the great war.

WE are informed by the Chairman of the Board of Control that the medical superintendents and chairmen of Visiting Committees of all county and borough mental hospitals in England and Wales have been invited to a conference, to be held on January 19th at the Ministry of Health, to consider in what directions lunacy administration and the treatment of persons suffering from mental disease may be improved.

DR. JAMES STEPHEN, on the occasion of his retirement to Aberdeen from Peterhead, where he practised for nearly half a century, has been presented by his friends with two easy chairs and a piece of silver plate suitably inscribed.

THE first and second courses in psychological medicine at the Maudsley Hospital showed a surplus of receipts over expenditure of £325, and it is expected that in the case of the third course, now in progress, expenditure and receipts will balance.

AT the recent meeting of the Ontario Neuro-Psychiatric Association at Mimico, Ontario, Dr. Edward Ryan, President of the Association, suggested that the time had arrived for a radical change in medico-legal procedure in cases where the accused was not of sound mind. He reviewed many leading cases, and asked why a medical commission of recognized psychiatrists could not be appointed in all medical cases to investigate the issue of insanity calmly and impartially, and lay the results before the attorney-general, the judge, and the jury. He suggested, therefore, that the legislature should provide that in all cases where the question of insanity was raised a body of psychiatrists should be appointed by the Crown a permanent body if possible to advise the Crown. The Hon. W. E. Raney, Provincial Attorney-General of Ontario, received Dr. Ryan's suggestion cordially. He said that if the association would appoint a committee to prepare legislation improving medico-legal jurisprudence he would supply legal advisers, and would undertake the expenses of such a committee. If legislation were prepared, he said that he would go on with it at the next session of the House.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocera, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4757, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4561, Central).

QUERIES AND ANSWERS.

"G. P." asks whether any particular article of diet or medicine is likely to benefit and arrest chronic interstitial nephritis. Alkalis and trinitrine have been used for headache, but it still persists.

INCOME TAX.

"BRIGHTON" asks if it is correct to include army pay in his practice.

Not if, as is in general the case, tax has been paid during the period of military service on the army pay for the year then current. If the pay in question was hospital pay issued through a local command and not dealt with by the paymaster for tax purposes or assessed separately by the local authorities, "Brighton" will probably be bound to include it in his average now.

"IKONA" inquires as to the allowance of expenses (1) in travelling to the headquarters of the Ministry of Pensions, and (2) of subscribing to professional societies, associations, and periodicals.

Where the fees in question are received by a general practitioner we conceive that he is entitled to include them in his general Schedule D statement, and to deduct the expense of travelling in the same way he would if he were attending at a patient's residence instead of at a Government office. But where the employment is a whole-time one the recipient of the salary would seem to be in the same position as any person living some distance from his work, and the expense of travelling cannot be deducted as a *professional* expense. In any case the expense of obtaining such periodicals and other sources of information as may be necessary to *maintain* the level of professional ability appears to us to be allowable. The expense of removing family and effects on taking up an appointment is not allowable.

LETTERS, NOTES, ETC.

A DISCLAIMER.

DR. G. N. BIGGS (London, W.) writes: It has just been brought to my notice that my name was mentioned in a Sunday paper last week in regard to the case of a boy who had been seen by Pastor Jeffreys at Notting Hill. I need hardly state that I was quite ignorant of the fact that my name was to be published, and I never gave any permission for it to be used in any way.

THE X RAY TREATMENT OF CANCER.

DR. S. P. IMPEY of Capetown writes with reference to the recent announcement as to the intensive treatment of cancer and the apparatus used at Erlangen that he is not surprised that good results are obtained, but that he sees no reason why special apparatus should be used, as for many years past, with the "apparatus in general use," he is quite able to cure cancer with his own methods. "I have had under treatment," he writes, "about 1,000 cases, and out of this number have cured upwards of 80 per cent." Accompanying these claims, and to substantiate them, he refers to papers he has published in the *South African Medical Record* of November 22nd, 1913, p. 474, March 24th, 1917, p. 87, January 12th, 1918, p. 5, and February 12th, 1921, p. 41.

We have read these papers carefully. The first is entitled "The Roentgen-ray treatment of malignant growths," and after notes on the manner in which he suggests *x* rays act, he states: "I have treated 216 cases of malignancy and have cured 183." Analysing his cases, we found that of the rodent ulcers he claims 46 cured out of 49; of the epitheliomas, 124 cured out of 133; of cancer of the tongue, 2 cured out of 2; of cancer of the parotid, none cured out of 5; of cancer of the thyroid, none cured out of 5; of disease of the mammary growths (? all cancer), 4 cured out of 11; of sarcoma, none cured out of 1; or, excluding the epitheliomas, 6 cases of cancer, or suspected cancer, cured out of 24. No details of his methods are supplied. The second paper, on "*X* rays and cancer," contains little of value as regards his own work. It consists of a dissertation upon cancer and the action of *x* rays; a few statistics as regards his results on "cancer" of the lip, and a statement that "alcohol has a prohibitive action on the rays," and that his uncured cases were "topers." Details of methods are not given. The third paper, on "*X* rays and high tension electricity," is again a mere discussion upon the action of *x* rays. It contains no statement as to results and no details of methods. The last paper is on "Epithelioma of the lip and its treatment by *x* rays"; it again is a discussion on the cancer cell and the action of *x* rays, followed by a statement as to the author's views on the kinds of epithelioma; a statement that he has cured 210 cases of epithelioma of the lip out of 264 treated. No details as to methods are given. It follows, then, that the claim to have cured upwards of 80 per cent. of 1,000 cases of cancer treated is not substantiated in these papers. The results as published, putting the surface epitheliomata out of the question, boil down to twenty-four cases of cancer or suspected cancer (he admits he is not sure of all of them) and a claim of cure of six.

By a later mail we received another communication from Dr. Impey which, after references to the above-mentioned papers, concludes as follows:

"In the treatment of cancer by the *x* rays we must always bear in mind that:

"1. Idiosyncrasies occur in *x* ray work as often as in drugs administered, and these have to be guarded against.

"2. Alcohol seems to have an inhibitive action on the action of the rays, and when the system is saturated with alcohol the rays seem to have no beneficial action.

"3. Every cancer case differs from every other case in some detail, and these differences have to be taken in account when treating a case.

"4. The health of the patient has a considerable influence on the results; a healthy body responds more readily to the rays than an unhealthy one, a young patient than an old one. In this connexion I may mention that I have found the H.T. current very useful in stimulating the healthy tissues, for they undoubtedly act as a tonic to the system.

"5. The site of the cancer has a marked influence on the results of treatment. As regards site, all cancers may be divided for practical purposes into three classes. (i) Superficial: When the cancer is absolutely on the surface and is not covered by epidermis or cutis. (ii) The subcutaneous: When the unbroken skin covers the growth—in this may be included enlarged glands. (iii) Deep-seated growths. In superficial cancers there is no difficulty in effecting a cure with an ordinary x-ray apparatus and with a soft tube. In the subcutaneous cases the results are not so good, because the skin acts as a filter and retards many of the most effective rays. In these cases a medium tube must be used, a stronger current of electricity, and the skin must be protected by a filter 1 mm. of aluminium or one thickness of good sole leather. In the deep-seated cases a much stronger current must be used, and the skin protected by at least 2 mm. aluminium or its equivalent in sole leather.

"6. To obtain the best results from a tube it should be brought as close to the tissue to be treated as possible.

"7. In my opinion medium doses given at short intervals, and extending over a lengthy period, give better results than any other methods."

The deep treatment practised at Erlangen and elsewhere is not concerned with epithelioma of the lip, etc., but with definite cancer, mostly of deep seated organs, and Dr. Impey brings forward no evidence that is worthy of consideration bearing upon this point. On the evidence with which he has supplied us his initial claim is not proved; indeed, his figures prove the reverse. As to any special methods of x-ray treatment referred to as "my methods", he does not describe them.

BIRTH CONTROL.

DR. MARIE C. STOPES (Holloway, N.) writes: Your two correspondents, Dr. Halliday Sutherland and Dr. Binnie Dunlop, by quoting paragraphs without their full context appear to lend support to views which by implication are, to some extent, detrimental to my own. This method of controversy has never appealed to me, but in the interests of the society with which I am associated, I must be allowed to answer the implications. The paragraph quoted by Dr. Sutherland is not, as would appear from his letter, a simple opinion of mine on the medical profession, but was written in reply to a rather scurrilous paragraph so worded as to lead the public to believe that the medical profession as a whole was against the Society for Constructive Birth Control and Racial Progress. My answer, which appeared not only in the papers quoted but in others, contained the following statement: "We have three of the most distinguished medical men in Great Britain on our list of Vice-Presidents; four others, also very distinguished, on our Research Committee." Reading these words before the paragraph your correspondent quotes, and taking all in conjunction with an attack implying that the entire medical profession was against us, it is obvious that the position is rather different from what readers of Dr. Sutherland's letter in your issue of November 26th might suppose.

As regards Dr. Dunlop, he now shifts the atheists' position by adding the word "organized." The atheists never tire of repeating certain definite misstatements, examples of which are: "If it were not for the fact that the despised Atheists, Charles Bradlaugh and Annie Besant, faced imprisonment, misrepresentation, insult, and ostracism for this cause forty-four years ago, she [Dr. Stopes] would not be able to conduct her campaign to-day" (*Literary Guide*, November, 1921); and "Before the Knowlton trial neither rich nor poor knew anything worth counting about contraceptive devices" (*Malthusian*, November 15th, 1921). Variations of these statements have been incessantly made, and I dealt with their contentions in the presidential address for the C.B.C. Meanwhile to them I reply that: "There has never been in this country any law against the dissemination of properly presented birth control information, and *before, during, and after* the Bradlaugh trial properly presented information on birth control was extending its range with full liberty." My address is now in the press and when published will make public not only new matter from manuscript letters of very early date in my possession, but other overlooked historical facts. I have already told Dr. Dunlop I refuse to be drawn into a discussion on facts, an account of which is still in the press.

MEDICAL SERVICES UNDER THE MIDWIVES ACTS.

"JUSTITIA" writes: I have recently had a friendly argument with the local sanitary authority of my town in connexion with payment for services rendered under the Midwives Acts, 1911 and 1918. The medical officer of health has always refused payment in those cases where the patient was not actually in labour, even though the attending practitioner has received the official "pink form" from the midwife concerned. Being convinced that my official colleague was wrong in his ruling, I decided to test the matter. The other day I received a "pink form" from a midwife asking me to see a case of pernicious vomiting of pregnancy. I at once complied, and afterwards applied to the M.O.H. for payment. This was courteously but definitely refused, on the grounds that "the patient was not in labour." I immediately took a barrister's opinion, and promptly summoned the mayor, alderman, etc., in the local county court. The legal advisers of the council decided that they had no case, and quickly paid into court the stipulated fee, *plus* the cost of the summons.

I have strong reason to think that other practitioners in other towns have also been refused payment on the same grounds, and would like to emphasize that it is clearly laid down in the "rules" drawn up under the 1918 Act that a medical man *must* be called in by the midwife if "any abnormality occurs during the course of *pregnancy*," and that the local sanitary authority is responsible for payment.

The action our correspondent took is to be commended, but he might have saved himself both expense and trouble if he had asked the Medical Secretary of the British Medical Association to take the matter up for him. One or two similar cases have already been taken up direct with the Ministry of Health with success.

THE MEDICAL SICKNESS ANNUITY AND LIFE ASSURANCE SOCIETY.

"M.B.CAMB., M.R.C.S.," writes: In case any of your readers may be unaware of the existence of the Medical Sickness Annuity and Life Assurance Society and the benefits which may be derived from it, I should like to make known to them the following facts: I joined the Society in 1894. In 1900 my health broke down completely, and I could no longer continue to practise. The beneficiary payments of the Society began at once, and have now ceased because I have reached the age limit of 65; but between 1900 and the present time I have drawn 1,096 weeks' sickness benefit for the sum of £2,361, and have paid in premiums £227. My own experience may perhaps induce other members of the profession who are not already insured to consider whether it would not be worth while to follow my example.

TRAIN GOSSIP.

"M.B." writes: The general public sometimes blames us for our secrecy. I hope that such as the following incident is rare: Yesterday I was in a train for London. The occupants of the carriage were three men and three women, including a London specialist and myself. At a station about twenty miles from London two men got in, and for the remaining half hour to London "talked shop." One was a qualified man, apparently on holiday from another part of England, the second a medical student. They discussed mastoid operations, the tracing of a cerebellar abscess, and various cases of lateral thrombosis with their end results, good and bad. They then passed to the subject of the chief teachers and examiners in London, whom they discussed by name, the qualified man speaking of a well known surgeon, remarking, "He is always called 'the butcher' you know." They had no means of knowing that their enforced listeners included two doctors, who might have been friends of the surgeon, but the effect might have been great if the other members of the general public happened to have known him.

A PROBLEM IN RECONSTRUCTION.

THE printer's devil must have had a particularly virulent attack of perversity last week, for at page 208 of the SUPPLEMENT (col. 2, line 6) we are made to announce, as one of the items on the Agenda of a meeting of the Cambridge and Huntingdon Branch, "The Reconstruction of a Female," an achievement which no mere male (even a medical male) could be expected to undertake. What we should have announced, according to the "copy" sent in by the Secretary of the Branch was "The Reconstruction of a Femur." We can only hope that the announcement so whetted the curiosity of the members that a very full attendance resulted.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, 31, 32, 33, and 34 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30 and 31.

THE appointment of medical referee under the Workmen's Compensation Act, 1906, for the Margate and Ramsgate County Courts in Circuit No. 49, is vacant. Applications to the Private Secretary, Home Office, by December 28th.

THE appointments of certifying factory surgeons at Chirk (Denbigh), Menai Bridge (Anglesey), and Chippenham (Wilts) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

The Purvis Oration

ON

RESPIRATORY PHENOMENA IN NERVOUS DISEASE.

DELIVERED BEFORE THE WEST KENT MEDICO-CHIRURGICAL SOCIETY ON DECEMBER 9TH, 1921.

BY

SIR JAMES PURVES STEWART, K.C.M.G., C.B., M.D.,

SENIOR PHYSICIAN TO THE WESTMINSTER HOSPITAL.

APART from the large proportion of our patients who suffer from primary respiratory affections, there are a considerable number who exhibit respiratory symptoms which are a consequence or complication of other maladies. I wish here to draw attention to that important group which we find occurring secondary to various diseases of the nervous system.

Respiratory Centres.

Let me first of all recall the nervous mechanism of respiration. The primary or lowest reflex respiratory centre is located in the lower part of the medulla oblongata, probably in the region of the visceral sensory nucleus of the fasciculus solitarius. This vital centre maintains ordinary breathing with its regular rhythm. During ordinary quiet breathing the inspiratory phase is an active muscular process of sucking air into the lungs; expiration, on the other hand, is a mere passive recoil of the lungs and thoracic cage, due to elasticity of their tissues.

The muscles involved in ordinary inspiration comprise, first, the diaphragm (innervated by the phrenic nerves whose motor nucleus in the spinal cord is at the level of the third, fourth, and fifth cervical segments); and second, the intercostal muscles (innervated by the series of anterior spinal roots from the first to the twelfth thoracic inclusive).

During forced or laboured respiration, and also in coughing and sneezing, various supplementary or accessory muscles, both inspiratory and expiratory, are called in, so as to reinforce the ordinary mechanism of inspiration and recoil.

Ordinarily the respiratory centre in the medulla is excited to activity by variations in the oxygen and carbon dioxide content of the blood. But it is also influenced by nervous stimuli. These stimuli reach it through various sensory nerves, chiefly along the vagus, which is the visceral sensory nerve of the respiratory tract, but also from almost any sensory nerve of the body; thus coughing and other respiratory reflexes can be induced by widely varying stimuli.

Perched above the vital respiratory centre in the medulla there is a higher reflex centre in the mid-brain, situated bilaterally in the mesial part of the optic thalami. This centre is concerned with emotional reflexes, such as laughing and sobbing, actions which involve modifications of the respiratory movements, accompanied at times by secretory phenomena, such as lacrymation, and even by visceral phenomena—for example, precipitate contractions of the bladder or bowel. Lastly, higher still, there are motor centres in the cerebral cortex, by means of which we can exercise a partial voluntary control over the lower respiratory mechanisms.

It is not surprising that these complex respiratory centres, situated as they are deep within the brain, medulla, and spinal cord, are liable to become disordered in diseases and injuries of the nervous system, whether the lesion implicates the central nervous system itself or the sensory or motor elements of the reflex respiratory arc.

Respiratory phenomena are commonly an accessory element in nervous diseases or injuries; sometimes, however, they may dominate, for a time, the whole clinical picture.

Respiratory Symptoms in Cerebral Lesions.

In *cerebral concussion*, say from a head injury, the morbid process consists in a sudden violent squeezing of the brain. This produces widespread cerebral anaemia and is associated with minute perivascular haemorrhages in various parts, notably in the grey matter of the cortex, the mid-brain, and the spinal cord. Besides the characteristic feeble frequent pulse, the subnormal temperature, and the low blood pressure of the concussed patient, we observe that his breathing is curiously slow, shallow, and irregular. Later on, when reactionary cerebral oedema supervenes, consciousness returns, the temperature rises, the pulse becomes full and bounding, and the respirations are now deeper than normal.

In cases of *apoplexy* from destructive cerebral lesions, whether due to haemorrhage, thrombosis, or embolism, in addition to the unilateral paralytic signs and symptoms, varying in distribution according to the location of the lesion, we often find those of coma. The probable explanation of this is that the brain as a whole is compressed by diffuse oedema surrounding the focal lesion, whilst beyond the oedematous zone there is an outlying zone of venous obstruction extending down towards the medulla, where it produces irritative symptoms. In such cases of cerebral compression, in which the patient is comatose with slow pulse and raised blood pressure, we note that his breathing is loud and stertorous in character. The snoring noise is due partly to flapping of the soft palate and partly to falling backwards of the root of the tongue. The noise of such stertorous breathing can often be alleviated by gently turning the patient on one side and propping up one shoulder, so that his tongue falls to one side instead of backwards. The patient, of course, remains unconscious as before, but his friends at the bedside are comforted by the quietening in his breathing. Sometimes in comatose patients of this sort we observe the highly ominous phenomenon of rhythmic breathing—the so-called Cheyne-Stokes type of respiration. In this there is a regular alternation of periods of activity and inactivity of the bulbar respiratory centre. During the inactive phase there is total cessation of breathing, which may last several seconds; then the respiratory movements gradually reappear, steadily becoming stronger and deeper. After persisting at a maximum for a few breaths the movements again subside, gradually declining in amplitude, until temporary complete apnoea is again reached. This process is repeated again and again until, in fatal cases, it is replaced by the true terminal breathing, popularly known as the "death-rattle." This is irregular and gasping in character, and to it coarse bubbling tracheal sounds are commonly superadded.

There is another less common form of cerebral haemorrhage in which the respiratory symptoms are peculiar and characteristic. This is what is known as *chronic subdural haemorrhage* or *delayed traumatic apoplexy*, a condition in which a collection of blood, often very large, gradually accumulates for days and weeks between the dura mater and the cerebral hemisphere. The blood is enclosed within a distinct fibrinous membrane, derived from the coagulated blood itself, which restricts the rate at which the haemorrhage spreads. The condition is sometimes bilateral. The bleeding is venous in origin, being a slow ooze from the short cerebral veins which enter the superior longitudinal sinus. Subdural haemorrhage of this sort is traumatic in origin, but the injury is often so trivial as to be overlooked. Following some slight blow on the head, after an interval, several days at least, the venous haemorrhage gradually becomes large enough to produce symptoms of intracranial pressure. Then headache supervenes, and gradually, a week or two later, the patient becomes dull and drowsy. After several weeks more the limits of mechanical compensation are reached and the symptoms change, rather suddenly, so that the drowsiness deepens into coma, perhaps ushered in by sharp pain in the head and by vomiting. This coma comes and goes, varying in intensity in a curious way, so that within a period of twenty-four hours the patient may pass from consciousness to coma and back again, being perhaps only a little dull mentally in the intervals. In this condition the respiration is very curious, for the patient, even when awake, breathes as if he were sound asleep—that is, his inspirations are deeper than normal and expiration is also slightly emphasized.

In the terminal coma of *cerebral meningitis*, *cerebral abscesses* or intracranial *tumours* the onset of stertorous breathing or of Cheyne-Stokes breathing is of grave omen and calls for prompt relief of intracranial pressure if this be still possible. In meningitis, especially in tuberculous basal meningitis, quite apart from threatened coma, it is not uncommon to observe a curious irregular type of respiration consisting in a want of harmony between the

diaphragm and the intercostal muscles, so that they no longer act synchronously.

In other varieties of coma—for example, post-epileptic coma, toxic coma (whether from outside poisons such as opium and alcohol, or from endogenous poisons as in uraemic or diabetic coma), in the coma of cerebral malaria and of sunstroke, and so on, stertorous breathing is one of the cardinal symptoms. In the coma of opium poisoning there is excessive slowness of respiration. Diabetic coma is often preceded for a day or two by air-hunger with slow, deep, sighing respirations and by uncontrollable drowsiness, gradually merging into coma with deep stertorous breathing.

Many years ago Hughlings Jackson made the interesting observation that in some cases of ordinary hemiplegia the chest wall during quiet respiration moves more freely on the paralysed side, corresponding as it were to the exaggeration of the deep reflexes in the paralysed limbs, whereas during voluntary deep inspiration the respiratory excursion, like other voluntary movements on the hemiplegic side, is distinctly less than normal.

Respiratory Symptoms in Bulbar Lesions.

In chronic nuclear diseases of the medulla—for example, in *chronic bulbar palsy*, whether this commences as a primary affair in the bulb or occurs as the upward extension of an amyotrophic lateral sclerosis of the spinal cord, or is due to syringobulbia or to tumours of the medulla—we observe that, if the vagal nuclei or nerves are implicated, the patient has a continuous dyspnoea, more or less severe, to which from time to time are superadded paroxysms of more intense dyspnoea. In such cases as the various bulbar nuclei, supplying the tongue, lips, palate, and larynx, become involved, the voice becomes feeble and monotonous. If the laryngeal abductors are paralysed, the glottis becomes narrowed to a mere slit, talking is an effort, respiration is laboured, even at rest, and the superaddition of the mildest bronchitis is liable to be fatal owing to difficulty in coughing up the bronchial secretions. If the adductors of the glottis are paralysed, phonation is lost and the patient may be unable to speak above a whisper; moreover, imperfect closure of the glottis favours the accidental inhalation of food particles with the possibility of a resulting bronchopneumonia. Curiously enough, syringomyelia with severe implication of the bulbar nuclei is sometimes compatible with prolonged survival.

Thus, I have in mind a lady who developed typical phenomena of syringomyelia in 1907, including dissociated anaesthesia of the upper limbs and neck. In 1909 she developed well-marked laryngeal stridor with bilateral, asymmetrical abductor paralysis, and became liable to attacks of acute dyspnoea. Nevertheless, she is still alive and able to get about in 1921, twelve years from the onset of her bulbar symptoms.

Acute or subacute bulbar palsy from affection of the bulbar nuclei or nerves is a much more serious affair. These nuclei may be implicated by the upward spread of an acute anterior poliomyelitis, or by the downward extension from the mid-brain of an epidemic encephalitis; or an acute ascending neuritis of toxic origin may spread up to the bulbar nerves as in Landry's paralysis, in which case respiratory paralysis begins with weakness of the abdominal and intercostal muscles, spreads up to the phrenic nerves innervating the diaphragm, and culminates in implication of the laryngeal and palatal nerves.

Respiratory Symptoms in Spinal Cord Lesions.

Progressive ascending lesions of the spinal cord in the dorso-cervical region are often accompanied by gradually increasing respiratory embarrassment as the muscles of inspiration become successively involved. Paralysis of the abdominal muscles favours the occurrence of meteorism or intestinal distension, pressing the diaphragm upwards, and as the intercostals cease from activity, more and more strain falls upon the diaphragm and upon the auxiliary muscles of inspiration which are called in to supplement its activity. Respiration becomes slower and more difficult, whilst expiration is shortened and followed by a long pause before the next inspiration sets in. Finally, when the upper level of the phrenic nucleus, the third cervical segment, is reached, the diaphragm is paralysed, as well as the intercostals, and the patient dies from asphyxia, since the supplementary muscles of respiration above that level (chiefly the sterno-mastoids, sterno-hyoids, sterno-thyroids, and the uppermost fibres of the trapezii) are rarely able by themselves to carry on adequate respiratory movements for more than a short time.

Symptoms such as we have just described may occur suddenly in fracture dislocations of the cervical vertebrae, and in wounds or haemorrhages within or around the *spinal cord;* they may come on acutely in acute poliomyelitis, in softening from arterial thrombosis (formerly misnamed "myelitis"), more gradually in abscesses or meningeal inflammatory deposits compressing the cord, and still more insidiously in tumours of the spinal cord and in primary degenerative diseases of the anterior cornual cells, as in amyotrophic lateral sclerosis.

An important group of respiratory troubles occurs as a complication of *tabes dorsalis* in the form of laryngeal crises. Sometimes the tabetic patient, even in the early, pre-ataxic stage of his malady, may have paroxysms of violent, causeless coughing coming on suddenly day or night, so severe that the patient becomes cyanosed for a few moments, has acute laryngeal spasm and may even become unconscious for a few moments. Later in the disease we meet with laryngeal palsies of various types, the commonest being a bilateral abductor paralysis. In such cases, even during quiet respiration, if we examine with the laryngoscope we can see distinct ataxia of the vocal cords, sometimes when they are moving outwards during phonation, sometimes as they come together for phonation, thereby rendering the voice tremulous. But it is especially in bilateral abductor palsy that laryngeal crises are liable to supervene in which, from some trivial catarrh or even without apparent exciting cause, the patient has a superadded laryngeal spasm producing cough and urgent dyspnoea, so urgent perhaps as to demand tracheotomy or intubation. A much rarer form of respiratory affection in tabes is a widespread apnoeic crisis, of which I have only seen one example.

This occurred in a tabetic patient of 42 who had suffered from unsteadiness of the legs for eight years. During the last three or four years he had been subject to occasional bladder crises and also to typical laryngeal crises. About a year before I saw him he developed occasional crises of a totally different sort, in which he became unconscious with cyanosis and stertorous breathing; but had been free from them for two months until his terminal attack in which I had the opportunity of witnessing several paroxysms.

The paroxysms occurred at intervals of about ten minutes. Each attack began with sudden total cessation of respiration, both diaphragmatic and intercostal. After a couple of minutes of this apnoea the patient gradually became cyanosed and then developed asphyxial convulsions, with clonic twitching of the face, trunk, and limbs. These passed off in a few seconds and were succeeded by inspiratory stridor, after which he gradually recovered consciousness with normal quiet respiration. The whole affair lasted about two minutes in all. The pulse persisted regularly but was rapid, 136 per minute, both during and between the successive attacks. These apnoeic crises recurred for two days, at intervals of ten to twenty minutes, in spite of assiduous treatment by full doses of atropine and strychnine, oxygen inhalations and occasional morphine. The individual attacks became shorter in duration, lasting only a minute in all, and the intervals between the paroxysms became longer, as much as twenty minutes, but the patient became stuporose and died from exhaustion on the fifth day.

Crises of sneezing are occasionally met with in tabes, accompanied by secretory phenomena in the form of rhinorrhoea and lacrymation, but, although these are exhausting to the patient, they do not cause danger to life such as occurs in the laryngeal and still more in the apnoeic crisis.

Laryngeal palsies occur in other degenerative nervous diseases, notably in disseminated sclerosis, and even in Friedreich's ataxia, but unlike tabetic cases, they are rarely accompanied by respiratory difficulties.

Respiratory Symptoms in Peripheral Nerve Lesions.

Respiratory troubles are sometimes met with in *peripheral neuritis* from toxic degeneration, whatever be the cause of such neuritis—for example, alcohol, diphtheria, arsenic, beri-beri, etc. Diphtheritic neuritis has a special tendency to select the nerves of the soft palate, giving a nasal twang to the voice and also causing difficulty in swallowing, with a special inclination to nasal regurgitation of fluids. Post-diphtheritic laryngeal palsies are less common, but we sometimes meet with them.

Diaphragmatic paralysis from peripheral neuritis is often overlooked, since the patient has little or no discomfort when at rest and shows merely a certain degree of acceleration in breathing. But as soon as he makes the

slightest physical effort he becomes markedly dyspnoeic. Once it is looked for, diaphragmatic palsy is easy of recognition, for we note that instead of the normal pushing forward of the epigastrium during inspiration, the abdominal wall is sucked inwards at each inspiration; meanwhile, there is marked over-action of the intercostals.

Paralysis of the intercostal muscles is rare in peripheral neuritis. In spinal cord lesions, however, it occurs fairly commonly, and the level of the lesion in the cord can often be accurately located by noting up to what level the intercostals are thrown out of action. In patients who are not too fat the healthy intercostal muscles can normally be felt to harden during deep inspiration. Absence of intercostal contraction, up to a certain level in the chest, is an important confirmatory sign in localizing lesions in the thoracic region of the spinal cord. When all the intercostals are paralysed, there is absence of expansion of the thoracic cage during inspiration.

Unilateral injuries of the *vagus*, and especially of its recurrent laryngeal fibres, are not uncommon in war time. The following is an example:

> After a hand-to-hand encounter on the Salonica front in 1917 a Bulgarian prisoner was brought in with a bayonet wound in the back of his neck. The entry wound was immediately above the middle of the spine of the left scapula, three inches internal to the tip of the acromion process. There was no exit wound. Within a week a small pulsatile swelling became palpable at the outer side of the left sterno-mastoid, at the level of the cricoid cartilage; no thrill or bruit was made out over this little swelling, but it was evidently a small aneurysm in the neighbourhood of the common carotid artery. When admitted to hospital, a few hours after being wounded, the patient had surgical emphysema of the left upper chest and some haemoptysis from wounding of the apex of the lung. His voice was hoarse and he had paralysis of the left deltoid, biceps and supinator longus muscles, all supplied by the fifth cervical root. These muscles ultimately developed electrical reactions of degeneration, and there was also an area of cutaneous anaesthesia along the outer side of the left upper limb, from the middle of the deltoid to the thumb, corresponding to the fifth cervical root, together with another area of cutaneous hyperaesthesia above this, over the tip of the shoulder and side of the neck, corresponding to the fourth cervical root. The biceps jerk and the supinator jerk were absent on the left side, whilst the other reflexes, including the pronator jerk and triceps jerk, beyond the territory of the fifth cervical segment, were unimpaired. In addition, the left vocal cord was fixed in the cadaveric position, evidently from damage to the vagus or to its recurrent laryngeal branch within the left carotid sheath. The curious area of cutaneous hyperaesthesia might be accounted for as due to irritation of the sensory fibres of the phrenic nerve in the scar, but no motor impairment of the diaphragm could be detected.

Even in civilian practice, as the result of aortic aneurysm and other intrathoracic abnormalities, the *recurrent laryngeal nerve*, generally on the left side, is not uncommonly affected. The vagus nerve, including its recurrent laryngeal branch, may also be accidentally damaged in operations in the thyroid region.

Unilateral traumatic lesions of the *phrenic nerve* are much less frequent, but the inclusion of this nerve in a ligature has been known to produce inveterate cough from irritation of its sensory fibres. This nerve may also be implicated by bullet and bayonet wounds, causing unilateral paralysis of the diaphragm, easily verified by radioscopy.

Respiratory Symptoms from Muscular Affections.

In many of the primary myopathies the progressive general muscular enfeeblement may in time implicate the respiratory muscles and thereby diminish the patient's resistance to pulmonary affections, but localized respiratory paralysis does not occur. In *myasthenia*, on the other hand, all the features of bulbar palsy may be reproduced, including laryngeal palsies and respiratory failure. In this disease the paralytic symptoms vary in intensity from time to time; they are specially aggravated by fatigue and tend to clear up again after a period of rest. Unfortunately, with the respiratory muscles prolonged rest is unattainable, for whilst the patient's tired-out respiratory muscles are resting he may die of asphyxia, and as a matter of fact this is the common termination of myasthenia gravis.

Family periodic paralysis is another rare affection, sometimes appearing in successive generations of the same family, in which the patient, otherwise healthy, has attacks of profound flaccid paralysis of the limbs and trunk, lasting from a few hours up to a couple of days at a time. The affected muscles are not only paralysed, but for the time they become inexcitable to electrical stimulation—the so-called cadaveric reaction. In such attacks the intercostal muscles may be implicated, but, so far as I know, the diaphragm has never been affected, and therefore respiration can still be carried on.

Spasmodic Respiratory Affections.

The foregoing respiratory troubles are mainly paralytic. Let us now turn to the group of spasmodic respiratory affections. These may be due to disease either of the vegetative or the cerebro-spinal nervous system.

With regard to the vegetative nervous system I need only mention in passing the important spasmodic respiratory affection known as *asthma*, whose phenomena of laboured breathing consist essentially in spasm of the non-striped bronchial muscles, innervated as we now know by the dorsal motor nucleus of the vagus. In asthma the bronchial nerve centres react with abnormal violence to various blood-borne irritants, whether these be foreign proteins or bacterial toxins, also to peripheral irritants, nasal or otherwise, or even to psychical stimuli. The result is the asthmatic paroxysm, whose features are so familiar that I need not weary you by recapitulating them.

Coughing, yawning, sneezing, and hiccup are all of them reflex phenomena which may be induced in healthy individuals by appropriate stimuli. Of these, *hiccup* calls for special mention. Hiccup is a spasmodic myoclonic contraction of the diaphragm, occurring so suddenly that the glottis is momentarily closed by suction, producing the characteristic inspiratory noise or "hic." In slight cases of hiccup the affair is transient and produces only trivial discomfort. Sometimes, however, it may become so severe and prolonged as to induce profound and even fatal exhaustion. The reflex phenomenon of hiccup is sometimes excited by transient gastric or other abdominal irritation. It may also be due to disease of the peritoneum in the region of the diaphragm (the phrenic nerve being sensory as well as motor in function). Other cases of hiccup are due to central disease of the respiratory centres in the medulla. Thus, for example, it may be produced by the toxin of epidemic encephalitis. In encephalitic hiccup the myoclonic spasms may implicate not only the diaphragm and the constrictors of the glottis, but may even extend to the muscles of the abdominal wall and trunk. Hiccup of this encephalitic type may continue for days at a time, at the rate of twelve to fifteen hiccups per minute. Most cases clear up in three or four days, but others go on for weeks. Hiccup may also occur as a terminal symptom in tumours of the posterior fossa of the skull. Lastly, we sometimes meet with cases of hysterical hiccup. These are recognized by their history and concomitant phenomena, and the symptom promptly subsides under appropriate suggestive treatment.

Before dismissing the subject of cough we ought to recall whooping-cough or pertussis (an infective disease causing irritation of the coughing centres in the medulla) with its initial and terminal stages of catarrh and its paroxysms of rapidly succeeding expiratory coughs, followed by a single long-drawn inspiratory laryngeal "whoop." These paroxysms of alternate coughs and whoop follow one another in succession until the attack culminates either in temporary apnoea with cyanosis, or in vomiting.

Laryngismus stridulus, especially occurring in rickety children, consists in laryngeal inspiratory stridor and is often associated with tetany or painful tonic spasms in the hands and feet. Laryngismus itself may be regarded as a tetany of the adductor muscles of the larynx.

In the classical accounts of *tetanus* the respiratory muscles are described as becoming implicated in the general muscular spasm so that during a severe tetanic paroxysm not only is there opisthotonos, but also tonic spasm of the respiratory and laryngeal muscles, causing asphyxia which may be fatal. I had considerable personal experience of tetanus during the Gallipoli campaign and had the opportunity of watching a number of severe cases of tetanus. Seven of my cases were fatal, but in none of them did death happen to be due to respiratory spasm or to asphyxia; what the patient died of was progressive cardiac feebleness, sometimes several days after the tetanic spasms had subsided completely.

Personally, I have never seen a case of *rabies* (or so-called hydrophobia), but the symptoms are described as being of two varieties, sometimes a spasm of the inspiratory muscles, as well as of the pharynx and oesophagus, at other times a paralytic inertia of the whole respiratory apparatus, occurring either primarily or following the spasmodic attacks. The patient may die either from respiratory spasm, or from syncope. On the other hand, *hysterical pseudo-hydrophobia* is not uncommon, and I have seen several instances of this in which the patient erroneously thought that he had been bitten by a rabid dog. Here we observe globus hystericus with rapid breathing and various dramatic movements of the trunk and limbs, sometimes accompanied by a loud hysterical laryngeal noise intended to resemble a dog's bark. But there is neither true respiratory spasm nor paralysis, and to the careful observer the diagnosis presents no difficulties.

There are also other nervous diseases in which the respiratory mechanism may be upset. For example, in a *major epileptic fit* the tonic phase of the fit is often ushered in by a curious laryngeal wail, the so-called epileptic cry, produced by tonic spasm of the expiratory muscles. Throughout the tonic stage of the epileptic fit the respiratory muscles are fixed, respiratory movements cease and the patient becomes increasingly blue and cyanosed. Then, when the clonic stage sets in, the cyanosis passes off, the respiratory muscles take part in the jerking movements and saliva may be jerked from between the lips. I once had the opportunity of doing a laryngoscopy during the clonic stage of an epileptic fit and was able to see the glottis alternately opening and shutting, synchronously with the clonic jerks of the trunk and limbs.

Both in *athetosis* and in *chorea* the irregular involuntary movements may implicate not only the limbs and face but also the respiratory muscles, causing the breathing to be irregular and clumsy, so that the diaphragm and intercostals no longer contract synchronously and the smooth rhythm of respiration is interrupted. In consequence, even the patient's articulation may be jerky. In so-called "paralytic" chorea the superadded factor of muscular feebleness may sometimes be so severe that the patient's voice is reduced to a faint whisper.

The fine muscular tremors of the limbs in *exophthalmic goitre* may sometimes spread to the trunk and to the respiratory muscles. This tremulous respiration, as Minor pointed out, is best marked during a long expiration.

In advanced *paralysis agitans*, if we examine the patient laryngoscopically, we may observe a rhythmic tremor of his vocal cords, synchronous with the tremor of the limbs. This laryngeal tremor usually ceases during phonation, but not always. The patient's voice becomes thin, monotonous, and feeble. His articulation, like his gait, becomes festinant, so that he begins his sentences slowly but tends to hurry towards the ends of sentences or of long words, pronouncing the final syllables hurriedly.

Various respiratory phenomena may be met with in *hysteria*. Of these, hysterical cough is the commonest, but hysterical tachypnoea or rapidity of respiration, hysterical sobbing, also all sorts of curious laryngeal noises, may be met with in different cases. But, whatever their variety, all these hysterical respiratory affections cease spontaneously during sleep. Hysterical cough occurs almost always in bouts or paroxysms, often at the same special time of day, and most frequently when the patient knows herself to be under observation. It may last for hours at a time. Hysterical cough is unaccompanied by true dyspnoea, whilst abnormal physical signs in the respiratory organs are conspicuous by their absence. Hysterical cough often has a peculiar metallic musical sort of noise. Hysterical laughing or sobbing are frequently part of a hysterical paroxysm, whether occurring before, during, or after the hysterical attack. Hysterical tachypnoea is another fairly common manifestation, consisting in paroxysms of extremely rapid breathing (80, 100, or even 150 per minute), but without cyanosis or other respiratory distress. The pulse remains quiet and steady throughout the attack, there are no abnormal physical signs in the chest, and the temperature remains normal throughout. Hysterical aphonia, another common type, is easily recognized, not only by its concurrent phenomena, but by its characteristic laryngoscopic appearances, showing deficiency of adduction of the vocal cords.

Finally, we have the interesting group of *respiratory tics or habit-spasms*, which occur in highly strung, often highly intelligent individuals of psychasthenic nervous constitution. Such patients are not necessarily mentally subnormal; on the contrary, some of them are far above the average of intelligence. Respiratory tics are of many varieties. I recall one individual—a distinguished university professor—whose habit-spasm consists in an occasional sudden sniffing inspiration accompanied by wrinkling up of the nose; another individual—a surgeon of world-wide reputation—who makes an occasional sudden inspiratory laryngeal noise from time to time when talking. In another highly strung young man the breathing is interrupted at irregular intervals by paroxysms of short little expiratory puffs at the rate of about two per second, associated with grimacing and with jerky movements of the arms; another individual gives an occasional little nervous cough or grunt, and so on. Then again, one variety of stammering, in which the patient sticks in the middle of a vowel (less common than the type where he sticks over a consonant) is simply a respiratory tic affecting the muscles of the false vocal cords. Examples of tics or habit-spasms of this sort might easily be multiplied, and many of you can recall for yourselves friends or patients who perform peculiar respiratory actions of this sort. A tic or habit-spasm, it should be remembered, is a psychomotor affair of cortical origin, consisting in the frequent explosive repetition of the same motor act. It never interferes with voluntary movements. Sometimes the tic takes place automatically and without the patient's conscious attention; in more severe cases the tic absorbs the patient's attention during its performance, and is accompanied by a feeling of irresistible compulsion. The greater the psychical abnormality the more violent does the tic tend to be.

An Address
ON
SOME OF THE CAUSES OF OUR C3 POPULATION.

BY

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WE as a profession had a more or less general acquaintance with the existence and growth of that section of the population which has come to be known as C 3, but it required a great war, necessitating the passing of a limited age group of the manhood of the nation through the sieve of physical and mental fitness, for it to become general knowledge. The examination of recruits was conducted by medical men who, generally it can be said, had no expert knowledge of mental diseases, and consequently the sieve had a very open mesh as far as mental disability was concerned—sufficiently open to allow the passage through of all except the most obvious cases of mental disease, and the rapidity with which the examinations had to be made, owing to the urgent demands of the situation, caused, in many instances, even men suffering from gross forms of insanity and mental defect to be passed into the service. Early in 1917, owing to the large number of soldiers being certified as insane, there was an outcry that the army was creating lunatics, and calling for special treatment of these men as victims of the war. In reply to this I pointed out that down to the end of 1916, estimating from the statistics then available, 5,000 men had been enrolled in the forces in England, Scotland, and Wales alone who, had the war not taken place, would have been certified as insane and placed under treatment as pauper patients. If this estimate had been corrected up to the end of 1919 the figures would have been approximately 10,000.

In this connexion it is most interesting to note the statement made in the House of Commons by the Minister of Pensions that on December 9th, 1920, over two years

Delivered at the annual meeting of the Kent Branch, held at the London County Mental Hospital, Bexley.

after fighting ceased, the total number of ex-service men confined in asylums suffering from certifiable insanity due (it is alleged) to war service was 5,634. If to this number be added the numbers of those who were certified but who have in the interim been discharged recovered or relieved, and of those who have died, the 10,000 mentioned above will approximately be reached. In other words, 10,000 potentially insane men were drafted into the service, resulting in a standing cost to the nation, if their maintenance, pensions, pensions to their wives and families (all at the full rate of 100 per cent. disability), and the central staff charges are computed, of upwards of three million pounds a year, as against about half a million, their cost as ordinary patients chargeable to a parish. I look upon these as belonging originally to the category C 3, and believe that a very large proportion of them would have been rejected if the sieve had been made of finer mesh by the addition of mental experts to the recruiting boards. All these cases have been a source of anxiety, difficulty, weakness, enormous cost, and trouble to the army authorities, both in the field and also at home. Closely allied to these, and almost inseparable from them, was a very much larger group—the neuro-psychiatric—of cases of war neuroses (commonly known as shell shock), which formed a large proportion of the total number invalided out of the service.

The dictum that man is the product of his heredity *plus* environment is very true, and it depends upon the interreaction of these forces what the dominant characters, physical and mental, of the individual will be. Like produces like, but every breeder of stock will say that by judicious selection in mating, suitable housing, proper feeding, and the cultivation of desired characters, he can obtain, after several generations, a breed of animals whose dominant characters are infinitely superior to his original stock; we, unfortunately, in dealing with the human race, can in our time only influence directly one and, in some rare instances, two generations.

Heredity.

Heredity is without doubt one of the great factors in the production of our C 3 population, and the trend of modern civilization, by its Poor Law system and by its treatment of the unfit during childhood and early adult life, tends to foster the growth of this class. The care, treatment, and education given to the physically and mentally unfit children in the special schools and homes may reduce materially the degree of unfitness, but if their improvement is such as to enable them to escape incarceration under the Mental Deficiency Act, they are turned out mental, moral, and physical weaklings, to return to an environment which was associated with the development of their unfitness. At the best they are misfits, capable only of the most menial work; they are deficient in the power of initiation, of application, and of control; their moral sense is feeble, and they are easy prey to evil influences. Members of this class are, as a rule, very improvident; they marry or cohabit usually with their like at a relatively early age, and, not being restrained by such problems as how the children are to be housed, fed, clothed, educated, and placed in the world, they produce large families to populate our workhouses and homes for the defectives, fill our prisons, and supply the bulk of the patients to our mental hospitals.

The good work which is being done throughout the country by the pre-natal and child welfare clinics sheds a ray of hope over this aspect of the problem, but to what extent the improved environment in the shape of better food, healthier conditions, and early treatment will counteract the bad heredity, time alone will tell.

Alcohol.

Alcohol is another of the great factors, and is commonly inseparably associated with heredity. A great amount of work has been done by numerous investigators to determine the effects of alcohol upon the growth and activity of animal and vegetable cell life, and these investigations all tend to prove the poisonous effects of even dilute solutions of alcohol upon every form of cell life. It appears to interfere in some way with the power of oxidation, resulting in retarded growth and imperfect development if it does not cause death. It is a protoplasmic poison, and as such it attacks the germ plasm in the prospective parents, beginning its evil action even before union has taken place. With regard to its effects on the developing ovum, it has been found in the case of hen's eggs hatched in incubators that when alcohol was applied in the form of vapour or injected as a solution, a large percentage of abnormalities, deformities, and monstrosities were present in the chickens hatched out, and further, that the chickens thus obtained showed a lack of normal instincts. Dogs given alcohol with their food are found to give birth to an unusually large proportion of deformed or dead puppies, and those puppies which survived for a time showed retarded development and the same loss of normal instincts observed in the chickens. These observations would lead one to expect that the human foetus does not escape from these poisonous effects during its sojourn in the womb of the drunken mother—in other words, the prospective mother, addicted to drink, poisons her child before it is born. What possible chance can a child have of developing into a normal citizen when born with such a handicap and surrounded from its birth with an environment of neglect, improper feeding, and the mental and moral miasma of a drunkard's home? Of course if the germ plasm had been handed down through several generations of strong, healthy, and virile ancestors, it is possible that its inherent power of resisting adverse influences might enable it, in a measure, to surmount the obstacles in its present environment, but though it may rise above the physical and mental defects which we associate with imbecility, it will not attain a normal maturity. During the past thirty years my work has necessarily brought me in close touch with the C 3 element of our population, and I am therefore entitled to speak with some authority as to their physical, mental, and moral attributes, even though I cannot at present bring forward statistics to support my views. I have observed that people with an alcoholic heredity are commonly undersized, frequently weedy or malformed; they have poor resistance to any stress, and their recuperative powers are relatively feeble. Mentally their standard of intelligence is poor; they rarely pass beyond the fourth standard at school; they are not willing students, and they show a poor return quantitatively and qualitatively when they do apply themselves; they are emotionally unstable, are easily swayed by passing influences, and are poorly controlled; their realization of their own deficiencies tends to develop the herd instinct, and their noisy valour in a crowd would appear to be great, but individually they are cowards. Their moral sense is commonly poorly developed, and they easily fall a prey to habits antisocial, which land them into the criminal class, and antisomatic, which will probably call for the intervention of the psychiatrist. I believe that the physical, mental, and moral standards of any community are in inverse ratio to its drink bill, and I am convinced that much as many of the U.S.A. citizens may rail against the interference with the right of the citizen which it entails, their present drink policy, if continued, will place them in a very short time intellectually, socially, and economically in advance of the rest of the world.

Diet: Vitamins.

Bad feeding in early life is an important factor in the production of malformations, poor development, and in the laying of a seed-bed for the many diseases and disorders which culminate in chronic ill health, even amongst those who have a good heredity. The deficiency diseases rickets, beri-beri, and scurvy, the underlying causes of a great amount of subsequent unfitness, we now know to be due to the insufficiency or absence from the food of certain definite principles—the antirachitic (fat-soluble A), antineuritic (water-soluble B), and antiscorbutic vitamins. I have for some time held the opinion that a number of other widespread diseases—for example, dysentery, diarrhoea, and even tuberculosis—will ultimately be relegated to this group. Tuberculosis is always associated with fat deficiency, and any improvement in the condition of the patient is invariably accompanied by an increase in the deposit of fat in the tissues. The discovery of vitamins opened the door for unbounded possibilities of improving the health and physique of the nation. I have always been a strong believer in the importance of milk as a sick diet, and long before vitamins were recognized I formed the opinion that when boiled it underwent

some profound change or lost some property which practically destroyed its nutritive value, so that for years I have insisted upon it being taken fresh or with the addition of a little lukewarm water. As during the last three-and-twenty years I have had, among my other duties at this hospital, the important task of supervising the dietary of between 2,000 and 3,000 people daily, I have of necessity given much time to the study of dietetics, and I have made innumerable experiments to aid me in devising nutritious yet economical dietaries. As instancing the value of a few elementary facts in dealing with a restricted dietary, such as the poorer classes have available during normal times, I may point out what happened at the London County Mental Hospital, Bexley, and similar hospitals throughout the kingdom, as a result of rationing during the war. The rationing of foodstuffs had not been long in operation before the health of the patients began to suffer and the death rate began to rise. After much deliberation I came to the conclusion that the primary trouble was the insufficiency of fats containing enough of vitamin A. Accordingly the roasting of meats, as being a process wasteful of fats, was stopped; the boiling of meat was not continued, as a large proportion of people will not take fat in that form; and all the meat was finely minced and converted into soup, with vegetables added and thickened with pea-flour, oatmeal, or maize-flour. The health of the patients rapidly improved; they regained weight, and the death rate dropped to practically normal—on the female side of the hospital it was below the 1913 rate—whilst in other hospitals throughout the country similarly placed and issuing foodstuffs of equal calorific value the patients lost weight and the death rates mounted up to double, and in many instances to treble, the pre-war rate, tuberculosis and dysentery being rampant. Patients transferred here from other hospitals invariably gained weight, in some instances as much as 2 st. in double that number of months. I have given these details not in order to blow our own trumpet, but to emphasize the important fact that a cheap dietary, composed of the cheapest food elements available to the poorest classes, is compatible with good health if properly cooked. The lack of knowledge of the most elementary facts with regard to cooking and the real value of foodstuffs (a form of ignorance not confined to the poorer classes) is deplorable, and a disgrace to the women of this country. Thriftiness is a virtue seldom found amongst our C 3 population, and I have often been struck by the extravagant mode of catering which I have elicited when interrogating patients on their mode of living and dietary. Oatmeal porridge is practically unknown; maize meal, one is told, "is cattle food"; whilst pea-flour is never heard of south of the Tweed. I often wonder as to the true dietetic value of margarine, which is a most important ingredient in the diet, and as to the degree in which it is responsible for the stunted growth which I think is becoming increasingly evident. When first introduced it was composed chiefly of animal fats, which no doubt retained their vitamin content to a greater or less extent during the process of manufacture, and some makers also added a percentage of butter fat, so that its nutritive value was practically equal to butter itself, even though the vitamins might have been considerably reduced during the process, seeing that there is reason to believe, as Professor Halliburton has pointed out, that only a small amount of vitamins suffices. Now, however, it is made from vegetable oils, which are subjected to a very high temperature during conversion, which probably completely destroys the vitamin content, and unless a sufficiency of vitamin is available in the form of milk or fat meat, we have the diet which has been proved by experiment to produce rickets in rats. It is a matter which calls urgently for investigation.

Teeth.

Good sound teeth and healthy gums are rarely found among the poorer classes. There is no country in any part of the world that I have been in where the teeth are so bad as they are in this country. Those who came in contact with the American and Colonial soldiers must have been struck with the great contrast between them and our own in this respect. There is probably no condition, particularly when accompanied by pyorrhoea, which bears in its train so many forms of ill health, such as chronic dyspepsia, chronic toxaemia, neuritis, and valvular heart affections, as bad teeth. Bad feeding and lack of proper care during infancy and childhood is without doubt an important cause, and I often wonder if the form in which bread is eaten in this country does not materially assist in producing this condition; here bread is baked in the form of a loaf, that is to say, with a minimum of crust, whereas on the Continent and also in America it is made in long or small rolls with the maximum of crust. The crumb is the portion which is most appreciated in this country, and rarely is the crust preferred even by the beggar; if any portion of the bread is discarded it is the crust. The teeth are consequently given little or no work to do; the crust, which would strengthen and clean the teeth and harden the gums if eaten is so small in amount, whilst the crumb forms a pultaceous mass in the mouth which fills the interstices of the teeth and later undergoes acid fermentation. The enamel of the teeth, already of poor quality and possibly deficient in amount owing to rachitic and scorbutic conditions in infancy, is destroyed. Another important point in favour of the maximum amount of crust is that the larger the proportion of the crust the greater the amount of mastication required, with resultant increase in the quantity of saliva and a more advanced state of digestion of the carbohydrates before they reach the stomach, to the great benefit of the whole process of digestion.

Syphilis.

The researches of Wassermann and Noguchi have enabled us to envisage the terrible ravages of syphilis much more completely than was possible before they placed such important aids to diagnosis at our disposal. Syphilis belongs to a totally different category of causes from those already mentioned, seeing that it produces its dire effects independently and uninfluenced by heredity and environment; the soundest heredity and the most ideal environment do not retard or minimize its effects. It also, in the case of acquired syphilis, brings down its victims most frequently in the prime of life when often children have been born, who consequently are thrown dependent on the world and possibly handicapped with the congenital form of the disease. Though it may attack any tissue in the body, it appears to have a selected affinity for, and produces its most disastrous effects upon, the nervous tissue and the vessels in its vicinity. Insanity, chiefly in the form of general paralysis, blindness, and organic nerve lesions, particularly tabes dorsalis, are the principal forms of the disease which reduce the patients to the C 3 category. In the congenital form we now recognize it as a great cause of maldevelopment, of wasting, blindness, idiocy, imbecility, or organic nerve diseases, including what is termed congenital general paralyis.

Housing.

Bad housing undoubtedly yields its quota to the C 3 population, and bad as its effects are upon the physical health of the inhabitants from overcrowding, insufficient lighting, and insanitary conditions generally, I believe, for reasons which I will presently state, that infinitely greater evils result from its influence upon the moral health, particularly of the children. With the physical aspect of the problem—the lack of oxygen, the excess of CO_2, and the poisonous exhalations of the human body, the presence of sewer gas from faulty drains, dampness, and the absence of sunlight, with their results, poor development, chronic anaemias, catarrhal conditions, tuberculosis, and chronic rheumatism—you are brought in daily contact, and can realize more fully perhaps than I, the extent of their degenerative influence. I wish therefore to emphasize the importance of the moral, or rather the immoral, aspect of overcrowding and its influence upon the mentality of the people as judged from my standpoint as a psychiatrist of over thirty years' experience.

Sexual Excesses.

I want you for a few moments to consider with me the function of reproduction. We know as a biological fact that the function of reproduction is implanted by Nature for the sole purpose of continuing the species, and to ensure that the acts of combining the necessary elements should be performed, Nature further provided that the act should be accompanied by the sense of pleasure; without this insurance animal life would have long since died out. It is only on rare occasions that the sexual act

is engaged in for the purpose of its true function. It is rather looked upon as a well of pleasure which can be drawn upon to an unlimited extent without incurring any penalty. Nature, however, imposes a penalty for the abuses of any of the functions it has created, whether that abuse be positive or negative, and though the range of excessive use and insufficient use may vary in individuals, Nature usually gives warning signs to the individual concerned before imposing the full penalty. You are all acquainted with the nature of the penalties attached to the abuse of most of the body functions, as your daily life is occupied in warning your patients, and in endeavouring to lessen the effects and counteract the penalties they have incurred, but few of you probably realize the nature and extent of the penalty Nature inflicts for abuse of the sex function. I do not propose on this occasion to enunciate any theories as to the pathological states which may ensue as the result of abuse of the organs of generation, but I purpose making an *ex cathedra* statement based upon my clinical experience, and showing how, in my opinion, the depraved morality and pernicious habits so frequently acquired during childhood and early youth, fostered by overcrowding, lead to the mental, moral, and physical deterioration of the race. I am fully convinced from my observations of, and the close investigation of the previous histories of, thousands of cases, that excessive drain on the sexual glands at any age leads to mental deterioration, varying in degree according to the amount of excess, the nature of the feeding, and the hereditary nerve stability in any particular case; and further, that if the drain is set up in early youth, the period when the maximum physical and mental building is taking place, partial, if not complete, arrest of mental development follows. In some rare instances the intelligent and observant parent has recognized the cause of the change, but commonly the child is said to be "outgrowing its strength" or to be "over-studying." A typical history of a very large number of my cases would be as follows: Up to the age of 12 or 13 the child was bright, clever, intelligent, and always held a high position in class, then gradually became dull, found it increasingly difficult to memorize, memory became less reliable and showed curious lacunae; apathy gradually became more pronounced, position in class dropped at each examination, was prone to fits of sullenness and bad temper, formerly unknown, and though at one time prominent in games, tended to become retiring and to be given to seeking solitude. Constipation was a source of much trouble, the complexion became muddy, and it was obvious to the parents that the health was suffering from some cause. The child was given more attention, was kept more closely under observation, was given tonics and special food, and for a time improved, but did not return to the former standard, and the progress at school was slow. After leaving school found difficulty in settling to any kind of work, never stayed in any place long, sometimes left abruptly; was poorly controlled, given to impulsive acts, had been "walking out" for some time, or was approaching marriage, or had been recently married; or perhaps, if the patient was a female, had the first baby, when the complete mental breakdown took place. Close investigation reveals that knowledge of sex matters had been acquired at a very early age, due possibly to observing the conduct and hearing the remarks of a drunken parent or sleeping in the same room with the parents, or, sharing the bed with older children or grown people, had been initiated in masturbation when 10 or 12; possibly had often practised the habit in concert with other children, had been checked, and for a time the habit had been arrested, due to increased attention received, possibly supplemented by religious influence or a change of environment to one of greater social purity; occasional gross lapses had occurred, followed by impulsiveness and irrationality, leading to change of occupation or place of employment; more frequent abuses brought about by the sex excitement associated with "walking out," or the greater excess of normal sexuality of early married life, or that factor, *plus* the stress of childbirth, resulted in the mental attack which we recognize by the term dementia praecox. If the excesses are not commenced until after adolescence has been established—in other words, until after the body building and mental development are completed—then the reduction is not so great, but the balance in the bank of health may have been brought so low that the bills presented by other forms of stress cannot be met. A person of either sex who had become a disciple of Onan commonly indulges in the habit very much more frequently than the normal sexual act would, for obvious reasons, be possible; and I have had quite a large number of cases under my observation where the habit acquired before marriage has been more or less persisted in after marriage. These people, when met by the ordinary trials, worries, and difficulties of life, can offer no resistance, but develop neurasthenia, psychasthenia or melancholia. In the great bulk of cases they recognize the cause of their trouble, and may try to fight against it; some may prevail, but with others the force of habit and the sex impulse is too strong for their weakened will power, and their neurasthenia, psychasthenia, or melancholia become more marked, when they are labelled as suffering from a "nervous breakdown." To this class belong a large proportion of the so-called shell-shock cases. In some fulminating cases, under the influence of sudden stress, real or imaginary, the patient suddenly commits suicide, or we have a double tragedy or some bizarre act bringing the case under public notice, and it is then said to be "a case of temporary insanity."

Bureaucracy.

These are, in my opinion, the principal factors which enter into the causation of our C 3 population. The question at once arises, Are we as a nation, and we of the medical profession in particular, as the real custodian of the health of the people, combating these adverse forces successfully? I fear the answer must be in the negative, for those of us who spend our lives in close contact with one or other section of it must, I think, admit that it is increasing out of proportion to the rest of the community. The enormous growth of bureaucracy in recent years, at enormously increased cost, has not, in my opinion, added to our efficiency in any branch of public health. Every branch of the profession is being pigeon-holed each into its own watertight compartment, presided over by an army of clerks and governed by lay bodies whose chief concern is to see that every man shall do his work in exactly the same way as everybody else. It puts a premium on action, stultifies individuality, kills progress, and writes innumerable reports. Reports are the life blood of bureaucracy. The rapid growth of medical knowledge necessarily means more specialization, as it is utterly impossible for any one man to keep in touch with its increasing ramifications, and therefore, to obtain results in any way commensurate with the increase in medical knowledge, we need greater facilities for team-work, so that special knowledge in any direction may be more readily brought to bear upon any particular problem at the earliest possible time. One of the greatest difficulties in connexion with my own speciality is the long duration of the attack and the progress which the disease has made before it receives the special attention which it requires, with the consequently reduced chances of recovery, and the greater mental scarring should recovery take place. If our special knowledge could only be brought to bear upon the case when the earliest manifestations of the disorder show themselves, enormous benefit might accrue to the patient and to the nation as a whole. I had the great pleasure of being present at the meeting at Dartford when Lord Dawson propounded the scheme formulated by the council over which he presided, with which I found myself in absolute agreement. I believe that the scheme of hospital centres, if efficiently established, would materially assist in solving the problem of our C 3 population.

AT Yale University Dr. Francis G. Blake has been appointed professor of medicine, Dr. Edward Albert Park professor of pediatrics, and Dr. Arthur M. Morse professor of obstetrics and gynaecology.

A SCHOOL for health officers has been established by the American Red Cross in Cracow, and has been very successful there. It grew out of a need for a well-trained Polish personnel to assist in carrying out the child welfare work of the American Red Cross in Poland. It is stated that the school will probably take a place as part of the educational curriculum of the University of Cracow, and it should have a wide influence in arousing public interest throughout Poland in the numerous health problems of that country.

THE BACTERICIDAL ACTION OF GASTRIC JUICE ON B. TUBERCULOSIS.

BY

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DURING the past few years a good deal of attention has been paid to the subject of gastric analysis in normal people. The invention of the Einhorn[1] tube has made this work much more accurate than was possible with the old stomach tube and glass funnel. It is not necessary, however, to refer in detail here to the valuable observations made by Crohn and Reiss,[2] Rehfuss and Hawk[3] in America, and by Ryle[4] and Bennett[5] in this country, and by numerous other observers, since most of their work has been done with reference to the chemical side of gastric analysis, with which we are only indirectly concerned. The short series of experiments dealt with in this paper was made with a view to testing the bactericidal power of normal gastric secretion on *B. tuberculosis*.

Technique.

The gastric juice was removed from the stomach with the Einhorn tube in the usual way, at regular intervals for a space of three hours after the test meal given on a fasting stomach, in the early morning. In each case the experiments were made upon persons whose digestive system was believed to be normal, and the test meal given was the oatmeal test recommended in Ryle's paper.[4] In the first case every sample of gastric juice removed during the period of observation was tested as to its bactericidal power; in the subsequent cases only three samples were tested, care being taken always to use resting juice as one of the samples.

All inoculations into animals were made by one of us (S. R. G.). As the first experiment showed considerable digestion of the tissues at the site of inoculation, and the guinea-pigs died early as a result of absorption of the toxic products of this, we decided in future experiments to inactivate the gastric secretion by neutralization with N 10 NaOH immediately before inoculation.

This procedure was carried out in Experiments II, III, and IV, and was successful in avoiding digestion at the site of inoculation and the consequent toxic absorption.

CASE I.

Healthy adult male clinically free from tuberculosis. Six cubic centimetres of gastric juice from each sample were mixed with approximately 0.5 c.cm. of typical nummular sputum containing tubercle bacilli (that is, about the amount of sputum a patient might readily swallow) and incubated at 37° C. for one and a half hours. The incubated mixtures of gastric juice and sputum were then inoculated into guinea-pigs. The results obtained are tabulated below.

Sample of Gastric Juice.	Starch.	Mucus.	Bile.	Total Acidity in Terms of N/10 NaOH.	Guinea pig Inoculation.
15 minutes ...	+	−	−	7.5	T.B. +
30 " ...	+	−	−	21.7	T.B. −
60 " ...	+	+	−	41.7	T.B. +
90 " ...	+	+	−	60	T.B. −
120 " ...	−	+	−	51.7	T.B. +
150 " ...	−	+	−	41.7	T.B. +
180 " ...	−	+	+	54.1	T.B. +

The quantity of resting juice obtained was only sufficient for the inoculation test. It was therefore used as a control in order to be quite sure that the gastric secretion from the case under observation contained no tubercle bacilli. The animal thus injected remained free from tuberculosis.

CASE II.

Healthy adult female clinically free from tuberculosis. In this case three samples of gastric juice were mixed with an emulsion of tubercle bacilli of a known virulent strain. This emulsion, originally containing 2,000 million organisms per cubic centimetre, was diluted down until *theoretically* it only contained 1,000 bacilli per cubic centimetre; 6 c.cm. of gastric juice were mixed with 0.1 c.cm. of this diluted emulsion, so that only 100 bacilli (exposed to the action of gastric juice) were contained in each inoculation of the mixture.

Of course, this can only be regarded as empirical, but we wished to show, if possible, whether the gastric juice could cope with small doses of bacilli. The test was made at 37° C. for an hour and a half as before. The results obtained were as follows:

Sample of Gastric Juice.	Starch.	Mucus.	Bile.	Total Acidity in Terms of N/10 NaOH.	Guinea-pig Inoculation.
Resting .	−	+	+	40	T.B. −
15 minutes ...	+	+	−	20	
30 " ...	+	+	−	16	T.B. −*
60 " ...	+	+	−	40	
90 " ...	+	+	+	32	T.B. −
120 " ...	−	+	+	28	
150 " ...	−	+	+	14	

* Typical caseous abscess at site of inoculation was noted on the twelfth day after inoculation, but no tubercle bacilli could be found either in direct films or by antiformin method. A control inoculation of the extremely dilute emulsion used in this experiment was also made in a guinea-pig, and proved negative. It seems probable, therefore, that the few tubercle bacilli present in the emulsion were lost during manipulation (for example, on the sides of the pipette).

CASE III.

Adult female convalescent from salpingectomy. No signs of tuberculosis. In order to make the experiments approximate more nearly to natural conditions the samples of gastric juice in this case were mixed with a mouth-wash obtained from a case of pulmonary tuberculosis with bacilli in the sputum. In the case of each sample 2.5 c.cm. gastric secretion was added to 2.5 c.cm. mouth-wash. The time of exposure at 37° C. was the same as in the last experiment (that is, ninety minutes).

Sample of Gastric Juice.	Starch.	Mucus.	Bile.	Total Acidity in Terms of N/10 NaOH.	Guinea pig Inoculation.
Resting ..	−	+	+	8	T.B. +
15 minutes ...	+	+	+	10	
30 " ...	+	+	−	10	
60 " ...	+	+	−	24	T.B. +
90 " ...	+	+	−	22	"
120 " ...	−	+	+	8	T.B. −

A control inoculation of this sample without the addition of mouth-wash gave rise to no tuberculosis in a guinea-pig.

CASE IV.

Adult male with fracture of right tibia and fibula. No signs of tuberculosis. The routine followed in the last experiment was adopted again, except that (*a*) a different case of pulmonary tuberculosis from which to obtain the mouth-wash was used, the first having died in the interval, (*b*) the time of exposure of gastric secretion to mouth-wash was lengthened from one and a half to three hours. The results obtained were:

Sample of Gastric Juice.	Starch.	Mucus.	Bile.	Total Acidity in Terms of N/10 NaOH.	Guinea-pig Inoculation.
Resting ...	−	+	−	20	T.B. +
15 minutes ...	+	+	−	6	
30 " .	+	+	−	48	
60 " .	+	+	−	38	T.B. +
90 " ...	+	+	−	40	"
120 " ...	+	+	−	62	T.B. +
150 " .	−	+	−	52	

This sample was inoculated into a guinea-pig as a control of the gastric secretion. No tuberculosis resulted.

CONCLUSIONS.

1. Gastric juice removed from the stomachs of persons free from gastro-intestinal disease, at various intervals of time after an oatmeal test meal, showed very little power of destroying (*a*) tubercle bacilli in sputum which had been exposed to it for ninety minutes, and (*b*) tubercle bacilli in mouth-washes which had been exposed to it for ninety and one hundred and eighty minutes respectively. In one case a total acidity of 62 (Case IV), in another of

54.1 (Case I), and in a third of 24 (Case III) failed to destroy the bacillus.

2. The gastric secretion may possibly have destroyed the tubercle bacilli in a very weak emulsion to which it was exposed under similar conditions, but the number of bacilli used (100) was so small that it cannot be considered a fair test, and even the control test with this weak emulsion proved negative in a guinea-pig.

3. The protection against the tubercle bacillus afforded by the gastric secretion is apparently by no means perfect. But it must be remembered that the dilution of contents and the motor activity of the stomach probably play a large part in this mechanism of protection, and these latter factors cannot be satisfactorily experimented upon *in vitro*.

These results are in general agreement with the conclusions arrived at by Allan Macfadyen[6] under different conditions and with bacteria other than *B. tuberculosis* as long ago as 1887.

4. In the four cases examined the untreated gastric juice contained no tubercle bacilli as judged by the inoculation test. We know of no records which show whether or no tubercle bacilli have been found in gastric juice in persons not suffering from clinical tuberculosis. This point may have important bearing on the portals of entry of the bacillus.

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AN OPERATION FOR INGUINAL HERNIA.*

BY

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SEVERAL cases in quick succession presenting difficulties in the efficient excision of the sac led me to devise a new method by which these and other troubles could be easily and successfully dealt with when they arise.

I approach and reach the back of the inguinal canal from a middle line incision in the lowest part of the abdominal wall. Unless compelled by some complication I do not open the general peritoneal cavity.

All the work is done in a space made in the subperitoneal tissue. I have operated in this way upon forty-one patients. In the first nine I made all the incisions longitudinal. In the remainder I have traversed the abdominal walls by Pfannenstiel's method. I will describe an uncomplicated operation.

The patient is placed in the Trendelenburg position, and the operator stands on the side opposite the hernia. A transverse skin incision 4 or 5 inches long is made 1½ inches above the symphysis pubis. Its centre corresponds with the middle line.

A transverse incision is made in the aponeurosis of the rectus abdominis of both sides, care being taken not to injure either linea semilunaris. The linea alba is undercut upwards and downwards, to within one or two inches of the umbilicus, and to the symphysis respectively: in doing so the sheath of each pyramidalis muscle will be opened. The opening thus made in the aponeurosis is retracted up and down and the subperitoneal tissue exposed by separating the abdominal muscles in the middle line. The peritoneum and its contents are pushed up on both sides, and if necessary kept up by packing.

Two retractors are inserted; they should have long, separate, and blunt prongs. The lower retractor, by far the most important instrument in the operation, should pull the abdominal wall downwards, outwards, and forwards on the side of the operation. Forwards to lift up the abdominal wall. Its prongs should reach the deep epigastric artery and vein. I should not advise anyone to proceed with the operation until he is satisfied that this retractor is in its proper position. The upper retractor pulls the structures outwards. After more completely pushing upwards the outer part of the peritoneum and thoroughly exposing the iliac fascia, the neck of the sac can be seen entering the inguinal canal. The deep epigastric artery and vein are delimited and separated from the inner part of the neck of the sac. Cheyne's dissector is a very useful instrument to use for this purpose. The spermatic veins and vas deferens, with its vessels, are found and separated from the whole length of the exposed sac. These structures are usually on the outer and under surface of the sac.

Having cleared the sac, it is pulled out of the canal by gentle continuous traction in the direction in which it lies. If there are no indications of the possibility of its easy extraction, the sac is cut and the canal portion replaced. The remains of the sac in the subperitoneal space are then radically excised. (Congenital herniae would belong to this type.) The neck of the sac, including part of the parietal peritoneum, is then transfixed and removed. Finally, the inguinal canal of the opposite side is examined, and if abnormalities exist they are treated on the same lines. I have only once had to ligature a vessel in the subperitoneal space, and that was a small branch of the deep epigastric vein.

I will now describe (1) the complications and structures with which I have met, (2) the herniae I would avoid, and (3) the herniae I would select for this operation.

1. *Complications and Structures Encountered.*

I have found and removed unsuspected and potential hernial sacs from the opposite side in three patients. In others I have cleared from the internal opening of the canal of the opposite side firmly attached dimples of the parietal peritoneum. In others I have removed fibrous cords that passed from the parietal peritoneum into the canals.

In one patient the urinary bladder occupied the canal and practically was a part of the neck of the sac. The peritoneum was peeled from the bladder, and the sac was radically excised. When I meet this complication again I should distend the bladder with fluid; this would render the separation of the peritoneum safer and easier. I may say here that it was a sequence of herniae in which the bladder appeared that made me devise some procedure by which I could deal more adequately with this complication. I am sure the operation I have described to you allows a complete and safe method.

In seven cases I found the urachus, which bore the same relation to the sac as that occupied by the bladder. This was traced to its union with the bladder, and it contained a good deal of unstriated muscle, very tortuous patent and small arteries and some fat.

In a few patients I have traced adhesions between bowel and sac, and omentum and sac into the general peritoneal cavity, which I have been compelled to open to satisfactorily clear them away. The herniae in these instances appeared to be reducible before operation.

The obliterated hypogastric artery was recognized in the sac in three cases. In one of these the lumen of the vessel was not obliterated at the point of section.

From one patient I removed a small sac entering the canal, and missed a much larger one that was plastered against the iliac fascia and outer part of the inguinal opening. It was this mistake that makes it so essential to expose the iliac fascia.

In another patient I had the following unfortunate experience. I had removed the sac on the left side and found an unsuspected sac entering the internal opening on the right side. I congratulated myself on removing these two sacs from the same opening. In six weeks the patient returned with a direct hernia on the right side. Rightly or wrongly I associated my operation with this new hernia and determined to take Mr. Victor Bonney's advice and adopt Pfannenstiel's method of traversing the abdominal wall.

As an unusual complication I may mention that through the same opening I have removed an appendix from a patient who suffered from appendicitis and inguinal hernia.

2. *Herniae to be Avoided.*

The herniae I would not select for this operation are direct hernia, irreducible enteroceles, hernia in male children under 7 or 8 years, and old herniae in which the internal opening has been dragged down opposite the external.

3. *Herniae to be Selected.*

I would select herniae in females of any age, and all uncomplicated inguinal herniae in males over 7 or 8. I would not exclude irreducible epiploceles.

* Read before the Section of Surgery, Royal Society of Medicine, December 7th.

Mr. H. L. Martyn of Windsor has performed this operation twice for the relief of strangulated herniae—in the inguinal and femoral regions respectively. Mr. Martyn found access to and division of the strictures easy to perform behind the strangulated intestines. He points out the advantage of being able to deal with a resection of the bowel from the same wound at the same time. He also points out that in femoral hernia the abnormal obturator artery would be seen and ligatured before being cut.

I may here say that I have approached femoral herniae by the same method. It has been quite easy. In some cases I have covered the internal opening of the crural canal by turning up a flap of periosteum from the pubes and by turning outwards and upwards a larger periosteal flap from the back of the symphysis pubis. In other cases I have blocked this opening by coiling up into a plug the internal saphena vein, which I dissected from the thigh as far as the knee.

It is too soon to report upon the success of these measures of occlusion in femoral herniae, but all is well so far.

LOOSE CARTILAGE.

BY

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THOSE clinical conditions of the knee-joint variously referred to as "loose cartilage," "displaced internal cartilage," and "internal derangement of the knee-joint," have in the past been a more prolific source of lay antagonism to the medical profession than almost any other delinquency of the human frame. Indeed, the unqualified bone-setter is the offspring of "loose cartilage" and "surgical apathy." Nor is the layman alone in looking askance at surgical methods of treatment for this condition; we have only to recollect the almost reverential awe in which internal derangement of the knee-joint was held by the R.A.M.C. during the late war. A man suffering from this condition was almost invariably boarded out of the service, partly, no doubt, because of the congested condition of operating theatres and the possibility of infection in certain cases, but far more often because "he would never be of any more use in the army."

The treatment of these wrongs is not easy, and the diagnosis is, to my mind, more difficult still; yet such gloomy pessimism should not exist in the mind of many, nor would it survive if it had not a very real foundation on the rock of fact.

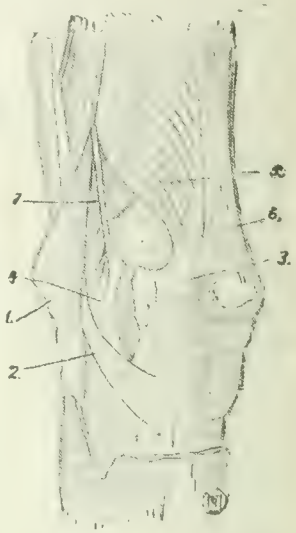
The results of operative treatment for loose cartilage (like all results) are grouped into three large classes: (1) Those cured or much improved; (2) those in whom no change has taken place; (3) those who are definitely worse.

It is with the first class only that I wish to deal here. The cures are in the minority, and in just that type of man which most commonly is the sufferer they are, if not an extremely small moiety, at least nothing like a majority—I refer to the athlete. During the last two years I have made personal inquiries among a large number of patients who have had the internal semilunar cartilage removed. Rugby footballers, cricketers, and soldiers nearly all made the remark, "The knee is better, but of course it will always be weak"; on inquiring this was generally interpreted as meaning "no more football." It may be argued that football should not be the test of a radical cure, yet to my mind the condition is not cured unless the patient can return to his normal mode of life and pleasure.

The clinical condition after operation which prevents the taking of violent exercise is, in nearly every case, an undue laxity of the knee-joint with lateral mobility of the leg on the thigh, and in order to understand how this has been brought about the anatomy and pathology of the condition must be briefly studied.

Anatomy.

The inner aspect of the knee represented in the accompanying drawing of a dissection made by myself in the anatomical department of Cambridge University, shows the various layers which go to make up or strengthen the capsule of this joint. Superficially the fascia lata invests the knee tightly, and when this has been reflected the capsule proper is exposed. This consists of bundles of connective tissue coursing in various directions, and often easily separable into layers and individual structures. Notable is a well-marked crescentic layer of dense fascia derived from the semimembranosus tendon behind and passing across (superficial to) the internal lateral ligament and the fibrous expansion of the insertion of the vastus internus (2). In the drawing it is not as prominent or extensive as I have seen it, and it should have been represented as rising well above the joint line. It is inserted into the subcutaneous surface of the tibia. The fibrous expansion derived from the vastus internus is an integral part of the capsule, and blends with the internal lateral ligament to the medial side. This latter is a ribbon-shaped structure 1 to 1½ in. in breadth, and though its thickest and strongest part passes down from the medial surface of the inner condyle of the femur just below the adductor tubercle, yet it is a much more extensive band of fibrous tissue than is described in textbooks, and extends well forward, where it is in danger of being wounded in the usual incision for removal of the internal cartilage. Furthermore, its intimate attachment to the internal cartilage renders it extremely liable to injury when this is displaced pathologically or removed surgically, the innermost fibres of the internal lateral ligament being torn, or at least stretched, when the internal cartilage parts company from it.



Left Knee. 1, Fascia lata. 2, Slip from semimembranosus. 3, Expansion from vastus internus. 4, Internal lateral ligament. 5, Vastus internus. 6, Internal condyle of femur. 7, Tendon of adductor magnus. (Cambridge Anatomy Dept., 1921.)

Pathology.

The pathology of loose cartilage is of some interest owing to the large number of aliases by which this clinical condition is known. These aliases really hide various stages or types of the same affection.

Practically the term "loose cartilage" refers to a clinical and not a pathological condition. Indeed, it is a most useful term, comparable with that alias for a mild gastritis, a "bilious attack." In practice a true loose cartilage—that is, one detached from all its connexions—must be extremely rare, if, indeed, it ever exists. Broadly speaking, there are pathologically three groups:

1. The unduly mobile cartilage, which after some stress or strain has severed its connexions with the internal lateral ligaments, but remains connected by its anterior or posterior horns and coronary ligaments to the head of the tibia; it tends to become "shunted outwards," resulting in a condition of "knee lock."

2. A partial fracture of the cartilage, which is torn tangentially or transversely to its circumference.

3. A cartilage with one horn detached from its moorings and bent into an abnormal form, or with part of it detached, which may wander about the joint as a loose body.

Be the condition which it may, injury almost always results to the internal lateral ligament—injury which is still further augmented by the consequent synovitis which follows a "knee locking" from the wedging of a detached or semi-detached portion of the semilunar cartilage between the condyle of the femur and the head of the tibia. Repeated or prolonged effusions into the knee-joint will give rise to a laxity of the ligaments and capsule. Those most affected will lie at the point of greatest strain—that is, to the inner side. This is partly by reason of the oblique "set" of the femur on the tibia, and partly because this space between tibia and internal condyle of the femur (normal one-eighth of an inch) will have been forcibly increased by the impaction of a foreign body between them if knee locking has taken place.

Treatment.

The methods of treatment in vogue at the present time consist of removal of the diseased or damaged cartilage combined with careful suturing of the capsule in one layer. As far I know, no attention has been directed towards remedying the lengthened internal lateral ligament, if one may except a caveat uttered against incising it in opening the capsule. This removal, even if it has been performed before the internal ligament has appreciably lengthened after the softening of a synovial effusion, will leave an internal lateral ligament relatively lengthened by one-eighth of an inch, which serves as an excellent starting point for a further actual lengthening, just as an imperfectly removed sac results in a "recurrence" of inguinal hernia, be the sac merely a "dimple" in the peritoneum. In addition, the usual incisions used for removal of the internal semilunar cartilage almost invariably encroach on the anterior fibres of the internal lateral ligament, which is still further damaged thereby. I refer to the curved incision passing to the inner side of the patella and then backwards just below the joint line, or the horizontal one on a level with this internal cartilage. Bearing this in mind, I have during the last two years operated with my eyes turned to the internal lateral ligament as the chief offender in the resultant lack of function of this joint.

Formerly I adopted the horizontal incision, but as this almost invariably resulted in severance of the anterior fibres of the internal lateral ligament, or an insufficient entrance to the joint cavity, I have now returned to the curved incision convex anteriorly.

The skin incision should be large, considerably larger than that which is made through the capsule; this having been found and all bleeding stopped, the internal lateral ligament is defined and thereby protected from damage; if it is so extensive as to reach far forward, its anterior fibres are deliberately divided, and in view of the knowledge of this severance can be united afterwards by separate sutures. The internal semilunar cartilage is then removed in the ordinary way, care being taken not to damage the internal lateral ligament at its attachment to the circumference of the semilunar cartilage, which may need careful division with knife or scissors.

The closing of the wound is the most important part of the operation. The incision through the capsule should be enlarged and the edges of the capsule excised so that at least one-eighth of an inch reduction in its vertical measurement is brought about, the edges are then tightly secured. The internal lateral ligament is shortened in its entirety by two or three mattress sutures, and, finally, the slip of fascia from the semimembranosus is detached from the muscle and swung forwards more vertically to act as an additional stay to the inner side of the joint and attached to the structures to the inner side of the condyle of the femur. If this slip is absent, a strip of fascia lata can be fashioned into an additional superficial internal lateral ligament to assist in the support of the inner aspect of the knee.

The chief points in the operation I wish to emphasize are:

1. The large skin incision, of "flap" form, allowing of the identification of the internal lateral ligament, and, when present, the slip from the semimembranosus.

2. The avoidance of damage to the internal lateral ligament, or the deliberate severance, when it cannot be avoided, of its anterior fibres.

3. The excision of a portion and tightening of the capsule by one row of sutures.

4. The shortening, or even pleating, and, where damaged, the reconstruction, of the internal lateral ligament by a second row of sutures.

5. Lastly, the manufacture of an additional superficial internal lateral ligament.

Passive movements should be begun early, but the leg should not be used to carry the weight of the body for one month, and exercises should be gradually initiated.

As to results, I can only plead that they appear satisfactory. I have only employed this method in some half-dozen cases, and though (as yet) I am quite satisfied with their condition, they have not been as severely tested as I could wish. No vigorous athlete appears among them, and the most strenuous are a railway porter and a policeman, both heavy men, continuously on their feet, and used to a fair amount of sudden turns. The knees are not in any sense lax, and lateral movement of leg on thigh is absent, as in a normal knee.

The most striking result is shown in a man with very lax lateral ligaments who was having repeated attacks of synovitis, and, as he expressed it, need no longer "lead a life in a straight line, but can turn corners with the best." Yet my purpose in publishing this paper is not to presume to teach my surgical superiors but rather to ask for a frank recognition on our part that the condition of loose cartilage has not been blessed by surgical cures in sufficient numbers to warrant a satisfied complacency with the present methods of treatment, and the possibility (it is almost a probability) that treatment of the cartilage itself is not the only procedure necessary for the repair of a damaged joint.

Lastly, I trust that others with more surgical experience of these cases than myself may come forward with criticism or condemnation of the methods advocated above.

THE MODERN DIETETIC TREATMENT OF DIABETES MELLITUS.*

BY

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AT the close of the eighteenth century John Rollo discovered that abstention from starch and sugar benefited the symptoms of diabetes. For more than a hundred years this epoch-making discovery dominated the treatment of the disease. From the middle of the nineteenth century onwards physicians, however, began to realize that glycosuria did not always disappear on a purely animal diet and to recognize the danger of the supervention of acidosis and coma on such a dietary. Towards the close of the century it was discovered that sugar could be derived from protein as well as carbohydrate and that the fats played a vital rôle in diabetes. During the first decade of the present century various observers, such as Naunyn, von Noorden, and Guelpa, recognizing the advantage to diabetics of occasional abstention from protein and fat as well as the starches, instituted periodic fast or semi-fast days. The adoption of these methods met with considerable success, but glycosuria commonly recurred when the former diet was resumed; this was especially the case when, as was customary, the patient afterwards was fed the more generously in the hope of making good the loss of tissue incurred during the period of restricted diet. The main object of treatment was to maintain the patient at the highest possible level of weight and nutrition with the intention of assisting him to withstand a wasting disease. As the result of Allen's experimental work at the Rockefeller Institute, the very opposite object is now kept in view, for we have learnt that the permanent reduction of bodily nutrition is in itself beneficial to the diabetic state.

Minkowski and von Mering in 1889 had shown that complete extirpation of the pancreas in animals caused permanent diabetes; and in 1900 Opie and others demonstrated the association between degeneration of the islands of Langerhans and the existence of glycosuria. Allen based his researches on the assumption that these islands furnished an internal secretion which supplies substances required by the body cells in the metabolism of carbohydrates. In 1913 he reported the results of his attempts to secure a "working model" of the disease by experiments on partially depancreatized dogs. Virtually every detail of clinical diabetes could be reproduced by removing varying proportions of the pancreas in animals, mild or severe diabetes being secured at will. The animals were then rendered sugar-free by fasting; in other words, by affording physiological rest to the external pancreatic secretions associated with the grosser digestive processes, the flow of the more specific internal secretion of the gland was augmented.

These experiments showed not alone why fasting was advantageous, but indicated practical methods for preventing the return of glycosuria when fasting was completed. Diabetic animals which from the outset were kept

* A paper read before the seventeenth South African Medical Congress at Capetown, October, 1921.

on restricted diet remained thin, but were vigorous and lively and continued sugar-free. Others, allowed to eat what they chose, appeared at first much better nourished, but sugar returned and they grew emaciated, cachectic, and finally died. The secret of success lay in keeping the diabetic animal permanently under-nourished and thereby adjusting the total load of the food intake to the lowered capacity of the pancreatic endocrine secretion. Correctly treated animals not alone continued sugar-free, but their tolerance to carbohydrates actually improved; weakened function was restored and strengthened by judicious feeding.

In 1914 Allen[1] applied the results of his experimental work to the treatment of the disease in man. At about the same time Graham, in London, discovered independently by clinical observation the value of fasting, followed by underfeeding. The principles of his method closely correspond to those of Allen, although they differ in details of application. The work of these observers has placed the whole problem of the dietetic treatment of diabetes upon a scientific basis, and affords one of the most notable advances of recent years in the field of medical therapeutics.

General Principles of Treatment.

The object of the modern treatment is twofold: First, to render the patient as quickly as possible sugar-free without producing acidosis or increasing an already existing acidosis. Second, to keep him free by means of a diet adjusted to his lowered assimilative capacity and designed to strengthen that capacity.

1. *Method of Rendering the Patient Free of Sugar and Acidosis.*

Freedom from both glycosuria and acidosis is usually readily achieved by fasting. Since diabetes is a disorder of total metabolism extending to protein and fat as well as carbohydrate, it is necessary—save in the mildest cases, when the restriction of carbohydrate alone may suffice—to withdraw all food materials. By cutting off the entire food intake, as in starvation, the risk of precipitating coma is avoided. On fasting, the main source of sugar is removed by prohibiting the ingestion of pre-formed carbohydrate; the body is consequently made to utilize its own store of sugar, so that, as Poulton[2] points out, there is soon none left to pass out into the urine. The same applies to protein (potential carbohydrate), although the process here takes a longer time to accomplish. Finally, when the tissues have been caused to burn their own sugar, the fat stored in the body is completely oxidized without the formation of acetone bodies as toxic by-products. Acidosis consequently disappears, as a rule, along with glycosuria during fasting.

2. *Method of Building up a Suitable Diet.*

The aim after fasting is successfully completed is to build up a diet which will keep the patient free and at the same time provide sufficient energy for the maintenance of health. This object, which is sometimes immensely difficult of accomplishment, can be reached by different methods.

When the new treatment was first introduced it was believed necessary to investigate separately the patient's tolerance for the individual food elements—first for carbohydrates, next for protein, and lastly for fat. This took a great deal of time and entailed, during the estimation of the carbohydrate tolerance, a relative protein deprivation detrimental to health. Clinicians, in their anxiety to avoid former evils attendant upon a high animal diet, went to the opposite extreme with diets excessive in vegetables and deficient in protein and fat.

Allen[3] now recommends in most cases a diet composed from the outset of almost pure protein. Mosenthal[4] had previously outlined diets predominant in protein, and Fenlon[5] quite recently has advocated a similar method. Graham[6] employs the "ladder diet," in which carbohydrate is maintained at a low level, whilst protein and fat are fixed from the outset at a relatively high level and gradually increased; carbohydrate is added in at the end. This system has many adherents; it is easy of application and yields brilliant results, especially in those milder cases tolerating high protein-fat allowances and reacting badly only to carbohydrates. Quite recently Graham[19] has instituted modifications of his method which would appear to promise even greater success in their clinical application.

In my own experience, based upon the treatment of 30 cases of diabetes, the best results on the whole have been obtained along the lines of the arrangement of diet outlined in Allen's earlier papers[1] and standardized by Joslin in America and by Leyton and Cammidge in England. Broadly, the primary purpose of this system is to learn the tolerance for carbohydrate and cover the protein loss as quickly as possible; fat, usually less urgently needed, is added later as conditions may seem to indicate. The method may be regarded as a compromise between the earliest schemes, involving extended periods of vegetable diet, and the newer plans, entailing possible risks from the stimulating effect upon metabolism of an initially high protein intake. It is simple of accomplishment, and possesses the merit of being applicable alike to mild and severe cases.

Whatever method may be selected, the keynote of treatment is under-nutrition. As Allen[7] has pointed out, the fact must never be lost sight of that any kind of food in excess weakens tolerance for other foods. Consequently the diet must be adjusted carefully with reference to all its constituent elements. Strict adherence to the scheme adopted is essential, for the patient who undertakes treatment and then relaxes his diet is in a worse plight than if he had never been treated.

Application of Modern Methods.

The individualization of the patient is of the highest importance. No two cases of diabetes are alike, and although a basic plan of treatment is essential each case must be managed according to its type of severity. When a diabetic presents himself for treatment the primary step is the careful examination of the patient. The history of his illness, the condition of his organs, and his weight are ascertained. In the scientific study of the metabolic disturbances of the disease diabetes, elaborate methods are required for the investigation of the state of the blood fat, the nitrogen and ammonia content of the urine, the percentage of CO_2 of the alveolar air, etc. In clinical practice, as Joslin[8] has insisted, complicated analyses are not necessary, and it is ordinarily sufficient to examine the urine for the presence of glucose* and diacetic acid. Estimation of the blood sugar is essential and must not be neglected unless laboratory facilities are wholly unavailable.

The required data having been elicited, the patient is advised to enter, if possible, a hospital or nursing home whose staff are familiar with modern dietetic methods and trained in the accurate weighing and measuring of foods.

The patient first of all is made to fast. Allen[9] has shown by experimental observations in animals that light exercise is useful in mild diabetes, whereas it increases the blood and urinary sugar in severe cases. Consequently the patient is allowed to be up and about during the fasting period if his general condition is good, whilst the weak and emaciated diabetic with much acidosis is kept in bed. It is wise, as emphasized by Joslin,[10] not to withdraw all food abruptly. In order to anticipate possible danger from acidosis, a modified diet, with fat excluded, is first of all employed. In severe cases with a strong diacetic acid reaction protein may next be withdrawn for forty-eight hours and carbohydrate food finally eliminated. As a rule, however, it is sufficient to place the patient for forty-eight hours on a mixed diet rendered fat-poor by the exclusion of butter, cream, meat-fat, etc.

The actual fast then follows, mitigated by the administration of tea or coffee (without milk, sweetened by saccharin if necessary), water and soda-water as desired, and a quantity of clear soup (beef-tea, bovril, etc., skimmed of fat) not exceeding 10 to 20 ounces per diem. Actual hunger is allayed by the use of substances such as biscuits made of agar or bran, which are practically devoid of nutritive contents. Alcohol to the amount of from 1 to 2 ounces daily may be allowed during the period of meagre diet, although its use is not approved by all authorities.

* As Graham[19] points out, in using Fehling's test equal quantities of urine and mixed solution should be boiled separately, mixed when boiling, and not reheated.

Fasting is continued until the urine is sugar-free, and for at least twenty-four hours afterwards. The duration of the fast should be determined, where possible, not alone by examination of the urine, but by the measure of the sugar content of the blood. Hyperglycaemia frequently persists after the urine is free. Tests based on glycosuria alone, as Allen[3] has shown, may yield a false standard subject to considerable error on account of the wide variations of renal permeability. For this reason the fast is extended to a period of not less than twenty-four hours after the urine is free, when the blood sugar as well may be hoped to have reached the normal. Leyton[20] states that the disease is not arrested unless the diet is reduced until the blood sugar is normal.

The disappearance of sugar indicates that the overtaxed internal secretions of the pancreas have been sufficiently restored by alimentary rest to permit the complete assimilation of sugar formed from the body tissues. It is expected that later, by judicious exercise, these functions will further become strengthened and able in addition to utilize the sugar contents of a carefully adjusted diet.

A mild case will become free in twenty-four hours; in severe cases the process may occupy many days. Allen[11] originally employed continuous fasts, extending in some cases to as long as ten days. Joslin[12] shortly afterwards substituted the more universal method of intermittent fasts, restricted to three or four consecutive days, interrupted by a few days of low carbohydrate-protein diet, and repeated if necessary. This alternate process of limited fasting with interpolated food days may require several repetitions before freedom from sugar is produced. Attainment of the aglycosuric state is accompanied by prompt cessation of the more distressing symptoms of diabetes, such as thirst, dryness of the mouth, polyuria, excess of appetite, pruritus.

Usually the diacetic reaction disappears together with the sugar. Some moderate diabetics exhibit slight persistence of this reaction so long as they are starved. This may be disregarded, for it will usually cease when feeding with carbohydrates is begun and nutrition reaches a certain level. Once the patient is free there follows the infinitely more difficult task of arranging his subsequent diet. The first step is to introduce carbohydrates, which even the severest diabetic retains some power to burn. This is best done by allowing a limited quantity of green vegetables, such as French beans, spinach, lettuce, or other "greens" (see Table B, Group 1). These are poor in nutritive value; when cooked three times in different waters they contain less than 2 per cent. of carbohydrate. At the same time they are rich in cellulose, which furnishes a comfortable feeling of fullness and stimulates intestinal peristalsis.

The first addition to the diet, then, is made in the form of from 5 to 10 or 15 oz. of thrice-cooked greens, each ounce of which represents approximately one gram* of carbohydrate. This ration is increased by 5 to 10 grams daily until sugar appears. In order to avoid the risk of sudden flooding of the tissues it is necessary to divide the food and distribute it in three or four portions during the day (for instance, at breakfast, lunch, tea, and dinner). Occasionally glycosuria will recur immediately vegetables are introduced; this phenomenon, which probably is the result of unpreparedness of the tissues for a carbohydrate influx, need not be viewed with alarm, since it ceases as a rule on increasing the quantity of this food. A very few diabetics, according to Joslin,[12] reach a daily tolerance level of between 200 and 300 grams of carbohydrate; most have a tolerance below 100 grams; the majority below 50 grams. In severe cases the attainment of a tolerance of between 40 and 50 grams may be considered satisfactory, provided a sufficient tolerance for protein and calories is at the same time achieved.

On the third day, whilst the carbohydrate tolerance is still being tested, about 20 grams of protein are added to the dietary. Three eggs will furnish this quantity. A further daily addition of 10 to 20 grams is made in the form of other predominantly protein foods, such as white of egg, lean meat, fish, etc. The increase is maintained until the patient receives from 1 to 1½ grams of protein per kilogram† of his body weight. Thus a patient weighing 110 lb., or 50 kilos, would be allowed some 50 to 70 grams of protein daily, provided he remains sugar-free. Some severe diabetics are unable to tolerate so high a level of protein, and will develop sugar on an excess of this food material as surely as on an excess of carbohydrates. The adjustment of the protein allowance consequently must be carefully made.

A small amount of fat has of necessity been included in the food during the process of building up the protein allowance, but until a relatively high carbohydrate ration is reached this element is restricted in order to minimize any tendency to the production of acetone bodies. When, however, the protein limit has been approached a sufficient carbohydrate standard reached, and the blood sugar is normal, fat as such is introduced into the diet. It is convenient to commence with an ounce of thin cream (containing 6 grams of fat). Thereafter from 10 to 20 grams of fat are added daily in the form of butter (containing some 25 grams to the ounce) and other predominantly fatty foods. Daily additions are made either until the body weight becomes stationary, or until the total caloric value of the diet reaches a level of about 25 calories‡ per kilogram of body weight—provided that sugar does not recur and there is no increase in acidosis. Cammidge[13] recommends that the final proportion of fat to carbohydrate in the diet shall not exceed a ratio of two grams to one.

An excess of total calories is the commonest mistake of inexperience, and is responsible, as Allen[3] states, for much unfavourable progress and mortality in diabetes. The patient, who has grown thin during treatment, is generally anxious to put on flesh by increasing his fat intake. This desire must be curbed lest any good results hitherto achieved should be completely nullified. As Geylin[14] points out, apart from immediate ill effects such as the possible precipitation of acidosis, fat exerts a depressing effect on carbohydrate metabolism and prevents a high degree of tolerance being maintained. These effects are the more dangerous in that they may be delayed and insidious in onset. Many a patient who up to this point has reacted well will relapse if he is permitted an excess of fat. Allen[15] has shown experimentally that the assimilative powers of diabetic animals rise and fall inversely with a gain or loss of weight dependent upon fat ingestion. In some manner an increased fat supply or formation of adipose tissue imposes a burden on the functional capacity of the islands of Langerhans.

It follows that although sufficient fat should be allowed to prevent further loss of weight, or even to permit of a gain of a few ounces per week, any material increase in weight which recalls sugar or acidosis must be checked by fasting. The patient must be schooled to accept the spareness of permanent under-nutrition as a substitute for the emaciation of disease. In most cases he will ultimately tolerate a greatly increased carbohydrate intake if his fat is kept low.

Throughout the treatment a twenty-four hours' specimen of urine is examined daily, and the return of the slightest trace of sugar is a signal for fasting. Usually a single fast-day will suffice to clear up the sugar. The diet thereupon should comprise not more than 50 per cent. of the food contents consumed just prior to the relapse. Further additions are cautiously made, and the maximum intake restricted for weeks to a level of from 10 to 20 per cent. lower than that previously reached.

During the course of treatment, and after its completion, the patient is subjected to a restricted diet on one day in each week. He is required to fast on every seventh day if his condition is severe, or merely to reduce his food to half-rations if the case is a mild one.

It is clear that the details of treatment must vary in accordance with the type of disease. Great difficulties are experienced in the treatment of the extremely emaciated and cachectic patient. It may be necessary, as Allen[1] expresses it, in such cases to juggle carefully the various factors of glycosuria, acidosis, and bodily maintenance. In some a prolonged period of almost pure protein nutrition may be required before the pancreatic function is sufficiently restored to permit the assimilation of even so small a quantity of carbohydrate as 10 or 15 grams without the return of glycosuria. In others, the supply of

* 30 grams = 1 oz.
† 1 kilogram = 2·2 lb.

‡ A calorie = the amount of heat required to raise the temperature of 1 kilo of water 1° C.
1 gram carbohydrate = 4·1; 1 gram fat = 9·3; 1 gram protein = 4·1 calories.
In practice it is convenient to ignore the decimal places.

pancreatic hormone may be inadequate to dispose of the minimum supply of food materials—namely, those derived from the patient's own body stores; glycosuria under these circumstances is beyond control. Again, in the severest forms of diabetes the patient may be unable to tolerate sufficient fat in his diet to subserve the needs of a comfortable existence, whatever the proportion of other food materials tolerated. In such cases although, as Janney[16] points out, the only danger-free existence for a diabetic is a sugar-free existence, the persistence of a moderate degree of glycosuria is preferable to a condition of chronic starvation.

Fortunately a course of dieting, conducted broadly on the lines described, in the great majority of instances will achieve brilliant results in a few weeks. As Joslin[21] says, there are now few cases of diabetes for whom little hope remains. The earlier in the disease treatment is begun the better will be the results. In many cases of young diabetics formerly pronounced hopeless, with an expectation of only a year or two of life, the patient after treatment is able to resume his ordinary routine of existence with an increased tolerance for starchy foods. His symptoms are relieved; he regains energy, resistance, and a sense of hopefulness and well-being. His life is prolonged, and risks from the common diabetic complications of gangrene and coma are greatly diminished. He is provided with a dietary offering a wide range of variety which robs it of monotony. His food intake, it is true, is restricted as to quantity; but it is known that the diabetic can lead an active life, maintaining his weight, on much less food than a healthy person of the same weight.

An important factor in treatment is the education of the patient in the rationale of the methods employed. His intelligent co-operation is essential at all stages. As Leyton[17] says, the patient below a certain standard of intelligence and possessing no self-control cannot be treated. The intelligent patient is readily taught to examine his own urine and to fast if sugar recurs at any time. He is instructed in the elementary principles of dietetics and the significance of food values. He is shown how his rations are weighed and measured and learns to estimate with sufficient accuracy his food portions, so that he is able after a time to dispense with weighing scales. He is given a limit which he must not exceed with regard to the various food elements. This limit, in order to provide a margin of safety, is placed at some 10 to 20 per cent. below the actual level he has been found capable of tolerating. Lists are supplied to him (see Tables A and B) showing the food value of the commoner articles of diet and their interchangeability. From these he is taught to select his menus within the limits prescribed. Finally, he is told not to gain weight but to follow a dietary just sufficient to cover his body needs as indicated by the weighing machine.

Prognosis.

Under former systems of dieting none but the mildest cases were rendered sugar-free for more than very brief periods. Even moderately severe diabetics, in spite of the most rigorous carbohydrate restrictions, remained glycosuric and subject to constant danger from gangrene or coma. The immediate outcome of modern methods is the arresting of the progress of the disease with consequent prolongation of life, whilst the risk of disastrous complications is enormously lessened. Acute diabetes has been largely abolished.

Of ultimate results it is too early to speak with certainty, for the method is yet in its infancy. When the new treatment was first introduced it was hoped that if the patient could be kept sugar-free for a prolonged period tolerance would gradually improve and approximate the normal. In mild diabetes this expectation appears to be justified in the case of experimental animals; in the case of the human diabetic the point is still undecided, and many years of observation will be needed before it can be settled. So far as the severer type of human diabetes is concerned, sufficient data are available already to show that the immediately favourable results are not always permanent. In some grave cases, in spite of most careful dieting and the avoidance of overstrain from an excessive food intake, the disorder is clearly of an inherently progressive character and spontaneously advancing. Even in mild cases which have remained well for years under treatment, the supervention of intercurrent conditions such as septic infections, influenza, pyorrhoea, or even trivial ailments and emotional disturbances, may produce metabolic set-backs of a grave and permanent character not amenable to further fasting and suitable dieting.

The modern dietetic treatment of diabetes is not a cure in the true sense, since it represents the sparing rather than the restoration of a weakened function. As Allen[18] says, "Any positive means of augmenting the endocrine pancreatic function even by a little would give therapeutic results far surpassing those of the negative plan of sparing the function by diet." Some day we may hope to be able to stimulate or strengthen the pancreatic function in a direct manner, and so to supersede palliative measures by actual cure.

TABLE A: GENERAL.

	Carbohydrates Grams.	Fat. Grams.	Protein. Grams.	Calories.
1 oz. greens	1	—	0.5	6
1 oz. oatmeal (cooked) .	5	0.5	1	20
1 oz. milk	1.5	1	1	20
1 oz. thin cream	1	6	1	60
1 oz. butter		25	—	225
1 oz. fat	—	30	—	270
1 oz. bacon (average .	-	15	5	155
1 oz. meat (lean		3	8	60
1 oz. ham (cooked) . .		7	6	90
1 oz. fish	--	—	6	25
1 oz. sardines (tinned) ..	--	6	7	80
1 oz. broth (clear) .. .	—		0.7	3
1 oz. bread (white)	15	0.5	2	70
1 egg (hen's)	—	5	6	70
1 oz. white of egg ...	—		4	16
1 oz. calf's foot jelly .	5		1	25
1 oz. Dutch cheese ..	1	5	11	95
1 oz. Cheddar cheese	1	13	9	160
1 oz. almonds	5	16	6	200
1 oz. walnuts (dry) ...	3	25	6	280
1 oz. alcohol	—	—	-	200

TABLE B: VEGETABLES AND FRUIT.

GROUP I.—*Containing average 1 gram carbohydrate per ounce:*
French beans; spinach; asparagus; seakale; brussels sprouts; cabbage; cauliflower; vegetable marrow; pumpkin; lettuce; cucumber; celery; watercress (cooked) tomatoes, rhubarb.

GROUP II. *Containing average 2 grams carbohydrate per ounce:*
Onions;* turnips;* carrots;* artichokes; leeks; radishes; watercress (raw); beetroot;* mushrooms;* lemons; strawberries; water-melon; peaches; oranges; pineapple.

GROUP III.—*Containing average 3 grams carbohydrate per ounce:*
Green peas; broad beans; macaroni; apricots; pears; apples;* nectarines; cherries.*

GROUP IV.—*Containing average 5 grams carbohydrate per ounce:*
Boiled potatoes; haricot beans; rice; fresh figs; bananas; plums; grapes.

* Show wide seasonable variations in carbohydrate content.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CONSERVATIVE TREATMENT OF COMPOUND FRACTURE OF THE ANKLE.

Of the many lessons useful to civil surgery taught by the war those concerning amputation have a most practical bearing on everyday life. The most ingenious devices of the instrument-maker, aided by the most painstaking co-operation of the patient, yield but a poor result when compared with a living limb. Whenever possible, therefore, conservative methods should be adopted. Sepsis and shock rendered this impossible in the great majority of war cases—a fact appreciated after an initial failure of attempted conservation. In civil life these two factors enter into the prognosis to a minor degree.

My apology for the following detailed account of a somewhat commonplace case is the desire to emphasize the value of conservative measures.

History.—Mrs. F., aged 31, was admitted to the Royal Portsmouth Hospital on April 15th suffering from a compound Pott's fracture-dislocation of the right foot. The injury resulted from a fall down a flight of stairs on the previous evening. Her medical attendant had immediately, under an anaesthetic, ligatured bleeding points and dressed and splinted the limb. His opinion and that of his colleague was that amputation was imperative.

Preparation.—Two hours was given for the patient to overcome the effects of a long ambulance journey. Then under general anaesthesia the skin was cleaned successively with turpentine, methylated spirits and ether, and finally painted with 2 per cent. iodine. Inspection revealed the injury as a clean "split" of the skin from the outer border of the tendo Achillis posteriorly to the neck of the astragalus anteriorly, at the level of the malleolus on the inner aspect of the foot. The deltoid ligament was ruptured together with the tendon sheaths; the tendons were displaced. The internal malleolus was fractured 1 in. above its tip. The lower quarter of the fibula was shattered. The whole foot hung hinged on the outer skin flap and tendons so that when everted the lower end of the tibia projected from the wound. The posterior tibial artery was uninjured.

Operation.—The joint was irrigated with mercury perchloride 1 in 3,000, the edges of the wound excised, and fragments of fibula removed as far possible. The foot was inverted, the tibial fragments opposed, and retained by a triradiate plate placed as an upright Y. The joint was irrigated with hydrogen peroxide and finally with saline. Interrupted catgut sutures were used to close the joint cavity as completely as possible. The tendons were sutured in position. The skin was closed without drainage.

After-Treatment.—A posterior angular back splint was applied. The wound was dressed on the fourth day. There was a slight breaking down of the wound immediately over the plate with some sero-purulent discharge; 1 per cent. picric acid dressings were used, and the temperature never rose above 99.8°. Passive movements were carried out from the fourth day, and active movements encouraged from the tenth day. On June 6th movements through twenty-five degrees were possible; the plate was still quite fixed, but healing over it was slow. I removed the plate. Progress was now rapid. A small sinus opened on the outer side of the foot and some fibular sequestra were discharged. The patient was discharged on July 2nd and attended as an out-patient. At the present time the foot is quite healed and movements are excellent. The last *x*-ray examination showed no further fibular sequestra.

In this case amputation was expected. I held a faint hope that an ankylosed joint might be attained, and then the result—a mobile joint with no shortening. The success I attribute to very careful skin preparation, antiseptic joint irrigation, and strict aseptic dressing during the tedious and prolonged after-treatment.

I am indebted to Mr. C. P. Childe for permission to publish this case.

London. R. STAFFORD FOSS, M.B., B.S., M.R.C.S.

EMETINE IN JAPANESE BILHARZIA DISEASE.

THE Japanese medical officer in charge of ss. *Panama kawu*, which was visiting Durban on October 1st, 1921, informed me that he had had three patients suffering from the effects of *Schistosoma japonicum* infestation on board, and that he had successfully treated them with emetine injections, giving from a half to one and a half grains on alternate days over a period of about one month. This is confirmatory evidence of the value of emetine injections in schistosome infestation, and I have already observed the degenerative changes characteristic of the antimony treatment in ova obtained from the urine of patients in Natal who harboured three distinct species of schistosome. However, I think a word of warning is needed in regard to the severe cardiac depression which is likely to occur during the second or third week of the emetine treatment, especially if emetine is tried, as it deserves to be tried, in comparison with the antimony treatment for lepers.

Durban. F. G. CAWSTON, M.D.Cantab.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.

AT a meeting of the City Division of the Metropolitan Counties Branch, held on November 18th, Mr. A. W. SHEEN, Professor of Clinical Surgery in the University of Wales, delivered a lecture on "Visceral displacements as a cause of disease."

The lecturer said that he would endeavour to make the subject interesting to the general practitioner, and would deal with it particularly as indicating lines of research available to him. He pointed out that the investigation of every new patient was a piece of original research, and indicated the sharp difference of opinion which existed as regards the importance of visceral displacements as a disease-producing factor, referring particularly to the work of Sir Arbuthnot Lane and to a recent paper by Lord Dawson. The possible causes of visceral displacements and their relation to disease were dealt with seriatim under the headings of developmental abnormalities, body shape, gravity, Lane's hypothesis, infections, and—as lesser factors—bad food, bad habits, bad hygiene, and neuropathic conditions. Details were given of the opposite view that displacement might exist without disease and disease without displacement, and this portion of the subject ended with an expression of the belief that congenital abnormalities *plus* gravity *plus* infection were the most important factors in disease production, others being secondary. A description was next given of the disease due to visceral displacement, which the lecturer considered could be recognized as a definite clinical entity, a condition of "indigestion" with malnutrition, having local abdominal symptoms and signs of general toxaemia. Toxaemia was the lot of all, a sterile alimentary tract becoming infected at birth; henceforth life was maintained by a precarious balance of toxins and antitoxins, and a sterile bowel might go far towards conferring immortality. The *x*-ray findings after opaque meals were described and the results of "biopsies" at operations given.

Treatment, non-operative and operative, was next considered: under the former heading aperients and a supporting belt were approved; under the latter fixation operations directed particularly to the large bowel. Non-operative measures were advocated in older people. The lecturer related his personal experience, especially in reference to a number of pensioner patients whose large bowels he had fixed by the methods of Waugh and Coffey. These patients had been idle for years, and in and out of various hospitals; many had had other operations. Of a considerable number particulars had now been obtained, and all but one of these patients were working. He also mentioned a few cases of colectomy which he had performed, and, although the results were good, he did not advocate the operation, pointing out that after colectomy there were cases which neither died nor recovered, but became subject to irremediable abdominal misery. The utility of the large bowel was shown, *inter alia*, by the biological researches of Colin Mackenzie. *X*-ray observations of opaque meals given to twelve old men were described. These were healthy labouring men working at the time, their ages varying from 68 to 80, the average being 75. In not one was the colon grossly displaced. Methods of observation similar to this were indicated and advocated. The disease was not peculiar to people in whom bad food, bad habits, bad hygiene, and nerve abnormalities might be supposed to have set up neuro-muscular defects in the bowel. It occurred in all sorts of people, although different classes reacted differently.

Appendicitis was a separate disease. Pyorrhoea was a primary infection. The incidence of tuberculosis depended

more on the degree of acquired immunity of the individual than upon alimentary toxaemia. Gastric and duodenal ulcers, troubles in the biliary tracts, and mobile right kidney were usually secondary effects of visceral displacements. In conclusion, Mr. Sheen spoke of research, stating that the disease was within the every-day experience of practitioners, and that their investigations thereon were as worthy of financial aid as laboratory research. He indicated the various lines on which such investigations might proceed.

Reports of Societies.

THE ORIGIN OF THE ANGINAL SYNDROME.

A DISCUSSION took place at the Harveian Society on December 8th, with Dr. G. DE BEC TURTLE in the chair, on the question, "Is the anginal syndrome of cardiac origin only?"

Sir CHARLTON BRISCOE put forward the thesis that angina might be due to respiratory stress. After drawing attention to the clear-cut nature of the picture in angina and the large number of cases which lay between the true angina and the so-called "false" angina type, he proceeded to develop the following propositions:

1. That the causes of an attack of angina were such as to place a strain upon the respiratory apparatus just as much as upon the circulatory.
2. That no adequate explanation was forthcoming for nocturnal attacks on the theory that the condition arose from circulatory stress.
3. That such attacks were more consistent with a theory of respiratory origin.

When over-fatigued, the skeletal muscle gave rise to referred pains, and this was true of the muscles acting on the upper respiratory apparatus. The triangularis sterni when tender and tested by pressure referred the pains through to the back of the sternum or outwards to the axilla, according as the stress fell during expiration or inspiration. The scalenes and intercostals of the first five spaces referred the pains to the arm, shoulder, or anterior axillary region, and less frequently to the occipital region, anterior triangle, or sternal area. The composite referred areas of any of these muscles presented a picture which would satisfy the referred areas found in typical cases of angina pectoris. The anterior scalene—under ordinary circumstances the most constant muscle in inspiration—was the most prolific in referred pains.

The speaker then went on to point out that instantaneous relief was possible in a considerable number of cases when assistance was given to the expiratory muscles of the upper thoracic segments. This action might be explained on the ground that it increased the activity in the lower part of the respiratory apparatus—that is, at the lower ribs and abdomen. He showed a simple mechanism which had proved satisfactory in many instances. It consisted of a spring inserted into a broad piece of webbing, which was used to strap the chest.

By means of a tracing he illustrated how the tender triangularis produced a marked thoracic elevation due to contraction of the scalene muscles, which did not relax fully in expiration, and he regarded this as a possible explanation for the spread of pain in an anginal attack. The pain in the neighbourhood of the sternum resulted from stress of the triangularis sterni, which caused increased action of the scalene elevating the thorax, with the consequence that pain was appreciated in the arm, while the gripping in the throat was the result of pain arising from the non-relaxation of this muscle in expiration. These referred pains were found in different types of cases—from true angina to the group of conditions of which asthma, thoracic neoplasm, and chronic bronchitis were representative.

His general conclusions were that fatigued muscles gave rise to referred pains; that the upper respiratory mechanism was excited under the same conditions as were usually associated with anginal attacks (in two of his cases anginal attacks had followed stimulation of these muscles); that the respiratory muscles, when tender, referred pains to those areas which were constantly affected in angina pectoris, and that treatment based upon the hypothesis of muscular strain had proved effective in relieving pain. The progressive ossification of ribs and cartilages, thereby increasing the work of the affected muscles, might explain why the respiratory stress arose at the time of life when angina pectoris commonly occurred.

Sir SYDNEY RUSSELL WELLS said that it almost seemed as if the purely cardiac explanation of angina was becoming discredited. Not only had Sir Charlton Briscoe assailed it from one side but a recent book had assailed it from another, the author declaring that angina was entirely of gastric origin. The arguments brought forward that evening were certainly convincing so far as they showed that there was some connexion between pressure of the muscles referred to and the pains in angina pectoris. It had been definitely shown that there was a sensory reflex between these tender muscles on the one hand, and the areas in which there were painful sensations in angina pectoris on the other. One difficulty, however, was that pressure over so many areas seemed to produce exactly the same series of painful impressions. The suggestion that the condition originated in the fatigue of these respiratory muscles appeared to be negatived to some extent by the fact that in angina pectoris, as a rule, there were very few respiratory symptoms. It had been distinguished by many observers as one of the characteristics of angina pectoris, as apart from other forms of cardiac trouble, that it was not accompanied by dyspnoea. Might not the irritation of these muscles be brought about by pathological processes which also affected the vessels? In grave degenerative diseases of the arteries it was not only the aorta which was affected, and it was quite conceivable that the widespread changes which went on in the chest set up an irritable condition of the muscles and brought about these reflexes. He would like to consider further the arguments brought forward before committing himself to a decided opinion, but he had the feeling, in spite of all that had been urged, that the cardiac origin of angina pectoris was not altogether disestablished.

Sir JOHN BROADBENT commented upon the entire absence of all reference to any disease of the heart in the cases which Sir Charlton Briscoe had brought forward in support of his contention. He did not gather that this respiratory spasm could produce a sudden stoppage of the heart or anything which might bring about sudden death. He had always regarded angina as a warning pain sent out by the heart as an indication that a little further effort would bring it to a standstill. Mackenzie attributed angina to a failure of contractility. It was a danger signal which caused so severe a commotion that very often a biggish dose of morphine was needed to stop it. Supposing the spasm of the muscle was a danger reflex, one could understand how strapping and reduction of the spasm would, on the theory now propounded, relieve the pain, but he failed to see how a strapping of the chest could prevent a danger signal from the heart due to failing contractility on increased exertion, and after all, it was an advantage to get this danger signal rather than that the heart should stop suddenly without warning. He admitted that the pathology of this referred pain was not very easy of explanation. It was not easy to say that one common cause, like failure of contractility, whether from insufficient blood supply or the weakening of the muscle by degenerative change, could account for it. An abdominal angina had been described by many authors, and was said to be a very severe radiating pain, somewhat like tabetic crises, and in many of the cases brought forward the pain might be that of abdominal angina or a severe gastric pain.

Sir WILLIAM WILLCOX said that the society must feel somewhat astonished at having so novel a view of angina pectoris brought before it. Sir James Mackenzie, in his most interesting explanation of angina pectoris, had said that the characteristic gripping pain was caused by spasm of the intercostal muscles, though he did not specifically mention the triangularis sterni. The discussion might really turn upon the question of which was the cart and which the horse. Was the contraction of the respiratory muscle as the sequel of an anginal attack the explanation of the pain, or was the pain caused by the contraction of this respiratory muscle as the primary condition? He confessed that he could not accept offhand the new theory, fascinating as it was. There were several points upon which it appeared to fail at the test. If fatigue

of the respiratory muscles explained the causation of angina pectoris, why were there not attacks of angina pectoris in lung conditions where there was continued over-exertion of the respiratory muscles? The theory did not explain the part which was played by disease of the coronary vessels, of the myocardium, and of the aorta in angina pectoris, as illustrated in the tragic cases which they had seen so frequently. Then, again, if the theory was correct that fatigue of the respiratory muscles caused anginal pain, why should not oxygen relieve the anginal attack, seeing that oxygen presumably would give rest to the respiratory muscles? For his own part he still adhered to the cardiac and aortic explanation of angina pectoris, although Sir Charlton Briscoe's arguments had been most instructive, and had shed a great deal of light on many of the obscure phenomena in this disturbance.

Dr. A. BLACKHALL-MORISON recalled that twelve years ago he had opened a discussion in the same society on this subject. In that discussion it was stated that William Stokes had declared positively that in the course of his long life he had never seen a single classical case of what he understood was meant by angina pectoris, although he had seen many cases of what he called anginal dyspnoea and distress. There was probably little difficulty in coming to a conclusion when one met with a case of true angina, which had a very definite character. In his own experience one clinical fact which he had noticed with great frequency was that after attacks of what was called, perhaps inadequately, true angina, there was a very remarkable and persistent fall in blood pressure. It was in cases of angina minor that dubiety arose as to whether the various pains of the individual concerned did or did not point to a serious condition. It was pretty generally admitted now that afferent influences reached the spine from the viscera. These minor cases had frequently to be watched with great care; no doubt there were some which were dependent on the stomach. He was afraid he must place himself amongst those who had expressed a preference for the older explanation, and he was very sceptical of peripheral manifestations of pain.

Dr. H. W. WILTSHIRE said that the absence of any exact definition of angina added to their difficulties. Sir Charlton Briscoe had evidently used the term in a very broad sense indeed, to include most attacks of a paroxysmal kind, but he thought that that broad use of the term had been justified that evening. In the general ignorance with regard to this condition it was not wise for clinicians to tie themselves down to an over-exact and limited use of the term. Sir Charlton Briscoe had referred mainly, not to major angina, but to those cases of less pronounced character, which, although they did not loom very largely in the textbooks, were met with very frequently in practice, where they caused much perplexity. He had not gathered that Sir Charlton Briscoe meant to claim that all angina was due to respiratory stress, but only that some anginas might be so explained. The facts which he had brought forward were certainly highly significant. He had told them that these muscles sometimes became tender, and, when tender, caused referred pains over wide areas, but that on applying pressure to the muscle in some cases the patient was able to recognize the pain caused as being his own particular breast pang. The speaker could bear that out; he had seen the same thing. Sir Charlton Briscoe had also said that pain of such a nature as would be classed as angina could be relieved by lateral thoracic pressure, and that again was the experience of the speaker. He was not going to give up the cardiac explanation for many anginas; he did not think that Sir Charlton Briscoe would claim to have solved the whole riddle, but only to have furnished some facts with regard to those cases which could not be exactly labelled or docketed, and in so far as he had done this he had helped the rest of them a stage nearer the truth, which had been obscured by the large collection of cases not to be exactly placed. In the meantime, in the present state of our knowledge, it would be safe to conclude that angina was not necessarily only a cardiac phenomenon.

Dr. W. W. STOCKER, speaking as a general practitioner, said that the discussion had made his mind more confused on the subject than before, although he recognized that there was much food for thought in what had been said. He wished Sir Charlton Briscoe would tell them whether the prognosis in the cases of angina caused in the way he had suggested was as grave as in the true angina of cardiac origin.

Sir CHARLTON BRISCOE, in replying to the discussion, said that in answer to Sir William Willcox's challenge to express his own views on the subject, he wished to state emphatically that he did not claim to have proved that the anginal syndrome was solely a respiratory phenomenon. He considered that his explanation of the cause of the pain was based on firmer grounds than that of previous authors. The conviction that angina was solely of circulatory origin was firmly fixed in the minds of the profession; so firmly, that in reading through monographs on this subject he found that practically no mention was made of any organ of the body other than the heart and the aorta in the *post-mortem* reports on cases dying during an attack. A consideration of any alternative view was considerably hampered by these omissions. At the same time, the differences recorded in the blood pressure relative to antecedent and subsequent observations, in the size and rate of the pulse, in the account of flushings or pallor of the face, sweating, and so forth, during observed attacks were remarkable. The two most constant phenomena were the pain and the fact of some unusual incident referable to respiration. The latter was interpreted as being dependent upon circulatory disturbances and no recognition was taken of the fact that it might possibly be the primary cause of the condition. In general, it was possible to explain the causes of an attack on a respiratory theory equally well or better than on a circulatory. In most of the conditions in which the main vessels showed serious deterioration similar phenomena might be anticipated in the smaller vessels supplying the various muscles. Possibly in the triangularis sterni more than other muscles, for it was, like the heart, one of the muscles constantly at work, contracting probably more than fourteen times a minute, Ischaemic conditions of the respiratory muscles might be expected to produce pains similar to those in an intermittent claudication. He was inclined to think that the true severe anginal attack should be regarded as the most acute type of a series in which the so-called hysterical attacks represented the mildest form.

Sudden death on the basis of the respiratory phenomena put forward was quite explicable on the following grounds. The right auricle was supplied with blood by two mechanisms—first, the negative pressure in the chest consequent upon inspiration; secondly, positive pressure in the abdomen resulting from contraction of the abdominal muscles countering the descent of the diaphragm. With the marked upper thoracic type of breathing, whether natural or spasmodic, the tone of the abdominal muscles was diminished or absent. The alternative mechanism of blood supply—negative pressure in the chest—was therefore acting alone, and if diminished, as by respiratory standstill, and as the general accounts of an anginal attack suggested, the natural sequence would be considerable diminution, if not suppression, of the blood supply to the right heart. This would account for facial pallor and for alterations in the pulse. The effect would be far greater where the main circulatory organs were markedly diseased. He considered that the whole question of the mechanism of the attack should be viewed with a healthy scepticism.

LIGATION OF THE INNOMINATE ARTERY.

AT the meeting of the Section of Surgery of the Royal Society of Medicine on December 7th Sir CHARLES BALLANCE discussed the ligation of the innominate artery, and described in detail four cases in which this operation had been successfully performed for aneurysm of this artery (aneurysm of the bifurcation); he also showed lantern views to illustrate the technique. He said that a clear appreciation of the anatomy of the region concerned was of the first importance in the performance of the operation. From the anatomical point of view the ligation of the innominate artery was a cervical operation by no means difficult of performance. There was no risk of injury to the pleura if the artery was approached from the front and from the tracheal site, and if the knife was not used outside the limits of the pulsation area. But from the pathological and operation standpoints he had found that it was necessary and desirable to remove bone so as to obtain a clear and free exposure. Each case required a different plan of operation, and his illustrations showed

the sections of bone removed in the four cases which he took as his text. As soon as the left innominate vein and the upper border of the arch of the aorta were defined the rest of the operation was fairly easy. Whenever bone removal was decided upon it could be safely accomplished if the fingers of the left hand were inveigled into the superior mediastinum so as to protect the structures therein from injury. When the bone had been removed the edge of the pleura could be pushed to one side by stroking with wet gauze. Sir Charles Ballance laid particular stress on four points: The first was that cases about to be submitted to this operation should not be previously treated by the method of Valsalva. The second, that there was a group of cases of aneurysm of the innominate artery (aneurysm of the bifurcation) which were suitable for proximal ligature. Distal ligature caused the aneurysm to become a diverticulum of the aorta, and so increased the pressure within it; this procedure should not be followed when proximal ligature was possible. His third point was that the presence of aneurysms necessitated the removal of a part of the sternum in order that a free and clear exposure of the vessel below the aneurysm might be gained. Finally, the ligation of the innominate might be safely and surely accomplished if the ligatures were tied in a stay-knot without rupturing the coats. While he would not magnify the difficulties of the operation, he could not quite accept the gay comparison of the late Sir W. Mitchell Banks, who said that in contrast to the ligation of the first part of the subclavian artery, the ligation of the innominate artery was a "surgical amusement."

Sir CHARTERS SYMONDS said that it had not fallen to many of them to ligature the innominate artery, apart from wounds in war, but he recalled one such operation which he did some years ago. The case was an aneurysm of the subclavian which raised the clavicle and filled the posterior triangle. On carefully studying Sir Charles Ballance's recommendations published at that time, it seemed to him a case in which he might ligature to the first part of the subclavian. Therefore he divided between the head of the sterno-mastoid and passed an aneurysm needle round the artery. For some reason which he did not understand there was a furious rushing of blood, with considerable noise. He withdrew the needle and it ceased, and on repeating this manœuvre the same thing occurred again. He then incised the sterno-mastoid and exposed the innominate, which he secured with floss silk, and the patient got well and the aneurysm dwindled. Afterwards the old sac suppurated, but notwithstanding this the patient made a good recovery and lived for some years. In the war one had to ligature the innominate artery on various occasions, but there the anatomical conditions, if the operation was taken in hand early enough, were such that it did not seem necessary to remove part of the sternum. If the sterno-clavicular region was quite free from the aneurysmal sac, it seemed to him that to adopt the method of incision inside the sterno-mastoid and draw to the carotid gave one a fair opportunity.

Sir CHARLES BALLANCE said that he did not recommend the removal of part of the sternum for subclavian aneurysm, but only for cases of aneurysm of the innominate (aneurysm of the bifurcation). Asked by the President of the Section (Mr. RAYMOND JOHNSON) what he recommended as ligature, he said that he had used kangaroo tendon, which had the advantage of being absorbed less quickly than catgut. He had also used goldbeater's skin, which was recommended to him by Lord Lister; this took about the same time to absorb as kangaroo tendon, and both these substances were absorbed from their surface, while catgut was not absorbed only from the surface, because the plasma cells worked their way through the interstices right into the centre, so that there was central absorption as well. He preferred materials which were subject only to surface absorption. He added that he could recall a time when the belief was very frequently held that catgut came to life again in the body. It was Lister, of course, who explained how each little particle of catgut was absorbed and living cells put down, which living cells, spinning fibrous threads, replaced those of the catgut.

A New Operation for Inguinal Hernia.

Sir LENTHAL CHEATLE read a paper on "A new operation for inguinal hernia," which is printed in full at page 1025.

Mr. PHILIP TURNER said that he quite agreed with Sir Lenthal Cheatle that the complete removal of the sac was the important part of the operation. For many years he had been accustomed to operate on inguinal herniae simply by removing the sac, without in the great majority of cases any suturing of the muscles. He began this practice with young children, extended it to older children, and finally to adults. He could quite understand that it did not matter what sort of sac one had, how large or extensive it was, for one could remove it perfectly easily by the method described. The method gave one the opportunity of exploring the rings and canals on both sides.

DIAGNOSTIC VALUE OF VIBRATION SENSE.

THE third ordinary meeting of the Liverpool Medical Institution took place on December 1st, with the President, Dr. J. E. GEMMELL, in the chair. Dr. W. JOHNSON read a short paper on the diagnostic value of the vibration sense. He pointed out that the work of Dr. J. L. M. Symns and Dr. E. J. Wood, in the Guy's Hospital Neurological Department, had, by establishing a quantitative method of estimating the sensation, rendered feasible the investigation of the vibration sensation at the bedside. The tuning-fork devised by Dr. Symns for the purpose was demonstrated. By means of this tuning-fork it was possible to show the presence of a definite diminution in the vibration sense in certain nervous diseases before the cutaneous forms of sensibility showed any loss. Thus the observation assumed clinical importance in the early stages of tabes dorsalis, peripheral neuritis, and lesions involving the sensory paths in the spinal cord. The point was emphasized that in cases where cutaneous sensory loss was definite investigation of the vibration sensation was comparatively unimportant.

Mr. J. H. RAWLINSON read a paper on some genito-urinary cases, drawing attention to frequent errors in diagnosis, and for their avoidance emphasized the importance of thorough investigation of the urine and catheterization of the ureter. He contrasted the symptomatology of tuberculous pyelitis with septic pyelonephritis, the latter being more often bilateral than the former. He referred to treatment by lavage of the renal pelvis through a ureteral catheter, and discussed the treatment of bleeding after prostatectomy. He stated that 75 per cent. of renal stones passed spontaneously, and that *Bacillus coli* occurred in more than 50 per cent. of cases of pyelitis.

ENCEPHALITIS LETHARGICA.

AT a meeting of the Pathological Section of the Liverpool Medical Institution, held on December 8th, with Dr. J. E. GEMMELL, the President, in the chair, Professor J. M. BEATTIE read a paper on encephalitis lethargica. He dealt mainly with the pathological conditions found in encephalitis lethargica, basing his remarks on the *post-mortem* examination of three cases.

The main pathological changes found were the congestion, both in the membranes and in the cerebral tissues, and the perivascular infiltration with occasional haemorrhages in this Virchow-Robin space. The nerve cells showed very marked degenerative changes, such as pigmentation, eccentricity or loss of nucleus, and vacuolation. Neuronophagia was present, but only in a minor degree. Irregular rounded or oval bodies, sometimes with an apparent central spot, were seen in the nerve cells, but these were thought to be degeneration products, and remains of Nissl granules. Very large numbers of "hyaline bodies," described by Boyd and by various Italian observers, were demonstrated, especially in one case (a woman aged 48 years), but they were present also in the other cases (aged 54 and 19 respectively). The relation of these to corpora amylacea was discussed, and Professor Beattie concluded that the bodies were produced by degeneration of myelin. They had no proved etiological significance in the disease, as stated by some of the Italian workers, but their presence could not be regarded as accidental, and as having no special pathological relation to the virus of encephalitis. It was shown in one case, where the first symptom was ophthalmoplegia, that these bodies were present in considerable numbers in the optic nerve, and were especially associated with a perivascular infiltration of the sheath of the nerve. The bacteriological

findings and the experimental production of the disease was discussed. Reference was made to the recent communication of Delaunay suggesting that encephalitis lethargica was a form of rabies, and the similarity between the pathological findings in the two diseases was dealt with. The relationship of the disease to poliomyelitis and to influenza was also discussed.

Professor Beattie concluded that the disease was a distinct entity; that the nasopharynx and salivary secretion harboured the virus, and that it was important, therefore, that throat and nose disinfection should be urged. He made an appeal for a co-operation between the pathologist, the bacteriologist, and the physician in the investigation of this disease, both during life and in the *post-mortem* room; and he especially urged that the *post-mortem* examinations should be undertaken only by thoroughly trained and experienced pathologists.

TUBERCULOSIS IN CHILDREN.

AT a meeting of the Pathological Society of Manchester held on November 9th, 1921, with Mr. HOWSON RAY, the President, in the chair, Dr. C. P. LAPAGE opened a discussion on tuberculosis in children. He pointed out the frequency of tuberculous infection in children, as illustrated by (1) *post-mortem* examinations at the Children's Hospital, Pendlebury. These showed the great frequency of glandular tuberculosis, in many cases without disease of the organs. They also showed that cavitation of the lungs in babies is not uncommon. (2) X ray examinations to demonstrate thoracic tuberculosis. (3) The results of the von Pirquet skin reaction in 1,000 children, as demonstrating the incidence of non-fatal tuberculosis in the age periods of childhood. Nos. (2) and (3) were correlated to the clinical examination, and the close correspondence between the three methods of examination pointed to the fact that tuberculosis in its early stages should be recognized by symptoms and history rather than by physical signs.

The one thousand cases were divided clinically in five categories—that is, negative, possible, suspicious, probable, and positive. Even the suspicious cases had no physical signs, but only pallor and debility, some loss of flesh, and an indefinite cough, and in some cases with a history of infection in the home. These were often tuberculous, and when tested with the von Pirquet test at the different age periods gave results as follows:

0–2, 5%; 2–5, 62%; 5–10, 67%; 10–14, 59%.

The frequency of tuberculosis and its variability in different areas was discussed in relation to the milk supply, the conclusions reached being that, though infection from human sources was much the more common and more dangerous, yet the danger from tuberculous milk was very real, especially when the likelihood of massive doses was present. The autopsies seemed to show that the tubercle bacillus could pass through the damaged mucous membrane, and clinically this seemed possible, especially if some illness, such as chronic enteritis or bronchitis, lowered the health of the child and produced local inflammation and perhaps stagnation. Closed or open disease resulted. In some cases there was a marked bacillaemia, resulting in generalized tuberculosis. In others tubercle bacilli were disseminated to various parts of the system where they might remain latent; then at some subsequent period of lowered health, with perhaps local injury, they might be lighted up and form isolated areas of disease, such as nodules or joint or bone trouble. The mode of spread was, however, more often by the lymphatic system. Tuberculosis was shown to be a very fatal disease, especially in young children, the death-rate falling very rapidly after the second year—that is, 25 at 0 to 1 year, rising to 40 at 1 to 2 years, and falling to 20 at 2 to 3 years. A great deal of non-fatal tuberculosis occurred, but every effort should be made to postpone infection as late as possible on account of the very high death rate at the early age.

Mr. E. D. TELFORD discussed the subject from the surgical aspect. His figure for bovine infection in Manchester was 50 per cent., the route of infection being, as a rule, via the digestive tract. The average age of clinical onset in a large series was 3½ years, from which he deduced a fairly long latent period after the original infection. In younger infants tuberculosis tended to be more acute and more generalized. Mr. Telford discussed the sites of surgical tuberculous disease and the influence of injury and pre-existing simple disease in determining the site of tuberculous infection later. The different types of cold abscesses and the results of aspiration were given. The effects of rest were discussed with special reference to the operative fixation of joints as opposed to formal excision. Finally, some points were mentioned regarding the prognosis and ultimate fate of the healed cases.

MEDICAL ASPECTS OF DELINQUENCY.

AT the last meeting of the Medico-Psychological Association of Great Britain and Ireland, held at the rooms of the Medical Society of London on November 22nd, under the presidency of Dr. C. HUBERT BOND, a paper on the medical examination of delinquents was read by Dr. M. HAMBLIN SMITH, medical officer to H.M. Prison, Birmingham. He began by saying that John Howard's book on prisons as he found them in the eighteenth century showed that the medical side was then practically non-existent. Though many of the prisons had a surgeon attached to them, he seemed to come in only when specially required. For many years past, however, every prison had had a regular medical officer as part of the establishment, and his duties and functions had undergone remarkable developments. The larger prisons were now well built and well equipped, and the nursing staff had altered for the better. The medical officer had opportunities, especially in the case of long-term prisoners, of observing the effects of diet and work, as well as watching the development, in either direction, of various forms of disease. It was of great interest to note how various physical ailments conduced to delinquency, though only so far as they affected the mental life. This might come about in several ways. A man suffering from such a physical defect as hernia, tuberculosis, defective vision, was handicapped in earning his living in the competitive labour market, and hence was predisposed to break the law. The early formation of good habits of industry must be a preventive of delinquency, but the physical defective from cardiac or phthisical disease was unable to work regularly; the physically weak child was often kept away from school—thus not only were bad habits formed early, but these persons received more than the usual sympathy. A boy with defective vision would be a constant trouble to his teachers, who, ignorant of the defect, would punish undeservedly, producing in the child a mental conflict which might result in delinquency. This was now largely prevented by the present system of school inspection. Moreover, the tendency of certain physical disabilities was to make their victims antisocial, owing to the feeling that they were not as others.

But, continued Dr. Hamblin Smith, the medical officer's duties soon grew beyond the mere treatment of physical ills; it became evident that no uniformity could be carried out in the way of diet, work, and punishment for infractions of discipline. The medical officer therefore had to exercise much discretion. There had been a great development, too, in the mental side of the work. Probably the official's work was originally confined, in this respect, to certification of cases of legal "insanity"; prisoners were held to be either normal or insane, in a rigid sense. It was seen, however, that a man though not insane might have a mentality which showed a deviation from that of the strictly normal person, and many of this type found their way into prisons. Largely, these abnormal cases were placed now under the medical officer's direct charge. These persons finding their way into prisons could now be certified under the Mental Deficiency Act, 1913. It was clear that conduct was the direct result of mental life. There could no longer be the rigid division of prisoners who were normal and those who were insane; every offender presented an individual problem, hence he needed separate investigation. Probably, however, public opinion was not yet ripe for such universal investigation, though the courts and the public should be educated up to the need of this. The author had long given careful consideration to the elucidation of the problems connected with the mental aspect of delinquency, and he had devoted much time to the selection and application of a scheme of tests. His earlier work was done with the Binet scale, but he became dissatisfied with that scheme; moreover,

he was not satisfied as to the propriety of much talk at the present day about "mental age." He was dealing with the test he now used in a book shortly to be published. Wonderful light had been shed on these problems of delinquency by the so-called new psychology, and he considered that this made these problems very hopeful. He was not saying there was always a mental conflict at the root of delinquency, nor whether such conflicts were always of a sex character. But he felt certain that such a conflict was present in many cases, and the discovery of this might alter the whole aspect from which the particular offender was regarded. He thought a scheme would need to be devised for the placing of suitable cases under the care of official psycho-analysts. At Birmingham the author was an integral part of the city's scheme for dealing with its delinquents. Dr. W. A. Potts had been appointed to examine cases which it was not desired to send to the remand part of the prison. The male and female Remand Departments were arranged and worked, as far as possible, on hospital lines, the idea of prison being kept out of sight. Dr. Hamblin Smith then described the routine followed. It was now very rare to get a mental defective or a psychosis case from the city of Birmingham on conviction. He advocated the division of the country into convenient districts, each having a properly equipped prison with a special medical officer in charge, to which all cases requiring mental examination should be sent. The only alternative plan would be to have travelling mental examiners in each district, who could attend when required. His conclusion was, that uninvestigated offenders were the most expensive luxury that any community could indulge in. He thought there should be a closer union between the prison and asylum services; there might be a unified service, working in each district under a local head, who would be the director and inspirer of the work. Lastly, Dr. Hamblin Smith detailed the requirements which psychiatrists should possess for this work, and referred to the intention of the University of Birmingham to hold, next summer, an intensive course of lecture-demonstrations.

Dr. W. A. POTTS confirmed the opinion that every offender was worthy of investigation, and that this procedure turned out in the end to be economical. He alluded also to the importance, in doubtful cases, of the supposed offenders being examined without going to prison, so that their self-respect was preserved.

Dr. J. T. DUNSTON (Commission of Mentally Disordered and Defective Persons of South Africa) spoke of what he saw during his recent visit to New York State. Each person sentenced there to a year or more imprisonment went through a thorough medical examination. A beautifully fitted reception prison was being built, and next to it a large medical institute, under the stimulus of the National Committee for Mental Hygiene. So far the work had been done, under some difficulty, by Dr. Glueck. After the medical examination each case was examined by a psycho'ogist, who had the final "say," for he settled whether the prisoner was defective, or maladjusted, or actually insane. If normal the man was recommended the right vocational training or treatment. Hence every felon's fate was decided, not by the magistrate, but by the examining psychiatrist. In Chicago every juvenile delinquent was examined by a psychiatrist, who sat beside the judge as assessor, and made a rapid diagnosis. In Massachusetts, however, a most detailed personality study was made. In America the prevailing view seemed to be that it was the individual who really mattered, not the crime.

Mr. A. H. TREVOR (Commissioner of the Board of Control) said it was impossible to hear what was being done in Birmingham and in America for keeping defective persons out of prison without sympathizing with such efforts to the full. Sir ROBERT ARMSTRONG-JONES spoke of an effort being made to found a Magistrates' Association, one object of which would be to secure greater uniformity in dealing with similar offences in the various districts.

"Forgetting."

A short paper entitled "Forgetting" was read by Dr. H. DAVIES JONES, of Littlemore Hospital, Oxford. He explained that he was not attempting to deal with the complete amnesias met with in the practice of psycho-analysts. Freud claimed that forgetting, whether for words or deeds, was not a fortuitous occurrence, but that a reason could usually be revealed by psycho-analytic methods. A means of gauging the value of an amnesia was the emotional effect accompanying it; he spoke only of cases in which a sufficiently deep impress had been made. Forgetting was not a passive but an active process; people forgot because they did not wish to remember something unpleasant, because it clashed with their innate tendencies. Each time the undesired memory recurred, an attempt to repress its expression was made, and eventually the repression would become a part of the unconscious self. Still, it possessed a latent energy which could not be destroyed, and expression would occur by devious routes. Methods of psychological analysis enabled this to be brought again to consciousness and a better adjustment made. To achieve this Freud employed the method of free association. Dr. Davies Jones quoted cases to illustrate his thesis.

The paper was discussed and praised by Drs. JAMES STEWART, C. STANFORD READ, BEDFORD PIERCE and A. E. EVANS, and the author replied.

TREATMENT OF PUERPERAL INFECTION.

A MEETING of the West London Medico-Chirurgical Society was held at the West London Hospital on December 2nd, with the President, Sir G. LENTHAL CHEATLE, K.C.B., in the chair, when a discussion on the treatment of puerperal infection was opened by Dr. FREDERICK J. MCCANN.

He compared the nature of puerperal infection with that of ordinary septic wounds. The normal sequence of events in a healthy puerperium was attained chiefly by the increased vascular and lymphatic supply of the involuting uterus. He emphasized the importance of wounds of the cervix, vagina, and vulva as sources of infection, and criticized the orthodox teaching that infection usually originated within the uterus.

After alluding to the modes of spread and the general course of the infection, he proceeded to discuss the importance of prophylactic measures. He deplored the present defect in our hospital system which provided such scanty accommodation for puerperal cases. The teaching of obstetrics also should be improved. Medical officers of health should be empowered to admit to hospital women whose domestic surroundings were unsuitable for a confinement. The application of forceps and the introduction of the hand into the uterus should be regarded as major operations. Rectal examination should be avoided; its disadvantages were obvious. Vaginal and perineal wounds and deep cervical tears should be carefully cleansed and sutured. With regard to the treatment of infected cases, in the first place extragenital sources of infection must be excluded. Exploration of the uterus was only permissible in the severer types of cases, or after any likely source of infection in the lower genital tract had been excluded. The curette should be used as a probe only or for gently removing any loose fragments, and never as a scraper. Puerperal peritonitis and localized abscesses must be dealt with on ordinary surgical lines. Subcutaneous salines, free purgation, and the judicious use of quinine were all valuable. In his experience, serums and vaccines were, on the whole, disappointing.

The PRESIDENT said he disapproved of the use of spirituous lotions in the prevention of cracked nipples, and advised the use of plain soap and water. He warned against placing too much reliance on the alleged antiseptic properties of many gauzes on the market.

Dr. REMINGTON HOBBS was strongly in favour of uterine drainage, as in his opinion the rise of temperature was due to mechanical blocking of the uterine outlet by malpositions of the uterus, oedema of the cervix, and overloading of the rectum. For this purpose he used a small rubber catheter. After cleansing the genital passages the catheter was introduced into the uterus by means of a special forceps made to his design; 10 c.cm. of a glycerin and iodine mixture (in the proportions of 7 to 1) were then injected into the uterus. It might be necessary to repeat this injection on several consecutive days, according to the course the temperature took. He showed a series of temperature charts which bore out the efficacy of this line of treatment.

Dr. H. J. F. SIMSON referred to the importance of prophylaxis, and wondered to what extent the glycerin was responsible for the success of Dr. Hobbs's treatment.

Dr. KNYVETT GORDON stated that an experience of 250 cases had led him to believe that the best line of treatment was curettage, saline infusions, and the use of serums (according to the bacteriology) in large doses, combined with saline. Laparotomy and even hysterectomy were indicated in the severer cases.

Dr. BERNARD SPILSBURY referred to the severe type of case usually seen by him, in some of which death occurred as early as twenty-four hours after infection. There was in these cases little macroscopic evidence to account for the infection. He felt encouraged by the line of treatment advocated by Dr. Hobbs.

Dr. J. BURNFORD laid stress on the importance of bacilluria as a cause of fever during the puerperium. Bacteriological examination of the urine should be a routine procedure in puerperal cases associated with pyrexia. Other speakers included Dr. MALCOLM DONALDSON, Dr. LAPTHORN SMITH, Dr. VAUGHAN PENDRED, Dr. SANGUINETTI, and Dr. F. G. LLOYD.

Dr. MCCANN, in replying to various points in the discussion, agreed that for cracked nipples simple washing with soap and water sufficed. He did not advocate the retention within the uterus of any instrument used for lavage or drainage, as he considered it would interfere with the normal contraction and retraction of the organ.

WAR METHODS ADAPTED TO GYNAECOLOGICAL SURGERY.

AT the inaugural meeting of the Nottingham Medico-Chirurgical Society Dr. FRANCES IVENS of Liverpool gave an address on some personal experiences of war methods adapted to gynaecological surgery.

She stated that early in the war her attention had been drawn at the Pasteur Institute to the value of antigangrenous serum. She had used it during 1915 and 1916 in a few instances, but the supply was inadequate for the large numbers of badly infected cases arriving at her hospital after the Somme offensive, and many died from gas gangrene. The results were infinitely better in 1918, when the three principal organisms had been differentiated and an efficient triple serum prepared. In spite of the numbers of badly wounded there were practically no deaths from gas gangrene among the cases treated prophylactically and curatively by the Weinberg serum, although there were deaths from gas gangrene among the cases in which, from the inadequacy of supply, no prophylactic dose could be given. A decrease in mortality from streptococcal septicaemia was also noted in the cases treated by the polyvalent serum of Leclainche and Vallée, and its prophylactic use in badly infected wounds was associated with improved results.

She had endeavoured to apply some of this experience to gynaecological surgery, and had used the combined antigangrenous and antistreptococcal serum with excellent results in cases of Wertheim's operation for carcinoma of the cervix where infected and necrotic growth was present. She had also found it of service in cases of malignant disease involving resection of bowel, and in the abdomino-perineal operation for carcinoma of the rectum. It was important to dilute the serum with normal saline, and its administration during anaesthesia lessened anaphylactic phenomena. Reference was also made to the treatment of puerperal sepsis by Vinaver's antistreptococcal serum, where the results had been encouraging.

Miss Ivens then discussed the use of antigonococcal serum as an adjunct to conservative surgery in gonococcal infections where mutilating operations had been so uniformly practised in the past. Her experience was based on the results of its use in forty cases, in the majority of which salpingitis had been the prevailing feature. Nicolle's serum had been employed and was administered as follows: (1) By intraperitoneal injection during laparotomy; (2) by subcutaneous injection after dilution with normal saline; and (3) by vaginal serum packs alternating with dressings of 10 per cent. salt solution mixed with 5 per cent. carbolic lotion. In the majority of cases the pus tubes were opened up and 20 c.cm. of serum injected into them or left in the pouch of Douglas. The tubes were not removed unless very extensively damaged, and the abdomen was closed without drainage. All the patients had made an immediate recovery, and the results in cases of salpingo-oöphoritis, endocervicitis, arthritis, and especially in puerperal gonococcal infections were excellent. Many cases had been followed up and were in good health, presenting a marked contrast to cases treated without serum. Three cases required further operation, but the possibility of reinfection could not be excluded. Miss Ivens considered that her results warranted extended study and experiment with a reliable serum.

X RAY DIAGNOSIS WITH ARTIFICIAL PNEUMOPERITONEUM AND PERINEPHRITIC EMPHYSEMA.

AT an informal meeting of the Section of Electro-Therapeutics of the Royal Society of Medicine on December 9th Dr. CARELLI, of Buenos Aires, gave a demonstration of his method of producing an artificial pneumoperitoneum for the *x*-ray exploration of the peritoneal cavity, together with a modified procedure for the investigation of the kidney. Dr. Carelli, whose work appeared originally in the *Rivista de la Asociacion Medica Argentina* in 1920 and 1921 (Nos. 183–5 and 200), did not claim that the inflation of the peritoneal cavity by means of oxygen as a preliminary to radiography was his own introduction; the method was first brought forward by Weber, in Germany, followed by other workers in that country and in Italy and America, and the first article on the subject in English, by Mr. J. E. H. Roberts, appeared in the BRITISH MEDICAL JOURNAL of November 13th, 1920, page 742. But Dr. Carelli appears to have improved the process, particularly as applied to the upper urinary passages. The large *x*-ray films which he showed on the viewing screens were received with acclamation. They illustrated with wonderful clearness the topography of the abdomen. The more solid organs, like the liver, spleen, pancreas, uterus, and ovaries, were discernible, their volume, shape, and relations could be appreciated, and in many instances it was possible to detect pathological changes. In some of his examples he was able to point to cysts of the ovary, stones in the gall bladder, abnormalities of the liver, fibroid of the uterus, and other conditions.

The plan which Dr. Carelli follows is, in the first place, to empty completely the digestive tract by a saline purge, and afterwards to puncture the abdominal wall with a long platinum needle of less than 1 mm. in diameter. When it is certain that the point of the needle is within the peritoneal cavity oxygen is passed in slowly, and radiographs are taken in different positions according to the area which it is desired to explore. It is very important afterwards to withdraw the oxygen, which is done by means of a small trocar. Out of 750 administrations he has had only one accident, due to an unsuspected condition in the patient. The kidney, being extraperitoneal, is not well shown in a pneumoperitoneum, and Dr. Carelli's procedure here, using practically the same apparatus, is to create an artificial emphysema around the kidney. After taking a preliminary radiograph for localizing purposes, he makes a lumbar puncture and inserts a fine platinum needle just above the tip of the transverse process of the second lumbar vertebra. As soon as this process is reached the needle is manœuvred so as to avoid it, and then, watching the respiratory movements with the aid of a manometer, which indicates when the perirenal connective tissue is reached, he injects carbon dioxide of very pure quality. The absorption is rapid, and the radiographs have to be taken as quickly as possible. The patient experiences a certain amount of discomfort in the lumbar region, but this is said to disappear within less than half an hour. The pictures, both of the normal and pathological kidney and the suprarenal gland, obtained by this means again evoked the applause of the audience.

Some questions were asked of Dr. Carelli with regard to the photographic side of his technique. He uses an ordinary Snook transformer and Coolidge tube, making his exposures with a double intensifying screen upon "duplitized" film. The exposures range from 0.2 to 0.4 second, and in the case of the kidney, save with stout people, are usually even shorter than this. Skiagrams

of a pneumoperitoneum are taken at a distance of two or three metres and of the kidneys at 60 or 70 cm. He illustrated an *x*-ray table which he has designed with the assistance of some of his colleagues. It is a mechanism which appears to be capable of inclination at every possible plane, while still preserving a uniform distance between tube and patient. The patient himself can be rotated quickly and completely by means of canvas slings. Dr. Carelli has lately been demonstrating this method in the radiological department of Dr. Delherm, in Paris, and he is shortly proceeding to the United States. The first actual demonstrations with patients in London were carried out at the French Hospital on the previous day, and Dr. HERNAMAN-JOHNSON told the Section that two most excellent results were obtained. The thanks of the meeting were voted to Dr. Carelli, on the proposition of Sir ARCHIBALD REID, supported by Dr. G. H. ORTON and Dr. E. P. CUMBERBATCH, the President of the Section, and Dr. CARELLI, in replying, emphasized the fact that he only brought forward the procedure for cases in which clinical diagnosis by ordinary means was not possible.

Reviews.

A TEXTBOOK OF PATHOLOGY.

"PATHOLOGY and clinical medicine are, after all, the same thing viewed from different angles." This is the principle on which W. G. MACCALLUM has written his *Textbook of Pathology*, which has now reached its second edition.[1] He has sought to deal with all sides of pathological processes, not only the anatomical, but also the chemical, the physiological, and the clinical. The subject is now so vast that an author is apt either to try to do too much, giving a confused account which special knowledge only can unravel, or to relapse into a degree of incompleteness which defeats its object. The book is forbidding in size and weight, and cannot be said to escape altogether either of these defects. The author states that it is not intended as a complete book of reference, and many not uncommon pathological conditions are hardly touched upon: the title is therefore to this extent misleading. He has set himself the task of treating pathological processes from the point of view of the injury causing them, and includes not only the immediate but also the more remote results. This inevitably leads to a certain amount of repetition, as the reactions of organs to different infections and other stimuli often differ but slightly.

Nevertheless the book is welcome, because it deals with each infective agent, and the reactions of the body to this agent, as they are met with in the patient, while the ordinary textbook of pathology too often tends to be a mere description of a pathological museum. The chapters on bacterial and spirochaetal infections are especially valuable from this standpoint. This new edition incorporates a great deal of experience gained first-hand in the war, and in addition a large amount of the work done under the same circumstances by others; it is one of the first books to be published which includes a comprehensive survey of the advances then made. Investigations carried out in America naturally take first place, as the book is founded on a course given to the second-year students of the College of Physicians and Surgeons at Johns Hopkins University; but the work of other nations, especially that of the British and Japanese on parasitic diseases, is also incorporated.

The first eight chapters deal with the disturbances of the physiological and biochemical properties of the circulating fluids and cells of the body, and could have been shortened by assuming that the reader possessed more knowledge of physiological processes; such knowledge is essential to any student of pathology. These earlier chapters are rather of the nature of a concentrated general pathology, with a few physiological, chemical and cytological fragments incorporated, though they are stimulating in that they expose many loose explanations which pass muster in this immense and still embryonic subject.

Chapters IX to XVII deal with the defences of the body against injury, including in this the processes of inflammation, immunity and repair. An endeavour is made to separate the processes of repair from those of inflammation, though the definition given of the latter is so vague as hardly to be a definition at all, and it is admitted that the two processes may proceed simultaneously "inextricably mingled in the same area." The discussion of the various types of wandering cells is chiefly based on the work of Maximow, who derives from the lymphocyte most of the mononuclear groups, including also the macrophages of Metchnikoff; the work of Opie on the different ferments of the wandering cells is also emphasized. The section on immunity is a very brief summary in which the side-chain theory of Ehrlich is strongly supported. This section is so concentrated as to be difficult of absorption, as is also the next—that on acidosis. The processes of repair are dealt with on the lines of their interpretation by comparison with the growth of tissues *in vitro*, at present perhaps a dangerous analogy. Chapters follow on the inflammatory actions and the attempts of repair in certain organs, including one devoted to the kidney and one to the liver. These are written in a discursive fashion and are rather of the nature of critical and somewhat destructive essays than of courses of instruction for the ignorant.

In chapters XVIII to XXIV forms of mechanical, physical, and chemical injuries are discussed, and special emphasis is laid on the results of obstruction in the various systems of the body—respiratory, alimentary, excretory, and circulatory. It is difficult, however, to understand why the various forms of circulatory failure, due to such conditions as myocarditis or disturbance of the conductive system of the heart, should be grouped under obstructive lesions. The chapters on obstruction in the alimentary and excretory systems are valuable because they group together matters of great clinical interest which are usually found either not at all or widely scattered in pathological textbooks.

Chapters XXV to XXXVII constitute the most valuable part of the book, as they put forward with clearness and precision the modern views of bacterial diseases, each infecting agent and the lesions produced by it being considered separately. This is the section in which the work the great war stimulated is chiefly incorporated. Prominence is given to the recent American work upon the various forms of bronchopneumonia which different cocci produce, and the most modern groupings of the streptococci and pneumococci are set out. Many of these bronchopneumonias are stated to be of the nature of interstitial invasions, a view which is fashionable in America now, to a large extent owing to its advocacy by the author himself, but which is perhaps to be accepted as yet with reserve. The chapters on syphilis are full and thoroughly up-to-date. Colles's law is explained as being an infection of the mother without symptoms, the infant being infected by the placenta; but no explanation is given how the mother harbours the organisms without giving evidence of this. The wide distribution of syphilitic granulation tissue which does not take the nodular form of gummata is rightly emphasized.

Two chapters on the diseases due to animal parasites are followed by others on the pathology of the blood and blood-forming organs. Emphasis is laid on the work of Bunting and others, on the regeneration of bone-marrow after its destruction by ricin, benzol, etc., and on the bearing of the facts on such problems as that of pernicious anaemia. The question of the leukaemic group of diseases is discussed very fully, status lymphaticus being included here. Hodgkin's disease is also added for structural comparisons, but it is recognized that its origin is probably infective.

Diabetes is held to be essentially pancreatic in nature, and stress is laid on the perfusion experiments of Admont Clark, showing that the perfusion of a sugar solution through the pancreas greatly aids its assimilation by the heart. Excess of thyroid secretion is considered to be an insufficient explanation of exophthalmic goitre, a condition in which, it is argued, the organs of internal secretion are all more or less involved; the sympathetic system is also vaguely implicated. In the discussion of the adrenals and their function the work of English observers, which established the whole matter, is ignored. Vague statements are also made about the presence of adrenaline secreting tissue elsewhere than in the suprarenal medulla, but in man the paraganglia disappear almost immediately

[1] *A Textbook of Pathology.* By W. G. MacCallum. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co. 1920. (Roy. 8vo, pp. 1170; 575 figures. 45s. net.)

after birth. The diseases associated with the pituitary body are treated on the lines of Cushing's experimental work. Two chapters follow devoted to the pathology of bones, in which the possible relation of vitamin deficiency is entirely omitted; even though the author may not believe in the theory, the experimental evidence is sufficiently strong to demand a passing mention. The final chapters are devoted to the consideration of "tumours," and a classification is given which is rightly stated to be an arrangement good for practical purposes rather than a true classification, as the latter is impossible until their etiology is known.

The illustrations are throughout good, and bring out clearly the points discussed, though the absence of explanatory lettering makes their interpretation at times conjectural. Photographs are mainly relied upon for macroscopical illustrations, and are throughout of a very high standard. Most of the microscopical illustrations are reproductions of drawings, the only poor ones being certain confused microphotographs of lung conditions which could with advantage be replaced. The coloured illustrations though few, are good, and a novel and useful feature is the introduction of sections of tissues seen under the low magnification of a hand lens. References are given at the end of each chapter which refer to papers (mostly of recent date) dealing generally with each subject, from which the more particular work can be found. The printing throughout is admirable, except for a few misprints. The book is to be recommended not only to students, but also to the practitioner, as it gives him pathology from the point of view from which he himself sees it, not as an abstract subject, but in its direct relation to the problems of clinical medicine.

PROFESSOR HAMMAR OF UPSALA.

THAT eminent histological anatomist Professor JOHAN AUGUST HAMMAR of Upsala celebrated his sixtieth birthday on August 21st last, and received on this occasion from his fellows, friends and pupils a *Festskrift*[2] containing thirty-eight scientific papers from their pens. Professor Hammar himself is responsible for ninety contributions to scientific literature, the earliest dating from the year 1885. The papers contributed to the *Festskrift* deal with medical subjects and histological research of all sorts, many of them relating investigations in disorders of the nervous system; they are written in Swedish, German, and English, covering over a thousand pages.

It is perhaps invidious to mention a few of these papers in view of their general excellence, for all afford evidence of careful observation and research. Dr. Kristenson gives a good account of a small epidemic of encephalitis lethargica observed in a Swedish regiment twelve months ago; such epidemics are said to be of frequent occurrence in Sweden, and to be in no way connected with or inhibited by epidemics of influenza. Dr. Wallgren has an interesting clinical study of tuberculosis of the bronchial glands in children; in the last resort he relies for diagnosis upon the results of *x*-ray examination, which may give positive evidence to be accepted as correct when the cutaneous tuberculin reaction has been negative repeatedly. Dr. Söderlund describes four cases of operation for acute cholecystitis occurring in the course of enteric epidemics in Gothenburg. The *B. typhosus* was recovered in pure culture from the bile in three of the patients, and in the fourth was mixed with *B. coli*; in one instance the cholecystitis followed the enteric fever, in three it occurred during the fever's course. Dr. Bergmark contributes a well-written account of the dissociation of sensation observed in three patients with lesions in the medulla and pons. Dr. Häggström, examining the two ovaries of a healthy woman aged 22, found in them over 400,000 follicles, of which 1,700 showed signs of further development, and 219 had gone on to the secretion of liquor folliculi. Nearly 1,000 of the ova contained two nuclei and were true twin ova; only five follicles containing two ova were found. The corpora lutea or their remains numbered 67, and 52 were in one ovary and 15 in the other; from which fact it may be argued that the follicles do not ripen in the two ovaries alternately.

[2] *Festskrift Til ägnad Professor J. Aug. Hammar, På Hans 60-Års Dag den 21 Augusti, 1921.* Upsala: Almqvist & Wiksells, Boktryckeri-A.-B. 1921. (Med. 8vo.)

GASTRIC AND DUODENAL ULCERS.

DR. ROSENTHAL'S essay on the symptoms and treatment of gastric and duodenal ulcers[3] is based on his experience of 326 cases of ulcer found among over 3,500 patients with gastric symptoms seen at Budapest. Of the 326 patients 64 per cent. were males and five-sixths were over 30 years of age, while over 20 per cent. had had their ulcer for over ten years. Tables are given showing the frequency with which certain symptoms occurred in the various localizations of the ulcers, and the *x*-ray diagnosis of the condition is discussed at full length. The author argues in favour of the medicinal rather than the surgical treatment of gastric and duodenal ulcers; rest in bed, a modified Lenharz diet, and the administration of well-emulsified fat. He recommends the use of atropine, or its congeners, eumydrin and novatropin, given by the mouth or, in severe cases, hypodermically; these drugs act by lessening the tonus of the vagus nerve, reducing the secretion of hydrochloric acid and diminishing the spasm of the pylorus. He also advises the use of bismuth salts and of the aluminium preparations neutralon and escalin. The surgical treatment of these cases is discussed, but is said to give results in general less satisfactory than the medicinal treatment. The book, which is illustrated with a number of excellent skiagrams, should be of interest to physicians and surgeons alike.

SEROLOGICAL METHODS OF DIAGNOSIS.

MARC RUBINSTEIN'S *Traité pratique de Sérologie et de Sérodiagnostic*[4] is an up-to-date book describing laboratory methods employed in the diagnosis of disease. The first part contains a brief description of the properties of normal and immune serum. No new theory is expounded, but the author attempts to give the views of well-known workers in the field of immunity in a concise form.

The second part of the book describes in detailed fashion several different methods of performing the Wassermann test; it enlarges on methods employed in the serum diagnosis of gonorrhoea, tuberculosis, echinococcus disease, and cancer; and ends with a consideration of Abderhalden's reaction. In a practical treatise of this nature it would have been better to distinguish more clearly between those methods which are universally approved and those which are of doubtful reliability. For instance, whilst forty pages are devoted to Abderhalden's reaction, only two are spared for the practical application of agglutination. It is a singular omission that attention is not drawn to the pitfalls of inhibition zones in agglutination; nor is justice done to the accurate technique of agglutination evolved in the war. The treatise will prove useful to those engaged in laboratory diagnostic work as a reference book, for it contains descriptions of many serological tests not commonly practised in this country.

DISEASES OF THE EYE.

A BOOK that has reached its ninth edition may safely be said to be beyond criticism, and we have no hesitation in saying that DE SCHWEINITZ'S *Diseases of the Eye*[5] is one of the best handbooks in our language on its subject.

This edition has been reset, with the result that, although it forms a bulky volume, it does not look quite so bulky as the last edition. It is well printed in clear type on good paper, and is thoroughly up to date, for much new matter has been incorporated in the text. In the preface a paragraph, consisting of more than twenty lines, draws attention to subjects which now appear for the first time, many of them the results of the experience gained in the war, such as poisonous gas conjunctivitis; the localization of the cortical centres of vision, the work of Sir William Lister and Dr. Gordon Holmes; and the various plastic operations of epithelial inlay and outlay for remedying ectropion and contracted sockets. A valuable

[3] *Über die Symptomatologie und Therapie der Magen- und Duodenal-Geschwüre.* Von Dr. E. Rosenthal. Berlin: S. Karger. (Sup. roy. 8vo, pp. 72; 10 plates, 8 figures. M. 12.)

[4] *Traité pratique de Sérologie et de Sérodiagnostic.* Par M. Rubinstein. Paris: A. Maloine et Fils. 1921. (Med. 8vo, pp. 414; 22 figures. Fr. 22; post free Fr. 24 20.)

[5] *Diseases of the Eye.* A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. de Schweinitz, M.D., LL.D Pa. Ninth edition, reset. Philadelphia and London: W. B. Saunders Company. 1921. (Roy. 8vo, pp. 832; 415 figures, 7 plates. 50s. net.)

feature of the book is the copious index, which extends to fifty-eight pages.

The opening chapters on general optical principles, reflection and refraction, ophthalmoscopy and the theory of the ophthalmoscope, are so clear as to be intelligible to the most obtuse. The author rightly devotes considerable space to the examination of the patient and of the eye and of functional testing, for it cannot be too frequently emphasized that this is the basis of all good clinical work. For the rest, the chapters dealing with ocular diseases and operations are written on traditional lines and are excellent. The senior ophthalmic student who invests in this book will find his money well spent; the student of medicine in this country who is preparing for his pass examinations for qualification will, however, find all he wants in one of the cheaper students' handbooks; the cost of this work is undoubtedly high, but it is difficult to see how it could be brought out at any lower price, and the book is well worth the money.

THE ORIGIN OF MAN.

DR. CHURCHWARD'S fine and well-illustrated volume on the *Origin and Evolution of the Human Race*[6] is a monument of erudition and research, in which the author has collected a wealth of evidence in support of the thesis that human beings are descended from pigmies, who were in turn evolved from anthropoid apes in Africa more than a million years ago. The birthplace of humanity he locates more precisely in the Nile valley and around the lakes at the head of the Nile. Remnants of the pigmy race are still found scattered over the world; developmentally the pigmy was, the author believes, followed by the prognathous Masaba negro, the Masaba negro by nilotic negroes, these by the Masai of East Africa and allied tribes, the Masai by Stellar Cult peoples, these by Turanians, and the Turanians by the lunar, solar, and Christian cult peoples we know.

The origin of man is, of course, a highly contentious subject, and Dr. Churchward often finds himself in conflict with generally accepted or authoritatively expressed views on the matter. He writes with the sincerest conviction, and has a great deal of evidence to bring forward in support of his own novel and iconoclastic beliefs. The book must be regarded as a singularly bold attempt to solve the ultimate mystery of our ancestry; it is admirably illustrated and may be commended to the attention of the wide circle of general readers as well as to those interested in anthropology and ethnology.

MONOGRAPHS ON OBSTETRICS AND GYNAECOLOGY.

A SERIES of gynaecological and obstetrical monographs has recently been published in America by Appleton and Co., and a number of these have been received for review. Professor NEWELL, of Harvard University, writes on *Cesarean Section*,[7] an operation that is, in his opinion, performed with undue frequency, and, as a matter of emergency, often when it should be rather a method of election. Half the volume is devoted to the indications and contraindications for the operation, the rest of the book to the details of its performance. The author writes with clearness and with the competence of full knowledge, and his conservative but thoroughly sound views will be read by gynaecologists with no little interest. The book is well turned out and well illustrated, as, indeed, are the other volumes in the series before us.

The book on *Extrauterine Pregnancy*,[8] by Dr. SCHUMANN of Philadelphia, gives a full account of the history of that condition, its frequency, terminations, anatomy, pathology, and diagnosis; the final chapter deals briefly with its treatment. The author estimates that in Philadelphia during 1918 the ratio of ectopic pregnancies (there were 169 of them) to full-time intrauterine pregnancies was 1 to 267. The book should be of interest to pathologists and gynaecologists alike.

Dr. NORRIS of Pennsylvania draws attention in his book on *Gynecological and Obstetrical Tuberculosis*[9] to the frequency with which tuberculosis of the female genital tract and peritoneum occurs; the infection is but rarely acquired by coitus, but is usually effected by way of the blood stream, or else by direct extension from a neighbouring focus. The author discusses the pathology and diagnosis of the condition at full length, quoting numerous illustrative cases, and gives adequate accounts of the treatment required in the various lesions described; special chapters are allotted to the influence of tuberculosis on such functions as child-bearing and menstruation. The book is one for the gynaecologist.

Dr. NOVAK, of Johns Hopkins Hospital, contributes a volume on *Menstruation and its Disorders*,[10] in which he points out the great advances in the knowledge of the subject that have been made during the last two decades, and accepts as practically certain the corpus luteum theory of menstruation—namely, that an actively functioning mature corpus luteum is found just before the occurrence of menstruation and is its cause. The relation of menstruation to various systemic diseases is fully considered, and abundant space is given to treatment, apart from surgical treatment. Numerous references to the literature are given; Dr. Novak writes clearly and fully, and his excellent volume may be recommended to the attention of all medical practitioners who have to treat the disorders of menstruation, as well as to gynaecologists.

Professor POLAK'S *Pelvic Inflammations in Women*[11] provides the gynaecologist with a dogmatic and concise description of the diseases peculiar to women that result mainly from septic, gonorrhoeal, and tuberculous infections. The volume is particularly well illustrated, and treatment receives adequate consideration throughout it.

TREATMENT OF GOUT.

IN his book on gout and its treatment,[12] Dr. GUELPA develops a theory of the causation of the disease, and describes his dietetic method of treating it. He holds that gout is a polymorphic pathological state of the organism, and represents a reaction against the alkalinization and mineral poisoning of the tissues; it is not to be regarded as due to hyperacidity of the blood. In treating it the first principles are, according to the author, to reduce the quantity of foods containing alkali and mineral matters and to increase the acidity of the blood by a diet of meat and acid drinks. Dr. Guelpa begins his course of treatment by four days of fasting, with purgation by magnesium citrate or sodium sulphate; then follow five or six days of light diet excluding vegetables; then the patient has three days of a diet consisting of things like brain, liver, sweetbread, and kidneys. This course of three periods is repeated, with variations according to circumstances; damaged gouty joints meanwhile receive massage and movement. Mineral waters and all alcoholic drinks are forbidden, the patient drinking only water, *eau sucrée*, or lemonade. Dr. Guelpa quotes a number of illustrative cases in which his method proved successful. He gave an account of his method to the Royal Society of Medicine recently, and his book contains full details of his principles and practice; it may be recommended to the attention of medical practitioners who have cases of chronic gout to treat.

NOTES ON BOOKS.

THE thirty-second edition of *Burdett's Hospitals and Charities*[13] has recently been published. "Burdett" (as it is familiarly known throughout the hospital world) is a lasting memorial to Sir Henry Burdett, its founder and for many years its editor, who died last year. The first 150 pages deal with hospital finance, a topic of more urgent interest this year than at any previous

[6] *Origin and Evolution of the Human Race*. By A. Churchward, M.D., F.G.S., etc. London: G. Allen and Unwin, Ltd. 1921. (Roy. 8vo, pp. [illegible]. 18s. net.)

[7] *Cesarean Section*. By T. S. Newell, A.B., M.D. (Roy. 8vo, pp. 292; [illegible] figures. 25s. 6d.)

[8] *Extrauterine Pregnancy*. By F. A. Schumann, M.D. (Gynecological and Obstetrical Monographs. (Roy. 8vo, pp. 129, 69 figures. 22s. 6d.)

[9] *Gynecological and Obstetrical Tuberculosis*. By C. C. Norris (Roy. 8vo, pp. 366. 32s. 6d.) 1921. (Cr. 8vo, pp. 148; 6 figures. Fr. 7.)

[10] *Menstruation and its Disorders*. By E. Novak, A.B., M.D., F.A.C.S. (Roy. 8vo, pp. 372; 30 figures. 22s. 6d. net.)

[11] *Pelvic Inflammations in Women*. By J. O. Polak, M.Sc., M.D., F.A.C.S. (Roy. 8vo, pp. 241; 89 figures. 22s. 6d.)

[12] *La Goutte et son Traitement*. Par Dr. G. Guelpa. Paris: F. Alcan.

[13] *Burdett's Hospitals and Charities, 1921*. Thirty-second Year. London: The Scientific Press, Ltd. 1921. (Cr. 8vo, pp. 982. 17s. 6d. net.)

time. In this new edition certain alterations have been made in the form of the tables in the chapter on hospital expenditure, with the object of giving a true comparative analysis of expenditure under each of the different heads. Then follows the usual detailed directory of hospitals and other charitable institutions, occupying some 800 pages, and including not only British, but Dominion, Colonial, and certain American and other foreign hospitals. Full as the information given is, it would be more complete if the names of the staffs of the provincial hospitals were given, in addition to those of the London hospitals; in a publication of this kind the names of the physicians and surgeons at, say, the Royal Victoria Infirmary, Newcastle-on-Tyne, or the Manchester Royal Infirmary, are of as much interest as the name of the auditor or the original architect. The account given of the finance of some of the Colonial hospitals is interesting; in Australia large Government grants to hospitals evidently do not prevent control by an elected committee of subscribers, while in at least one large New Zealand hospital the entire income of £39,000 appears to come from contributions by patients, in spite of the fact that it is free to those who are unable to pay.

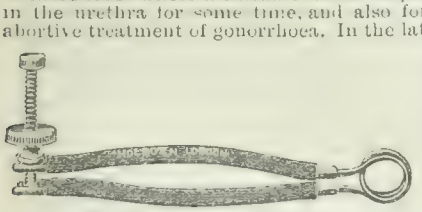
It is undoubtedly desirable that the average diabetic patient, having a chronic disease that can only be treated dietetically, should be taken fully into the confidence of his medical attendant and taught as far as possible to take care of himself. The American *Primer for Diabetic Patients*[14] by Dr. WILDER and two lady dietists of the Mayo Clinic attempts to do this; beginning with brief chapters on foods and urine testing, it gives an account of the diets and recipes suitable for different classes of diabetic patients. The book is well written and seems to fulfil very well the purpose for which it has been written. Many of the foods mentioned are American products and presumably to be obtained in other countries only with difficulty.

[14] *A Primer for Diabetic Patients.* By R. M. Wilder, Ph.D., Mary A. Foley and Daisy Ellithorpe. Philadelphia and London: W. B. Saunders Co. 1921. (Fcap. 8vo, pp. 76; 2 figures. 7s. 6d. net.)

APPLIANCES AND PREPARATIONS.

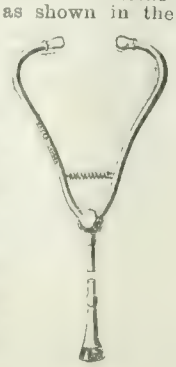
A Penile Clamp.

MR. H. WANSEY BAYLY, M.R.C.S. (London, W.), writes: The penile clamp shown in the figure will, I think, be found useful in those cases where medicaments are required to be retained in the urethra for some time, and also for the "sealing-in" abortive treatment of gonorrhoea. In the latter case, the clamp is loosely adjusted before the injection of the 20 to 30 minims of collosol argentum, and is firmly closed after injection. The metal seal of collodium can now be applied at leisure, and the clamp should not be removed until after the seal has hardened. I have found the clamp satisfactory for use with any adolescent or adult male patient. Owing to the great variations in size of the penis in different individuals, the usual spring clamp is often useless. The "sealing-in" abortive treatment of gonorrhoea is so valuable in suitable early cases that any method tending to the simplification of the technique is of interest. The clamp has been made to my design by the Holborn Surgical Instrument Company.



A Rigid Binaural Stethoscope.

DR. VICTOR FELDMAN (London, N.) writes: This stethoscope is made up of three main parts, as shown in the illustration. The ear pieces are joined together by means of a ball and socket joint. Into the socket is screwed a metal tube, the length of which can be varied to suit the user's convenience. The chest piece, in its turn, is screwed to the end of the tube. Should we require a movable chest piece, a short length of stout pressure tubing (about 1½ in. long) is supplied, into which the adjacent ends of the tube and chest piece can be fitted, thus allowing lateral movement to the chest piece. The advantages claimed for this rigid stethoscope are: (1) It does away with rubber tubings. (2) Sounds are conducted better than in the ordinary stethoscope. (3) It can be taken to pieces and is therefore portable. The stethoscope is made by Messrs. Mayer and Phelps, of 59 to 61, New Cavendish Street, W.1.



THE HISTORY OF BRAIN SURGERY.

THOMAS VICARY LECTURE BY SIR CHARLES BALLANCE.

AT the Royal College of Surgeons of England on December 8th, before a distinguished gathering, with the President of the College (Sir ANTHONY BOWLBY) in the chair, the Thomas Vicary Lecture was delivered by Sir Charles A. Ballance, K.C.M.G., who took as his theme "A glimpse into the history of surgery of the brain."

Sir CHARLES BALLANCE said that the history of surgery of the brain was so wide that he would make no effort to touch its compass, but would merely, like an alpine traveller, salute a few of the peaks and pass on. When did brain surgery arise? He hesitated to dogmatize with regard to the surgical methods of prehistoric races, whose civilization, more or less complex, had perished with its records in the abysmal depths of geological time. He was anxious, in discussing the surgical knowledge which might have been attained by early man, to guard himself against the assumption that it was devoid of knowledge or skill. Surgery was the oldest branch of the healing art, for injuries must have been common events among our remote ancestors, and with the evolution of tribes into nations, one would think that some knowledge of injuries and skill in their treatment must have been acquired and handed down to succeeding generations.

Trephining in Early Times.

No written record had reached us, but the evidence of skulls showed that trephining was practised in prehistoric times. The late Professor Lucas-Championnière made a study of this subject, and in 1912 published an account of the skulls found in the burial grounds of the Incas of Peru and also in the caves and tumuli of various parts of France. His conclusion was that trephining was undertaken among prehistoric races as a remedial measure; and in the main recent therapeutic views justified the cranial therapy of the neolithic savage. It was certainly of surprising interest that, thousands of years before trephining was recognized as a part of scientific surgical practice, a decompression craniectomy was performed among peoples in many parts of the earth.

Early trephining was probably done for the relief of pains in the head, fits, insanity, the biblical disease known as "devil-possession," and fractures of the skull. The portions of skull removed, as he showed by specimens from the College museum, were of considerable size, and it was noteworthy that in very many cases the holes were made over the motor cortex. Lucas-Championnière had shown that the men of the Stone Age employed a very definite method of removing bone, and that they used saws in cutting. Multiple trephining was also performed by neolithic surgeons, and in this procedure they had not been without followers in later times. Guthrie, the great British surgeon, who went through all the battles of the Peninsular war with Wellington, had to set his face against the practice of multiple trephining, which before his time was common. The classic instance was that of Henry of Navarre (sixteenth century), who was thrown from his horse and sustained a fractured skull, and whose surgeon trephined him twenty-seven times. The undaunted Henry gave a certificate to his surgeon to this effect, and that he was quite well; and, as there were still some who doubted, he asked his best friends to supper and drank two or three of them to death! The lecturer showed some interesting examples of saws and other instruments used in surgery in the hinterland of Algeria at the present day. They had been lent to him by Captain Hilton Simpson, who had studied the hill tribes of that country, and had secured these instruments from the native surgeons.

From Hippocrates to Horsley.

Of ancient Mesopotamian surgery very little was known, although there must have been surgery in a fair degree of development in Babylon and Nineveh. Greek surgery was the earliest of which there was any definite record. The operation of trephining by the time of Hippocrates was done in an admirable way, not really to be bettered at the present time, and the method as practised by Hippocratic surgeons was probably in direct descent from the primitive methods of the Stone Age. Crete was a kind of half way house between the continents, and was probably the

starting point of European civilization. Unfortunately, no record existed of the surgery of the golden age of Crete or of Mycenae; no surgical abode had been dug out, although discoveries had been made of bodies bisected longitudinally, which suggested that anatomy was studied by means of frozen sections. Homeric surgery was chiefly descriptive of wounds. In the eighth book of the *Iliad* the horse of Nestor was wounded in the brain by an arrow shot from the bow of Paris, and it was related that in agony the horse sprang into the air and rolled round and round, causing confusion among the other horses of the team. The lecturer suggested that the horse of Nestor was wounded in the cerebellum, which in the horse was very large as compared with the cerebrum, and that it was the peculiarity of the cerebellar wound to cause this rotatory movement. Hippocrates was the father not only of medicine but of surgery, and whatever personal contributions he made to surgical knowledge, his greater task was to take in all that had been done before him, select the valuable from the worthless, and make surgery a science, independent of superstition and sophistry. His tradition was a priceless asset to the profession for all time. His knowledge of injuries to the head was extremely complete; in some cases he recommended operation in order to slacken the "tightness of the head," he also decompressed when there was inflammation or a foreign body inside the skull. Hippocrates recommended trephining as a cure for blindness when there was no evident disease of the eye; he also recommended operation for meningitis. His trephine had a collar or cross bolts to regulate the depth to which it could go.

The next great period was that of Celsus and Galen, the former of whom described the trephining operation, while Galen, so far as he knew, was the only experimental physiologist before Harvey. Then came the long ages during which men were content without surgical inquiry. Such learning as escaped the blight was preserved in the monasteries of Europe, mostly, so far as medicine was concerned, among the Benedictines. The slow re-creation of surgery was a fascinating study. To come down at once to very recent times, the lecturer said that when he was elected on the surgical staff of the National Hospital for the Paralysed and Epileptic, thirty years ago, the two great men with whom he came immediately into contact were Hughlings Jackson and David Ferrier. The former remained in his vision as the Socrates of neurology, and his papers were of extraordinary interest. Ferrier belonged to that small group of great men who rediscovered and re-created the science of experimental neurology, which had been lost to mankind since the time of Galen. It was difficult to realize (with Sir David Ferrier sitting immediately in front of him) that his first paper was published in 1873. Then there was Victor Horsley, who from 1884 to 1891 published eight papers of the greatest importance. Godlee was the first to remove, under modern conditions, a tumour of the brain, which he did in 1884, and by the end of 1886 Horsley had done ten such operations. Horsley had long and intimate acquaintance with operations on the brains of monkeys, and the lecturer believed that to this was largely attributable Horsley's success in brain surgery, and any slight success of his own was due to the same opportunity.

The Lesson of History.

What was the lesson to be gathered from the story of the surgery of the brain which he had so imperfectly sketched? In the gradual evolution of truth, at the end of each stage of the world's history, it would seem that a great man appeared who focussed the best thoughts of the preceding centuries or was the messenger of new knowledge. Carlyle, in speaking of the hero as poet, said that ten silent centuries found a voice in Dante, and he spoke of Dante "deep, fierce, as the central fire of the world; Shakespeare, wide, placid, far-seeing, as the sun, the upper light of the world." So it had been in surgery. Hippocrates, John Hunter, Lister—all marked epochs in the advancement of knowledge. There were lesser names bridging the gaps—Morgagni, for instance, between the famous anatomists of the Middle Ages and the great pathologists of the first half of the nineteenth century; and after Hunter there were Astley Cooper and Pierre Ouvrard (a French refugee in Russia), and others. John Hunter awoke in the minds of his pupils and later followers a desire to explore the old ground by the new experimental method and to discover truths long concealed. There was a spirit of adventure with Hunter and his school akin to that of the Elizabethan explorers. The torch which Hunter lighted was carried forward by Cooper and others, burning with a brighter flame. Galen and Harvey had been like Hunter in their enthusiasm for the experimental method, but neither of them left behind a great band of pupils and followers. In a volume which he himself had had to read as a student it was written that surgery had then reached its furthest limits. But in the fullness of time Lister, the peerless knight of surgery, the "upper light," the herald of the dawn of scientific surgery, arose and inspired a deeper insight into surgical thought and practice. In the fullness of time also came a man specially trained and of great ability and enthusiasm named Victor Horsley, and created a new department—that of neurological surgery—making what was before his time haphazard and dubious to rest upon the surest foundations in the practice of every surgical clinic. None of them had seen Hippocrates in the flesh, but his spirit ruled and energized their teaching and stimulated their clinical investigation. The wonderful character and spirit of Hippocrates, as Dr. Charles Singer had said, were more real and living now than ever they had been since the eclipse of the Greek scientific intellect. None of them had seen John Hunter in the flesh, but his spirit was very evident in the Hunterian Museum, and also in the genius for inquiry and experiment which he had elicited.

The Sacred Duty.

In conclusion the lecturer confessed to an uneasy feeling, shared by some of his friends, that during the last two or three decades the cult of the operator among some of the younger Fellows of the College had displaced in part the recognition of the sacred duty upon each one of them to lay one more stone on the building of surgical knowledge. They were all of them pilgrims of surgery who had only as yet reached the threshold of truth. A vast field of their art and science remained unmapped and unexplored. He trusted that succeeding generations of surgeons would devote time to research work. Research added such zest and satisfaction to life. There was no thrill like that which accompanied the first perception and the slow unfolding of some new truth or principle. Thus might they as surgeons rightly forge new weapons against disease and death.

Wisdom and yet more wisdom was their goal as they groped their way onward upon this bank and shoal of time, for was it not written, "She is more beautiful than the sun, and above all the order of the stars, and being compared to the light, she is found before it; she is the brightness of the everlasting light, the unspotted mirror of the power of God, and the image of His goodness."

LEAD POISONING AND THE INTERNATIONAL LABOUR CONFERENCE.

BY

PROFESSOR HENRY E. ARMSTRONG, D.Sc., F.R.S.

ONE of the decisions taken at the recent Geneva Conference (of which a note appeared in the BRITISH MEDICAL JOURNAL of December 3rd, p. 958) involves the early introduction of regulations protecting health in the painting trade. Undoubtedly, the dust produced by dry rubbing down is the chief risk, and if this be eliminated and careless work deprecated, there should be little, if any, objection to house-painting as an occupation. Lead poisoning is practically unknown amongst the painters in Scotland; probably their immunity is that which intelligence provides—the Scottish painters seem to be more careful workers than painters generally. Proof has been given, by a long series of practical trials carried out recently in Manchester and London, that it is not only possible but advantageous to rub down paint after wetting with water, then removing the débris with a wet sponge; in this way all dust is prevented. Several large firms in the painting trade have already adopted this method.

The Belgian and French inspectors asserted at Geneva that regulations are unworkable; probably they have a careless, if not unintelligent, class of worker to supervise. Apart from regulations, however, if it once be made really

clear to painters what they have to gain, if the public also be made aware of the one chief danger attending painting, an opinion will soon be established and a fashion set, so that official inspectorial interference will be unnecessary.

The risks from lead poisoning, which were formerly great in the white lead and pottery industries, it is well known, have been all but entirely abolished by the introduction of mechanical methods of removing dust and of wise regulations imposed upon employers and workers. The white lead bogey, however, still stalks among painters; in fact, the painter has only to consult his doctor for a pain in his stomach to be told, more often than not, that he is a victim of lead poisoning. There may, however, be other causes at work which are not always suspected.

Ten years ago two Departmental Committees of the English Home Office inquired into the risks attending the painter's occupation. I was one of those who gave evidence; it so happened that I had been working, on the action of hormones on living matter, in a direction which made my testimony of consequence.[1] The question at issue was the poisonous character of white lead paints. The assertion had been made that volatile compounds of lead were given off from paints.

By an exhaustive series of experiments Mr. C. A. Klein and I were able to prove that such was not the case.[2] The assertion was once more made in 1914 by M. Herman, a Belgian worker. Mr. Klein and I have recently repeated his experiments and have been able to demonstrate their fallacious character[3]—he had been misled owing to the presence of minute quantities of copper in filter paper; recently, at the Geneva Conference, the transcript of a statement by M. Herman was handed to us in which this observer admits that we are correct in our conclusion. The "volatile lead" bogey may now be regarded, we trust, as laid for ever. I may add that our conclusions have been confirmed by the Government chemist, Sir James Dobbie, to whom the matter was referred in 1913 by the Home Office Committee.

When first called into consultation in 1911 I was not conversant with the medical history of the subject. I was told that paint had a poisonous effect on animals, and it was suggested that a volatile lead compound was operative this was before I had made specific experiments. I could only scoff at the suggestion as an entirely improbable explanation from a chemical standpoint. I pointed out that paint did not only contain white lead but also oil and turpentine, and that the oil underwent changes in drying. When told that basophilic granules had been observed in the blood cells of the animals exposed to paint and that this condition was an indication of lead poisoning, I suggested that the turpentine and perhaps also the vapour given off on drying might well be the cause of the phenomenon. The experiments were repeated and my forecast verified. At the meeting I had produced leaves poisoned by turpentine.

The effect is so striking, so easily demonstrated and so instructive, that I would urge every medical man to observe it for himself and reflect on its deep meaning.

All that is needed is to enclose a leaf of the ordinary spotted laurel (*Aucuba japonica*) in a wide-mouth bottle, such as a pickle bottle, together with a few drops of turpentine. After an interval, depending on the temperature, the leaf begins to darken and eventually becomes black; the action is rapid at blood heat. The turpentine vapour penetrates the leaf surface and produces a disturbance within the cells which determines the interaction of an enzyme with a glucoside, one of the products of change being a substance which blackens in the air. Equally striking is the result when an ordinary laurel leaf (*Prunus laurocerasus*) is used together with a strip of paper dipped in an alkaline solution of picric acid. The yellow paper soon becomes orange and eventually brick-red through the action of the hydrogen cyanide (prussic acid) liberated from the leaf, which gradually becomes brown. Chloroform produces the effect more rapidly.

In view of the frequency with which persons sleeping in newly painted rooms have been affected, and of the work done, especially by French observers, extending back into the earlier half of last century, it is more than remarkable that the influence of turpentine in paint has been so little considered by the medical profession and every disturbing symptom displayed by a painter attributed, of late years, to lead poisoning. The work done in America, Germany, and elsewhere, showing that volatile liquids generally have most deleterious effects on health, seems to be recognized only in narrow circles.

Mr. Klein and I in 1913 summarized the situation in the following terms:

"The toxic effects sometimes experienced from drying paints are to be ascribed to turpentine, and due allowance must be made for this in dealing with the hygienic phase of the problem. Our inquiry also shows that, in many cases, effects have been regarded as due to 'lead poisoning' which are attributable to other causes, especially to turpentine.

"The whole available evidence indicates that the dangers attending the use of lead compounds are only the well-known mechanical dangers.

"There is no foundation for the importation of a new element of danger into the consideration of the question of paints. Lead paints are to be objected to only on the ground that they may enter into the system through careless handling or in the form of dust such as is produced by rubbing down old paint."

We have again dealt with the subject in a recent paper read at the Royal Society of Arts,[3] and have stated our conclusions in the following paragraph:

"*In point of fact, all solvents of oil which can be used in paints and varnishes as thinners are lethal substances.* It is only seldom that painters compelled to work in confined spaces are overcome by their vapours; such cases must be regarded as abnormal, because they are, in fact, acute cases of poisoning, due to the high concentration of the vapours in the air breathed. In the ordinary practice of house painting the worker is exposed almost daily, during long periods, to air containing vapours at a low concentration; under such conditions, owing to the slow nature of the attack, the effects are frequently overlooked, though deep-seated changes may be in progress, the extent of which, even to-day, is not fully appreciated."

At Geneva, the question "Is medical science, generally speaking, in a position properly to diagnose lead poisoning?" was referred to a medical subcommittee composed of Dr. Desiré Glibert (Belgium), Dr. Frey (Germany), Geheim Hofrat Professor K. B. Lehmann (Germany), Professor Curschmann (Germany), Dr. T. M. Legge (Great Britain), Professor Loriga (Italy), Dr. José Gonzalez y Castro (Spain), Sir Kenneth Goadby, K.B.E. (Great Britain).

This Committee reported unanimously that:

"Medical science has been able for a long time to diagnose satisfactorily typical and severe cases of saturnism.

"Modern methods of diagnosis in the hands of specially trained medical men enable them:

"(1) To recognize saturnism in most doubtful cases.

"(2) To exclude cases of alleged saturnism.

"(3) To recognize lead absorption and lead intoxication at an earlier stage than heretofore."

This report told us only that *specially trained* medical men—in other words, the certifying doctors—could diagnose saturnism; of these, I believe, there are not a dozen in the country. Sir Thomas Oliver, one of the few lead experts, in his recent special address to the British Medical Association at Newcastle-upon-Tyne, mentioned cases within his knowledge in which death certified as due to lead poisoning was proved by *post-mortem* examination to be due to malignant disease of the intestine. We had with us at Geneva a master painter from Manchester, who told the Committee that his medical advisers long insisted that he was suffering from lead poisoning, although he assured them that he had not been in contact with paint for years; when ultimately he was operated upon he was found to be suffering from gall stone. For some unexplained reason my attempt in the committee to discuss the influence of turpentine was objected to especially by M. Glibert, the Belgian factory inspector and medical man.

When it was proposed to refer the following questions to the Medical Subcommittee—

1. What is the degree of risk of lead poisoning attaching to the painting industry, according to statistics?

2. What are the channels by which lead penetrates most frequently into the organism of the body?—

the further proposal was made to add:

Amongst painters' diseases attributed to white lead, should any proportion properly be attributed to any other cause than white lead?

This was defeated, and consequently my attempt to bring the question of volatile thinners under proper discussion was thwarted. Such are the methods of conferences; the scientific treatment of a subject appears to be barred.

The report of the Medical Subcommittee was:

"That, in so far as concerns painters using white lead or other lead compound, saturnism is the chief professional risk, but that the statistics are vitiated:

"1. As to mortality—(*a*) primarily, by the exclusion of cases of death due to saturnism which are grouped under other

headings; *b* secondarily, by the inclusion under saturnism of cases of death due to other causes.

"2. As to morbidity, by defects in notification and certification and by other imperfections."

As to the second question the Committee reported that:

"By far the most important danger is from lust which enters through the nose and mouth."

Of late years I have given much further attention to the effect of chemically neutral substances, anaesthetics and antiseptics, on living tissues. Their penetrating power and their power of exciting disturbances within the normal cell is astounding. My considered opinion is that the medical profession has yet to appreciate the insidious and often deep-seated effects that may be produced by repeated and continued exposure even to small amounts of vapours such as that of turpentine. Painters are known to be subject to sicknesses from which lead workers are as a rule free—such as kidney complaints and hardening of the arteries. It will be necessary to take careful note of the influence of such exposure in any future attempts to diagnose the symptoms and assess the danger arising from the use of lead paints.

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ST. BRENDA'S PRIVATE HOSPITAL, BRISTOL:

A HOSPITAL FOR PAYING PATIENTS.

BY

STUART V. STOCK, M.B., B.S., F.R.C.S.,

REGISTRAR.

IN the issue of the BRITISH MEDICAL JOURNAL for February 21st, 1920, Mr. William Billington published an article on the St. Chad's Private Hospital, Birmingham, and on July 16th, 1921, a discussion was opened at the Royal Society of Medicine by Sir Thomas Horder on the private clinic system. The following account of a private hospital which has been started in Bristol under the group system, and which is intended for patients of limited means, may therefore be of interest at the present juncture.

In Bristol, as in Birmingham, there was no provision for that large number of patients who were unable to afford the heavy expenses incident to an operation in a private nursing home, and who yet were not of the class for whom the voluntary hospitals are primarily intended—a state of affairs which is bound to lead to hospital abuse. It was felt, therefore, that a non-charitable, self-supporting institution, like that in Birmingham, which would take these patients at fees well within their means and give them all the advantages of the up-to-date modern hospital, would be a great boon, not only to the patients themselves but, it was hoped, also to their family doctors.

In drawing up the lines on which the hospital should be run there were obviously two schemes to be considered—one in which the institution should be run on the lines of St. Chad's; the other, in which it should be run in the same way as a modern general hospital, with its own staff and a fixed scale of fees. After a good deal of deliberation the second alternative was decided upon, and it was further laid down as a fundamental principle that no patient should be admitted without a note of recommendation from his own doctor.

Finance.

It was decided that no financial assistance should be sought from the general public, so that the staff, and the staff alone, would have the management, thus eliminating the danger of lay control with its desire for financial success and temptation to advertise, which would surely follow, as pointed out by Mr. Bishop Harman.

The fees to be charged were next decided. With these as a basis, it was resolved to start with 40 beds. Careful calculation and inquiry showed that, with 40 beds and the low fees, the hospital must be run on the small ward system, as separate rooms would mean too high fees for the restricted incomes of the patients to be catered for. Having arrived at this point, the number of the staff was decided upon as follows: Two surgeons, two physicians, a gynaecologist, an ophthalmic surgeon, a dermatologist, a surgeon in charge of the ear, nose, and throat department, two anaesthetists, a skiagraphist, and a bacteriologist, all of whom are on the junior staff of either the Bristol Royal Infirmary or the Bristol General Hospital and the Clinical Board of the University of Bristol.

Legal advice was then sought, and the twelve members of the staff formed themselves into a limited liability company. The company has issued ordinary and preference shares, all of which are at present held by the staff.

This is the present constitution of St. Brenda's, but it is meant to be only a temporary phase. The number of beds we could afford to open was limited, thus limiting the staff. This limited staff, on the advice of the lawyers, became a limited liability company. But the intention is not to rest here. As the hospital grows, and we have experience enough to show that it will grow, the staff is to be enlarged. It is hoped that when debentures have been paid off the constitution will be altered to take in the bulk of the junior staffs of the Bristol hospitals.

Premises.

The question of premises was one of the greatest difficulties the staff had to face. Building, at present prices, was out of the question, so, after a considerable amount of trouble, two large semi-detached dwelling houses in Clifton Park, close to the Clifton Downs, were secured and thrown together, and converted into a hospital on the small ward system. The majority of the wards contain three or four beds. There are two floors available for wards. The ground floor contains the surgical beds, the theatre and *x*-ray installation, and the second floor the labour ward, nursery, medical wards, and day rooms for men and women. This provides accommodation for forty beds. The pathological department and the dark rooms are in the basement. The rooms are lofty and well ventilated, and central heating has been installed.

The hospital is run on the lines of an ordinary general hospital. A great feature is "team work," and patients are more thoroughly overhauled than is usual in a general hospital. Very close touch is kept with the general practitioner who sends the case in. He is given a preliminary report on his case, and, if necessary, an intermediate one. On the discharge of the patient he receives a full account of the progress, treatment, and suggestions for further treatment. In any case of difficulty he is called in to the consultation, and is always warned as to the time of operation in a surgical case. Careful records of each patient are kept by the registrar.

The fees are 3 guineas a week for maintenance, 1½ guineas for professional attendance, and from 2 to 10 guineas for operations, according to their severity, and from 1 to 3 guineas for special investigations, such as *x* rays. No charge is made for routine clinical pathology, drugs, or dressings.

The hospital has been opened six months, and it has been found that the system works admirably. A factor which is greatly appreciated by the general practitioner and the patient is that the cost of treatment, investigation, or operation is known beforehand, as there are no extras whatever.

THE Swedish Parliament has allotted 6,000 kronen for the establishment of an institute for racial biology at Upsala, under the direction of Professor Lundborg.

The *Bulletin Hebdomadaire* states that there are 22,990 medical practitioners in France and its colonies, of whom 5,415 reside in Paris.

THE London County Council is urging the Government to take steps to introduce legislation to give permanent effect to emergency measures passed during the war to permit a reduction in the number of jurors on coroners' inquests and to allow a jury to be dispensed with altogether in certain cases. In three districts, out of 152 inquests, 140 were held without a jury, with no complaint and with a great saving of expenditure.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE SPARE PART PROBLEM.

RECENT correspondence in these columns has revealed that a number of medical men resident in various parts of the country have a common experience in discovering that it is next to impossible to obtain deliveries of spare parts for their motor cars; while others complain of the unreasonable delays of procedure. Some of these correspondents appear to imagine that I have not touched on the subject. That must be due to a lapse of memory on their part, in that it is one of the problems that has been referred to by me frequently in these columns since the Armistice. More than once stress has been laid on the fact that the choice of a car for a medical man should be governed largely by investigation as to the probability of spare parts being available promptly as and when they shall be needed. This had to be touched on, for example, at the time that changes of models, liquidations of companies, difficulties in regard to labour problems, and so forth, were discussed. As it appears, however, that the urgency of the matter has not been sufficiently appreciated by many of those concerned, it may be of service to draw attention to the fact that the medical man's choice of motor vehicles is necessarily and always very much narrower than that of the general public. On the one hand, the medical man cannot afford to indulge in experiments, because his car is needed to be ready to take him anywhere at any time all the year round; whereas the average member of the public can motor more or less at his option. In practice, this means that, whereas the average member of the public can try an entirely new type model if it embodies points that appeal to him, the medical man cannot take such a risk, because it is a long established fact that even the biggest firms have to give a new type at least twelve months' run in the hands of the public before they can discover all the things that are likely to go wrong with it in charge of the general user, as distinct from those points that are revealed when the experimental and earlier examples of the given type are put through all manner of tests in the hands of their staffs, although many of the tests represent even more deliberate abuse than cars receive occasionally at the hands of some owners or their paid drivers. It is only after a car type has been on the market twelve months that medical men are justified in buying it, provided the result of such test is that the model has proved itself to be a suitable one. But that is not the only ground on which the medical man's choice is necessarily restricted. A factor that operates to a greater extent in most cases concerns the obtaining of spare parts. Under normal conditions this problem will be present always. In the current abnormal conditions it is in evidence to a greater extent than ever before.

REPLACEMENTS FOR OLD MODELS.

We may therefore take the three main examples which the medical man should have in mind:

Sometimes where a medical man knows the person who has owned a certain car he can economize capital outlay by buying it at secondhand, because he has personal knowledge that it has never been abused. In no other circumstances should a used car be acquired by a medical man. Such machines do not carry the maker's guarantee against the failure of parts, and so on. In exceptional cases where it is apparent that, as a mere capital outlay, the individual medical man will be doing well to acquire a particular car, in that he cannot obtain any new one to give corresponding service for anything like the same sum of money, nevertheless before making his final decision he should ask himself how old the particular model is, and take steps, not merely to discover how the nearest local authorized agent of the given make of car is situated in regard to stocks of spare parts, but also what is the position of the manufacturer behind the agent. Some 2,000 parts go to the construction of the average motor car. Few builders who have established their reputations over a period of years and who are therefore of the class most likely to serve medical men well, have put through fewer than twenty satisfactory standard models in the course of their enterprise. It will therefore be appreciated that it is as well a financial as a physical impossibility to carry for an indefinite period a stock of spare parts for all types. To deal with the problem some manufacturers, such as Rover, have removed the jigs, patterns, dies, and other necessaries for producing the parts of old models and have set up entirely separate establishments, sometimes a hundred miles away from the factory, where there is installed the necessary machinery for making such parts to order. But in these days of excessive taxation and ever-increasing financial stringency obviously it is impossible for any manufacturer who does not chance to have had a lot of spare parts left over before the war—and that case would indicate that his car had not been very much of a success—to have on hand in these days of high costs of material and labour, and on falling markets, a big post-war production of spare parts for obsolete models. Where a car is of a model which was abandoned at the time war broke out most of the spare parts needed nowadays have to be made to order, and that takes time. In this connexion I would mention that the medical man derives one incidental advantage from circumstances over which, it chances, no one has any control: as the price of materials and wages is coming down, such parts are likely to be made cheaper and more cheaply as time goes on. But, more important than getting a few shillings off a spare part, is the question of the medical man getting it promptly. It is because we cannot rule out the time factor in this connexion, and because, in any case, spare parts which have to be made to order cost much more than those which go through in series, that the medical man should be chary of acquiring out-of-date models, although the initial cost is often very tempting. Of course there are certain parts of the vast numbers that go to the assembling of a car which are sometimes carried in stock for out-of-date models because the books of the given firm tell them at what periods such parts are due to be worn out; therefore, from the numbers of cars that have been sold, they have a very clear idea of what will be the demand for such parts and when it will arise. But many parts need replacement merely because an accident has occurred. Ten to one such parts will not be stocked, because they are not portions that wear out in the normal course of motoring.

SUPPLIES FOR FOREIGN BUILT CARS.

The second point concerns foreign built cars. Both in the pre-war and the post-war period it has been pointed out many a time that cars, particularly of American makes, are sold by firms registered here each with a limited capital liability of not more than £10,000; yet each of such concerns will sell in a year goods exceeding £250,000 and some of them £1,000,000 in value, every one of the cars disposed of having the maker's full guarantee. Plainly, if anything went wrong with the model the guarantee would not be worth the paper on which it is given, because there is £10,000 capital only behind a quarter of a million pounds, or a million pounds liability, as the case may be. The business in America was built up largely on the principle that service must be given in a manner which, certainly in the pre-war days, was not understood by European manufacturers. While all was going well, of course, the benefit of such service was very plain to the owner. But when things go ill, as they have done in the majority of cases since the war, an entirely different situation obtains. It is for this reason that many American service schemes have broken down in this country. But one must be explicit in this connexion and point out that there have been exceptions in the American industry, some of the firms represented in this country having continued to enjoy successful trading here and being determined to lay their plans for further development of their schemes this year. Hence the exceptional factors concerned are able to continue to give effective service. Likewise, in regard to the Continental industry, there are in France, for example, certain firms which are able to give supplies of spares promptly. But the French motor industry in general is in a very bad case, much worse than our own, in that some of the oldest established French firms have even ceased to be. This topsy-turvy situation obtains in all motor building countries. One has always to recognize the existence of this unknown factor. In addition, the financial status of the authorized

agent through whom any builder or chief concessionaire sells a car to an individual customer situated outside the metropolis will largely govern the facilities given or withheld in regard to obtaining spare parts. Sometimes even in the case of a manufacturer whose business has been reconstructed the new interests decline to have anything to do with the production or marketing of spare parts for obsolete models after stocks have been exhausted, because that part of the business does not pay. In short, this problem is aggravated owing to the extraordinary state of affairs to which the world's industry is subjected as the result of the war. But though the medical man is powerless to control manufacturing conditions, nevertheless he has a certain local radius of vision, as represented, for example, by his inquiries satisfying him as to whether the authorized agents of the car are financially sound. Some agents continue business for months and even years after manufacturers can give them credit no longer, which means necessarily that their customers will suffer occasionally in regard to service, apart altogether from factory problems.

POST-WAR BRITISH SERVICE SCHEMES.

Lastly, we come to the question of home-built machines. Here much the same circumstances govern the manufacturer. The medical man should be informed that the people in charge of practically all the world's motor manufacturing and selling enterprises are not those who appear nominally to be so; but financiers. In nine cases out of ten such folk do not concern themselves with future prospects, but concentrate all their attention on the problems of the moment. In that connexion often the business of spare parts has to be proportionately neglected because the financiers can see at a glance that the prices of labour and raw materials are falling; therefore it is inadvisable to produce parts at current prices to go into stock for an indefinite period, in that the prime aim in endeavouring to negotiate difficult financial times in manufacturing enterprise must be to devote all attention to the production of that which will be liquid and realizable in the minimum time. Happily, on the whole, the outlook at home is not so gloomy as one might imagine on considering these points. For example, such an enterprise as the Vickers concern, the Wolseley Company, has organized a service system which is more complete than any contemplated by Americans in this country. Briefly, the principle is that thirty centres have been established in various parts of these islands, at each of which complete stocks of spare parts of all post-war models are carried, including parts that could not wear out, but which might be damaged by collisions and so forth. Thus the problem of a part needed for replacement through an accident, as distinct from normal wear, can be dealt with right away. It will be appreciated that, by choosing no fewer than thirty centres in such a relatively small area as these islands, it is possible for a customer at any one point to be within at most a 30 miles radius of a source of supply. Again, the question as to whether supplies can be had through a particular local agent from any one of the centres so established is solely a point of the local agent's financial condition at the given time, in that no builder can afford to supply through an agent who is financially unsound. The medical man, however, could easily obtain the name of the nearest of the thirty dépôts and deal with it direct in such circumstances. I have instanced what, as far as I am aware, is the most notable illustration of a British firm establishing a complete service scheme; but I wish to make it understood clearly that a number of British manufacturers are working on similar lines, and that gradually the problem of spare parts will be solved. Moreover, through many of these services out-dated models will also be able to be kept in use.

DEPOSITS SHOULD NOT BE MADE.

So much for the governing circumstances and the various situations which evidently need bringing to the notice of medical men as matter for practical consideration when they are choosing cars. In regard to those who have vehicles already, some will come into conflict with one or other of the particular governing circumstances I have illustrated, and over which one can exercise no control. But medical men must have the use of their cars by hook or by crook. One correspondent writes: "Most firms intimate that spare part delay can be avoided by leaving with them a credit deposit—of uncertain amount." No such policy should be encouraged by any medical man. It is beyond the power of mortals to foretell what will be the financial condition of any firm in the future. If one went wrong the money so deposited would probably be lost to the medical man who advanced it. The greatest concession any medical man should make in the matter of expediting business is to send cash with his order. But even that should not be done unless he is at least certain that the business of the manufacturer in question is in operation when he sends his order. Cash on delivery is about all that ought to be asked. Of course, the matter is complicated by a number of manufacturers having to change their agents no less in the interests of the public than of themselves. The problem is certainly the most vexed of all those that concern medical motor users at the moment. Yet it is one with which it is practically impossible for the Society of Motor Manufacturers and Traders to deal because they could not possibly guarantee the financial status of any member. Neither would any form of agreement render it possible to deal with what are the vicissitudes of conducting commercial enterprise. One does see, however, that the Society of Motor Manufacturers and Traders could at least do something in the matter of urging its members to speed up facilities for spare parts and to have a standard procedure by which, for example, each would always acknowledge promptly an order for a spare part whether he could supply it or not. Fortunately for the credit of the industry and the trade, despite the abnormal circumstances through which we are passing, such experiences as are rightly complained of are the exception rather than the rule. Moreover, I believe it is reasonable to entertain the hope that complaints under this head will tend to be fewer from now onwards. For one thing, the management of local garages is largely passing into the hands of businesslike men. We are not yet at the end of weeding out unsatisfactory agents, but the process is proceeding apace. In connexion with the whole matter, too, some injustice is being done unwittingly in the general confusion. For example, if an owner of a British car cannot obtain spare parts, ten to one he tells all and sundry who will listen to him that no British manufacturer organizes his business properly. The same sort of thing obtains in the case of an owner who has been disappointed about an American car, a French one, and so on.

THE JUST VIEW.

The truth is that one can cite good and bad examples when dealing with cars of any country of origin. By generalizing instead of specifying the individual motorists may do an injury to those very businesses, whether they are of British or foreign origin, which it is desirable to encourage, because they happen to be conducted on the right lines. Every complainant should be most scrupulous to cite the particular make of car and agent in question whenever he is justly spreading his grievances abroad. In no circumstances should sweeping assertions be made, because examples, alike of satisfactory and of unsatisfactory service, could be cited in the case of members of the motor industry or trade of any country. For example, it was the fashion before the war to cite the Americans as the only folk who could give really satisfactory service, and to condemn all others, including the members of the Continental and home trades, by comparison. The fact is that to-day more American firms doing business in this country could be censured under this head than foreign or British ones. That does not mean that it would be fair to condemn all traders in American cars. Than that nothing could be more unjust.

In regard to the Ansaldo car, of which brief mention was made in these columns recently, Messrs. Watkins and Doncaster, Ltd., of Great Portland Street, inform us that the back axle drive is by straight bevel gear, and that detachable wooden wheels are standardized.

IT is reported that during the year 1920, deaths resulting from accidents caused by automobiles and other motor vehicles (excluding motor cycles) recorded within the death registration area of the United States (an area which contains 82 per cent. of the total population), numbered 9,106. This represents a death rate of 10.4 per 100,000 of the population.

British Medical Journal.

SATURDAY, DECEMBER 17TH, 1921.

THE MEDICAL HISTORY OF THE WAR.

THE publication of the official *History of the Great War* has been eagerly anticipated, and the first volume of the medical series,[1] now available, will whet the appetite for the succeeding issues which are planned to cover the whole field. The complete series will consist of twelve volumes: General History of the Medical Services (four volumes); Diseases of the War and the Medical Aspect of Aviation and Gas Warfare (two volumes); Surgery of the War (two volumes); Hygiene of the War (two volumes); Pathology and Medical Research during the War (one volume); Medical Statistics and Epidemiology of the War (one volume). We hope that from all this mass of material valuable lessons will be drawn for future guidance. The Editor-in-Chief, Major-General Sir William Macpherson, has secured the assistance of a large number of writers whose special knowledge of particular subjects is made available for the information of all.

The volume now issued deals with organization and administration in the United Kingdom, and also with the operations against Tsingtau, Togoland, the Cameroons, and South-West Africa. In no previous campaign in which the British armies have taken part has any concerted attempt been made from the beginning to preserve and publish an adequate description of the medical problems involved, and it is fortunate that this lack of knowledge as to what has taken place in the past was so soon recognized in the great war, and that, owing largely to the action of Professor Adami and Sir William Osler, provision was early made to meet it. Lieut.-Colonel F. S. Brereton was appointed in 1915 to commence the gigantic task of disinterring and collating information from the innumerable war diaries kept by each medical unit which otherwise would have been buried in a mass of files that the most courageous reviewer would have hesitated to wade through. The Editor-in-Chief in his introduction also pays tribute to the value of the services rendered by the Medical Research Council through its Secretary, Sir Walter Fletcher, who placed at the disposal of the War Office the statistical machinery which ultimately became invaluable in elucidating the mass of figures as to casualties, incidence of disease, and so forth. It was quickly recognized that such a war as this would produce an invaluable collection of pathological specimens, and here again the Medical Research Council, with the foresight which characterizes so much of its work, stepped into the breach, and by the appointment of Professor T. R. Elliott, F.R.S., at the Boulogne base, formed a collecting centre which preserved a unique collection of specimens, both medical and surgical.

The task which was laid upon the Army Medical Service was one the magnitude of which the most careful prevision could hardly have foreseen. An army of three and a half million had ultimately to be provided for, and a personnel, highly trained but wofully inadequate in numbers, had to be expanded to deal with the problem of the sick in such an army. The preparatory steps are lucidly traced by Sir William Macpherson, who sketches the development of the R.A.M.C. as a corps, and indicates the way in which it was made possible to expand this nucleus until it finally embraced over a half of the medical men and women in this country. As he says himself, it is "the magnificent and harmonious co-operation afforded by the medical profession throughout the empire, and by a host of voluntary and other helpers in the work of the Army Medical Service and the Royal Army Medical Corps that was the most prominent feature of the war."

Statistics are now not altogether convincing weapons. Suffice it to say that the beds in military hospitals at the outbreak of war numbered 7,000, and at the Armistice had risen to the gigantic total of 637,746 fully equipped beds; 75 hospital ships or medical transports were put into commission; 770 separate units were mobilized; and finally 2,655,025 cases, either battle casualties or invalids from sickness, were transferred to the United Kingdom. Reading once more the story of the early efforts made in 1914, the mind travels back to the hustling and urgent methods which were perforce in vogue to allow of the necessary rapid expansion of the Royal Army Medical Corps. Two features stand out prominently: medical administration had elaborated the ideas on which the work proceeded; and, in most respects, that which followed had, in its general outlines, been foreseen. It was a stroke of genius which contemplated the enlistment of voluntary aid, and had made a partial commencement in the training of Voluntary Aid Detachments, which subsequently were an invaluable source of recruiting for the nursing and medical services. The nucleus provided—often with a certain amount of derision at the likelihood of its ever being required—obtained recognition of its extreme value with a rapidity which rarely occurs, and as succeeding volumes unfold the story we shall doubtless recognize more and more the value of this agency. It is interesting to note that it was in 1914 that the establishment of nursing dépôts first appeared in the official tables of war establishments. Had this method of dealing with the convalescent sick and wounded been recognized still earlier, and made a more prominent feature of medical administration, its value would have been far greater, for there was no medical measure throughout the whole war which did more to check wastage and maintain man power than the expansion of the convalescent system of handling casualties. Should war ever occur again, and the British armies take the field, the provision of convalescent beds in the proportion of two to every hospital bed would probably be recognized to be a matter of very early importance.

Another interesting point to trace and one on which columns could be written was the method of transport. From the first railway ambulances, improvised largely from derelict French rolling stock, there evolved a fleet of ambulance trains fitted with every possible convenience for minimizing the suffering of travelling. The introduction of motor transport also revolutionized the handling of casualties in the field, and the story of the motor ambulance convoys is one of absorbing interest.

One of the great lessons to which attention should be drawn in this preliminary survey is the development of the preventive sanitary service. The con-

[1] *History of the Great War based on Official Documents.* Medical Services. General History. Vol. I: Medical Services in the United Kingdom; in British Garrisons Overseas; and during Operations against Tsingtau, in Togoland, the Cameroons, and South-West Africa. By Major-General Sir W. G. Macpherson, K.C.M.G., C.B., LL.D. London: H.M. Stationery Office, Imperial House, Kingsway, W.C.2. 1921. (Med. 8vo, pp. xv + 463; illustrated. £1 1s. net.)

tinuous, little advertised, and often monotonous and arduous work which the sanitary sections carried out was undoubtedly one of the most valuable factors in preventing epidemic disease, and when statistics are prepared the incidence of acute disease will indicate the remarkable achievement in preventive medicine of the Royal Army Medical Corps, which with its sister services had expanded at home and abroad to include half the medical profession in Great Britain and the British Empire. Another matter which will be of interest to the civilians who served in some medical capacity in the war is the tracing of the part played by the consultants and the specialists; the co-ordinating and instructional work which the former carried out, and the handling of casualties by those specially qualified to deal with particular diseases or injuries which the appointment of specialists made possible, marked an advance in administration which was ultimately copied in the allied armies. Enough has been said to indicate the interest which this first volume will create. We hope in subsequent issues to discuss some of the many matters of detail it raises.

THE IMPERIAL CANCER RESEARCH FUND.

OWING to the more pressing problems of the war, the work of the Imperial Cancer Research Fund was practically suspended for the period, and the recent publication of the seventh annual report marks the resumption of its activities. Of the seven papers constituting the report, four have already appeared in print in other periodicals from 1918 onwards, and may therefore be dealt with briefly.

The first paper, by Dr. W. Cramer, is an account of a series of experiments on the effect of sodium and calcium ions on the growth of a transplantable mouse carcinoma. By suspending tumour emulsions in isosmotic solutions of sodium chloride and calcium chloride he found on transplantation of the cells so treated that there was a distinct though temporary inhibition of growth with the latter: the calcium chloride abstracted some of the water from the cells, but this loss could be neutralized by subsequent treatment with the sodium chloride solution. It is believed that this inhibition and the subsequent recovery afford an explanation of the spontaneous fluctuations often exhibited by tumour cells in the course of their propagation. Dr. A. H. Drew contributes a suggestive paper on the comparative oxygen avidity of normal and malignant cells. Comparable quantities of living normal mouse tissues and mouse cancer cells were incubated in long test tubes of Locke's solution containing methylene blue in weak concentration. The rate of decolorization of the fluid starting from the bottom of the tubes was measured, and it was found that in the case of normal tissues the decolorization proceeded rapidly for the first hour, then slowed down markedly, and ceased after the fourth hour, whilst in the case of the malignant tissues there was no appreciable decolorization for the first hour or two, a slight amount in the fourth or fifth hour, and then a cessation, after which time the cells were dead. The explanation given is that the tumour cells have a much lower oxygen avidity than the normal, and that whatever oxygen they require is obtained from that dissolved in the solution. This explanation, however, is rendered doubtful by the findings in a subsequent paper in the same report. Dr. Drew states that further investigations were in progress to determine whether the reaction could be used to distinguish neoplastic from other proliferations, or benign from malignant tumours. As this paper first appeared in April, 1920, the further communication giving the results of such a practical application will be awaited with interest. Two other papers by Drs. Russell, Gye, and Woglom, on the oxygen consumption and respiratory exchange of mouse tissues, normal and neoplastic, are concerned mainly with the technical difficulties of a difficult problem, which have been partially overcome, but which allow only of cautious and tentative conclusions. So far as they go they seem to indicate that the quicker the rate of growth and the more highly differentiated the tumour is, the greater the oxygen consumption, and further, that the more rapidly growing undifferentiated tumours draw their energy from carbohydrates while the more slowly growing tumours obtain it from fats.

Dr. C. da Fano contributes a long and well illustrated paper on the Golgi apparatus of transplantable tumour cells. An account is given of the technique required for the demonstration of this somewhat obscure cytological structure, and the literature on the subject is thoughtfully reviewed. Dr. da Fano finds that apart from the fact that Golgi's apparatus was a constant feature of the undegenerated cells of all tumours examined, it showed a characteristic aspect in almost each of them, whilst there was a similarity of structure and situation between the Golgi apparatus of tumour cells and that of normal tissue elements. By way of reply to the contention of some sceptics who have doubted the applicability of the findings in the study of mouse cancers to the investigation of malignant disease as it affects the human being, Dr. J. A. Murray collects a few cases illustrating "lymphatic dissemination" in spontaneous and transplanted tumours in mice. He admits that the number of these lymphatic gland metastases is small, and he attributes this to the fact that a certain length of time is necessary before metastases occur, and that in the case of the rapidly growing tumours death occurs before metastatic nodules appear visible to the naked eye. In the few instances he cites of lymph gland metastases the proof that these arise by lymphatic rather than by vascular dissemination is not very strong; and the frank admission that the frequent involvement of lymphatic channels so characteristic of human carcinomata, as well as some other features, are not paralleled in the case of mouse tumours would not seem to us seriously to detract from the value of the results obtained from the study of mouse cancers.

Probably the most important paper in the present report, and one that will attract more general attention, is the brief account given by Drs. Murray and Woglom of their experiments dealing with tar cancer in mice. The authors refer shortly to the work of their predecessors in this interesting development of cancer research. Though the close relationship between tar and other similar substances to the production of warts and epitheliomata has long been recognized, mainly owing to the investigations of Dr. T. M. Legge of the Home Office in the industries concerned, yet the numerous attempts at experimental verification of this relationship between cause and effect have failed, probably because the experiments were not continued long enough. The first success was obtained by the Japanese workers, Yamagiwa and Ichikawa, a few years ago. By long-continued application of coal tar to the ears of rabbits they induced papillomata and epitheliomata, the latter in a few cases giving metastases in the regional lymph glands. Though it is difficult to be certain of the percentage of cases that were definitely malignant, yet the work of these pathologists is of supreme

importance, not only because they opened up a new field in cancer investigation, but because they taught us the value of patient persistence necessary to successful results with any suspected cancer-producing agent. No criticism can detract from that. Following them, in 1919, another Japanese worker, Tsutsui, found that tumours were easily induced by applying tar to the back in laboratory mice.

These pioneer communications contributed to a Japanese journal might have escaped general attention, and perhaps have been doubted had not Fibiger and Bang of Copenhagen undertaken the verification of their findings. The work of the e Danish observers was published, it is interesting to note, in English. Drs. Murray and Woglom have given further verification, if such were necessary. On one point they seem to us to be rather severe on the work of their predecessors: they insist that too much reliance was placed on histological evidence. A reading of the paper by Fibiger and Bang leads us to believe, however, that their evidence is singularly complete and convincing. The only point which the workers of the Imperial Cancer Research Fund claim to be an advance is the value they attach to the transplantability of tumours as the prime test of malignancy, and they believe that the success of autoplastic grafts taken from the tumour at a fairly early stage enables one to ascertain definitely that the malignant stage has occurred. The alteration of environment of the proliferating edge of such a tumour introduces quite new factors, and it may be doubted if much importance should be attached to autotransplantation. Certainly the proceeding is in the nature of things inapplicable to human tumours of a histologically or clinically doubtful nature, and in the case of experimentally-induced tumours in mice the point of interest is not so much the percentage of neoplasms that can be classified as benign or malignant as the fact that undoubted malignant tumours can be produced. Drs. Murray and Woglom attempt also to draw a relationship between the "cancer age" and the onset of the proliferations induced by tar painting in mice. Throughout the various reports of the Imperial Cancer Research Fund one finds an insistence on the importance of age with regard to the development of cancer.

The previous experiments of Fibiger on spiroptera carcinoma, of Bullock and Curtis on cysticercus sarcoma of the liver of rats, as well as the experiments of various workers on tar cancer of mice, would seem to show beyond doubt that age as a factor *per se* is of no importance: it is merely a question of the length of time during which the causal agent, parasite or other irritant, has been in operation. Drs. Murray and Woglom have not entered into a discussion of the particular constituent in tar which has this effect on tissues. The opinion is strongly held amongst workmen engaged in the pitch industries in Wales that the incidence of tar warts and epitheliomata has increased since the anthracene fraction has not been removed, and the Home Office reports do not show any cases of skin neoplasms amongst men working with blast furnace tar. Recently Bloch and Dreifuss[1] in Zurich have shown that the substance inducing new growth is distilled over at a temperature above 300°, and this would probably correspond to the anthracene fraction. These, of course, are minor points, but the great advance resulting from the demonstration which the Japanese scientists and their successors have given with tar is that it enables us by the use of a common irritant to study the stages of growths from their inception to the end.

[1] *Schweiz. med. Woch.*, November 10th 1921.

MASTERSHIP IN ORTHOPAEDIC SURGERY.

THE University of Liverpool has established a Mastership in Orthopaedic Surgery (M.Ch.Orth.). This is, we believe, the first occasion on which a university has established such a degree, and it is very appropriate that Liverpool should be the first university to do so; the fact that the scheme has been evolved with the advice of Sir Robert Jones and will be administered under his direction must ensure success. The degree will only be granted to candidates who have diligently attended a special course extending over fifteen months which the university is about to establish with the advice of a special board. Candidates must be (*a*) graduates in medicine of the university or an approved university, or (*b*) graduates in a faculty of the university or an approved university who are Fellows of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland, or the American College of Surgeons. The first course will, we understand, begin next October. Sir Robert Jones has been appointed Director of Orthopaedic Studies and Chairman of the Board of Orthopaedics; the other members are the Vice-Chancellor, the Chairman of the Medical Faculty, Professor Macdonald (professor of physiology), Professor Beattie (bacteriology), Professor E. E. Glynn (pathology), Professor Thelwall Thomas (general surgery), Associate-Professor Simpson (anatomy), Mr. Armour and Mr. McMurray (orthopaedic surgery), Mr. Newbolt (general surgery), Mr. Dun (surgery of children), the Dean of the Medical Faculty, and Mr. Thurstan Holland (radiology). Mr. Thurstan Holland in addition is acting as Secretary to the Board. Candidates for the degree must attend combined courses of anatomy and physiology, and pathology and bacteriology, each extending over six months, a course in radiology and physiotherapy extending over three months, a clinical and practical course in general surgery extending over six months, and courses in clinical orthopaedic surgery extending over fifteen months. Candidates who hold the degree of Master of Surgery of an approved university or are Fellows of the Royal Colleges of Surgeons of England, Edinburgh, and Ireland, or the American College of Surgeons, may be exempted from the special courses in anatomy and physiology, pathology and bacteriology. The courses will be arranged in five parts of three months each. The courses in anatomy and physiology and pathology and bacteriology will be attended during the first two periods of three months each, and during these periods the afternoons will be given to general surgery and the orthopaedic clinic. During the third three months a candidate will attend a course in radiology and physiotherapy and the orthopaedic clinic. During the fourth and fifth periods of three months each a candidate will hold a clinical assistantship in an orthopaedic clinic, and will attend on one afternoon a week a general surgical clinical theatre. The first course will, we understand, begin in October, 1922. Terminal examinations will be held; the final examination will consist of written papers in the principles and practice of orthopaedic surgery, an oral examination, and a clinical examination. The fee for the courses in anatomy and physiology, pathology and bacteriology, and radiology and physiotherapy is six guineas in each case; for the clinical courses the fee is twenty guineas. The examination fee is £5, and for admission to the degree the same amount.

STANDARDIZATION OF SERUMS.

THE conference, attended by representatives of ten powers, which is being held in London this week by the invitation of the League of Nations Health Committee, has considered the steps that should be taken for the standardization of serums. The conference was formally opened at the Ministry of Health, on December 12th, by the Minister of Health, who, in welcoming the delegates, pointed out that invitations had been extended to countries

not members of the League. The chair was taken by Dr. Th. Madsen, Director of the State Serum Institute in Copenhagen, who said that work on the lines desired had been begun some years ago by the Medical Research Council. The conference proposes in the case of all the serums discussed to consider the tests for sterility, for the amount of antiseptics present, and for the amount of proteins. It is hoped to arrange for a series of investigations on a uniform plan in leading institutes in the different countries. It is proposed also to institute a uniform system of indicating the dates of preparation and of issue. At present standard diphtheria and tetanus serums are maintained at the Institut für experimentelle Therapie, in Frankfurt, and in the Hygienic Laboratory of the United States Public Health Service. These two institutions are being asked to interchange their standard serums and to send them to the other institutes which will participate in the proposed investigation, in order that the relation between the two standards may be determined. As the methods for the standardization of tetanus antitoxin vary in different institutes, a discussion of methods has been held, and a proposal has been put forward for an international unit of both diphtheria and antitetanus serums. With regard to dysentery serums, the position is much less well defined. The first question that must be settled is whether a standard serum should be prepared against the Shiga bacillus only, or whether it should include other dysentery bacilli. The action of meningococcus serum being to a great extent dependent upon the type of meningococcus against which it is prepared, knowledge must be obtained of the different types of meningococci in different countries, a uniform method of examination of the various types must be established, and a uniform system of nomenclature of the different types arranged. The four main methods of testing the potency of antimeningococcus serum at present in use are based on the agglutinin content; on the complement fixation standard; on the opsonin content (phagocytosis); and on the anti-endotoxic value and protective power. It is assumed that a serum rich in more than one of these antibodies will possess a comparatively high therapeutic efficiency, but further evidence on this point is needed. It is proposed that the standardized serums from different laboratories should be compared and different methods for standardization examined, that an investigation of pneumococci in different countries should be made in as many institutes as possible, and that a uniform nomenclature should be devised. The two main methods it is proposed to use for determining the potency of the antipneumococcus serum are based on its agglutinating power and its anti-infectious action. Here again the question of a polyvalent serum arises. The conference intends, if possible, to evolve a scheme of making the serum diagnosis of syphilis reliable and the results in different countries comparable. Each of the institutes participating in the inquiry will be asked to compare one or more other methods with its own by applying them in a large number of cases of known syphilis and of control cases. The results would then be collected and analysed and conclusions drawn, which would be submitted to other institutions for observation and experiment. On December 14th the delegates, together with a number of other guests, were entertained to luncheon by the Government, when Sir Alfred Mond was in the chair. The closing meeting of the Conference was held later on the same day.

PROTEIN DEFICIENCY AND PELLAGRA.

In an article published at the end of February (p. 311) reference was made to the conclusion of the Committee of inquiry into Pellagra among Turkish prisoners of war that an inadequate supply of protein to the body tissues was important in the genesis of the disease, but it was at the same time pointed out that while an adequate supply of suitable protein was undoubtedly necessary it was not likely to be adequately utilized by the body tissues in the absence of a sufficiency of vitamins. As the result of many years' research and elaborate analyses of pellagrous and non-pellagrous diets in Egypt, Dr. W. H. Wilson,[1] Professor of Physiology at Cairo, has written a paper which greatly strengthened the case for protein deficiency as the essential factor in pellagra. He shows that the minimum daily intake of protein necessary to ensure against pellagra is the equivalent of 40 grams of animal protein, but there are considerable personal variations in normal persons as to the amount of protein necessary; labour raises the amount required, and so also, as will be seen later, does disease of the alimentary tract. Karl Thomas's view, that the minimum requirement of protein varies according to the kind of protein, is accepted; he has stated that the "biological value" of beef protein is 104, of milk 100, rice 88, potato 79, wheat 39, and maize 29. The explanation of the discrepancy in the biological values of proteins from different sources appears to be the well known difference in the proportion of the various amino acids which make up the protein molecule; in 1913 the late Professor F. M. Sandwith suggested that the absence of tryptophane (indol-amino-proprionic acid) from zein (a protein in maize) is an important factor in the etiology of pellagra. The question as to the part played by maize may now, it is contended, be answered in the main by pointing to the low biological value of maize protein: 50 per cent. of that in the endosperm is zein; in other words, pellagra is not due to maize as such. From analysis of a series of diets Professor Wilson finds that those with a biological value in protein of 30 or less are all primarily pellagrous, whereas those with a biological value above 37 are relatively non-pellagrous if the diet is sufficient to meet the energy requirements. The deficiency of protein may be primary when the supply is insufficient or is in such an indigestible form that it cannot be utilized; or, and this is a most important point, it may be secondary when, from disturbances of digestion or other conditions, the supply of protein cannot be assimilated. In pellagra intestinal disorders are common, and so is indicanuria, which represents a loss of protein and tryptophane. Professor Wilson points out that, measured by the indican in the urine, the protein destroyed in the intestine may amount to a considerable part of the total nitrogenous intake. Indicanuria is of course closely related to the diminution in the hydrochloric acid of the gastric juice so common in pellagra, for as a result the bacterial flora flourishes and the secretion of pancreatic juice fails. The liability of pellagra to relapse may be connected with achlorhydria and the resulting intestinal putrefaction, for such persons require more protein than normal individuals, and on a diet sufficient for the latter may suffer from protein insufficiency. While healthy persons may escape pellagra when their food protein has a biological value of no more than 20, the minimum safe value for a community would be 40, for hard labour probably 50, and for persons with chronic intestinal disease or previously the subjects of pellagra as much as 60. By applying these conclusions obscure cases of pellagra—for example, those occurring in this country—may be explained. Though pellagra is agreed to be a disease of the poor, starvation and pellagra are not convertible terms, for pellagrins may be otherwise well nourished; in sprue, in which there is usually much emaciation, pellagra is not noticeable; but it is interesting to note that in sprue the coefficient of protein assimilation is high, indicanuria is not prominent, and the hydrochloric acid in the gastric juice is increased rather than diminished.

[1] W. H. Wilson, *Journ. Hyg.*, Cambridge, 1921, xx, 1–59.

DISTRESSED PROFESSORS.

We have received from Sir Maurice de Bunsen, Chairman of the Universities Committee of the Imperial War Relief Fund, an appeal, signed by a number of distinguished British men of science, for contributions to the Committee's

fund for the assistance primarily of professors and lecturers in the universities of Austria. Information recently received has induced the Committee to extend its work to the universities of Russia. The average Viennese professor, with his wife and children (the appeal states) draws but the equivalent of £40 to £60 a year to maintain himself and his family. From the Armistice to the end of last year one-tenth of the professors and lecturers of Austria died, largely as the result of want, starvation, and consequent disease. The appeal made to undergraduates in this country has met with a good response as a plea to students for students. The sum of £1 a head a student is being gradually raised, mainly by student effort, until a total of some £32,000 has been collected. In Holland the amount raised, taking into account the value of clothing and food, is about £11,000. South Africa, with only 3,000 students, has sent about £3,400, and America has raised roughly £80,000. This money is being spent on a carefully organized plan for the relief of the most destitute students in the universities of Austria, Hungary, Poland, and Czecho-Slovakia. The special appeal now made is to men of learning in Great Britain and Ireland to help in the work of relieving the distressed senior members of sister universities. Information received shows that between 1914 and 1920 the number of doctors who died in Russia owing to war and distress was 30,000. The Universities Committee hopes, in co-operation with the British Committee for Aiding Men of Letters and Science in Russia to relieve some of the most acute distress existing in the universities of Russia. Cheques should be made payable to the Honorary Secretary, Universities Committee, and sent to its Organizing Secretary at Fishmongers' Hall, London Bridge, E.C.4.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

AFTER a considerable lapse of time the Clarendon Press has sent forth three large instalments of the Oxford English Dictionary,[1] and has brought the conclusion of the whole work within sight. As it happens, the portions of the alphabet dealt with (U—Unforeseeable, W—Wash, and X—Zyxt) contain few medical terms as compared with many much smaller parts which have already appeared. The reason of the comparative scarcity of medical words is found in the facts that Greek is hardly at all represented in the portion of U under consideration, that the W part shows an entire absence of both Greek and Latin derivatives, and that Y is in similar case. The words under X and Z, being largely Greek and Latin in origin, serve in some measure to make up the deficiency; they might wholly have made it up had not the editors deliberately held their hand, as is revealed by their statement that "many Latin names belonging to the systematic terminology of zoology and botany do not fall within the scope of this Dictionary." In the U portion there are a few medical terms of some interest, such as *udder-clap* and *udder-ill* (diseases of the udder of ewes); *ulcer* with its associated words, including the rather rare *ulcuscle* (a small ulcer); *ulna* with its derivatives; *uloid* (having the appearance of a cicatrix, from the Greek, οὐλή, a scar); *umbilic* with *umbilical*, *umbilicality* (a seventeenth century word for umbilical cord), *umbilicate*, and *umbilicus*; *unction* (in its medical sense); *under-blade-lurker* (an obsolete name for the subscapular muscle); and *undercot*, a rare word, signifying to fester or suppurate inwardly. As usual, the illustrative quotations are chosen with wonderful appropriateness; for instance, under *umbilical*, one reads (from a seventeenth century book): "Umbilical Arteries are two arteries marching from the Navil, through Peritonaeum to the sides of the Bladder"; and again, "The Embrio doth breath, but not feed, through the Umbilical vessels"; and yet again (in a figurative sense, from Sir Thomas Browne), "In his immortall and diviner part hee seemed to hold a nearer coherence, and an umbilicality even with God himselfe." The medical meanings of ordinary words are, as the editors have led us to expect, never forgotten and never unillustrated; for example, under *unfavourable* one finds the definition "not favourable, of diseases or physical injuries," and the quotation, "they were seized with an unfavourable small-pox." Among the rubrics from W to Wash, there is hardly a single strictly medical term, but the non-medical words with medical meanings are all presented fully. Thus *wafer*, with the sense of a cachet, is defined and illustrated; so is *waff*, with the meaning of "slight" (a slight attack or touch of illness); and so are *walking* (for example, walking the hospitals), *wambly* (affected with nausea), *wandering* (for example, wandering cells, spleen, kidney), and *want* (mentally deficient). There is, however, one interesting medical term, *wall-eyed*, with an obscure derivation; it is used both of human beings and horses, and sometimes wrongly as if it meant blind-eyed; it really signifies having an eye the iris of which is whitish, streaked, parti-coloured, or different in hue from the other eye, or having a divergent squint—in a word, "speckled-eyed." A quotation of 1694 speaks of a man as having "one eye bigger than the other and divers in colour, being a Hazel or Wall Eye." In the third instalment, which contains the last three letters of the alphabet, there are some commonly used medical words. *X rays* have a prominent place, and illustrative quotations from the year 1896, their discovery by Roentgen having taken place in the previous year. Other terms are *xanthelasma*, *xanthine*, *xantho-* (in many combinations), *xeno-* (meaning foreign or strange in many compound words, amongst which, however, one misses *xenomenia* or vicarious menstruation), *xero-* (as in xerostomia or dry mouth), *xerosis* (ichthyosis), *xiphoid* (sword-shaped or ensiform), *xiphopagus* (double monsters such as the Siamese twins), *xylaloes* (equivalent to lignaloes) and *xylotherapy* (the use of certain kinds of wood in the cure of disease). Among the Y's attention is arrested by *yaw* (a tubercle) and the disease *yaws* (which, like measles and mumps, is not a plural). The earliest quotation containing the word yaws is dated 1679, and reads: "Both which quarters of the world [*sc.* American and African deserts] bring forth the monstrous yaws as a proper stock to engraft a new cion of Disease." *Yean*, meant to give birth to; *yeld* signifies sterile or not yielding milk; *yellows* is a synonym for jaundice; and *yex* is a hiccup. An interesting and rather surprising fact is that the earliest quotation containing *yellow fever* is dated 1748. Amongst the Z's *zona* and *zoster* (both equivalents for herpes zoster), *zygoma* and various *zygo-* compounds catch the eye which is on the outlook for medical terms; all are sufficiently illustrated and clearly defined. The Editors are to be congratulated on the appearance of these three parts of the N.E.D. and on the near approach of the completion of their huge task.

[1] *A New English Dictionary on Historical Principles*. Edited by Sir James A. H. Murray, Henry Bradley, W. A. Craigie, and C. T. Onions. Vol. x, U to Unforeseeable by W. A. Craigie, M.A., LL.D.; W to Wash, by Henry Bradley, M.A., LL.D.; X to Zyxt, by C. T. Onions. Oxford: At the Clarendon Press, etc. Humphrey Milford. July, 1921. (Prices, 10s., 15s., and 10s. net.)

THE MAUDSLEY COURSES IN PRACTICAL PSYCHOLOGY.

THE fourth course of lectures and practical instruction for the diploma of psychological medicine, to be given at the Maudsley Hospital, Denmark Hill, S.E., will commence on January 3rd, 1922. The course will consist of two parts, Part I being conducted by Sir Frederick Mott, Dr. F. Golla, and Dr. Henry Devine. Sir Frederick Mott will give eight lectures on the anatomy of the nervous system, followed by practical instruction and demonstrations on methods of staining nervous tissue and preparing it for microscopical examination; microscopic sections will be distributed, illustrating the principal diseases of the nervous system, for mounting as a permanent collection. Dr. Golla will give eight lectures on the physiology of the nervous system,

followed by practical instruction and demonstrations on physiological chemistry (including the chemistry of the nervous system, physico-chemical methods, blood and urine analysis, and gastric contents analysis) and practical physiology (including the recording of reflexes and tremors in man, and the action of drugs on the autonomic system). Similarly, Dr. Devine will give eight lectures on psychology, followed by practical instruction and demonstration of psycho-physical methods and memory and intelligence tests. Part II, which will begin in April, 1922, will include lectures and demonstrations on the diagnosis, prognosis, and treatment of mental diseases; mental defect and crime; the practical aspect of mental deficiency; pathology of mental diseases, including brain syphilis, its symptomatology and treatment; the symptomatology of mental diseases; the psychoneuroses; and demonstrations in neurology. Full details will be published later. The fee for the whole course (Part I and Part II) is 15 guineas, or for either part separately 10 guineas; for one single series of lectures in Part I the fee is 4 guineas, and in Part II 2 guineas. Inquiries as to lectures, etc., should be addressed to the Director of the Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E. The Fellowship of Medicine, 1, Wimpole Street, W.1, will collect fees from, and issue admission tickets to, medical men intending to take the course who are introduced by the Fellowship.

CLAYDEN v. WOOD-HILL.

A REPORT of the case—Clayden *v.* Wood-Hill—which resulted in a verdict of £750 damages against Dr. Wood-Hill, appeared in the JOURNAL of November 26th, p. 919. We announced in our last issue that the matter was under the consideration of the Medico-Political Committee of the British Medical Association. At a special meeting of the Committee held last week (December 7th) the opinion was unanimous that, if the verdict were allowed to stand, it might prove a menace to medical men placed in circumstances similar to those in which the defendant was himself placed, and that if there were reasonable prospects of the verdict being set aside by the Court of Appeal or the defendant succeeding if a new trial were ordered, steps should be taken to that end. It was reported by the Solicitor that the last day on which an appeal could be lodged was December 13th. The Committee heard a full statement of the legal position from the Solicitor, who pointed out that in every case of this nature it might be taken that the Court of Appeal would intervene only on one or other of the following grounds, namely: (*a*) That there was no case to go to the jury; (*b*) that the verdict was against the weight of evidence; (*c*) that there was misdirection on the part of the judge; (*d*) that the verdict involved questions of law as distinct from questions of fact; or (*e*) that the damages were excessive. Mr. Hempson explained that he was fully acquainted with all the facts of the case, his firm having acted for the defendant at the trial. Whatever support might be given by the British Medical Association, the appeal would have to be that of Dr. Wood-Hill as defendant in the action, the Association having no *locus standi* in law apart from him. The most that could be looked for from the Court of Appeal would be not a reversal of the verdict and judgement in favour of Dr. Wood-Hill, but a direction for a retrial of the action by a judge sitting with a jury, in which event the risk of an adverse verdict would again have to be run. After discussion and further consultation with the Solicitor, the Committee agreed unanimously that the case was of sufficient importance to justify the Association in doing whatever was possible in order to test the judgement and get the decision reversed. Dr. Wood-Hill had stated that, acting on legal advice, he had refrained from appealing on his own behalf, but would give all the help he could provided the legal advice received by the Association satisfied him that there was reasonable prospect of a successful issue resulting from an appeal. The Committee instructed the Solicitor to obtain at once counsel's opinion and empowered a small subcommittee to act for it should the opinion be in favour of taking the case to the Court of Appeal. Counsel's opinion has now been obtained. The joint opinion of Sir Ernest Wild, K.C., and Mr. H. C. Dickens, by whom the defendant was represented at the trial, was to the effect that the prospects of success were not such as would justify an appeal. They pointed out that it would be possible to succeed only: (1) On the ground of misdirection by the judge; or (2) on the ground that the verdict was against the weight of evidence. After examining the judge's summing up and the evidence given in court counsel stated that the chances of success were very problematical, and they had come reluctantly to the decision that they could not advise an appeal with any degree of confidence. The Chairman of the Medico-Political Committee reported accordingly to the Council of the Association at its meeting on Wednesday, December 14th. The Council approved the course which the Committee, acting upon legal advice, had taken. A second list of subscriptions to the fund now being raised to reimburse Dr. Wood-Hill for the heavy expenses incurred by him in defending the action is printed this week at p. 1057. The Treasurer of this fund is Sir Hamilton Ballance, All Saints Green, Norwich.

RENEWAL OF MOTOR LICENCES.

MEDICAL men may be reminded that by the new arrangements that have come into force this year they would do well to set about renewing their motor car licences as soon as possible, and not wait until the turn of the year, as formerly. All information applicable to each individual case can be obtained by applying for the necessary form at the local post office.

THE opening of the Sir Alfred Jones Research Laboratory at Freetown, Sierra Leone, will be celebrated in Liverpool on Tuesday next. Sir Francis Danson, Chairman of the Incorporated Liverpool School of Tropical Medicine, will preside at a dinner to be held at the Adelphi Hotel. The guests will be the Earl of Derby, Chancellor of the University and President of the Liverpool Chamber of Commerce, and Dr. B. Blackwood, Professor of Tropical Diseases of Africa in the School.

England and Wales.

NORFOLK WAR HOSPITAL, THORPE.

AT the Norfolk War (General) Hospital, Thorpe, Norwich, now reverted to its normal use as the Norfolk County Mental Hospital, Field-Marshal Earl Haig unveiled a commemorative tablet on November 30th, set up in the front hall of the main buildings. The event was celebrated with due ceremony, and the tablet was, after unveiling, dedicated by the Lord Bishop of Norwich in the presence of a distinguished gathering, which included the Dean and choir of Norwich Cathedral and the Earl of Leicester, Lord Lieutenant of the County, Major Delaval Astley, the Vice-Chairman of the Committee of Visitors, and others. Marshalled in groups on the front lawn were doctors, nurses, and ex-patients, officers and men, disabled ex-service men from neighbouring hospitals, the Norwich Transport and Ambulance Company, and Commandants of Norfolk Auxiliary or Red Cross hospitals. Escorted by Lieut.-Colonel D. G. Thomson, C.B.E., the officer commanding the hospital, the Field-Marshal inspected the various groups, saying a few kindly words appropriate to each. The band of the Norfolk Regiment added music to the interest and success of the ceremony.

Scotland.

GLASGOW CONFERENCE ON VENEREAL DISEASE.

A CONFERENCE was held in Glasgow, on December 2nd, of representatives of local authorities and others interested in the campaign against venereal diseases in Scotland, under the auspices of the Scottish Committee of the National Council for Combating Venereal Diseases. Of 285 local authorities who were invited, 196 sent representatives, and the meeting was stated to be the largest held in Scotland on such a question. Mr. E. B. Turner submitted a paper prepared by Sir Malcolm Morris on the prevalence of venereal disease and the work of the National Council. It was hoped that an active programme would be pursued in Scotland to secure that the subject of venereal disease received an adequate place in all permanent educational arrangements, and that the training of all doctors and nurses should include a lequate instruction in the subject. Persons responsible for the training of adolescents should be given a course of lectures on the disease and its social effects in order to enable them to guide the young people under their care. Particulars of the work of the medical department of the National Council were given and the desirability was emphasized of a certificate of health for people before marriage. Sir Leslie Mackenzie read a paper on administrative aspects of venereal disease control in Scotland. Thirty-one tr atment centres had been established and were in full operation in Scotland, and these centres served more or less adequately a very large proportion of the population. Only 27 per cent. of the local authorities had not complied with the regulations and had not submitted schemes for approval. Dr. McGregor Robertson, chairman of the Scottish Committee, dealt with the functions and proposed operations of that committee. Without the support of the local authorities they realized that their work was likely to begin and end in words, and he sought to stimulate local interest and encourage and promote local effort in dealing with those diseases. Dr. A. K. Chalmers said that as a means of preventing the spread of the disease it could not be suggested that the present dispensary scheme was effective, but it might be urged that it had a certain educative value. Compulsory treatment and (where necessary) detention was the only logical sequel to notification, and this was the rock upon which it split. Dr. Richardson (Haddington) introduced a discussion on the problem in rural districts, where it was much more difficult to spread knowledge about venereal diseases that in town areas. Two methods had been suggested, one by propaganda by means of the cinema and the other by co-operation with the education authorities.

EDINBURGH ROYAL INFIRMARY.

At the third annual meeting of the League of Subscribers to the Edinburgh Royal Infirmary the organizing secretary said that notwithstanding the many difficulties of the past year they had exceeded the subscriptions of the previous year by more than £4,800. A total sum of £17,808 has been collected from the various groups of subscribers, comprising industrial employees and those engaged in commercial and business establishments throughout the city and in public works in the country districts now embraced in the scheme. During the year the membership of the league had been extended from 55,000 to 75,000, the increase being equally divided between the city and country districts. The membership was divided into 989 groups in town and country, with numbers ranging from thousands to less than a dozen in a group, while the rate of subscription varied, the minimum being one penny weekly. The chairman of the board of management of the infirmary congratulated the league on the effort made. There had been 13,600 in-patients in the infirmary during the year, while out-patients numbered 41,800. The infirmary was the largest general hospital in Great Britain, and was well worthy of all the support that they and others gave it. Last year the expenditure was £130,000, and this year he was afraid it would be between £134,000 and £135,000, but from all sources the income over expenditure would show a balance to the good. They would not, however, have been able to show such a good result except for the fact that the Prince of Wales's Fund had been drawn upon to help the infirmary, while they had also received a large amount from legacies.

PENSIONS INQUIRY AT ABERDEEN.

An inquiry was opened at Aberdeen, on December 9th, by representatives appointed by the Minister of Pensions to inquire into complaints regarding the Orthopaedic Annexe at Forbesfield, Aberdeen, and the circumstances regarding the resignation of the committee in charge. The inquiry was conducted by Mr. George Chrystal, permanent secretary of the Ministry of Pensions, Sir Lisle Webb, Colonel Warden, and Colonel Richardson. After inspecting the annexe, the commissioners met representatives of the Aberdeen Branch of the British Legion, who put forward complaints in regard to the accommodation for ex-service men at Forbesfield. It was stated that the accommodation was totally inadequate, that there were not sufficient huts to house the men, that the heating arrangements and cloakroom accommodation were not satisfactory, and that the approach to the annexe was in a bad condition. Mr. Chrystal said that he had inspected the annexe, and was quite in agreement with the British Legion, and promised that there should be no delay in having the matter remedied. A representative of the British Legion spoke of the good treatment which the men received under Dr. Middleton Connon. Mr. Chrystal said that he personally shared that opinion.

GLASGOW ROYAL INFIRMARY.

A most enthusiastic and happy gathering took place on December 5th in the Athenaeum Restaurant, Glasgow, when 205 nurses, past and present, of the Glasgow Royal Infirmary met at this the first annual dinner. The chair was occupied by Mrs. Strong, who was formerly matron of the institution, and who retired from that position in 1907 after many years' service. There were present as guests Mr. James Macfarlane (Chairman of Managers), Mr. James S. Craig and Professor John Glaister (Managers), and Dr. J. Maxtone Thom (Superintendent). After dinner a full toast list was carried through by the nurses. In the course of the evening it was unanimously decided to form a league for Glasgow Royal Infirmary nurses, and if possible to publish a magazine at regular intervals for circulation among its members.

NEURO-INDUCTION.

The autumn meeting of the Scottish Division of the Medico-Psychological Association was held in Edinburgh on Friday, November 18th, when Dr. Haydn Brown read a paper, and gave a demonstration of the methods he employed in "neuro-induction." The audience contained many recognized authorities on psychotherapy, including Professor George Robertson, Dr. George Ker, Dr. Murray Lyon, Dr. Bryce, Dr. Brock, Dr. Henry, and Dr. David Yellowlees. The speakers were unanimously of opinion that what Dr. Haydn Brown called "neuro-induction" was simply light hypnosis or the hypnoidal state of Boris Sidis, induced by a recumbent attitude in an easy position, accompanied by the usual suggestions and manipulations employed in inducing hypnosis. The opinion was further expressed that there was nothing new in the methods demonstrated, and nothing that was not employed in appropriate cases by several of the speakers in their own practice. The introduction of a new term to describe so familiar a process and conditions was therefore deprecated.

Ireland.

INSURANCE CERTIFICATE FEES FOR MEDICAL MEN.

ON the invitation of the Local Medical Committee, a meeting of medical men in Belfast and neighbourhood was held in the Medical Institute, Belfast, on December 6th, "to consider the proposed reduction of fees for certificates under the Insurance Act." Professor R. J. Johnstone, F.R.C.S., M.P. (Northern Ireland), presided, and there was a good attendance. The following resolution was passed:

> That this meeting of members of the medical profession in Belfast and in the surrounding counties protest most strongly against the proposed reduction of the present fees for certification in connexion with the National Insurance Act, as the present rate does not even yet represent the rate of remuneration that was originally agreed on, when regard is had to the depreciation in the value of money.

The Dublin Borough Medical Committee (Professor R. J. Rowlette, F.R.C.P.I., in the chair) passed the following resolution:

> That inasmuch as the original agreement between the medical profession and the Treasury, arrived at in 1915, was to the effect that certain sums of money were to be allocated by the Treasury for expenditure in Ireland on (1) certification, (2) on the appointment of medical referees acceptable to the medical profession; and seeing that the Treasury has not in the six years ensuing adhered to their part of the bargain, the medical profession must decline now to agree in advance to any further arrangements suggested by the Treasury in this matter.

Strongly worded protests by other Borough and Local Medical Committees throughout Ireland have been made with regard to the action of the Treasury; it is pointed out that, first, by its violation of its undertaking with the Irish Medical Committee in not appointing whole-time medical referees, etc., the Treasury managed to have from 30 to 40 per cent. of the equivalent grant unexpended each year since the Insurance Act came into operation, and secondly, that owing to the circumstances in which the increased fees for certification were granted in 1920 the Treasury is not justified in making any reduction.

Dublin Infant Aid Society.

The Committee of the Dublin Infant Aid Society is making its annual appeal for funds to enable it to continue the supply of milk. This charity, which is the means of saving the lives of numberless children, is one which should appeal to many. Indeed, it may be looked on as a duty as much as a charity to support it, for the health of the future generation depends on the health of the babies of the present. The work, which is non-political and non-sectarian, is carried on in a thoroughly practical and businesslike way. Through the city registrar the committee has a knowledge of all births in the city of Dublin. The nurses visit those who live in the poorer localities and might be expected to be in need of help. The voluntary visitors then visit until the baby is one year old. The nurses' duties are to see that the child's health is not neglected until 5 years of age. The milk dépôts and the sewing guild of the society were formed to help the very poor. There are five milk dépôts, in all of which milk is given either free to those who cannot afford to pay anything, or at a reduced price to those who can afford to pay a little. It will be understood that the expense of carrying on those dépôts is high owing to the price of milk at present.

Ulster Medical Society: Annual Dinner.

The annual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast, on December 8th. Owing to the illness of the President, Dr. Robert Hall, the Vice-President, Mr. J. A. Craig, F.R.C.S.Eng., occupied the chair. The society had as guests the Lord Mayor of Belfast, the Speaker of the Senate of Northern Ireland (the Marquis of Dufferin and Ava), the Speaker of the House of Commons of Northern Ireland (the Hon. Hugh O'Neill), the Lord Chief Justice of Northern Ireland, together with Lords Justices Moore and Andrews, Mr. Justice Wilson, the Recorder of Belfast, and the President of the Law Society. The following toasts were given: "The King," by the Chairman—the National Anthem was sung; "The Prosperity of the City of Belfast," by Professor R. J. Johnstone, M.P., responded to by the Lord Mayor; "The Senate and House of Commons of Northern Ireland," proposed by the Chairman and responded to by the Speaker of the Senate and by the Speaker of the House of Commons; "The Legal Profession," proposed by Professor J. A. Lindsay, and responded to by the Lord Chief Justice; the Recorder and Lord Justice Andrews also spoke; "The President," proposed by Dr. Thomas Houston, who referred with great regret to the illness of Dr. Hall, and said that all would join in wishes for his speedy recovery; he coupled with the toast the name of their Chairman and Vice-President, Mr. J. A. Craig, to whom they owed a debt, as at an hour's notice he undertook to fill the gap, and had done so with the signal success that they had all witnessed. Mr. Craig replied, and proposed the healths of the Honorary Secretary, Dr. W. W. D. Thomson, and his two coadjutors, Drs. Marshall and Turkington, to whom fell all the labour and work; Dr. Thomson replied.

Correspondence.

HYPERTROPHIC PYLORIC STENOSIS AND HYPERADRENALISM.

Sir,—In your issue of November 26th (p. 891) appears a communication by Messrs. H. Tyrrell Gray and F. N. Reynolds in which congenital hypertrophic pyloric stenosis is attributed to hyperadrenalism in the mother. This extraordinary theory is supported by the following evidence:

> "Clinical evidence appears to us to support the view that closure of the pyloric sphincter is controlled by stimulation of the sympathetic nerve supply and by its hormone (adrenaline), and the logical inference is that the pyloric hypertrophy is associated with hyperadrenalism, the result of excessive sympathetic stimulation. . . . Now there is no evidence of hyperadrenalism in the child; but, since it is generally conceded that the hypertrophy takes place *in utero*, it is probable that the hyperadrenalism is maternal in origin."

Anxiety and apprehension in the pregnant mother and the "first child" factor are also put forward as arguments. The theory was previously published by Dr. Pirie.[1]

The theory makes several unwarrantable assumptions. In the first place, it is not at all certain that the normal effect of sympathetic stimulation in man is a constriction of the pylorus. I can find no authoritative account of any experiments on this point. Even if constriction has been obtained in any particular series of experiments on animals, we should be very careful not to assume that such would be the action of the sympathetic, or the only possible action of the system in the human subject. We know that the strength and the quality of the stimulus make a great difference in the result. We know also that the effects of sympathetic stimulation are not the same in different classes of animals. We may further suspect that the effects differ in different animals under different conditions.

As to the effects of adrenin, it must not hastily be assumed that these are in all respects identical with those of sympathetic stimulation. We know that the effects of the drug vary according to the dose, and very probably with several other unknown factors. I am aware that there are some isolated statements that adrenin constricts the pylorus, but I submit that the evidence is not convincing.

In speaking of hyperadrenalism, Messrs. Gray and Reynolds probably mean over-activity of the chromophil tissues. About the adrenal body (cortex) we know practically nothing, nor yet have we any notions of what may be the functions of the adrenal body in conjunction with the chromophil tissue in it (medulla). It is not known what are the normal functions of the chromophil tissues, nor are there reasonable grounds for supposing that there is such a thing as over-activity of these tissues. It is not easy to conceive what would be the results on the whole organism of excessive activity of the chromophil tissues—assuming that this means increased pouring out of adrenin, and that adrenin has exactly the same effects as stimulation of the sympathetic. From the data available it would seem that the effects on heart, blood vessels, muscles of alimentary tract, organs of secretion, and other structures will be so complicated and so serious that any increased contraction of the pylorus would never be noticed. It seems curious that this one possible action should be singled out to account for a definite malformation.

Again, one is urged to inquire, why should the effect be manifested on the foetus, and not on the mother?

But the starting point of the whole hypothesis seems to be the emotional theory of adrenin secretion. It is only just to point out that this theory has never been firmly established.

Taking all these points into consideration, it is lamentable that the record of a good piece of surgical work—the relief of an intestinal obstruction by a simple incision—should have been spoiled by the introduction of a hypothesis which is not only totally unfounded, but which is not even plausible. The publication of such views brings the whole subject of internal secretion into disrepute, and can only have the effect of deterring critically minded

[1] *Lancet*, September, 1919.

clinicians from exploring what might in many cases turn out to be fertile territory.—I am, etc.,

SWALE VINCENT.

Middlesex Hospital Medical School, Dec. 6th.

PERFORATION OF THE NASAL SEPTUM IN COCAINE TAKERS.

SIR,—I regret that, by my letter published in your issue of November 27th, I failed to make my meaning clear to your correspondents. That perforation of the cartilaginous nasal septum does occur in cocaine sniffers, and that such perforation apparently stands in definite relation to the taking of the cocaine by the nose, has been known abroad, in the States, and in Canada, for some years.

I have found no mention of the fact in any English textbook; but, of course, I may have failed to consult the right authorities.

I am well aware that septal perforation occurs with special frequency amongst workers in certain trades, etc.; and that many explanations have been given for its occurrence in other persons, who have not been suspected of the cocaine habit.

But Dr. O'Malley's logic—that, since perforation of the nasal septum occurs in people "who never had access to cocaine," its presence in cocaine takers must be regarded as merely coincidental—is equally capable of proving that, since such perforation occurs in people who are not workers in either salt mines or chromic acid factories, its presence oftentimes, amongst those who *are*, is merely coincidental. So, too, for syphilis. Dr. Tilley, however, thinks that people take to cocaine because a perforation is forming as a result of irritation from collected dust and nose-picking; he regards the ulceration as antecedent rather than consequent, to the habit. My point is simply this: Perforation of the cartilaginous septum is of sufficiently frequent occurrence in notorious cocaine takers to warrant our attaching some diagnostic importance to the association, in any particular person, of such nasal perforation with a certain group of nervous symptoms.

In my experience perforation of the septum in cocaine takers is always circular. It is not "button-hole," as suggested by Dr. Tilley. A button-hole is a slot, at most elliptical, but never circular. The septal perforation of cocaine takers is described in *La Cocaine*, by Courtois-Suffit (Masson et Cie, Paris).—I am, etc.,

London, W., Dec. 10th. F. G. CROOKSHANK.

MULTIPLE TOOTH EXTRACTION.

SIR,—The latest craze of the medical practitioner appears to be to advise his patient to "have all your teeth extracted"; on any affection of the eye, rheumatic pains, rheumatoid arthritis, gastritis, and many other diseases, the same advice is given. Although there is, no doubt, much to be said in favour of this advice in certain circumstances is it not possible that it is often taken a little too far? A case in point: a healthy man, aged 28, a cycle agent in possession of a set of teeth far above average, consulted me complaining of "inflammation of the left eye." The history was that his eye had been inflamed and painful for a week; he had seen his medical adviser several times and was informed that he had "an ulcer of the eye" and strongly advised to have all his teeth out. On examination I found a minute metallic filament embedded in the cornea which with the help of a solution of cocaine and a needle was easily removed.

This case may be exceptional, but I am convinced that in recent years the advice so simple to give—"have all your teeth out"—is often given without due consideration of all that this advice entails.—I am, etc.,

Southsea, Dec. 6th. MONTAGUE WAY.

AMBROISE PARÉ.

SIR,—Your reviewer W. G. S. is rather severe on Ambroise Paré, to whom he is less than kind. "As to his midwifery," W. G. S. says: "Philumenos and Soranos had described podalic version on the living child; Paré only referred, with Celsus, to podalic version for the extraction of a dead foetus."

The first part of this sentence is true enough, though how Paré's credit can be affected by the work of Soranus, which was only rediscovered in the nineteenth century, I fail to see.

Philumenos, as quoted by Aetius, certainly in one brief sentence recommends podalic version on the living child. He can hardly be said to describe it, for the whole matter is contained in the following sentence: "At si caput infantis locum obstruxerit, in pedes vertendus est, et ita adducendus." But the practice had completely fallen into disuse until Paré's time, and he revived it by his writings.

W. G. S.'s statement that Paré "only referred to podalic version for the extraction of a dead foetus" is not correct. The heading of Paré's chapter (I quote from the English translation, not having access to the original French) is, "Of the chirurgical extraction of the childe from the womb, either dead or alive." Moreover, in the course of his very precise directions he advises that one of the arms be allowed to remain up by the side of the head, on account of supposed danger of the os contracting round the neck and so killing the child. It is thus clear that he is speaking of version of the living child.

Again, W. G. S. says: "He believed that the pubic symphyses separated." This is the reverse of the fact. Paré says: "But the bones of the share, called ossa pubis, I have never seen to be separated, as many do affirm." What W. G. S. was probably thinking of is Paré's assertion that the ilia separate from the sacrum at the time of labour, which he declares that he has actually seen in *post-mortem* examinations of women who have died in labour.

Finally, W. G. S. says: "Although Paré does not mention it, Guillemeau states that he had seen Paré perform dilatation of the cervix, accouchement forcé; and that Paré's own married daughter had been so delivered." This evidently refers to Guillemeau's account of his own successful treatment of Paré's daughter for *ante-partum* haemorrhage, which is worth quoting in full. (Again I quote from the English translation (1612).)

> "The yeare 1599" (Paré died in 1590), "Madam Simon, yet alive, daughter to Mr. Pareus Counsellor and Chief Chirurgion to the King, being ready to lie downe was surprised with a great flux of bloud . . . and because of great swoonings that took her every quarter of an houre through the losse of bloud she had, Mr. Marchant my son in lawe and myselfe were sent for. But I finding her almost without pulse, having her voice weak and her lips pale; I told her mother and her husband that she was in great danger of her life; and that there was but one way to save her, which was to deliver her speedily: the which I had seen practised by the late Mr. Pareus her father, who had caused me to do the like, unto a gentlewoman of Mad. de Seneterre. Then her mother and her husband earnestly intreated us to helpe her and that they would put her into our hands to dispose of her. And so sodainely, following the advice of the physitions, she was very happily delivered of a lively child."

Earlier in the chapter the procedure is described, which is simply that of podalic version and rapid extraction. There is no need to use the term "accouchement forcé" of such a very ordinary procedure. As to three-bladed dilators, as hinted by W. G. S., there is not a word of such a thing.

Action and reaction are equal and opposite, and I can only conclude that the indiscriminate eulogy of Paré on the part of the author reviewed produced a reaction on the part of W. G. S. calculated to neutralize it. Paré, with his modest saying, "Je le pansae Dieu le guarist," would have wished to be saved both from his friends and his enemies.—I am, etc.,

Liss, Hants, Dec. 8th. PHILIP D. TURNER, M.D.Lond.

VENEREAL CLINICS: A LAY POINT OF VIEW.

SIR,—Unlike Dr. Reginald Miller, I am very strongly of the opinion that the BRITISH MEDICAL JOURNAL has given valuable assistance to the antivenereal campaign by publishing "Venerealee's" letter in the issue of November 26th.

To those who refuse to live in a fool's paradise and who prefer to face the truth, however unpleasant it may be, the blindness of certain sections of the public, especially the feminine public, to the wide incidence of sexual irregularity amongst unmarried men is a great difficulty in driving home the venereal problem. Few with a large experience either of venereal disease or of the outlook of young unmarried men can fail to realize that the views expressed by "Venerealee" are those of a very large section of our young men. We have to face the problem

of the unchaste as it exists to-day, however remote the outlook may be from the idealism with which we sympathize.

Dr. Marion Mackenzie, in common with many medical women and women social workers, quite naturally finds it difficult to give credence to the opinions expressed by many responsible men that the large majority of young men indulge, either occasionally or frequently, in irregular sexual intercourse. For these ladies are the very last to whom such men would confess their inmost thoughts on such a matter, and it is only after close contact and intimate personal association that young men admit even older men into their confidence.

It is clearly a matter of paramount importance that the children of this country should be trained in the development of self-control, but in the meantime what can be done to limit the infection amongst those who persist in satisfying their sexual instincts? Amongst such, the raising of the individual's sense of responsibility towards his fellow citizens, to the extent of making him realize that if he indulges in such anti-social acts it is his duty to take such precautions as will render these acts the least likely to be followed by infection, which he may transmit to innocent persons with whom he may afterwards be associated, appears the method most likely to be successful. For this purpose the knowledge of the principles and practice of immediate self-disinfection is necessary, and it would appear very advantageous that venereal clinics should be used as one of the means of disseminating this knowlege.

"Venerealee" expresses his gratitude for the kindness, sympathy, and efficiency that he met with at the St. Thomas's Hospital Clinic, while undergoing treatment for his infection, but apparently he received no instruction or information in regard to the prevention of venereal disease, and I think it is now universally agreed that the best hope of diminishing venereal disease lies in preventive, rather than curative, medicine.—I am, etc.,

London, W., Dec. 9th. H. WANSEY BAYLY.

SPINAL ANALGESIA.

SIR,—I reply with great pleasure to the letter (in the BRITISH MEDICAL JOURNAL of November 12th) of Mr. Stanley Rowbotham, especially because it gives me an opportunity of correcting a stupid mistake made by me in my communication of November 5th (p. 745).

The ampoules contain a 10 per cent. solution of stovaine (Billon), to which is added a 10 per cent. solution of sodium chloride. The ampoules generally contain 3.4 c.cm., which is equivalent to 7½ centigrams of stovaine (my maximum dose). Thus, 1 c.cm. of the mixed solution would contain 10 centigrams of stovaine and 0.1 c.cm. = 1 centigram. Therefore a decimal point must precede all the quantities given in the original article: thus a double hernia would require 0.7 to 0.75 c.cm., rectal operations 0.5 c.cm., and so on. So that the actual quantity of fluid injected is comparatively small.

Now I answer seriatim Mr. Rowbotham's pertinent questions:

1. The solution strength is 10 per cent. stovaine.

2. In the ampoule there is an addition of 10 per cent. sodium chloride solution. I tried the heavy glucose solution for a brief period during the war, but we all satisfied ourselves that it much augmented the subsequent headache. The position during the operation is indifferent. I find no difficulty or danger with the patient in the Trendelenburg position. If the operation to be performed is high up, and if the higher interspaces are difficult to find, I inject the stovaine in the highest accessible interspace and immediately lower the patient's head till the operation begins.

3. I believe that strychnine is of definite value both as heart and nerve tonic. We operate on many patients in a very poor condition from bilharzia infiltration and tumours along the descending colon, and find that the addition of strychnine is quite helpful.

May I be allowed to add that, as it is difficult in a JOURNAL article to combine brevity with clearness, I shall be happy to answer any inquiries made privately, even in meticulous detail.—I am, etc.,

[illegible] Hospital, Alexandria, Nov. 27th. A. MORRISON.

HOSPITAL POLICY.

SIR,—I observe with much interest that the Leicester motion has once more occupied the attention of hospital staffs in London,[1] and seems to be near its death at last, because, as Dr. Couzens says, "we have seen the error of our ways." The history of this proposal may with advantage be recalled ere it becomes extinct:

On December 21st, 1920, a large conference of staffs of hospitals,[2] having exhausted the morning in veneration and applause of the voluntary system, spent a short time in the afternoon in hurriedly endorsing a resolution which, in the opinion of the able Cave Committee, which held twenty-eight meetings and examined ninety-three expert witnesses, many being eminent medical men, would "endanger the future of the voluntary hospitals." Indeed, this Committee quoted with approval the opinion that "the bottom would drop out of the voluntary system." Moreover, this same Conference, having in the morning by immense majority rejected on the *score of sentiment* the able arguments of Dr. Peter Macdonald, although they allowed them to be logical, proceeded in the afternoon on the *score of logic* to endorse, also by huge majority, the most crudely unsentimental proposition ever put before the staffs of hospitals in this country. Only two persons besides myself had the temerity to reject the counsel of the Chairman that this resolution should be unanimous, and I alone protested against it in the JOURNAL.[3] The next stage in the propagation of this idea was an attempt to exploit it in Scotland,[4] but there the staffs of hospitals rejected it forthwith. Moreover, it failed equally in Brighton.

In no way discouraged, its sponsors revived it at Newcastle.[5] Here, after a stormy career, in which its supporters seemed to vie with one another in apologies for their unhappy position, it took precarious root, and the staffs of hospitals everywhere were formally requested to commend it to their committees. It would be interesting to learn how many really did so, and what happened if they did. Further, the Representative Body, after short discussion (in which, of course, no layman took part), proceeded to inform the Cave Committee that they were quite wrong. I am tempted to wonder what would happen were the position reversed. Let us suppose that a committee of medical experts, selected by a Cabinet Minister, held twenty-eight meetings, and examined ninety-three accredited witnesses, and were then told by a body of laymen, many of whom had made no special study of the subject in debate, who held but one meeting, and called no medical witnesses, that they—the medical committee—did not know their business. What uproar would arise in the medical camp! I note, however, that the Cave Committee are not disturbed—and, indeed, they have no need to be.

Now, is it not time that the profession recognized the futility of solemnly meeting and seriously formulating among themselves unpractical resolutions upon questions most intimately affecting the life, health, and pockets of the laity—questions, moreover, which will, as a matter of hard fact, be ultimately decided by laymen, and that, perhaps, with little reference to us? Surely it would be better to invite these interested laymen to our conference at first, instead of waiting to be, figuratively, kicked downstairs by them afterwards, which is the usual result of this short-sighted policy.

I would suggest that at the next Hospital Conference two representatives be invited from each hospital, *one of whom should be a layman.* I fear, however, that no chairman would have the hardihood to invite such a conference to pass with unanimity that misguided invention—the resolution of Leicester.—I am, etc.,

Chichester, Dec. 5th. G. C. GARRATT.

DISINTOXICATION IN DIABETES AND GOUT.

SIR,—In the account of the discussion on Dr. Guelpa's lecture, printed on p. 989, it is stated that I referred to the writing of Bret Harte. I should have referred to Mark Twain, not Bret Harte. The overeating sailor, suffering from "crops" of boils, who was cured owing to a shipwreck

[1] BRITISH MEDICAL JOURNAL, Supplement, November 26th, p. 139.
[2] Ibid., Supplement, January 1st, p. 1.
[3] Ibid., January 1st, p. 1, and August 27th, p. 337.
[4] Ibid., Supplement, February 26th, p. 51.
[5] Ibid., Supplement, July 30th, p. 79.

and the great reduction in his food which it necessitated, figures in Mark Twain's *My Début as a Literary Person*. But see also his *At the Appetite-cure*.—I am, etc.,

London, W., Dec. 10th. F. PARKES WEBER.

CLAYDEN v. WOOD-HILL.

SIR,—The following subscriptions and promises have been received to the Wood-Hill Fund in addition to those recorded in the first list, which was published in your issue of December 3rd. There is plenty of opportunity for further subscriptions.—I am, etc.,

HAMILTON A. BALLANCE,
Honorary Treasurer.

All Saints Green, Norwich,
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SINCE the removal of the Tropical Diseases Bureau to the buildings occupied by the London School of Tropical Medicine the libraries of the two institutions have been united. The common library, which is known as the Tropical Diseases Library, is administered by a committee representing both institutions as well as the Seamen's Hospital Society, who are the trustees. The aim of the Tropical Diseases Library is to promote the study of tropical medicine and hygiene generally, and the Library and Reading Room are open daily from 9 a.m. to 6.30 p.m. (except on Saturday, when they close at noon) to all members of the profession who are interested in those subjects.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examination indicated:

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Passed with distinction.

UNIVERSITY OF BRISTOL.

THERE was a large attendance in the Council Room at the University of Bristol on Friday, December 2nd, when Emeritus Professor C. Lloyd Morgan, D.Sc., F.R.S., was presented with his portrait, a gift from friends, colleagues, and students, both past and present. The portrait was painted by Mr. Anning-Bell, A.R.A.

UNIVERSITY OF MANCHESTER.

THE following appointments have been made: J. P. Buckley, M.A., M.D., M.S., F.R.C.S., Lecturer in Regional Surgery; J. M. W. Morison, M.B., C.M., Lecturer in Applied Anatomy; and T. H. Oliver, M.D., Lecturer in Clinical Medicine.

UNIVERSITY OF WALES.

THE Council of University College of South Wales and Monmouthshire has appointed Dr. Ewen J. Maclean Professor of Obstetrics and Gynaecology in the University of Wales in connexion with the Welsh National School of Medicine, Cardiff.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

AT the annual meeting of the Royal College of Physicians of Edinburgh, held on December 1st, Sir Robert Philip, M.D., LL.D., was elected President for the ensuing year. The other office-bearers for the year were appointed as follows: Vice-President, Dr. Harry Rainy; Councillors, Drs. John William Ballantyne, John Macpherson, George M. Robertson, Robert Thin, and James Lamond Lackie; Treasurer, Dr. Norman Walker; Secretary, Dr. J. S. Fowler; Honorary Librarian, Dr. John William Ballantyne; Curator of the Research Laboratory, Dr. J. J. Graham Brown.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on December 8th, when Sir Anthony Bowlby, President, was in the chair.

The diploma of Fellow was granted to the following twenty-six candidates found qualified at the recent examination:

A. J. McNair, V. E. Negus, M. L. Treston, N. St. J. G. D. Buxton, L. H. W. Williams, R. C. Davenport, G. I. Evans, D. C. Norris, E. I. Lloyd, L. B. Goldschmidt, Marian N. Bostock, Eleanor J. Partridge, R. B. Green, A. D. Wall, H. Reid, A. B. K. Watkins, R. Y. Paton, L. H. Appleby, G. G. Bruce, W. H. Bleaden, G. A. Brookes, H. W. B. Cairns, C. M. Finny, A. H. Heslop, G. I. Strachan, D. McK. Suther and.

The Licence in Dental Surgery was granted to sixty-three candidates.

Sir Anthony A. Bowlby and Sir John Bland-Sutton were re-elected to represent the College on the Conjoint Board of Scientific Studies.

The President reported that he attended in the lecture theatre of the College on Thursday, November 17th, the day appointed

for the annual meeting of Fellows and Members, and that, as the required quorum of thirty was not present at the expiration of fifteen minutes from 3 p.m., the hour for which the meeting had been summoned, he had announced that the meeting could not be held. The President referred to certain irregular proceedings which appeared to have taken place on this occasion after his withdrawal from the theatre, and suggested that it might be a matter for the future consideration of the Council as to whether, or not, any steps should be taken in view of these irregular proceedings.

The matter was referred to a committee to consider and report to the Council in regard to the irregular proceedings to which the President had called attention.

A vote of thanks was passed to Mr. H. J. Waring, the representative of the College on the General Medical Council, for his reporting the proceedings of the General Medical Council at their recent session.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.

THE following have, after examination, been admitted as Fellows of Faculty: D. McIntyre, O. H. Mavor, J. I. Russell, D. Smith, D. Steven, W. R. Wiseman.

Obituary.

THOMAS MacQUEEN, M.B., C.M.EDIN.,
Eastbourne.

By the death of Dr. Thomas MacQueen, who passed away on December 1st at Eastbourne, aged 70 years, the local medical profession has lost one of its oldest and most respected members, and the town one of its most esteemed citizens.

Born at Crofts, Dalbeattie, Kirkcudbrightshire, in 1841, Dr. MacQueen received his medical education at Edinburgh University, graduating M.B., C.M. in 1873. Thereafter he filled the positions of resident surgeon, Queen's Hospital, Birmingham, and resident medical officer, Royal Hospital for Sick Children, Edinburgh. In the Russo-Turkish war of 1877–78 he served as one of the surgeons with the Stafford House Society. In 1879 he settled in Eastbourne, joining in the partnership of an extensive general practice. He was for many years one of the medical officers on the honorary acting staff of the Princess Alice Memorial Hospital, and at the time of his death he was on the honorary consulting staff.

Ever since he underwent a serious operation, in 1910, which was followed by a protracted convalescence, Dr. MacQueen never recovered his former vigour and buoyancy, and although he continued, with the assistance of his son, who joined him in partnership in 1919, to attend to some of the work of the practice, it was evident of late to his friends that the remaining term of his life's span was rapidly drawing to a close. But those of his fellow members who saw him at the meeting of the Division of the British Medical Association the day before his death never contemplated that the end was so near at hand. He was a past president of the Eastbourne Medical Society, a past chairman of the Eastbourne Division of the Association, and always took a keen interest in the welfare of his profession. He also took an active interest in communal affairs, was a member of the Town Council from 1892 to 1895, when he rendered excellent service on the Sanitary Committee, and was an ardent Freemason.

A colleague writes: "A typical Scot, of ample physical proportions, genial, buoyant, unassuming, sympathetic, full of common sense and brimful of humour, withal intolerant of everything savouring of cant and hypocrisy, Dr. MacQueen possessed a sterling character which, consistently displayed during the forty-two years of his association with the affairs of Eastbourne, so endeared his personality in the affectionate esteem and regard of all classes of the community that his death is now universally regretted. Especially will his loss be irreparably felt by those in the humbler spheres of life who have appreciatively regarded his patient and assiduous services, never-failing courtesy, ever-ready sympathy and many unostentatious acts of kindly benevolence with feelings of gratitude. By those who knew him best—and his intimate friends were many—it was realized that he never harboured a grievance nor cherished malice against anyone, and it can truthfully be said that at the end of a long and honourable career the vital spirit of Thomas MacQueen quits this mundane sphere without leaving an enemy behind."

JOHN SCOTT, M.A., M.D.,
Late Physician to the Southern Hospital for Women and Children, Manchester.

WE regret to record the death of Dr. John Scott, M.D., practitioner in Manchester, at the residence of his son, Dr. James Bethune Scott, Abridge, Essex, in the 74th year of his age.

Dr. Scott was born at Aberdeen in 1847, and attended the grammar school there, where he was the school medallist. At Aberdeen University he received the degree of M.A. in 1866, the degrees of M.B., C.M. in 1873, and that of M.D. in 1891.

After acting for a brief period as assistant to Dr. McWilliam in Huntly and as medical officer, South Ronaldsay, Orkney, he removed to Manchester in 1876. He was for many years in partnership there with his brother, the late Dr. Benjamin Scott. In 1918 he underwent an operation from which he never sufficiently recovered to resume active work. In 1880 Dr. Scott became physician to the Southern Hospital for Women and Children, and to the Manchester Maternity Hospital. When these institutions were amalgamated with St. Mary's under the name of St. Mary's Hospitals, he continued his work in the children's and the maternity wards until he retired in 1918. He was lecturer to midwives and examiner to the Central Midwives Board for many years, during which he also served the University of Manchester as lecturer on vaccination. He was a member of the North of England Obstetrical and Gynaecological Society from its beginning, and as local secretary arranged the Manchester meetings and dinners of the society. He was thus very well known in northern obstetric circles, and was universally loved and respected as one who cherished all that was courtly and chivalrous in his dealings not only with his colleagues but with students, nurses, midwives, and the hospital staff of all ranks.

Dr. Scott endeared himself to his patients and friends by his sympathetic interest, his delightful humour, and cheerful disposition. He was an accomplished classical scholar, and never lost his taste for the masters of Greek and Roman literature. He was also well versed in French literature and history. Dr. Scott is survived by his widow and his son, Dr. James Bethune Scott, M.C.

WE regret to record the death of Dr. ROGER BERNARD BURKE, which took place at Plymouth on November 29th in his fifty-eighth year, from pneumonia following an operation. Dr. Burke received his medical education at Queen's College, Cork, qualifying with the diplomas of L.R.C.P. and L.R.C.S.Edin. in 1888, and he began practice in Plymouth about thirty years ago. He held the posts of honorary anaesthetist to the South Devon and East Cornwall Hospital and to the Ear and Throat Hospital, Plymouth, and during the war was on the staff of the Stoke Military Hospital. He was an active member of the British Medical Association, and at the time of his death was a member of the executive committee of the Plymouth Division. In his younger days Dr. Burke gained great distinction in Ireland as an athlete, and he held more than one Irish championship. He was very popular alike with all classes of the population and with his fellow practitioners; he was devoted to all kinds of outdoor sports, was a golfer, and rode to hounds. He was twice married, and is survived by his widow, two daughters, and three sons.

THE *Deutsche medizinische Wochenschrift* states that the medical profession in Germany lost 1,675 of its members by death in the war, while 2,200 were wounded.

THE late Mr. Frederick William Gorst of Hayton, Lancs, has by his will bequeathed £500 each to the Liverpool Royal Infirmary, the Liverpool Northern Hospital, the Liverpool Southern Hospital, and the Liverpool Stanley Hospital, and £250 each to the Liverpool Consumption Hospital and the Liverpool Children's Hospital.

UNDER the will of the late Miss Frances Elizabeth Hughes the Ramsgate General Hospital and Seaman's Infirmary receives £1,000 to endow a Frances Elizabeth Hughes and John Davies Hughes bed. The testatrix has also bequeathed £2,000 to Dr. Robert Grieve Hicks of Ramsgate in recognition of his long-continued kindness to her.

Medical News.

AN International Society of Medical Hydrology was founded at a meeting at the Royal Society of Medicine on December 9th, with a preliminary membership of 71 medical men, from 13 countries, engaged or interested in medical hydrology. Delegates from France, Italy, and Holland were present. The following were elected representatives for their respective countries: Belgium, Dr. R. Wybauw; Czecho-Slovakia, Dr. Isidore Müller; France, Dr. Paul Ferreyrolles; Great Britain, Dr. Wilfrid Edgecombe; Holland, Professor J. Van Breemen; India, Dr. H. D. Dastur; Italy, Professor Luigi Devoto; Japan, Dr. Goichi Fujiyam; New Zealand, Dr. Arthur Herbert; Norway, Dr. T. W. Knudtzon; Switzerland, Dr. de la Harpe; United States of America, Dr. Guy Hinsdale. They will collate and present to the society, by means of an international journal, the clinical and experimental work in each country bearing upon the medical action and uses of waters and baths. Dr. Buckley of Buxton and Dr. Ferreyrolles of La Bourboule were elected honorary editorial secretaries and Dr. Fortescue Fox president.

AT a meeting of the Manchester Clinical Society, held in the Physiological Department of the University on November 17th, the president, Dr. G. R. Murray, announced that the subject of Professor Leonard Hill's paper in March would be on the physiological action of light and its uses as a therapeutic agent. Dr. Lamb spoke on alveolar air, its relations to respiratory processes and to blood; and demonstrated the various methods of taking alveolar air. Professor Hill discussed the carriage of CO_2 by the blood, and the acid base ratio, compensated and uncompensated. Drs. Lamb and Robinson discussed a combination in which there might be a disturbance of the acid base ratio in the blood.

THE King has commanded that the Great Northern Central Hospital, Holloway, shall henceforth be known as "The Royal Northern Hospital."

THE Committee of the Bristol Royal Infirmary has asked Lieutenant-Colonel Percy G. Robinson, D.S.O., to act as president of the institution, with a view to his election by the governors in due course, in succession to Mr. H. H. Wills, who recently resigned for reasons of health. Colonel Robinson is a director of Messrs. E. S. and A. Robinson, Ltd., and served with much distinction in the war. It shows an enterprising spirit in the governors of such an important hospital to choose as their president-elect a young man who is not only an active member of a big business but well known throughout the district as an all-round sportsman and county cricketer.

AT a meeting of the School Medical Group of the Society of Medical Officers of Health, held in London on November 19th, it was decided to make representations in the appropriate quarters advising that the Minister of Health should undertake all the powers and duties now delegated to the Board of Education with respect to medical inspection and treatment of children and young persons, as was the expressed wish of Parliament during the passage of the Ministry of Health Act, 1919.

THE annual dinner of the Epsomian Club was held at the Trocadero Restaurant on December 8th, with Dr. H. E. Haynes in the chair. After the health of the King had been honoured Dr. Haynes proposed "*Floreat Epsomia*." He reviewed the history of the college from its foundation, and gave interesting reminiscences of his own old school-days there. He said that the school had never been so flourishing as it was to-day, and much of its success was due to the present head master. The Rev. W. J. Barton, head master of Epsom College, replied to the toast. He said that one of the features of the school at present was the great success of the Officers' Training Corps, the percentage of successful candidates for O.T.C. certificates at Epsom being the best in England. The rebuilding of the nave of the college chapel, which was to be the Epsom war memorial, was to be commenced in the near future, but a considerable sum of money was still required for the purpose. He said that although the school was successful alike in work and play, he hoped to be able to do something more to develop the intellectual interests of the boys, most of whom at present seemed to spend their holidays repairing motor cars and motor cycles. The toast of "The Visitors" was proposed by Dr. H. F. Ealand in a characteristically witty manner. He set out, as he said, to "pull the legs" of the different guests, a feat which he achieved in no uncertain fashion. The toast was responded to by Sir Edward Pollock, Solicitor-General, who spoke of the difference in the modern developments of school life as contrasted with his own schooldays. The health of the Chairman was proposed by Sir D'Arcy Power, and at the conclusion of the dinner the school song was sung with much enthusiasm.

THE house and library of the Royal Society of Medicine will be closed from Friday, December 23rd, until Tuesday, December 27th, both days inclusive.

THE annual dinner given by the Medical Committee of the Cancer Hospital was held at the Hotel Cecil on the evening of December 8th, under the chairmanship of Sir Charles Ryall, C.B.E., the senior surgeon. In proposing the toast of "Prosperity to the Cancer Hospital," the Chairman referred to the breaking down in recent years of the barriers between the various hospital staffs of the metropolis, and the participation of the Cancer Hospital in the scheme of post-graduate education. The finances of the institution, he said, were still holding up in the anxious times that all voluntary hospitals were now going through. Sir Thomas Horder, physician to the hospital, in proposing the health of the guests, welcomed each visitor in a few apt words, and coupled with the toast the names of Sir James Allen, K.C.B., High Commissioner for New Zealand, Sir Kingsley Wood, M.P., Parliamentary Private Secretary to the Minister of Health, and Sir Percival Horton-Smith Hartley. Sir James Allen, in his acknowledgement, expressed the gratitude of New Zealand to the medical schools of Great Britain for the opportunities given to its medical students and graduates and the welcome they received; Sir Kingsley Wood defended the Ministry of Health's attitude towards the voluntary hospitals; and Sir Percival Hartley spoke of the friendly relations that exist between the Cancer Hospital and its near neighbour, the Brompton Hospital for Consumption, of whose Medical Committee he is chairman. The health of the Chairman was proposed in warm terms by his colleague, Mr. Cecil Rowntree, F.R.C.S., who made the arrangements for a very enjoyable evening.

THE Medical Golfing Society has been carried on in a more or less informal manner for twenty-three years, but it has now been decided to put it on a business footing. At a recent meeting Dr. Rolf Creasy was elected the first president; vice-presidents, a committee, and a secretary and treasurer were also elected. The annual subscription has been fixed at 10s., and is payable to Dr. Rolf Creasy, jun., honorary secretary and treasurer, 36, Weymouth Street, W. Subscriptions for 1922 may be paid forthwith. Two tournament meetings are to be held annually, and there will be team matches and other competitions for two challenge cups and two other cups. Membership, without election, is open to any gentleman on the *Medical Register* on application to the honorary secretary.

THE War Office announces that officers of the R.A.M.C. (except quartermasters) are in future to be removed from the Reserve on attaining the following ages: Surgeon-General, 60 years; Colonel, 57; and other officers, 55.

THE Livery Dinner of the Society of Apothecaries of London was held at Apothecaries' Hall, Blackfriars, on the evening of December 13th. The chair was taken by the Master of the Company, Dr. W. F. R. Burgess, O.B.E., and there was a large attendance. After the loyal toast had been honoured, the toast of the "Army, Navy and Air Force" was proposed by the Senior Warden and responded to by Vice-Admiral Sir Robert Hill, Medical Director-General, R.N. The toast of "Universities and College and the Examiners" was submitted by the Master, who gave reminiscences of the London University classes when he was a student many years ago at Guy's, and he paid a tribute to London University for what it had accomplished in raising the standard of professional education. The toast was replied to by Sir Sydney Russell Wells, M.D., Vice-Chancellor of the University of London, who dwelt on the great services rendered by the City Companies and by his own University to the cause of education; and by Mr. W. Girling Ball, on behalf of the Board of Examiners of the society. The health of the Livery and Company was proposed by the Master and responded to by Dr. Gordon Brown; and the toast of "The Guests," of whom many were present, was proposed by the Junior Warden, Dr. Thomas Wakefield, and replied to by Sir Charters Symonds. Some delightful solos and duets were sung by Miss Violet Openshaw and Mr. Bingham Watson, Clerk of the Company, with Mr. David Richards at the piano.

THE centenary of the Society of Medicine of Warsaw was celebrated on December 5th by a special meeting of the society and a reception, and on December 6th by a special service at the Church of St. Cross.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"C. W. E." is paid "a salary with free board and lodging, etc.," and has been assessed apparently on his salary plus £99 for the value of the allowances. Is this correct?

*** No; if his engagement is for a salary plus certain emoluments in kind, the value of the latter is not assessable to income tax; on the other hand, if he were appointed on the understanding that his salary was £449, of which £99 was to be deducted by or returned to his employers for value received in kind, the legal effect would be otherwise.

"W. S." inquires: (1) The rate of life assurance allowance, policy effected before the war, and total income £800 per annum, capital sum £800; and (2) in the case of alteration of amount of income does the three years' average apply.

*** (1) 3s. in the £ on the premiums, with a maximum of 7 per cent. on £800 (= £56) at 3s. for the total allowance. Finance Act, 1919, sections 26 and 32. (2) Yes, except in certain cases where the practice has changed hands during the previous three years. Rule 1 applying to Cases 1 and 2, Schd. D, Income Tax Act, 1918.

"C. H. S." acted as medical officer at a military hospital from May, 1915, to May, 1921, included the income therefrom in his general return, and has been assessed accordingly under Schedule D. Can he now claim to exclude the amounts for the purpose of his assessment for 1921–22?

*** To do so would seem to be inequitable, because that would not bring the whole of the military pay fully into assessment—for example, as a fact "C. H. S." apparently paid nothing on his military pay during the first year he received it, and he is now facing the converse case. Also it *may* be that a redistribution of the pay as a specific receipt of each financial year might increase the rates of tax payable on his other income for the years 1915–16 to 1920–21, but of course "C. H. S." has lost the benefit of the lower rate of tax for "service" pay. It would seem that the claim to the difference in the rate of tax can be made for the three years 1918–19, 1919–20, and 1920–21 to the extent to which income tax has been paid on that source of income, but that advantage *might* be swallowed up by the effect of redistribution if the gross assessments for those years were recast on the basis of putting the "pay" into a separate category.

HABITUAL HEADACHE.

"N. O." asks for suggestions for the treatment of a young married woman who has suffered from headache since childhood. The ache is frontal and vertical, and amost always commences in the mornings on waking, but may last for some days, and is not associated with sickness or nausea. All the natural functions are normal, and the eyes have been examined more than once by London specialists, who have found nothing wrong. The pain is generally a dull ache, but sometimes is typically neuralgic and very acute; these latter attacks seem quite different from the "habitual headache." Aspirin occasionally relieves, but more often not; treatment along the lines of diet was without benefit. The patient is exceptionally bright, and takes plenty of exercise and sleeps well, though much given to dreaming.

LETTERS, NOTES, ETC.

IN order to make the series of *Transactions* of the Edinburgh Medico-Chirurgical Society complete, the Librarian of the British Medical Association will be glad to receive Vol. XXXIV (1919–1920) from any member who can spare a copy; the volume is out of print.

IN our issue of October 29th (p. 715), under the heading "Tropical Medicine in the East," a list of vice-presidents of the Far Eastern Association of Tropical Medicine was given, with the areas with which they were associated. Dr. J. F. E. Bridger's name was associated with Saigon; this should have been Ceylon.

DR. HERBERT CARRE-SMITH (London, W.) writes to recommend a small case to hold four ampoule syringes made at his suggestion by the firm of Hoffman-La Roche, 7 and 8, Idol Lane, London, E.C.3. The same firm makes larger cases, but Dr. Carre-Smith has found the small case very useful; it can be carried in the waistcoat pocket, and provides sterilized solutions for injection at a moment's notice. He carries morphine (with or without atropine), strychnine, and digalen; this allows one place for any other drug preferred.

HERPES AND VARICELLA.

DR. KENNETH ANDERSON (Banwell, Somerset) writes: As showing a close connexion between these conditions the following notes may be of interest: Mrs. L. was seen on November 18th with typical herpes zoster just developing. Her child, aged 5, was seen on December 2nd with the first crop of the eruption of varicella, and a baby of 18 months also showed a few spots. Inquiry has failed to discover any other cases of varicella in the neighbourhood. Assuming that the mother infected her children, the incubation period was exactly fourteen days, which is that most usual in varicella.

COLLAPSIBLE DOUCHING APPARATUS.

MR. A. ALLPORT (London) writes: So many patients who are taught to irrigate themselves complain of the difficulty of concealing the necessary apparatus, especially in taking it from their bedroom to the bathroom, without disclosing a bulky parcel. To obviate this I have devised a collapsible vessel made of rubber, which will fold up and go into the pocket, but which can be extended and made rigid by means of a vulcanite stay or prop. It is graduated inside up to two pints and is worked on the siphon principle, the siphonage being started by a rubber suction bulb. The suction bulb may be fitted to the Janet's nozzle, together with the rubber shield, and used as a hand syringe if required. The makers will supply this hand syringe separately if wanted. Further particulars can be obtained on application to Mr. W. G. Holman, manufacturer's agent, 29, Beauchamp Place, Brompton Road, S.W.3.

LEWIS'S LIBRARY.

MESSRS. H. K. LEWIS AND CO. have issued a pamphlet describing the growth of their establishment during the past seventy-seven years. Some interesting illustrations are included, showing the development of a little bookshop, above which Mr. Lewis lived when he began in 1844, into the well known publishing and bookselling business of to-day with its many branches, one of which, the circulating library, has earned for the firm the description of "the Mudies of the medical world."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 31, 32, 33, 34, and 35 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 30 and 31.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Observations
ON THE
INFLUENCE OF FOODS RICH IN ACCESSORY FACTORS IN STIMULATING DEVELOPMENT IN BACKWARD CHILDREN.*

BY
HARRIETTE CHICK, D.Sc LOND., LISTER INSTITUTE, LONDON. AND ELSIE J. DALYELL, M.B SYDNEY, BEIT MEMORIAL FELLOW.
(From the Landes Zentral Kinderheim, Vienna.)

THE children described in this paper were in one ward of a large foundling hospital in Vienna, where we were permitted to work by the courtesy of the director, Dr. Gustav Riether. They varied in age from 1 to 3 years, and in growth, body weight, activity, and general development each was considerably below the normal standard for age and had been so for many months previously. The backward condition was in no way associated with existing illness, and the observations made on the group were of interest by demonstrating each child's approach to normal standard when dietetic changes were introduced.

In this institution there is an effective system of recording the body weight, diet, development, and medical history of every child, and it was therefore possible to trace the progress made since admission in the first weeks of life. The hospital is established in spacious modern buildings, and has a small staff of trained nurses, who supervise the wards. The care of children is undertaken by mothers, admitted with their infants from the obstetric clinics, who remain three to four months, in order to nurse their own babies and to assist in the care of those without mothers. As frequently happens in large institutions, the life of mothers and children is rather confined, and, owing to shortage of fuel, overcrowding could not be avoided in the reduced number of pavilions it was possible to heat.

Careful study of the past diets of the special group of children showed that after the three first months of life the calorie value of their dietary was usually adequate when breast milk had been supplemented by artificial food; but the types of food used suggested that defective growth might be due to qualitative deficiencies in the diet, from shortage of fats and of fresh elements. The frequent occurrence of infantile scurvy (Barlow's disease) in the institution and the prevalence of rickets pointed in the same direction.

The diets of the children consisted of diluted cow's milk, to which was added sugar, cereals, or proprietary infants' foods. The amount of vitamins in the food was therefore reduced in proportion to the amount of this dilution, and the same was true of the fat content. The antiscorbutic value of the milk food was further reduced, owing to the time that elapsed before it was consumed. It was reckoned that all milk was three to four days old when it was consumed in the wards. There is also little doubt that during the warm months the milk was heated at least once before delivery. All the food for some hundreds of infants was prepared in a central milk kitchen by standardized methods, which were studied in detail. The kitchen arrangements were admirable and there was no overcooking, but the irregularity of the milk delivery and the necessity for preparing large quantities at once, caused delay in the whole process of preparation. The food was prepared according to standard receipts under the control of one sister who had been in charge of the milk kitchen for over ten years.

By the courtesy of the director and with the co-operation of the physician in charge of the ward, dietetic treatment of a group of children was undertaken from December, 1919, to June, 1920. The main diet was still supplied from the central kitchen, but addition was made of (1) antiscorbutic material to supply this accessory factor, and (2) fats rich in the fat-soluble accessory factor.

Condition of the Children before Treatment.

In this communication nine children are specially selected for study; their ages ranged from 12 to 31 months. A short survey of their condition when first seen is set out in the accompanying table (p. 1065). All were under the normal weight for their age and in most cases the deficiency amounted to 25 or 30 per cent. The delay in development was more striking than the low body weight.

Four of the nine children could not sit up without support. Case 7 at 21 months lay inert, and if a limb were raised it fell back helplessly. Case 9, 31 months old, could not hold its head up for more than a few minutes and took no notice of its surroundings or of being handled. The absence of any spontaneous activity or movement among the children was a very striking feature. They showed little signs of awakened intelligence, they had no desire to play, and the older children made no attempts at speech.

With two exceptions, weight at birth was normal; Case 1 was a premature baby weighing 2,000 grams, and Case 8 was a twin and weighed only 1,600 grams. All had had some amount of breast feeding in the early months of life, and one child had had a complete diet of breast milk until 7 months old; most of the children, however, had made little progress at first, in spite of the breast feeding. It should be noted that the dates of their birth—1918 or early 1919—coincided with a period of great food deprivation in Vienna, and it is therefore probable that the mothers were imperfectly nourished during both pregnancy and lactation. In hospital, however, there was no serious shortage of calories in the diets after the breast feeding was supplemented or replaced by artificial food. The supplementary artificial food began from birth in 4 cases, and before 4½ months in 5 cases.

From the data available the calorie value and the proportion of milk fat in the diets were calculated from birth up to the time of the first examination of each child. The energy quotient or ratio of the calories consumed daily to the body weight expressed in kilograms was also calculated. This value was always maintained at the accepted† standard and averaged well over 100; in some cases it reached 150, 180 and even 200 for varying periods of time. The amount of milk fat was low in comparison with that taken by an infant fed on whole milk of good quality, whether human or cow's. The antiscorbutic value of the diet was low for the reasons given above.

Previous Illness.

The past history of the children showed furunculosis and otitis in many cases, but the outstanding fact was the occurrence of definite scurvy once or oftener in every instance except Case 1. Case 8 had suffered from two attacks, at 6½ and 13 months respectively, and Case 9 (31 months old) from three attacks, at 16, 20, and 24 months respectively. These two children were the most backward of the series considering their age. The symptoms of scurvy had consisted in swelling and tenderness of the limbs, especially the thighs, and in haematuria; mouth symptoms were rare.

In the treatment of scurvy in this institution some whole raw milk was given in the diet for a period varying from one or two weeks to some months, the time depending on the rate at which the symptoms subsided, and the amount upon the supply of raw milk available. In some cases raw lemon juice was also given, but no satisfactory method existed for its administration. Recovery was slow and often partial; in Case 8 symptoms persisted over a period of several months. Study of the weight charts of these children convinced us that failure to increase in weight was often associated with deficiency of antiscorbutic material in the diet. In many cases increase in weight had taken place when extra antiscorbutic was added to the diet, or when raw milk was substituted temporarily for the heated milk food.

Presence of Rickets.

Some symptoms of rickets were present in all children, and in five cases the disease was severe and definite deformity was present. A survey of the whole institution, made in March–June, 1920, showed that some degree of

* Report to the Accessory Food Factors Committee appointed jointly by the Lister Institute and Medical Research Council.

† Lusk (*Science of Nutrition*, third edition, 1917, p. 404) concludes that 80 calories per kilo of body weight would suffice during the first year of life; Heubner (*Berl. klin. Woch.*, 1901, vol. xxxviii, p. 449) allows 100 for the first three months of life, 90 from three to six months, and 80 afterwards; Holt (*Amer. Journ. Dis. Child.*, 1921 xxii) places the standard at 120 for the first few months and at 100 until the end of the first year.

rickets was common at 5 and 6 months of age, and that the disease was practically universal at 9 months—that is, at a period considerably earlier than that at which it is ordinarily supposed to be manifest. In arriving at a conclusion as to the existence of rickets attention was directed to the following points:

1. Condition of anterior fontanelle; presence of craniotabes; development of parietal and frontal bossing.

2. Enlargement of costochondral junctions; development and contour of chest.

3. Enlargement of epiphyseal ends of long bones at wrists and ankles; bowing of the tibiae.

Description of Treatment.

Treatment consisted in enriching the diet of these children with (1) the antiscorbutic vitamin and (2) the fat-soluble vitamin in form of animal fat. The diets remained otherwise unchanged except that in some cases food was withdrawn to balance the additional calories given in the form of fat. The energy quotient was in no case increased. The general management of the children remained the same.

The antiscorbutic material was given in the form of raw swede turnip juice, 10 to 20 grams daily; experimental work on scurvy in guinea-pigs had indicated that the raw juice of this vegetable possesses antiscorbutic properties comparable with those of fresh oranges or lemons. The clean cut surface of the raw vegetable was grated on an ordinary kitchen grater and the pulp squeezed in muslin by hand. It was given alone or with the food and was well tolerated in all cases. It was occasionally replaced by orange juice or lemon juice (neutralized with solid calcium carbonate and filtered), but during the winter 1919–1920 these fruits were too scarce and too expensive in Vienna for general use.

The fat-soluble vitamin was given in the form of cod-liver oil and butter. The initial dose was 10 grams of butter daily; in February, 1920, the daily dose of butter was increased to 20 grams for five of the nine children, and to these, in the month of April, 10 grams of cod-liver oil daily were given in addition. Cases 1 and 3 received cod-liver oil only, and Case 2 received an extra ration of 400 c.cm. full milk daily—that is, about 12 grams of milk fat.

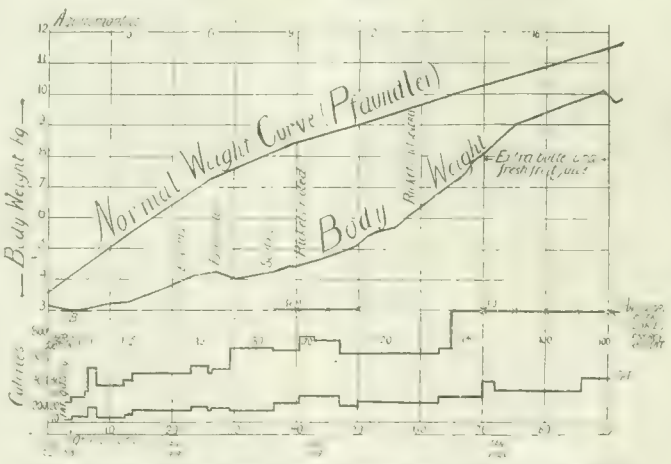


CHART 1. Case 4, Barbara J., born August 22nd, 1918. B., Breast milk. R.M., Raw cow's milk. F.J., Raw fruit juice. E.Q., Energy quotient of diet.

The result of these additions to the diet was in every case satisfactory. The children began to put on weight at a more rapid rate than formerly, and the normal curve was gradually approached during the six months of treatment (see Table). The improvement is specially evident in Cases 8 and 9, where departures from the normal weight for the age, as great as 4 and 4.6 kg., were reduced to 1.2 and 2.4 kg. respectively.

But more striking than the increase in weight was the improvement of the children in general activities. Taking the four children, aged respectively 12, 21, 22, and 31 months, who were unable to sit alone, Case 7 could do so after six weeks, and Cases 1, 8, and 9 after two and a half to three months of treatment. Of seven children who showed no spontaneous movement of the legs when first examined, four (Cases 1, 4, 5, 8) stood within three months, and after six months all the children were beginning to walk. Another sign of satisfactory development was the rapid closing of the fontanelle, which in every case was open before treatment was begun.

Data collected from the past histories and during the period when the children were under observation were set out in charts showing the calorie value and fat content of the diets, together with the weight curves, plotted against the normal. That given by Pfaundler (1916) has been adopted as giving a fair average for normal growth. The past histories proved to be of great interest, especially as showing the influence of scurvy or of a prescorbutic condition upon increase in weight. It would take up too much space to give the detailed description of all the nine children, but four cases (4, 7, 8, and 9) have been selected as being specially instructive. Case 4A, that of a little girl nearly two years old, not, however, treated in the present series, has been added as a striking instance of growth induced by adding antiscorbutic to a deficient diet.

CASE 4 (Chart 1.)

At birth, August 22nd, 1918, this child was of normal weight (3.1 kg.), was breast-fed for six weeks, and then received diluted cow's milk, with additions of sugar, till six months old. Full milk and cereal were then given for a month. At seven months this was largely replaced by malt-soup (*Mal soppe*), a preparation with calorie value equal to full milk, consisting of 33 per cent. milk, 4 per cent. flour, and 10 per cent. malt extract. The child throve poorly from the start, and the weight curve deviated more and more from the normal until about the tenth month.

The total calories (approximate) and daily ration of milk fat, together with the energy quotient, are plotted on the chart underneath the weight curve. There is no evidence of lack of calories in the diet throughout this period; the energy quotient varied from 120 to 150 during the first six months, and later (seven to ten months) it varied from 150 to 180; but, nevertheless, the child only put on 400 grams weight in this period. It is evident, therefore, that the high calorie intake had little effect in stimulating growth. The inhibiting factor appears to have been the deficiency of antiscorbutic material in the diet. Severe symptoms of scurvy were noticed at eight and a half months (April 29th, 1919), after a period of about seven weeks in which malt-soup figured largely in the diet. As demonstrated by Hess and Fish (1914), malt-soup is especially poor in antiscorbutic properties, for the milk is diluted 1 in 3 with water and the food is boiled twice during the preparation. It is therefore possible that the malt-soup diet precipitated the onset of acute symptoms. The diet was changed at once to include a plentiful supply (400 to 600 c.cm.) of raw full milk, and growth began to take place slowly for the first month while the symptoms of scurvy remained, but later more rapidly. At 12 months the child weighed 5.5 kg., and at 16 months 8.1 kg. During this period there was no increase of calories or of fat, and the energy quotient progressively declined in value.

The prescorbutic period was marked by an attack of furunculosis. The scurvy attack was of a particularly severe character, the right thigh showed skin haemorrhages and was swollen and tender and the leg was maintained in a flexed position; blood cells were present in the urine. The acute symptoms yielded but slowly to treatment with raw milk, and after forty-one days (June 13th, 1919) haematuria still persisted. A persistent deformity (shortening of the right leg) was left; *x*-ray photographs taken in October, 1919, five months after the acute attack, when the child was 14 months old, showed structural deformity of the right femur, with 1 cm. shortening of the thigh as compared with the left; the left femur was also affected, but to a less degree. At this period a definite "rosary" and slightly bent tibiae are recorded as evidence of rickets.

Two months later, in December, 1919, the child was first seen by us. She was then 16 months old, and was receiving the mixed diet usual in the institution, consisting of milk, cocoa, puddings made with milk and cereals, finely sieved cooked vegetables, and a little bread. It was calculated that this diet had a calorie value approximately equal to 1,000 calories daily and contained 30 grams daily of milk fat. The weight curve was approaching the normal, but she was still 20 per cent. under weight for her age; her fontanelle was open; she had four teeth, but made no attempt to speak. The deformity of the right leg was still very obvious; she could sit up unsupported, but could not stand. She received a regular antiscorbutic in the form of 20 grams daily of raw swede juice or orange juice. The milk fat in her diet was gradually increased from about 30 grams daily to 35 to 40 grams, and later some cod-liver oil was given.

She made good progress during the succeeding five months, put on over 2 kg. in weight, the teeth erupted rapidly, the fontanelle was closed, there was marked increase in general intelligence and activity, and she learnt to walk.

This was the only child of the series who appeared to be unable to tolerate cod-liver oil, which caused loss of appetite accompanied by loss of weight, and consequently had to be discontinued.

Summary.

1. Marked failure to grow during the first nine months of life, associated with lack of antiscorbutic material in the diet, culminating in an attack of acute scurvy.
2. Growth in weight restored on inclusion of raw milk in the diet.
3. Permanent deformity of scorbutic origin in long bone of the skeleton.
4. An attack of furunculosis during the prescorbutic period, possibly due to a diminished resistance to infection.
5. Good progress from 16 to 21 months, when extra milk fat and antiscorbutic were added to the diet.

The next case offers interesting confirmation of the conclusions drawn from Case 4 as to the effect upon growth of a deficiency of antiscorbutic material in the diet. This child left the home shortly after our first visit in December, 1919; she received no treatment from us, and her case is not therefore included in the accompanying table.

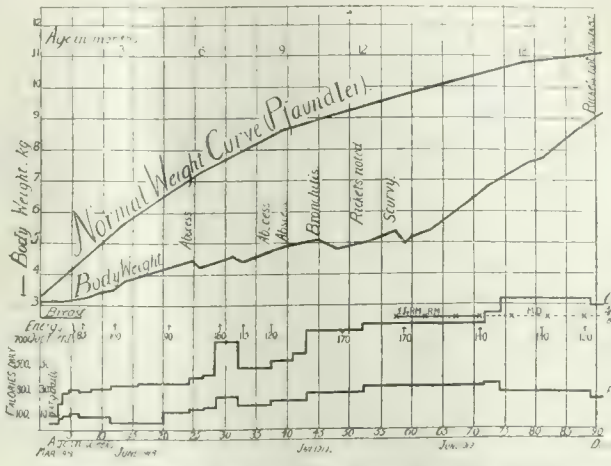


CHART 2.—Case 4A, Marie B., born March 18th, 1918. B., Breast milk. R.M., Raw milk. F.J., Fruit juice. M.D., Mixed diet.

CASE 4A. (Chart 2.)

At birth, on March 18th, 1918, the child was of average weight (3 kg.); she received some breast milk for six weeks, after which the diet consisted of diluted cow's milk and sugar, and from the third to the fifth month included a considerable amount of malt-soup. From the fifth to the twelfth month some full milk and cereal were given.

During this period growth in weight was very poor, and at 12 months the child's weight was about half that normal for the age. There had been no lack of calories in the diet (see Chart 2), but until the age of six months the proportion of milk fat was very low and never exceeded 20 grams daily. Later this improved, and from 10 to 12 months 30 grams of milk fat was taken daily. There was a deficiency of antiscorbutic material in the diet, especially when the malt-soup was given.

The prescorbutic period was again punctuated by various infections, furunculosis was noted at 6 months of age, again at 8 months and at 9 months; the child also had an attack of bronchitis at 10½ months.

At 12 months some degree of rickets was noted. At 13 months (April, 1919) acute symptoms of scurvy were recognized; blood was found in the urine, the gums were swollen, and the lower half of the right thigh was swollen and tender. The thorax was flat and the epiphyses thickened but not sensitive. Fruit juice was given and raw milk; this treatment was continued for three months. Growth in weight took place immediately this antiscorbutic treatment was begun; the weight, which was 5.2 kg. at 13 months, improved to 6.8 kg. at 16 months, and 9.2 kg. at 21 months, and was fast approaching the normal (11.4 kg.). Mixed diet containing vegetables was introduced at 17 months.

When seen by us at this time she was making progress although backward: she could stand but did not walk, she had eleven teeth but made no attempt to speak.

CASE 7. (Chart 3.)

F. B. weighed 2.8 kg. at birth on April 4th, 1918. He also showed poor development during the first year of life. Breast-feeding was partial (300–350 c.cm. daily) until 5 months old, but at this age the weight had increased only to 3.6 kg. The artificial food given had consisted of malt-soup, and after breast-feeding was discontinued malt-soup formed the entire diet for a short period. At 6½ months the weight was only 5.8 kg.; breast milk was again introduced, supplemented by increasing amounts of full cow's milk. At 8½ months the weight was 4.4 kg., and the diet was changed to diluted cow's milk and cereal food.

At 11 months (weight = 4.9 kg.) definite symptoms of scurvy, swollen gums, and red blood cells in the urine were noted. Lemon juice and some raw milk were given; the scurvy symptoms improved slowly and were still apparent after four months' treatment, but the effect of antiscorbutic material in the diet was evident in the weight curve, which showed a slow but distinct improvement. The raw milk was continued for ten months (December, 1919), when the child was 21 months old and weighed 8 kg.

At this period we first saw the child in the backward condition summarized in the accompanying table. He could hold up his head but could not sit unsupported. His muscles were flaccid, the body fell limply forward, and if arm or leg were handled it would fall back helplessly when released. There was no spontaneous movement, muscular power was that shown by a normal baby of three months; the child resented handling and cried continuously. Dentition was not markedly backward and there were ten teeth. The contour of the head was very rachitic, the fontanelle was widely open and the epiphyses at wrists and ankles were enlarged. After this examination the antiscorbutic treatment of 150 c.cm. raw milk daily was increased (December, 1919) by the addition of 20 c.cm. of potent material in the form of raw turnip juice or orange juice. Butter was given (10-20 grams daily) and later 10 grams of cod-liver oil in addition, so that the daily fat ration reached 35–45 grams.

The following is a short summary of his progress:

Three weeks (January 16th, 1920). Weight 8,460 grams. Some improvement in muscular power, can sit up with some support but still feeble, and makes no attempt to use legs. More contented and sleeps better.

Six weeks (February 4th, 1920). Weight 8,710 grams. More active, can sit alone, and kneel in cot holding on to the bars with hands.

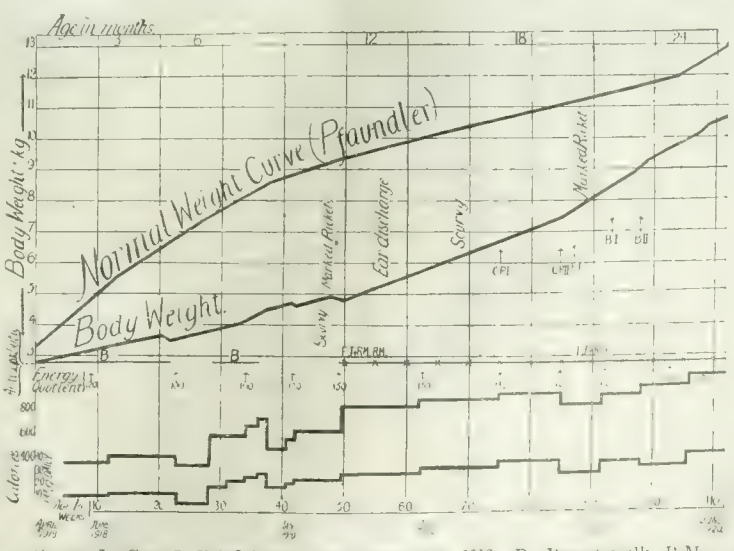


CHART 3.—Case 7. Friedrich B., born April 4th, 1918. B., Breast milk. R.M., Raw milk. F.J., Raw fruit juice. B. 1, Butter [illegible]; B. 2, butter 20 grams daily. C.P. 1, 10 grams cod-liver oil [illegible]; C.P. 2, cod-liver oil and phosphorus discontinued.

Ten weeks (March 5th, 1920). Weight 9,390 grams. Stood for first time; rickets less prominent in head contour, tibiae slightly bowed, chest contour good.

Twenty weeks (May 14th, 1920). Weight, 10,630 grams. Fine looking child, active, skin healthy, subcutaneous tissues firm, stands easily. Rickets much less apparent, head contour much improved, no parietal, and only slight frontal, bossing, tibiae straight, chest contour normal; wrist epiphyses show slight swellings.

Twenty-four weeks (June 16th). Weight 10,900 grams. Beginning to walk.

The improvement in weight is well seen in Chart 3, the 30 per cent. deficiency from the normal at 21 months is reduced to a 10 per cent. deficiency after five to six months' treatment.

Summary.

1. This case shows a period of poor growth in weight, culminating in an attack of acute scurvy; improvement in growth in weight on adding antiscorbutic material to the diet.
2. Marked improvement in growth and also general progress and activity on adding a larger ration of antiscorbutic, and at the same time increasing the milk-fat.

CASE 8. (Chart 4.)

Ida P., born February 11th, 1918, was one of twins, and was much under normal weight at birth (1.6 kg.); her twin brother weighed 1.4 kg. She received a complete diet of breast milk for nearly three months; then followed a transitional period of mixed feeding for a few weeks, after which the diet was completely artificial, and consisted of diluted milk and cereal

food. This was continued for four months; at six months of age (September, 1918) definite symptoms of scurvy were observed. The child screamed on being handled, swellings were noticed on the left thigh and left shoulder, the epiphysis of the left humerus was swollen and painful, the muscles over the right tibia were swollen and oedematous, and skin haemorrhages were noted on chest, neck, and back. Raw full milk was introduced into the diet (800 to 600 c.cm.), fruit juice was given and an infusion of pine tree needles. The symptoms cleared up slowly, and after two months raw milk was discontinued and scurvy was considered to be cured. At this time (ten months) a moderate degree of rickets was noted.

During the first four months of life on breast milk the child made fair progress and the weight curve ran fairly parallel to the normal. There was marked flattening during the period preceding the scurvy attack and while the symptoms lasted. The weight, which had reached 4 kg. at 6½ months, remained stationary until 9 months, when the child weighed only 4.2 kg. After the definite symptoms of scurvy had disappeared some progress in weight was noted; although some full milk was retained in the dietary it was not given raw, and both fat content and antiscorbutic value were low. The short period of growth from 9 to 12 months was succeeded by another stationary period from 12 months (5.3 kg.) to 15 months (5.5 kg.). During this period there is a continuous record of coughs, feverish colds, etc., and in March, 1919, at 13 months of age, a second attack of acute scurvy took place, shown by a swollen, painful femur and presence of blood in the urine. Treatment with whole raw milk was again instituted, and at 14 months vegetables were also introduced into the diet. Growth in weight began slowly and proceeded evenly until December, 1919, when we first saw the child. Raw milk in decreasing amount had been continued with slight intermission till this date.



Ida P. (left) and Johanna P. (right), June 22nd, 1922, at 28 months of age.

The child was then 22 months old, and weighed 7.6 kg., about 35 per cent. below normal. She was limp and passive, and her muscles were flaccid; she could neither sit nor stand, nor was there any attempt at spontaneous movement. She showed a moderate degree of rickets: she had four teeth, the fontanelle was still open, and distinct frontal bossing was present. The chest was rachitic in contour, with projecting sternum, palpable rosary, and a lateral sulcus at the rib junctions. The legs were straight, but there was a slight thickening of the lower ends of both tibiae. The wrists were not enlarged.

During the six months she was under observation she received daily 20 grams antiscorbutic material (raw lemon juice, swede-turnip juice, or orange juice) and 10 grams of butter. In February, 1920, the butter was increased to 20 grams, and in April 10 grams of cod-liver oil were given in addition. There was a dramatic improvement and the weight curve began to make a steep ascent towards the normal; five and a half months of treatment (up to June, 1920) reduced the deficiency in weight from 35 per cent. to 11 per cent. The child was then 2½ years old and weighed 11.1 kg. normal for that age 12.5 kg.).

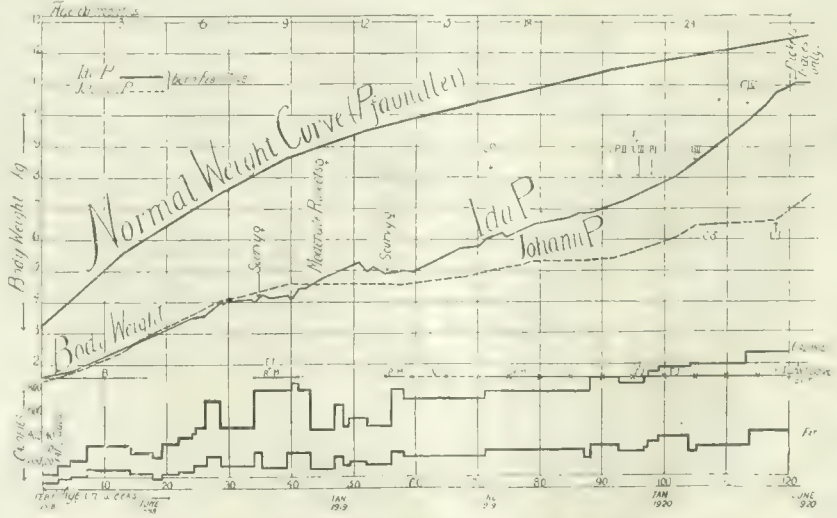


CHART 4. Case 8. Ida P., born February 11th, 1918. B., Breast milk. R.M., Raw milk. V., Vegetable food. F.J., Raw fruit juice. C.P. I, Cod-liver oil with phosphorus 5 grams daily; C.P. II, cod-liver oil and phosphorus discontinued; C. III, cod liver oil 5 grams daily; C. IV, cod liver oil 10 grams daily. B. I, Butter 10 grams daily; B. II, butter 20 grams daily. Dotted curve = Johann. P., her twin brother. C.J., Cod-liver oil given. L.J., Raw lemon juice. Curves representing daily calorie and fat intake and antiscorbutic in diet refer to Ida P.

The rapid increase in weight during this period was accompanied by marked general progress, which is summarized in the Table. After five to six months of the enriched diet the little girl (at 28 months) was a transformed creature; she was active, merry, and plump, could stand and walk round her cot, and was trying to talk. She had twelve teeth, her fontanelle had closed, and there was a very striking remission in the signs of rickets noted on our first examination. No rosary and no swellings of the epiphyses were to be felt, and the chest contour had much improved. (See photograph.)

An unexpected control for this case was discovered in a twin brother, who had also been in the institution since birth but remained in another ward in the same building. The salient points of his past history were obtained, and his weight curve is plotted alongside that of his sister's (see dotted weight curve in Chart 4), and runs fairly parallel with it.

The brother suffered also from a severe attack of scurvy during the first year of life, and in his case the symptoms appear to have been present persistently from the ninth to the eighteenth month. During this period the body weight increased only from 4.2 to 5.3 kg., so that at 18 months of age the child was about half the normal weight. After this period various additions to diet were given in form of cod-liver oil and meat juice, but no regular antiscorbutic was given, and the weight curve remained very unsatisfactory until May, 1920, when he received for the first time raw lemon juice. This change coincided with a sharp upward turn in his weight curve.

It was at the end of this period that we first saw the child, who was feeble, anaemic, and unable to sit up without support. His arms and legs were thin and ill developed, his condition was lethargic, and he showed no signs of intelligence. The contour of the head was rachitic, the fontanelle was closed, but there was marked frontal and parietal bossing, the chest was compressed laterally, there was a definite rosary, and the abdomen was prominent. His condition exactly reflected that of his twin sister six months previously before her diet was enriched. The contrast between the two children is well shewn in the accompanying photograph.

We are inclined to attribute the improvement in the twin sister principally to the effect of a regular and potent antiscorbutic in the diet, for the proportion of fat, though increased also, was not so greatly altered, and the child also had been taking a small amount of cod-liver oil daily before she came under our notice.

CASE 9. (Chart 5.)

V. J., aged 2⅓ years old when first seen, was the oldest of the series and at the same time the most backward. She was about 35 per cent. under weight for her age, did not even hold up her head, and made no attempt at spontaneous movement.

She weighed 2.8 kg. at birth (May 12th, 1917), and after one

Case No.	Sex.	Date of Birth, and Wt. in Kg.	Date of Examination.	Age Mths.)	Duration of Treatment (Mths.).	Actual Weight (Kg.).	Normal for Age (Kg.).	Difference (Kg.).	Description.	Treatment (daily).	History of Scurvy and Other Illnesses.
1. J. U.	M.	7.12.18	22.11.19	12	0	6.2	9.4	3.2	Cannot sit. No attempt to use legs; rickets severe in head and chest; enlarged epiphyses; no teeth	10 g. antiscorbutic.	
		(2.0)	5.3.20	14	2½	8.2	10.1	1.9	Moves actively; stands in cot; shows signs of intelligence; rachitic deformities less obvious; no teeth	10 g. cod-liver oil.	
			14.5.20	17	5	9.6	10.8	1.2	Can stand unsupported; tries to talk; rickets arrested, though deformities persist; tissues firm; muscular power good.	Cod-liver oil 20 g. from April 15.	
2. J. R.	M.	5.1.19	22.12.19	12	0	5.9	9.4	3.5	Can sit; tries to use legs. fontanelle open (2 cm.); slight signs only of rickets; good muscular power; two teeth.	20 g. anti-scorbutic from Jan. 10, 1920.	Scurvy at 8½ months.
		(3.5)	13.4.20	15	3	8.9	10.3	1.4	Stands well with support; colour good; traces only of rickets; 6 teeth; fontanelle still open.	400 c.c. extra milk from Feb. 10, 1920.	
			16.6.20	13	5	9.2	10.8	1.4	Fontanelle closed and firm; slight enlargements of epiphyses the only sign of rickets; can stand alone and walk round cot; 6 teeth.		
3. R. H.	M.	10.10.18	22.12.19	14	0	8.2	9.9	1.7	Can sit, but makes no attempt to stand; well grown; good muscular power but activity poor; general development as for child of 9 months; rachitic stigmata in rib junctions and epiphyses; fontanelle open; 4 teeth	20 g. antiscorbutic. 10 g. cod-liver oil from Feb. 18, 1920.	Scurvy at 8½ months.
		(2.9)	13.4.20	18	4	9.9	10.8	0.9	Active; stands in cot; no progress in rachitic stigmata; fontanelle closed; 12 teeth.		
			15.6.20	20	6	10.8	11.7	0.9	Can just walk; tone of all tissues good; enlarged epiphyses the only sign of rickets; development normal for age.		
4. B. J.	F.	22.8.18	10.12.19	16	0	8.1	10.3	2.2	Can sit but cannot stand; tone of tissues good; spontaneous movements not vigorous; fontanelle open; 4 teeth; rickets slight. Backward child, still suffering from effects of a severe attack of scurvy; right femur shows 1 cm. shortening.	20 g. antiscorbutic. 20 g. butter. 10 g. cod liver oil in addition from April 15 to May 12, 1920.	Scurvy, 8½ to 10 months; furunculosis 6 to 7 months.
		(3.1)	5.2.20	17½	1½	9.1	10.7	1.6	Stands and can walk with assistance; no progress in rickets; fontanelle almost closed; marked general improvement.		
			14.5.20	21	5	9.9	11.4	1.5	Condition good; child vigorous and intelligent; activity normal for age; dentition proceeding rapidly; rickets stationary.		
5. W. W.	M.	5.8.18	5.12.19	16	0	8.7	10.3	1.6	Can sit but cannot stand; well grown; makes no spontaneous movements; pallid; no obvious sign of rickets; 5 teeth.	20 g. antiscorbutic. Butter, 10 g. from Jan. 1, 1920; 20 g. from Feb. 17, 1920. 10 g. cod-liver oil in addition from April 15, 1920.	Scurvy at 10½ months; furunculosis.
		(2.9)	5.2.20	18	2	9.7	10.8	1.1	Stands with support and moves vigorously about cot; pallor less marked; epiphyses slightly enlarged.		
			8.5.20	21	5	11.6	11.45	—	Can stand alone; condition good; fontanelle closed; 7 teeth; intelligence and activity normal for age (three weeks later could walk alone).		
6. A. D.	M.	30.6.18	22.12.19	18	0	9.5	10.8	1.3	Child sits and can stand up in cot; muscular power good, but activity poor and mental condition lethargic; marked rachitic deformities of head, chest, and legs; tibiae bowed; shortening and disproportion of limbs; fontanelle almost closed; 8 teeth. Child had fracture of the radius at 12 months following severe attack of scurvy.	20 g. antiscorbutic. Butter 10 g.; 20 g. from Feb. 17, 1920.	Scurvy, 7 to 11 months; furunculosis.
		(3.1)	3.2.20	19	1½	10.7	11.1	0.4	Stands well; tries to walk and to talk; seems normally intelligent. Rickets arrested.		
			13.4.20	21½	4	12.0	11.6	—	Excellent condition of all tissues; activity normal for age; intelligent; deformities less marked; 10 teeth.		
7. F. B.	M.	4.4.18	23.12.19	21	0	8.1	11.4	3.3	Very backward; no attempt at spontaneous movement; all tissues flaccid and muscular power very defective; limbs fall limply after being raised; child lies inert and resents handling; head rachitic and epiphyses much enlarged; fontanelle widely open; 10 teeth.	20 g. antiscorbutic. Butter 10 g.; 20 g. from Feb. 20, 1920. 10 g. cod-liver oil from April 15, 1920.	Scurvy, 11 to 15 months.
		(2.8)	4.2.20	22	1	8.7	11.7	3.0	Can sit alone and can kneel in cot; muscular power improved but legs still feeble; 15 teeth; is making rapid progress.		
			5.3.20	23	2⅓	9.4	11.9	2.5	Can stand; rickets arrested and deformities less marked; fontanelle closed; colour improved.		
			16.6.20	26	6	10.9	12.3	1.4	Child beginning to walk; all tissues in good condition; rachitic stigmata retrogressing; head contour improved; remarkable improvement in activity and intelligence; marked disproportion of limbs to length of body.		
8. I. P.	F.	11.2.18	23.12.19	22	0	7.6	11.6	4.0	Very backward; cannot sit even with support; tissues soft and muscles very flaccid; child passive and makes no attempt at spontaneous movements; rickets shown in moderate degree in head, chest, and lower ends of tibiae; fontanelle open; 4 teeth. Child shows no intelligent interest in surroundings; marked pallor.	As for Case 7.	Two attacks of scurvy, at 8 months and 13 months.
		(1.6)	4.2.20	24	1⅓	8.3	12.1	3.8	Tries to sit; is more active; rickets stationary; still pallid; fontanelle open; 4 teeth.		
			3.5.20	25	2½	8.9	12.2	3.3	Can sit alone, but makes no attempt to stand; muscular power still feeble; fontanelle closed; 6 teeth. Child appears more intelligent and tries to talk		
			13.4.20	27	4	9.8	12.3	2.5	Marked improvement in activity; tries to crawl; 12 teeth; is intelligent and contented.		
			1.6.20	27½	5½	11.1	12.5	1.4	Child can stand and walk round cot; is active, merry, and plump; general condition excellent; slight signs of rachitic stigmata remaining in head and chest.		
9. V. J.	F.	1.5.17	5.12.19	31	0	8.1	12.7	4.6	Very backward; cannot sit alone and can hold head up only for a short time; body limp and helpless; child pallid and feeble; lies passively in cot and takes no notice of being handled; slight signs only of rickets; fontanelle open; 13 teeth.	As for Case 7.	Three attacks of scurvy, at 16 20 and 24 months. Ear discharge at 9 months. Tuberculous finger 12 to 15 months.
		(2.8)	3.3.20	34	3	9.5	13.0	3.7	Begins to sit up; activity much improved; uses arms and legs, and rests on elbows. Interest shown in her surroundings; colour improved.		
			14.5.20	36	5	10.8	13.1	2.3	Can stand up in cot; tissues firm; child active and intelligent; general development as for a child of 18 months; fontanelle almost closed; 16 teeth.		
			1.6.20	37	5½	10.9	13.3	2.4	Beginning to walk; traces only of rickets.		

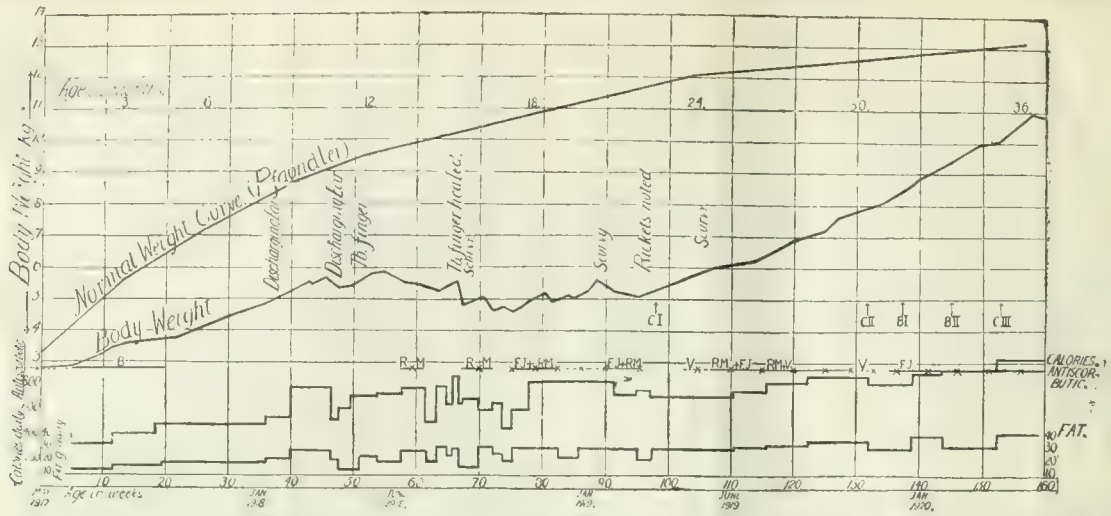


CHART 5.—Case 9, Victoria J., born May 12th, 1917. B., Breast milk. R.M., Raw milk. V., Vegetable food. F.J., Fruit juice (raw). C. I, Cod-liver oil with phosphorus given; C. II, cod-liver oil and phosphorus discontinued. B. I, Butter given 10 grams daily; B. II, butter increased to 20 grams daily. C. III, Cod-liver oil given in addition, 10 grams daily.

month of breast-feeding received additions of diluted milk. From 4½ months old her diet was entirely artificial, and until the age of 9 months consisted of milk diluted two-thirds with sugar and cereal. Small amounts of full milk were also given. From 9 to 11 months of age (February and March, 1918) she received full milk and cereal food made with full milk. During the first year of life the weight curve became progressively flatter and departed more and more from the normal.

The second year of life (May, 1918, to May, 1919) was even less satisfactory than the first. The net increase in weight over the whole twelve months was negligible, and amounted to 200 grams, and the year was marked by three attacks of scurvy.

The diet for the first month of this period contained a large proportion of "malt-soup," but in June, 1918, there is a record of full raw milk given for a few weeks, indicating that a scorbutic condition was suspected, although no symptoms are noted in her dossier. The diet then reverted again to ordinary milk and cereal food, until, at the end of August, 1918 (at 13½ months) malt-soup again made its appearance in the diet, with the addition of 100 grams daily of raw milk. In spite of this antiscorbutic addition definite scurvy was diagnosed in September (at 16 months). Fruit juice was given, and the diet was again changed to raw full milk, which was continued, with a short interval, until December, 1918. A cooked diet was then given of whole milk and cereal. Vegetables were included, but in January, 1919 (at 20 months), definite scurvy symptoms were again noted in the form of swollen gums and swollen and painful legs. Raw apple juice and lemon juice and raw milk were given again, and the raw milk was continued until the beginning of March (1919). The acute symptoms had then disappeared, so the raw milk was again discontinued and replaced by malt-soup. At the beginning of May (the child was then 24 months old) definite scurvy was diagnosed for the third time, and on this occasion was more severe in character than on the two previous occasions. There were skin haemorrhages on the back and thigh, the thigh was sensitive and painful, the gums were swollen, there was oedema of both feet, and haematuria.

Note was made of rickets at 22 months, the child had only five teeth, and was evidently very backward.

The curative treatment of this third attack of scurvy consisted of lemon juice, green vegetables, and raw full milk, which on this occasion formed a large proportion of the total diet, and was continued for nearly six months. The child began to grow, and at 2½ years had increased from 5.9 to 7.9 kg. in weight. At this period the child was seen for the first time, and her condition is summarized in the table. She was 2½ years old, and, although very backward in general progress, showed no gross signs of rickets. The head was well ossified and properly developed, the fontanelle was wide but not soft, the chest was rather contracted, but the abdomen was flat. The legs were long and straight and the body well proportioned, the arms were very weak, and the wrists showed enlargement. The muscular power was extremely feeble, and the head could only be held up for a few minutes. The child was lethargic, unintelligent, and inactive.

The effect of a combination of antiscorbutic and fat-soluble accessory factors is well shown in the progress made when raw lemon and orange juice 10 to 20 grams, and 10 to 20 grams of butter were added to the diet (see Table). Later 20 grams daily of swede turnip juice was substituted for orange juice. In six weeks the child was trying to sit up; in three months she could do so, and was trying to stand; she also showed activity and intelligence in many ways. In five months she was beginning to walk with help.

This case is in many ways the most instructive of the series. First, it shows very clearly the inhibition of growth and progress imposed by a scorbutic or pre-scorbutic condition, even when definite symptoms were absent. In the second place, the history of the second year of this child's life shows that scurvy must not be considered as cured when the severe symptoms are no longer obvious. The curative treatment for the first two attacks was applied for a short period and discontinued when symptoms had disappeared; on both occasions a speedy relapse took place. Only after the third attack of scurvy was the antiscorbutic treatment continued for a prolonged period, when the child showed by its growth that the constitutional disturbance was being really rectified.

CONCLUSIONS.

It is not possible to make generalizations upon the history of nine children, but the following provisional conclusions are stated here in the hope of suggesting further research in this field:

1. The addition of antiscorbutic juices and of fats containing the fat-soluble accessory factor was found to have a satisfactory result in stimulating growth and progress of nine very backward children, of ages varying from 12 to 31 months. The condition of these children before treatment showed that development had been retarded for many months.

2. The diet allotted for the children did not appear to be lacking in calories, but there was evidence that their food had been deficient in antiscorbutic principle and in milk fat.

3. It appears that deficiency of antiscorbutic material in diet had been an important cause of failure to grow. Eight of the nine children gave a history of previous attacks of definite scurvy, and two (Cases 4 and 6) showed bony deformities which were probably of scorbutic origin.

4. It is not possible to determine whether the beneficial effect observed after enriching the diet with two accessory factors is to be attributed to the extra antiscorbutic or to the extra fat given; probably both factors were concerned. In some instances—for example, Cases 4A and 8—improvement in growth and remission of rachitic symptoms were observed after addition of antiscorbutic material to a diet already containing a fair allowance of milk fat.

5. The cases studied indicate that the child's capacity for recovery is considerable when conditions of deprivation are rectified; the normal standard could be approached in six to twelve months, even after twenty-four months of retardation in growth and progress.

In conclusion, our warm thanks are due to Dr. G. Riether, Director of the Landes Zentral Kinderheim, for hospitality afforded to us in the wards of the institution and for permission to publish these observations. We also wish to express our indebtedness to Primarius Dr. M. Zarfl, physician-in-charge of the section in which these observations were made, for his continued co-operation and sympathy with us in our work.

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THE ETIOLOGY OF RICKETS.

BY

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AT the present time there are two different schools of thought on the subject of the etiology of rickets—namely, the dietetic and the hygienic, the former considering that a defective diet is the cause of this disease and that lack of fresh air, sunshine, and exercise is only a contributing factor, which increases the severity of the disease but never causes it if the diet is satisfactory. The latter claim that rickets is directly due to a hygienic defect. Many years before vitamins were thought of, Cheadle[1] brought forward many convincing arguments in favour of the former supposition. He pointed out that the disease was very rare in breast-fed children, and that when it did occur it was almost invariably due to prolonged lactation (with deficient secretion of milk) and the addition of starchy foodstuffs as a supplement. He considered that fat insufficiency was the chief cause of rickets, but also recognized the value of suitable protein in the diet as a preventive and the injurious effects caused by an excess of carbohydrates in young infants. He claimed to have cured rickets by merely correcting the diet of infants, and was of the opinion that cod-liver oil, though useful in some cases, was not an essential form of treatment, and that in other cases—for example, those infants who had indigestion—its use was sometimes harmful.

Findlay, in 1906, expressed the opinion that insufficient exercise was the cause of rickets. His experiments with Paton on pups appeared to have strengthened his views, and recently[2] he has published a small number of cases which are intended to show that greater curative effects are obtained by massage and electricity than by improved dietary and administration of cod-liver oil, etc. Noël Paton and Watson, as a result of their experiments, came to the conclusion that an unclean environment produced rickets in young animals owing to microbic infection. They suggested that a non-specific microbe such as McCarrison has shown to be the cause of goitre was to blame for the disease. Hess,[3] by reason of his dietary experiments on negro children, was opposed to the vitamin theory, and noting, as most other observers of the disease have done, that rickets was most active in winter and tended to improve in spring and summer, suggested that lack of sunshine was the cause of rickets. He demonstrated by a further series of experiments that sun baths in spring and ultra-violet rays in winter had a curative effect on negro infants suffering from this disease.

Rickets in Australasia.

Before discussing the various theories the writer would like to give a short description of rickets as it occurs at the Antipodes, as he considers that it serves to throw a certain amount of light on this vexed question. In former times the existence of rickets in Australasia was denied, and its absence was quoted as an argument against the dietetic origin of this disease. Such, however, is far from the truth, and it is now recognized that rickets, although not nearly as prevalent as it is in Europe and America, is by no means uncommon. It is present, however, in a much milder form—marked deformity of bones is extremely rare, and spasmophilic conditions, such as tetany and laryngismus, which are associated with advanced forms of rickets, are conspicuous by their absence. The common symptoms observed in Australia and New Zealand are slight beading of the ribs, delayed dentition and closure of the fontanelle, a protuberant belly, sweating of the head, and restlessness at night. Anaemia and malnutrition (although occasionally the fat form of rickets is seen) are usual. The muscles are flabby and wanting in tone and the ligaments are relaxed. A tendency to the development of catarrhal conditions of the mucous membranes, such as bronchitis and diarrhoea, is not infrequent. These symptoms are practically identical with those described by Cheadle as existing among the better classes of the population in England.

An analysis of forty cases seen in private practice in Auckland may be of some interest:

Age.	Cases.	Percentage.
Under 6 months	1	2.5
6 to 12 months	21	52.5
1 to 2 years'	16	40.0
Over 2 years	2	5.0

The cases seen over the age of 2 years were aged 2 years and 3 months and 3 years and 2 months respectively. The latter case presented marked deformities of the bones of the upper and lower limbs and chest wall, and was the only case of such marked deformity in a New Zealand born child that I have ever seen.

Diet.—In every case the diet was more or less unsatisfactory as regards insufficiency of milk and excess of starchy foods. None of the cases were wholly breast-fed, but 8 (20 per cent.) were partly on the breast, supplemented chiefly with starchy foods. It is noteworthy that 5 (62 per cent.) of these partly breast-fed infants were over the age of 1 year. One infant of 9 months of age from a country district developed rickets on a diet of a patent food and condensed milk, but his twin sister, fed on exactly the same lines, showed no sign of rickets.

Season.—Roughly dividing the year in Auckland into five winter months (which is a very liberal allowance) and seven summer months, it was found that 29 (72.5 per cent.) of these cases were brought for advice during the summer months and 11 (27.5 per cent.) during the winter. These figures tend to show that the increased activity of rickets in winter noticed in other countries does not occur in New Zealand. The probable explanation is that, advice being sought for the catarrhal complications of this disease, diarrhoea in this country is a more marked feature than bronchitis, which, as is well known, tends to occur chiefly during the winter season.

Hygiene.—The hygienic condition of all these patients was good.

Symptoms.—No case was included in the above series of cases in which beading of the ribs, delayed dentition and closure of the fontanelle were absent. Marked sweating of the head and restlessness at night occurred in the majority. All the cases, without exception, were below normal weight. Slight deformity of the chest, such as pigeon-breast or the presence of Harrison's sulcus, occurred in a few of the cases, but bending of the long bones of the limbs, with noticeable enlargement of the epiphyses, was only noted in the one case already mentioned. None of the cases showed signs of laryngismus or tetany.

A comparison between rickets as observed in Europe and Australasia would tend to show that the early symptoms this disease show great similarity, but that the course is much more benign at the Antipodes than in older parts of the world. A little consideration on the subject should clearly demonstrate why such is the case. There is a wide difference between the environment of the child in Australia and New Zealand and that which exists in the slums and tenement houses of the large cities of Europe.

In Glasgow or London, for instance, among the young children of the poor during the long winter months the hygienic conditions of life of the puppies cooped in a laboratory is almost exactly reproduced. Close confinement, with its attendant evils of insufficient fresh air, sunshine, and exercise, naturally tends to intensify the symptoms of a metabolic disorder. For normal growth and development in an infant we know that a well-balanced diet is an essential, but other factors are also necessary. For proper development of muscles exercise is an important feature. The ceaseless activity during waking hours, which is characteristic of all young animals, is probably a necessity for normal development of both muscles and bones. Similarly the functions of the rapidly developing cerebro-spinal and sympathetic nervous systems of the infant would appear to be stimulated, through the eyesight, by an environment which permits of a variety of objects of interest. Contrast the lot of the infant of the slums with that of the child in the same class of society in Australasia. The former for six months of the year is kept for the greater part of the twenty-four hours in a dingy room, in which sunshine, fresh air, and cleanliness are all lacking. Excessive clothing, hampering the free movement of the child, is not uncommonly applied by the parents to maintain warmth, and, owing to the tendency of these unfortunate children to bronchitis, the mother is often afraid to take them into the open for fear they should "catch cold." In Australasia the winters are short and sunshine is abundant, and in consequence infants are enabled to spend a great deal of their existence in the open air, to exercise their muscles freely, and increase their powers of observation. The occurrence of this disease in Australasia would tend, then, to show that absence of exercise and sunshine have no causal relation

Some prefatory matter containing a review of recent experimental work by Hopkins, Osborne, and Mendel, Mellanby, and others (1911-1918), and a few other paragraphs have been omitted owing to exigencies of space.

to rickets. The one feature common to all cases seen by the writer in these countries is some dietary defect, and from this he concludes that rickets is a dietetic disease.

The chief difficulty in accepting a purely dietetic theory for the causation of rickets is the following well-known fact. If a number of children are placed under the same hygienic conditions and fed on a similar ill-balanced artificial diet three things may occur:

(1) The infant may remain quite healthy and develop normally.
(2) Malnutrition may occur without signs of rickets.
(3) Rickets may appear.

None of the theories so far advanced explains the markedly variable susceptibility to the development of rickets possessed by infants placed under similar conditions of life as regards hygiene and diet. Speaking of infants reared in an institution, Hess[3] recently said the fact that 25 per cent. of the children fed on the same milk would get rickets and the rest would not, showed that there was some individual idiosyncrasy. If we adopt the dietetic theory of rickets we must go further, and be able to explain why a similar diet given to three infants is capable of producing atrophy in one, rickets in another, while a third child who was similarly treated remained in good health.

Cautley[4] has endeavoured to explain why the atrophic infant shows no sign of rickets by stating that there is antagonism between the two diseases, the atrophic infant not having "sufficient anabolic vitality for the production of the characteristic proliferative changes in the cartilages and bones." Be that as it may, the fact remains that atrophic infants rarely show signs of rickets. In both these affections, which may be presumed to be due to dietetic causes, as human milk is a specific remedy for one and a prophylactic for the other, there are profound metabolic changes, yet the clinical signs are markedly different. In looking for an explanation which will satisfy all the peculiarities of rickets as shown by laboratory experiments and clinical observation, including the results of therapy, it appears to the writer that one must go further than to assign either a purely dietetic or hygienic etiology for this disease. The profound metabolic changes which occur in a severe case of this disease can, he considers, be only caused by a disturbance of those organs which control metabolism in the young. In the further study of secretions produced by the endocrine organs — "the regulators of metabolism," to quote McCarrison[5]—will perhaps be found the key to open the portals which at present hide the mysteries of this disease. If a deficiency of endocrine secretion is the direct result of an unsuitable artificial diet, and the latter is also the chief factor in the causation of rickets, it would perhaps not be illogical to conclude that this disease is the effect of a deficiency of the secretion produced by one or more of these organs. Of the various endocrine organs a deficiency of whose secretion is responsible for the production of rickets I suggest that the thymus gland is the most probable. McCarrison found that in birds and monkeys experimented on with certain diets "the thymus atrophies intensely," but he has no data with regard to the merely scorbutic diet. A plausible reason for considering that rickets is due to thymic insufficiency is that the age incidence of the active growth of the thymus and of the disease known as rickets is almost identical. The normal thymus does not increase in size after the age of 2 years, and rickets as a progressive disease is usually limited to that age. Surely these significant facts are something more than a mere coincidence. Then again the peculiar idiosyncrasy to rickets may better be explained by this theory than any other. Still[6] has drawn attention to the wide discrepancy between the weight of the normal thymus gland in infants as noted by different observers, and it is not unreasonable to suggest that Nature has been more lavish in her endowment of some infants with a large and active gland than in others. If such should prove to be the case, we can more easily explain those cases (known to all observers) which, in spite of an ill-balanced diet containing (theoretically) insufficient suitable protein or fat and an excessive amount of carbohydrate, can still remain healthy for a considerable time, because, owing to a highly efficient thymus, a sufficiency of secretion is produced to prevent the onset of this disease. In advanced cases of rickets the spasmophilic manifestations which occur owing to defective hygiene are possibly due to the atrophy of other endocrine organs such as the parathyroids. The condition of marasmus or infantile atrophy, which is said to be antagonistic to rickets, may possibly be due to a deficiency of the secretion of other endocrine organs.

The writer has endeavoured to show that rickets is primarily a dietetic disease, being due to either an insufficiency of fresh animal food in an artificial diet, or to defective assimilation (as a result of digestive disturbance) of such food. It remains only to express an opinion as to which of the two great classes of foodstuffs, fat or protein, are responsible for such defective metabolism. As a result of clinical study and a consideration of the experiments of others I have come to the conclusion that a deficiency of suitable protein is the probable cause. The experiments of Paton and Watson would appear to show that in pups rickets is not caused by feeding on skimmed milk, and though I have frequently fed infants on fresh and dried separated milk for several weeks I have never seen rickets occur as a result. The beneficial effects of cod-liver oil in this disease, both as a prophylactic and a curative measure, would at first sight appear to be a stumbling-block to the acceptance of this theory. I know, however, of no evidence that the benefit derived from this form of treatment is due to the fat of the cod-liver oil, alone or in part; and further investigation may show that the extractives contained therein possibly serve as metabolic stimulants or regulators.

Summary of Conclusions.

1. That rickets is due to a deficiency of fat-soluble A vitamin in the diet has not been proved.

2. It is primarily due to a diet actually deficient in fresh animal food, probably suitable protein, or to a disturbed digestive condition which prevents the assimilation of the same.

3. The striking metabolic changes in rickets are due secondarily to a deficiency of secretion of one or more of the endocrine organs and probably chiefly of the thymus gland.

4. Confinement in young animals, with its attendant evils of lack of sunshine, exercise, and cleanliness, are important factors in increasing the severity of the disease.

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DIAGNOSIS AND TREATMENT OF PERFORATED DUODENAL ULCER.

FOUNDED ON FORTY-ONE CONSECUTIVE CASES.

BY

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ON looking over the records of my work in the Aberdeen Royal Infirmary during the years 1914–1919 I was struck by the number of cases of perforated duodenal ulcer that came under my care—namely, 12 in 1915, 9 in 1916, 8 in 1917, 9 in 1918, and 3 in 1919, or 41 in all. As this seemed much in excess of previous years, I thought it might be of interest to record certain points in the clinical notes of the cases. Owing to the greatly reduced staff in the hospital during that time, the only assistant available for me was a senior student who had many duties to perform, hence the notes are not so detailed as I would have liked.

Perforation is the most serious symptom that can occur with duodenal ulcer; it may take place in both acute and chronic ulcer at practically any age. Perforation has been reported in a child of two months and in a woman aged 77 years, but such cases are exceptional. At the same time the fact must be recognized that duodenal ulcer and its complications is now being found at a much earlier age than was at one time thought to be probable. Perforation is not only the most serious but also the most frequent complication, but the percentage of cases in which it is said to occur varies greatly. Osler, in his *Principles and*

Practice of Medicine, stated that perforation occurs in 6½ per cent. of all cases. Douglas, in *Surgical Diseases of the Abdomen*, says "The frequency of perforation is given as 43 per cent. (Chvostek), 6½ per cent. (Collin), and 50 per cent. (Robson)." In the collected papers of the Mayo Clinic (1905–1909) it is stated that in 272 operations for duodenal ulcer perforation was found sixty six times, and that sixteen of these were acute. The further fact, however, must be apparent, that statistics are not accurate, as there are many cases of duodenal ulcer diagnosed either not at all or wrongly. Considering the now acknowledged prevalence of duodenal ulcer any light that can be thrown upon its serious complications must be of value.

Frequency.

The ratio of men to women suffering from duodenal ulcer is variously given as from 5 or 3 to 1. In the present series of cases of perforation the ratio was 40 to 1, the one being the only case of perforation in a woman that I have ever seen. From this, and from a study of other hospital statistics in Aberdeen, I get the impression that duodenal ulcer in the female is very rare. Some observers account for the greater frequency of perforation in men by the fact that men are more liable to trauma, and that the nature and quantity of the food taken is different.

Age.

Most statistics state that duodenal ulcer is commonest between the ages of 20 and 60, that is in cases operated upon, but as the majority of the cases had had symptoms for months or years, an earlier age must be taken for the incidence of ulcer. In the present series the youngest was a lad of 17, the next a woman of 19, the oldest a man of 63. Of the 41 cases 26 occurred between the ages of 40 and 60, 9 between 20 and 40, and 4 over 60. L. J. Hammond[1] reports 14 cases of perforation (12 males and 2 females), and states that the greatest number occurred between 20 and 30.

History of Previous "Indigestion."

In the majority of cases of perforation there is a history of definite "indigestion" for months or years. In three of the present series there was no previous history of trouble, all stating that they felt perfectly well until the onset of the symptoms. In the bulk of the cases under review in which previous symptoms were present, there was a period of exacerbation previous to the perforation varying from a few hours to a week. This seems to be the usual experience, and differs from that of L. J. Hammond, who reported 14 cases to show the absence of clinical symptoms during the stage before perforation. Investigation of the previous history of indigestion usually gives a fairly typical picture of duodenal ulcer—namely, pain and discomfort coming on two to three hours after a meal, slightly relieved by vomiting and the eructation of gas and completely relieved by the taking of food, also the characteristic night pain; practically all the cases admitted going to bed with milk and biscuits close at hand.

In the present series the previous history of indigestion varied from thirty years to several months, though in one case the history was for one week only.

Dissemination of Fluid after Perforation.

Perforated duodenal ulcers have been divided surgically into three main classes, namely:

1. Cases in which the escape of intestinal contents is so profuse as quickly to flood the whole peritoneal cavity.
2. Cases in which the escape is not so profuse but yet constant, and areas of the general peritoneal cavity become more gradually filled, usually in a very definite sequence, one part after another.
3. Chronic perforation, in which the leak is so small and gradual that it leads generally to the formation of a localized abscess, owing to the limiting adhesions which have time to occur.

The cases in the present series belong to classes 1 and 2. In none of the cases was there any appearance of a localized affection. The second class of case was by far the most common. There was nearly always an interval during which the extravasated contents were limited to a particular region of the abdomen. Frequently the course of the extravasation can be followed clinically by noting the points of most acute tenderness, which seem to correspond to the spreading margin of the fluid. As the fluid leaves the duodenum it tracks along the shelf of mesocolon towards the right kidney pouch, then downwards either on the outer or inner side of the colon to the right iliac fossa, and thereafter flows into the pelvis. When this is full the fluid gradually spreads up the left side, and finally, in an untreated case, fills the whole peritoneal cavity.

Symptoms of Perforation.

As regards the symptoms at the onset of perforation, practically all the cases under review told the same story, and when to this was added the previous history of indigestion, there was little doubt as to the nature of the case. The onset is, to my mind, very characteristic—a very sudden attack of severe, agonizing or excruciating pain in the epigastrium, which tends to "double one up" and gives the feeling of impending death. This is quickly followed, in the majority of cases, by severe prostration or collapse, the degree of which possibly depends upon the amount and rapidity of spread of the escaping fluid. In my cases the onset was variously described as "like an electric shock," "severe burning," "a terrible spasm," "knife-like," "absolute agony," etc. I was struck by the number of patients who spontaneously stated that the pain "doubled them up." The sudden pain is accompanied by respiratory distress, in that the respirations are short, rapid, and difficult, and this, along with the sense of impending death, makes the expression one of great anxiety; the face becomes pale and perspiration stands out in beads on the forehead. The upper part of the abdomen is usually "board-like" on palpation and excessive tenderness is present, especially in the epigastrium.

These symptoms may be looked upon as the first stage in the condition, and clearly indicate some grave catastrophe, and, as already stated, when taken with a previous history of "indigestion," should leave no doubt as to the diagnosis. In this stage there is usually some quickening and weakening of the pulse, the temperature is subnormal, and the patient may or may not vomit. In twelve of my series vomiting was noted at the outset, but it may have been a symptom in many more.

This first stage is usually of very short duration, and unfortunately medical men seldom have the opportunity of seeing it as the patient soon passes into what may be termed the second stage, which is characterized more by tenderness and muscular rigidity. In this stage there may be recovery from the collapse, the pulse and temperature may be normal, there may be little complaint of pain, and the patient may look comparatively well, although in most cases there is still a suggestion of anxiety or restlessness in the expression. Examination of the abdomen reveals very marked rigidity of both recti and usually difficulty in taking a long breath; breathing in the majority of cases is costal. There is usually also marked tenderness a little to the right of the mid-epigastrium, rather below and internal to the tip of the gall bladder—to the right of the middle line above the umbilicus. At this stage there may not be much alteration in the temperature or pulse rate, but as a rule the respirations remain quick; 35 cases in my series had a respiratory rate of from 25 to 30.

Obliteration or diminution of liver dullness must not be taken as a necessary sign of perforation. Only in two cases was the liver dullness found to be obliterated; in five it was diminished.

The time occupied by the first and second stages is usually from one to two hours, and the third stage develops rapidly. The cases come under observation most frequently during this third stage, when diagnosis has become more difficult. The fluid has usually found its way to the right iliac fossa and often into the pelvis, and it is now that we find the signs of spreading "peritonitis"; the pulse rate increases and the temperature rises, there may be slight distension of the abdomen, and the tenderness becomes more general; although excessive tenderness may still be made out to the right of the epigastrium, the tenderness is frequently most marked at this time in the right iliac fossa, and this observation may lead to a diagnosis of acute appendicitis. The phenomenon is accounted for by the fact already mentioned, that the point of greatest tenderness follows the spreading margin of the extravasated fluid. The board-like rigidity has

probably spread widely from the epigastrium, but may be still especially marked on the right side. In a few cases vomiting may persist throughout this stage, and when added to the other symptoms may lead to a diagnosis of acute intestinal obstruction. In 7 of the 41 cases it was noted that the bowels had moved freely after the onset of acute symptoms.

As the fluid spreads and the symptoms increase in severity the pulse rate gradually quickens, with or without an accompanying rise in the temperature; but, in fact, the temperature usually now begins to fall. The respirations become more rapid, the abdominal distension becomes more marked, and the patient gradually passes into what may be termed the fourth or moribund stage, characterized by lividity of the face, a rapid thin pulse, and a cold and clammy condition of the skin.

Diagnosis.

The diagnosis of perforation is easiest in the first and second stages, before there is much distension and before the physical signs reach the right iliac fossa. If, as is usual, a previous history of indigestion resembling gastric or duodenal ulcer is given, then the onset of excruciating pain in the epigastrium, often described as like the outpouring of boiling fluid, with marked respiratory distress, rigidity of the upper part of the right rectus muscle, and marked tenderness to the right of the epigastrium, makes the diagnosis of perforation pretty certain.

At later stages various other conditions may be simulated, but at all events the symptoms point to an acute abdominal condition requiring early surgical intervention. In two cases in the series the initial incision was made in the appendical region, and on one occasion the diagnosis of renal colic delayed operative interference for twelve hours.

Prognosis.

All statistics go to prove that the earlier the case is operated upon after perforation the greater the chance of recovery, and there is no doubt that within recent years the mortality has decreased greatly, due partly to the cases being recognized earlier, and partly to improved technique. In the present series of 41 cases there were 5 deaths, and, for reasons to be seen later, in the cases subsequent to January, 1916, there were 29 cases with 2 deaths. Taken all over, the time of operation after perforation varied from three hours to three days, the average being a little over seventeen hours, and in 14 cases the time was twenty-four or more hours after perforation.

Of the three fatal cases occurring during 1915 the first was that of a male, aged 48, who, twenty-four hours previous to operation, was suddenly struck by a sudden severe pain in the right costal region and also in the right iliac region, spreading rapidly over the whole abdomen. For one week previous to this he suffered from discomfort in the upper abdomen. There was otherwise no history of indigestion. Before admission to hospital he was given opium pills. The physical signs were those of an "acute abdomen." At operation a perforation of the first part of the duodenum was found, and in spite of the usual treatment, including drainage, he died in five days with symptoms of acute peritonitis.

The second was a male, aged 36, with symptoms of acute abdomen for eight hours—acute pain, sickness, and vomiting of "coffee grounds." Although the abdomen was full of fluid resembling stomach contents, no perforation could be found, and he died six days later, in spite of epigastric and suprapubic drains. Unfortunately, no *post-mortem* examination was made to confirm the diagnosis, but the history and course of the case left little doubt as to the condition present.

The third fatal case during 1915 was that of W. B., aged 52, who was admitted to hospital in a moribund condition, having perforated three days previously, and for whom the only treatment carried out was the insertion of a suprapubic drain under local anaesthesia.

During the years 1916–1919 there were two fatal cases, one in 1916 and one in 1918, out of a total of 29—that is, 7 per cent. mortality. The first was a lad of 21 years, whose acute symptoms had been present for fully forty-eight hours before admission. He gave a history of sudden pain and collapse, with vomiting of brown material, and later showed the presence of blood in the stool. On admission he looked very ill. His pulse was 128, respirations 32, and temperature 100°. At operation a well marked perforation of the first part of the duodenum was found close to the pylorus. The perforation was sutured, the abdomen washed out, and a suprapubic drain inserted. He died on the seventh day after operation.

The other fatal case was that of W. F., male, admitted twenty-nine hours after the onset of acute symptoms. Previous to admission he was given first 5 oz. of castor oil, followed in about seven hours by 5 grains of calomel and later by several soap and water and turpentine enemata, without result! On admission he showed the symptoms of an acute abdomen in the final stage and justifiable interference was regarded as being limited to suprapubic drainage under local anaesthesia. He died within twelve hours of admission. In this case no *post-mortem* examination was granted and the diagnosis was made from the history and course of the case.

Treatment.

All authorities agree that immediate operation offers the only chance of cure and the best chance of recovery. In the present series all were cases of free perforation, no evidence of localization of any kind being present. The various problems of treatment can be divided into four distinct sections or steps—namely, (1) the treatment of the perforated ulcer, (2) the treatment of the peritoneal cavity, (3) whether or not drainage should be employed, (4) should gastro-enterostomy be performed?

It is not my intention to discuss all these, but merely to state what steps were taken in the series of cases quoted.

1. In every case except two the perforation was closed by purse-string suture, frequently reinforced by interrupted cross sutures. In none of the cases was either excision or cauterization performed.

2. The general opinion is that the peritoneal cavity should not be irrigated. My technique is as follows: Having sutured the perforated ulcer, I make a suprapubic opening sufficiently large to allow of the insertion of an average sized Keith's drainage tube. I then retract and lift up the edges of the epigastric incision, and gently pour into the abdomen pints of normal saline solution. With my hand inside the abdominal cavity I make sure that the periduodenal regions, especially under the liver, the right renal pouch, and the right colic regions, are well flushed, and siphon off what gathers in the pelvis through the Keith tube. The irrigation is continued until the fluid comes out of the pelvis quite clear. The epigastric incision is then closed, and the suprapubic drain removed without any attempt being made to empty the peritoneal cavity. The suprapubic wound is closed, and the patient subsequently treated in the Fowler position.

During 1915, with 12 cases and 3 deaths, the above technique was not the routine one, the process of "mopping" being used in several; but subsequent to January, 1916, irrigation has been used in all the cases. During 1916 and 1917 the suprapubic drain was left in for twenty-four to forty-eight hours, but subsequent to 1917, being struck by the small amount of fluid which drained away, I closed the suprapubic wound at the time of operation. From 1916 to 1919 inclusive I treated 29 cases, with 27 recoveries, and knowing the details of the two fatal cases, I do not think anyone could say that any other method of treatment would have saved them.

As regards the performance of gastro-enterostomy, it is my custom to postpone this until a later date. In the hospital class of patient it frequently appears to be unnecessary, as in only four of the series have I been asked for further advice some months after their discharge. Gastro-enterostomy then cured their symptoms.

In a recent textbook on operative surgery one of the steps in the operation for perforated duodenal ulcer is described as follows:

"Provide for drainage through the primary incision, through a special opening made in the right loin just below the last rib, and where there is much peritonitis provide pelvic drainage through an anterior wound and keep the patient in the Fowler position."

It was this difficulty of drainage that led me to try irrigation, and I was glad to read in Hertzler's *The Peritoneum*, under treatment of acute general peritonitis, the following:

"There is one condition in which irrigation seems rational. In instances where large amounts of fluid have been poured into the peritoneal cavity it seems that irrigation may be useful by removing mechanically foreign bodies which have escaped from the intestinal lumen. There is no doubt that peritonitis is much enhanced when foreign bodies enter along with the bacteria present. If the manual force of a stream of fluid can be made to remove them before inflammation has been set up the irrigation may be beneficial."

To my mind the statistics I have here given warrant a continuance of the irrigation method.

REFERENCE.

[1] *Pennsylvania Medical Journal*, June 19th, 1919.

BLUE SCLEROTICS AND BRITTLE BONES, WITH MACULAR ATROPHY OF THE SKIN AND ZONULAR CATARACT.

BY

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WHEN the sclerotics are abnormally thin, as in buphthalmus, and even locally after scleritis, the white part of the eye assumes a bluish colour, because the dark uvea shows through. But a bluish colour of the whole sclera may be congenital, and is most often found in connexion with bones so slender and fragile that fractures are occasioned by the slightest cause—as, for example, slight blows or fall from a small height.

The description of the disease "blue sclerae and tendency to fracture" was published for the first time by Eddowes[1] in 1900 in a short report in the BRITISH MEDICAL JOURNAL, which, however, gives an almost complete description of the disease. Eddowes saw the disease in a father and his daughter, and he is of the opinion that the blue sclerae, as well as the tendency to fracture, are due to an inherited defective structure of the fibrous tissue of the body. In 1908 Peters[2] describes a family of four generations, of the 11 members of which 10 had blue sclerae, and he establishes the fact that the disease is congenital and hereditary. In a subsequent report Peters[3] mentions that fractures, too, often occurred in this family.

Since then several pedigrees have been published of families in which blue sclerae and the tendency to fracture were found to be inherited. In this way Stephenson[4] mentions, in 1910, four generations, and Harman[5] a fifth generation of a family, of the 55 members of which 31 had blue sclerae.

Burrows[6] found in 1911, in a family of 24, 13 affected with blue sclerae and 9 with the tendency to fracture; Adair Dighton[7] found among 14 persons 9 with blue sclerae; Cockayne[8] 6 cases in a family of 17 members. Van der Hoeve and de Kleyn[9] report two pedigrees in 1918; in one, 10 persons out of the 22 members of the family have blue sclerae, as have, in the other, all the 6 members of the family, while 10 and 5 respectively have the tendency to fracture. Finally, Freytag[10] has recently mentioned a family of 18 members, 11 of which had blue sclerae.

In summing up all these cases it will be seen that among 156 persons, 76—that is, about one-half—had blue sclerae; and among 52 persons, whose bones were examined in addition to the symptoms of the eyes, 24—also about one-half—had the tendency to fracture. If we look at the published pedigrees, for instance, at ours, the conditions of heredity seem to be of such a nature that the whole matter seems to be in accordance with the view adopted by Groenow,[11] that the anomaly is inherited as a dominating quality according to Mendel's theory.

Besides blue sclerae and tendency to fracture, other anomalies are described in these patients. One of the most frequent seems to be deafness. Van der Hoeve and de Kleyn,[9] who were the first to describe this symptom in connexion with the blue sclerae, found hardness of hearing or deafness in all the members of the two families in question who suffered from blue sclerae and tendency to fracture. Bronson[12] found deafness in 7 cases, Voorhoeve[13] the same in 4 cases. Late development of the teeth is further mentioned by Crocco,[14] syndactyly and astigmatismus by Van der Hoeve and de Kleyn,[9] embryontoxon by Peters,[2] haemophilia, congenital vitium cordis, palatum fissum and rachischisis by Voorhoeve,[13] projecting frontal and occipital bones by Bronson,[12] and a tendency to luxations and subluxations by Freytag[10] and Behr.[16]

As regards the cause of the disease, a great deal seems to indicate that this is due to an inherited anomaly of the mesoderma. The blue colour of the sclerae is, as mentioned above, due to the sclerotic being so transparent that the uvea shows through more than normally; the transparency, in its turn, is due to the sclerae being thinner than usual, as Buchanan[20] proved by measuring an enucleated eye, the sclera of which was only one-third of the ordinary thickness.

The tendency to fracture is due—as is proved by several examinations by *x* rays (Stenvers in Van der Hoeve and de Kleyn's report,[9] Freytag,[10] Crocco,[14] Reye[21])—to thinness of the bones and defective calcareous development. Further, a relative thickening of the compacta at the expense of the spongiosa is found—probably a result of former fractures—in addition to older and newer fracture lines as well as flexures of separate bones and of the whole bony system.

The deafness is, in some cases, due to oto-sclerosis (Bronson,[12] Crocco,[14]) and in other cases to labyrinthic disease (Voorhoeve[13]). Stenvers (loc. cit.) found on examination by *x* rays that the labyrinthic parts were covered by a thick calcareous substance, so that the deafness in this case was due probably to a secondary disease of the labyrinth as a consequence of disturbances of nutrition caused by the osseous affection in this region.

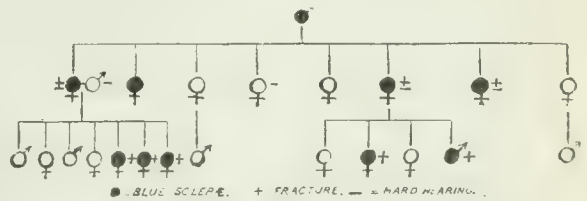
The real cause of all the symptoms is quite unknown as yet. Some authors think that it is due to disturbances of the internal secretion (Bolten,[15] Behr,[16] Hoffmann[17]), while others connect the disease with inherited syphilis; but none of these theories has, however, yet been proved.

We shall now bring forward a case of this rare disease which has not, to our knowledge, yet been described in this country.* The case is more interesting because the patient suffers from a cutaneous disease, which perhaps is connected with the other symptoms, and which has not before been described as part of this disease.

DESCRIPTION OF DISEASE.

Condition of Heredity.—The existence of blue sclerae and the tendency to fracture in all the other members of the family is illustrated by the accompanying pedigree, composed according to information given by the patient. It has only been possible to examine one member, a maternal aunt; she had typical blue sclerae, was dull of hearing, and had formerly had several fractures, but presented no changes in the skin.

Pedigree.



Anamnesis.—The blue colour of the sclerae has existed as long as the patient remembers, and does not seem to have changed in the course of the years. She has not noticed any subjective symptoms of her eyes, and has not complained of an impaired eyesight.

The patient states that she had broken her right upper arm twice, her left forearm once, both her legs once, her right collar-bone once, and one of her ribs once. Each fracture had occurred after a very slight trauma. The patient is not able to give any more detailed information about these repeated fractures, the last having occurred at the age of 13. Subjective ear symptoms have not been observed.

Three years ago in summer time—brownish spots as big as a pea began to appear on the neck. They grew in the course of the winter, and other spots of the same nature as the first ones continued to appear. From that time cutaneous affection has spread slowly, developing especially in winter, while the disease has in summer been rather stationary. There has been no itching, pains, or paraesthesias. The state of the general health has been good. There have been no symptoms from the lungs or heart and no febrilia.

OBJECTIVE INVESTIGATION.

The patient is 23 years old, unmarried, the daughter of a cottager. Weight 35 kg., height 142 cm., the distance between the finger-tips at outstretched arms 152 cm.

Eyes.—The eyelids are natural, the conjunctivae free from injection. The corneae have distinct arcus juvenilis above and below, otherwise normal. Javal: 3.00 (0°) above, on the left: 3.00 (170°) above, on the right.

* A case of osteogenesis imperfecta congenita with blue sclerae, described by Johannesen and Eiken in *Hospitalstidende*, 1919, No. 7, should, however, perhaps be referred to here.

Corneal radius horizontally is 7.7 mm., vertically 7.3 mm. Visual acuity, on right, 6/9 Am. 200 (15°); visual acuity, on left, 6/9 Am. 200 (165°). She reads with correcting glasses the finest writing (Jaeger N.1) at a distance of 10 cm.

Both sclerae are of a rather deep grey-blue colour, especially in the foremost part corresponding to the ciliary body, which is sharply outlined through the sclerotics. By transillumination by means of Sach's lamp a deep reddish light is seen peripherally everywhere, while a distinct radially striped shadow of the ciliary body is seen in front. The irises are grey-blue, the pupils normal. By maximum dilatation of the pupils a *cataracta zonularis* is seen on both eyes. Otherwise the refractive media are clear; the fundus of both eyes is normal. The tension is between 10 and 7.5 (Schiötz).

Bony System.—The patient is little and slender, the face flat, the chin small, the shape of the head brachycephalic, the prothesis full. The palpable long bones show no changes except that they are slender, while a considerable kypho-scoliosis, together with a pronounced curvature to the right, is noticed in the dorsal part, with a curvature to the left in the lumbar part and a corresponding deformity of the thorax. Photographs by *x* rays of all the bones, except the skull, did not show any trace of previous fractures. On the other hand, they proved to be but slightly calcareous and on the whole defectively developed.

The Ears.—Both tympanic membranes are red and retracted. The hearing is slightly reduced on both sides, probably on account of a double-sided chronic catarrh of the middle ear. There is no trace of disease of the inner ear, the vestibulary function being normal.

The Skin.—The lower part of the neck and the upper part of the chest are affected with a strange cutaneous disease which appears zonularly. In front there are definite spots varying in size from a millet seed to a farthing, of a greyish purple colour, and of a somewhat irregular or oblong form. The surface is below the level of the surrounding skin, and the veins show through distinctly. At the edge of these parts, which at some places join into great patches, a narrow hyperaemic border is seen. The surface of the skin in the affected parts is atrophic, smooth, without scales or crusts, and the hair follicles seem to be natural. The sebaceous glands come out strongly as small white points. On the back of the neck, where the spots are smaller but of the same form, they have a somewhat different appearance. The colour is more red-purple and the atrophy less pronounced, and in some of them there seems even to exist a slight infiltration. The healthy skin is richly covered with hair and has no anomalies of pigmentation. The colour of the hair is dark blonde.

Microscopy of the affected skin did not show any changes in the epidermis, but an atrophy of the corium was present, accompanied by a slight cell infiltration along the vessels. By elastin colouring it was proved that the atrophy especially attacked the elastic tissues, whereas the connective tissue was only slightly altered.

Other Organs.—The examination of the lungs and heart showed a normal condition, except a displacement caused by the kypho-scoliosis. The abdomen was normal, without any soreness or perceptible growths. The examination of the sensibility of the affected parts of the skin did not show any difference, as regards the senses of touch, pain, and temperature, from the surrounding normal skin. There was no swelling of the thyroid gland. The pulse averaged a rate of about 80, and was regular and strong.

Special Investigations.—Haemoglobin 85 (Sahli); red corpuscles 4.1 million; white corpuscles 6,300, of which 75 per cent. were eosinophiles and 1 per cent. large mononuclears; number of blood plates 398,000 per c.mm.; coagulation time six minutes; volume of cells 39 per cent.; quantity of febrin in plasma 0.30 per cent. The Wassermann reaction was negative. Mantoux's, von Pirquet's, and Moro's tuberculin reactions were strongly positive. There was no focal reaction on the affected parts of the skin. Ewald's test meal showed normal figures of acid. The urine did not contain albumin or sugar.

According to the pedigree, the anamnesis, and the objective findings, there can scarcely be any doubt that the disease of the patient must be referred to the syndrome described by Eddowes. The examination by *x* rays has not corroborated the statement of the patient about previous fractures, but it is possible that the ten years have effaced the traces, and the fact of the bones being tiny and slightly calcareous is, from a diagnostic point of view, just as valuable as existing fractures. The hardness of hearing, which, as has been said above, is very slight, seems in our case to have another etiology than in the cases previously described.

The most interesting feature of the present case is the zonular cataract, which, as is generally recognized, is a hereditary affection, and which, as far as one knows, has not been described before in connexion with Eddowes's complex of symptoms. Further, there is the particular change in the skin which, in its development and appearance, corresponds to a description given for the first time by Thibierge,[23] who called it *athrophodermie érythémateuse en plaques à progression excentrique.* A similar case, differing, however, in some points, was reported later by Yadassohn,[23] who proposed the name *anetodermia erythematodes.* The name that has been used in most of the recent publications is, however, *atrofia maculosa cutis.*

In addition to the rather considerable foreign literature of this disease there exists a report by L. Nielsen[24] in the proceedings of the Danish Dermatological Society (March, 1899). It appears from the descriptions that the disease generally begins with round, slightly elevated, bluish-red spots, varying in size from a lentil to a shilling; these spots are, subsequently, slowly changed into atrophic areas; the beginning stage of infiltration has, however, in many cases not been seen. The histological investigations correspond entirely with the description given above.

Whether this rather rare cutaneous disease, in its nature quite unknown, is found accidentally in our patient together with Eddowes's complex of symptoms, or whether there really exists a connexion between them, will, of course, be impossible to state from this single case. If we consider that changes in the sclerotics and bones are due to a defective development of the mesodermal tissue, we are, however, apt to conclude that the cutaneous atrophies form a part of the entire disease. By going over the available literature regarding Eddowes's complex of symptoms, it has not been possible, however, to find any case in which cutaneous atrophies are mentioned; the only cutaneous affection which is mentioned is an eczema in Eddowes's[1] own patient. On the other hand, the attempt to find information about blue sclerotics and fractures in the literature of *atrophia maculosa cutis* has also been unsuccessful, only one author, Gottheil,[25] mentioning a patient with defectively developed bones and infantilism, but he says nothing about blue sclerae or fractures.

It will consequently require to be proved by future investigations whether a connexion exists between the cutaneous symptoms and the other symptoms of the disease. In addition to the possibility that the cutaneous atrophy may be a symptom parallel with the blue sclerotics, the brittle bones and the hard hearing, it is probable that the debility of the mesodermal tissue may predispose to the development of the cutaneous atrophy, although the latter may be produced by other causes.

Our thanks are due to Professor C. Rasch for permission to publish this case.

LITERATURE.

(Those marked with * are not referred to from the original.)

[1] Eddowes: BRITISH MEDICAL JOURNAL, 1900, ii, p. 222. [2] Peters: *Klin. Monatsbl. f. Augenheilk.*, 1908, p. 130. [3] Peters: Ibid., 1913, i, p. 594. [4]*Stephenson: *Ophthalmoscope*, 1915, p. 278. [5]*Harman: Ibid., 1910, p. 559. [6] Burrows: BRITISH MEDICAL JOURNAL, 1911, ii, p. 16. [7] Dighton: *Ophthalmoscope*, 1912, p. 188. [8]*Cockayne: Ibid., 1914, p. 271. [9] Van der Hoeve and de Kleyn: *Arch. f. Ophth.*, 1918, 95, p. 81. [10] Freytag: *Klin. Monatsbl. f. Augenheilk.*, 1921, p. 507. [11] Groenow: *Graefe-Saemisch Handbuch*, 1920. [12] Bronsön: *Edin. Med. Journ.*, 1917-18, p. 240. [13] Voorhoeve: *Lancet*, 1918, ii, p. 740. [14] Crocco: *Comm. d. Hosp. oph. Buenos Aires*, 1920, ii, p. 38. [15] Bolten: *Nederl. T jdschr. v. Geneesk.*, 1918, i, p. 560. [16] Behr: *Klin. Monatsbl. f. Augenheilk.*, 1913, ii, p. 281. [17] Hoffmann: *Arch. f. klin. Chirurgie*, 1915, 107, p. 279. [18] Rolleston: *Proc. Roy. Soc. of Med.*, April, 1911, p. 86. [19] Antonelli: *Arch. d'Ophthalmologie*, 1913, 33, p. 91. [20] Buchanan: *Trans. of the Ophthalm. Soc.*, 1903, 23, p. 287. [21] Reye: *Deut. med. Woch.*, 1917, p. 125. [22] Thibierge: *Ann. de Dermat. et Syph.*, 1891, p. 1091. [23] Yadassohn: *Verh. d. deutsche derm. Ges.*, 1892, p. 342. [24] Nielsen: *Dansk dermat Selskabs Forh.*, 1-3, 1899. [25] Gottheil: *Journ. of Cutaneous Diseases*, 1916, p. 133.

THE nineteenth Dutch Congress of Natural Science and Medicine will meet at Maestricht in Easter, 1923, under the presidency of Professor Spronck of Utrecht.

THE great parade ground at Berlin has been transformed into a field for light and sun baths for children with surgical tuberculosis.

THE DIFFICULTIES IN DIAGNOSIS AND TREATMENT OF HEPATIC ABSCESS.

BY

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The present relatively high frequency of hepatic abscess as the result of oversea service during the recent war, the difficulty experienced in accurate diagnosis even when the lesion is borne in mind, the dramatic results of emetine treatment—these factors combine to make the disease of great importance at the moment. The following notes of cases which have occurred recently serve to illustrate the difficulties experienced. The fact that a patient has had a liver abscess in the past which has been surgically treated by no means excludes the development of a second abscess at some very considerably later date. The following two cases illustrate this:

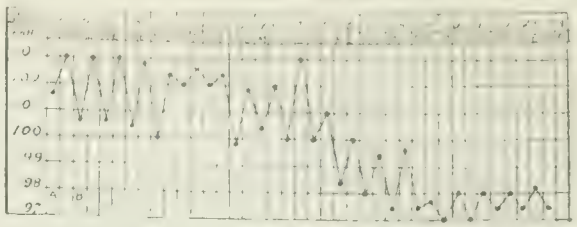
J. S., aged 43, served three years in Palestine, developed dysentery in 1918, and was operated upon in Gaza in that year. A large liver abscess was opened and drained. He reached home in February, 1919, and returned to work as a miner. He was admitted to hospital on August 25th, 1920, with intense hepatic pain. There was an operation scar in the region of the gall bladder. Liver dullness at the right base reached up to the angle of the scapula, the edge of that organ being felt four fingers below the costal margin. There was great tenderness over the seventh rib in the axillary line. *X*-ray examination showed fluid in the right pleura, a fixed diaphragm, and a very large liver. Under treatment this all disappeared, the diaphragm and liver returning to normal and the patient returned to work. He, however, came under observation again in January, 1921, with all the signs of an acute liver abscess, from which over two pints of pus were evacuated. He made a good recovery.

J. A. H., aged 30, had seven and a half years' army service, of which four years had been spent in India. He was operated upon in July, 1913, for hepatic abscess, of which the scars through the right rectus and the eighth rib in the axillary line still remain. He was discharged unfit for further service on account of rheumatoid arthritis in 1914. He was admitted to hospital on June 6th, 1920, on account of vomiting, pain in the right chest and right shoulder. Examination showed crippling of left hip, knee, and foot. The liver was only slightly enlarged upwards, but reached down to the iliac crest, and was very tender; there was slight pyrexia up to 100° F. at night. Under emetine the temperature quickly came to normal, and the liver had returned to its usual dimensions at the end of the usual sixteen-day course of treatment. He has remained well since.

Although cases presenting the syndrome of dysentery, pyrexia, leucocytosis, hepatic pain and enlargement, are generally diagnosed as hepatic abscess, it is important to remember that, although the right dome of the diaphragm may be pushed up and fixed, the pathological condition may still be an acute amoebic hepatitis. It is this condition in which dramatic cure may be effected, and, because this is the early stage of the disease, it is also the condition in which errors of diagnosis are easily committed. The differentiation of hepatitis from abscess formation is usually impossible unless clinical examination or *x* ray shows an actual bulging, and even then much surgery can be saved by vigorous emetine treatment—for instance, 1 grain of the hydrochloride night and morning subcutaneously or intramuscularly. So effective is this treatment that radiographic examinations at four-day intervals enable one to follow the diminution in the size of the liver, and the rapidity of recovery in these patients is one of the few curative joys of life vouchsafed the physician. The patient in a week or so is converted from a sallow-complexioned, wasted, sweating wreck to a comparatively normal individual with no pyrexia and no pain.

The accompanying temperature chart shows how easily these cases may be mistaken in the early stage for an enteric group infection. The temperature in this case came to an abrupt end on the exhibition of emetine, which was prescribed on account of the hepatic enlargement discovered on clinical examination.

A history of definite dysentery is not by any means always obtainable, but two forms of bowel looseness appear to be frequently associated with this grave complication: (1) Diarrhoea occurring at night, the bowel acting three or four times, and (2) two or three loose evacuations in the morning between breakfast and luncheon, intestinal peace reigning for the rest of the day. It is possible that this variety of bowel reaction to amoebic infection is not sufficiently severe either to send the patient for expert advice or to arouse at home the suspicion that the entamoeba is the responsible agent. Hence the condition goes untreated and uncured, giving rise to hepatic infection later. The following case illustrates this:



A. On admission. B. Blood culture negative. One grain of emetine was given on the fourteenth day, and thereafter one grain in the morning and one-third of a grain in the evening on each day from the fifteenth to the twenty-third day; one grain was given on the morning of the twenty-fourth day.

A. A., aged 43, served in Mesopotamia from 1916 to 1918, contracting dysentery in 1917, for which he was invalided to India. He has suffered from a slight diarrhoea ever since his return to England in May, 1919. The bowels have been open three or four times every morning, but he has been comfortable for the rest of the day. He was admitted to hospital on August 21st, 1920, with pain in the right hypochondrium and pyrexia up to 100° F. of one week's duration. The complexion was sallow and the patient obviously in great pain. The skin of the right lower ribs was blistered by the application of mustard leaves and hot-water bottles prior to admission. There was dullness at the right base for a handbreadth up, but the liver edge could not be felt. He was acutely sensitive to any pressure over the right lower ribs. *X*-ray examination revealed the right diaphragm pushed up and fixed by the hepatic enlargement. Under emetine the pain and tenderness rapidly disappeared, the liver enlargement more slowly, but on September 28th, 1920, the patient was discharged with only very slight limitation of right diaphragmatic movement. He looked very well and has remained so till now.

On the other hand, grave difficulty may arise from the scarring which must follow the evacuation of a liver abscess. The following case is still a source of anxiety, and has been so for some weeks past.

W. H., aged 50, served in India from 1896 to 1912, where he contracted both dysentery and malaria. He rejoined the army in 1915, and was operated upon in that year at Grantham for a liver abscess. In 1916 another operation was undertaken at Herne Bay for the repair of a hernia which had developed at the site of the wound. He came under observation in February, 1921, for malaria and a recent recurrence of dysentery. There was a central epigastric scar, through or in the thin wall of which hepatic tissue was visible. The upper limit of the liver was normal, but its edge reached two fingerbreadths below the costal margin. It was not tender. No splenic enlargement and no malaria parasites were found. There was an extensive fistula in ano with three separate openings, from which much pus and some blood was discharging. No entamoebae were found in the stools, but the *x*-ray examination revealed a large liver, with some impaired movement of the right diaphragmatic dome and a very obvious bulging upwards just to the right of the pericardium. There was no pyrexia, no leucocytosis, no pain, and no tenderness, but the patient had a very marked clubbing of the fingers for which no cause could be found.

The fistula was excised and rapid healing took place; histological examination of the tissue showed no entamoebae. The patient remains quite well, the *x*-ray appearances being attributed to the cicatrix of his previous abscess, since no change in its appearance has taken place in three months. The disturbing factor of his clubbed fingers remains unexplained, but he is emphysematous and may possibly belong to the group now designated Ayerza's disease.

The case below is worthy of record owing to the rarity with which amoebic abscesses are found in the lesser peritoneal sac.

R. C. P., aged 23, contracted dysentery at Cantara in April, 1919. He was demobilized in September, 1919, and had been ill ever since with pain in the chest and abdomen, accompanied by constipation. He was seen on November 11th, 1919, and found to have hectic temperature, sweating, wasting, extreme prostration, and a curious earthy pallor. The lower thorax and abdomen were held rigid, and a large tumour mass was both seen and felt in the left hypochondrium, which was acutely tender. Mr. Graham Simpson of Sheffield Royal Hospital very kindly operated upon this urgent case: incision through the left rectus revealed the left lobe of the liver, and a large fluctuating swelling the size of a cocoanut was felt in the lesser sac behind the stomach; this was drained through the lesser omentum. On the third day after operation consolidation of the right pulmonary base was found. On the fourth day emetine was started; the temperature became normal in three days and remained so, recovery being uninterrupted.

It is scarcely necessary to observe that every liver abscess, though solitary, is not due to the entamoeba, as the two following anomalous cases show:

P. P., aged 29, served in Ireland four and a half years, France five months, Mesopotamia three years, being demobilized in August, 1919. He contracted malaria, and in September, 1918, received a blow on the chest from a spade handle. A swelling developed painlessly, and was opened in December, 1918; a discharging sinus remained, which was again operated upon in February, 1919. When seen on January 30th, 1920, there was still a discharging sinus around the right seventh rib in the mid-clavicular line. There was no pyrexia, no enlargement of liver or spleen, no enlarged glands, and no signs in the lungs. The Wassermann reaction was negative. X-ray examination showed no enlargement of the liver. Operation revealed a hydatid cyst of the upper surface of the diaphragm, removed with much difficulty, the sinus taking several weeks to heal.

H. W., aged 24, a machinist (female), had suffered from pain in the right side for the past three months, but had only been off work for the past three weeks. When first seen on March 15th, 1921, she looked flushed and very ill, with great dyspnoea and a rapid pulse. The heart's apex beat was in the third space in the nipple line on the left side. Dullness at the right base extended up to the third rib in front, and on the left side to the sixth rib in the lateral line. The right chest was tapped, and thirty-four ounces of clear but spontaneously coagulable fluid was drawn off. The hectic temperature continued, and the dyspnoea was but little relieved. The apex beat returned to the fifth space in the nipple line, but the right-sided dullness persisted, although the left had disappeared. A needle was introduced into the right chest on two subsequent occasions, but only blood was obtained. The liver edge reached below the umbilicus throughout.

The chest was explored, as it seemed likely that the trouble lay beneath the diaphragm, and a huge suppurating hydatid cyst of liver was found which during the operation burst into the lung, producing some haemoptysis. The blood showed a marked leucocytosis but no eosinophilia. Later it was found that complement fixation, using the clear fluid obtained from daughter cysts, gave with the patient's serum a complete fixation in 1 in 20 dilution and delayed lysis in 1 in 40 dilution. With two controls no fixation was obtained. This patient had never lived outside northern England. Her death, which occurred on the fifth day after operation, was hardly surprising in view of the great extent of hepatic damage.

To my surgical colleagues, Mr. W. R. Douglas, Mr. John Morley, and Mr. Geoffrey Jefferson, for their ever ready help and advice in these difficult and anxious cases, I would offer my grateful thanks.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUDDEN DEATH FROM ASPHYXIA FOLLOWING REGURGITATION OF SEMI-DIGESTED FOOD.

As the following case possesses some medico-legal interest it has been thought advisable to bring it to general notice.

A man, aged 52, was brought in dead to King Edward VII Hospital, Cardiff, on the evening of November 7th, having shortly before died suddenly in a hotel bar. The *post-mortem* examination was made on the morning of November 9th. The body was that of a well-preserved, well-developed man, and, beyond a slight abrasion on the right forehead, there was nothing abnormal in the external appearances of the body. *Post-mortem* staining and rigor mortis were present, but there were no traces of lividity.

On opening the body it was noticed that the veins of the neck were greatly distended with very dark fluid blood; this escaped on severance of the veins, leaving the large veins and right side of the heart without a trace of blood. The escaped blood clotted quickly outside the body. The fluidity of the blood within the body is attributed to the suddenness of the death, the subsequent cooling of the body, and the absence of factors facilitating deposition of blood platelets. Apart from dilatation of the chambers, and a slight increase of epicardial fat, the heart was in very good condition.

The lungs were engorged with dark blood, which brightened on exposure to the air. There was no oedema and but very slight emphysema. Impacted in both bronchi, in the right to a greater extent than in the left, was some creamy pultaceous material, which extended into the bronchioles of both lungs. There was no inflammatory reaction. Traces of the same material were found in the trachea, larynx, and oesophagus, none of which showed any evidence of inflammation. On examination, the material appeared to be composed of semi-digested food; the total quantity present did not exceed two tablespoonfuls.

The stomach was almost empty. The mucous membrane of the oesophageal antrum showed capillary engorgement and rugae were present. The pyloric antrum, on the other hand, showed digested rugae and the presence of a few cubic centimetres of semifluid digested material tinged with altered haemoglobin and emitting an odour of stale alcohol. The other organs of the body, including the brain, were free from any pathological condition, apart from some venous engorgement.

There was therefore presumptive evidence of the ingestion of some irritant on an almost empty stomach containing the remains of a semi-digested light meal, followed by vomiting and regurgitation into the larynx and trachea, and so into the bronchi and bronchioles, producing speedy suffocation. The irritant action of the ingested material was evidenced by the condition of the mucous membrane of the oesophageal antrum and its preservative nature by the persistence of the rugae at this site. The odour of the stomach contents suggested the alcoholic nature of the irritant. These findings were borne out by the details related at the inquest. His last meal, taken at 5.30 p.m., consisted of tea and bread-and-butter. He arrived at the public-house at 8.20 p.m. and sat drinking until 9.30 p.m., when he was noticed to gasp for breath, his head fell back, and his pipe dropped out of his mouth; death appeared to be practically instantaneous. It is conjectured that on account of the presence of some women friends he attempted to suppress the vomiting which took place.

Cardiff. E. EMRYS-ROBERTS, M.D.

A CASE OF PELIOSIS RHEUMATICA.

IN view of the recent discussion on the phenomena of acute rheumatism, the following case may be of interest.

A man, aged 26, was taken ill on November 14th with joint pains. He remained at work until November 16th, when he contracted a sore throat and took to his bed. He was admitted to the Ham Green Hospital, Bristol, on November 17th as a suspected case of diphtheria. On admission his throat was very congested, with a small ulcerated patch on the left tonsil; the tongue was furred. He complained of pain and stiffness of the joints, and fluid was detected in the right knee-joint. The heart sounds were normal, the temperature 100°, and the pulse 98. He was given a small dose of diphtheria antitoxin and large doses of sodium bicarbonate and sodium salicylate. He got no relief even after the salicylates had been pushed further. On November 20th raised areas of large haemorrhagic patches appeared on the left hip, both knees, and on the forehead. There were purpuric patches also on the palate. There was no eruption on the back. Further patches of ulceration appeared at the base of the uvula and on the lower lip. The joint pains were still present; aspirin was substituted for sodium salicylate, but with no better result. On November 21st the temperature rose to 103°, and remained there for forty-eight hours; it dropped to normal on November 24th, and remained down. The joint pains and patches of ulceration cleared up rapidly, and he was discharged on November 29th. During the height of the fever there was a thick cloud of albumin in the urine. The throat swabs were negative to diphtheria and Vincent infection.

The combination of joint pains, sore throat, and purpuric eruption was first described by Schönlein under the name of peliosis rheumatica, but it appears to differ from acute rheumatism in the following respects:

The joint pains are not nearly so severe as those of acute rheumatism, and the patient can move about with a fair degree of comfort.

The profuse sweating so characteristic of acute rheumatism is absent. Endocarditis does not occur.

Salicylates appear to have no effect whatsoever on the joint pains or the temperature.

H. V. JACKSON, M.R.C.S.

Bristol City Isolation Hospital.

AT a recent meeting of the Féderation Internationale at the Hague it was decided to hold an international dental congress at Madrid, to which Germans and Austrians would be invited.

A LARGE number of professorial chairs are vacant in Prussian universities, including those of radiology, history of medicine, embryology, and laryngology at Berlin; medicine, medical jurisprudence, and pharmacology at Königsberg; pathological anatomy, medical jurisprudence, and dentistry at Bonn, and pharmacology at Kiel.

THE Ministry of Food in Germany has formed a committee to promote scientific investigations on food. The committee consists of Professors Abderhalden and Rubner for the physiology of nutrition; Baur and G. Haberlandt for vegetable physiology; A. Haiduschka, A. Juckernack, and T. Paul for the chemistry of food; R. O. Neumann for bacteriology and alimentary hygiene; F. Müller for chemical questions, and R. Kuczynski for statistics.

Reports of Societies.

THE INCIDENCE OF ECLAMPSIA.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine held on December 1st, with Professor HENRY BRIGGS, President, in the chair, Mr. R. H. PARAMORE read a paper on eclampsia and its incidence. He believed eclampsia was simply a uraemia, distinguishable from other acute uraemias only in the method of its production. The necrosis of the maternal kidney and liver was an ischaemic necrosis—a necrosis due to a shutting off of the blood supply. The cessation of the blood flow was determined by an occlusion, not of the supplying arterioles, but of the capillaries into which these arterioles led; and the occlusion was produced, not by a thrombosis, but by a pressure. The thrombosis was secondary to the necrosis, and the pressure was due to the raised intra-abdominal tension, which in certain cases of pregnancy was exaggerated, and to which the rises induced by activity and especially by labour were superadded. The incidence of eclampsia supported this conception. Thus, eclampsia was most common in primigravidae and also more common in strong muscular women than in fragile or diseased (for instance, phthisical) women. The unmarried pregnant woman was more prone to eclampsia than the married, because she constricted her abdomen by corsets, endeavouring to prevent the abdominal distension which the woman in wedlock had no motive to hide. Eclampsia, however, also occurred in other kinds of cases—in twins, hydramnios, concealed accidental haemorrhage, and in hydatidiform mole. The first three types at least had one conspicuous feature in common—that the uterus was greatly larger than it should be for the period of the pregnancy. This necessarily must affect the intra-abdominal pressure. And labour, by which great rises of this pressure occur, also played a part in the causation of eclampsia. *Post-partum* eclampsia was to be attributed to the effects of labour. Labour increased the albuminuria of pregnancy and often first caused albumin to appear. The question of the effect of straining on the blood flow through the viscera had not been considered. Mr. Paramore stated that the blood chose the easiest path, and that not all the organs, or indeed all parts of the same organ, were supplied in quite the same way. The great mass of blood reaching the liver had first to pass through the gastric and intestinal capillary network, whilst that reaching the convoluted tubules of the kidneys first traversed the glomeruli. If in consequence of an increase of intra-abdominal pressure an obstruction in these secondary capillary areas occurred, it could surprise no one that the tissues concerned should suffer from an inanition or that an ischaemic necrosis should result. The question was whether a study of the intra-abdominal pressure and of the incidence of eclampsia warranted the acceptance that such actually happened. He believed that the evidence more than justified such a conclusion.

In the discussion that followed Mr. MALCOLM said that Mr. Paramore had brought forward a definite, easily understood explanation of an admittedly difficult question, and argued his point with ingenuity. He overlooked the fact that the same argument was applicable to the power of the body to avoid the effects of a too great pressure upon the liver and kidneys. Again, it was stated in the paper that the blood in its course chose the easiest path. This ignored altogether the control of the vessels by the sympathetic nervous system, which should bring about a contraction of all the vessels of the body rather than allow a pressure necrosis of the important organs affected in eclampsia.

Dr. GILES asked whether Mr. Paramore had considered the question of the production of lesions of the liver and kidney as the result of increase of intra-abdominal pressure from tumours, apart from pregnancy.

The paper was also discussed by several other speakers, who had difficulty in accepting the pressure theory.

Mr. JOHN ELLISON showed specimens from an unusual case of ectopic gestation. The patient was a young woman who had been married four weeks and whose last period was a fortnight before marriage. For a week before admission to St. George's Hospital there had been some tenderness of the breasts, and five days before she had sudden pain in the right iliac fossa which made her feel faint. The abdomen was opened and the right tube was removed. The section of the tube at the point where the cone touched it showed normal lumen and wall with blood surrounding it. The tube appeared to be quite normal, and for that reason the author suggested that the primary implantation had occurred on the pelvic peritoneum and embedded itself in the retroperitoneal space. Mr. John Ellison also showed a specimen of squamous-celled carcinoma of the cervix uteri associated with a nodule of spheroidal-celled carcinoma of the body of the uterus.

Mr. SIDNEY FORSDIKE showed microscope slides from a case of carcinoma of the cervix in a virgin aged 24 years and 10 months. When 23 years and 3 months old she began to have irregular bleedings from the vagina; she saw a doctor, who told her to go to hospital if they did not cease. The bleeding became worse and there were occasional floodings, but she did not go to hospital until November, 1921, one year and seven months after the onset of symptoms. Then on examination the hymen was found intact, but by rectum the cervix was felt hard and enlarged. Under an anaesthetic a few days later a large growth involving the vaginal walls and bases of broad ligaments was found; a piece was removed for pathological examination. The growth was quite inoperable and radium treatment was given. The microscope showed the growth to be columnar-celled carcinoma.

OXYCEPHALY.

AT a meeting of the Medico-Chirurgical Society of Edinburgh on December 7th, 1921, with Sir ROBERT W. PHILIP in the chair, Mr. D. M. GREIG gave a demonstration of certain features of the oxycephalic skull and of the oxycephalic syndrome which included webbing of the fingers and toes, frequently with interdigital synostoses, and inability to extend fully certain joints, especially the elbow-joints. The condition was congenital, and possibly also hereditary, from its occurrence in individuals in minor degrees. The sex incidence was about equal. A short clinical history was given of four cases. In two the condition was slight: a boy of 8 with oxycephaly, but without syndactylism; and a girl of 8 with the typical skull, with syndactylism and normal mental development. In two adult cases the condition was much more pronounced. One was a man of 56, with a healthy pedigree, and married, with three children, of whom one had died in infancy from meningo-myelocele, two survived and were apparently healthy. The man's skull was typically oxycephalic; there was no syndactyly, but there was limited extension at the elbows. His mental development was under the average, but this perhaps was to be explained by the defective hearing and eyesight which existed; the man was able to work and to maintain his family. The features of this case were demonstrated by photographs and radiograms. The second adult case was a man of 47, of well developed body, but illiterate. In addition to oxycephaly, he showed complete webbing of the fingers and toes, and had synostoses of certain parts of the phalangeal bones. The skull was shown and its features demonstrated. The main points were the smallness of the bones of the base of the skull and of the superior maxilla and palate; the very narrow bony foramina in the basal region (the jugular foramen admitted only a fine quill); the bulging out of the temporal fossae; the typical peaked vertex of the skull; and the thinness of the bones of the vertex which produced in radiograms the characteristic "digital impressions."

The factors in the growth of the normal skull were discussed and the effect of normal synostosis in moulding the shape of the ununited portion of the skull. Mr. Greig's explanation was that in oxycephaly the bones fused whenever they touched, this synostosis beginning unusually early. A clue to the commencement of the process was to be found in the associated synostosis of the phalangeal bones. These bones were being formed about the fourth week of foetal life. With regard to this point of date, a skull obtained from Paris, without any history attached, was demonstrated. This skull showed in the vertex the features of oxycephaly, but the bony elements of the base, and also the maxillary and palatal bones, were of normal size. It was argued that in this case the forces altering the shape of the vertex could only have come into

play at a much later date in the life-history, certainly after birth, and probably not till adolescence. This interesting specimen he described as an example of pseudo-oxycephaly.

Clinical Value of Renal Function Tests.

Dr. J. D. COMRIE gave an account of the common tests of renal function, and of their value in the diagnosis and prognosis of kidney cases. He described the technique of three tests: blood urea estimation, phenolsulphonephthalein excretion, and the urea concentration test. In his opinion the most valuable single test was the phenolsulphonephthalein, but it was more useful to combine the three tests and to obtain a short series of the group. With regard to diagnosis, these tests enabled an earlier diagnosis of commencing interstitial nephritis than did the ordinary methods of clinical observation; also, in those cases of advanced heart disease where there were signs of kidney involvement, these tests more accurately discriminated between the effects of a renal venous congestion and those of a more serious involvement of structure and function. There were also groups of cases where these tests had made prognosis more accurate; in acute parenchymatous nephritis, whether the ultimate result was recovery or a serious and permanent damage to the kidneys, this result, good or bad, could be foreshadowed more accurately by a series of these tests. Dr. Comrie quoted a striking case of interstitial nephritis where the ordinary clinical signs gave no serious warning, while the special renal function tests were definitely bad and the patient died in a few months.

Dr. R. FLEMING said these newer methods had assisted treatment by securing more accurate diagnosis and prognosis. There seemed a possible fallacy in the blood urea test, in that the liver and other organs might hold up a proportion of the retained nitrogen. Dr. W. DAVIES criticized the use of soya bean meal in the estimation of blood urea; he had found it too variable in its ferment action. He alluded to cases of acidosis complicating nephritis and giving a high blood urea reading independent of the renal disease.

Dr. W. T. RITCHIE had found the phenolsulphonephthalein test especially useful in combined cardio-renal conditions. Dr. CHALMERS WATSON attached most value to the blood urea test, but on the whole was sceptical as to any great assistance from these tests in their present stage of development.

ORAL SEPSIS AND SYSTEMIC DISEASE.

A MEETING of the Leeds and West Riding Medico-Chirurgical Society was held at the General Infirmary, Leeds, on November 25th, in conjunction with the Leeds Branch of the British Dental Association. Dr. BERTRAM WATSON (Harrogate) opened a discussion on oral sepsis and systemic disease. After referring to Dr. William Hunter's pioneer work, the speaker said he purposed dealing mainly with chronic apical infection, probably the most important of the focal infections. He briefly alluded to Rosenow's work on selective localization of bacteria, and described the changes found at the apices of infected teeth, emphasizing that these conditions were often symptomless, and recognizable only by dental radiography. He enumerated various systemic disorders which might be attributable to oral sepsis, laying stress on malignant endocarditis, nephritis, and the rheumatic group of diseases. He concluded with a plea for closer co-operation between physician, dental surgeon, and radiographer, and for a fuller recognition of the potentialities of dental work for good or evil.

Mr. H. B. SCARGILL explained the methods used in the *x*-ray examination of the teeth, illustrating his remarks by numerous lantern slides.

The pathology and bacteriology of oral sepsis were dealt with by Dr. SINCLAIR MILLER (Harrogate), who described the various types of gingivitis and pyorrhoea alveolaris, and expressed the opinion that other factors as well as bacteria were essential for the production of these conditions. In speaking of apical and peri-apical infections of the chronic type, Dr. Miller quoted his bacteriological findings in a large series of teeth condemned by *x* ray and removed from patients suffering from systemic disease, with a view to vaccine therapy. Streptococci, falling chiefly into the *viridans* group, were obtained from all specimens of the series; other organisms in addition were cultured in a small percentage of the cases. The speaker demonstrated by lantern slides bacteria lying in granulomatous tissue removed from the apices of infected teeth.

Mr. G. A. PHILLIPS said that though Dr. Hunter's work had led to a proper appreciation of the damage caused by septic conditions in the mouth, there appeared to be grounds for complaint in some quarters against the increasing sacrifice of teeth in the treatment of certain systemic disorders. After discussing the mode of origin of peri-apical infection and chronic suppurative peri-odontitis, Mr. Phillips stated that many dentists had doubts as to the results of devitalization of pulps and of attempts at disinfection or preservation of asepsis in root canals by the use of caustic and antiseptic drugs; the difficulty might, however, be met by the use in an aseptic root of a neutral filling material, and, when antiseptics were required, by drainage and redressing at short intervals, removing all traces of drugs before the permanent fillings were introduced. He expressed doubts as to whether complete confidence should be placed in radiograms. He felt that the dentist should require reasonable proof of the need for sacrificing any large number of teeth, and he entered a plea for a wider exercise of caution and thoroughness in diagnosis.

Mr. G. L. WILKINSON said that while there was perhaps no positive proof that focal abscesses or granulomata at the apices of the teeth were often the cause of infected hearts and joints, much circumstantial evidence had been presented during the last few years. He asked that these cases should be considered without prejudice and with a close co-operation between physician and dentist. He entered a strong plea for a careful conservative treatment, pointing out that areas of rarefaction, as shown by radiology, disappeared after infection was removed. He advocated as suitable for front teeth the method of amputation of the necrotic apex through the outer wall of the alveolar process after filling of the canal with some hard and suitable material. A discussion followed, in which Dr. LIVINGSTONE, dental pathologist at the University of Liverpool, took part.

STERILITY.

A MEETING of the London Association of the Medical Women's Federation was held on December 13th at the Elizabeth Garrett Anderson Hospital, with Dr. LOUISA MARTINDALE, the President, in the chair.

Dr. CHRISTINE MURRELL briefly reviewed the possible causes of sterility, emphasizing at the outset the fact that the condition of the husband as well as of the wife had always to be taken into consideration. Where active spermatozoa were present in the seminal fluid sterility might be due to incomplete or too rapid coitus, to mechanical obstruction to the upward passage of spermatozoa—as, for instance, in cases of uterine displacement, or in cervical obstructions as from profuse discharge, or stenosis of the internal os. The uterine lining might be unsuitable for imbedding, or there might be disease of the tubes or of the ovaries. Apart from the mechanical causes, which could often be treated surgically, there was still much work to be done in the study of the different endocrine glands as they affected pregnancy. Dr. Murrell discussed at some length the "higher up or hormone" theory of sterility and the particular effects of administration of such internal gland preparations as thyroid, post-pituitary, thymus, and the various ovarian extracts, on menstruation, ovulation, and pregnancy. She indicated the theoretical grounds on which the different endocrine preparations might be expected to be of value, and the particular conditions in which she had found them useful.

Miss ELIZABETH BOLTON said that she had put together the cases she had seen in private who had come complaining of sterility after having been married more than two years. She had not attempted to get statistics from hospital patients, partly because she had not time to get answers from them and partly because one did not get as fair a chance of talking with the patients themselves and of advising that the husband be examined before any operative treatment for the wife was undertaken. In all cases she talked to the patients first and tried to find out what kind of life they led, whether they tended to overdo

themselves physically, whether there was marked mental strain, and also whether dyspareunia was present. If so it was treated. In some cases dilatation with a stretching speculum like Cusco's was enough. In others she obtained for the patient a graduated vaginal dilator and advised her to use it for half an hour daily for two months. In the extreme cases she examined the patient under an anaesthetic and dilated the vagina at one sitting. If possible, she preferred the more gradual methods. The frequency and time of connexion was then inquired into, especially in relation to the desires of the woman. In many cases the patient stated that there was not retention of semen, and in these cases she generally suggested the use of a bolster to raise up the hips, and the alteration of position from the dorsal to the semiprone after intercourse.

She had notes of 150 cases, all of whom had been examined, but 28 of whom were not treated and were not seen again. This left a total of 122 treated cases, of whom 63 became pregnant. On considering these cases she found that they fell into four different classes, according to the gynaecological findings, and she had found a gynaecological abnormality in every case. Of these 150 cases, 86 had marked anteflexion with, in the great majority, an elongated cervix pointing forwards; 20 had retroversion, 28 fibroids, and there were 16 tube cases.

Of the 86 anteflexions 16 were untreated, and of the remaining 70, 40 became pregnant; 52 had a dilatation and curetting, 3 having had the passage of a sound tried first; of these 27 became pregnant. Nineteen had a sound passed only, and of these 10 became pregnant. Two had vaginal septa, and these became pregnant later. One was treated by injection of semen twice after two dilatations, but with no result. One had an exploratory operation, when the ovaries were found to be adherent and were freed, while a dilatation was also done; the patient became pregnant. In all these cases the passage of the sound and dilatation were done if possible at such a time as to allow intercourse before the next period. The time of pregnancy in relation to the operation varied greatly; in the majority of cases it occurred within a few months, in a few cases at once, and in a few others after from two to three years, but she had not heard of any after a longer period than three years. A good many of the dilatation cases were operated upon on account of dysmenorrhoea as well as sterility, and many of these were much better from the point of view of the dysmenorrhoea, although they did not become pregnant.

Of the 20 retroversions 2 were untreated, and 13 of the remaining 18 became pregnant; 11 had the retroversion replaced and a Hodge pessary inserted; 4 of these were treated by a dilatation, and 2 had a sound passed. Of the 11 cases treated with a Hodge pessary 7 became pregnant; 2 retroversions with adherent tubes had an exploratory laparotomy, and both later became pregnant. Five Gillian operations were done for sterility, and 4 of these cases became pregnant.

Of the 16 tube cases 3 were untreated; 13 had operative treatment, and of these 4 became pregnant; all four had the right tube only involved, complicated by the appendix.

Of the 28 fibroid cases 7 were untreated, and of the remaining 21, 7 became pregnant; 2 of these had a large polyp removed by the vaginal route, while the other 5 had several fibroids removed by abdominal myomectomy. Miss Bolton usually advised patients after myomectomy to avoid pregnancy for six months. She had had one patient from whom she removed large fibroids by myomectomy, who was found at the time to be about two months pregnant. This patient had had no previous pregnancy, had been married fourteen years, and was 42. She went to term quite satisfactorily.

In considering this comparatively small number of cases Miss Bolton thought it was worth noting that all had a gynaecological condition which might account for the sterility, and that over 51 per cent. of the total number of treated cases became pregnant.

THE fiftieth annual meeting of the Société Médicale de la Suisse Romande was held in October at Lausanne, Dr. Monnier, of Neuchâtel, presiding.

THE Medical Society of the County of Erie (New York) celebrated the centenary of its incorporation on October 17th.

Reviews.

THE HEALTH OF QUEEN ELIZABETH.

COUNT FOSCO observed that the English intellect was sound as far as it went, but tended to be cautious in the wrong place. This is certainly true of the attitude laymen adopt towards the opinions of medical men. The man who permits himself to criticize the technical details of a method of treatment of which he cannot possibly be a judge will often be found to attach the greatest importance to a medical *obiter dictum*. This remark is prompted by a review of Mr. FREDERICK CHAMBERLIN'S book, *The Private Character of Queen Elizabeth*,[1] which appeared in the Literary Supplement of the *Times*. According to the *Times* reviewer, the chief importance of Mr. Chamberlin's book is on the medical side. "It is satisfactory," we are told, "to have a ruling on the question from a competent medical authority." Historians and novelists have devoted many more or less interesting pages to the great queen's love affairs; but "with the medical verdict, *cadit questio*. What was physically impossible cannot have happened." Such is the impression created on the mind of an educated layman by utterances of some eminent medical men printed in Mr. Chamberlin's book. It will be interesting to consider what was said by the "doctors" and upon what grounds.

Mr. Chamberlin first collected every extant contemporary remark upon Elizabeth's health, arranged the statements in chronological order, appended ten questions (of the type usually objected to by counsel as "leading") and submitted the dossier to five medical men.

The general character of the answers and the extent to which the word unanimous (employed by the *Times* reviewer) is applicable may be judged from a single instance. Mr. Chamberlin's fifth question was: "Did she [that is, Queen Elizabeth] or did she not probably have a strong constitution?" Sir William Osler answered, "A strongly neurotic one." To this remark we find Mr. Chamberlin has attached a remarkable footnote asserting that erotic, neurotic and neuropathic are popularly supposed to be synonyms—"all except purists in our tongue and medical men understand the three terms to be interchangeable." Sir Clifford Allbutt answers the question in the negative; Mr. Alban Doran leaves it alone; Dr. J. A. Howard says, "this question has no medical meaning and should be deleted." Sir Arthur Keith says that "clearly we have not the data to assess the nature of Queen Elizabeth's constitution, except by noting the reaction of her brain and body to the changing conditions in which they were placed. But if we may use the expressions as they are habitually employed in ordinary speech we should certainly say she was of a nervous constitution."

When we turn to the "evidence" it is found to consist of the gossip of servants, extracts from the letters of ambassadors, politicians, and in general of matter amply justifying Sir Clifford Allbutt's surmise that "the tittle-tattle of Courts, the subtilty of embassies, much exaggerated the symptoms of many of the indispositions," and Sir William Osler's blunt remark, "probably far too much was made of her illnesses." But how, in the face of these plain statements, could an intelligent critic have reached the conclusion we have quoted?

Sir Arthur Keith must, we fear, bear the burden. He began his contribution by stating very plainly that the data were inadequate to support a scientific conclusion. As he says, one "has to attempt a diagnosis on historical data, not set down by expert observers, but by men and women who, in our sense, were not acquainted with the elements of medicine." Sir Arthur Keith has, however, attempted to draw certain conclusions from the meagre details supplied to him.

According to the "evidence," Elizabeth, from the age of 14, was frequently ill; sometimes definite physical stigmata, such as dropsy, are mentioned, more frequently indeterminate symptoms suggesting "hysteria" are reported. There are also remarks which point fairly distinctly to amenorrhoea or dysmenorrhoea, and, especially about the normal time of menopause, headache, violent fits of temper, and so forth, are recorded. Sir Arthur Keith

[1] *The Private Character of Queen Elizabeth*. By Frederick Chamberlin. London; John Lane. 1921. (Pp. 334. 18s. net.)

suggests that all these may be referred to an abnormal sexual system, and that "in a medical sense her sexual system was blasted, she had neither the instinct of sweetheart nor mother—for these instincts are impossible in such a frame as hers." Sir Arthur goes further: he thinks that these disabilities were advantageous to the queen. "A healthy sexual life," he says, "a womb and ovaries in perfect health, a body that glows in full perfection of womanly beauty, are handicaps to a woman who has to steer a course amidst the shoals and narrows of the Sea of State; with such a full endowment she cannot but be the slave of the qualities with which nature has so richly dowered her." This opinion will affect different medical readers differently. Some will hastily say that it sounds rather like nonsense; others will be reminded of the immortal Sherlock Holmes's deduction from the manner in which Watson's boots were laced that his faithful biographer had had a Turkish bath; others — probably a majority — will call it eloquent and thought-provoking. None will accept it as a scientific deduction from adequate data. That it should produce so different an impression upon the lay reader is a significant fact and one we should all take to heart.

Whether Queen Elizabeth was or was not capable of a normal sexual life is *pace* Mr. Chamberlin a subject of the same order of importance as the authorship of the *Junius* letters or the tunes Arion played to the dolphins. But it is not a trivial matter that the authority of medical science should be extended to cover *obiter dicta* such as that in which the *Times* reviewer indulges. The usage Sir Arthur Keith has experienced shows what unexpected results may flow from the discussion of psycho-pathological topics in popular books.

PROGNOSIS IN CONGENITAL HEART DISEASE.

Le Traité des maladies congénitales du cœur[1] is the result of ten years' work by Dr. C. LAUBRY, physician to the Hôpital La Rochefoucauld, Paris, and Professor C. PEZZI, of the University of Pavia, the editor of the Italian archives of heart disease, who worked for some years in Professor H. Vaquez's wards in Paris. The authors show that instead of being merely an attractive study of pathological curiosities and at most a subject of clinical interest in children's and lying-in hospitals, congenital heart disease has a hitherto unexpected importance in the explanation of unusual cardiac conditions in adult life. They also draw attention to the long duration and latency of many cases, the true facts with regard to which have been kept in the shade and hardly recognized sufficiently by reason of the deaths that occur soon after birth and in early life. Further, congenital lesions of the heart due to malformations do not weaken the cardiac muscle in the same way that acquired disease, due in the vast majority of cases to some infective factor, necessarily does. A hopeful view is taken of the outlook of pregnant women with congenital morbus cordis, the authors finding that this event is more often accomplished with success than accompanied by calamity. Their experience does not tally with the general impression that pulmonary tuberculosis is a common termination in congenital heart disease, and especially in pulmonary stenosis, for in none of their cases was the tubercle bacillus found in the sputum. A feature of the research undertaken in the preparation of this monograph is the analysis, by means of graphic methods, the electrocardiograph and the fluorescent screen, of congenital lesions in adults; in them these methods are much more successful than in infants.

After introductory chapters on the development of the heart, on the general morbid anatomy of congenital cardiac lesions and on their pathogeny, the various forms of congenital morbus cordis are considered seriatim and in admirable detail. The old hypothesis of a true malformation as the explanation of the morbid changes is reinstated in place of the conception of foetal endocarditis which has appealed more to medical authority, at any rate until the appearance of Sir Arthur Keith's work on the bulbus cordis; but it is definitely stated that foetal endocarditis is mainly responsible for two conditions—namely, tricuspid stenosis and stenosis of the pulmonary orifice (as apart from the infundibulum). The influence of congenital syphilis is fully discussed and is shown to be an important but not exclusive factor in causing cardiac malformations, for in more than half the authors' cases the Wassermann reaction in the patients and their parents was negative. The positive evidence in support of the belief in the influence of parental tuberculosis in inducing congenital heart disease in the offspring is carefully examined and found to be too scanty to lend any support to such an explanation. The reported examples of congenital mitral stenosis are submitted to careful criticism, and though the existence of a small group of cases of true malformation or of foetal endocarditis is admitted, the great majority of the reputed cases are regarded as the result of attenuated endocarditis arising after birth.

The subject of a patent ductus arteriosus is discussed at length, and as a preliminary consideration the causes of normal closure are minutely described; while agreeing with the late Dr. G. A. Gibson as to the diagnostic value of a murmur continuous through systole and diastole, the authors do not regard it as pathognomonic, nor do they believe that it is constantly present. A full and attractive account is given of coarctation of the aorta; it is illustrated by diagrams of the two types found in the newly born and in the adult respectively, and by a scheme of the collateral circulation that develops as the result of this constriction of the aorta near the junction with the ductus arteriosus.

The careful clinical descriptions and the analysis of the copious literature, including that of this country, render this important monograph a valuable source of reference.

[1] *Traité des maladies congénitales du cœur.* Par Ch. Laubry et C. Pezzi. Préface par M. le Professeur Vaquez. Paris: Librairie J. B. Baillière et Fils. 1921. (Roy. 8vo, pp. xv + 395; 100 figures. Fr. 50.)

EMERGENCY SURGERY.

THERE would appear to be a certain attraction in the compilation of works on emergency surgery. They allow to the author considerable licence in the selection of his material and enable him to dogmatize on principles of practice without any very laborious reference to authority. The value of such books to those to whom they are intended to appeal depends essentially on the soundness of the practical advice given. The book by Dr. JOHN J. MOORHEAD entitled *Traumatic Surgery*,[2] the second edition of which is before us, is a work of this character, and a large part of its subject matter quite obviously belongs to the category indicated, though certain chapters, such as those on diseases of bone, deformities of the hands and feet, and traumatic neuroses, are not commonly so classified.

In his consideration of the treatment of wounds in general, the author, although he pays homage in the letter to the most successful procedures brought to notice during the last seven years, appears to be imbued with the spirit of what may be termed pre-war methods. There is a good chapter on infection of the hands and fingers, in which the anatomical situation of pus collections and the best lines of incision for their evacuation are carefully studied. The subject of joint injuries is illustrated by a series of pictures from Murphy's *Clinics* showing in detail the vascular supply to the larger articulations. In treating acute suppurative arthritis the author appears still to favour the use of rubber tubes for drainage, and in certain cases of knee-joint infection advocates transverse incision of the joint followed by its full flexion. In this section twenty-four pictures, illustrating the various stages of the operation of arthroplasty according to Murphy's methods, are included. Dislocations are dealt with on classical lines. As might be expected, considerable space is devoted to the subject of fractures, though the chapters are not exhaustive. For example, the author does not discuss as a cause of non-union in fractures the presence of synovial fluid between the broken surfaces, and further, the minor but important fractures of the hand and foot receive very short notice. His view, that *x* rays should not be necessary in the diagnosis of fractures, will hardly be assented to by most surgeons of to-day; however estimable it may be to encourage the clinical diagnosis of these injuries, it is clearly undesirable to omit the use of the method which can furnish the most accurate information. The value of several physio-therapeutical measures in restoring the function of injured

[2] *Traumatic Surgery.* By John J. Moorhead, B.S., M.D., F.A.C.S. Second edition. Philadelphia and London: W. B. Saunders Company. 1921. (Roy. 8vo, pp. 864; 619 figures. 45s. net.)

limbs is referred to, but the more modern methods are not described in detail. The opinions the author expresses on the treatment of injuries of nerves in which there has been complete division, with separation of the ends, must be frankly stated to be misleading in view of recent experience in this country. The Medical Research Council, after reviewing a mass of evidence, has drawn the conclusion that good results can only be expected in those cases if direct suture of a nerve trunk is carried out; several manœuvres have been devised to make this process possible even when there is a gap of several inches between the severed ends of the nerve.

The book is well printed, but the photographic reproductions, especially those of *x* ray prints, are in several cases lacking in definition.

NOTES ON BOOKS.

DR. KNOWSLEY SIBLEY'S little book on *The Treatment of Diseases of the Skin*[1] has now reached a third edition, which is at once an achievement and a testimonial. It has only grown slightly in size, and remains very convenient to handle. The old characteristics are retained: the first part consists of a general description of methods of treatment, and the second of notes on those skin diseases selected by the author for inclusion, arranged in alphabetical order. Each disease is first defined and then directions are given for its treatment. He does not concern himself with the question of diagnosis. The appendix contains a number of prescriptions, both for internal remedies and local applications. Many of these are no doubt of great utility, but the fault we have to find with the book is that the author does not give any clear idea to the practitioner how to set about dealing with any particular condition. On the other hand, should he be rather at a loss in any difficult case, he is likely to find here some additional method to try which previously might not have occurred to him. The illustrations are all photographs, many of them pairs of the "before" and "after" type; some of the "after" are not entirely convincing. There are also a number of photographs of dermatological curiosities, which, although interesting in themselves, are not very appropriate to a work of this character. We recommend the volume to the seeker after "tips," but it is not calculated to be of much use to the student.

The second edition of *The Laboratory Manual in General Microbiology*,[2] prepared by the Michigan Agricultural College, has been brought up to date by the incorporation of recent methods, such as standardization of media by hydrogen ion concentration and improved technique for water and sewage analysis. The book is a concise well-illustrated account of the methods employed in studying bacteria, and is intended to be used in conjunction with some standard treatise on bacteriology. The first series of exercises designed to teach the student morphological and cultural methods are followed by another dealing with the physiology of micro-organisms. The remainder of the book deals with applied microbiology; air, water, sewage, soil, and milk are dealt with successively, the technique being thoroughly explained. The last section is devoted to animal diseases and immunity, and though it contains well-chosen representative exercises, it is not sufficiently comprehensive to be of much value to the medical bacteriologist. The appendix is well stocked with notes on media making and staining solutions, together with other information of a practical nature.

Professor FERMI's book on anopheles and malaria[3] gives the general reader who is also a reader of Italian an excellent account of the bases of antimalaria campaigns, or, as he puts it, of "disanophelesization" and "dismalariation." It is written in the form of question and answer, and is practical in its treatment of the subject.

To those interested in the mental processes of a construction engineer engaged in demolishing the bacterial theory of infectious disease and the scientific basis of therapy by vaccines and serums Mr. PEARSON'S booklet on *Fasting and Man's Correct Diet*[4] may be recommended. Others will probably find it less interesting.

The Child's Path to Freedom[5] is the title of an interesting and persuasive little book in which Mr. NORMAN MACMUNN criticizes the traditional system of class teaching in schools, and expounds the ideas and methods upon which he has worked among his boys for some years past. He advocates a complete reform of method in child education, the chief means being the cultivation of an atmosphere of freedom in which the boy teaches himself to concentrate upon his work, just as the young animal learns through play to fit itself for the struggle of life. This notion of using the play impulse for auto-education and self-discipline lies, of course, at the root of the Montessori method; but Mr. MacMunn has travelled a considerable way by himself through the new country of which Dr. Maria Montessori is a pioneer, and he has evidently been impressed on his journey by the method of psychological analysis; so far, indeed, has he gone that he finds the Montessori movement in England threatening to become a narrow orthodoxy. Like many enthusiasts, he writes discursively at times, and in his desire to put things right he hits out at those who seem to obstruct reform. As for the results of "the new discipline," it is as yet too early to form an opinion; but this interesting experiment is now in progress at Tiptree Hall in Essex, and we imagine that inspection by medical men and women would be welcomed.

We have not failed each year since its publication began to praise the Medical Art Kalendar[6] published by the firm of Philip Kruseman of The Hague. It is a wall calendar of twenty-seven sheets, each adorned with a half-tone reproduction of a picture having a medical interest. Some of the pictures favour the alchemist of Teniers (the younger) and the doctor's visit of J. H. Steen, both in the Mauritzhaus at The Hague; another alchemist by the younger Teniers, said to be a portrait of the artist, is less well known. Another portrait is of Ludeman described as a "Kwakzalver," who certainly looks it; the legends are all given in English as well as Dutch, though it was hardly necessary to translate this expressive word, which is well established in our language, though with a different spelling. Several of the pictures reproduced are in the Wellcome Historical Medical Museum in London and some others are from private collections in the Netherlands. A good many of the pictures have to do with extraction of teeth, which may, perhaps, commend the calendar to dentists.

The number of *Brain* issued last week contains the third part of the study of cerebral function in learning, by K. S. Lashley, of the University of Minnesota; a psychological inquiry into congenital word-blindness, by Lucy G. Fildes; and a paper by Kanshi Sassa on proprioceptive reflex and clonus in the spinal frog. The issue contains also a report of Mr. Percy Sargent's presidential address on epilepsy delivered to the Section of Neurology of the Royal Society of Medicine.

[1] *The Treatment of Diseases of the Skin.* By W. Knowsley Sibley, M.A., M.D., B.C. Camb., M.R.C.P.Lond., M.R.C.S.Eng. Third edition. London: E. Arnold. 1920. (Demy 8vo, pp. 252, 24 plates. 12s. 6d. net.)

[2] *Laboratory Manual in General Microbiology.* Prepared by the Laboratory of Bacteriology and Hygiene, Michigan Agricultural College. Second Edition. New York: John Wiley and Sons. London: Chapman and Hall, Ltd. 1921. (Cr. 8vo, pp. xiii + 472. 75 figures. 21s. net.)

[3] *Sugli Anofelei e Sulla Malaria.* Professor C. Fermi. Rome: Tipografia Fratelli Pallotta. 1920. (Med. 8vo, pp. 155.)

[4] *Fasting and Man's Correct Diet.* By R. B. Pearson. Chicago Illinois, U.S.A.: Published by the author. (Cr. 8vo, pp. 153.)

[5] *The Child's Path to Freedom.* By Norman MacMunn, B.A. London: G. Bell and Sons, Ltd. 1921. (Cr. 8vo, pp. 163. 2s. 6d. net.)

[6] J. Poortman Kruseman, 87, Prinsegracht, The Hague, Holland. Price 6s., post free.

BEGINNING with the January issue, the *Journal of Orthopaedic Surgery*, the official organ of the American Orthopedic Association and of the British Orthopaedic Association, will be published once a quarter instead of monthly.

THE *Berliner klinische Wochenschrift* and the *Therapeutische Halbmonatshefte* will be amalgamated at the beginning of next year, under the title of *Klinische Wochenschrift*.

AFTER a long interval the *Gazeta Medica da Bahia* (Brazil) has resumed publication, entering now upon its fifty-second year, under the direction of Drs. Novis and Sampaio Tavares.

THE publication will be resumed on January 1st, and thereafter monthly, of the *Archives Internationales de Laryngologie, d'Otologie, et de Rhinologie*, which ceased publication in August, 1914. It will be edited by Drs. F. Lemaitre and L. Baldenweck. The address of its publishing office is 120, Avenue Victor Hugo, Paris, and the annual subscription is Fr. 60.

THE STANDARDIZATION OF SERUMS.

THE conference in London called by the League of Nations Health Committee to discuss the standardization of serums and serological tests concluded its business, as stated last week, on December 14th. The members were the guests of the British Government at luncheon on the last day of the meeting, when Sir ALFRED MOND, Minister of Health, in welcoming the visitors, said that the delegates had not been drawn exclusively from countries which were members of the League. This was an allusion to the presence of two delegates from Germany, and also of a United States representative, who, although not delegated from his country to the conference, was present as a member of the Office International d'Hygiène Publique.

In responding to the toast of "The Guests," Dr. THEODORE MADSEN, Director of the State Serum Institute at Copenhagen, president of the conference, referred to the active part the British Ministry of Health had played in building up the health work of the League. It was quite certain that without the assistance of a most distinguished member of the Ministry, Dr. G. S. Buchanan, Senior Medical Officer of the Ministry and Vice-President of the Health Committee of the League, the health organization would not have been completed so soon nor so efficiently. They were also indebted to the Ministry of Health for lending Dr. Norman White to be Chief Epidemic Commissioner of the League.

The present conference represented one of the branches of international health work which the Health Committee had found themselves able to take up immediately. It had brought together many men of science from different countries who had not been able to meet for a very long time. His chief regret was the absence of a colleague from Russia (Professor Tarassivitch). They were specially fortunate in receiving such great assistance from the Medical Research Council. There had been a great need for a uniform unit for antitetanus and antidiphtherial serums, and now, by the co-operation of British, French, German, American, and Italian scientists, complete agreement was practically certain to be obtained at a time not very far distant. The discussion of the serological diagnosis of syphilis, a subject suggested by the British Ministry of Health, had led to a number of institutions agreeing upon a uniform plan of work along this line. The methods of standardization of dysentery, meningococcus, and pneumococcus serums had been discussed, and further work in common had been planned. Again, by international co-operation it was hoped to arrive at what might be called a bacteriological geography of the different types of meningococcus and pneumococcus. The conference was attended by three members of the League of Nations Health Committee or Office International d'Hygiène Publique (Dr. O. Velghe of Belgium, Dr. G. S. Buchanan of the Ministry of Health, and Dr. Rupert Blue of the United States). The foreign delegates to the conference were:

Austria: Dr. R. Mueller, Professor of Serology, Vienna.
Belgium: Dr. Renaux of the Pasteur Institute at Brussels.
France: Dr. Louis Martin, Dr. Dopter, and Dr. Cotoni, of the Pasteur Institute.
Germany: Professor W. Kolle, of the Institute of Experimental Pathology, Frankfort; and Professor H. Sachs, of the Cancer Research Institute, Heidelberg.
Great Britain: Sir Frederick Andrewes, Dr. H. H. Dale, and Professor W. Bulloch, members of the Standards Committee of the Medical Research Council.
Italy: Dr. B. Gosio, Medical Officer of Health of Rome.
Japan: Dr. Miyajima, of the Kitasato Institute.
Poland: Dr. L. Hirszfeld, of the State Serum Control Institute, Warsaw.
Switzerland: Dr. R. Doerr, Professor of Hygiene and Bacteriology, Basle.
Secretaries: Dr. L. Rajchman, Medical Director, League of Nations, and Dr. Norman White, Chief Epidemic Commissioner of the League.

Among the British scientists assisting the conference were: Representing the Medical Research Council, Sir Walter Fletcher, K.B.E., M.D., F.R.S., Professor G. Dreyer, M.D., Oxford, Dr. M. H. Gordon, Professor J. C. G. Ledingham, F.R.S., Professor P. Fildes, and Dr. S. R. Douglas; representing the Ministry of Health, in addition to those already mentioned, Colonel L. W. Harrison and Dr. A. Eastwood; representing the War Office, Sir William Leishman, K.C.M.G., F.R.S.

The business of the conference was in part conducted by subcommittees, and the following were among the recommendations made:

I.—DIPHTHERIA AND TETANUS.

The Committee on anti-diphtheritic and anti-tetanic serums, which met under the chairmanship of Dr. Louis Martin, considered it both possible and desirable to fix for both an antitoxin unit which could be generally accepted and acknowledged as an international unit.

Diphtheria Antitoxin.

Two units are used at present—(*a*) the German, determined in the Frankfort Institute for Experimental Medicine, following the Ehrlich method with the standard serum, and (*b*) the unit determined in the Public Health Bureau at Washington.

To determine accurately the very small differences between these two units the standard serums and test toxins will be supplied to the various participating institutes both by the Frankfort Institute for Experimental Medicine and the Washington Public Health Bureau. The result of the experiments performed at the several laboratories represented will be sent to the Danish State Serum Institute, which for this purpose will act as the central laboratory.

Tetanus Antitoxin.

At present four methods are employed to describe the potency of antitetanic toxin. The points of departure of the four methods are different, and experiments have not yet determined the exact relation between the units thus determined. It is considered desirable and possible to establish a common measure by an agreement on a single standard antitoxin, using the principle adopted in connexion with the standardization of antidiphtherial serum. The participating laboratories must first fix experimentally the relations which obtain between the four units at present employed, and with this object an exchange of serums and toxins will be made in order to secure the necessary comparative experiments. The precise details of the experiments will be recorded and the documents will be sent to the Danish State Serum Institute, which for this purpose will act as the central laboratory; the results will be discussed at a subsequent conference.

II.—MENINGOCOCCUS AND PNEUMOCOCCUS.

(a) Antimeningococcus Serum.

The recommendations of this Committee, of which Dr. Dopter was chairman, were as follows:

1. With the object of obtaining full information regarding the various types of meningococcus the several laboratories mutually agree to exchange agglutinating serums and strains of meningococci, the latter being obtained exclusively from the cerebro-spinal fluid of meningitis cases.

2. Macroscopic methods will be employed in agglutination investigations, the bacterial emulsions having been kept for 24 hours, at a temperature of 37° C., without prejudice to other methods which may also be employed. Investigations into the saturation of agglutinins may be carried out by any method.

3. In the existing state of our knowledge and without prejudice to the opinions of the several institutes participating in these researches and who are not represented at this conference, it appears to be difficult to determine the therapeutic value of antimeningococcus serum by measurement of agglutinins, sensitizers (sensibilisatrices), and opsonins.

4. Fresh experiments will be undertaken in the various laboratories regarding the value to be attached to the determinations of anti-endotoxic and bactericidal power.

(b) Antipneumococcus Serum.

1. A mutual exchange of cultures of different strains of pneumococci.

2. Researches into the agglutinating power of antipneumococcus serum is of no value in determining its therapeutic power. The best method of titrating the serum is the measurement of the bactericidal power in animals, preferably mice.

3. New investigations will be carried out with regard to (*a*) the best method of inoculation—peritoneal or subcutaneous—for the titration of serum; (*b*) the selection of methods preventive or simultaneous for the injection of serums and cultures; (*c*) the monovalence or polyvalence of the different serums.

III.—DYSENTERY.

The Committee on antidysentery serum, of which Professor Kolle was chairman, came to the following conclusions:

1. It was agreed that it would be advisable that the different institutes, laboratories, etc., should exchange samples of serum and toxin, and that further experiments should be carried out, using (*a*) different methods of titration, (*b*) different species of animals.

2. There was general agreement that, in testing the potency of serums, the antitoxin, especially the anti-endotoxin, should be estimated, and that this could be accurately carried out equally well with dead bacilli as with toxin. In reference to the method of testing the dysentery serum on mice, it was recommended that a series of tests should be carried out with the standard serum, which the Frankfort Institute would supply, comparing them with methods in use in the various institutes, and that a report on these experiments should be presented at the next conference. It was considered that it would be advisable also to test the antimicrobic power of serum, employing living bacilli for the test.

3. It was unanimously agreed that in the preparation of experimental anti-Shiga serum the horses should be inoculated with the *B. dysenteriae* (Shiga) only.

4. It was agreed that the question of the preparation and the standardization of serums prepared from various other atoxic

dysentery bacilli should not be discussed, as the actual state of our knowledge does not permit us to give a decisive answer.

IV.—SERODIAGNOSIS OF SYPHILIS.

The recommendations of this Committee, which sat under the chairmanship of Professor Bulloch, were:

1. In a certain number of institutes the Wassermann reaction as practised in them should be compared with the methods of Sachs-Georgi, Meinike III, and Dreyer-Ward ("Sigma").

2. The number of cases examined in each institute should be 1,000 of undoubted syphilis and 1,000 in which syphilis could be excluded as far as possible.

3. It is also recommended that the different methods should be compared on about (one and the same) 50 cases out of the 1,000, at different stages of the disease. These repetition tests should be carried out on at least three or four occasions in the course of the disease, and it is recommended that the 50 cases should comprise especially suspected syphilis of the nervous system and of the eye.

4. The worker should be allowed the opportunity of studying the respective authors' own methods in the respective institutes.

5. The places where the tests are to be carried out should be efficiently equipped and the serologist should be in as close touch with the clinician as possible.

6. For the flocculation tests the serologist should use only extracts prepared or controlled by their respective authors.

7. The samples of serum to be tested should be known only by numbers, and the serologist should not have access to the clinical or pathological records until the whole series of tests is concluded, but the chief of the laboratory may cause any serum to be retested without making the serologist aware of the fact.

8. A preliminary report should be submitted after the first 500 tests have been concluded.

9. All reports on tests should include information as to (*a*) reliability of the method, (*b*) complexity of technique, (*c*) relative consumption of time by the method, (*d*) expense, (*e*) ease and accuracy with which the reaction can be observed, (*f*) percentage of dubious results, (*g*) the extent to which the method yields quantitative results.

It is recommended that all the results should be finally submitted to the State Institute for Seropathy of Copenhagen.

THE HEALTH OF ELEMENTARY SCHOOL CHILDREN.

THE number of children in average attendance at the public elementary schools of England and Wales during the year 1920–21 was 5,187,000. Approximately 2,400,000 of these were medically examined during the year, in three groups—at 5 years of age, at 8 years, and at 12 years, or when they are commonly spoken of as entrants, intermediates, and leavers. The medical staffs of the 316 local education authorities number about 800 whole-time medical officers, many of whom are also medical officers of health, and 1,900 school nurses; there are also 730 private practitioners employed part time, both in the schools and in the 900 school clinics, but there are many others engaged in the 391 hospitals which undertake some of the school work. Besides the regular examination of the children at the stated periods of their school life, any sick and ailing children are specially examined, and these examinations account for some 30 per cent. of the total number of examinations.

Commenting on the great scope of the work, in his annual report,* the Chief Medical Officer remarks that three disadvantages of State intervention in this respect were anticipated in the early days—namely, that such action would pauperize the parent and destroy the sense of parental responsibility; that it would impose an unremunerative burden on the ratepayer; and that it would have a detrimental effect on the legitimate practice of medical men. The history of the school medical service has dispelled these fears. Parental responsibility has been stimulated, the investment is yielding a high interest, and medical treatment has been sufficiently safeguarded to secure the support and co-operation of the medical profession. The school medical service is not duplicating the work of the medical practitioner, but supplementing and enhancing it. Further, there has been an important indirect effect in the entry of the medical officer to the schools: it has taught the educationist that the child must be handled as an individual and not in the bulk. It has given a new understanding of the child as an individual, an understanding which cannot fail in the future to affect the whole scheme of education.

The growing interest taken by teachers and parents in the health of the children is evidenced in the reports of local school medical officers. Dr. Johns of Banbury writes:

"The teachers do everything possible to facilitate the satisfactory and efficient work of school inspection. . . . It is largely owing to the interest taken by the teachers in the health of the children under their care and the trouble they take in following up the work of school medical inspection, that the larger proportion of children obtained treatment for their defects, for a teacher who has lived for years in a village, and knows all the parents, has very great power in persuading them to have their children's defects remedied."

The number of parents attending the routine medical inspections varies considerably throughout the country. At Northampton the percentage was 37.3, in Essex 44, at Blackpool 52.6, at King's Lynn 68.5, at Margate 80. The reports comment appreciatively on the work of many voluntary bodies, such as the Children's Care Committees, National Society for Preventing Cruelty to Children, Invalid Children's Aid Association, Children's Country Holiday Fund, the Fresh Air Fund, the Guild of the Brave Poor Things, and such other guilds of help.

It is now becoming the custom of the school medical officers to undertake certain collective investigations into the health of their charges. For the current year it is suggested that special inquiry into one or more of the following matters should be made:

1. Dull and backward children. The incidental causes of the conditions and the manner of treatment.
2. The supervision of abnormal children.
3. The incidence of rickets.
4. The effects of industrial processes on the physical welfare of elder children and adolescent pupils.
5. The incidence of neuropathic conditions in public elementary schools.
6. A comparison of physical conditions in elementary and secondary schools.

Nursery Schools.

The recent opening of the extension of the Deptford Nursery School by the Queen has caused some inquiry as to the nature of these schools. Up till now as many as twenty-seven have been established in various parts of the country; of these three have been closed. Most of them are in London, but Birmingham, Bradford, Darlington, Derby, Leeds, Manchester, Salford, and Scarborough have established such schools. At present the Board can only entertain proposals for the establishment of further schools of the kind in special circumstances and on an experimental basis where existing buildings are available. Variation in the type of building is desirable in order to learn from actual working which form of school most nearly approaches the ideal; but in any case they should be unpretentious and simple both in form and equipment. The Deptford school provides open-air sheds closed on three sides only, put up on unoccupied land. The great danger to be guarded against in these schools arises from the risk of infection of epidemic diseases to a body of children at a highly susceptible age—a fact that those connected with children's hospitals know only too well. It is therefore desirable that these schools should be very small, and extensions leading to the gathering together of a hundred or more infants should be avoided. It appears that the Board required that due safeguards against this risk should be taken before the extension of the Deptford school was allowed.

The report states that there is already abundant evidence that parental interest is stimulated and increased by the obvious physical and educational improvement of the children under the skilled care of the nursery school superintendent. The classes afford a practical demonstration to parents, young teachers, and elder girls of the value of right methods of training of the youngest children.

School Absences.

Some investigation has been made into the causes and frequency of absences from school. Broadly speaking, it is no longer necessary to drive children to school. Among other considerations, the opportunity for the employment of children for profit has gone; in many respects the school has become for the child a more attractive place than formerly, and the efficient work of the school attendance officers has regularized school attendance and made it the recognized habit of the community. There were four points in the inquiry: (1) What is the percentage of total absences? (2) What is the percentage of absences

* Annual Report of the Chief Medical Officer of Education, 1920. London: His Majesty's Stationery Office. 1921. Price 6s.

due to diseases? (3) How much time is lost? (4) What are the principal diseases leading to absences? The answers show that only a minority of the children are absent on grounds other than medical. Truancy is rare. The percentages of absence vary from 7 to 10. Of these, some 75 to 86 per cent. were absences due to illness. A large proportion of the absences are for short periods of one-half to one day. Of causes, common colds, coughs, and lung conditions head the list, next come infectious diseases. Very accurate returns have been made in London of absentees of periods of three months and upwards; the nature of the illnesses in order of frequency were: Tuberculosis, rheumatism (including heart affections and chorea), nervous disorders, eye complaints, anaemia and debility, ringworm, and lastly, skin affections.

The Findings of Medical Inspection.

Last year some 2,400,000 children were examined by the medical staff, and of these no less than 47.9 per cent. were found to be suffering from defects. This percentage includes all degrees of defect, major and minor; some required active treatment, others were recorded for further observation. In London the actual percentage referred for treatment was 39.4. A most valuable comparative return is given on page 47 of the percentages of defect found in four different sections of the community.

The four groups taken are twenty-four industrial areas, twenty-four residential towns, twenty-four rural areas, and London. The total number of children whose physical condition comes into the count upon which the table is based is 746,411, fully sufficient to give a true picture. The striking feature of the table is the distinction of the children in the residential towns; under nearly every one of the twenty-two heads in which the defects are scheduled these children show a smaller, and often a distinctly smaller, degree of defect than the children in the other three classes. The children of the rural areas, contrary to popular ideas, do not show up to advantage; they are never so good as the children of the residential towns, and they are scarcely ever better than the children of the industrial towns or of London; indeed, in diseases of the throat and nose they show the highest return of all the four groups. In dental disease they show an equivalent figure to that found in London and the industrial towns—namely, 23 per cent.—a figure much larger than that found in the residential towns, where dental defects totalled only 14 per cent. The rural children had a lesser degree of visual defects than the industrial towns and London, but they showed more of this defect than the children of the residential towns. Valuable reports in this connexion are furnished by Dr. Newsholme of the North Riding of Yorkshire, and by Dr. J. B. Lowe of Birmingham.

"Dirt," says Dr. Hamer of London, in his report, "remains the greatest enemy with which we have to contend." Despite progress, a large number of parents still appear to consider that the presence of nits and vermin in the head reflects in no way on the standard of cleanliness among their children, but is simply a natural phenomenon. Uncleanliness of serious degree imposes a handicap on the progress of the child, and often inflicts upon him acute physical discomfort. No child can be said to be deriving reasonable benefit from his school life if he is to be found in the school usually in a verminous condition. Medical inspections in London, however, show that there has been an improvement of 30 per cent. in seven years in verminous conditions, and this improvement has been accelerated during the last three years, during which there has been a great forward campaign. The country districts are not exempt from the plague of dirt. Dr. Martin of Gloucestershire writes, as regards pediculosis: Of 32,000 children no less than 14 per cent. were infected; but that is half the percentage of what was found ten to twelve years ago. He states that the present procedure is cumbrous, slow, and unsatisfactory. The time has arrived when simpler and more satisfactory action should be practicable. The simplest course would be to make it "an offence for a parent to send a child to school in an infective condition (including pediculosis) after notice has been given to the parent that such child is infectious." Certainly the time has come when the clean children of the schools should be protected from the constant liability to infection which the presence of a few persistently dirty children present.

Medical Treatment of the School Child.

The feature of the report is the evidence of the growth of school medical treatment. At its inception it was a very small affair. In 1910 there were only 14 school clinics, and London contemplated provision for the treatment of 25,000 children. In 1920 there are 900 school clinics, and London makes provision for the treatment of no fewer than 198,000 children. On page 69 is given a tabular return of the numbers of attendances made at school clinics by the children of twenty-four areas for each year since 1914. In those four years there has been an enormous increase from 700,000 to 2,800,000, or over four-fold. These figures are remarkable. In considering them the Chief Medical Officer makes the following observations:

"Attendance at a clinic is not a form of entertainment; such a place is visited only of necessity. Again, it is clear that these attendances do not mean that disease is more prevalent, but that it is being more treated. Nor do they mean that children prefer school clinics to private practitioners, for in many cases private practitioners form the staff of the clinic. The common means available to the parent for obtaining medical treatment are the private practitioner and the hospital. But the private practitioner charges a fee, and is often too much engaged to give careful attention to children's ailments; and the hospital is overcrowded, and does not lay itself out to accommodate children. The out-patient departments of our large hospitals are not attractive places, and a parent may be kept waiting for long periods. On the other hand, the school clinic is a popular institution. It is attractive and well equipped. The treatment is prompt and encouraging. The school nurse is *persona grata*. The doctor, the parent, the teacher, the nurse, the school attendance officer, and the care committee all combine to secure attendance of the child. The usefulness of the clinic indicates what is possible in this direction, for the great mass of the people, and the hospitals, and some private practitioners have much to learn from its overwhelming success. Indeed, its very success may be its hurt. For an overcrowded clinic is an inefficient one; and a clinic devoted exclusively to children, to treatment of crowds of children, may lose its preventive and educative functions."

We give this paragraph as it stands. There is a good deal of special pleading in it. The contrasts are manifestly overdrawn. There are statements on both sides of the picture which can scarcely be accepted without further examination. In any case the true reason of the great increase in attendances of children at clinics has nothing to do with the likes or dislikes of the children, and little to do with the likes or dislikes of the parents. It is wholly a matter of organized pressure—pressure all along the line, from the examination of the child to the end of the course of treatment. This pressure may be justifiably in the best interests of the child and of the community. But the fact that this pressure succeeds in swelling the clientèle of the school clinics is no evidence of "popularity" as against any other means of medical treatment, and the use of such data in this sense argues a failure to recognize the facts of the conditions.

Section I of the Local Education Authorities (Medical Treatment) Act, 1909, requires:

"That where any local education authority provides for the medical treatment of children attending any public elementary school under Section 13 of the Education (Administrative Provisions) Act, 1907, there shall be charged to the parent of every child in respect of any treatment as may be determined by the local education authority, and in the event of payment not being made by the parent, it shall be the duty of the authority, unless they are satisfied that the parent is unable by reason of circumstances other than his own default to pay the amount, to require the payment of the amount from the parent, and any such amount may be recovered summarily as a civil debt."

The Board of Education recently asked local authorities what are the principles followed by them in determining the charge to be made to parents under the Act, and from the replies of certain authorities a return has been compiled showing the fees charged for various forms of treatment. The extraordinary variation in these replies indicates that there is no common policy in the country, and there is little indication of any reasonable attempt to carry out the direction of Parliament. The report adds that:

"The wise and appropriate administration of this Act calls for the careful consideration of each authority. It is obvious that where the patient can pay something towards a medical treatment he should do so. Clearly the intention of Parliament was to place upon the authority the responsibility of securing payment 'unless they are satisfied that the parent is unable, by reason of circumstances other than his own default, to pay the amount.'

"The inspected school child who requires treatment should always be referred to the private practitioner when he is willing or able to undertake the necessary treatment for minor ailments, presence of vermin, ringworm, otitis media, adenoids and enlarged tonsils, defective vision, or dental caries, and when the parents of the child can pay the cost of the treatment. The establishment of the school clinic does not abolish this principle, it merely provides the convenient equipment for dealing with many children."

This section deals very fully with the arrangements that are desirable in the treatment of tonsils and adenoids. The utmost care is necessary in the selection of cases for operation; there must be assurance that the condition is not a temporary inflammatory enlargement, and that the continuance of the enlargement is detrimental to the health of the child. Further, there must be strict compliance with reasonable requirement for the after-care of cases where operation has been performed. "For children to be left to recover after operation, with bleeding throats, on the floor of a hospital waiting-room, or to be sent home suffering from haemorrhage or vomiting in a tram car, or to be allowed on the day following operation to play in the street and eat anything they like is obviously improper." As a suitable scheme of arrangements there is reprinted the instruction drawn up by Mr. Herbert Tilley, of University College Hospital, London, for the use of his patients. An account is also given of the Cyril Henry centre at Woolwich for the operative treatment of these conditions, and where the children are retained for two days after operation.

The organization of school ophthalmic work is discussed in some detail and largely along the lines of a paper by Mr. Bishop Harman recently published in these columns (BRITISH MEDICAL JOURNAL, 1921, vol. i, p. 792). The conclusion on this matter is as follows:

"Apart from any consideration of ease and comfort of life, proper attention to visual defect during the school period will ensure that the young worker will enter industrial life well equipped for the strain of regular effort required of him. His earning power and continuity of service will be enhanced thereby, and any expenditure which will give him proper use of his eyes finds its justification in this fact. Here indeed is a force making for economy and efficiency in industrial life."

Dental Disease and Treatment.

That the incidence of dental defect among school children is widespread, indeed almost universal, is admitted on all sides. Yet the conditions of dental work have been such that there has been no real possibility of overtaking the work. There has been a shortage of both dental practitioners and nurses. Owing to the passing of the Dentist Act of 1921 the shortage of the former may be remedied. The extent of dental defect can be judged by the figures of the returns received from 121 areas, representing an average attendance of over two and a half million children. These show that of 580,000 children inspected by the school dentist not less than 407,000, or 70 per cent., were deemed to be sufficiently serious in respect of dental decay to be referred for treatment, but scarcely more than one-half of these actually received treatment. Commenting on the arrangement of dental clinics, the necessity of saving every moment of the dentist's time is pointed out; at present much time is wasted either through faulty arrangements in the handling of children or in failing to record fully the results of inspection. In many areas no chart is made out until the child attends for treatment, whilst in a few others providing treatment there is no preliminary inspection at all.

"Another prolific source of wasted time is the treatment of the temporary teeth to the neglect of the permanent. In many areas the number of temporary teeth filled during the year actually exceeds the number of permanent. In fact, in some clinics no discrimination would appear to be made between the two groups. This is an extremely short-sighted policy; for if a child is to leave school with a sound and complete dentition, it is of the utmost importance that the first sign of disease or misarrangement in the first permanent teeth should be promptly dealt with. Inspection should, if possible, be made sufficiently early to permit of any necessary treatment being undertaken in time, and since the 'six-year molar' is often in place even before five years of age, and sometimes badly decayed by the time the child reaches six, it follows that the nearer to five years of age the inspection takes place (even in the present difficult times), the more hope is there of making it possible to the child to reach the school-leaving age with no permanent teeth extracted."

The Abnormal Child.

From the returns of the year it is estimated that the total number of ascertained abnormal children in England and Wales is 164,500, exclusive of dull and backward children. The mentally defective head the list with 37,000, not counting 6,500 epileptics in this total. Next follow the cripples with 36,000, those affected with pulmonary tuberculosis number 20,000, the blind and the deaf account for 6,000 each. The total number of these children in special schools is about 34,000, leaving over 100,000, or about 2 per cent., of the whole child population unaccommodated. To this estimate must be added the tale of the dull and backward children, estimated at 10 per cent., so that the full number of abnormal children reaches a total of some 12 per cent. The great difficulty met with in these children is the diagnosis of mental defect. The definitions adopted in the various statutes are of a legal or sociological nature, and do not afford a clinical basis of diagnosis. It is pointed out that mental defectives offer every kind of variation, and are alike in one respect only—they all exhibit absence or lack of memory power. After some consideration of the various tests in vogue for the measurement of mentality, the peculiar mental characters of the various types of defects are considered.

The blind child is commonly very backward on admission to a school; at the age of 7 or 8 years he may be extremely timid and incapable of fastening his own clothes; his talk may be mere baby talk, and unless care be taken it may be that such a child will be certified as mentally defective. In striking contrast to this is the absence of fear shown by the deaf child, although, when neglected, these show no better advancement in general capacity than the blind child. The improvement both these classes show after training at appropriate schools is dramatic in the extreme. The crippled and tuberculous children, apart from general retardation, show no well ascertained signs of psychological abnormality attributable to their defect. During the intervals of freedom from fits the epileptic may be mentally normal, subnormal, or supernormal. The course of the disease may cause him to degenerate into a state of mental deficiency or imbecility, in which his case resembles that of subjects suffering from those defects.

The dull and backward child presents a serious problem. Mr. Cyril Burt, referring to the results of an investigation into the educational ability among the entire body of children in a representative London borough, points out that barely one-half (46.4 per cent.) are assigned to a grade or standard assumed to be normal for their age. Of the subnormal, a large proportion are but little behind their proper level, but at least 10 per cent. are from 15 to 30 per cent. retarded, and form the group of definitely dull and backward children. These present a formidable by-product of the educational system. Correlated with this backwardness there is often some physical defect. Dr. Clarke of Cornwall found that the following stand out as important: Enlarged tonsils and possibly nasal obstruction, squint, malnutrition, defective hearing, and various diseases of the circulatory system; while defective vision, more particularly confined to one eye, seems to be correlated with retardation. Educationally the backward child is a misfit in our present system. The school standards do not fit him, and without special provision he has a tendency to become incapacitated and unemployable. A number of areas have provided special classes for these children in which the ordinary curriculum is moderated in requirement, and a liberal substitute of manual training is offered.

The Provision of School Meals.

There are some signs of a falling off in the nutritional condition of the school children during the past two years. The set-back is not serious in degree, nor is it universal, and the returns show immense improvement on 1907 and even 1913. But it is not satisfactory that 8 or 10 per cent. of school children should be ill nourished, a figure which in some districts is greatly exceeded. Four things may be done with regard to these children—

(1) The school doctor may prescribe for the child a suitable dietary and advise the parents accordingly, and this is the usual course. (2) The authority may provide milk or cod-liver oil for certain children, free or at cost price. (3) Canteens may be established in connexion with schools, as was done for the

great munition works during the war. 14 The school medical officer may advise the authority to put into operation the Provision of Meals Act for certain children attending their schools. This Act was put into operation in 137 local areas last year; 148,000 children were fed, a number more than twice as large as the numbers fed in the years 1916 to 1919, but much smaller than the average of the preceding four years.

There are indications that the local authorities are exercising care in this matter. Note has been made that when the meals are continued during the holidays there is a marked drop in the number of children receiving free meals, from which the inference is made that the free meal was not thought worth the trouble of going for it, or in other words, that the parents were not in such circumstances that a free meal was needed. At Stoke-on-Trent applications for free meals by parents are required on a printed form, and to that is attached the clause of the Act which states that the cost is to be charged to the parents where they are able to pay. The head teachers of the schools of the district report a number of instances in which parents have withdrawn their application on their attention being drawn to the section of the Act printed on the application form.

Kent has instituted a promising experiment to meet the conditions of children coming to school from distant parts. A number of canteens have been established in the schools at which these children may obtain hot meals at cost price. So far the scheme has been an entire success. It has obtained the widest help from voluntary workers, it saves the rates, improves the average attendance, it nourishes the child, and it lays the responsibility upon the parent. For many rural districts the scheme may be found to solve a difficult problem.

Juvenile Employment.

The provisions of the Education Act of 1918 and of the Employment of Women, Young Persons, and Children Act, 1920, have well nigh extinguished the employment of children under school age. But there were in 1920 in England and Wales as many as 27,967 children under 14 years of age certified for half-time labour, and a further number of 64,141 for whole-time factory labour, a total of 92,000 children employed under 14 years of age. Upwards of 42,800 of these children were in Lancashire, 22,600 in Yorkshire, 5,500 in Staffordshire, 4,300 in Cheshire, 2,100 in Wales, 1,500 in Warwickshire, and only 126 in London. The remainder are returned as distributed in "the rest of England."

The centre of the inquiry is now moved to the leaving age of 14, when the school medical officer will be called upon to determine the effect of the activities of the school medical service upon the child during school life, and to state in clear and intelligible terms what part the child is able to play in the industrial life before it. The importance of this examination of children before they reach the leaving age is shown by the return of the rejections of children on medical grounds by the certifying factory surgeons. Upon these surgeons falls the duty of certifying the fitness of children under the age of 16 years prior to their admission to the factory. The children disallowed on medical grounds numbered in all 7,992 out of a total of 11,639 rejections in the United Kingdom—that is, they constituted 68 per cent. of the rejections. The remaining rejections were: On account of age 397, want of evidence of age 3,071, and other non-medical reasons 178. Of medical grounds of rejection, want of cleanliness heads the list for nearly half the children; next comes defective vision or disease of the eyes.

These figures show that approximately 2 per cent. of the children leaving school were rejected by the factory certifying surgeons as medically unfit, yet all these children had been under the care of the school medical service. The maladies for which they were refused employment must, therefore, have been overlooked, or though detected, unremedied, or misdiagnosed by the school doctor or the certifying surgeon, or, though correctly diagnosed, disregarded by the parent or the local education authority, or finally, contracted since they had left school. In any case there is an indication of a leakage the source of which should be investigated by the authorities concerned.

The report concludes with certain appendices. Appendix A is a tabular return of the school medical service of each education authority. Formerly the number and character of the medical personnel was indicated and furnished useful information, there is now given only the name of the chief school doctor, who is commonly the medical officer of the area. It would be convenient if the earlier fuller information were restored. Appendix B gives information concerning prosecutions instituted by local education authorities. Appendix C is a most interesting inquiry into a new scheme of physical classification devised by Professor G. Dreyer of the Department of Pathology of the University of Oxford. This scheme should be investigated practically by every school doctor, for it promises to be a most valuable indication of physical fitness.

Finally, we might call attention to the altered price of the report. It is now 6s. a copy. Formerly it ranged from 1s. to 1s. 8d., and for reports of greater bulk even to twice the number of pages. Evidently the Stationery Office is charging "blue books" at their cost instead of at a nominal sum representing little more than the cost of the paper. It is to be hoped that the increased price of the report will not lessen its circulation.

WILLIAM CLIFT'S DIARY.

SOME contemporaries insinuated that William Clift, Conservator of the Hunterian Museum from 1800 to 1842, was a natural son of John Hunter, and in an early *Lancet* he is described as making his appearance among the distinguished audience at a Hunterian Oration "looking more like John Hunter than ever." Inasmuch, however, as Mrs. Hunter introduced young Clift into the Hunter household at Leicester Square, having, as it were, received him from a lady at Bodmin whose favourite artistic prodigy the little boy had been, this scandalous and picturesque theory has but small support. From sketching in chalk on his Cornish patroness's kitchen floor, he was early promoted to the position of museum artist, amanuensis and general utility man to John Hunter himself, and, coming to know his great master and to admire his genius and his transparent honesty, he was able in time to hand on the full Hunterian tradition to the new College of Surgeons of England in a new century. A book that has probably never yet been written about, since for a number of years it lay out of sight in a storeroom at the College, is Clift's Diary. It is in some thirty volumes, and covers the period 1811–41. Each volume is one of Richards's "Diaries" for any given year, the size is quarto and the paper is of that excellent kind only now used in *éditions de luxe*. Clift gave three shillings for his diary at each New Year, and solemnly recorded the fact of the purchase in an early page of the book. He writes a beautiful clerkly hand of the eighteenth-century type, which suggests a training in drawing and design, and uses the irregular forms of spelling of an age not yet confined to set rules of orthography. It is a pleasure to read these old MS. notes and daily jottings of a man who in his generation served the College and the memory of a great man with touching singleness of heart and untiring industry and knowledge. At first sight the Diary does not appear to contain any very important entries; we are confronted during successive weeks with homely details of small expenses—items recording fourpences and twopence ha'pennies spent for string, glue, tintacks, and paint brushes used in the museum. But even among these little accounts appear more interesting facts, and we learn much about coach hire, porterage, and outlays for refreshments, suggesting that the labourer did not go dry or hungry, and about the very moderate rates of pay current in an age when the purchasing power of the sovereign was often ten times what it is at present. Thus, on June 27th, 1811, we find the conservator "packing preps at the London Hospital. Bread and cheese and beer while packing, 2s. 10d." The year 1811 was very busy, for the whole of the Hunterian Collection was in process of transference from the house of "Mr. E. Jenner," adjacent to the college building, where it had been deposited in 1806 after its removal from Castle Street.

"Sunday 10 [March, 1811] Sir Wm. Blizard, Mr. Cline, and Mr. Home met at the Museum on account of arranging Cases."

March 12. "The Giant's case to be heightened to admit the skeleton." A letter from a Mr. Elers in a later diary mentions that the giant's (O'Bryan's) mother was a short stout woman, but that nothing could be found out about his father.

March 26. "Removed stuffed animals into College house out of the way."

March 29. "Carrying in Dry Diseases, &c., into College house, &c., &c., for a sale of 31 lots by Mr. Creaton."

May 1. "Nails for green cloth examination table 2d."

May 2. "Mr. Harvey of St. Bartholomew's Hospital brought Ten Gentlemen, Students at that Hospital, to the Museum." These were probably the first visitors to the Museum apart from Members of the Court of Assistants or of the College staff.

May 3. "Mr. Hawkins [Master in the inaugural year of the College, 1800] and his friend called to see the Museum," and there arrived "A Mummy in a Glass case from Thebes," which Anthony Carlisle subsequently unrolled before a select audience.

On May 17 there came the first American visitor, "a friend of Sir W. Blizard's, to see the Museum."

On the 25th came the widow of John Hunter with Mrs. Campbell (Agnes Hunter).

July 12. "Received the Ostrich from Exeter Change, for which Mr. Home paid Mr. Polito's man £5 5s."

Later, arrived a lama at the price of two guineas.

The Museum, now fully installed, was first opened to visitors for two days weekly on May 18th, 1813. On June 11th, 1816, "the Museum opened to visitors for June, July, and August." Clift seems to have made a point of showing visitors round the collection, then, as now, unrivalled. In his zealous, unaffected way, he gave his explanations to all and sundry, to students as well as to distinguished laymen. Among the former we may imagine John Keats to have been included, for we know from the College books that in the year 1816 a ticket was issued to him for Sir William Lawrence's lectures, which lasted, as Clift notes, from March 21st to May 13th, when the fifteenth and last lecture was delivered. The second lecture was, "On the Various Theories concerning Life, at various periods of the world." This may have excited comment, for in 1826 Lawrence, we know, got into difficulties in a publication held by his opponents to be disrespectful to "the dignity of man." Another notable course of lectures that year was from Abernethy, who was opposed to Lawrence's materialistic views. Our discreet diarist, however, never offers comment or criticism on the ideas or utterances of the Court of Assistants, and we only very rarely obtain a glimpse of his private opinions, as when he notes that Mr. George Shaw, the zoologist, to whom the College presented a gold tea and coffee service, was "a dunce." Shaw's crime may have been that of getting others to do his business for him in the many volumes of his finely illustrated treatise on Natural History, the plates of which are manifestly not his own work. Clift hated plagiarism, and that the services of literary ghosts should go unacknowledged. Hunter was, in a sense, ghost to Sir Everard Home, and Clift more than suspected the latter of using Hunter's notes and then destroying them. Home thus built up a high reputation which was not properly his, and Clift never forgave him. When Home, driving with him in a post-chaise, confessed to his destruction of the Hunter papers in 1823, he was so taken aback that he could only stutter: "Well, Sir Everard, there is but one thing more to be done, that is to destroy the collection." The death of Home (September 1st, 1832) is recorded by Clift in the Diary by the insertion of a biographical notice, quoted from a journal, at the end of which he writes grimly, in brackets, "*Sic transit gloria mundi.*"

He did not attend Sir Everard's funeral or that of Sir Astley Cooper, but on Sunday, January 7th, 1821, we read, "Mrs. Hunter died this morning. Aged 79." Clift calculates that she was twenty-four years younger than John Hunter at the time of their marriage. She was buried at noon on January 15th, the mourners being Dr. Baillie and Sir Everard Home (brother), William Hunter Baillie and William Clift, and two other gentlemen, of whom one was a painter. These were conveyed in two mourning coaches from Mrs. Hunter's house in Holles Street, Cavendish Square, "a white house," says the diarist, "east side above the middle." The coffin was buried in a vault under the new church, Marylebone. "Lady Campbell (Agnes Hunter)," continues Clift, "remained in Holles Street, and, of course, did not appear." "Mrs. Hunter had been declining in health and strength gradually for some time. Dr. Baillie and Sir Everard Home thought it useless to drench her with Medicine; as she had little appetite they supported her with Cordials, such as weak brandy and water, &c. Being very fair, and her hair like Flax, her Teeth had failed her for several years; and consequently her digestion did not improve."

Of Clift's activities outside the College, such as the dissection of the bodies of criminals who had been hanged, his journeys in search of specimens, or the relations of the College with arctic and other explorers, some account may be given at a future date. VICTOR G. PLARR.

THE OPERATIVE TREATMENT OF MALIGNANT DISEASE.

BRADSHAW LECTURE BY MR. H. J. WARING.

AT the Royal College of Surgeons of England, on December 14th, the Bradshaw Lecture was delivered by Mr. H. J. Waring, Fellow of the College, on "The operative treatment of malignant disease, its possibilities and limitations."

Mr. WARING said that he proposed to confine himself to the conclusions at which he had arrived as a result of his own work and observation during the last twenty-five years, and to bring forward no references to literature or to statistics. Statistics in this instance were misleading, because many patients, especially hospital cases, were reported as cured and passed out of the observation of the operating surgeon, but afterwards developed recurrence and sought treatment elsewhere.

Commencement and Site of Malignant Disease.

Pathologists had not yet succeeded in demonstrating the actual mode of commencement of a malignant tumour. Probably the process was essentially a local one, and only after the growth had become well established did it invade adjacent tissues or cause the formation of secondary growths. The growth having infiltrated into the various connective tissue layers, a few cells might be detached, and, carried by the blood or lymph streams, give rise to secondary growths in other parts of the body. The parts in the immediate neighbourhood of a new growth usually, in varying degrees, formed a natural barrier to its extension, and therefore, from the surgical point of view, in all malignant disease the affection should be regarded as really a local one, and upon the extent to which this was the case depended the possibilities of successful operation.

The first important consideration was the site of the disease. When malignant disease attacked a tissue or organ near the surface of the body the patients usually sought skilled advice at an early stage, and this permitted of surgical interference in a way that promised success. In cases in which the tongue was affected, for instance, people, at all events among the educated classes, came for advice early, although this did not hold good in the case of people of the artisan class, especially if they had no effective dental service available, and the results in consequence were less satisfactory. But in the case of affected tonsils, on the other hand, the disease often was not manifest to the patient until a much later period in its development; indeed, epithelioma of the tonsils might not be noticed until the adjacent vessels were well involved.

The determining importance of the site of the disease was illustrated in such cases as carcinoma of the oesophagus, which was very difficult to approach surgically, and, even if the anatomical difficulties were overcome, the patients almost invariably died from secondary haemorrhage. The stomach was frequently, in the later decades of life, the site of a carcinoma, and up to the present the surgical results had not been as satisfactory as one would wish. This was due to a great extent to the difficulty of early diagnosis. The tumour could not be readily felt, and the disease was often not treated until the lymph glands and other structures had become infected. The pancreas was another deep-seated organ, and the symptoms which followed from malignant disease of the pancreas were not very definite, so that by the time the disease was noted it was often too extensive to eradicate. He had operated for carcinoma of the pancreas in three cases, but two of the patients died after operation, and the third only recovered to die later from secondary growths.

Primary and Secondary Growths and Types of Carcinoma.

The extent and connexions of the primary disease had next to be considered. Some growths, while extending quite markedly, would remain with margins well differentiated from the surrounding tissues, and here the prospect of operative treatment was good; but others—he showed in illustration a growth in the pelvis of the kidney extending to the ureter—had no clear line of demarcation, and in such cases there was likely to be a swift recurrence after operation. Secondary growths were most commonly developed in the lymph glands. An

infiltrating growth of the tongue, even if it were recognized at an early stage, might set up a secondary growth which rendered further operative procedures of doubtful benefit. When the growth involved the lymph glands largely and the connective tissues showed signs of oedema, the case might be said to be beyond surgery. On the other hand, columnar-cell carcinoma of the large intestine and rectum might exist for a long time before it set up secondary growths, and such a condition was very amenable to surgery, provided it was diagnosed early. Considerable stress was sometimes laid on diagnosis by *x*-ray examination of the intestinal tract. The lecturer thought that *x*-ray workers were rather inclined to make diagnoses which were not justified by clinical experience. He would not advise reliance on the *x*-ray findings to determine whether or not an operation should take place in columnar-cell carcinoma. The primary growths appeared to have, in some cases, a marked influence on the further increase in size of the secondary growths. The cause of this was not clear to him; he only knew that it was so as a result of clinical observation.

From the clinical point of view carcinoma might be said to consist of four varieties: (1) The exuberant, or "cauliflower," type; (2) the ulcerative type, which was fairly satisfactory in operation; (3) the infiltrating type, which surgically was the least satisfactory of all; and (4) the scirrhus type, with a large amount of fibroid tissue, met with particularly in the breast, and giving fairly satisfactory results in treatment. Occasionally a tumour which had existed for a long time and had been regarded as non-malignant would become malignant; it was always well for the surgeon to bear in mind that possibility. The more the cells of a malignant growth approximated to the type and size and characteristics of the cells of the tissue from which it had been taken, the greater was the likelihood of the success of the operative procedure. The more remote histologically, the smaller the prospects of success. Usually the vital characteristics of the cells of a malignant tumour could not be estimated until the growth had been removed and a histological examination made. But the vascularity of the growth and its mode of extension was of assistance in prognosis. A very vascular tumour with cells extending widely from the margins indicated the less favourable condition.

The reaction of the tissues immediately adjacent to the malignant growth was an important factor. Generally the tissues were resistant, and sometimes formed a fibrous barrier, so that the growth was localized, its extension limited, and its invasion of the lymph and blood vessels delayed, but, on the other hand, the tissues appeared sometimes to offer no barrier, and then the case was exceedingly grave.

Characteristics of Patient and Decision as to Operation.

The vital characteristics of the patient and the coexistence of other diseases had also to be reckoned with. Patients who were naturally obese were not usually good subjects for operation, owing to the ease with which a malignant tumour invaded fatty tissues, and also in certain cases to their diminished power of repair. The patient's age was of some importance. Carcinoma in the elderly was of slower growth than in the young. In carcinoma of the breast in a woman of 30, or of the tongue in a man of 30, the operation was likely to be less successful, other things being equal, than in a similar case with a man or woman 20 years older. Some surgeons were averse from removing malignant growths in people of advanced age, but age was not a barrier to the performance of an operation unless the patients had other affections which militated against success.

Preliminary excision of a portion of the supposed malignant growth before operation, in order to confirm the clinical diagnosis and decide the kind and extent of operation to be performed, was a practice which could not be too strongly condemned, as the necessary cutting might cause the starting of new growths. Careful clinical examination by a skilled diagnostician would, in practically all cases, avoid the necessity for such a procedure. Where some such course was demanded, the growth should be removed as far as seemed practicable, and, after investigation, the operation completed in the appropriate way. All the clinical facts should be communicated to the pathologist. Clinical examinations of supposed malignant tumours should be carefully carried out, and when the diagnosis was once made further repeated examinations should be deprecated because they were likely to lead to the detachment of cells from the tumour and establish secondary growths. Every operation for radical cure should have for its objective the complete removal of the primary focus of the disease. Unfortunately, operations were sometimes done by surgeons whose anatomical knowledge was not as complete as it should be. The results of surgical procedure would be more favourable with the earlier diagnosis of the disease and immediate operative treatment by a skilled surgeon versed in the anatomy of the part.

X Rays and Radium.

The lecturer referred, in conclusion, to the value of *x* rays and radium in complementing or replacing surgical procedures. *X* ray applications previous to the performance of an operation had been advocated by many. In his own experience he had not been able to assure himself that there were any advantages from this preoperative treatment. One of its effects was to cause the tissues in the region of the growth to become indurated. In the case of carcinoma of the breast and other superficial tumours it might be an advantage to apply *x* rays after operation in order to destroy any scattered or detached cells outside the operative field. It was essential to the successful treatment of malignant disease that all malignant cells should either be removed by operation or destroyed *in situ*, and agents such as *x* rays and radium offered the only means of attaining the second result. There was no doubt that *x* rays and radium exerted a marked effect on the growth of cells in many malignant tumours. A previous injection of a salt of copper was said to assist in the destruction of the tumour cells by *x* rays, and physicists with whom he had discussed the matter thought that the introduction of copper was likely to cause the cells to be more subject to *x*-ray action.

The empirical application of *x* rays and radium in the treatment of all cases of malignant disease was strongly to be deprecated. Recently an improved *x*-ray apparatus had been introduced, and with this it was claimed that the rays could be effectively applied to deep-seated tissues. The powers of this therapy had been very much exaggerated in the lay press. His own belief was that the frequent result of *x*-ray treatment of operable growths was to render them inoperable. One of the chief reasons for failure in cases treated by *x* rays was that the radiologists who had treated the patients had had insufficient clinical experience. A few weeks previously he had been visiting Germany, and he went to one of the centres where deep *x*-ray therapy was practised. There he found all kinds of patients being treated by *x* rays, and it appeared to him that while the *x*-ray operators were highly competent in their own technique they were less familiar than they should be with clinical medicine. He asked one of the authorities to show him a cured case, and a patient who had been treated for carcinoma of the breast was brought for his inspection. Undoubtedly the breast carcinoma had shrivelled up a great deal, but the growth had spread into the axillary region, where he found a considerable secondary growth adherent to the lymphatic structures. He indicated this to the *x*-ray specialist, who, however, said that there was nothing in it of importance! Mr. Waring insisted that in cases in which *x* ray treatment was given the *x*-ray operator and the clinician should work in close conjunction. In his opinion, up to the present time many more cases had been rendered inoperable, and therefore incurable, by *x* rays and radium than had been cured by these agents. The place of *x* rays and radium was in surgically inoperable cases, where much alleviation of suffering and some prolongation of days might be obtained from radiotherapy.

THE next annual meeting of French-speaking neurologists will be held at Quimper in the first week of August, 1922, under the presidency of Professor Jean Lépine, of Lyons, when the following subjects will be discussed: (1) Mental disturbances in epidemic encephalitis, introduced by Drs. Trucile and Petit; (2) Lesions of the central nervous system in motor restlessness and muscular rigidity, introduced by Dr. Anglade, of Bordeaux; (3) Care of the insane and protection of the rights of the individual and society, introduced by Dr. Courbon, of Stephansfeld.

British Medical Journal.

SATURDAY, DECEMBER 24TH, 1921.

CHEMICAL WARFARE.

THE policy of secrecy concerning gas warfare in all its aspects resulted in a veil being drawn across the stage of war, and only now, little by little, is this veil being pulled aside. Even when all the official histories are printed it is not likely that the whole story will be told, but we shall know enough to study the great medical problems involved, just as the daily press is initiating the general public into some of the new and terrifying possibilities that chemical warfare holds. Secrecy was a wise precaution when our defence against gas was inadequate, and a necessity as regards our own and our Allies' preparations for using the same weapon. That it, however, hampered medical treatment of the casualties and led to an unnecessary prolongation of convalescence, particularly in home hospitals, is equally undoubted.

Most of the recent publications on the subject, dealing both with medical and general aspects, have come from American authors, which is not surprising when the great gas organization built up in the United States is remembered. Nearly 1,300 chemists were allotted to various branches of research work, and we have it on the authority of General Fries, who commanded the American Gas Service in France, that at the armistice their Chemical Warfare Service, including the gas regiments, numbered over 4,000 officers and nearly 45,000 men. The results of some of the medical research are now available,[1] and form a valuable record of pathological and therapeutic investigation. The final results very largely confirm the opinions which had been held by British observers, who, working without the advantage of much laboratory assistance, and pressed as they were by the urgent needs of the moment, may well be satisfied that in no essential have their conclusions been proved at fault.

It will be remembered that the first employment of poison gas was by means of cloud attacks: chlorine, and later a mixture of chlorine and bromine, was liberated from cylinders and carried down wind to the opposing lines. This method of attack was gradually replaced by gas shell, whereby a variety of poisons could be used, the direction of the wind could largely be ignored, and a very high concentration of gas could be obtained on a distant target. Phosgene and other toxic substances with a similar action—notably chloropicrin—were at first the usual filling for gas shells; but the introduction of "mustard gas" in July, 1917, marked the point when chemical warfare began to be a definite factor as regards the number of casualties. Up to that time gas warfare, though harassing to troops from the need for constant vigilance, caused a proportionately small number of casualties; but after mustard gas was freely used casualties increased enormously in numbers, and began to influence the problem of man power very considerably.

[1] *The Lethal War Gases: Physiology and Experimental Treatment.* By Frank Underhill, late Lieut.-Colonel, Chemical Warfare Service, United States Army. New Haven: Yale University Press. London: H. Milford, Oxford University Press. 1920. (Med. 4to, pp. 309. 63s. net.) *The Medical Aspects of Mustard Gas Poisoning.* By A. S. Warthin, Ph.D., M.D., and C. V. Weller, M.S., M.D. Henry Kimpton. (Pp. 267, with 156 original illustrations. 42s. net.)

The classification of gases adopted during the war was in accordance with the main pathological condition produced, and this may still be regarded as the most useful for general purposes. The lethal gases or lung irritants, such as chlorine and phosgene, produced their main effects on the pulmonary alveoli. The second group was named the vesicants, of which mustard gas was the outstanding member. The third, consisting of the arsine preparations, was employed in the closing phase of the war, and was the least effective weapon in the production of serious casualties, though the effects were immediate and for a short time stupefying. About this last group little has so far been published in accessible literature, largely because its potentialities are so considerable.

Mustard gas produces a chemical burn, affecting any portion of the body with which either the vapour or the fluid itself comes into contact. The effects are delayed; usually they commence six or eight hours after exposure. Then an acute inflammatory process begins, and this, if not checked, is followed by a bacterial invasion, the organisms common to the area affected multiplying on the pabulum of dead tissues provided, and setting up their characteristic lesions. The eyes, the skin, and the airway are all accessible to the direct action of this poison, and consequently suffer. Acute conjunctivitis, leading on to keratitis if neglected: a widespread erythema, followed by vesiculation, stripping of the epidermis, and extensive septic burns: laryngitis, tracheitis and bronchitis, with sloughing of the mucous lining of the larger tubes and complicated by a descending septic bronchopneumonia: these are the grave lesions observed. The American authors confirm the view held by the British, in opposition to the French, that mustard gas does not produce any systemic affection. The symptoms of the latter they, with ourselves, ascribe to the secondary septic infection, which may set up acute nephritis or toxic myocarditis.

In discussing the treatment of skin lesions the authors lay stress on the value of hypochlorous solutions, and the standard treatment in the American armies was based on their recommendations. It consisted of alternate treatment with eusol solution and hypertonic saline solution, to the entire exclusion of ointments. The protocols of cases treated in this fashion form a strong argument in its favour. Though masks can save from respiratory or ocular troubles, the skin is in no way protected, and as mustard gas—a fluid with a high boiling point—can remain active on the ground for days, troops moving over a contaminated area will be exposed to the danger of burns for days after the shelling. We may note here the varying degree of susceptibility to the action of mustard gas: some individuals show a burn after an exposure of five seconds to air saturated with vapour, others show none after an exposure of five minutes, while among negroes 70 per cent. are resistant to a 1 per cent. solution.

Colonel Underhill has given us a monumental work on the action of the lung irritants, which affect the pulmonary alveoli, setting up acute oedema. His book is a mass of detailed experiments, largely undertaken to investigate the blood changes. In brief, it may be stated that the blood is an index to the severity of the pulmonary condition. The initial phase is one of blood dilution, which lasts for about six or eight hours. This he regards as an increase of blood volume due to the reaction of the tissues in response to the strong irritative stimulus of the gas on the respiratory tract. This phase, during which

pulmonary oedema develops, is followed by a very high blood concentration, persisting for several hours. The concentration is due to the pouring out of fluid into the lungs. This, in part a passive effect, is in a large degree due to mobilization of chlorides in the lungs, which leads to retention of fluid to hold them in solution. The tissues first are drained of fluid to supply this need, but ultimately the blood also becomes concentrated to furnish the demand of the lungs. If recovery takes place, a slow return to normal concentration follows. Associated with the oedema there is a marked degree of acidosis, but whether this is due to chlorine absorption or to a CO_2 acidosis has not been determined. Thus, physiological problems of great interest are outlined in this work.

With regard to treatment, the author advances some views which will not be fully accepted in this country. He advocates venesection, and urges its employment at an early stage before acute pulmonary symptoms have supervened. This may be possible in a laboratory, where the degree of gassing is known, but it is impracticable in the field. Were it carried out it would be an enormous tax on the medical service, and would certainly mean that a large number of men would be unnecessarily deprived of a pint of blood. We agree with the value of venesection in treatment but doubt its place as a prophylactic. Associated with bleeding he advocates intravenous saline infusion (0.97 per cent. NaCl). This treatment has not been tried clinically; but in theory it is sound, and has proved of value in the laboratory. On the question of oxygen we again part company with him. His work on gassed dogs led him to attach little value to oxygen, but the British medical service in France proved its value and saved scores of lives by its use.

Major Lefebure, in his interesting book *The Riddle of the Rhine*,[2] shows how the successive developments in the use of poison gases took place, and he concludes that in future wars these gases will play an even more important part. His object is to point out the fact that now that the war is over Germany is left with eight enormous chemical factories, seven of them on the Rhine, all of which can at short notice be converted into poison gas factories capable of turning out three thousand tons of poison gas a month. No other country is in a position to produce a tithe of this amount. Major Lefebure holds that Germany's possession of factories capable of making such enormous quantities of poison gas constitutes a menace to humanity, and discusses the methods by which the menace may be countered. The ideal method without doubt would be to abolish gas warfare, as was suggested in the manifesto published in the BRITISH MEDICAL JOURNAL of November 30th, 1918, p. 611. Failing this, however—and it seems clear that no convention, guarantee, or disarmament safeguard will prevent an unscrupulous enemy from employing poison gas if he has the whip-hand in its production—other methods must be looked for.

A great field of research has been opened up by chemical warfare. To some extent this research is of benefit to general medicine. In the main, however, we cannot but regard it as a degradation of medical science that it should be called upon to assist in the study and perfection of lethal agencies. It is a strange anomaly that whilst the International Disarmament Conference is discussing control of preparations for war there should be an apparent quickening of interest in chemical means of destruction.

[2] *The Riddle of the Rhine: Chemical Strategy in Peace and War.* By V. Lefebure. With an introduction by Field-Marshal Sir Henry Wilson. London: W. Collins Sons and Co., Ltd. 1921. (Demy 8vo, pp. 277; 7 sketch-maps. 12s. 6d. net.)

THE SIGNIFICANCE OF DIGESTION OF THE OESOPHAGUS.

DIGESTION of the mucous membrane and walls of the oesophagus is a recognized condition at necropsies; it has largely been regarded as an event taking place after death, and although the occasional occurrence of peptic ulcers at the lower end of the oesophagus, analogous in all respects to gastric and duodenal ulcers, has long been known, the first attempt to correlate post-operative and other forms of haematemesis with *intra-vitam* digestion of the oesophagus was made by Mr. Pringle and Professor Teacher in 1919 on the basis of clinical observations and naked-eye examination of the oesophagus. *Intra-vitam* digestion of the oesophagus (oesophago-malacia) is probably not so very rare, and some at any rate of the cases commonly regarded as examples of *post-mortem* digestion really belong to the category of actual and important disease.

Professor Teacher, Mr. Pringle, and Dr. L. T. Stewart,[1] have observed eighteen examples in seven years and have now supplemented the previous paper by histological examinations of fifteen specimens showing evidence of vital reaction in all but one; in the exceptional instance haematemesis had occurred during life. When the change occurs after death the stomach is commonly affected also, vital reaction such as acute inflammation is absent, and rupture into the pleura is rare; in *intra-vitam* digestion of the oesophagus on the other hand the stomach is either not at all affected, or only slightly, and the microscopic appearances are in general those of acute injury and inflammation. The cases may be classified into three groups: in the first there is slight superficial erosion with a history of vomiting of black material; in the second there is severe and extensive ulceration without perforation, and microscopic examination shows much more change than appears to the naked eye; in these cases it was thought that the lesion had occurred within a period of thirty-six hours of death; in the third group, which contained nine cases, perforation or widespread destruction of the lower part of the oesophagus had occurred. The main clinical manifestation was vomiting of blood, unusually black, in small quantities; pain behind the sternum or between the shoulders was noted in two cases, but is probably a characteristic symptom, being, no doubt, often masked by pain due to the principal disease or by the patient's grave condition. Out of the eighteen patients, ten were suffering from surgical conditions, such as appendicitis or gall stones; in two the condition occurred subsequent to accidents—namely, rupture of the liver and fracture of the femur; and six were observed in such medical conditions as pneumonia and puerperal eclampsia. The suggested explanation is that vomiting of active gastric juice occurs, and that some of this fluid remains in the lower part of the oesophagus and digests its walls; in nine cases in which fairly accurate time data were available the interval between the onset of haematemesis and death was from twenty to thirty-eight hours; in one case the interval was forty-three hours, and the microscopic appearances were compatible with commencing healing.

The process of *intra-vitam* digestion of the oesophagus, therefore, is not an agonal phenomenon, and, as it can be diagnosed, it may prove to be amenable to treatment.

[1] J. H. Teacher, J. H. Pringle, and L. T. Stewart, *Journ. Path. and Bacteriol.*, Edinburgh and London, 1921, xxiv, 396-412.

BREAST CARCINOMA.

For some years past Sir Lenthal Cheatle has been conducting careful researches on the histology of breast carcinoma. His work is all the more welcome because at the present day the professional pathologist is almost entirely engrossed with problems of bacteriology and serology. It is our loss that the rush to these gold mines should have been so universal and whole-hearted, for it has left the man who stayed at home, the morbid anatomist, to follow an unfashionable pursuit and to be, in some quarters, the object of good-natured reproach. Sir Lenthal Cheatle proves to us that the study of dead tissue is not so barren a field as many would have us believe. We have achieved no finality of knowledge here, and Sir Lenthal Cheatle has been able to show to us that the patient study of sections will reveal to the investigator many facts which others have misinterpreted or neglected. The method employed has been the intensive study of serial sections of large pieces of breast tissue, and the object has been the investigations of cysts of the breast, of cystic mastitis, and the origins of cancer. By his serial sections he has demonstrated that many of the so-called breast cysts are really in continuity, that they are not properly cysts, but dilated and convoluted ducts. In a paper published recently[1] he discussed those intracystic papillomata, which he terms "uni-" and "multi-radicular," pointing out the relationship of the latter to carcinoma. He goes on to describe a condition of diffuse, benign, desquamating hyperplasia of epithelium in ducts and acini. This condition he regards as primary within the gland and not secondary to chronic inflammatory changes outside the epithelial tube. This change he believes to be due to an irritant, probably gaining access along the ducts from without. Thus stagnation with irritation are the causal factors, and the end result may be a benign desquamative hyperplasia (so-called "chronic mastitis") or something more serious. This former condition is the first step in the dilatation of the ducts which leads to the apparent cyst formation. Papillomata and malignant disease may follow. It is impossible fully to appreciate this very short but suggestive article without reference to two previous papers.[2] It will be recalled that Sir Lenthal Cheatle many years ago put forward the suggestion that cancer begins most commonly in the ducts and more rarely in the acini. Its origin becomes obscured when lymphatic permeation and infiltration take place owing to cell metaplasia converting the original columnar cells into cuboidal and spheroidal shapes. In an advanced case the origins of the growth become obscured, and little, if any, trace of the original cell type can be found. It is at this point that the whole breast sections can be of great value, and the study of the area neighbouring on the chief mass of growth may bring fruitful results. One other benefit derived from such sections has already been alluded to—namely, the demonstration of the unity of scattered "cysts," which are really only sections of a convoluted duct system. A further point of great importance is the apparently wide area of primary malignant growth. The carcinoma does not begin at one very definite spot in the duct wall and spread by indiscriminate invasion, but seems to spring from wide areas of duct wall. To explain this on our present conceptions of cancer growth it is necessary for Sir Lenthal Cheatle to postulate a definitely "genetic action" on the part of the tissue fluids secreted by the cancer cells. He suggests that autolytic products of injured cells may cause this proliferation. This is, however, merely a tentative suggestion to explain an observed condition very difficult to reconcile with the facts of cancer as we know them to-day. There can be little doubt, however, as to the accuracy of Sir Lenthal Cheatle's observations, and his really beautiful and profuse illustrations bear out the written word.

[1] "A Further Contribution to the Study of Cysts and Papillomata of the Breast," by Sir Lenthal Cheatle, *Brit. Journ. Surg.*, 1921, October, 255.

[2] Cysts, and Primary Cancer in Cysts of the Breast, Sir Lenthal Cheatle, *Brit. Journ. Surg.*, October, 1920, 149. Benign and Malignant Changes in Duct Epithelium of the Breast, Ibid., January, 1921, 385.

THE ETIOLOGY OF ERYTHEMA NODOSUM.

The contribution to the elucidation of the etiology of erythema nodosum by Dr. J. Odery Symes in our issue of November 5th and the various communications to which it had given origin make it clear that this curious condition still requires much research before its relationship to other diseases can be regarded as definitely established. One of the most interesting contributions to this subject was recently made by the well-known Swedish physician Dr. H. Ernberg, but it has not enjoyed the wide publicity it deserves. In August, 1919, at the first Northern Congress for Pediatrics in Copenhagen, he gave an account of 55 cases, all of which had been under close clinical observation throughout the period of the eruption. As Dr. Ernberg pointed out, accounts of erythema nodosum are seldom combined with a careful record of the condition of the lungs. Focussing attention on the lungs, he found that during the eruption, particularly in its late stages, transient signs of pulmonary disease were often demonstrable. From time to time he detected rhonchi, changes in the quality of the normal respiratory sounds, prolonged expiration over part or nearly the whole of one lung, slight dullness over a considerable part of one lung, and other signs of involvement of the lungs. He suggested that the briefness and inconstancy of these manifestations probably account for the slight attention hitherto paid them. His case for regarding erythema nodosum as a tuberculous reaction received considerable support from *x*-ray examinations of the chest which were undertaken in 39 of his 55 cases. In 35 of these 39 cases there were *x*-ray signs of tuberculosis, and there was considerable evidence for regarding it in most of these cases as both active and extensive. Only in four cases were the *x*-ray signs of tuberculosis uncertain; but, curiously enough, in these four cases other signs of tuberculous infection, such as phlyctenular conjunctivitis, filled the gap in the evidence. Dr. Ernberg's researches into the relation of v. Pirquet's tuberculin test to erythema nodosum also seem to have cleared up some of the mysteries surrounding it. His study of the literature of negative tuberculin reactions in connexion with erythema nodosum showed that, when the time of the test was stated, it was always carried out during convalescence and after the erythematous stage. In his own experience the test invariably proved definitely positive when he carried it out during the acute stage of the erythema, and after the erythema had subsided this test was apt to be negative even when there were definite clinical signs of tuberculosis. Many of his patients developed manifest tuberculosis soon after the outbreak of the erythema, and he concluded that this condition should be regarded as the organism's reaction to "autogenous tuberculinization," the lesion being closely similar to that provoked locally by a subcutaneous injection of tuberculin. The collection of abstracts in *Tubercle* for May, 1920, and October, 1921, shows how busy many investigators have lately been in scrutinizing the underlying cause or causes of erythema nodosum.

THE TREATMENT OF LEPROSY.

In the account given on November 19th (p. 851) of the position to-day of the treatment of leprosy reference was made to the progress achieved in the past twenty years by the use of chaulmoogra oil and its derivatives, and more particularly during the last ten years by improvements in technique. A considerable amount of valuable and interesting clinical work on the subject is being done in the Far East, as, for example, at Makogai, Fiji, by Dr. Philip Harper, and at Siaokan, China, by Dr. Henry Fowler, of the Mission to Lepers. The annual report for 1920 of the

Fiji Medical Department, published recently, contains an appendix by Dr. Harper on the treatment of leprosy by the intravenous injection of chaulmoogra oil. Fijians, he states, are quick to recognize leprosy, which has existed amongst them from early times, and have special names for all the prominent symptoms. Dr. Harper considers that the division of cases into nodular and nerve is unsound, because although cases of pure nerve leprosy are common, in a case of nodular leprosy careful examination will always demonstrate nerve symptoms. In his experience the first sensation affected in leprous neuritis is that of temperature, pain sensation next disappears, and touch sensation later. There are three stages, he concludes, into which leprosy, in Fiji at least, may be roughly divided: (1) the macular stage, without neuritis or nodules; (2) the nerve stage, with macules, past or present, but without nodules; and (3) the nodular stage, in which neuritis is always demonstrable though macules may not have been noticed. Acid-fast bacilli teem in smears of serum from macules, accompanied by infiltrations on nodules, but are not found in smears from macules present alone. Dr. Harper considers that all cases of purely skin leprosy and some cases of the nodular type can be cured; he insists, therefore, on the importance of early diagnosis and treatment. The favourable results of treatment in the past few years at Makogai have been due to the general hygienic treatment and to the intramuscular injection of chaulmoogra oil, mostly by Mercado's formula; it has been found, however, that chaulmoogra oil may be given intravenously. Of forty cases so treated since August 21st, 1920, all derived benefit except two, in both of whom treatment had to be stopped early. The formulae employed for intravenous injection are two, though the iodine formula has recently been abandoned, as it was convenient to use only one mixture when as many as 200 patients were being injected daily. The first was: Iodine 1 part, ether 250 parts, chaulmoogra oil 750 parts. The second is: Carbolic acid 10 parts, ether 250 parts, chaulmoogra oil 750 parts. Chaulmoogra oil had previously been given intravenously with great precautions by Varham, Stevenel, and Noc, but the dose used was about one-fortieth of that employed by Dr. Harper, and it was repeated far less frequently. He starts with 10 minims of one of the above mixtures for adults, and this is increased gradually to 20 minims without ill effects; the dose is given daily for six days a week, and may be continued for at least five months on end. Children bear relatively large doses; one advanced case, an Indian girl aged about 9 years, received 20 minims for several weeks. The immediate effects of the injection are a taste of ether and of chaulmoogra oil, flushing of the face, acceleration of the respiration and pulse, and sometimes cough; the later results include slight drowsiness, a rise of temperature and of pulse rate, reaching the maximum in about four hours and ending eight hours after injection, and leucocytosis. If in making the injection the vein is missed and the injection made into the cellular tissues, a painful swelling persists for two or three days, and sometimes longer; in the first 3,000 injections there were two cases of mild and transient phlebitis. In *Without the Camp* (the quarterly magazine of the Mission to Lepers) for October, 1921, Dr. Henry Fowler states that intramuscular injections of chaulmoogra oil and camphorated oil, with resorcin, given week by week, had little success in his hands in the treatment of leprosy. Later on he ascertained that in Korea, where excellent results were being obtained at the same time by Dr. Wilson, of Kwangju, larger doses were used. The camphor was dissolved in the chaulmoogra oil itself, and ultimately the resorcin was omitted. One pound of chaulmoogra oil is brought to the boil in a water bath, and 100 grains of pulverized camphor added; the mixture is kept in the water bath with the cork of the bottle partially closing its mouth until all the camphor is dissolved; the bottle is then tightly corked, and the contents are ready for use. The oil is injected into the deep gluteal muscles, starting with 2 c.cm. once a week for the first month, then 3 c.cm. once a week for the second month, increasing by 1 c.cm. each month until 6 c.cm. are given once a week in the fifth month; if the patient can stand it, this dose is continued. Under such treatment, in three or four months patients say that they feel stronger and more cheerful, sensation returns to previously anaesthetic areas, and the thickened nodular appearance is no longer to be observed.

SYMPTOMLESS CARRIERS OF PROTOZOA.

In a recent paper Dr. H. H. Scott has drawn attention to the frequency of carriers of the cysts of *Entamoeba histolytica* and *Entamoeba coli* in Jamaica.[1] None of the 102 individuals chosen for examination were suffering from intestinal complaints, but they were selected at random from patients admitted to hospital for other diseases. Nine examinations, at intervals of two or three days, were made on each individual over a period of three weeks, the stools being concentrated by the method of Cropper and Row. Three separate samples from each stool were examined before the stool was passed as negative for the day. Dr. Scott found that cysts of *E. coli* were found at some time or other in 47 per cent. of the patients examined, and *E. histolytica* in 17 per cent. These figures are very high. The nearest approach to the figure for *coli* cysts was that noted by Matthews and Malins Smith among asylum patients in England—namely, 45.9 per cent. Though these carriers themselves were not suffering from the disease, those harbouring *histolytica* cysts were, of course, potential sources of infection to their neighbours. The sanitary provisions of Jamaica are, to say the least, primitive, and therefore natives must be constantly exposed to infection. Dr. Scott reports that in two of the males and one of the females examined there were ankylostoma, ascaris, trichiuris, *E. coli* cysts, *histolytica* cysts, Giardia, and Chilomastic without causing any abdominal or intestinal disturbance. In a second paper Dr. Scott deals with the sizes of *E. histolytica* cysts among symptomless carriers in Jamaica. The cysts varied in size from 7 to 15 μ, but the average diameter lay between 11 and 12 μ. The curve obtained by plotting the size of the cysts against the number examined was found to be bimodal, the first mode appearing between 7.5 and 8 μ and the second between 12 and 13 μ. A case is reported giving instances of the change of size of *E. histolytica* cysts in the same patient, a fact which previous workers have not observed and one which has a practical bearing on the question of the differentiation of strains by the size of the cysts. With regard to the size of *E. coli* cysts, Dr. Scott shows in a third paper that the curves recording the size of *coli* cysts is also bimodal, with modes between 17 and 18 μ, and again between 19 and 20 μ. It is usually stated that the curve of *E. coli* is unimodal, with the mode between 16 and 17 μ. It would appear, therefore, that the cysts of the races of *E. coli* found in Jamaica are of a larger average diameter than those found elsewhere.

MEDICINE AND LAW.

The annual dinner of the Medico-Legal Society was held on December 14th, when Lord Justice Atkin presided, and the Lord Chief Justice, the Attorney-General, and the Presidents of the Medical Society of London and of the Law Society were the principal guests. Sir William Collins, in proposing "Medicine and Law," raised the delicate question as to which should have precedence. The two professions had developed side by side, and the first hint of their association was to be found in the code of Menes, when the law called medicine to its aid to secure that no corporal punishment should be administered to a woman with child. The methods of procedure of the two professions were fundamentally different. Medicine had

[1] *Annals of Tropical Medicine and Parasitology*, vol. xv., July 1921.

few of the uniformities in which law delighted, but was rich in hypotheses. The medical man rather distrusted the legal method, and was apt to hold with John Hunter that "Definitions are of all things most damnable," while the lawyer probably summed up the medical man as he left the witness-box, as Hume summed up the philosophy of Berkeley, "His case is unanswerable, but it fails to carry conviction." Sir William Collins hinted at the formation of an institute or faculty of forensic medicine under the aegis of the University of London. Mr. James Berry responded to the toast as President of the Medical Society of London, and in making play with the antithesis of the two professions told the story of the lawyer who remarked to a doctor, "In our professions we both of us have to do dirty work," and received the reply, "Yes; but, at any rate, after my dirty work I can always wash my hands." The Attorney-General, who spoke next, said that the lawyer could have replied that for his part he always came into court with clean hands, and that if he knew anything about his business he took care not to soil them. Sir Gordon Hewart added that to make a comparison between Law and Medicine was a little invidious, and he would find refuge in the example of the schoolboy who, when asked to say which was the greater general, Hannibal or Julius Caesar, replied that when it came to a comparison of their abilities and achievements the answer must be in the affirmative! The Lord Chief Justice, in a few words, proposed the toast of "The Medico-Legal Society," and said that anything which associated the medical profession with law was of great advantage, at all events to the law: the two were not in such antagonism as was sometimes suggested. Lord Justice Atkin contented himself with a survey of the work of the Medico-Legal Society, which, he said, was never in a more flourishing condition than now, and never had a larger roll of membership. Sir John Collie proposed "The Guests," and replies were made by the President of the Law Society and the Master of the Apothecaries' Company. The officers of the society were the recipients of many neat compliments from Mr. Travers Humphreys, who proposed their health.

SCHOOL HYGIENE FIFTY YEARS AGO.

THE recollections of a veteran in any service are always of interest, and the paper on school hygiene fifty years ago, by Dr. Clement Dukes, the doyen of the public school medical officers, which appears under the above title in the official organ of the Medical Officers of Schools Association,[1] will carry the reader back to his boyhood, and the recollection of what public school "sanitation" was like. As Dr. Dukes says, sanitary science in 1871 was in its infancy throughout the world, and in schools almost an unknown quantity; even where its existence was recognized it was largely disregarded in practice. But when the time arrived for him to relinquish the seals of office, he was able to inform the governing body of Rugby School that every single reform for which he had striven connected with the school had been attained, with the sole exception of sick-beds commensurate in number with the increased numbers in the school, and these were there and then conceded. In his view, "the secret of progress is definitely to ascertain what is absolutely required, and then go for it for all one is worth. Convince oneself, and convert those concerned; but the difficulties are that it usually involves so much and so many." He adds that he believes there will now be found in the public and preparatory schools, at all events in the English-speaking races, the soundest sanitary conditions which can at present be attained. In considering education arrangements, he discusses, the hours of work, and insists that for the very young they should be few, and the hours of sleep ample. He gives the following scale of the daily amount of sleep necessary at various ages: At birth twenty-three hours, at 1 year twenty, at 2 years eighteen, at 3 years sixteen, decreasing thereafter by one hour a year until the age of 6, and after that by half an hour a year until at 19 the hours of sleep number nine. At all other ages he considers eight hours a night enough. He considers that there is still a fault in the deficiency of supply of fat in the general dietary scales: "Few children will eat the fat of butchers' meat, but they love suet puddings of all kinds." Parents, he urges, should get into touch with the schools, as much good may be gained thereby. Comparing the advantages and disadvantages of day schools and boarding schools, he concludes that the boarding school is the best place for those children who have the misfortune to be reared in homes where the discipline is slack. "And the meaning of discipline," he says, "is training, not punishment!" Dr. Dukes objects to the easy-going policy in vogue, which says, "He will turn out all right in the end." And adds that "He will—if he is made to!" He concludes his interesting paper with a note of admiration for the work of Sir Robert Baden-Powell, Chief Scout-Master and founder of the Boy Scouts and Girl Guides.

[1] *School Hygiene*, November, 1921.

SMOKE ABATEMENT.

THE injurious effect of a smoke-laden atmosphere both upon health and property has long been admitted. Dr. W. A. Brend in a recent paper[1] has expressed the view that a smoky and dusty atmosphere far transcends all other influences as a cause of infant mortality, and other observers have shown that there is a distinct relation between smoke polluted air and ill health. A parliamentary committee reported in 1919 on the practicability of smoke prevention. In the past hundred years many special inquiries into the subject have been held, and there has been a great deal of legislation relating to it. A bill introduced in the House of Lords in 1914 by Lord Newton was withdrawn on second reading upon the promise of the Government that a Departmental Committee should be appointed to examine the present state of the law and its administration and to advise as to further legislation. The President of the Local Government Board, Sir (then Mr.) Herbert Samuel, appointed a committee, but its labours were abandoned during the war, and it was reconstituted by Dr. Addison in January, 1920, with Lord Newton as chairman. An interim report was issued six months later and the final report of the committee has just been published. It is clearly shown in these reports that the existing laws with respect to smoke nuisances are not being administered as they should be. The reason for this is not far to seek, for the administration is in the hands of the local sanitary authorities, whose members include many delinquent manufacturers. There is also a widespread delusion "that the presence of smoke implies prosperity and that the blacker and grimier a district the more flourishing are its circumstances." The Alkali Acts are administered by Government inspectors, and it is evidently the opinion of the committee that the smoke abatement laws should be similarly administered, though no such definite recommendation is made, and the less drastic proposal is put forward that the central authority should be empowered to act only in default of the local authority neglecting the duty placed upon it of enforcing the law. Other recommendations are that, while minor local authorities should retain the power to take proceedings, the duty of administering the law with regard to the pollution of air by smoke should be in the hands exclusively of the county borough councils and the county councils. As regards domestic smoke it is recommended that the central housing authority, unless such a course is found to be impracticable, should decline to sanction any housing scheme unless specific provision is

[1] *Health and the State*, p. 87.

made for the adoption of smokeless methods for supplying the required heat. It is suggested that local authorities should be able to make by-laws requiring the provision of smokeless heating arrangements in newly erected hotels, clubs, offices, and similar buildings, and that the Government should encourage the co-ordination and extension of research into the problems of domestic heating generally. It is well known that in some towns a very considerable profit is made by municipalities in connexion with gas and electricity undertakings. This is deprecated by the committee, who recommend that every facility and encouragement should be given to increase and cheapen the supply of gas and electricity.

JEJUNO-COLIC FISTULAS AFTER GASTRO-ENTEROSTOMY.

GASTRO-ENTEROSTOMY, by altering the physiological conditions in the alimentary canal, created an entirely new morbid lesion—the peptic jejunal ulcer—which seems to have been first described by Braun in 1899; it has been variously estimated as occurring in 1 to 4 per cent. of all gastro-enterostomies. This sequence of events has naturally been carefully studied by surgeons, among others Mr. H. J. Paterson (89 cases in 1920) and Mr. Garnett Wright (165 cases in 1918), and was graphically described by the title of Sir John Bland-Sutton's Hunterian lecture in 1916, "Ulcers new and old, jejunal for duodenal ulcer." The jejunal ulcer may open into the colon, and a year and a half ago Dr. Charles Bolton and Mr. Wilfred Trotter published in our columns clinical observations based on 4 cases under their observation and 27 collected from literature (vide BRITISH MEDICAL JOURNAL, 1920, i, 757). This subject has recently been further elaborated by Dr. Georges Loewy,[1] of the surgical clinic of the Salpêtrière; by means of extensive research into the literature he has collected 59 cases, and by the addition of 17 previously unpublished examples, has brought the number of jejuno-colic fistulas after gastro-enterostomy up to 76; as the recorded examples of a peptic jejunal ulcer amount to about 400, the incidence of a jejuno-colic fistula is estimated at 19 per cent. The peptic jejunal ulcer is recognized to be much commoner in males than in females, probably because men are less amenable to dietetic restrictions; in some of the statistics three-quarters of the patients are males; but even so, it is rather remarkable that all Loewy's 76 jejuno-colic fistulas were in males. In all the gastro-enterostomy was retro-colic. This fistula is generally between the efferent loop of the jejunum, close and opposite to the gastro-enterostomy orifice and the transverse colon, which is often narrowed at this point. The efferent loop of the jejunum shows dilatation, congestion, and thickening, due to regurgitation of faeces and gas from the colon, in a fashion analogous to the dilatation of the ileum usually present after ileo-sigmoidostomy. Loewy discusses the pathogeny of peptic jejunal ulcer at some length under the three headings of (*a*) errors in surgical technique and post-operative feeding, (*b*) physiological factors, hyperacidity, and the peptic effect of the gastric juice, and (*c*) pathogenic factors, such as circulatory and nervous disturbance and infection, syphilis having recently been thought to be a probable factor, particularly in young subjects; but, although this monograph is rather remarkable for the attention paid to British writers, there is no reference to Dr. A. F. Hurst's view of the existence of a special type of stomach or duodenum inherently prone to undergo ulceration under conditions that would be ineffective in ordinary persons. Loewy concludes that no one factor, such as the use of unabsorbable ligatures, is the responsible cause of peptic ulcer, but that a combination of factors is necessary. The symptoms of jejunal peptic ulcer usually precede those of the colic fistula, which consist of diarrhoea, foul eructations and vomiting, wasting and loss of strength. Diagnosis is particularly difficult when the symptoms of jejuno-colic fistula come on without previous evidence of a peptic jejunal ulcer, and in such cases a bismuth enema followed by an *x*-ray examination is of the greatest help. The outlook is very bad indeed unless operation is adopted, and even then the tendency to recurrence makes the outlook anxious.

[1] *Les Fistules jejuno-coliques par ulcère perforant après gastro-entérostomie.* Par le Docteur Georges Loewy. Travail de la Clinique Chirurgicale de la Salpêtrière, Professeur A. Gosset. Imprimerie L. Desfosses, Paris, 1921. (Pp. 225, 5 plates, 11 figures.)

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Special Session.

THE special session to enable the Government to submit the articles of the Irish agreement for the approval of Lords and Commons was opened in State by the King on Wednesday, December 14th, and was continued until Monday, December 19th, when Parliament was prorogued by Royal Commission until January 31st. Debates of historic interest took place, and on December 16th there were divisions in each House on the address in reply to His Majesty's speech. An amendment, which had been moved in the Commons, was defeated by 401 votes to 58, and that moved in the Lords was defeated by 160 votes to 47. In each place the address—declaratory for ratification—was then agreed to. His Majesty, in proroguing, intimated that he had "received with deep satisfaction" the assurance of approval of the articles of the agreement and the readiness of Parliament to give effect to the provisions. Only the Irish business was taken; but the usual opportunity for questions to various matters about other subjects was available.

Treatment Allowances.—Mr. J. Davison asked, on December 16th, how many men had been struck off treatment allowances in consequence of the circular of the Ministry dealing with the supervision of out-patient treatment; how many of those struck off allowances were certified by the Ministry of Pensions as fit for any work; how many were ordered to continue treatment without allowances; and whether, in view of the posters issued by the Ministry of Pensions in 1919 intimating to disabled men that during treatment while unable to earn they would be given adequate allowances for the support of themselves and their families, this practice would be reconsidered. Mr. Macpherson regretted that the figures sought were not available. He pointed out, however, that it was not the duty of the medical officers of the Ministry to certify men as fit for work, and the treatment allowances could only be authorized under the terms of the Royal Warrant when in consequence of the treatment provided the man was rendered unable to provide for his own support and that of his family. This was not a new principle, and he was not prepared to recommend any amendment of the Warrant in this respect.

Indian Opium Trade.—In reply to Mr. Gilbert, on December 16th, Colonel Gibb (for the Secretary for India) stated that the total area under poppy cultivation in British India amounted to 156,435 acres in the year 1919–20, and 9,823 chests of opium were exported in that year. The countries which imported this opium were the Straits Settlements, Dutch East Indies, Siam, French Indo-China, Japan, United Kingdom, Hong Kong, British North Borneo, Ceylon, Mauritius, and Fiji Islands. The Minister was not in a position to state how much of the raw opium exported from India to other countries was there converted into prepared opium for smoking.

Russian Famine Relief.—Replying to Mr. A. Williams, on December 16th, Mr. Chamberlain said the Government was fully alive to the serious nature of the famine in Russia. Parliament had voted a sum of £100,000, representing the present value of Government stores, chiefly medical, to be placed at the disposal of the Red Cross Society for the relief of famine in Russia; the original value of these stores was £250,000.

PROFESSOR H. WINTZ has issued a notice stating that the women's clinic of the University of Erlangen, which has hitherto always been open to visitors, is closed for the present. The clinic is being reorganized, alterations made, and new installations introduced. He hopes to open the clinic next year by a course of post-graduate lectures.

A DUTCH pharmacist, Dr. H. Baljet of Arnheim, has been awarded the Davy prize by the University of Geneva for an essay on the dosage of digitalis.

England and Wales.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

A MEETING of the President and General Council of King Edward's Hospital Fund for London for the purpose of awarding grants to the hospitals, convalescent homes, and sanatoriums for the present year was held on December 15th, with Viscount Finlay in the chair. Lord Revelstoke (the honorary treasurer) announced that the amount received for general purposes to December 3rd, 1921, was £221,326. This exceeded the total indicated in the estimate laid down before the Council in November, the increase being due to the action of King George's Fund for Sailors in again providing the amount of the grant of £5,000 to the Seamen's (Dreadnought) Hospital. Last year they had been compelled to draw on reserves to complete the amount required for the ordinary distribution. This year he was glad to say that they were in a more fortunate position. For instance, the legacies received during the last eleven months amounted to £74,000, as against £18,000 in 1920. The Council had decided to distribute a portion of these additional receipts and to keep a portion in reserve, thus effecting a reasonable compromise between their endeavour to afford every possible assistance to the hospitals during this year, and their equal desire to maintain a regular distribution as a stabilizing influence and element in their finance. He had received the following communication from Lady Mount Stephen:

"I have been allowed to tell you by the executors that my husband has left the residue of his fortune to King Edward's Hospital Fund. It is, I believe, practically nearly the whole of his fortune, for the legacies, etc., in proportion, do not amount to anything of importance. Would you, as Treasurer of the King's Fund, make this known to the Council?"

This communication reached them at a moment when their finances were in urgent need of help, and the capital account had been depleted by the extraordinary calls made upon it during the past eighteen months. Several of them were that day mourning the loss of a very dear personal friend; and every member of the Council, and, indeed, every member of the community who might be interested in hospital matters, would deplore the loss of a benefactor who, imposing in his modesty and reserve, was really remarkable for an almost unique breadth and generosity of character.

Sir William Collins, in making the annual statement on behalf of the League of Mercy, said that the meeting of the Council of the League would not be held until the next day, but the League would certainly be in a position to make a contribution of £14,000, possibly more, making a total from its foundation of £323,034 to the voluntary hospitals of London, through the King Edward's Fund, and including extra-metropolitan hospitals, £360,429.

The amount placed at the disposal of the Distribution Committee for allocation amongst hospitals at the present distribution was £210,000. The amount distributed last year at the ordinary distribution was £190,000, apart from the emergency distribution of £250,000 made by the Fund in July, 1920, out of its accumulated funds, and the special distribution of £250,000, which was entrusted to the Fund by the British Red Cross Society and the Order of St. John of Jerusalem for distribution on their behalf in aid of schemes of extension or improvement at hospitals able and willing to treat ex-service men.

The number of hospitals applying this year was 110, as against 108 in 1920. The Alexandra Hospital had moved out of the London area, the Royal Chest Hospital was amalgamated with the Royal Northern Hospital (late Great Northern Central Hospital), and applications had been received from the Evelina Hospital, the Metropolitan Ear, Nose and Throat Hospital, the Roll of Honour Hospital, and St. Bartholomew's Hospital. The total amount of the grants recommended in aid of schemes of capital expenditure was reduced from £36,300 last year to £11,575 this year. The total grants to maintenance amounted to £198,425, an increase of £44,725 over the corresponding total at the ordinary distribution last year.

The statistical report showed that the increase in cost of working still continued, the expenditure of the London hospitals in 1920 being 135 per cent. more than in 1913, whereas their income had increased by only about 66 per cent. Lord Cave's report showed that the aggregate increases in expenditure in London, where comparative statistics of cost of working were circulated by the King's Fund, were considerably smaller than the aggregate increases at the provincial hospitals.

UNIVERSITY COLLEGE OF SOUTH WALES.

The preliminary list of subscriptions to the appeals by the University College of South Wales, which in total amount to £250,000, for the provision of additional buildings and laboratory equipment and for the adequate remuneration of the staff, amounts to £76,300. The subscriptions include £50,000 and £20,000 respectively from Lord Glanely and Mr. D. R. Llewellyn, President and Treasurer of the College. Messrs. Morgan, Wakley and Co. have contributed £2,100, and £1,050 each have been subscribed by Sir J. Wyndham Benyon, Sir Herbert Cory, Mr. Daniel Ratcliffe, and the executors of the late Mr. Richard Beaumont Thomas.

BIRMINGHAM MEDICAL BENEVOLENT SOCIETY.

To commemorate the centenary of the Birmingham Medical Benevolent Society, which was founded on November 27th, 1821, a dinner was held at the Queen's Hotel, Birmingham, on November 25th, when the President, Mr. George Heaton, and fifty-two members and guests attended. The object of the society is to relieve indigent widows and children of members of the society, and also members who have themselves fallen into necessitous circumstances. The society has during the hundred years of its existence been able to distribute a sum approximating £35,000. In several cases the total amount of grants has exceeded £1,000, and at present £775 is granted annually to three practitioners and twenty-three widows and children of deceased members. The chief guest of the evening was Mr. Neville Chamberlain, M.P., who, in an able speech, proposed the toast of the society, which was replied to by the President and the Senior Treasurer, Mr. F. Marsh. The latter, in his reply, made an appeal for a larger membership to enable the society to make more liberal grants to deserving cases. Speeches were also made by the Lord Mayor of Birmingham, Sir Edward Malins, Dr. James Neal, Bishop Hamilton Baynes, and Dr. H. G. Dain, and a most successful and pleasant evening was spent. Particulars concerning membership of the society, and forms of application, may be obtained from the honorary secretary, Dr. L. G. Parsons, 52, Newhall Street, Birmingham. Any registered medical practitioner, male or female, regularly practising within fifty miles of Birmingham, is eligible as a member of the society. The subscription is one guinea, payable annually for twenty-one years; or the whole may be compounded by the payment of one sum of 16 guineas.

VETERINARY AND HUMAN MEDICINE.

Professor Share Jones, of Liverpool University, speaking at Exeter on December 8th, said that the progress of veterinary science in this country had been retarded and its real mission obscured by the popular view that it consisted solely in the doctoring of sick animals, and in consequence it had become associated also entirely with the Ministry of Agriculture. The result was that its work was generally assessed at live-stock value, but nothing could be more fallacious; the work had a much more far-reaching effect on the nation's welfare. Lord Haldane's Royal Commission on University Education, in 1918, reported that the modern veterinary surgeon should pass through an exacting programme of education and a course of training as specialist as thorough as the student of human medicine; it held, further, that the future development of veterinary medicine depended upon its adoption of the methods of dealing with disease that had been worked out for human pathology. The Commission considered that research in animal disease must of necessity be associated with research in human disease, and that a department dealing with animal disease had become as necessary to a school of investigation in human medicine as the association with human pathology was to the investigation in animal disease. Obviously the proper Ministry to take charge of veterinary science was the Ministry of Health. It was absurd that rabies in animals, for instance, should be dealt with by the Ministry of Agriculture and the same disease, hydrophobia, in man, by the Ministry of Health.

Scotland.

GLASGOW VICTORIA INFIRMARY.

THERE has just been issued the thirty-fourth annual report of the work of Glasgow Victoria Infirmary, its dispensaries, and its convalescent home at Largs. At the Infirmary 4,348 in-patients were treated, 280 of whom remained in hospital at the close of the financial year. The average residence of patients was twenty-five days, compared with 25.2 days for the previous year, and the cost per patient was £10 9s. 3d., against £10 4s. 3d. At Bellahouston Dispensary 24,560 out-patients attended, and at the convalescent home 498 patients were treated. The total ordinary income of the Infirmary was £41,904, and the total expenditure £49,161, the deficiency of £7,256 contrasting favourably, however, with the deficiency of the previous year of over £11,000.

QUEEN MARY NURSING HOME, EDINBURGH.

Since the opening of the Queen Mary Nursing Home, Edinburgh, in 1913, the demand for admission has exceeded the accommodation available. The adjoining house has therefore recently been purchased and connected with the original building, and with this addition sixty beds will be available for medical and surgical cases. The Queen Mary Nursing Home was opened as a nursing home for persons with limited means who were unable to meet the charges of private homes and did not wish to go into a charitable institution. The initial cost of construction and equipment was defrayed by public subscription, and the home is self-supporting, the charges being arranged so that it is run simply to pay expenses. It is managed by a committee, three members of which are appointed by the Edinburgh Branch of the British Medical Association, and Sir Robert Usher is chairman.

Ireland.

THE DUBLIN PHARMACOPOEIAS.

ON St. Luke's Day, 1920, the Registrar, Dr. T. Percy C. Kirkpatrick, the author of *The History of the Medical Teaching in Trinity College, Dublin, and of the School of Physic in Ireland*, submitted a life of "Edward Hill, M.D. (1741–1830), Regius Professor of Medicine in the University of Dublin," to the meeting of the College, and on the same day this year he gave an account of "The Dublin Pharmacopoeias," thus continuing the history of the college and showing its influence on medicine in Ireland. By the Medical Act of 1858 the General Council of Medical Education and Registration of the United Kingdom was empowered to publish a pharmacopoeia for the United Kingdom to supersede those previously published for England, Scotland, and Ireland by their respective Royal Colleges of Physicians. The first edition of the *British Pharmacopoeia* collated those of London, Edinburgh, and Dublin, and appeared in 1864. As regards these separate pharmacopoeias, the Royal College of Physicians of London came first into the field by bringing out on May 7th, 1618, the *London Pharmacopoeia*, a small folio of 164 pages, which became authoritative in England and in the town of Berwick-on Tweed, and in 1699 the Edinburgh College followed suit by publishing a pharmacopoeia for Scotland; on June 5th, 1721, the President and Fellows of the King and Queen's College of Physicians began to consider seriously "the making of a dispensatory for this City (Dublin) and Kingdom," but the first Dublin Pharmacopoeia did not appear until 1806, the delays which occurred being fully detailed by Dr. Kirkpatrick. Such a work was obviously much needed, for in the charter granted to the Irish College by William and Mary in 1692 the President and Fellows were given authority to enter the houses or shops of apothecaries and druggists to examine the medicines there, which, if found "to be defective, corrupted, or not meet or convenient to be used in medicine for the health of man's body," were to be "burned or otherwise destroyed." But as neither a standard of the purity of the drugs, nor of the method of manufacturing compound medicine, had been laid down, the difficulty in deciding fairly on the drugs must have rendered the inspection of little use. In 1721, pending the issue of the Dublin Pharmacopoeia, the Irish College recommended the use of the London Pharmacopoeia, but it did not make it official as it was in England, though it remained as the standard in Ireland for eighty years. The first Dublin Pharmacopoeia was an octavo of 297 pages in Latin, and though only 500 copies were printed for the use of the whole of Ireland, it was not until 1826 that a revised edition saw the light; this work was severely criticized by Michael Donovan (1791–1876), whose name has been preserved in the solution of iodide of arsenic and mercury. On November 1st, 1830, the President and Fellows received a letter from Thomas Watson, M.D., Secretary of the Committee appointed by the Royal College of Physicians of London for the purpose of revising the pharmacopoeia of that College, asking if they would join with the London and Edinburgh Colleges in the formation of a general pharmacopoeia for the United Kingdom. This proposition, which anticipated the action of the Medical Act of 1858, was politely declined. The last edition of the Dublin Pharmacopoeia, brought out in 1850 by Professor John Apjohn, was in English, and was much improved by the adoption of the system of weights and measures advocated by Donovan in his criticism of the previous issue.

Correspondence.

HOSPITALS IN THE TERRITORIAL FORCE.

SIR,—Your article (December 10th, p. 997) on the correspondence between the Senate of the University of London and the War Office in reference to the reorganization of Territorial General Hospitals is the first intimation to many of your readers that this matter is receiving attention.

Two fundamental changes appear to be contemplated by the War Office—namely, the abolition of the *à la suite* system and the requirement that the whole of the personnel must be medically fit for general service and must take the obligation to serve overseas. With these two changes no one, I imagine, will be found to quarrel; certainly no Territorial who served overseas in the late war.

The Territorial General Hospitals as originally planned were intended as a provision against a possible invasion and military operations in the home country. The danger of this does not for the present exist. The Territorial Army is therefore no longer a "Home Defence Force," in the sense that it will stay at home to defend our homes. It is not surprising that the scheme for the reconstructed Territorial Army should include General Hospitals ready to serve overseas when mobilization of that Army becomes necessary. This is a contingency which we all hope may not arise, but, if it should, the medical services must be better prepared than they were in August, 1914. It is with this object in view no doubt that the War Office has laid down the conditions quoted in your article for eligibility for appointment to the General Hospital List. These conditions include the innovation that no young medical officer can be placed on the General Hospital List unless he has seen active service (either overseas or at home) or has completed three and a half years' service in what for convenience may be termed a "field unit." The intention of the War Office is evident. Some measure of military training is regarded as the essential complement to professional skill.

My experience persuades me that the policy of the War Office is sound. The principle that an army doctor shall be an officer as well as a doctor does not inevitably lead to his becoming an administrative automaton, hide-bound with red tape. The officer who was apt, in the late war, to lay so much blame upon red tape was as often as not an untrained civilian who, from ignorance of the workings of the machine, was unable to make his bit of it work. It was not always red tape that clogged the wheels; in the medical service it was frequently the man who said, "I'm a doctor, and I can't be bothered with all this army nonsense."

In this detail the proposals of the War Office should be supported. There were quite enough doctors taken from civilian life who showed themselves able to add to high professional attainments a mastery of the duties of an officer to justify the War Office in asking for proof of this combination in officers on the General Hospital List. At the

same time, the "authorities" need an occasional reminder that among the minor horrors of the war were a certain number of officers who attained high rank as administrators whose sole claim to be so regarded was ignorance of and indifference to professional knowledge of any kind. The best administrative officers could not tolerate anything less than the best professional work in their units.

If as a profession we support the War Office proposals it must be on terms. The War Office asks that the men who staff the Territorial General Hospitals shall have some training in the administration of the medical service. We may agree provided some guarantee is given that when a medical officer has added this training to his other qualifications, promotion to higher rank and to higher pay shall not be confined to the specialist in administration.

The last paragraph of the War Office letter promises a great reform—namely, the formation of hospitals for home service only, to be staffed by officers who, by reason of age or medical category, are not eligible for service overseas.—I am, etc.,

Clifton, Bristol, Dec. 14th. J. A. NIXON.

SIR,—The correspondence between the Army Medical Department and the Senate of the University of London raises the whole question of the future of the Territorial General Hospitals. Perhaps the experience of one who served for five years in one of these institutions during the war may have some bearing on their organization in the future and the continuance or non-continuance of the *à la suite* system.

The plan of Lord Haldane and Sir Alfred Keogh of securing the services of the consultant and specialist members of the profession for home service was, on the whole, admirably conceived, and certainly resulted in the best medical and surgical skill in the country being at the disposal of the sick and wounded soldier. That is beyond controversy. Unfortunately there were gaps in the organization which were never properly filled up from first to last.

1. Almost from the beginning the administrators were given, or arrogated to themselves, the position of commanding officer, with absolute control, not only of the administrative work and of the non-medical personnel, but of the distinguished men who formed the medical staff. There was no provision in the organization to ensure that the officer holding that position should be a man of previous hospital experience.

2. There was no provision for a medical board on which the officers who really did the medical and surgical work should sit to have an effective voice on the professional work of the hospital. They were merely officers under the military orders of the administrator.

3. There was no provision for resident house-surgeons to carry out the orders of the medical officers.

The system by which our great civil hospitals is carried on is the result of hundreds of years' experience. A medical board and the existence of a resident staff is the very essence of it. It was a mistake to ignore that experience completely in setting up the Territorial General Hospitals. One evil result was the absurd system by which highly qualified consultants spent days of valuable time in the routine work of an "orderly officer" in merely signing hundreds of letters and forms issuing from the office of the C.O. The letters themselves were often written by a sergeant-major or even less highly placed N.C.O., but the mechanical work of attaching a signature had to be done by an officer who was a specialist or consultant, to the waste of his time and energy and the sacrifice of his own proper work, which suffered grievously thereby.

The fact that one man was a lieutenant-colonel or a major and that another was only a captain depended not on the professional status of the officer, but on the accident of original appointment; yet to the regular D.D.M.S. rank was everything. One of these gentlemen, telephoning to the hospital one day, was informed that there was nobody above the rank of captain there at the moment; he declined even to speak on the telephone to any officer not of field rank! though the captain on duty as orderly officer was a physician on the staff of the great civil hospital of the town and a man of the highest professional status. The duty of the subordinate officer was not to suggest but to obey. All intelligence was presumed to centre in the higher ranks, although the D.D.M.S. might be a man of very small professional experience who had never even held a resident appointment in a hospital.

The professional staff of the general hospitals was absurdly excessive if only they were called on to do their proper work and not turned into clerks or house-surgeons. If the Territorial General Hospitals had been demilitarized, if the officers had been styled physicians and surgeons and specialists instead of lieutenant-colonels and majors and captains—if, that is, these institutions had been run on the lines of the great civil hospitals, they would have been only half as expensive and twice as efficient. The red tape, the endless correspondence, the failure to secure proper equipment, the want of resident house-surgeons, the friction and the ill feeling, all these resulted from the attempt to run great hospitals on the lines of the antiquated Army Medical Service.

The scheme the Army Medical Department has now submitted reeks of all the evils of purely military control of what are not, in essence, military units at all. If Territorial General Hospitals are again to be set up they should be under Territorial control. There should be a system of medical boards throughout; both a central medical board at the War Office, and medical boards at each hospital to direct the real professional work of the hospital, and with real power. A proper system of house-surgeons should be instituted. The work of the administrator should be limited to administrative and military work only, though he should, of course, be a member *ex officio* of the medical board. The clerical work should be done by clerks, and not by doctors. Responsibility should be decentralized and the control of the Regular D.D.M.S. limited.

It would be better were rank and uniform among the professional staff abolished, and that they should be appointed according to their professional qualifications and seniority, each to do the work for which he is best suited. This, however, is perhaps too much to expect the Army Medical Department to consent to, and if the hospital goes abroad military status becomes necessary. But is there any reason why the home hospitals should be sent abroad? Is there no room for a scheme by which the home hospitals should be, as before, served by the best medical and surgical men in the country, although they may be unfit, by age or other reason, to serve out of England? It has been said that the *à la suite* system failed; if it did it was because of the manner in which the medical officers' time was wasted and their initiative crushed. That they did their work with great enthusiasm and devotion, in the face of every obstacle and discouragement, is undeniable. They have received scant recognition: neither promotion nor decoration came their way in the main. But it was the civilian doctors who started every improvement in the treatment of the soldier, and that is the object of general hospitals. It is to be hoped that the British Medical Association will insist on having a say on this important matter.—I am, etc.,

December 14th. LATE CAPT. R.A.M.C. *à la suite*.

HOSPITAL POLICY.

SIR,—Hospital policy is by agreement a matter for the calmest deliberation. It has been so treated in all professional meetings at which I have heard it discussed, and so also in most of the correspondence thereon in the JOURNAL. But Dr. Garratt's letter in the issue of December 17th, p. 1056, is a lamentable exception to the rule. Either by reason of the intensity of his feelings, or from forgetfulness, he allows himself to distort facts in a way that would be scarcely tolerable in the perfervid oratory of a political partisan.

He criticizes the policy of the Association relative to the formation of a hospital "Staff Fund," for he says that this

> "in the opinion of the able Cave Committee, which held twenty-eight meetings and examined ninety-three expert witnesses, many being eminent medical men 'would endanger the future of the voluntary hospitals.' Indeed, this Committee quoted with approval the opinion that 'the bottom would drop out of the voluntary system.'"

On turning to the Cave report, par. 50, which is the sole reference to the staff fund, we find, after a brief description of the purpose and method of such a fund, a statement that the practice is supported by the British Medical Association respecting patients sent to a hospital by a

public authority; and then: "On the other hand, the honorary staffs of some hospitals are unwilling to share in such a fund: and two distinguished physicians expressed the view that if the medical staffs came to be subsidized to any substantial extent, 'the bottom would drop out of the voluntary system.'"

The opinion of the committee itself is expressed thus:

"If the system of carrying a percentage to a staff fund is confined to cases where the full cost of maintenance and treatment is paid by or on behalf of the patient, not much objection can, we think, be taken to it; but any extension of the practice beyond those limits appears to us to endanger the future of the voluntary hospitals."

The mildness of the committee's opinion, and the slenderness of the evidence upon which they came to their conclusion, is in striking contrast with the false emphasis which Dr. Garratt puts upon it. Dr. Garratt's summaries of the proceedings of the Conference of the Staffs of Voluntary Hospitals held on December 21st, 1920, and of the Annual Representative Meeting at Newcastle, are as distorted as his citation of the Cave Committee's report.

Setting aside his "facts," the real reply to his argument lies in the definition of a "voluntary" hospital. On that point there have been many misapprehensions. A voluntary hospital is one that is under voluntary and independent management, as opposed to a State or municipal hospital, which is managed by the representatives of the rate or tax payers. That is the sole test of a voluntary hospital. Whether the patients pay or do not pay, or whether the staff is paid or is not paid is immaterial, and in no way affects the "voluntary" status of a hospital if its management is independent and voluntary. As a matter of fact, the "two distinguished physicians" who expressed their view on the staff fund to Lord Cave's Committee, which is quoted above, belonged to a voluntary hospital which has paid the members of its staff honoraria for many years, yet that hospital remains voluntary.

So long as a voluntary hospital is a charity members of our profession will be as fully prepared to do philanthropic work in at least equal proportion to other sections of the community; but in so far as a hospital becomes a place for the reception of paying patients, whether they pay in whole or in part, it is inevitable that the demand of the medical staffs that they should receive remuneration for any such work, if only in some cases by a token payment, will become more insistent throughout the country.—I am, etc.,

N. BISHOP HARMAN.
London, W., Dec. 16th. Chairman of the Hospitals Committee.

THE CAUSES AND PREVENTION OF BLINDNESS.

SIR,—I wish to make a little neurological comment on Mr. Bishop Harman's admirable paper on the cause and prevention of blindness (November 5th, p. 727). That I like to do so will be evident to anyone who has read Snellen's and my paper in the *Nederlandsche Tijdschr. v. Geneeskunde*, 1909, ii, No. 15, being a report of the examination of 100 inmates of the school for blind children in Amsterdam. In more than 20 per cent. we found either certain or probable brain disease spontaneously (or too late operatively) cured. It seems to me that in the National Institute of the Blind the 7 cases of Group II, the 105 cases of optic atrophy of the school children, and the 55 private ditto cases should be equally examined from our point of view by a competent neuro-surgeon, or a neurologist in combination with an ophthalmologist. It will then be interesting to speculate as to in what percentage of these unfortunates a palliative operation in time might have prevented the complete blindness, for it was one of our results that this percentage was a very great one if we took the really completely blind cases apart.—I am, etc.,

Amsterdam, Nov. 29th. L. J. J. MUSKENS.

PERFORATION OF THE NASAL SEPTUM IN COCAINE TAKERS.

SIR,—Dr. Crookshank (p. 1055) takes exception to my logic because I stated that perforation of the nasal septum was common in people who had no access to cocaine, and that its presence in cocaine takers must not be regarded in the relationship of cause and effect. I venture to think, however, that most rhinologists will agree with my point of view.

Dr. Crookshank's original letter was written apropos of a case under his care which he diagnosed as a "cocaine taker" because the latter had a perforated nasal septum, although "other competent medical men" had already labelled the patient "syphilitic." Logically, this patient might have been called chrome worker, granite cutter, metal grinder, or rag sorter, if he had not revealed his occupation or secret vice.

The question is of considerable interest, but the dangers attached to laying much emphasis on septal perforation as diagnostic of the cocaine habit can be very serious. As Mr. Tilley has very ably placed the necessary note of warning before the inexperienced reader, I merely wish to endorse what he says.—I am, etc.,

London, W., Dec. 16th. JOHN F. O'MALLEY, F.R.C.S.

"STIMULANTS."

SIR,—Dr. E. Weatherhead takes me to task for referring to alcohol as a stimulant. He upbraids me for perpetuating what he regards as a popular fallacy which it may take centuries "to exorcise from the mind of the general public." He thinks one might have expected better things from me, for he says it has been clearly proved "that alcohol is a narcotic and *not* a stimulant."

As a member of the British Society for the Study of Inebriety, of which I was for several years president, I have heard the action of alcohol and alcoholic drinks discussed almost *ad nauseam*, and I have listened to some wise and much foolish talk on the subject. I have even heard a learned professor of therapeutics assert that new whisky has just the same effect upon the human organism as the matured article.

The fact is, alcoholic drinks affect the body in many different ways, according to the nature and quantity of the beverage imbibed, and the age, constitution, and state of health of the imbiber. To state categorically that alcohol in the form of beer, spirits, or wine is a narcotic is assuredly not to state the whole truth. That alcohol in one or other of these forms may act as a narcotic is certain; that it may, as Sir Samuel Wilks was wont to insist, act as a sedative is also certain; and it is equally certain that under some conditions it may act as a temporary reviver or stimulant.

I do not say that alcohol always acts as a stimulant, in perfectly sound health, for instance. In the majority of cases it does not enhance the work of brain or muscle. Nor have I any great faith in alcohol as a therapeutic agent, and I even believe that the health of the community would be improved if we lost the art of brewing this subtle essence; but this does not blind me to the fact—the glaring fact—that under certain conditions alcoholic drinks are stimulating.

Does Dr. Weatherhead seriously maintain that in states of exhaustion alcohol may not have a temporary reviving—that is, stimulating—effect; that, for instance, an aged subject slowly and painfully recovering from a severe attack of influenza may not sometimes be temporarily revived by a glass of champagne? Or, again, that a man habitually consuming two bottles of whisky daily is not similarly revived when, after several hours of abstinence, he has recourse to the bottle?—I am, etc.,

London, W., Dec. 12th. HARRY CAMPBELL.

AMPUTATION OF MANGLED LIMBS DURING COLLAPSE.

SIR,—This letter has been prompted by the report of an accident in to-day's lay press; a report of an exactly similar case appeared about a year ago.

A man, aged 51, had both legs badly crushed in a motoring accident. He was carried three-quarters of a mile to a hospital. The report then goes on to say: "Immediately on Mr. K——'s arrival at the Cottage Hospital both legs were amputated at the thigh, but the injured man expired shortly after nine o'clock last evening"—that is, a few hours after the accident. The word "but" should read "and naturally."

Two explanations are given by those who make a practice of amputating while the patient is collapsed. One is, "Well, you see, the case was hopeless from the first," a statement which carries its own refutation, since, if the case was obviously hopeless, amputation was unjustifiable.

The second and more usual explanation is that the limb, being injured beyond possibility of repair, if not removed at once would certainly cause severe and fatal sepsis, with a probable reference to the risk of absorption of the products of disintegrated tissues (histamine, etc.) which, in the laboratory animal, are capable of producing a condition resembling that of shock.

The argument is fallacious, because the deferring of amputation until the collapse has passed off does not necessarily involve the occurrence of severe sepsis, nor is it certain that severe sepsis, even should it occur, must be fatal. The one certainty is that amputation during collapse obliterates any chance of survival which may still exist, and causes death.—I am, etc.,

Plymouth, Dec. 15th. C. HAMILTON WHITEFORD.

Obituary.

W. GORDON SANDERS, M.B.EDIN., M.D.MONTPELLIER, Cannes.

THE death of Dr. Gordon Sanders from pneumonia, at the comparatively early age of 56, will be deeply regretted by a wide circle of patients and friends. William Gordon Woodrow Sanders was born in Edinburgh in 1865, the eldest son of William Sanders, F.R.S., Professor of Pathology in the University of Edinburgh. Dr. Sanders's mother was Miss Georgina Wright of Norwich, whose sister Helen married Sir William Gairdner, K.C.B., F.R.S., Professor of Medicine in the University of Glasgow. Gordon Sanders was educated at Fettes College, and, taking up the family tradition, entered the medical school of the university. His academic career was distinguished, and he graduated with first class honours; he held resident appointments in the Royal Infirmary and the Royal Hospital for Sick Children. To be President of the Royal Medical Society is justly esteemed a distinction far above academic triumphs, and this honour came to Sanders. With such encouragements he started in practice as a physician in Edinburgh, becoming a Fellow of the College of Physicians in 1894, and physician to the Western Dispensary.

This promise of a brilliant career as a consulting physician was cut short by the development of pulmonary disease. With characteristic courage, Sanders at once proceeded to Montpellier, where he graduated in 1896, thus obtaining the right to practise in France. He then settled in Cannes, where professional success rapidly came to him. A general physician of wide knowledge and sound judgement, he gained the respect and affection of patients and colleagues alike. Sanders had early been attracted to the study of diseases of the heart. The new conceptions of cardiac diseases and the methods for their study and treatment originated by his friend Sir James Mackenzie were embraced by Sanders with enthusiasm. He contributed papers on cardio-pulmonary murmurs and congenital malformations of the heart to the medical journals. The scanty leisure available from a large practice and his untimely death have robbed medical literature of the fruits of the clinical experience of his later years. Sanders was a marked personality, wise, kindly, and endowed with a genial humour which was the delight of his friends. Dr. Sanders married Miss Georgina Frances Darnell. His eldest son held a commission in the Flying Corps throughout the war. His second son, an officer in the West Yorkshire Regiment, fell in 1918. His third son is a medical graduate of Edinburgh. They with his three daughters, one of whom is a member of the medical profession, are left to mourn his loss.

THE death occurred in Salisbury, Rhodesia, on October 27th, of Dr. HERBERT EDWARD HICK, who was chairman of the Mashonaland Division of the British Medical Association. Dr. Hick was born in Leeds, Yorkshire, and was educated at the Leeds Medical School, qualifying M.R.C.S.Eng. and L.R.C.P.Lond. in 1889. He commenced practice at Bradford, but soon left, with his family, for South Africa. He settled temporarily in Natal, but prior to the outbreak of the South African war he went to Rhodesia, and practised in Salisbury until 1903. He then left for the Transvaal, and settled at Volksrust, where he practised for nine years. During that time, in addition to his other duties, he was appointed medical officer of health, and for several years was a member of the town council. Dr. Hick returned to Salisbury in 1912, and actively associated himself with the social life and development of the town. He was appointed medical officer of health, and his devotion to duty was marked by his numerous activities to enhance the welfare of the community. In addition to an extensive practice and his duties as M.O.H., he was chairman of the Hospital Advisory Board, and was also a prominent Freemason. Dr. Hick was exceedingly well known throughout Rhodesia. Of a kindly nature and charming disposition, he won a host of friends wherever he went, and his death comes as a personal loss to a large section of the community. He leaves behind him his widow, two sons, and a daughter.

THE death of Dr. GREGORY PAUL JORDAN, which took place in London on December 4th, at the age of 64, removes one of the oldest and most popular residents of Hong Kong. Dr. Jordan graduated M.B., C.M. at Edinburgh University in 1880, and afterwards studied in Vienna and Paris, and at St. Thomas's Hospital, obtaining the diploma of M.R.C.S.Eng. in 1884. Proceeding to Hong Kong in the eighties, he was appointed colonial surgeon, and when that post was abolished became health officer of the port, an appointment he held until his death. With Sir Patrick Manson and Sir James Cantlie he was one of the founders of the old Hong Kong Medical College; he was consulting surgeon to the Alice Memorial Hospital, and during the war was surgeon-superintendent of police. Although advised to take a holiday some time ago, he remained at work and continued to act as vice-chancellor of Hong Kong University and professor of tropical diseases. Recently the degree of LL.D. was conferred upon him.

DR. GEORGE FREDERICK ROSSITER, who died recently at Weston-super-Mare, aged 69, had been in failing health for some years. He commenced his professional studies in 1868 at the Taunton and Somerset Hospital, and in 1870 entered St. Thomas's Hospital, where he had as a student a brilliant career, being awarded the Cheselden medal and the Treasurer's gold medal. He qualified with the diploma of M.R.C.S.Eng. in 1874, obtained the M.B.Lond. degree two years later, and was successively house-surgeon, house-physician, and resident accoucheur at St. Thomas's. In 1877 he commenced private practice at Weston-super-Mare, and three years later was elected honorary surgeon to the hospital there, where for the next twenty-five years he did excellent work. On his retirement from active practice in 1908, on account of ill health, he was appointed consulting surgeon. Dr. Rossiter was for nearly forty years a member of the British Medical Association, but he took little active part in public life. He was a man of high character, with a deep sympathy for others, and he did a multitude of good works in an unobtrusive manner. He is survived by his widow and four sons.

DR. THOMAS BROWNLIE MCKENDRICK died suddenly at Southport on November 30th, at the early age of 39. He received his medical education at Glasgow, and obtained the triple qualification in 1909; in 1918 he became an F.R.F.P.S.Glasg. He joined his brother in practice at Rochdale, and on the outbreak of the war he offered his services, being appointed to a commission in the R.A.M.C. in October, 1914. As a result of his war service he developed heart disease and was invalided to England in 1918. He was unable to resume work at Rochdale, and commenced the practice of electro-medical therapeutics at Southport. For the past three years he also held the appointment of neurologist to the Preston Board of the Ministry of Pensions. He had been a very keen angler all his life, and wrote several magazine articles on fly-fishing. He leaves a widow and two young children.

DR. HENRY CLARENCE WILLIAMS, who died at Boston, U.S.A., on November 8th, aged 66 years, was born in Manchester, England. He became a licentiate of the Royal College of Physicians, Edinburgh, in 1880, and a member of the College two years later. He went to America in 1887, and had practised in Boston for many years.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on December 17th the following medical degrees were conferred:

D.M.—W. E. Waller.
B.M.—M. E. Shaw, D. B. Pauw, C. C. H. Chavasse.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have passed both parts of the examination for the Diploma in Psychological Medicine and are entitled to receive the diploma:

M. A. Archdale, S. Kelly, G. A. Lilly, R. A. Noble, W. D. Wilkins.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on December 14th, the Vice-Chancellor (Sir Sydney Russell Wells, M.D.) being in the chair.

Mr. R. H. Aders Plimmer, D.Sc.Lond., was appointed as from January 1st, 1922, to the University Chair of Chemistry, tenable at St. Thomas's Hospital Medical School. From 1902 to 1904 he was Grocers' Company's Research Student at the Lister Institute of Preventive Medicine, and in the latter year was appointed Assistant for Physiological Chemistry at University College, at which he was later appointed to teach chemistry to medical students. In 1912 the Senate conferred on him the title of Reader in Physiological Chemistry. Since 1919 he has been head of the Biochemical Department of the Rowett Research Institute of Animal Nutrition at the University of Aberdeen and North of Scotland College of Agriculture, and Research Lecturer in Applied Biochemistry in the University of Aberdeen.

Regulations for the new degree of Bachelor of Dental Surgery were approved for internal students.

Sir Sydney Russell Wells, M.D., was reappointed the representative of the University on the General Medical Council for 1922-23; and Professor A. D. Waller, M.D., F.R.S., was appointed to represent the University at the unveiling of a memorial to Pasteur, in commemoration of the one hundredth anniversary of his birth, to take place at Strasbourg in May, 1923.

LONDON SCHOOL OF TROPICAL MEDICINE.

The following were successful at the examination at the end of the sixty-seventh session:

E. P. Hicks (winner of "Duncan" Medal), *E. S. Godlieb, *G. D. English, E. A. C. Langton, Miss A. Reubens, C. F. Chenoy, A. G. Boggs, C. U. Lee, J. R. McVail, B. Shaha, F. G. Spear, J. A. Young, H. C. Wilkinson, H. O. Hofmeyr, G. N. Cossery, J. Dimock, J. Pedris, J. D. Gazder, H. S. Hutchison, A. H. Mitchell, G. D. K. Waldron, Miss Reba Hunsberger, Major J. A. A. Kernahan, I.M.S., P. M. Nanavati, M. Remy, A. Bindari, M. H. Eid, J. F. Misquitta, Captain D. F. Taylor, I.M.S., W. Spiteri, M. Shalaby, H. Buchanan, K. C. Kirti.

* With distinction.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examination indicated:

M.B., CH.B. (WITH HONOURS).—*Class I:* *J. L. Armour, ‡ C. A. Wells. *Class II:* *C. H. R. Carmichael, E. N. Chamberlain.

M.B., CH.B.—*Part III:* O. A. Akjaly, J. R. Bhatia, H. R. Chibber, A. C. Crawford, Helen M. Duvall, I. S. Fox, R. A. Galway, F. G. Latham, J. F. C. McColl, Kathleen M. Platt, Gladys Rutherford, F. C. H. Sergeant, N. S. Taylor, W. T. de V. Thomson. *Part II:* W. H. A. Dodd, G. T. Krajewski, C. B. Lewis, G. F. G. Prideaux, G. Sanders, E. R. Smith, Enid F. Stowell, A. Weisberg, D. A. Woodeson. *Part I:* A. R. D. Adams, J. Berkson, R. W. Brookfield, T. L. Bulmer, I. Casdan, W. J. R. Chidlow, R. G. Cooke, R. L. Corlett, I. H. Davies, Hilda M. Davis, F. Farlam, F. S. Fowweather, Susan Guck, H. Graf, J. R. Griffiths, A. J. Hawe, C. W. Healey, S. Hesselberg, Elizabeth Hunt, J. E. Johnson, F. H. Jones, A. Kefalas, T. J. Kirkpatrick, D. A. Levin, Eileen M. Lloyd, Marion R. Lunt, D. Macfarlane, Mary M. McMillan, P. Madan, P. Malpas, C. H. Owen, Eleanor M. P. Pearson, J. D. O'M. Poole, E. L. Roberts, ‡J. Roberts, Dorothea W. Rogers, J. A. Scott, J. F. D. Shrewsbury, E. R. Smith, J. R. A. Tallack, Dorothy A. Taylor, Elizabeth M. Theron, V. T. Thierens, H. A. Thomas, R. W. Thomas, §A. Tumarkin, E. J. Whymark, H. P. Widdup, A. G. Wilkinson, E. B. Wilkinson, J. Williams.

D.P.M.—G. P. F. Allen (recommended for the Alan H. Milne Memorial Medal), C. R. Corfield, A. Hamid, B. W. Longhurst, G. A. Macvea, H. R. Madan, W. P. Mulligan, S. S. Shri Kent.

* Distinguished in Surgery. † Distinguished in Obstetrics.
‡ Distinguished in Medicine. § Distinguished in Pathology.

UNIVERSITY OF EDINBURGH.

AT the graduation ceremonial held in McEwan Hall, on December 16th, Sir Alfred Ewing said that in a comparison with fourteen British universities, Edinburgh taught the largest number of students, and gave its teaching at the least cost per head. Taking the fourteen large universities of England altogether—Oxford and Cambridge were necessarily left out, because their finances were too obscure to be understood—there were about 26,000 students, at a total cost of £65 per head. That meant that the universities had actually to find £65 annually for each student that they taught. Out of that cost, the student contributed on the average £25 in fees, and the remainder had to be found somewhere. They in Edinburgh were so fortunate as to receive now £70,000 a year from the State, equivalent to £16 per head. Their endowments amounted to £8 a head, and their fees to £22 a head. The cost to the University was £47: and if they took the three largest Scottish universities together, the cost per student was £49, of which the student found only £21. For every £9 that the University found, the student found only £4. When they emerged from the war the universities were in a parlous condition.

The following medical degrees and diploma were conferred:

M.D.—G. Ap Thomas, J. J. R. Binnie, Alice Bloomfield (with First Class Honours), *C. C. Brown, S. B. B. Campbell (with First Class Honours), **Major V. T. Carruthers, R.A.M.C., *Major A. G. Coullie, I.M.S., *F. A. E. Crew, *Major H. R. B. Gibson, I.M.S., *R. L. Girdwood, G. H. Gunn, G. Lange, D. Lennox, J. S. Lloyd, *B. Morrison, H. Patley, Ella F. Pringle, R. H. Pulipaka, A. O. Ross, J. H. M. Sandison, H. J. Slane, A. K. Towers.

M.B., CH.B.—R. Abramsky, J. C. Adam, C. S. Appleyard, E. Arosemena, C. G. Auld, C. T. B. Benson, L. R. Bergson, Susan A. Binnie, J. M. Blair, R. P. Bliss, J. M. Bonar, G. Brewster, Agnes G. Brough, D. L. Brown, C. Brownlee, W. S. Burr, †K. F. Caird, A. Campbell, D. Campbell, G. G. Campbell, C. G. Catto, C. Henri-François de Chalus, E. Clark, D. R. Clarke, Matilda L. Craig, †D. R. Cramb, J. C. Cruickshank, A. H. Deighton, J. A. Douglas, A. MacG. Duff, Jeannie P. Dunn, Katrine Dunn, Evelyn B. G. Ewen, G. B. Flint, Charlotte E. Forsyth, J. A. Fraser, Eileen R. Freeman, F. L. A. Gacé, Marjorie Geen, ‡O. S. Gibbs, N. Giblin, Doris M. Gibson, Helen E. Gibson, A. R. Gilchrist, I. S. Hall, T. Harrison, Isabella M. Hay, W. B. E. Hughes, E. J. Hunter, R. H. R. Innes, B. Isaacson, Inez M. Y. M. Jenkins, C. I. I. Jones, ‡J. O. Kelly, Marjorie C. Kerr, A. King, J. Lovius, P. J. McDiarmid, Jane W. Macdonald, W. S. Macdonald, G. S. Mackay, G. W. J. Mackay, J. C. MacKay, H. D. McKinna, H. McNair, J. W. Mason, †D. S. Middleton, I. C. Middleton, Ann L. Morrison, O. M. Musa, S. S. Nicholson, G. Ogilvie, M. M. Ostrowick, J. W. T. Patterson, H. R. Potter, ‡A. M. W. Rae, L. Ratnayaké, †W. B. Reid, C. A. Robson, A. Sanders, E. L. Sanders, G. G. Sanders, Margaret M. Sands, M. N. Sanyal, ‡G. S. Scott, C. M. Seward, J. McD. S. Slater, A. T. Sloan, T. R. C. Spence, ‡G. D. Steven, F. M. Stewart, A. Stuart, A. Sutherland, A. K. Tampi, Marion C. Taylor, L. Teitelman, D. W. C. Tough, G. A. Velluot, K. Vullakki, G. B. Walker, J. Walker, P. K. Walker, Sarah B. H. Walker, †K. B. Williamson, ‡A. J. Wilson, J. T. Wilson, J. H. Wright.

D.P.H.—W. P. S. Johnson.

** Highly commended for Thesis. *Commended for Thesis.
† Passed with first class honours.
‡ Passed with second class honours.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT the meeting of the College held on December 16th, Sir David Wallace, C.M.G., President, in the chair, Dr. George Mackay and Mr. C. W. Cathcart, C.B.E., were re-elected representatives on the board of management of the Royal Infirmary, Edinburgh, for the ensuing year.

The following candidates, having passed the requisite examinations, were admitted Fellows:

E. R. Chambers, C. B. Clarke, J. H. Dove, E. D. Smith, V. B. Gokhale, J. W. Hall, N. Hodgson, E. W. Ingle, M. S. Irani, V. M. Kaikini, R. Mailer, R. B. P. Monson, K. S. Nigam, A. L. Sheppard, P. A. Smuts, D. Steven, R. L. Stewart, T. J. R. Warren.

The Services.

DEATHS IN THE SERVICES.

Captain Clement Hoyle Heppenstall, Indian Medical Service, was reported as killed in action on December 11th, on the North-West frontier of India, in an attack made by tribesmen on a convoy proceeding from Datta Khel to Muhammad Khel, in the Tochi Valley. He was educated at Leeds, and took the Scottish triple qualification in 1908; he graduated M.B., B.S. London in 1914, and took the London diploma in tropical medicine, with distinction, in 1920. After filling the posts of resident medical officer at Leeds Public Dispensary and of medical officer to a silver lead mining company, he took a temporary commission in the I.M.S. on December 2nd, 1915, as lieutenant, was confirmed from March 13th, 1916, and promoted to captain on December 2nd, 1916. He had served in the recent war for three years.

Surgeon-Major-General Peter Stephenson Turnbull, K.H.S., Bombay Medical Service (retired), died in Edinburgh on October 7th, aged 85. He was educated at Glasgow, where he graduated M.D. in 1859, and entered the I.M.S. as assistant surgeon on October 1st, 1860, becoming brigade surgeon on April 1st, 1887, deputy surgeon-general on February 26th, 1888, and surgeon-major-general on February 26th, 1893; he retired on March 2nd, 1895. He served in the Abyssinian war of 1867-68, when he was present at the action of Arji, and at the storm and capture of Magdala, receiving the medal. In 1883-85 he acted as Inspector-General of Prisons, Bombay; from 1885 to 1888 he was secretary to the P.M.O. Bombay; and in the administrative grades he held the posts successively of P.M.O. in Sind and of surgeon-general with the Government of Bombay. He received a good service pension on Feb. 26th, 1893, and was made an honorary surgeon to the King on September 20th, 1902. He leaves a widow, three sons, and four daughters.

Major Albert Thomas James McCreery, R.A.M.C., died of appendicitis at Bombay on September 10th. He was born on October 26th, 1882, and educated at Trinity College, Dublin, where he graduated B.A., M.B., B.Ch., and B.A.O. in 1907. Entering the R.A.M.C. as lieutenant on August 1st, 1908, he was promoted to a brevet majority on January 1st, 1919, and to major on August 1st, 1920. He served in the recent war in Mesopotamia, where he took part in the defence of Kut under General Townshend, was twice mentioned in dispatches, on April 5th and July 13th, 1916, and received the Military Cross on June 3rd, 1916, as well as a brevet three years later

Medical News.

THE British Red Cross Society makes an appeal on behalf of the Russian Famine Relief Fund, which is already shipping stores to the value of £250,000 given to it by the British Government. A great deal more is needed if a continuance of the famine, with its attendant epidemics, is to be prevented. Dr. Reginald Farrar, until recently a medical officer of the Ministry of Health, is already in Moscow on behalf of the Society and of the Epidemic Section of the League of Nations to advise upon the distribution of the large amount of medical supplies contained in the British Government's gift. Sir Benjamin Robertson, K.C.S.I., who has had much experience of famine in India, is going to Russia, at the request of the British Red Cross Society, to examine existing methods of distribution in Russia of voluntary charitable relief from the British Empire and to make suggestions. The address of the treasurer of the Russian Famine Relief Fund is Fishmongers' Hall, London, E.C.4.

WE are informed that a Council for the Promotion of Oro-Nasal Hygiene has been formed, with Dr. Octavia Lewin as chairman and Dr. John Kynaston as honorary secretary. The first members are Dr. Henderson and Dr. Baskett. The objects of the Council are to extend the knowledge of the functions of the upper air passages, to obtain acceptance of the principle that oro-nasal hygiene should be adopted as the ordinary routine, and that operations should be performed only in exceptional cases. Communications may be addressed to the honorary secretary, 26, Welbeck Street, London, W.1.

PART of the great work done for the blind by Sir Arthur Pearson, whose death has aroused so much sympathy, was to provide training in massage for blinded soldiers and civilians. The Association of Certificated Blind Masseurs, 224, Great Portland Street, London, W.1, of which Sir Arthur Pearson was president, appeals to the medical profession to encourage the employment of blind persons skilled in massage. Its members are forbidden to undertake the treatment of patients without the consent and advice of a registered medical practitioner.

A PRACTICAL course on orthopaedics will be held by Dr. Calot at his clinic in Paris, 69, Quai d'Orsay, from January 23rd to 29th, 1922. The Spanish and English languages will be employed in the demonstrations as well as French; the fee is 150 francs, and the number of places is limited. Further information may be obtained from Dr. Colleu, 69, Quai d'Orsay, Paris.

THE annual report of the Royal Surgical Aid Society, presented to the fifty-ninth annual meeting, held at the Mansion House, on December 13th, showed that 19,490 patients had been assisted and 28,656 surgical appliances supplied to necessitous persons. The Lord Mayor, in moving the adoption of the report and accounts, urged that every effort should be made to augment the society's income and to extend its usefulness.

THE first Italian National Congress of women medical practitioners was held at Salsomaggiore from October 14th to 16th, and a national Association has now been organized.

A COMMITTEE, with M. Georges Clemenceau as president, has been formed to erect within the precincts of the St. Anne's Asylum, Paris, a monument to the memory of Dr. V. Magnan, who was for long its chief medical officer. It is hoped to unveil the monument next May and at the same time to celebrate the centenary of the discovery of general paralysis by Bayle. Subscriptions may be sent to M. Masson, 120, Boulevard Saint-Germain, Paris VI[e].

AT a recent meeting of the Metropolitan Branch of the Society of Medical Officers of Health mention was made by Dr. F. W. Alexander, M.O.H. Poplar, of the solution and sprayer used with great success in Poplar for destroying bugs. As several inquiries were made afterwards about this solution Dr. Alexander states that the fluid used is solution "D," made by Messrs. Sumner, of Hanover Street, Liverpool; it consists of certain synthetic derivatives of coal-tar in combination with volatile and mineral oils. It is sold in five-gallon tins, price 6s. a gallon.

THE twenty-fifth anniversary of the Finsen Light Institute was celebrated at Copenhagen on October 23rd.

AMONG the courses of lectures to be given at the Royal Institution before Easter is one by Sir Arthur Keith on "Racial problems in Asia and Australasia," being the first part of a course on "Anthropological problems of the British Empire."

DR. A. S. GUBB, of Mustapha Supérieur, Algiers, has received from the President of the French Republic the medal of the "Reconnaissance Française" in recognition of his services to the French Red Cross, in connexion especially with the auxiliary military hospitals at Aix-les-Bains (Savoie) and Algiers. Dr. Gubb's many friends in London, where he was engaged in general practice for many years, and acted also as editor of the *Medical Press and Circular*, will desire to congratulate him on the recognition he has now received from his adopted country.

THE number of nurse infants in the custody of foster mothers registered by the London County Council was 2,952 in 1920, and of this number 1,045 were under 1 year of age. The number of deaths in the year was 26 (20 of them among infants under 1 year), and so far as can be ascertained, 27 others who had been under the care of foster mothers died in hospitals or infirmaries. About 90 per cent. of the nurse infants are illegitimate, and this mortality bears very favourable comparison with the mortality among illegitimate children generally.

IN its annual report the State Children's Association points out that the amount of juvenile delinquency has now fallen to pre-war level. It repeats its protest against the practice of sending to prison boys and girls between 14 and 16, and juvenile adults between 16 and 21; the imposition of these sentences, often for a month or less, can, it is argued, have no effect on the offenders save to destroy self-respect. The number of children supported or assisted under the Poor Law has increased, as was to be expected in existing economic conditions. The scattered home system for Poor Law children who cannot be boarded out is winning approval, though the shortage of houses and the heavy cost of building has checked its application. The report makes reference to the Home Office Committee on Probation appointed at the end of 1920. The State Children's Association submitted its views to it, but the report has not yet been published.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

DR. H. FERGIE WOODS (London) writes, in reply to Dr. Montgomery (November 26th, p. 924), that homœopathists often use condurango in cases of cancer accompanied by painful cracks in the corner of the mouth.

HABITUAL HEADACHE.

"A. E." writes: Will "N. O." try a glass of water at bedtime, just after brushing the teeth with collosol argentum dentifrice, and honey as a finish to breakfast if the lady likes it?

DR. R. MACDONALD LADELL (Birmingham) writes: It would appear possible that the patient in question suffers from a conversion hysteria. This would not be inconsistent with the fact that her general attitude towards life is a bright one. Analysis of her dreams should reveal whether or not this is the case, and would provide a basis for cure.

FLEAS.

DR. S. MALLANNAH (Hyderabad, Deccan) writes, in answer to "A.B.S.'s" query (October 29th, 1921, page 726) as to preventing access of fleas to the skin, to suggest the use of powdered tobacco leaves on floors or floor mats, which he thinks much better than camphor.

IODINE TREATMENT.

"W. T.," who desires to resort to the intensive iodine treatment for tuberculosis and arthritis, finds that the tincture of the French *Codex* which is recommended for this purpose contains no potassium iodide. The proportion of iodine is 1 grain in 10 minims; when this amount is added to a small quantity of water a precipitate occurs.

We learn that at University College Hospital, where the concentrated 10 per cent. tincture of the French *Codex* is used, it is customary to dispense it undiluted and to direct the patient to measure the drops into water or milk and drink off the mixture at once. The preparation "Iodinosol" (E. T. Pearson and Co., London Road, Mitcham, Surrey), contains 6 per cent. iodine (approximately) and can be diluted with liquid paraffin, or dispensed in full strength to be taken in milk or on sugar. It is more difficult to measure than an alcoholic solution.

INCOME TAX.

"G. P." inquires whether the forthcoming reduction in the capitation fees for panel patients is a "specific cause" entitling him to a reduction from the average basis of assessment.

*** Yes, but it must not be forgotten that a "specific cause" does not constitute a ground for departing from the average basis except where there has been a change in the proprietorship of the practice during the period covered by the three years forming the average or in the year of assessment itself.

"G. A." desires to know whether the whole of the income derived from investments in the Dominions is liable to tax in this country or only that portion which is remitted.

*** In general income derived from stocks, shares, securities, and rents is chargeable according to the amount of income accruing, other forms of income according to the amount remitted. But "persons not ordinarily resident in the United Kingdom" can claim the remittance basis for either class of income, and this was the case in the reply to which our correspondent refers.

"L.D.," a medical woman who holds a county post, receives 3s. 6d. per diem when she is away from home as out-of-pocket expenses. Is this returnable as "income"?

* No. It represents repayment to the recipient of special expenses, and we understand that the Revenue authorities make no claim to assess any portion of the amount which may not be expended—in the long run no doubt there would be no excess in any case.

LETTERS, NOTES, ETC.

CANCER HOUSES.

DR. D. OWEN WILLIAMS (Glandyfi, Cardiganshire) writes: As bearing upon the matter of cancer houses mentioned in your issue of November 12th, p. 818, it seems to me that I have read in the JOURNAL some time ago that cancer might be caused by mice and rats infesting houses; and these might have been present in the old houses referred to.

DESTRUCTION OF LICE ON HAIR-CLAD AREAS.

DR. E. W. GOODALL (Hampstead) writes: About two years ago I was anxious to obtain an effective but cheap insecticide for use on the heads of patients suffering from acute illnesses. Through the kindness of Mr. Bacot I was able to obtain a small but sufficient quantity of light wood oil and from another source I procured some heavy wood oil. After trial of these oils, both neat and diluted with paraffin, I came to the conclusion reluctantly that they were unsuitable for the purpose for which I required them, however valuable they might be for the lousy inhabitants of a typhus-ridden country. They have an uninviting appearance and a most unpleasant odour. I also found much difficulty in getting the samples I had to form a mixture or solution with paraffin.

IN the course of a letter on the treatment of verminous diseases Dr. W. B. HUNTER (Londonderry) writes: Perhaps the history of the following case may lead to a treatment easily carried out, and if the cure can be attributed to the remedy employed it would come in very handy to meet epidemics of typhus or "the minor horrors of war." Some years ago a patient was brought to me in deep distress, suffering from lousiness from which he could not free himself. He was in good circumstances and was able to go from home and take baths of every kind. His undergarments were boiled and daily put on clean and all to no purpose. I had read of such cases being successfully treated by giving the patient a mixture containing dilute hydrocyanic acid in ordinary doses. This was ordered for my patient, and in a short time to my surprise I must admit, and to the great delight of the patient and his family, he came to tell me he was completely free from his affliction. I inquired several times after and was informed there was no return of the trouble. It will be noticed that someone at that time—about forty-five years ago—had been using the same remedy successfully and had written about it. Recently I have tried the remedy in hospital patients, they all got quickly well, but as other remedies were being used at the same time how much of the cure was due to either remedy or to both together I cannot say. If the destruction of the parasite was due to the hydrocyanic acid circulating in the blood one would think that a weak and appropriate solution of it sprayed over head and body of patient or on his inner garments would be more quickly efficacious.

HERPES AND VARICELLA.

DR. JAMES B. MILLER (Bishopbriggs, Lanark) writes: Is the relationship between chicken-pox and herpes other than fortuitous? Chicken-pox is a very common disease, herpes not at all uncommon; it would be contrary to the laws of permutation were these diseases not to occur on occasion simultaneously in the same household, just as any other common ailments do. In how many instances does chicken-pox occur where the source of infection cannot be traced? In a very few of these it is doubtless preceded, associated with, or followed by herpes or any other of the thousand-and-one ills to which flesh is heir. Like all general practitioners I have seen many cases of these two diseases, but only recollect their association in the two following instances:

1. On October 21st, 1921, C. H. (5 years), was found to be suffering from chicken-pox, and on the same date her little sister, Ch. H. (1 year), had herpes; on November 3rd, 1921, Ch. H. developed chicken-pox.

2. Some years ago a child in a country house, half a mile distant from the nearest village, developed chicken-pox, her aunt, who looked after her, having had an attack of herpes zoster about two weeks before. The parents were certain that the child had not been in any way exposed to infection, and indeed stated that they knew of no case of chicken-pox in the vicinity; a careful inquiry in the neighbourhood, however, elicited the fact that chicken pox was then somewhat prevalent in the nearest village, and that the child had actually been in contact with infected children.

Now it is apparent that in these two cases the occurrence of herpes was incidental; not only so, but Ch. H.'s herpes gave her no protection whatever against chicken-pox, her attack running the usual course.

THE LAW OF THE ROAD.

DR. JAMES HOLMES (Chesham Bank, Bury) writes: The Highway Act of 1835 enacts "That the driver of any cart, carriage, or other vehicle *shall* keep to the left or near side when meeting any other cart, carriage, or other vehicle." The penalty is £10 for an owner driver and £5 for a hired driver. Note that the driver has to keep to the "near side," not near half. It is presumed that this provision is to allow faster traffic ample room to pass. As a cyclist I have obtained several convictions under this clause, when drivers of horse vehicles seemed to think a cyclist had no right to be on the road. I am informed that under the Police Clauses Acts overtaking traffic must in populous places pass on the right or off side.

A CORRECTION.

IN Professor Swale Vincent's letter in our last issue (p. 1054) the word "chromophil" occurs several times; it should have been "chromaphil." The former word simply means deeply-staining, while the latter refers to the reaction to salts of chromium.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 31, 32, and 33 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 30 and 31.

WE have received from the Anglo-French Drug Company, Limited, of 238A, Gray's Inn Road, W.C.1, a copy of the block diary they are issuing for 1922. It should prove a useful daily memorandum pad for the consulting-room desk.

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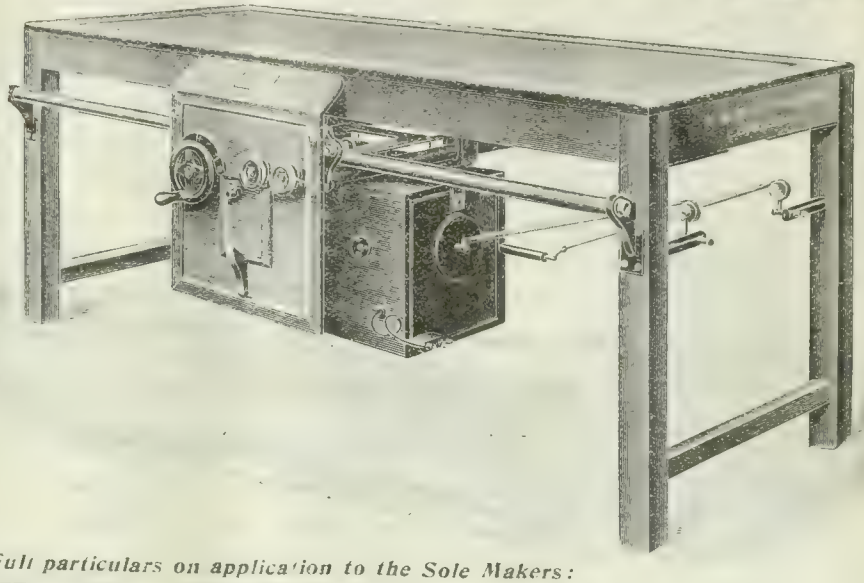
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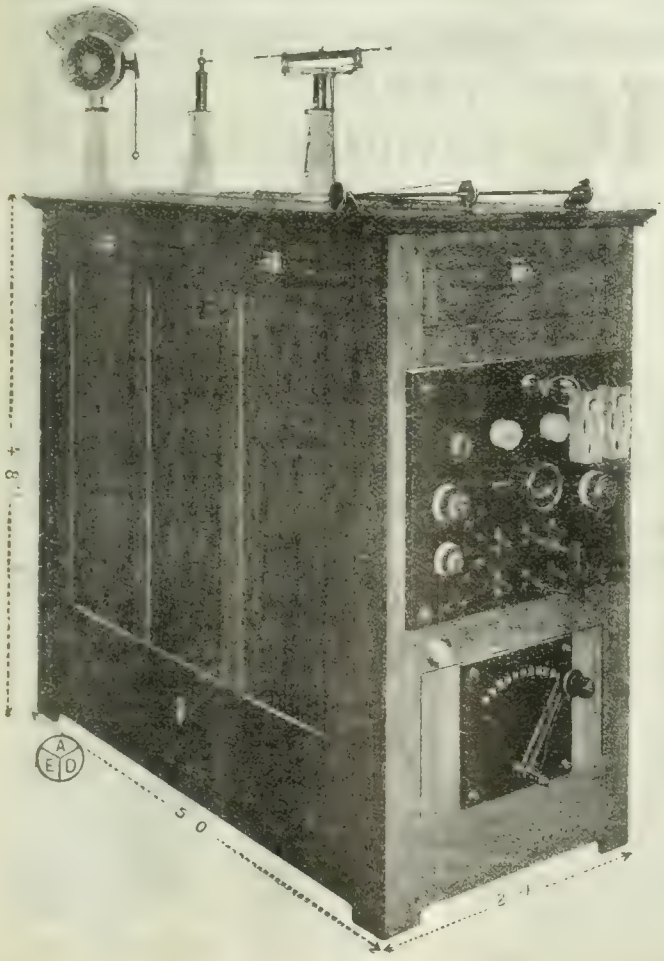
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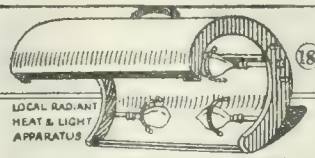
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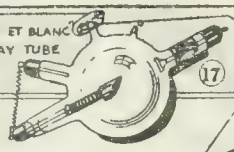


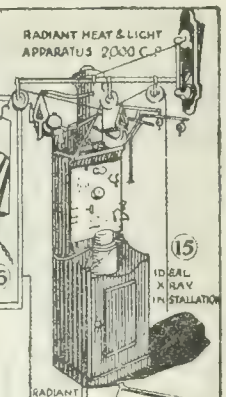
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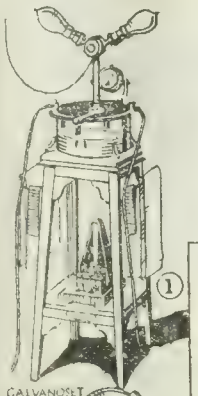


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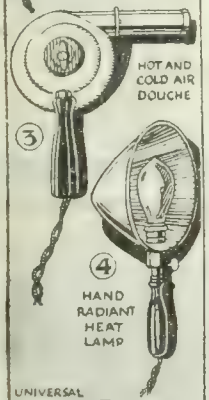
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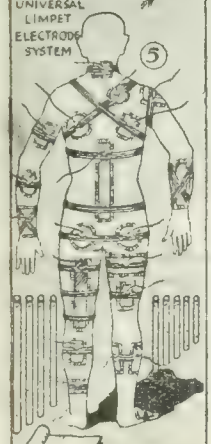
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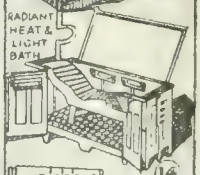
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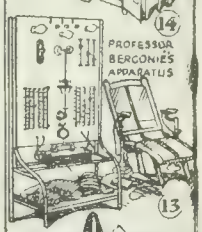
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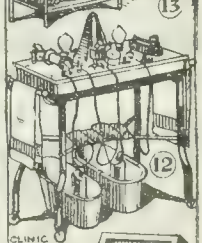
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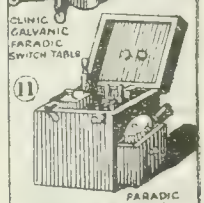
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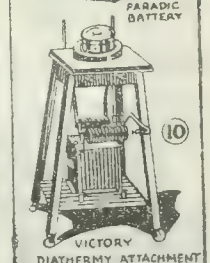
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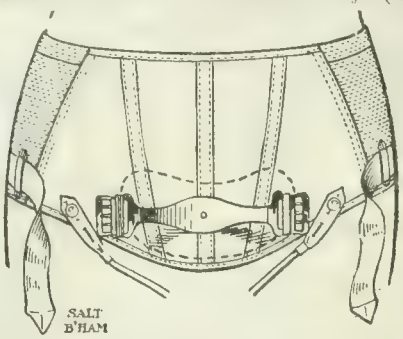
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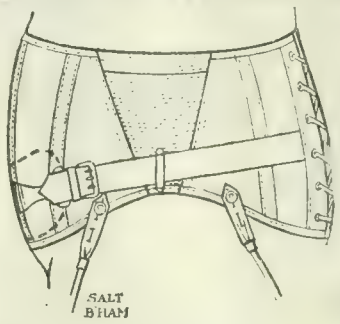
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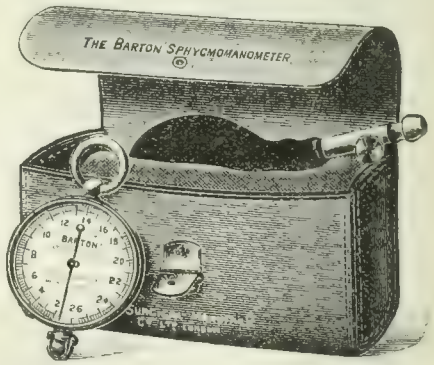
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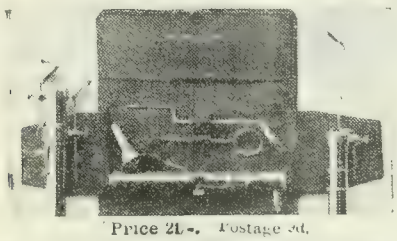
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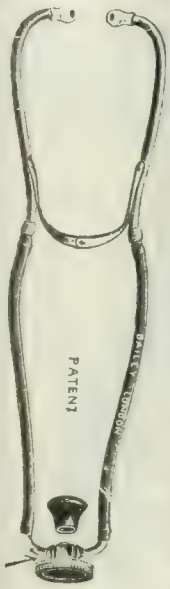
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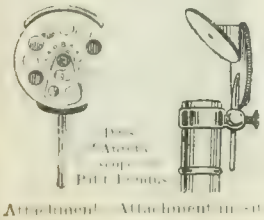
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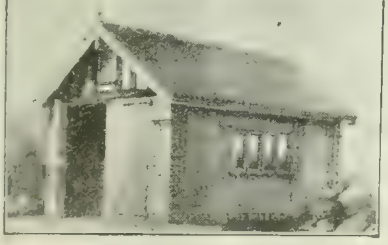
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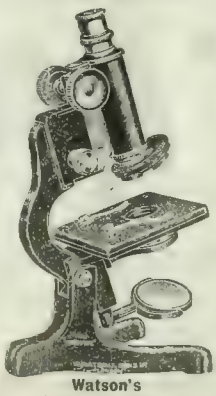
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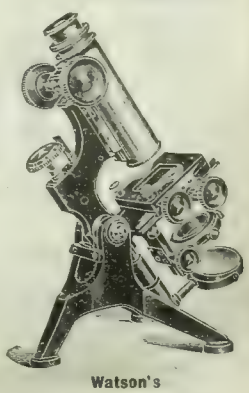
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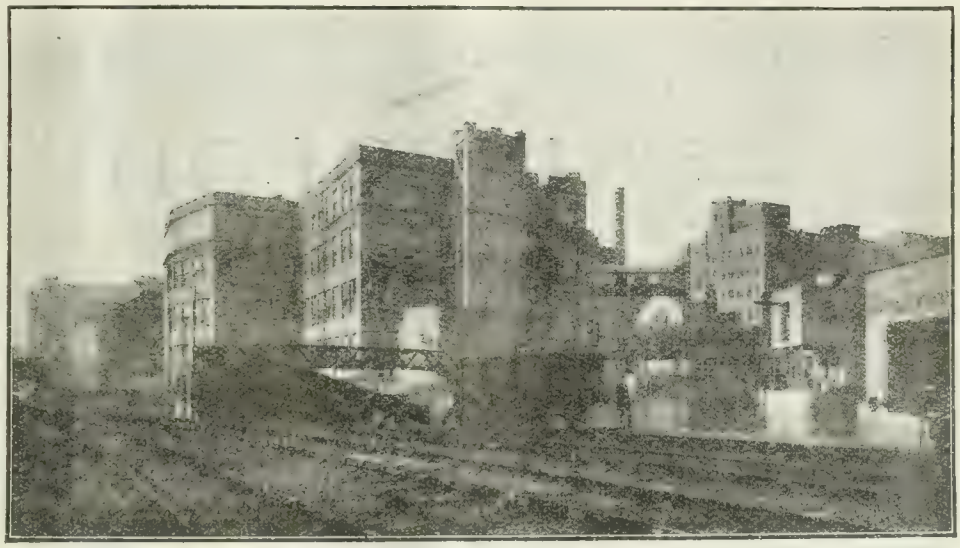
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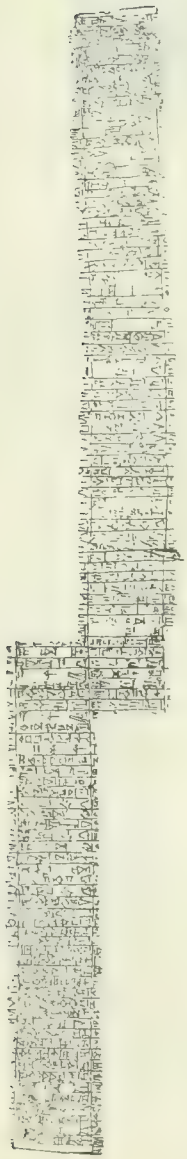
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A Post-Graduate Lecture

ON

THE PRESENT POSITION OF THE TREATMENT OF CARCINOMA OF THE CERVIX.

DELIVERED AT THE MANCHESTER ROYAL INFIRMARY, JUNE, 1921.

BY

WM. FLETCHER SHAW, M.D.,

LECTURER IN OBSTETRICS AND GYNAECOLOGY, MANCHESTER UNIVERSITY; ASSISTANT GYNAECOLOGICAL SURGEON, ROYAL INFIRMARY; SENIOR ASSISTANT SURGEON FOR WOMEN, ST. MARY'S HOSPITAL; AND GYNAECOLOGIST, CHRISTIE HOSPITAL FOR CANCER, MANCHESTER.

In the last fifteen years, with the general adoption of Wertheim's hysterectomy and the discovery of the effect of radium on the disease, the prognosis in cancer of the cervix has been greatly improved, though it is still anything but satisfactory, and can hardly be so as long as the cause of the disease is not definitely known. At the present time some of the best scientific minds in the profession are working on the problem, and there is every hope they will ultimately solve it; until then the treatment must necessarily be in the nature of groping in the dark; but in spite of this great handicap the clinician has made steady progress, and it is with the object of comparing the results of treatment obtained to-day with those obtained before the adoption of Wertheim's hysterectomy and radium that I have chosen this subject now.

DIAGNOSIS.

It is impossible to discuss the treatment of cancer of the cervix without saying a few words about diagnosis, for the two are indissolubly connected.

Unfortunately a very large number of patients suffering from this disease come to us too late for treatment to hold out any hope of cure. This is very largely due to the patient seeking medical advice very late, in some instances because there is an ineradicable belief in the female mind that haemorrhage at any time is more or less normal, and in others because the patient fears to have her own fears confirmed; there are, however, a certain number of cases where the patient consults her own doctor, who treats her symptoms empirically without a vaginal examination, and so valuable time is lost before she is sent to the gynaecological surgeon.

Cancer of the cervix may produce many symptoms, but the one symptom which is hardly ever absent is haemorrhage. It is very difficult for a doctor in general practice to suggest making a vaginal examination on every woman who comes to him complaining of haemorrhage, but it would be very much better if this could be done, and it should be insisted upon if the haemorrhage does not cease after two or three weeks' treatment, for cancer of the cervix may occur at a very early age. I have seen it as early as 22 and 24 years of age, though it is very much more common in patients who have passed the fortieth year. After that age no patient who complains of haemorrhage should be treated until a vaginal examination has been made, and this becomes increasingly important as the age of the patient advances, and is most important when the haemorrhage commences after the menopause.

Moreover, no opportunity should be missed of impressing upon women the fact that increased haemorrhage at the menopause, and any recurrence after the menopause, is always due to some pathological condition and should lead the sufferer to consult her doctor at once.

If only we could get women to realize this fact and consult their doctor whenever it occurs we should get a much higher percentage of early cases of cancer of the cervix to deal with and a much larger percentage of cures.

Pain is considered by women themselves and frequently even by doctors as an important sign in cancer of the cervix. This is not so. If the patient suffers from pain due to cancer of the cervix the disease has extended beyond the cervix and there is little hope of cure. Another fallacy is that cancer of the cervix occurs in thin, tired-out anaemic patients. In my experience the largest number of patients suffering from cancer of the cervix are stout, fairly healthy-looking women, and one of the biggest drawbacks to the performance of Wertheim's hysterectomy is the amount of abdominal fat which occurs in so many of the patients.

OLD METHODS OF TREATMENT.

When I was resident surgical officer at St. Mary's Hospital, before the adoption of Wertheim's hysterectomy and before it was known that radium affected the growth, cases of cancer of the cervix were divided into two groups for treatment.

In the early cases vaginal hysterectomy was performed; in the cases too far advanced for this the cervix was scraped and cauterized. It was only in very rare instances that the patient, after vaginal hysterectomy, did not have fairly early recurrence of the growth, and that is what would be expected. In the first place, cancer of the cervix very quickly extends beyond the cervix, and in a vaginal hysterectomy the line of incision is bound to cling very closely to the cervix from fear of damaging the ureter, so that in a large proportion of cases the outlying cells of the growth are not removed; and in the second place, the malignant mass on the cervix is rubbed into the raw wound during the manipulations of the operation. From one or other of these two causes early recurrence was almost inevitable.

The advanced cases were scraped and cauterized simply as a palliative measure and without any hope of cure, though many improved markedly in general health, and were free from local symptoms for some months, due to the removal of the sloughing infected tissue from which toxins were absorbed. This was the position of the operative treatment of carcinoma of the cervix fifteen years ago.

WERTHEIM'S HYSTERECTOMY.

A great advance in the treatment of cancer of the cervix was the adoption of Wertheim's hysterectomy, which differs in two main principles from the old vaginal hysterectomy or abdominal panhysterectomy. In the first place the ureters are dissected out and retracted to each side, so that the whole of the parametrium out to the iliac vessels can be removed, and along with this any enlarged glands situated along the iliac vessels.

In the second place the dissection is carried down the vaginal wall, which is then well clamped below the cervix and cut across below the clamps, so that the uterus is removed with a cuff of the vagina clamped over the cervix to prevent cancer cells being rubbed into the raw area.

I did my first Wertheim's hysterectomy in 1911, and a very difficult proceeding I found it to be. Until that time, as far as I know, only two of these operations had been done in Manchester, both by Dr. Donald, and I had assisted him on both occasions, but though I realized that the operation presented very great difficulties it was only when I came to perform it myself that I recognized their true magnitude.

Fortunately this patient did very well, and after a time I lost sight of her until, in September, 1916—that is, five and a half years after my operation—she was sent to me from another town by another doctor with a small epithelioma in the vagina, its upper edge being quite a quarter of an inch below the scar in the vagina. This patient I have included in the cases of recurrence, but I can hardly consider it a true recurrence, as it looks more like a new growth in a patient who is susceptible to cancer.

In the following year I did the operation four times with three deaths, and it was only the knowledge that these patients were doomed if treated by any other method which allowed me to continue performing this operation.

It must be remembered that at this time few operators had adopted the operation and the details were not standardized, so we were constantly trying new methods. Gradually our present technique was evolved, with vastly improved results. The following year I performed the operation seven times with one death.

Operability.

Judgement on this point varies very considerably in different centres and with different operators. Some surgeons will only perform the operation in the very earliest cases, while others, knowing that it holds the only hope of cure, and that some of the apparently advanced cases remain free from recurrence after the

operation, perform it upon all possible cases. In some centres all cases diagnosed as carcinoma of the cervix seem to be referred to the gynaecological surgeons, while in others the doctors in charge of the cases only refer those which they consider operable; that is the only explanation I can offer for the great divergence in the operability percentage of surgeons who are operating upon every possible case.

Berkeley and Bonney[1] give their operability percentage as 67; Mayer[2] from the Freund-Wertheim clinic gives it as 65.3 per cent.; while Wilson[3] estimates his at only 32.5 per cent.

Unfortunately I cannot give my total operability percentage as all our out-patient records are destroyed at St. Mary's Hospital after three years, but during the last six months I have kept a careful record of all cases of cancer of the cervix seen by me at the Manchester Royal Infirmary, St. Mary's Hospital, and in private.

During the six months I have seen 41 cases of carcinoma of the cervix, and have been able to do a complete Wertheim's hysterectomy on 11—that is, 26.8 per cent. So many cases are sent to us in a very advanced state that this seems to me the highest percentage of operability we can obtain in Manchester, as in this series I have operated upon every possible case, in fact, in several other cases I opened the abdomen but was unable to complete the operation.

These figures show the importance of educating the public to the necessity of consulting a medical practitioner whenever there is excessive haemorrhage, and especially when this recurs after the menopause, and also of the importance of a vaginal examination being insisted upon in each case. If only the diagnosis could have been made early the operability would have been 100 per cent.

Mortality.

With such an extensive operation the mortality is of necessity very high, and the more advanced the case, which means necessarily more extensive operation and a feebler condition of the patient, the higher is the mortality. If patients would only consult us when first the symptoms appear not only would the operability be greatly increased but the risks of the operation would be greatly diminished. Berkeley and Bonney[4] quote their mortality as 22.5 per cent. Wilson[5] gives it as 28.4 per cent., and in his later cases he has got it down to 10 per cent. Wertheim[6] quotes his mortality as 15.2 per cent., though it was 40 per cent. in his first thirty cases and only 7 per cent. in his last thirty cases.

I have performed the operation on 89 patients, 17 of whom died from the effects of the operation—a mortality of 19.1 per cent. This includes all my early cases, and if I deduct my first year the percentage of mortality is very considerably reduced. At first sight this mortality seems appalling, but we must remember that this list includes advanced as well as early cases; if the latter alone were operated upon the mortality would be little more than with simple panhysterectomy, but as this operation alone gives any chance of cure, and without it the patient is irrevocably condemned to death, common humanity compels a conscientious operator to attempt the operation in all possible cases, even though the mortality is so high. This again emphasizes the importance of early diagnosis: if these cases came to us at an early stage, not only would the operability percentage increase but the mortality would greatly decrease.

Percentage of Cures.

Berkeley and Bonney[7] published a series of 112 cases of cancer of the cervix seen by them, of which they were able to operate upon 63 per cent. Of the whole number of cases seen, 26 per cent. were well three years after the operation. We have only to consider the results from vaginal hysterectomy which were obtained ten or fifteen years ago to see what an enormous advance has been made during this time. As I have no record of the total number of cases I have seen of cancer of the cervix I cannot give the percentage of those which are well at the present time, but I have followed up the after-history of all my cases, with the following results:

Several of the patients on whom I have performed this operation were suffering from cancer of the body; a number of other cases have been done within the last year, and 2 cases I have been unable to trace, so that I have only 59 cases upon whom I did a Wertheim's hysterectomy more than one year ago. Of these, 12 died from the operation, 21 have died of recurrence, and 26 are now alive and well.

Period of Recurrence.

13	recurred in the first year	
5	,,	second year
2	,,	third year
1	,,	sixth year

Although I have placed 5 patients as having had recurrence in the second year, in all probability these had some recurrence in the first year, as none of them reported themselves as being very well at the end of the first year, so it will be seen that the majority of recurrences occurred at a very early date; in fact, if a patient reports that she feels very well one year after the operation, has a good colour, and is putting on weight, she has a very good chance of complete recovery.

The one which I recorded as having recurrence in the sixth year is the one mentioned above as the first case I operated upon, and one which seemed to be a new growth occurring in a patient susceptible to cancer. Of the 26 who are well at the present time

4	have been operated upon	more	than	one year.
5	,,	,,	,,	two years.
2	,,	,,	,,	three years.
10	,,	,,	,,	four years.
1	,,	,,	,,	five years.
2	,,	,,	,,	six years.
2	,,	,,	,,	eight years.

Of all the patients upon whom I have done this operation more than one year ago, and who recovered from the operation, 55.3 per cent. are alive and well to-day.

RADIUM.

The next great advance in the treatment of carcinoma was the discovery that radium had a powerful action on the growth. Great claims were made for it when first it was introduced, as is always the case with a new "cure" for cancer, and its reputation naturally underwent a reaction when later it was discovered not to be so beneficial as at first claimed; now, after several years of patient observation, we are able to adopt a more just opinion of its value. During these years much experimental work has been done in the methods of application, and undoubtedly much better results are now obtained than when it was first introduced, and though I do not think we are yet justified in relying upon it alone, I have great hopes that the future will allow us to do so.

In many parts of the body radium, apparently, has little effect on malignant growth, but upon cancer of the cervix, about which I can specially speak, its immediate effect is little short of marvellous, though the ultimate results so far have been disappointing. The literature on this subject is now very large, and the results recorded differ so considerably, even with the same dose of radium and the same methods of application, that I can only conclude that many observers are tinged with the enthusiastic optimism of the specialist. Fortunately in Manchester we possess a large amount of radium in the Radium Institute, and more fortunately we are blessed with a radiologist in charge of it, Dr. Burrows, who, while he is enthusiastic and obtains as good results as anyone working in this field, does not allow his enthusiasm to blind his judgement, and never claims anything for radium which he cannot produce.

I have worked with him much in the last six years, and he has often urged me to operate upon cases when I have been inclined to leave them to him. It is by this combined work of the radiologist with the surgeon that the best results can at present be obtained.

My first personal experience with radium was in 1914. I was called out to one of the Lancashire towns in consultation, and found a lady suffering from inoperable carcinoma of the cervix, with a mass the size of an orange on the left side of the uterus. The patient was 53 years of age, and I was most anxious to do something for her. Dr. Burrows had just arrived in Manchester, but his radium had not, so he kindly obtained some emanation tubes from London, and treated the patient for me. The result was little short of marvellous; altogether she had three applications in the course of twelve months, and both the

primary growth and secondary mass disappeared, so that, at the end of the twelve months, no growth could be discovered—just a normal sized uterus and cervix, somewhat fixed to the left side of the pelvis with scar tissue; her general health was much improved, and she was free from pain. Unfortunately, this good result did not last long. Soon the pelvic mass re-formed, and continued to grow in spite of further applications of radium. The bladder and rectum became involved, and the patient died at the end of the second year from my first seeing her. The net benefit was probably one year's extra life, and I do not think the final stage was so distressing as is often the case.

Since that time Dr. Burrows has treated a large number of my cases of carcinoma of the cervix with radium. A large percentage of these cases showed a marked improvement with the treatment, in many the disease had apparently disappeared when the patient was examined two months after the application, but in only one case of mine has the improvement lasted more than one year. This is very disappointing. The initial improvement is, however, so marked that I still hope further experiments with different methods of application may lead to complete cure.

We must also remember that all these cases were far advanced and inoperable, probably better results would be obtained in early cases, but neither Dr. Burrows nor myself yet feel justified in treating early cases with radium alone.

The one exception I mentioned above was seen by me in March, 1918, and then had carcinoma of the cervix which was quite inoperable. Radium was applied in the Christie Hospital in 1918, 1919, and 1920. She was 47 years of age when first seen, and since the last application has been quite free from haemorrhage. I last saw her in May, 1921, and found the cervix quite smooth and with no trace of friability.

Wertheim's Hysterectomy after Radium.

In November, 1916, I was asked to see a patient with Dr. Christie of Longsight. She was 45 years of age, had not passed the menopause, but had had excessive haemorrhage for six months. We found that she had a large friable carcinoma of the cervix extending on to the vaginal walls. At that time I was advising Wertheim's operation in all cases where operation was possible, but this case was far too advanced for me to attempt operation. Dr. Burrows treated her with radium in December, 1916, and in February, 1917, we again examined her. The result was excellent; the cervix had contracted to little above normal size, had lost all its friability, and, so far as we could tell, was not fixed. Apparently the case was now operable, and Dr. Burrows urged me to operate, as our previous experience led us to believe that while radium killed most of the malignant cells a few were left in the deep tissues which could not be reached with radium, and these would soon break into active growth. In March, 1917, I did an extensive Wertheim's hysterectomy and found it more difficult than I had expected. What had been new growth previously had contracted into hard, cartilaginous tissue from which the ureters could only be dissected with great difficulty. This I subsequently found to occur in all cases treated with radium, and difficult as an ordinary Wertheim operation is, the difficulties in these late cases treated with radium are increased tenfold. For this reason I have had to abandon several subsequent operations, as I found it impossible to dissect out the ureters. In this first case I was able to complete the operation and remove all the sclerosed tissue.

I have seen this patient at intervals since the operation, and to-day, over four years since my first examination, she is very fit and well, putting on weight, doing her housework, and during her last summer holiday walked seven miles on each of four consecutive days. Since that time I have operated upon 10 cases which were far too advanced for operation, and I have had only two deaths from the operation, though it is very much more difficult and severe than an ordinary Wertheim operation in an early case. In 5 other cases, however, I have had to abandon the operation owing to the impossibility of separating the ureters.

Of the 8 cases which recovered from the operation, 5 are well to-day, one four years and another three and a half years after the operation. In 3 recurrence has taken place. One of the patients had malignant cells in one of the iliac glands, though the cervix showed none on microscopical examination, the growth in the cervix having been entirely killed by the radium, and this patient is very well—two years after the operation. In fact, when I saw her three months ago she had become so stout I did not recognize her, and yet two years ago she was a thin, poor woman obviously dying from cancer.

We must remember that all these cases were too far advanced for operation when first seen, but radium made operation possible, though with this alone recurrence would probably have occurred within one year. So impressed have I been with these results of the combination of radium and operation that I now never operate upon any case of carcinoma of the cervix without a preliminary application of radium. I operate one week after the application of radium and find the tissues have not been sclerosed in this short interval, and so the difficulties of the operation are not increased and the patient has the benefit of both treatments.

Whether in the future new methods of application will make it possible to cure cancer of the cervix by radium alone and to discard this very severe operation of Wertheim's hysterectomy, time alone will show. I sincerely hope it will be so, but the time is not yet. At the present time the best hope of complete cure of cancer of the cervix lies in the combination of radium with Wertheim's hysterectomy.

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THE RADICAL ABDOMINAL OPERATION FOR CARCINOMA OF THE CERVIX.

RESULT OF ONE HUNDRED CASES BASED UPON FIVE YEARS' FREEDOM FROM RECURRENCE.

BY

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In the BRITISH MEDICAL JOURNAL for September 30th, 1916, my colleague Comyns Berkeley and myself published the results of our first one hundred radical abdominal operations for carcinoma of the cervix (Wertheim's operation) reckoned on the basis of five years' freedom from recurrence. Of the 100 operations performed between April, 1907, and September, 1911, 51 were done by Berkeley and 49 by me. Between April, 1907, and July, 1915, I myself performed the operation 100 times, and by keeping in touch with the recovered cases was by July, 1920, in a position to review my results on the basis of five years' freedom from recurrence. In the manner of setting forth these results I am following the general plan of the paper written jointly by my colleague and myself in 1916, so that comparison of the results of the two series of cases can be more easily made, and the further to facilitate this I have contrasted the figures in parallel columns in the tables.

The Character of the Operation.

The operation performed has been the most thorough possible, for with the uterus and its appendages have been removed in all the cases the upper half or two-thirds of the vagina, the parametric and paravaginal tissue out to the pelvic side wall and down to the levatores ani and the glands in the obturator fossae and along the iliac vessels.

The Cases Operated On.

Every case has been operated on in which there appeared any chance, however small, of removing the growth, and amongst the patients were many who had been dismissed from other hospitals as inoperable. This policy, which has been steadfastly pursued by my colleague and myself since we took up the operation, is naturally followed in a number of cases by the necessity of closing

the abdomen on account of the growth proving on inspection to be absolutely untouchable, while in others, though the removal is effected, yet the operator is, so to speak, "riding for a fall"; on the other hand, a certain number of great triumphs are obtained which, in our opinion, outweigh all the failures.

Keeping in Touch with the Recovered Cases.

I have been exceedingly successful in keeping in touch with the patients, only 4 out of the 80 recovered cases having been lost sight of. Every patient has been written to at least once a year, and experience shows that, in order to allow of this to be done, not merely should the name and address of the woman be taken, but the names and addresses of at least two of her relatives, so that in the event of her moving and not notifying her change of address, her relatives can be applied to as to her whereabouts.

The Result in 100 Cases.

The results obtained are shown in the following table. The figures in brackets are those of the joint series published by Berkeley and myself in 1916, and are inserted here for comparison.

Died of the operation	20 ...	(20)
Died of recurrent growth	33 ...	(32)
Died of other disease	3 ...	(2)
Lost sight of	4 ...	(7)
Well after five years	40 ...	(39)
	100 .	100)

It will be seen that the results of the two series are closely similar. Under the head "Died of the operation" is included every case of death due to the operation, whether occurring in the first few days or after an interval of several weeks. Post-operative sepsis and shock are the commonest causes of death.

Cases with Glandular Involvement.

In every case the regional glands removed at the operation were microscopically examined; in 38 cases they were found to be malignant. This is a larger figure than in the conjoint series, in which 35 cases were found to be carcinomatous. As might be expected, these 38 cases show a much higher operative mortality and a much greater percentage of recurrences than do the 62 cases in which the regional glands were not malignant, but nevertheless a certain proportion of them were alive and well five years or more after the operation.

Table of Cases in which the Regional Glands were and were not Carcinomatous.

	Glands carcinomatous.		Glands not carcinomatous.	
Died of the operation ...	9 ...	9)	11 ...	(11)
Died of recurrent growth ...	17 ...	(16)	17 ..	16)
Died of other disease ...	1 ..	1)	2 ..	(1)
Lost sight of	2 ...	2)	1 ..	(5)
Well 5 or more years after ...	9 ...	(7)	31 ...	(32)
	38	(35)	62 ...	(65)

The corresponding figures for the conjoint series are placed in brackets for comparison.

Again the similarity between the results of the conjoint and the present series will be noticed. The important fact that secondary carcinomatous deposit in the regional glands may exist at the time of the operation and yet a good result be obtained is very strikingly shown, and establishes the correctness of the opinion expressed by my colleague and myself in our joint paper, that carcinomatosis of the regional glands *per se* does not contraindicate the operation, and that as it is impossible, except by the microscope, to be sure of the condition of the glands, their removal should be part of the routine of the operation in every case.

Recurrences.

Death from recurrence occurred in 33 cases.

Table showing Dates of Recurrence.

Within 2 years	15 ...	(15)
Between 2 and 3 years	12 ..	(10)
Between 3 and 4 years	3 ...	(1)
Between 4 and 5 years	3 ..	(6)
	33 ..	32)

The figures in brackets are those for the conjoint series.

There is again a general similarity between the results of the present and those of the conjoint series, the principal difference being in the number of late recurrences. In either, more than three-fourths of the recurrences take place within three years of the operation.

As in the first series so in the present the seat of early recurrence is usually in the vagina, of late recurrence higher up in the pelvis or abdomen. General cancerous metastasis practically never occurs, but recurrent growth may develop in the bony pelvis, or lumbo-sacral spine.

Deaths from other Disease.

Of the three cases that died of disease other than carcinoma one succumbed to pulmonary tuberculosis which she had at the time she was operated on, one died of acute urinary sepsis following an operation for repair of a vesical fistula undertaken a year after the radical operation, and one died suddenly of angina pectoris over three years after the operation. The two first cases are included in the joint series.

Cases Lost Sight of.

Four patients were lost sight of, one at the end of one year, two at the end of two years, and one at the end of three years. They were all well when last heard of.

Cases Well after Five Years and the Question of Absolute Cure.

The patients who remained well after five years numbered 40. The first was operated on in March, 1908, and the last in February, 1915, and the others intermediately between these dates.

In the paper written by Berkeley and myself reporting the results of our first 100 operations we followed Wertheim in considering five years' freedom from recurrence as "absolute cure." Experience has shown that this is not justified, and that a small proportion of recurrences, probably about 5 per cent. of the total number, do occur after five years.

Thus, in the present series, two of the patients who passed the five years limit subsequently developed secondary growths. In one the growth recurred in the abdomen in the sixth year, and she died six and a half years after operation. It was a columnar-cell carcinoma, and the glands removed at the operation were not carcinomatous. In the other the growth recurred in the abdomen in the sixth year, and she lingered on to die nearly seven years after the operation. It was a squamous-cell carcinoma, and the glands removed at the operation were carcinomatous.

An absolute cure should not therefore be claimed for anything under seven years' freedom from recurrence. It is of course possible for secondary growth to appear even later than this; but practically it is so rare that a patient who has survived that time may be regarded as surely cured, whereas after five years, though she is probably cured, there still remains an appreciable chance of the disease reappearing.

Operability Rate and Actual Achievement.

To appraise correctly the results actually achieved by a series of radical operations for cancer of the cervix it is necessary to know the surgeon's operability rate—that is, the number of patients operated on out of every unselected 100 presenting themselves for treatment at the institution at which he works and in his private practice, for it is obvious that no comparison of results founded on the mere enumeration of operative deaths, recurrences, and cures can be made between the performance of one surgeon who practises a restricted operation on carefully selected early growths and another who carries out a drastic procedure on every case in which there is possibility of removal.

My colleague and myself, in our paper in 1916, estimated our operability rate as being 63.5 per cent., on grounds which do not need repetition here as we fully discussed them then. The 100 cases with which this paper is concerned represent, therefore, a selection out of 160 cases originally presenting themselves for treatment.

On the Continent various formulae have been used to express the late results and actual accomplishment of this operation, but in our joint paper my colleague and I adopted a more explanatory method which I shall repeat here.

Out of 100 patients operated upon, 40 have lived five or more years free from recurrence. If from the 100 cases operated upon the 4 cases lost sight of be subtracted, then of the 96 cases operated on whose subsequent fate could be followed up, 41.6 per cent. have lived five or more years free of recurrence. And if, in addition the 3 cases be subtracted that died of disease other than carcinoma, then of 93 cases operated on in whom it has been possible to follow up the outcome of the carcinoma, 42.3 per cent. have lived five or more years free of recurrence.

Again, the number of patients that recovered from the operation is 80, and of these 40—that is to say, 50 per cent.—have lived five or more years free of recurrence. If from these 80 recovered cases the 4 lost sight of be subtracted, then of 76 recovered cases whose after-history could be followed, 52.3 per cent. have lived five or more years free of recurrence. If, in addition, the three cases that died of disease other than carcinoma be subtracted, then of 73 recovered cases in whom it has been possible to follow up the outcome of the carcinoma 54.8 per cent. have lived five years or more free of recurrence.

Further, it will be seen that of the 160 cases originally presenting themselves for treatment 40, that is to say 25 per cent., have by reason of the operation lived for five or more years. If from these 160 cases the 4 cases lost sight of be subtracted, then of 156 patients originally presenting themselves whose subsequent fate could be followed up 25.6 per cent. have by reason of the operation lived five years or more free of recurrence. And if, in addition, the 3 cases that died of disease other than carcinoma be subtracted, then of 153 patients originally presenting themselves in whom it has been possible to follow up the outcome of the carcinoma, 26.1 per cent. have by reason of the operation lived five or more years free of recurrence.

Prolongation of Life in Patients Recovering from the Operation.

It was shown by Archibald Leitch, from a study of over 1 000 cases, and independently confirmed by MacCormac, both working in the Cancer Research Department of the Middlesex Hospital, that in patients not operated upon the average duration of life from the onset of symptoms to death is one year and nine months. Berkeley and I found that patients presenting themselves for treatment for the first time, and suitable for operation, had on an average had symptoms for six months. The life expectation of these women therefore is on an average one year and three months. It may therefore with confidence be assumed that where a patient survives the operation three years or over her life has been prolonged by the operation.

On this basis it will be seen that out of the 80 cases of this series that recovered from the operation 48, or 60 per cent., had their life prolonged as the result of the operation, namely:

Prolongation of Life by Operation.

Well cases	38 ...	(39)
Recurrent cases	8 ...	(7)
Case that died of intercurrent disease	1 ...	(0)
Cases lost sight of	1 ...	(3)
	48	(49)

The figures in the brackets are those of the joint series.

A Review of the Operation.

To put it briefly, a surgeon undertaking a series of these operations performed in the manner of my colleague and myself as described elsewhere, and carried out on every case in which there appears a possibility of removing the growth, may expect, if his operative mortality is the same as that of this series—namely, 20 per cent.—that 25 per cent. of the patients originally presenting themselves for treatment unselected, 40 per cent. of those operated on, and 50 per cent. of those recovering from the operation, will be alive and well five years after the operation. Further, he may expect that of these about 5 per cent. will succumb to recurrence within the next two years, after which period those surviving may for practical purposes be reckoned as cured.

Such results would be exceedingly successful for carcinoma in any situation, and are remarkable beyond expectation when the anatomical difficulties that beset the operation are borne in mind. It is but justice to the late Professor Wertheim to point out that the results of the two series absolutely confirm all the claims he made for the operation of which he was the principal pioneer from 1898 onwards.

It seems extraordinary at first sight that twenty-three years should be required to establish the value of a surgical procedure, and that even now there should be many who look askance at the operation, and others who are stated to be disappointed with its results, or even to have abandoned its practice altogether. In explanation it is to be remembered that before any individual surgeon can accumulate sufficient personal experience to form his own judgement many years must elapse (thirteen years in the case of the present series), during which he must maintain a very painstaking record of the after-fate of his patients. Many surgeons will not be troubled to do this, and as a result the successful cases drift away from them and are lost sight of, and all they see are the patients who come up to them with recurrence, a disheartening procession.

But a more important reason than this is the fact that Wertheim's operation is not, and never can become, an operation for the general. The most difficult operation in surgery, its successful practice can only be achieved by learning how to do it. Those of us who took it up years ago had no firmer basis on which to begin than the written description of the operation as practised by its deviser, and improvement could only be obtained by self-teaching. Those who come after have an easier road to travel, for the technique is established down to those minute details which count so much in success. But even so the operation cannot be learned without much practice, thought, and time, and it must be regretfully admitted that there are some who can neither teach themselves nor learn from others.

The Operative Mortality and its Reduction of Recent Years.

The chief objection to the operation that has stuck in the throat of surgeons in this country is its high mortality in the past. Whether this objection is well founded in the case of a disease whose mortality untreated is 100 per cent. I shall not discuss, but there can be no doubt that a high death rate is most disheartening to a surgeon, and so burdens him with repeated anxieties and disappointments that he may lose his moral courage, and resort to picking and choosing for operation those cases in which recovery seems fairly assured, or else practise a restricted operation only applicable to quite early growths.

My colleague and I have greatly lowered our operative mortality of recent years by other means, thus:

Operation Mortality.

Death rate of the operation in our first joint 100 cases	20 per cent.
Death rate of the operation in the present series	20 ,,
Death rate in the last 100 cases performed by Berkeley	14 ,,
Death rate in the last 100 cases performed by Bonney	13 ,,
Death rate in the last 200 cases jointly performed	13.5 ,,
Death rate in the last 50 cases performed by Berkeley	8 ,,
Death rate in the last 50 cases performed by Bonney	10 ,,
Death rate in the last 100 cases jointly performed	9 ,,
Death rate in the last 50 cases jointly performed	6 ,,

This improvement is due to four factors: (1) spinal anaesthesia, (2) the use of "violet green" to sterilize the vagina, (3) suturing the vagina, and (4) increased operative dexterity.

We employ spinal anaesthesia to block shock impulses and to produce relaxation of the abdominal wall, whereby the operation is immensely facilitated, but the patient is under full inhalation anaesthesia as well.

Sterilization of the vagina by "violet green" has reduced in a remarkable way the number of cases of severe post-operative sepsis. The vagina is packed with gauze soaked in it immediately before the abdomen is opened.

In our earlier cases we always left the cut end of the vagina open for drainage, but since Mr. Thring of Sydney told us that he found the patients did better if it was

closed we have done likewise, and found that he was quite right.

Increased operative dexterity comes with practice, and after an experience of between 400 and 500 cases we naturally have learnt many little technical "tips," difficult to put into words but apparent enough in practice. The net result is lighter handling of the tissues, less damage to adjacent structures, less bleeding, and greater quickness. All but the very difficult operations are finished under an hour, and some under three-quarters of an hour, and this year I did one exceptionally easy case in thirty minutes.

The Future of the Operation.

Until some means of treating operable carcinoma of the cervix is found which will cure more than 35 per cent. of the patients, surgical extirpation will remain the proper treatment for operable cases.

Radium has not fulfilled the high hopes founded on it. It appears to cure occasional cases, but so would a red-hot poker vigorously applied. In certain quarters an improved appliance for *x*-ray radiation has been boomed; so were mesothorium and radium some years ago. Those of us who have had the handling and the seeing of the actual conditions that obtain in carcinoma of the cervix must be pardoned if at present these alternative methods of treatment leave us cold.

A review on the basis of five years' freedom from recurrence of not less than 100 cases treated in this country must be to hand before the results of any new method of treatment can be critically compared with the results of surgery, and the obtaining of such will require about seven years; until then, at all events, Wertheim's operation will hold the field.

Its successful results which this paper records are not its utmost achievement; improved technique and experience will better them. It is probable, however, that the advance will be more in the direction of lowered operative mortality, and prolongation of life rather than absolute cure, for it must be remembered that most of the deaths due to the operation occur in the cases of advanced growth or border-line operability, so that the "cure-expectation" rate of the lives gained by reducing the operative death rate from, say, 20 to 6 per cent. will not be great. At a hazard I should say that 4 survivals at the end of five years out of the 14 cases would be all one could expect. That the scope of the operation can be extended to growths more advanced than those now dealt with I do not believe. It has reached its limit in this direction.

THE MODERN OPERATION FOR CANCER OF THE BREAST.*

BY

RUSSELL COOMBE, M.A., F.R.C.S.,

EXETER.

WHEN one turns one's thoughts back to the form of operation that was performed for cancer of the breast in my student days and contrasts it with any of the operations which are now undertaken for this condition, the immensity of the change is very striking. In the days of my house-surgeoncies an elliptical incision, made chiefly with the view of securing an easy coaptation of flaps, sufficed. These incisions were enlarged around the tumour until the pectoral fascia was reached and then the breast was removed; many operators advised tearing it from the underlying tissues since this method led to less haemorrhage. There was never any idea of removing any axillary glands, still less of a formal dissection of the axilla. These were almost pre-antiseptic days, and the usual result was that shortly after the operation the wound had become a big abscess which slowly healed up.

Mitchell Banks of Liverpool was an early advocate of an extended operation, and it was he who pointed out how much better flaps might be obtained by "lateralizing" the scalpel used. It was Halstead, however, who first advocated and practised an operation which included removal of the greater part of the pectoral muscles and a complete clearance of the axilla; this operation, he stated, he could complete in favourable cases in an hour and three-quarters, the time being longer in more difficult cases. Harold Stiles of Edinburgh did much to develop and improve Halstead's technique. It is taken for granted nowadays that no surgeon has done his best by a case of cancer of the breast who has not removed the greater part of the pectoralis major, the pectoralis minor and the axillary contents. The discussion of how best to carry out these objects is what I wish to lay before you this afternoon.

Certain fundamentals must be at once laid down: (1) No longer time than is essential should be spent; the shock of an operation of such magnitude is necessarily severe, and should not be increased by using any but the quickest method compatible with effectual removal of the disease. (2) Outside the question of time every other means should be taken to obviate shock. (3) Every possible precaution should be taken to prevent any risk of infecting divided tissues during the course of the operation. (4) A complete removal must be carried out of the disease itself with a wide margin of surrounding tissues liable to infection, of the proximal lymphatic area, and of the corresponding lymph glands.

The Question of Time.

The observance of certain points will save time.

(*a*) Free and complete access to the axilla, so that no time may be lost in the thorough clearing of its lymphatic glands and tissues. Lockwood pointed out that it is impossible to clear the glands surrounding the axillary vein unless the pectoral muscles are divided. The time spent over this can be vastly shortened by completely turning back the tissues constituting the anterior axillary wall before the dissection is commenced.

(*b*) The provision of instruments calculated to help in performing the axillary dissection as rapidly and cleanly as possible. Kelly's comb greatly shortens this process.

(*c*) Avoidance of having repeatedly to arrest bleeding from the same vessels owing to re-dividing them; that is to say, the vessels supplying the organ should at once be divided as near their sources as the incisions allow.

(*d*) Lower flaps should be made first so as to avoid delay due to blood from higher flaps and incisions having to be frequently wiped away.

(*e*) An ample supply of pressure forceps should be available so that none should have to be tied and twisted off simply because they are wanted again; four dozen is by no means an excessive number to provide.

Shock other than that Due to Time.

This raises again the point just referred to of rapid haemostasis, but beyond this there is much to be done to minimize the shock due to so large a mutilation.

(*a*) Every effort must be made to keep the patient warm. In the first place a suitably cut mackintosh is wanted which will prevent loss of body heat, except at the part actually exposed for operation. The corresponding arm should be warmly wrapped up.

(*b*) If it can be shown that some part of the operation is necessarily slower than another, and especially if it only involves a comparatively small part of the total operation, that part should be performed first so as to avoid a prolonged exposure of the larger portion of the wound. Further, should it be shown that such a proceeding is possible, the rest of the exposed area should be carefully kept warm until the latest moment.

(*c*) I submit that the dissection of the axilla and the amputation of the breast practically constitute two separate operations. It is, of course, assumed that all the ordinary methods of protecting patients from shock during operation will be carried out.

Infection of Divided Tissues.

There are three chief means by which this may be reduced to the minimum:

(*a*) Planning incisions and flaps so as to leave a wide margin round the original growth.

(*b*) Avoiding any incisions or dissections which invade the line of tissue-bearing lymphatics running from the growth to the axilla, and so open lymphatic vessels which may contain malignant cells.

(*c*) Avoiding manipulations which may tend to push on towards the axilla any malignant cells which may already have entered lymphatic vessels.

* A paper read before the Exeter Division of the British Medical Association on November 18th, 1921.

Of course, when in cases of doubt a preliminary incision is made, it should be the rule, if a malignant growth is found, to close the incision properly—a swab inside with sharp catch forceps on the skin is the quickest method—to discard the knife and all other instruments used and thoroughly to wash one's gloves.

Complete Removal.

The aim must be removal of the disease with a safe margin, not the reservation of flaps which will come together artistically. The operator must do his best to put the patient's life out of danger and consider the covering in of the wound afterwards. I do not propose to spend time in discussing the many forms of flaps—some of them quite fantastic—which have been suggested.

Methods of Operation.

Broadly speaking, two main schemes for breast operations present themselves to us, (*a*) the old method of operating from below upwards, and (*b*) the more modern method of operating from above downwards. Personally I must at once proclaim myself as a strong advocate of the second method; yet, as I find that at, at any rate, one London hospital which is a teaching school, and also in some provincial hospitals, the former method is taught and practised, it occurred to me that the matter was one justifying some discussion of the relative merits of the two methods.

Reviewing the older method, I think we shall find the following considerations with regard to our fundamentals:

1. It is the slower method. Halstead talked of 1 hour 45 minutes. I have frequently done even unfavourable cases in less than an hour, operating by the second method. The axillary dissection is needlessly delayed and complicated by the fact that the tissues to be removed are attached and hanging on to the heavy mass of the breast tumour; the moving of this, and the fact that the axillary mass itself tends to obscure the apex, can only make for difficulty and delay. In regard to the arrest of haemorrhage, a very large part of the arterial supply of the breast comes from above; in operating from below, such vessels are continually being re-divided at a higher point than before, and much time is thus lost.

2. Owing to the early formation of the large breast wound, and the presence of this open wound during the axillary part of the operation, a severe amount of unnecessary shock is inflicted on the patient.

3. Infection of the divided tissues. We shall surely agree that manipulation of the amputated breast during the fine dissection of the axilla is very liable to help the escape of any malignant cells present in the lymphatics at the time of operation into the wound, and so lead to reinfection; also, it is less easy to keep clear of the deeper parts of the growth when lifting the mass upwards than when turning it downwards.

These, then, are distinct disadvantages of the older method, and I do not personally know of any advantages to counterbalance them. As a contrast, I propose now to describe the operation I have for some years been accustomed to perform.

A specially designed mackintosh and corresponding cloth cover up the trunk except the site of the proposed operation; the arm is well wrapped up. The upper ends of the incisions over the breast are lightly traced and continued up so as to cross the axilla and end on the inner side of the arm nearer to the anterior than to the posterior fold. A four-fold piece of sterilized flannel is then placed over the affected breast so as to keep that portion of the trunk warm during the axillary dissection.

The upper part of the incision is now deepened to divide the axillary fascia, and a posterior flap is formed to expose the latissimus dorsi (posterior wall of the axilla). The incision is made near to the anterior fold because the backward dissection does not have to go beyond the posterior fold.

An anterior flap is now dissected forward to about the middle of the clavicle, the finger is thrust up behind the anterior wall of the axilla, close to the humerus (on the outer side of the axilla) beneath the pectoralis major, which is cut through with scissors close to its insertion. This plan completely avoids the lymphatics which cross the pectoral fold further in. The pectoralis minor is now similarly divided, and the acromio-thoracic vessels on its inner side are divided between two pairs of forceps, and any further part of the pectoralis major that requires division is severed from the clavicle. It will now be found that the whole axilla is freely exposed, and the vessels and nerves going down the inner side of the humerus are in full view.

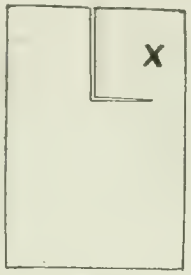


FIG. 1.

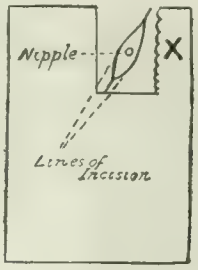


FIG. 2.

FIG. 1.—Special mackintosh and cloth.
FIG. 2.—Remainder of flap is pushed under the back of the thorax.

A point is selected as the lowest point from which the tissues surrounding the axillary vessels are to be removed, and these are dissected up the inner side of the arm along the outer side of the axilla to its apex. When this point is reached the dissection is reversed, and the axillary tissues are brought away from the chest wall, turned down, and left as a mass continuous with the breast and pectoral muscles. The axillary dissection is now carefully reviewed, any detail found requiring attention receiving it.

This done, all vessels are twisted and tied off before turning to the breast amputation; a large hot swab is placed in the axilla, and the upper part of the skin wound brought together over it with catch forceps, thus covering it up. This portion of the operation being finished, the breast remains to be amputated.

The external flap is cut first; then the internal flap is reflected towards the sternum. When these are completed the mass of pectoral muscles, axillary tissues, and breast are rapidly separated by the finger from the chest wall; for vessels divided in this process at least a dozen pairs of forceps should be ready.

The internal attachments of the pectoralis major are cut through with scissors, the left hand or blunt-pointed scissors separating the muscle from the chest wall and the perforating vessels being secured as they are divided. The pectoralis minor is similarly separated from the ribs, and the amputation by this and a little further separation from the chest wall is completed.

Nothing now remains but to deal with haemostasis, insert a drain in the posterior flap, and close the wound. It is well, whilst ligaturing and twisting vessels, to keep large flat hot swabs on the wound.

Let us now review the advantages of this operation. All proceedings are so facilitated as to lead to their taking the shortest possible time. Early and complete access to the axilla is provided; the stripping up of the tissues on the outer side of the axilla from the big vessels and nerves will be found to be an almost astonishingly quick and easy procedure; everything is in full view and easy of access. Similarly the tissues on the inner side come off the surface of the serratus magnus with great rapidity and very cleanly. I should like again to draw attention to the value of Kelly's comb in the dissection of the upper part of the axilla. It was brought out by Howard Kelly of Baltimore, described in the *Annals of Surgery* in 1906, and quoted in the *Medical Annual* in 1907.

A large portion of the arterial supply to the breast is cut off quite soon by the early division of the vessels derived from the axillary artery; there is thus no waste of time due to frequent re-division of the branches of these vessels, and there is much less loss of blood from the operation as a whole. Care is taken to make the lower external flaps of the amputation first; these incisions are thus not obscured by oozing trickling down.

Shock is minimized by postponing to the end of the operation the severe mutilation involved in the actual amputation of the breast; moreover, this large area is kept quite warm during the slower dissection of the axilla by the dry thick flannel placed over it.

Manipulations are minimized and disturbance of malignant cells thus avoided; cut lymphatics are turned downwards and forwards out of the wound, and so again

the risk of infection is minimized. Especially there is no manipulation of the main tumour whilst the axilla is being dissected. An easy view is provided of the posterior aspect of the tumour, and complete knowledge obtained of the satisfactory distance of the posterior surface of the tumour from the line of cleavage.

I may add that after operation I always keep the arm at right angles to the trunk—in other words, extended in a line with the shoulder. I have known one or two cases begin doing their own hair as early as ten days after operation. I beg, therefore, to submit the contrast I have drawn between these two operations for discussion by the meeting. Personally, I have full confidence that my preference for the more modern operation will find acceptance, but I trust some of those present will be found to point out advantages of the former and defects in the latter operation which have escaped my notice, but which I presume present themselves to the minds of those who practise it. This is intended to be merely a short paper. I have therefore avoided any reference to the larger operations involving division of the clavicle or dissections down the abdomen.

GONORRHOEA TREATED BY ELECTROLYSIS:

RESULTS IN 500 CASES.

BY

CHARLES RUSS, M.B.Lond., M.R.C.S.

In 1915 I published a description of this process and gave a brief account of the results in the earliest stages. Since then several monographs have appeared showing the improvements attained. The outstanding feature of the method as evolved to-day is, I think, the rarity for any case to become chronic; particularly is this the case when the subject is one who has attended early and has not already had one or more attacks. Not the least satisfactory feature of the method is the facility with which one can deal with the disease in women on the same principles, but of course with a modified technique. The process as I use it is as follows:

In an acute case, in a man, the first step is to make a smear preparation of the discharge and stain it by Gram's method. The existence of gonococci will be established by this means, but if they are not seen there can be no positive diagnosis of gonorrhoea. By the microscope one also detects in this way the existence of those cases, which are quite uncommon, of a primary urethritis with a purulent discharge for which some other bacteria are responsible. These latter cases also differ clinically as to the latent period between the contact and the appearance of the discharge and in other signs.

The patient is first directed to void some but not all of the urine; he then reclines on the couch. In the acute stage a few drops of stovaine solution are injected into the anterior urethra. Having thus dulled the sensitiveness of the channel, the perforated electrolysis catheter is gently passed into the urethra as far as the compressor muscle. This will be found a painless proceeding. The flexible indifferent electrode containing metallic gauze covered by several layers of lint is wrung out with warm water and applied to the scrotum, and also around the penis. The positive electrode is connected to the stylet of the catheter, and the negative electrode is connected to the pad. The fluid used is a solution of sodium chloride, 1 per cent., containing also one-half per cent. monochloracetic acid. This fluid fills the catheter, and also the funnel of india-rubber which is attached to its upper end. As the fluid is absorbed to some extent by the urethra, and also decomposed by the current, the excess in the funnel maintains the provision of the fluid path for the current, which is also chemically balanced as the electrolytic action progresses. I mean that the monochloracetic acid is less decomposed by the current than the salt, and this acid is able to neutralize the alkalinity which the liberated sodium would otherwise deposit against the urethral membrane, and which would cause pain and injury to the delicate epithelium.

A current of three-quarters to one milliampère is all that need be given, for half an hour each day for the first five days. After that I treat the case only every other day, and on the average twelve treatments in all are enough. Beginning this work in 1912 I have tried most of the variations of the large currents (up to five milliampères). I have tried the effect of giving treatment several times a day and other variations, but I find the best results so far are as above mentioned. The clinical improvement is not due alone to a germicidal effect on the gonococci, though this is considerable. There is also a vaso-congestion following any electrolysis, and if too strong or too frequent a current is used there may be haemorrhage following from the engorged vessels.

After six treatments of this kind there will be very little discharge, and of course no other treatment, such as lavage or irrigations, must be used. At the end of the first week the patient takes 5 minims of sandalwood oil in capsule form four times daily. This can be gradually increased to twice that amount in the twenty-four hours. A weekly dose of gonococcal vaccine is also a routine which helps the vital factor of phagocytosis. Starting with small doses of 10 million a safe increase is that of a like amount each week. Gonococcal vaccine alone is quite unable to overcome the suppurative process.

As the discharge ceases the threads are the only remaining sign of the malady; these become less purulent and are soon only wisps of mucus, in which presently no gonococci can be found. When the patient has seen no discharge for two weeks and is having no treatment by electricity, nor in the form of medicine, the tests can be undertaken. If gonococci are not found microscopically a dose of 200 million gonococcal vaccine is injected. If the infection has not been abolished there will be an angry redness of the injection site and the re-establishment of a urethral discharge of a purulent character, in which gonococci will be seen easily. Favourably there are neither of these signs. At the same time the patient can resume the use of alcohol, which has been avoided since the onset of the malady. Alcohol, being a mild urinary irritant, is sometimes able to reinforce a slight urethral discharge, which the patient may have missed, but it is, of course, unable to generate gonococci or other bacteria which were not there all the time. Electrolysis practised in this way is a painless, safe, and rapid way of overcoming acute gonorrhoea. It is, of course, a much more elaborate form of treatment than using a syringe or irrigator, and gives much more reliable results.

Complications.

I have already referred in previous monographs to the remarkable immunity from arthritis and fascial complications of patients treated in this way. In the whole series I have only encountered two cases, and in one of these a peri-urethral abscess had been incised before I saw the case. The act of incision (a correct procedure) had provided the inoculation of the gonococci into the lymph stream. In the other case the condition was reported to me after the patient had come under the care of another doctor for a sharp fever attack coincident with his gonorrhoea, but I did not have the opportunity of seeing the joint or distinguishing the condition from an influenzal or other arthritis. Without, however, labouring these cases, the percentage is too remarkably small to be accidental. It is clear that the process of electrolysis for gonorrhoea makes arthritis so unlikely an occurrence as almost to justify the assurance of immunity. When one realizes the serious disability that patients may suffer from the crippling effects of gonorrhoea this is a consideration of the first order of importance.

In this series I had no cases of ophthalmia, nor did any cases of stricture occur. The absence of stricture is not surprising, considering the rarity with which cases become chronic. For an organic stricture to form there has previously been a necrotic phase of the suppuration leading to an ulceration. The subsequent fibrosis of the ulcer leads, of course, to the constriction of the urethral lumen and its symptoms. It is probable that the use of strong and caustic chemicals, either as bougies or as instillations, in the delicate urethral lining produces the initial chemical lesion which initiates the ulcer formation. Spasmodic stricture one sees, of course, occasionally, but as this is essentially of the nature of an inflammatory spasm it needs nothing more than sedative treatment, to which it always yields.

Epididymitis is the one liability of gonorrhoea in men which I have encountered; this condition is, of course, met with in patients in whom none but expectant or

purgative treatment is followed, while it also occurs in the routine methods of injections or irrigations. Not infrequently a new case appears for treatment with epididymitis as the first symptom of any malady that the patient has apparently noticed. This complication is the one which makes the period before recovery much longer. In my last series of cases the frequency of its occurrence has fallen considerably. In my experience epididymitis is unlikely to occur except in the acute or subacute stages.

Number of Treatments.

In the absence of any complications twelve treatments are needed in an acute case. This means that electrical treatment is not required after the third week. By a survey of the last five years of this work this period has been getting shorter, and the present is not likely to spell finality. In this series of 500 cases 287 were acute and 213 chronic. The chronic cases were usually sent to me after not less than two months of treatment under the care of the patient's medical man. Either irrigation or injections had given some relief but had not arrested the disease, or there had been a relapse after ceasing treatment. In such cases there needs to be microscopic examination as to the presence or not of gonococci. By this means one knows whether the condition is one of gleet.

For the reasons already given there should not be too frequent use of electrolysis in these cases. In spite of local lavage that has been tried in the methods mentioned, and perhaps vaccine and medicines, there still is a suppurative condition. The patient's resistance is weak, and if continued with no perceptible improvement one sees too often how irrigation leads to irritation. Electrolysis three times weekly, with no other local treatment, soon produces the desired change, and so far I have not met the case which will not yield to careful assistance given this way provided the patient co-operates in the programme laid down. Sometimes the patient's failure to recover under his doctor's care is due to the patient's own impatience or to indulgences of the alcoholic or other types. Sometimes also he has been disappointed by the unrealized promises of recovery within a period. The promise of recovery in a certain time is, of course, a factor in the patient's confidence at the beginning. I think, however, with the late Dr. Gee, that in most maladies prognosis is the most difficult of the informations expected of us. But as that great teacher used to remind his students, "Gentlemen, you will usually be wrong."

In view of the immunity from rheumatic complications described, I believe the protection is due to the production of a specific antibody, probably allied chemically to gonococcal vaccine. If so, the vaccine I am making in a special way may, by itself, prove of greater value than existing forms, but I have not yet sufficient experience of it to make a detailed publication at the present stage. In curing gonorrhoea we are not able by any single operation to empty the mucous glands and follicles of the urethra of the infecting bacteria. A stream of liquid injected or irrigated does something in that direction, but if it could wash out the gonococci in these crypts we could remove them while the patient waits, so to speak. Manifestly we can no more do that than we can wash the infecting microbe out of the parotid gland (in a case of mumps) by irrigations through its duct. Treatment of gonorrhoea does, of course, assist recovery, and it does so by local germicidal action, by elevation of the resistance by the appropriate vaccine, and by the bactericidal action of urinary antiseptics. A good treatment therefore must avoid washing away the precious antibodies which are in the lymph-bathed but inflamed parts, and at the same time it should help by destroying or otherwise removing from the affected channels the populations of the gonococci, whether dead or alive.

ACCORDING to recent statistics Vienna has lost 10 per cent. of its population since 1910, or 190,000 inhabitants, 130,000 of whom were children or adolescents.

PROFESSOR EMILE JEANBRAU has been appointed the first professor of urology at the school of medicine at Montpellier. He was president of the twenty-first congress of the French Association of Urology recently held at Strasbourg.

C

THE TREATMENT OF NEGLECTED CASES OF CLUB-FOOT.*

BY

W. PAYNTER NOALL, M.S.LOND., F.R.C.S.ENG.,

SURGEON, YORK COUNTY HOSPITAL.

THE commonest deformity resulting from infantile paralysis is club-foot, the variety known as talipes equino-varus being the most frequent. This condition, as time elapses, becomes more pronounced, and, unless appropriate means are adopted in its early stage to correct the deformity, very radical procedures are necessary for its amelioration.

During the last four years I have had several cases of the different varieties of club-foot under my care which have not had efficient treatment, some of them having been entirely neglected. Their ages have varied from 7 years up to the twenties when first brought under observation. They have comprised cases of talipes equino-varus (paralytic and spastic varieties), talipes equino-valgus, talipes calcaneo cavus, and talipes plantaris.

As pointed out by Rowlands,[1] it is useless to expect that in the later stages tenotomies, with division of contracted ligaments and fascia, will alone rectify the deformity. The bones of the foot have grown and developed in an abnormal position, and it is this abnormal growth of the bones which proves an effective obstacle to the restoration of the foot to a normal shape. Rowlands advocates an operation through the medio-tarsal joint, which is tantamount to an excision of this joint. I have followed closely on the same lines.

Talipes Equino-varus.

This deformity, when well developed, presents the following points of interest:

The affected limb is shorter than its fellow; there is wasting, which may be very marked; the leg feels cold, presents a bluish discoloration; the heel is raised from the ground; the foot is inverted and adducted. The head of the astragalus forms a marked projection on the dorsum of the foot. There is some degree of scoliosis (compensatory), which disappears on the patient being held up. The gait is awkward, the patient walking on the outer border of the foot, and where this comes in contact with the ground a callosity develops. There may, in addition, be some degree of rotation inwards of the lower part of the leg.

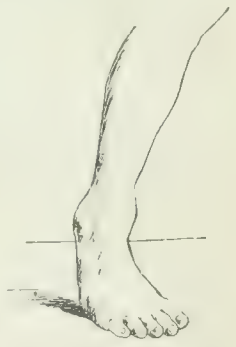


FIG. 1.—Talipes equino-varus.

Treatment.—Following the example of Sir Robert Jones, the operation is bloodless. After elevation of the limb a tourniquet is applied around the thigh so as to compress the femoral artery. Though numerous vessels are severed, there is no bleeding to obscure the field of operation, and consequently no time is taken up in tying vessels or swabbing the wound.

The plantar fascia is put on the stretch, the tense bands being divided subcutaneously. The inferior and internal portions of the astragalo-scaphoid capsule and the long and short plantar ligaments are then divided. The foot is unrolled and stretched manually as much as possible. A curved incision is then made from below and in front of the internal malleolus, downwards and outwards over the dorsum of the foot towards its outer border. This incision is planned so as to open later the medio-tarsal joint, which latter is made up posteriorly of the head of the astragalus and fore part of the os calcis, articulating respectively with the scaphoid and cuboid anteriorly, each joint having a synovial cavity and being surrounded by a strong ligamentous capsule.

The incision is deepened, cutaneous nerves and veins are cut through and then the anterior annular ligament of the ankle-joint is divided. The following tendons are exposed from within outwards: the tibialis anticus, extensor longus hallucis, extensor longus digitorum, and the peroneus tertius. These are freed and lifted forwards by means of a couple of hooks. The termination of the

* Read before the York Medical Society, December 14th, 1921.

anterior tibial artery, vein and nerve are exposed between the tendons of the extensor longus digitorum and extensor longus hallucis. The nerve to the extensor brevis digitorum is, if possible, preserved, this latter muscle being detached from its origin from the os calcis and turned outwards. The prominent head of the astragalus is easily made out and the astragalo-scaphoid joint opened. The periosteum and ligamentous capsule are separated with a rugine in a backward direction from the neck of the astragalus, and the head and part of the neck removed with a sharp chisel. At the age of 8 or 9 years this can be done with a chisel alone, but if the patient is much older a mallet will have to be used as well.



FIG. 2.—Parts removed at operation.

A thin layer is taken off the adjacent surface of the scaphoid. The calcaneo-cuboid joint is now opened dorsally and adjacent portions of these bones removed. In removing the head of the astragalus due regard must be had to the line of section, the direction being from above downwards and slightly forward and outwards. Sufficient amount of the bones is removed so as to eliminate the varus; the opposing surfaces should now lie snugly opposed in the corrected position. The medio-tarsal joint is now closed dorsally with stout chromic catgut sutures.

In cases where the tibialis anticus is strongly acting its insertion may be detached and sutured to the periosteum and ligamentous structures over the dosal surface of the cuboid so that it becomes an inverter of the foot. The origin of the extensor brevis digitorum is now sutured back in position to the upper surface of the os calcis. The annular ligament is united over the extensor tendons and the skin closed with interrupted silkworm gut sutures. The limb is now held vertically and a longitudinal incision made on the inner border of the tendo Achillis. This tendon is exposed and lengthened by a Z-shaped incision, the tendon being first slit longitudinally and then each half divided transversely, one half being divided above and the other half below. By sliding the two divided halves on each other the tendon can be lengthened to the required degree.

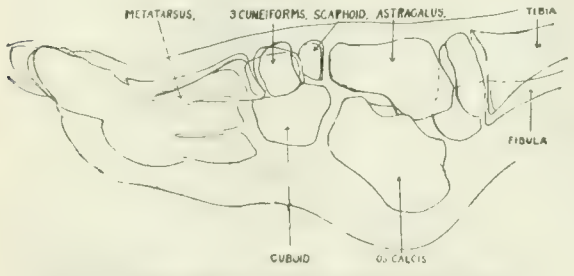


FIG. 3.—Photo-skiagraph of the foot before operation.

The posterior ligament of the ankle-joint is then divided, and the foot can now be dorsiflexed beyond a right angle, the equinus position being over-corrected. The two ends of the tendo Achillis are now sutured together with chromic catgut and the skin incision closed with interrupted silkworm gut sutures. The sutured lines are now painted with iodine and gauze dressings applied. The limb is surrounded with a layer of wool from above the knee to the base of the toes and a flannel bandage applied over all. While the foot is held in an over-corrected position the limb from above the knee to the toes which are left free, is encased in plaster-of-Paris bandages. Before the casing has set it is slit up in its whole length anteriorly with a sharp scalpel and surrounded with a single layer of cotton-wove bandage. The tourniquet is now removed. The circulation is now seen to be restored to the toes and the patient is returned to bed.

For the next forty-eight hours it is not uncommon for the patient to complain of some degree of pain in the limb; this is not accompanied by any swelling of the toes or signs of haemorrhage, and need not cause any alarm. It is easily assuaged by the exhibition of a few minims of nepenthe, and passes off within two days.



FIG. 4.—The foot nine weeks after operation.

The plaster is removed at the end of six weeks. This is quite an easy matter, as it has already been slit up before leaving the operating table. The sutures are now removed and the limb replaced in its plaster casing. In a few days massage is commenced, and in the course of a month the patient is measured for boots and leg irons. Whilst these are being made the plaster casing serves as a splint to keep the foot in position. During the early part of the massage treatment, or on putting the foot to the ground, the patient may complain of pain in the sole, but this soon disappears. After the plaster is first removed there is no voluntary movement, but under massage this soon returns, and movements which before operation were feeble or even absent may become respectively stronger and apparent.

In cases of equino-varus, in providing leg irons (external and internal), it is necessary to have a stop at the ankle to limit plantar flexion and permit dorsiflexion, and, in addition, a varus T-strap to counteract any tendency to a return of the varus position. A cork sole is added inside the boot of a sufficient depth to compensate for the shortening of the limb. Where there is some inward rotation in addition of the lower part of the leg, this can be corrected by carrying the leg iron up to the pelvis, to which is fitted a pelvic band. Massage will still have to be continued and the apparatus worn till deformity does not tend to reappear and the limb become as useful as possible. As time goes on it will be found necessary to diminish the depth of the cork sole.



FIG. 5.—The foot after operation.

Talipes Calcaneo-cavus.

In this uncommon deformity, the opposite to equino-varus, the patient walks on the back of the heel and the fore part of the foot is dropped—that is to say, the portion of the foot in front of the medio-tarsal joint. I have had two cases of this deformity where the paralysis has not been complete, but where both the anterior and posterior group of muscles of the foot have exhibited some degree of movement. The operation in these cases has followed for the most part the one designed by Sir Robert Jones[2] and quoted by Tubby. It is divided into two stages.

Stage 1.—Through an incision on the inner and outer border of the foot opposite the summit of the cavus deformity—that is, opposite the medio-tarsal joint—a wedge-shaped piece of bone, base upwards, is removed, transversely from the tarsus, the incisions are closed with silkworm-gut sutures and the foot bandaged to the tibia with plaster-of-Paris bandages. If there is any varus the wedge removed is broader externally than internally, and if there is any valgus the wedge is broader internally.

This operation corrects the cavus deformity. In four to five weeks the plaster is taken off and the sutures removed.

Stage 2.—At this operation the calcaneus deformity is corrected, the foot being brought down to a right angle. The anterior ligament of the ankle-joint is divided through an open incision across the front of that joint, the tendons being held out of the way. Through a longitudinal incision over the tendo Achillis the tendon is divided and a wedge shaped piece of bone removed from the back of the astragalus, the base backwards, the superior articular surface of the astragalus being left intact so that we can still get dorsiflexion and plantar flexion at the ankle-joint.

The foot is now brought into an over-corrected position, a sufficient portion of the tendo Achillis being removed so as to meet in this corrected position. The posterior incision is closed. In one of the cases a wide gap was left at the site of the anterior incision, and it was found necessary in order to close it to make a transverse incision above the ankle-joint, undercut its edges, and unite it vertically. Dressings are applied and the foot and leg put in plaster-of-Paris bandages. These are removed after six weeks, and the after-treatment is the same as indicated in cases of talipes equino-varus. Boots and irons are provided with a stop at the ankle to allow plantar flexion and limit dorsiflexion. A varus or valgus T-strap is added if there is any tendency to either varus or valgus respectively.

Talipes Plantaris.

This condition—"hollow foot"—is bilateral, and variously supposed to be due to wearing short boots or to a neuritis affecting the extensor group of muscles of the foot following some of the infectious fevers in childhood. The arch of the foot is higher than normal and the sole hollow, the toes are contracted, hyperextended at the metatarso-phalangeal joint and flexed at the interphalangeal joint, the structures in the sole of the foot are shortened. The foot cannot be flexed to or beyond a right angle. Corns develop on the heel and ball of the foot, walking being very painful, this being the chief symptom calling for treatment. This condition can be treated on the same lines as outlined for talipes equino-varus.

Results of Operation.

By observing these cases over a number of years one finds that the paralysed limb, as a result of the operation, not only grows in length and girth, but it grows in length at a quicker rate than the sound limb. I have frequently observed cases where the affected limb has been from 1½ in. to 3 in. shorter than its fellow, that this amount of shortening decreases as time goes on, and in one case operated on four years ago, where the shortening was 1½ in., has to-day become practically *nil*, the gait is indistinguishable from that of a normal person, and the the patient has discarded all apparatus.

Table of some Cases where Measurements have been Recorded.

Talipes equino varus. Operation, July 18th, 1917. Amount of shortening: November, 1917, 1½ in.; December, 1918, 5/8 in.; to-day, 1/4 in.

Talipes equino-valgus. Operation, 1918. Amount of shortening: October, 1918, 1¼ in.; February 25th, 1921, 3/4 in.

Talipes equino-varus. Operation, July 18th, 1919. Amount of shortening: November, 1919, 3 in.; March, 1920, 1½ in.; February, 1921, 1¼ in.

Talipes calcaneo-cavus. Operation: first stage, March 19th, 1920; second stage, May 1st, 1920. Amount of shortening: 1920, 1 in.; after operation, June, 1921, 5/8 in.

Talipes equino-varus. Operation, November, 1919. Amount of shortening: June 15th, 1920, 1/2 inch; February 24th, 1921, 1/4 in.

In some cases, where the paralysis is extreme, the patient may have to continue to wear the apparatus, but even in these cases the deformity has been corrected, the gait becomes more that of a normal person and less of an eye-sore to its parents and friends, and can partake more in the activities of life. A point to be noted in two cases of spastic talipes equino-varus (right-sided hemiplegia) is that the upper limb markedly improved after the foot had been operated on.

In undertaking the treatment of these cases it is necessary to have them under one's own supervision for a few years, also to have at one's command the services of a skilled masseuse, and to have provided correct boots and irons. Messrs. C. F. Thackray, of Leeds, have provided me with efficient apparatus.

The line drawings from photographs and skiagram appended illustrate a case of talipes equino-varus before and after operation.

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PIGMENTATION OF THE VERMIFORM APPENDIX.

(*A Preliminary Note.*)

BY

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THE literature on the subject of pigmentation of the vermiform appendix is at present scanty. In fact, a recent search through the various available indices of medical books and periodicals proved negative. No edition of the large monographs on appendicitis is of late enough date to include this subject.

This interesting pathological condition was first discovered a few years ago by W. H. Battle,[1] and the results of a study of six of his specimens were published by Professor S. G. Shattock in 1916.[2] In this article the naked-eye appearances and histological characteristics of the specimens are fully described, and possible explanations of the phenomena discussed. The drawing published by Shattock shows a mottled black pigmentation of the mucosa. The irregularity of the coloration is due to a sprinkling of light areas, corresponding to the situation of the lymphatic nodules. In the specimen removed from the case described in this paper the patchy distribution of the pigment was remarkable, reminiscent of the markings on the back of a snake. On analysis Professor Shattock failed to find any traces of iron in these specimens. He was also able to show that the pigment was not derived from blood. Histologically the pigment lies in the tissue surrounding the glandular crypts and is carried in large endothelial cells, all of which are superficial to the muscularis mucosae.

The subject is at present being actively investigated by Professor Sir Arthur Keith. In a recent demonstration at the Royal College of Surgeons he showed several sections of pigmented appendices. The granules are contained in large endothelial cells lying round the bases of the crypts of Lieberkühn. In sections taken from the colon in chronic cases of intestinal stasis these cells are being attacked by large numbers of phagocytes. The actual pigment seems to be related to melanin, and contains a fatty acid which is in some way allied to adrenaline. The changes that occur in the structure of the colon in chronic intestinal stasis are profound, but one of the most interesting is certainly the pigmentation of the mucosa.

In this connexion McCarrison's[3] recent work on deficiency diseases is illuminating. This observer has been able to produce experimentally, by feeding animals on a vitamin-free diet, changes in the bowel similar to those described by Keith. While no mention is made of the appendix, the mucous membrane of the caecum is said to be "usually moderately congested, ecchymotic, and often of a dark slate-grey colour." Clinical evidence is also forthcoming to show that a deficient diet, as experienced in a prisoners of war camp, may produce the same changes in the behaviour of the bowel. Guarini[4] has studied forty cases of deficiency inanition which developed the condition of chronic intestinal stasis, *x*-ray examination showing visceroptosis, distension of the gut, and constipation.

These pathological changes in the bowel are associated with an alteration in the adrenaline secretion (McCarrison). Further studies on this subject are being carried out. In the meantime there appears to be sufficient evidence to justify the conclusion that the changes in the bowel associated with chronic intestinal stasis and resulting in pigmentation of the mucosa, interstitial fibrosis, and degeneration of the intrinsic neuro-motor mechanism, may

be due to, or at any rate largely associated with, avitaminosis.

The clinical history of the patient from whom the appendix here illustrated was taken is typical of that of chronic appendicitis and suggestive of intestinal stasis.

A lady, 50 years of age, was sent to me complaining of occasional right iliac pain, nausea, inability to take and digest more than a few carefully chosen articles of food, together with obstinate constipation, varying with bouts of passing loose unformed motions.

The first attack occurred thirty years ago, and for twenty years she had noticed an almost continual grumbling in the right iliac fossa with slowly increasing constipation. In 1907–8 she had to resort entirely to aperients and the motions were always loose. In 1916 chronic appendicitis was diagnosed but no operation was performed. In 1920 there was a definite attack of acute inflammation with raised temperature.



FIG. 1.—Section of appendix mucosa. Pigmented cells grouped round the bases of the glandular crypts, superficial to the muscularis mucosae.

When examined in April, 1921, the patient, a lady of a naturally dark complexion, showed a sallow skin, yellowish sclerotics, and a dirty tongue. The urine was normal and the actions contained bile. On pressure deep tenderness in the right iliac fossa was obtained, and Rovsing's sign was elicited.[5]

It was felt that extensive structural changes probably existed in the colon and short-circuiting was discussed. However, it was finally decided, at the request of the patient, to perform appendicectomy, at any rate as a preliminary measure.

The incision advocated by Jalaguier[6] was utilized to expose the caecum and adnexae.[7] Several pericaecal adhesions were divided, the ileum released, and a diseased appendix was removed. The appendix as it lay *in situ* was noted to be of a slaty-grey colour, whereas the large bowel appeared normal in tint. When the appendix was slit open the mottled pigmentation was very striking.

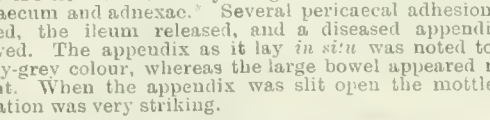


FIG. 2.—Appendix slit open, showing mottled pigmentation.

Six months later the improvement in both the general appearance and symptoms of this patient was remarkable. She presented a clear, fresh complexion and looked years younger. The constipation was no longer her *bête noire*, and she was able to take an ordinary diet, digesting and enjoying articles of food she had been obliged to refuse for years.

SUMMARY.

1. Pigmentation of the vermiform appendix has hitherto been regarded as an uncommon condition. Attention having been drawn to it, surgeons will now probably be surprised at its frequency. The first specimens were discovered by Mr. W. H. Battle and described by Professor S. G. Shattock in 1916.

2. The condition may be regarded as secondary to changes in the big bowel associated with chronic intestinal stasis (Keith).

3. The pigment cells contain melanin and a fatty acid substance probably allied chemically to adrenaline.

4. While the exact significance of the pigmentation is not yet clear, it appears constantly in cases of chronic intestinal stasis along with the degenerative changes in Auerbach's plexus (associated with a defective motor mechanism), diminished activity of the intestinal mucosal cells, and lack of the usual protective mechanism against bacterial infection (McCarrison).

5. It is probable that all these changes are closely related to avitaminosis, since all the pathological conditions already mentioned have been produced experimentally in animals by appropriate diets (McCarrison).

6. From the practical point of view the importance of this conception cannot be over-estimated. Chronic intestinal stasis, chronic appendicitis, and many morbid conditions of the caecum may be prevented by the administration of a diet containing sufficient natural foodstuffs which are especially rich in vitamin B.

These notes have been written at the suggestion of Professor Sir Arthur Keith, to whom I am indebted for much valuable information and who kindly prepared the sections described. I wish also to thank Lord Dawson for the opportunity of examining the patient clinically and subsequently obtaining the specimen at operation.

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[7] The operation is a very useful one, described in 1895. The skin incision follows the line of Poupart's, and is 2 inches long, the anterior sheath 2 inch internal to the anterior superior spine of the ilium. The posterior layer of the sheath is not opened.

THROMBOSIS OF THE INFERIOR VENA CAVA:

WITH SPECIAL REFERENCE TO PROGNOSIS.

BY

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THROMBOTIC obstruction of the inferior vena cava is a condition which has long been known in medicine. In Alexander's[1] translation of Morgagni's *Seats and Causes of Disease* there is a very clear description of the condition, derived from a letter from Stancari, and Morgagni also gives a detailed reference to a description by Haller.[2] It may follow an infection (such as typhoid fever or puerperal sepsis), traumatism, or malignant tumour of the kidneys, suprarenal bodies, or liver. In 1911 Pleasants[3] collected records of 314 cases of obstruction of the inferior vena cava; of these, 171 were due primarily to thrombo-phlebitis, usually associated with inflammatory foci elsewhere; in 88 cases the obstruction was due to malignant growths; the cause of the remainder was indefinite.

As regards the all-important point of the eventual prognosis of the condition and the average duration of life in those cases unconnected with malignant disease very little appears to be known, and little or no information is given, with few exceptions, in the reports of cases which have been published. This lack of knowledge was emphasized in a discussion on the subject of thrombosis of the inferior vena cava last year in the Section of Medicine of the Royal Society of Medicine, introduced by Dr. F. Parkes Weber.[4]

In 1903 Parkes Weber examined a man, aged 28½, for life insurance, and he was accepted, with ten years added; on May 8th, 1917, he was still alive and well and about to pay the last premium of the policy. Parkes Weber also quotes Shattock's[5] case of a medical colleague who developed thrombosis of the inferior vena cava in 1884, and who lived for twenty-five years afterwards, death occurring in 1909 from tonsillitis and septicaemia; during the last six years of his life, however, he had been subject to attacks of thrombo-phlebitis in his enlarged saphenous veins. In 1907 Parkes Weber saw a man, aged 26, whose inferior vena cava was thrombosed seven years previously as a sequel of typhoid fever; the thrombosis was associated with oedema of the legs and varicose ulcers, and he had had three attacks of thrombosis. In 1912 the condition of this man was much the same.

I have recently had under my care a patient who developed thrombosis of the inferior vena cava fifteen years ago, from puerperal sepsis, and whose condition is of some interest in regard to the ultimate prognosis of such cases. The patient was sent to me by Dr. W. J. Rutherfurd, to whom I am also indebted for the historical notes upon this rare condition.

A married woman, aged 41, came under treatment because of very severe thrombosed and ulcerated internal haemorrhoids. Her history was that fifteen years ago she had a very difficult childbirth, involving two days' labour and an instrumental delivery; following this, puerperal sepsis supervened, with white swelling of the left leg and, a week or two later, of the right.

She was completely bedridden for three months, and partially so for nine months. Before her confinement she had been quite healthy, with no sign of varicose veins or haemorrhoids. The swelling and oedema of the lower extremities subsided very slowly. She stated that the superficial veins in the front of the abdomen became greatly distended to the level of her

waist, and she developed piles. In the intervening years she was a semi-invalid, getting about very little owing to the discomfort of the haemorrhoids and the feeling of weight in her legs. She also suffered from dispareunia and menorrhagia, but seemed to have had no further phlebitis.

When she came under the observation of Dr. W. J. Rutherford, about ten months ago, she had masses of varicose veins in both legs extending up to the thighs, varicose veins in the vulva, haemorrhoids of a severe degree, and a well marked communication on each side between the tortuous veins behind the anterior superior spine and those of the lower intercostal spaces. There was no visible communication between the epigastric systems, but this might well be hidden by the anterior abdominal fat; there was no sign of ascites, and no albuminuria. The haemorrhoids were operated upon in the Manchester Jewish Hospital, with a marked increase of the patient's comfort.

As regards the duration of life after thrombosis of the vena cava, it is interesting to look at the results of a series of experiments on dogs conducted by Béjan and Cohn.[6] In the dog the inferior vena cava system is absolutely comparable with that of man, and ligature of that vein was performed by these investigators at different points. They reached the following conclusions: In ligature of the inferior vena cava below the level of the renal veins, whatever the points of application of the ligature, life is possible and compatible with ordinary good health. Ligation at the level of the renal veins, and comprising one of these veins in the ligature, is well tolerated. Ligature performed immediately above the renal veins, and taking in the left suprarenal body and its vessels, is also compatible with life, the circulation becoming re established; but ligature performed above the right suprarenal body and its vessels is always followed by death, the circulation apparently remaining completely obstructed.

This conclusion, Béjan and Cohn state, is confirmed by clinical observation, and is also in accord with the conclusions of all other investigators down to that time (1911). Purpura stated (1898–99) that life was possible when ligature of the inferior vena cava was performed between the junction of the iliac veins and the hepatic veins, but was more difficult to preserve if the ligature was made above the level of the renal veins; Gosset and Lecène concluded from their experiments (1904) that ligature of the inferior vena cava below the renal veins was accompanied by no pathological phenomena, not even by any oedema of the lower limbs, but ligature above the level of the renal veins was always followed by serious lesions and death. Leotta[7] carried out similar experiments in 1907, and came to similar conclusions. The absence of albuminuria in the case described above is of importance here as being strongly suggestive that the thrombosis had stopped short of the level of the renal veins.

Shattock conducted an autopsy in the case which has been already mentioned, and found that the inferior vena cava had been converted into an impervious ribbon from the point of entry of the hepatic vein downwards, while both the renal veins were closed at their entrance into the vena cava, blood being returned from the kidneys through the veins of the capsule and by way of the lumbar veins through the azygos veins. This should be compared with the observation recorded by Morgagni.[1]

It seems evident, therefore, that complete obstruction of the inferior vena cava, leads to the development of varicose veins, sometimes of very considerable extent, and to attacks in them of thrombo-phlebitis—in addition to pigmentation of the legs, varicose ulcers, and other sequelae of severe varicosity—and to other symptoms of backward pressure in the venous system of the lower part of the trunk and the legs, but is not incompatible with a prolonged and fairly comfortable life.

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DURING the last nineteen months there have been 34 cases of anthrax in New York, 20 of which have been due to the use of infected Japanese shaving brushes; 11 of the cases were fatal. A few cases were also caused by infected toothbrushes.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

COMMON CHANGES IN ERYTHROCYTES.

IT is well known that in lead poisoning the red discs show abnormalities ranging from polychromasia and punctate basophilia to erythroblasts of various kinds. But the changes that follow small doses of lead in a few days have almost escaped observation. In treating occasionally internal haemorrhage and chronic diarrhoea with lead (plumbi acetatis gr. xx, ac. acetic dil. ʒj, aq. (dest.) chloroformi ad ʒviij; ʒss ter die), I have observed that for ten persons there were, in three to nine days, (1) about four showing polychromasia and punctate basophilia; (2) three showing in addition Cabot rings and Howell-Jolly bodies; (3) two showing all these and erythroblasts; (4) one showing no reaction.

I am not aware that attention has been directed to the frequency with which such changes follow the malarial paroxysm. My experience is limited to a few cases of benign tertian infection, but the changes were practically always present about thirty hours after the onset of pyrexia. In ordinary ambulatory cases nucleated reds are seldom seen, but in such cases polychromasia may be detected in 3 to 4 per cent. of erythrocytes, and punctate basophilia, Cabot rings, and Jolly bodies in about 1 per 1,000 of red discs. These changes are not usually observed in ordinary ailments, but I have seen them, though rarely, in influenza, typhoid fever, and scarlet fever. In each of three cases of haemolytic anaemia they were greatly increased at the paroxysms (acholuric jaundice), but never disappeared entirely. In pernicious anaemia their presence has been recognized for a long time.

The evidence suggests that these — polychromasia, punctate basophilia, Cabot rings, Jolly bodies—are signs of an erythrogenesis more active than is ever required in health, and therefore in this sense abnormal. In malaria such erythrogenesis is to be expected and is a good sign. In lead poisoning Pappenheim considered that the metal directly excited the marrow. The fact that even small doses quickly stimulate erythrogenesis suggested to me the use of lead in certain persistent anaemias of chlorotic character. In chlorosis one seldom meets with signs of overactive erythrogenesis (polychromasia, etc.), but young chlorotics promptly respond to lead. In older women with chronic or recurrent anaemia of chlorotic character I have given lead for a fortnight without observing any reaction in the film except that the reds were less anaemic, and that the increase in haemoglobin continued for weeks after stopping the drug.

In any case it is useful to recognize these changes. Ordinary stains show the coarse basophilia excited by lead, but the other changes and the finer basophilia in malaria are rarely displayed by a stain that cannot be depended on to show Schuffner's dots conspicuously. Manson's methylene blue answers well when it has been steamed (not under pressure) for half an hour on three or four successive days. It becomes intensely polychrome. It is convenient to have two small wide-mouthed bottles with glass stoppers. One contains about 20 c.cm. of pure methyl alcohol, and films are dropped in to be fixed by laying the bottle on its side for five to fifteen minutes. Into the other bottle 50 c.cm. of distilled water are poured, and four drops of 1 per cent. aqueous solution of eosin and three drops of polychrome Manson's blue added. The whole is well mixed, and the fixed film transferred with forceps to stain for half an hour to two hours or longer. Distilled water, drop tube, and clean bottles are necessary.

Ealing, W. ROBERT CRAIK, M.D.Glasg.

A CASE OF ANEURYSM OF THE SUPERFICIAL PALMAR ARCH.

THE following case of traumatic aneurysm of the superficial palmar arch is, I think, worthy of record.

A girl, aged 5 years, was admitted to the Presidency General Hospital, Calcutta, under my care on October 4th, 1921. She was suffering from a pulsating tumour on the palmar surface of her right hand. The history given was that three weeks before she sustained an injury to her right hand by a piece of glass from a burst soda-water bottle. The injury produced a linear

cut about an inch long on the palm of the hand midway between the bases of the proximal phalanges and the wrist-joint. Haemorrhage, which was profuse, was controlled by a handkerchief used as a tourniquet and by local pressure. There was no further bleeding on removal of the tourniquet, and the patient was able to use her hand without pain.

Five days after the accident the patient, in pushing open a door, forcibly hyperextended her hand. Next day there was a slight dark brown discharge from the wound, which had seemed to have healed. There were then some pain and swelling in the hand, which were relieved by elevation of the part. The swelling gradually became more marked and extended to the ring and little fingers, which could not be straightened. The skin around the wound took on a bluish appearance. Two days after the second injury the mother of the patient noticed a lump protruding from the wound, but did not observe any pulsation in it. The lump gradually became larger. The patient was treated for some time by a doctor who applied local pressure, but in spite of this the swelling grew in size. I found a dark blue swelling a little to the ulnar side of the centre of the right palm. It was about the size of a pigeon's egg; it protruded from the wound, pulsated, and disappeared gradually on pressure. The patient complained of pain and tenderness in the hand. The ring and little fingers were flexed on the palm, and any attempt to straighten them caused pain. A thrill was felt and a bruit was heard.

I operated on October 7th, 1921, under chloroform. A rubber tourniquet was applied above the wrist, the wound was enlarged half an inch above and below the swelling, and the sac dissected out. The swelling was found to be an aneurysm of the superficial palmar arch. This artery was ligatured on both sides, and also one palmar interosseous branch. The wound was swabbed out with rectified spirit, treated with bipp, and sewn up. There was a slight sero-sanguineous discharge from the wound for a few days. The patient was discharged from hospital cured on October 13th.

I am indebted to Lieut.-Colonel E. E. Waters, I.M.S., Superintendent, Presidency General Hospital, Calcutta, for permission to publish this case, and to Assistant Surgeon J. J. Dunne, I.M.D., for his careful notes.

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Presidency General Hospital, Calcutta. Major I.M.S.

VARICOCELE IN THE FEMALE.

I WAS much interested to read the lecture given by Dr. W. E. Fothergill at St. Mary's Hospital, Manchester, on varicocele in the female (p. 925). I have been working at the subject for the past two years, and with some good practical results.

In many cases I could find no objective signs to account for certain definite and distressing symptoms enumerated by patients, the most marked being constant dragging pains in one or both groins, extending in some cases down the thighs, always better just after periods were over, and beginning to come on about a week or ten days after the period had stopped and becoming increasingly pronounced until the next menstrual flow had started. These symptoms puzzled me because I could in many cases find no deviation from the normal in ovaries or tubes. I did not do as Dr. Fothergill suggests, and examine the patients in the upright position. At last with one patient life was such a misery that I resolved to do an exploratory laparotomy.

On opening the abdomen and examining the pelvis I found the uterus normal and the ovaries normal, but the plexuses of veins in the broad ligaments were much increased in size, the vessels being three or four times as big as ordinarily found—in fact, the broad ligaments looked as if a fair sized varicocele had been spread over them. I ligatured some of the larger masses of veins at both ends and cut between. The patient made a good recovery and went out without pain.

I adopted the same procedure in other patients who were without definite physical signs. The cases all terminated as did the first, and as none of the patients have yet returned, I presume that my deductions were correct and my operations justified. I know that the small number yet treated will not allow me to dogmatize, but at any rate it is a start in what I believe to be the right direction to a cure of what up to now has been a harrying condition in so many otherwise healthy women.

London, W. E. L. ROWSE.

A NEW medical journal entitled *La Diagnosi*, to contain chiefly articles on pathology and on clinical medicine, is to be published at Perugia, under the direction of Professor Silvestrini.

SMALL-POX has recently broken out at Zurich and Basle. In Zurich there were 120 cases of a mild character and in Basle 47 cases, of which 8 were fatal. The ages of the patients ranged from 1 to 67.

Reports of Societies.

TREATMENT OF DISFIGUREMENTS CAUSED BY NASAL SYPHILIS.

AT a meeting of the Laryngological Section of the Royal Society of Medicine on December 2nd, with Sir WILLIAM MILLIGAN, the President, in the chair, Dr. DOUGLAS GUTHRIE showed photographs and lantern slides illustrating the result of treatment in a case of nasal syphilis where the disease had destroyed the columella and the cartilaginous septum, and had produced an extreme degree of "saddle-nose" deformity. The patient, a girl aged 18, had suffered from inherited syphilis between the ages of 14 and 16. When the lesions were healed and the Wassermann reaction was negative, operative treatment was undertaken. The columella was reconstructed by skin flaps from the upper lip, and the "bridge" of the nose was restored by a graft of costal cartilage. This graft was introduced through an incision across the root of the nose, which was considered preferable to an intranasal incision, on account of the ease of access and greater asepticity. By subcutaneous dissection a pocket was constructed for the reception of the cartilage graft, which was suitably shaped according to the requirements of the case. It was well in these cases not only to make a pocket downwards to the tip of the nose, but also one upwards, and not too deep, accurately measuring the length of the graft and the length of the pocket, so that when the graft was slid in it would be tightly gripped. The advantage of a cartilage graft was that it was natural tissue. It had great superiority over paraffin or other foreign substances, and it could easily be whittled down to the exact shape and size required.

Mr. H. D. GILLIES expressed the opinion that the deformity following nasal syphilis was due in large measure to destruction of the mucous membrane lining the nose. If only cartilage were implanted the desired result would not be achieved, and it was necessary to replace, by means of skin grafts, the mucous membrane which had been destroyed. He showed lantern slides of three cases which had been treated in this manner with excellent results. The operation might be supplemented later by the introduction of a cartilage graft, if necessary.

Replying to questions by Sir WILLIAM MILLIGAN, Mr. MUSGRAVE WOODMAN, Dr. KELSON, and others, Dr. GUTHRIE said that he preferred cartilage to bone on account of the ease with which it could be cut to any desired shape. Cartilage persisted unaltered when introduced subcutaneously, and it was immaterial whether perichondrium remained attached or not. No fixation by suture was necessary, provided that the graft was shaped suitably and fitted accurately into the pocket constructed for its reception. He had operated on 7 cases, 5 of which were due to injury and 2 to syphilis, and the earlier cases had stood the test of time.

Sir STCLAIR THOMSON showed a patient, a schoolmaster, aged 53, suffering from intrinsic epithelioma of the larynx. The only symptom was hoarseness, which had been coming on steadily for one and a half years. The larynx was normal except for the left vocal cord, which had a comparatively slight mechanical impairment, and had been replaced by an infiltrating irregular neoplasm, of characteristic cauliflower appearance. [Laryngo-fissure was successfully performed on the following day.]

Dr. ANDREW WYLIE showed a patient from whom a fibroma of the right vocal cord had been removed by the forceps which he had designed; the patient had had tracheotomy performed when a child, and Dr. Wylie considered that the tube must have irritated the vocal cord, the fibroma resulting years afterwards.

Arrested Development of Trachea.

Mr. C. A. SCOTT RIDOUT reported the case of a boy, aged 16, who was first seen on September 27th, 1921, when he was suffering from extreme dyspnoea, with marked recession, and was livid and gasping. There was thyroid enlargement, especially of the right lobe. The history was that difficult breathing on exertion was noticed after enteric fever eleven years before, and also a "lame right hip." The boy was unable to move about quickly owing to dyspnoea, but could talk quite well. He had pneumonia twelve months ago, and his breathing was much worse

afterwards; "swelling of the neck" was noticed two weeks before admission to hospital on September 27th. As no anaesthetic was possible, an injection of cocaine and adrenaline was given, and an incision made for low tracheotomy. The right lobe of the thyroid was found in the middle line of the neck, and on pushing this aside and dissecting carefully a cord-like collapsed trachea was exposed deeply placed, about the size of a goose quill, flattened laterally, and pushed to the left of the middle line. An incision was carefully made after injection of 1 per cent. cocaine, and with difficulty a No. 28 Parker's tube was inserted; there was immediate relief. The tube later on was coughed out, grave symptoms returned, and a larger tube was inserted. The thyroid enlargement was rapidly disappearing under the administration of 5 gr. of thyroid extract daily. On October 19th, 1921, a fresh incision was made over the cricoid cartilage, which was almost normal in size, the trachea being atrophic up to this point, and Koenig's tube was inserted. The larynx, except for somewhat infantile appearance of the epiglottis, was not unduly small for his age. In the right thigh all the muscles were wasted, but reflexes were apparently normal.

Sir J. DUNDAS-GRANT said the history did not support the idea that the condition was congenital, as the difficulties dated only from the typhoid fever in the fifth year. He thought it likely that some atrophy of cartilages had occurred as the result of the illness, and for that reason the condition appeared to have persisted after the pressure on the right lobe had been removed. Perhaps a skiagram would indicate the condition of the lower part of the trachea. If that part proved to be wide, possibly the restricted portion might be resected. That was heroic treatment, but reports of Gluck and others required that it should be considered.

Sir WILLIAM MILLIGAN said that if the narrowing had been confined to a small area he could have understood the attribution to typhoid fever; but he gathered that the lumen was small from top to bottom, and he could not think typhoid fever could cause such uniform stenosis. Probably the whole bronchial tree would be found to be in a like condition. The fever probably aggravated the stenosed condition already existing; in fact, the lad got on well until the typhoid added to the trouble. Tracheas had been seen flattened by the thyroid, but this present condition was not local.

Other cases and specimens of interest were shown by Sir JAMES DUNDAS-GRANT, Mr. G. W. BADGEROW, Mr. KELSON, Mr. CLEMINSON, Mr. J. F. O'MALLEY, and others.

AMOEBIC DYSENTERY.

AT a meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine on December 5th, presided over by Sir LEONARD ROGERS, Professor LEONARD DUDGEON opened a discussion on amoebic dysentery. He referred to the widespread occurrence of both dysentery and diarrhoea during the occupation of Gallipoli in 1915–16, and to the wholesale use of emetine for prevention and treatment. He claimed that emetine had been responsible for the freedom from the complication of liver abscess, and had enabled many dysenteric patients to continue at their posts in spite of their attacks. The value of emetine bismuth iodide, though beneficial in the early stages of an attack, had been over-estimated, for it had failed to cure many long-standing cases. In the diagnosis of the chronic stage he mentioned the importance of the use of the sigmoidoscope, the necessity of frequent examination of the stools for *E. histolytica* cysts, and he attributed some value to the presence of Charcot-Leyden crystals. Reference was made to the finding of the cysts in stools of normal people without any history of past disease and residents in Great Britain. Past histories were, he thought, often open to doubt and unreliable. The presence of cysts might result from very small amoebic ulcers of the bowel giving rise to no symptoms, such as *post-mortem* examinations occasionally revealed where death was due to accident.

Dr. P. H. MANSON-BAHR dwelt on the difficulty in the treatment and diagnosis of the chronic case, whose course was more often marked by alternating diarrhoea and constipation. The presence of cysts of *E. histolytica* in the stools could only be verified in about 30 per cent. of cases. In a further 40 per cent. diagnosis was supplied by the use of the sigmoidoscope, and in the remainder was based on the course and history of the case. Mention was made of the insidious onset and long spells of latency occasionally displayed by amoebic infection. Emetine bismuth iodide was undoubtedly of value in the early stages, and was capable of curing about 50 per cent. at that period, but when the disease became chronic it had proved a failure. He emphasized his preference for the use of emetine alone in the acute phase, followed later by emetine bismuth iodide. Earlier administration of the double iodide might prove harmful owing to the risk of its irritating action on the acutely inflamed bowel leading to serious intestinal haemorrhage. Recovery depended much on the patient's general resistance to infection being maintained, and was occasionally aided by rectal injections of eusol. Emetine bismuth iodide was best given in gelatine cachets, in 3-grain doses every night, for a course of 36 grains. Abstinence from food for two hours previous to each dose was advisable, and intolerance to the drug was occasionally avoided by giving ten minims of tincture of opium, or, as advocated by Sir Leonard Rogers, by the addition of 5 grains of tannic acid to the iodide. Ipecacuanha given on the lines advised by Sir Patrick Manson at times succeeded when emetine bismuth iodide failed, but treatment of the chronic stage of amoebic dysentery still left much to be desired. Following the course of the double iodide treatment in a favourable case, careful attention in the matter of food and the gradual return to full diet were of much importance.

Sir LEONARD ROGERS recommended Deeks's bismuth carbonate treatment for the relief of cases which emetine failed to cure, the number of which was relatively small in proportion to the large total of acute amoebic dysentery. Many cases in India, vaguely diagnosed as chronic diarrhoea or constipation, were found *post mortem* to be due to amoebic infection. He attributed the reduction in the number of cases of liver abscess in India to the use of emetine in the treatment of dysentery. Combination of tannic acid and emetine bismuth iodide had certainly checked the unpleasant effect of the latter, and after the course of emetine bismuth iodide he had found courses of ipecacuanha in doses of 15 to 30 grains of value.

Surgeon Rear Admiral Sir PERCY BASSETT-SMITH stated that the general debility due to recurring diarrhoea and constipation in the chronic stage of the disease diminished the prospect of recovery. Emetine and emetine bismuth iodide treatment met with success in the acute cases, but later on the results were less favourable. Emetine bismuth iodide at times proved so unpleasant to patients that they would not take it. He had found the combined use of ipecacuanha and tannic acid very helpful in chronic cases, but under present conditions the difficulty of their obtaining suitable diet was a serious problem. He mentioned the results of the examination of stools of normal persons for *E. histolytica* cysts, and stated that Bayliss had found 2 per cent. out of 400 examined at Haslar to be cyst carriers who had never been out of England and had no history of any intestinal disorder. Owing to improved sanitation the risk of chronic amoebic carriers spreading infection in England was negligible.

Dr. ARTHUR POWELL, referring to cyst carriers among normal persons, regarded their past histories as being open to doubt. In his experience, amoebic abscess of the liver was usually preceded by dysentery. In the diagnosis of chronic cases, the value of the sigmoidoscope was limited to those with ulceration in the lower part of the bowel. He confirmed the benefit derived from the combined use of tannic acid with emetine or ipecacuanha, as also did Dr. G. W. GOODHART, who followed in the discussion. Dr. J. C. BAKER described a few cases of amoebic dysentery which had apparently been relieved by the use of chenopodium oil. Dr. G. S. BUCHANAN asked to what extent amoebic dysentery occurred in Great Britain; he thought that little reliance could be placed on history of freedom from illness of cases reported as cyst carriers. He disapproved of such cases being entitled to inclusion under the term amoebic dysentery carriers.

Professor DUDGEON, in reply, said he had dealt with amoebic dysentery in Great Britain as referring to those coming from the East and under treatment at home. Dr. MANSON-BAHR did not regard the chenopodium oil as of any real value in the treatment of amoebic dysentery. It was exceptional to find amoebic abscess of the liver without *post-mortem* evidence of some, even minute,

ulceration of the bowel, which, as Professor Dudgeon had pointed out, might exist without any symptoms and be found in persons dying as the result of accident. He referred also to instances in his experience of conditions of apparent rude health, yet associated with chronic amoebic lesions of the bowel. He had little doubt that amoebic dysentery existed both in Great Britain and France.

AMBULANCE ORGANIZATION IN WAR.

AT a meeting of the War Section of the Royal Society of Medicine on December 12th Colonel H. W. GRATTAN, late D.D.M.S., 9th Corps, British Expeditionary Force, lectured on medical organization, particularly with reference to the transport of wounded, in open warfare. He laid special stress on the importance of foresight, not merely in the provision of an adequate supply of dressings or reinforcements, but in the arrangement of a general plan of campaign, having regard to the circumstances of the locality in which the battle would probably take place. A general review of the area should be made before the battle, either by means of maps or, better still, by reconnaissance of the ground, having in view especially the probable difficulties in the evacuation both of stretcher cases and walking wounded. During his three years' experience on the western front he had done everything he could to develop and encourage the principle of liaison between the medical and other branches of army service. It was very useful for the officer in charge of an ambulance division to know in advance exactly the arrangement of field telephones, and to be allowed to study the field maps and aerial photographs. Those responsible for the medical arrangements should, above all, receive information about impending operations. In studying tactics in advance with his officers he had found plasticene models very useful. He exhibited a number of diagrams illustrating the positions of the various detachments and reserves from the advance dressing station rearwards. By the exercise of foresight a field ambulance might become a very dependable and flexible organization, and the aim in allotting duties to field ambulance commanders should be to ensure that the work of the ambulance would be carried out as well, or almost as well, when the commanding officer was absent as when he was present. The bearers were the most important units in the field ambulance system, and proper means must be provided for keeping them in touch with the main medical detachment. In a divisional area before operations he provided for over a thousand stretchers and double that number of blankets, and by his diagrams he illustrated the strategy of their disposal. The first great requirement in ambulance organization, as in all military employment, was secrecy. The second was efficient march and traffic discipline. March discipline meant that under no circumstances must the ambulance transport be overloaded. Traffic discipline meant not only compliance with the general instructions as to the rule of the road, but strict observance of the plan of keeping a space of so many yards between every twenty vehicles when the transport of a column was on the line of march; this prevented traffic blocks. A third requirement was that the main outlines of the scheme of transportation should be drawn up in advance, bearing in mind that it was an economy in personnel to have one divisional route of evacuation, although under certain circumstances it might be necessary to have two.

Most of the discussion centred round the possibility of greater use being made of motor transport in dealing with the bearer problem in the forward area, and one speaker advocated aerial transport as a means of taking back the wounded with maximum speed and to the furthest distance from the front.

MESSRS. A. E. DEAN AND CO.'s catalogue, in addition to illustrations of all this firm's well-known *x*-ray apparatus, including the most recent form of the diascope, has photographs of cubicles installed by them at hospitals for the purposes of carrying out both deep and superficial therapy in safety. One of these shows the double coil group installed at the London Hospital. Many pieces of apparatus useful in *x*-ray work are shown, and the firm states that all of this is manufactured in their London factory. An invitation is given to those interested to visit the factory at Leigh Place, Brooke Street, Holborn.

Reviews.

GUY'S HOSPITAL REPORTS.

THE October instalment of the *Guy's Hospital Reports*,[1] the fourth for this year, completes a most successful volume and provides ample evidence of the stimulating influence of the editor, Dr. A. F. HURST. As mentioned in previous notices of this new departure—the quarterly publication of these reports—a welcome feature is that the articles are almost universally new and not reproductions of contributions to other medical periodicals. The article, In Memoriam of the late Sir James Goodhart, by Dr. Lauriston Shaw, tells the story of the strenuous life of this striking personality with sympathetic insight. After being the first house-physician at Guy's and the first resident medical officer of the Evelina Hospital for Sick Children, Goodhart, though aiming at the post of physician, became, for lack of other opening, surgical registrar at Guy's for two years, and then threw his energies into pathology with such effect that when he was elected assistant physician some opposition was aroused on the ground that he was too good a pathologist ever to become a successful physician. His early clinical reputation owed much to his *Student's Guide to Children's Diseases*, first published in 1885, and his lectures on "Common Neuroses" in 1892. Dr. Barber's well-written article on protein-sensitization and focal sepsis in the etiology of certain skin affections contains some of the subject matter of his paper read before the British Medical Association at Newcastle and recently published; he emphasizes the dependence of alopecia areata on focal infections, usually in the mouth and throat, and the streptococcic origin of erythema nodosum, erythema scarlatiniforme recurrens, and herpes zoster. In the first instalment of a valuable research on tests for physical efficiency Dr. G. H. Hunt and Professor Pembrey describe "the pulse ratio," or the ratio between the average pulse rate for the two minutes immediately following the given exercise and the pulse rate at rest, as a better test than that usually employed—namely, the time that the pulse takes to return to normal after exercise. Dr. C. P. Symonds describes a case of bilateral eighth-nerve tumours associated with multiple neurofibromata and multiple endotheliomata of the meninges, and supplies an interesting commentary on the symptoms and pathology. The studies on gastric secretion deal with pyloric obstruction by Dr. J. A. Ryle, and the effect of belladonna in hyperchlorhydria by Dr. R. D. Roberts, resident medical officer at the New Lodge Clinic, Windsor Forest. In a note on gastric and duodenal ulcer as family diseases Dr. A. F. Hurst points out that the frequency of a family history in gastric and duodenal ulcer suggests a diathesis which favours the development and recurrence of such ulcers. Mr. R. P. Rowlands discusses the relative merits of cholecystectomy and cholecystotomy, and, while pointing out the advantages of removal when the disease is limited to the gall bladder and the cystic duct, insists that it should never be performed unless it is certain that the common bile duct is patent. Mr. A. W. Ormond gives an account of six cases of quinine amblyopia and discusses the mechanism of its production. The volume closes with Dr. A. J. McNair's article on 121 cases of Caesarean section in Guy's Hospital, 1910–1920.

THE OPHTHALMOLOGICAL SOCIETY.

THE outstanding features of the forty-first volume of the *Transactions of the Ophthalmological Society of the United Kingdom*[2] number two—the Bowman lecture and the report of the discussion at the Oxford Congress on post-operative infection in ophthalmology. To take the latter first, no better opener could have been found than Professor Morax of Paris; his reputation is world-wide and he is very well known in this country. His paper

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[1] *Guy's Hospital Reports*. Vol. lxxi (vol. i, Fourth Series), No. 1, October, 1921. Edited by A. F. Hurst, M.D. Issued quarterly. London: Henry Frowde, and Hodder and Stoughton. Price subscription, 2 guineas, post free for volume of four numbers; single numbers, 12s. 6d. net.

[2] *Transactions of the Ophthalmological Society of the United Kingdom*. Vol. xli. London: J. and A. Churchill. 1921. (8vo, pp. 542, with 12 plates (2 in colour), and 91 illustrations in the text. Price 31s. 6d.)

provides a lucid summary of modern views on the bacteriology of wound infections after operations on the eye, and deals with those troublesome late infections which are possibly of endogenous origin, and which usually show themselves some time about the end of the first week after the operation or even later still. Morax's paper is one that should be read and pondered on by all ophthalmic surgeons. .

The Bowman Lecture, delivered by Mr. Treacher Collins, in memory of Sir William Bowman "*Fundator noster*," is quite a different piece of work: it deals with the changes in the visual organs correlated with the assumption of the erect posture. Mr. Collins dealt mainly with the higher mammals. A study of the morphology of their visual organs showed, he said, that there is a close resemblance between those of man and monkeys, and wide differences between those of monkeys and the lower mammals. He showed that the chief cause of these marked divergencies was the alteration in environment produced by the adoption of arboreal life. This paper is too long and also too valuable to be dealt with suitably in an abstract, and it must be sufficient to say here that the subject is discussed under the following heads: Visual field; Light sense and form sense; Accommodation and convergence; Colour sense and the protective mechanism of the eyeball. The amount of research entailed in the preparation of this paper must have been enormous, and, though Mr. Collins's services to the society are too many to be enumerated, extending as they do over a period of thirty-six years, we doubt whether he has ever achieved a more solid contribution to the pages of the *Transactions* of the society which he has served so well.

The remainder of the volume contains notes of cases and pathological observations and the reports of two discussions, the one on psychology in relation to vision and the other on the treatment of manifest concomitant strabismus. Excerpts from the proceedings of the six affiliated societies are given also. The matter is good, and the volume as a whole compares favourably with any of its forty predecessors.

HYPNOTISM.

DR. LLOYD TUCKEY first published his well-known volume on *Treatment by Hypnotism and Suggestion*[8] in 1889, and, since it has now reached its seventh edition, it still clearly maintains its position as a reliable guide to psychotherapeutic treatment based upon suggestion. The author has utilized hypnotism in the treatment of nervous disorders for over forty years, and his views are therefore based upon an exceptionally long and varied experience.

The book is essentially practical in its aims, and a number of short case histories derived from the personal experience of the author are included in the volume. No attempt is made to discuss more recent modes of therapy, and Dr. Lloyd Tuckey wisely confines himself to the form of treatment he has himself found efficacious during so many years. In method he follows the teaching of Liébault, to whom this volume is dedicated. Apparently he does not utilize the hypnotic state for facilitating the revival of traumatic memories, but rather for the increased suggestibility which characterizes this psychical condition. No doubt, like all wise physicians, he makes himself acquainted with the personal difficulties of his patients, but there is in this volume no discussion of the psychopathology of nervous disorders, and the treatment is purely suggestive. The author follows Bernheim in ascribing his cures to the influence of suggestion, but it may be that other factors operate in the production of beneficial results. Thus it has been suggested that the complete relaxation and inner quietude of the hypnotic state permit of mental readjustments which could not otherwise be effected. If this be the case a kind of spontaneous recovery may sometimes occur in a manner unknown. This comment is made because though hypnotism tends to be replaced by more sophisticated and less empirical methods, its possibilities cannot be altogether ignored in view of the encouraging experience of those who have utilized it over a number of years.

In the present edition the chapter on psycho-analysis by Dr. Constance Long is omitted, as Dr. Lloyd Tuckey considers that this subject has its own literature and is not suitably included in a work concerned with suggestion. A chapter by Dr. Percy Allen on treatment by suggestion during the war is added to this volume, as are also some additional cases by the author. The additional chapter is somewhat scanty, and its writer seems to be conscious of the fact that hypnotic suggestion has only been utilized in a minor degree in the treatment of the war neuroses, and that other methods have been largely employed.

DISEASES OF THE KIDNEYS.

A SECOND and entirely revised edition has been issued of the volume on diseases of the kidneys,[4] which forms Fasciculus XXI of the new *Traité de Médecine* appearing under the general editorship of GILBERT and CARNOT. Progress in the investigation of renal disease is so rapid at the present time that a revision of this nature had become imperative. The names of the authors are sufficient guarantee that modern scientific work receives the fullest attention, especially in the department which is at present of such absorbing interest—namely, the estimation of renal efficiency. The first chapter deals admirably with the physiology of urinary secretion, the composition of urine in health and disease, and with the problems of renal function. This is the contribution of JEANSELME and AMBARD, and represents a difficult task excellently performed. Methods of investigation are being so constantly introduced, modified, and replaced by other and better ones that it would be easy to compile a treatise which, by adopting a tone of finality and positive assertion, might be out of date before it had left the printers' hands. The authors have, avoided this pitfall by judiciously laying stress on the general objects of research rather than on particular methods. The methods in vogue are amply described, but in appraising their value the impression left on the reader is that much more remains to be done, and that this volume only blazes the trail. The result is that the book will serve as a most valuable stimulus to further progress. One problem especially strikes us as being more dwelt upon than has heretofore been the case—namely, the rate of elimination of arsenic after injection either subcutaneous or intravenous. A careful study of these observations is recommended to all who are responsible for the treatment of venereal diseases and who wish to avoid untoward consequences due to the toxic effects of arsenic. But the whole subject of the physical, chemical, and microscopic examination of the urine has been brought together in readable and masterly fashion.

CHAUFFARD and LOEDERICH deal with the clinical aspects of renal diseases, discussing their etiology, symptomatology, and pathology. The various forms of nephritis are described with a precision and clarity to which the French language is peculiarly well adapted, and in this respect the authors have well maintained the high standards for which the medical literature of France is justly famed. In the discussions on prognosis a wealth of information is to be found which every medical man will value highly; it will, no doubt, be freely drawn upon by future writers in all countries. The prognostic significance of the newer efficiency tests is clearly explained. Finally, treatment meets with the fullest consideration, so that the volume may be confidently recommended to general practitioners, physicians, surgeons, and research workers alike.

A TEXTBOOK OF GYNAECOLOGY.

No speciality seems more fruitful in the production of textbooks than gynaecology, and although a casual observer might think there was no room for more, yet the enterprise of authors and publishers must presumably be rewarded or else the supply would diminish. Often it is difficult to discern any special reason for the production of a new textbook, but that does not apply to Dr. JAME-

[8] *Treatment by Hypnotism and Suggestion, or Psychotherapeutics.* By C. Lloyd Tuckey, M.D.Aberd. Seventh edition. London: Baillière, Tindall, and Cox. 1921. (Demy 8vo, pp. xiv + 496. 21s. net.)

[4] *Maladies des Reins.* Par L. Jeanselme, A. Chauffard, et L. Loederich. Fascicule XXI du *Nouveau Traité de Médecine et de Thérapeutique*, publié sous la direction de MM. A. Gilbert et F. Carnot. Deuxième tirage entièrement revisé. Paris: G. Baillière et Fils. 1920. (Roy. 8vo, pp. 552. 7 figures. Broché, Fr. 40. Cartonné Fr. 47.50.)

YOUNG'S *Textbook of Gynaecology*,[5] which has recently made its appearance in the well known and justly reputed Edinburgh Medical Series of Messrs. A. and C. Black. Nowhere does Dr. Young specifically mention the audience to whom he is particularly appealing, but a perusal of the book indicates that he has had the final year student more especially in his mind. For the student the book is admirable. It is not so short as to be scrappy or to be of the nature of a "cram book"; and it is not too long or detailed. It supplies all and a little more than all that the student can possibly require for examination purposes, and much that he will find of great value in the early years of his practice.

It is in this calculated suitability to the needs of a special class of readers that we find ample justification for this book. In its arrangement there is nothing particularly novel, and its teaching follows the accepted lines. The first section is devoted to a summary of the special anatomy and physiology of the female reproductive organs. Then follow sections descriptive of the methods of examination and of symptoms. The various c inical conditions are grouped under the headings of displacements, infection, extrauterine pregnancy, new growths, and errors of development. Lastly comes a section dealing with operations and therapeutic measures. Amongst the displacements it seems unnecessary to include retroflexion of the gravid uterus, as the condition is more appropriately discussed in a textbook of obstetrics, and the author has apparently nothing to say about it that is not to be found in such books. Over the thin ice of controversial points he skates with commendable discretion and dexterity, neither attempting to conceal the unsatisfactory state of our knowledge of some points in gynaecological pathology by an affectation of dogmatism, nor emphasizing it to such a degree as might leave the student with a feeling of lack of confidence in the teaching.

The illustrations by Mr. John Grieve and Mr. Richard Muir are for the most part excellent. But we hope that in due course Fig. 36 will be redrawn (for at present it verges upon the ludicrous), and that Fig. 66, a microscopic drawing of tuberculous (not tubercular) endometritis, will be provided with a high power inset. We congratulate Dr. Young and cordially recommend the volume to students and to teachers who have felt the lack of a book of just the right size and kind for recommendation to their classes.

PHYSIC AND FICTION.

SIR SQUIRE SPRIGGE is so well known for his books on *Thomas Wakley* (his official ancestor in the editorial chair of the *Lancet*), on *Medical Education*, *Medicine and the Public*, and the lighter sketches in *Odd Issues* and *The Industrious Chevalier*, that it is with a feeling of pleasant anticipation that the reader takes up *Physic and Fiction*[6] and settles down in comfort to the study of twelve essays which, though mainly published previously in popular reviews, have been expanded as the result of considered experience. These articles, dealing with the relations of medicine to ordinary life, strike a note of reasonable and wholesome optimism, and are refreshingly free from the post-war depression of the *laudator temporis acti*—an encouraging feature, as they are obviously the judgement of mature and careful thought. The opening essay, on "Medical Priestcraft," shows that, as medicine is not an exact science, it is viewed by a large section of the educated public, who now concern themselves much in matters bearing on their health, with suspicion, and no longer as a mystery sacred from criticism; a medical priestcraft, indeed, is no longer possible, and before long the principles of public health will be so widely familiar that a more reasonable sympathy will be felt with the aims of medicine. A later chapter on "Some Public Developments of Medicine" discusses the establishment and future of the Ministry of Health, and makes it clear that the claims of the public to be associated with any exhibition of medical authority are all for the good. The prophecy is hazarded that soon there will be no class of general practitioner separated off from hospital physicians and surgeons, from specialists, and from officials, and that the principal hospitals, becoming local centres of scientific medicine, will be officered by men who, by fusion of duty with the general practitioners of the neighbourhood, will make of the whole of medical energy one general scheme for the good of the populace, the practitioners having hospital beds and sharing in the teaching of students, as Sir James Mackenzie has urged.

In the introductory address on "Prizes and Performances" the future of medical students is considered on the basis of Sir James Paget's well-known analysis of 1,000 entrants at St. Bartholomew's Hospital, on Mr. Edred Corner's recent examination of the careers of students at St. Thomas's, and on a study of 250 students at St. George's Hospital; the satisfactory conclusion is arrived at that in comparison with other vocations the medical profession promises much. The interesting essay on "Medicine in Fiction" has many references to past and recent novels, and the note on Thackeray's "Dr. Goodenough" relates the circumstances of the fall of Elliotson, the prototype of this famous character. In contrast to word pictures, which too often leave a wide scope for speculation as to the identity of the disease described, is the accurate diagnosis supplied by the artist's brush; but unfortunately pictorial art is sadly wanting for purposes of diagnosis in the history of disease, and, as is pointed out in the section on "Medicine in Art," a few frescoes would have helped to settle how far malaria was responsible for the sudden decadence of Greece. The medical man's tendency, born of his training, to regard those he meets as potential cases and to diagnose them facially, and Dickens's ability in this respect—as shown by many of his grotesques, such as Quilp—are described under the title of "The Pathologist in the Street."

NOTES ON BOOKS.

A COMMITTEE of the British Science Guild has published a *Catalogue of British Scientific and Technical Books*[7] covering, it is hoped, every branch of science and technology, and designed to promote the use of knowledge and the development of education, science, and industry. It consists of lists of books arranged in groups according to the subjects with which they deal; the information given in each case being the author's name, the title of the book, its size, price, and so forth. Turning to the heading Medicine, with its many subheadings, we find under "Diseases of the Respiratory System" no mention of Powell and Hartley's book on diseases of the lungs and pleurae; nor does Sir Thomas Lewis figure among the authors mentioned under the subheading "Diseases of the Heart and Circulatory System." Such lacunae are no doubt inevitable in the compilation of a work such as this *Catalogue*; yet, equally without doubt, they impair its utility not a little.

Dr. CARRUTHERS'S *Urine Examination Made Easy*[8] is meant for readers untrained in science; it contains sound advice and full directions for performing the common urinary tests, and may be recommended to the attention of nurses and hospital orderlies.

Mr. ANDRÉ TRIDON is a prolific writer on psychoanalytic subjects, and his latest volume is concerned with *Psycho-analysis, Sleep and Dreams*.[9] The book is written on popular lines, and in it the thesis is advanced that we sleep in order to dream, and to be for a number of hours our simple and unrepressed selves. Such a view would scarcely seem to be defensible on biological grounds as it fails to account for sleep as a phenomenon of universal occurrence throughout animal life. Mr. Tridon holds the view that sleeping sickness is in a large measure psychogenetic in origin. He does not appear to be a medical man.

The history of the Thirty-fourth Division, by Colonel J. SHAKESPEAR, is typical of most of the new army divisions, whose raising and training and quick transfer to

[5] *A Textbook of Gynaecology*. By James Young, D.S.O., M.D., F.R.C.S.E., Lecturer in Clinical Gynaecology and Clinical Obstetrics, Edinburgh University. Edinburgh Medical Series. London: A. and C. Black, Ltd. 1921. (Cr. 8vo, pp. xvi + 354; 183 figs. 15s. net.)

[6] *Physic and Fiction*. By S. Squire Sprigge. London: Hodder and Stoughton. 1921. (Demy 8vo, pp. 307. 12s. 6d. net.)

[7] *A Catalogue of British Scientific and Technical Books covering every Branch of Science and Technology, carefully Classified and Indexed*. Prepared by a Committee of the British Science Guild, London: British Science Guild. 1921. (Demy 8vo, pp. xviii + 376, 10s. net.)

[8] *Urine Examination Made Easy*. By T. Carruthers, M.A., M.B., Ch.B. Fourth edition. London: J. A. Churchill. 1921. (Pott 8vo, pp. 5. 2s. net.)

[9] *Psycho-analysis, Sleep and Dreams*. By André Tridon. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1921. (Cr. 8vo, pp. 175. 7s. 6d. net.)

the actual front still remains one of the great wonders of the war.[10] The Thirty-fourth was a North of England and Scottish formation, and perhaps that accounts somewhat for the clannish spirit which arose, and which carried the division so uniformly successfully and steadily through many tight corners. Its blue-and-white chequer sign will long be held in affectionate memory. Colonel Shakespear has not attempted any general description of the war, but has given us a chatty domestic account of divisional life, and that, after all, is the memory which most of us wish to retain. Incidentally he pays tribute to the work of the R.A.M.C.: "Whether in a big offensive or in slight shell shower, the 'doc' was always ready—cool, efficient, and unwearying." The spirit of camaraderie which the war engendered will secure for this book a welcome from the thousands who, at one time or another, formed part of the Thirty-fourth Division.

Birmingham shared with London and Manchester the administrative good fortune to have nearly all the medical units of its Territorial Division recruited and trained close to each other, which gave opportunity for community of training and much friendly emulation. Colonel J. E. H. SAWYER[11] has traced the origin and the progress of these units—field ambulances, general hospitals, and casualty clearing stations. The South Midland Division, of which the ambulances were part, crossed to France in March, 1915, and from that time on bore its full share of battle, both on the Western front and, from November, 1917, on the Italian front. The Mounted Brigade Field Ambulance was sent with its Mounted Brigade to Egypt, and went through the whole of the Senussi and Palestine campaigns. The history of each unit is traced separately, and the varying experiences at home and abroad form a general epitome of the work of the R.A.M.C. in all areas. Birmingham medical men and nurses will be glad to have this permanent record of their share in the great war.

The French *L'Année Thérapeutique* for 1920,[12] by Dr. CHEINIS E, is a small volume consisting of two parts. The first of these contains an alphabetical list of diseases, with notes on the recent improvements made in their treatment. The second is devoted to new methods or to criticisms of older methods. In compiling his year-book the author has consulted the French medical literature most frequently, but also notices original contributions appearing in America, England, and other countries. His volume may be described as rather slight, but it contains information of service to practitioners of medicine anxious to know the latest thing in treatment, and to them it may be recommended.

The book, *Tuberculosis of Children*,[13] translated by Dr. MAX ROTHSCHILD from the German text of Professor MUCH, is a somewhat contentious work in which the diagnosis and treatment of the disease are treated from a popular point of view. The translator has preserved much German idiom in his American rendering, and the publisher has swelled the volume to an unnecessary size by the use of wide margins and wide interspacing. Professor Much's views command the respect of many of those who have to do with the prophylaxis and treatment of tuberculosis, and to them the book may be recommended.

[10] *The Thirty-fourth Division, 1915-1919.* By Lieut.-Colonel J. Shakespear, C.M.G., C.B.E., D.S.O. London: H. F. and G. Witherby. 1921. (Demy 8vo, pp. vi + 328; 7 illustrations, 15 maps. 12s. 6d.)

[11] *The Birmingham Territorial Units of the R.A.M.C., 1914-1919.* Edited by Brevet Lieut.-Colonel J. E. H. Sawyer, M.D., R.A.M.C.T. Birmingham: Allday, Ltd. 1921. (Cr. 8vo, pp. 230.)

[12] *L'Année Thérapeutique, 1920.* Par Dr. L. Cheinisse. Paris: Masson et Cie. 1921. (Cr. 8vo, pp. 144. Fr. 6 net.)

[13] *Tuberculosis of Children: Its Diagnosis and Treatment.* By Professor Dr. H. Much. Translated by Dr. Max Rothschild. New York: The Macmillan Co. 1921. (Demy 8vo, pp. 156. 12s. 6d. net.)

APPLIANCES AND PREPARATIONS.

DR. E. S. ELLIS (Honorary Anaesthetist, Hospital for Sick Children, Gloucester) writes: Mills's chloroform bottle still deservedly retains its popularity, but it has the great disadvantage that the leaden stopper is always liable to fall out, with disastrous results. With a view to obviating this difficulty, Messrs. Allen and Hanburys, 48, Wigmore Street, W., have made to my specification a bottle in which the stopper screws, not to a collar, which is also liable to come off, but to a thread cast in the glass itself. A second feature is its squat shape, making it almost impossible to upset. The bottle is graduated in cubic centimetres or ounces, reading from below upwards, for the greater simplicity in administering mixtures.

HOSPITALS AND THE NATIONAL PROVIDENT SCHEME.

DISCUSSION IN THE KENSINGTON DIVISION.

AT a meeting of the Kensington Division of the British Medical Association on December 19th, with Dr. W. E. FRY in the chair, Dr. J. F. GORDON DILL of Hove gave an address on the National Provident Scheme (otherwise known as the Sussex Scheme) as a means of placing hospital finance on a sound footing.

Dr. Gordon Dill's Address.

Dr. Gordon Dill began by reviewing a generation of hospital development. When he started practice and was elected to the honorary staff of a large provincial hospital, the patients in that hospital were, without exception, the indigent poor. The average working man at that time, thirty years ago, disliked the idea of going to the hospital. A certain stigma was associated with the receipt of charity, and no question arose of the abuse of hospitals by people who could afford to be treated privately. The change in the social status of hospital patients had coincided with other changes in the internal administration of hospitals, whereby their equipment had become increasingly elaborate and abreast of modern scientific progress. His early colleagues could look back to a time when the only aids to diagnosis were the physician's own trained powers of observation and a stethoscope, when the hospital wards were invaded by waves of sepsis, and when surgery, although often brilliant, was timorous and handicapped. Since that time, along with the discovery of a new world of pathogenic micro-organisms, there had been developed means of defence in the shape of antiseptics and aseptic surgery, and of counter-attack in the shape of serums and vaccines. Many new weapons had been added to the therapeutic armament, such as *x* rays and medical electricity. Many instruments of precision, such as the ophthalmoscope and the cystoscope, had been introduced. It was not to be wondered at, in view of the increasing elaboration and cost of medical and surgical equipment, and of the fact that the hospital was the only place where all these aids to diagnosis and treatment were available under one roof, that advantage should be taken of hospital facilities by people higher and higher in the social scale. He believed that at no great hospital in the country was the proportion of inmates who could be called indigent poor higher than 20 per cent. The remainder were people able and in many cases willing to pay a part at least of their maintenance. It had been computed that 84 per cent. of the population were potential hospital patients, and only 16 per cent. nursing-home patients.

During these revolutionary changes the hospitals had maintained their tradition of charity. Until the last two years they had treated all their patients as though they belonged to the necessitous poor. At his own hospital (the Royal Sussex County Hospital), until the beginning of 1921, patients were not allowed to pay. In recent months an increasing number of hospitals had adopted schemes of payment by patients. At St. Bartholomew's a fixed charge of two guineas a week was made in the case of an in-patient, and the almoner then had to decide whether the patient was able to pay. The full cost of maintenance in some of the London hospitals was £5 a week; the average, he believed, was about £4. Of the large bulk of the population who were potentially hospital patients only about 2 per cent. were received as in-patients in the course of a year, and about 18 per cent. attended as out-patients. If 100 per cent. of this population paid a small yearly premium it would pay the full cost of maintenance of these in-patients and of attendance on these out-patients. This, in brief, was the plan of the National Provident Scheme. He agreed that the charitable tradition of the hospitals must be maintained, but some regard must be paid, in defining their charitable scope, to recent social history.

Dr. Gordon Dill then went on to deal with the question from the point of view of the profession. A large party in the State was anxious for the nationalization of the hospitals. If something was not done to put the hospitals on a proper financial basis, nationalization would become practical politics. The profession, when agreed within itself, could do anything in the medical world, and therefore it was desirable to formulate a statesmanlike policy which would restore the hospital equilibrium. The National Provident Scheme was carefully framed to give the general practitioner his proper share in the medical services of the country. It gave him a hold upon admissions to the hospitals. None of the contributors could obtain the services set out under the scheme save through a general practitioner. That was sound policy from the point of view of national health. There was no better preventive officer than the general practitioner, who knew the constitutions, environment, history and hereditary tendencies, and also the psycho-

logy, of his patients. Under this scheme, in every respect save with regard to the indigent poor, the family doctor was the necessary link between the patient and the hospital or consultative services he required.

The scheme was in its infancy, and it would be unwise to draw conclusions from eleven months' experience in Sussex. Lord Selby had given certain figures (BRITISH MEDICAL JOURNAL, December 10th, p. 1007) showing that during the eleven months 2.083 of the contributors were in-patients and 8.5 per cent. were out-patients. The latter figure was very satisfactory as against the 18 per cent. which he had quoted earlier, because it showed that the scheme was likely to realize one of its foundation principles—that of making the out-patient department, except in the case of the indigent poor, consultative. The other principles of the scheme were:

1. That the people who used the hospitals should be given an opportunity of paying in full for the services they received, and should do so by an organized system of collected payments which would balance in any one year the expenditure occasioned on behalf of those of their number who received in-patient or out-patient treatment.
2. That in the case of these people the hospitals should give the aid of their resources to the private doctor for the purposes of diagnosis and treatment.
3. That admission to hospital, except in urgent cases such as accidents, should be through the private doctor.
4. That mass payments or workmen's contributions which fulfilled the conditions mentioned above (paying in full for services rendered) should be made through a neutral intermediary body, and not to the hospital direct. This last provision would form an important safeguard for the voluntary system.

General Discussion.

Dr. H. M. STRATFORD criticized the scheme from the point of view of the general practitioner. A great number of general practitioners did their own operations, and if patients were given the opportunity of calling in consultants, they would ask for the consultant for any little surgical trouble, such as tonsils and adenoids, or the opening of empyemas. This would mean that the general practitioner practically ceased to do surgery. Similarly in medicine, there were many cases which a practitioner was unable to diagnose on first seeing the patient; and here again there would be a demand for the consultant, with consequent loss of responsibility to the general practitioner, who would become a sort of superior clerk. It seemed a pity that the generous and elastic methods which the profession had practised in only requiring payment from patients according to their ability to pay should end up in the tightness of a contract scheme.

Dr. H. H. SANGUINETTI thought that the scheme was likely to "swell the head" of hospital staffs while attenuating the body of general practitioners. Dr. Dill's estimate was that more than 80 per cent. of the population in the last recourse would be hospital patients, and he supposed that about 10 per cent. of the medical profession were on the staffs of hospitals. This meant that 10 per cent. of the medical profession looked after 80 per cent. of the serious illness of the community. He quite realized that the general practitioner had certain facilities at the hospital under the scheme, but it would be better if general practitioners themselves inaugurated schemes of diagnosis and treatment in centres of their own, rather than that everything should be centred in the hospital. It was time that the importance of general practitioners in diagnosis and treatment was emphasized. The difference between general practitioners and members of hospital staffs was not a difference of capacity but of opportunity.

Dr. HAROLD SINGTON regarded it as a curious way of relieving the finances of a hospital to add to its expenditure by allocating a sum to the medical staff, which hitherto had been honorary. He failed to see very much financial benefit to the hospitals, while the general practitioner would lose considerably.

Dr. R. H. DREAPER pointed out that the Sussex scheme emanated from Brighton, which was not only a much smaller place than London but less of a working class area in proportion to its population. He believed that under the scheme the attendance at the out-patient department in working class areas would be much larger than 8 or 18 per cent. Many insurance practitioners saw 50 per cent. of the insured persons on their list in the course of a year.

Dr. F. G. LLOYD said that the position of the voluntary hospitals must necessarily cause anxiety, and he regretted what the Bishop of Birmingham rightly called the "inhumane policy" of the Ministry of Health in not accepting in full the recommendations of the Cave Committee to make to the hospitals the grant of a million forthwith. His own feeling was that as the hospitals were founded for the sick poor, the introduction of a contributory scheme would vitiate their original purpose. It would take away from the sick poor the beds to which they had a right. At the present time 400 of the necessitous poor were awaiting admission to the West London Hospital. He was entirely against the charging of fees at voluntary hospitals, and this for several reasons, one of which was that in course of time a competition developed between the hospitals and the general practitioners.

Dr. RICKARD LLOYD asked whether Dr. Gordon Dill considered the scheme a good substitute for the powerful lever which the free treatment of the sick and needy exercised in eliciting voluntary contributions.

Dr. HERBERT TANNER questioned whether the scheme would raise sufficient money, not merely in one year, but over a number of years. Would it be possible to continue the collection of the subscriptions in view of the notorious improvidence of certain classes, coupled with the fact that the majority of the contributors during a given year, or perhaps a number of years, would have no occasion to apply for benefit under the scheme?

The Opener's Reply.

Dr. GORDON DILL, in reply, said that if the scheme tended to take all surgery out of the hands of the general practitioner, that would be the general practitioner's own fault. It was expressly stated that general practitioner treatment was not provided under the scheme. No doubt many general practitioners were competent to do even major surgery, and the scheme would not deprive them of the opportunity. His own experience was that patients would prefer their own general practitioner to do an operation, if he was capable of performing it, rather than go to someone whom they did not know. But it was open to the general practitioner under the scheme to write to the consultant that he thought a patient needed an *x*-ray application—or other service—which he had not the means of giving, and if the consultant agreed this could be arranged. At the same time, if the treatment was within the competence of the general practitioner, the hospital staff would not take it away from him, and he would have the advantage of a second opinion. At present the general practitioner, while desiring a second opinion, often hesitated because he did not think that the patient could afford the full fee, and did not care to ask the consultant to undertake the case for a reduced fee. No such hesitation need take place under this scheme if the patient were a contributor. Those of them who practised as consultants had an opportunity of judging of the competence of the general practitioner, and he himself had the highest possible respect for the general practitioner's attainments. But how many of them could do the work they did at the hospital without the facilities which the hospital afforded—facilities for a Wassermann test, a differential blood count, an *x*-ray examination? No man, however competent, could do his best work without such advantages, and it was desired that they should be shared with the general practitioner.

Several speakers, Dr. Dill continued, had alluded to the possibility of a fall in voluntary subscriptions if the scheme were adopted. But there was another way of looking at the question. At present many former subscribers to hospitals were deterred from subscribing because the wages of working-class inmates were very frequently so high that charity did not seem to be called for. If it could be pointed out to such that those who could pay were doing so by a properly organized system they would be more likely to subscribe because they would feel that their benefactions were relieving the residuum of necessitous poor. He was surprised to learn that 400 necessitous poor were awaiting admission to the West London Hospital. He knew of no hospital in which the proportion of the indigent was above 20 per cent., and he thought that Dr. Lloyd's definition of the poor must be different from his own. He added that it was not the promoters of the Sussex Scheme who introduced the principle of payment by patients. That principle had been introduced previously, and the fact had to be accepted. One speaker had suggested that the scheme was founded on the sand of working-class improvidence. It was true that the industrial classes had been accustomed to have their hospital treatment for nothing, but it was surely only a matter of education for them to realize that they must pay for it. The provision for the payment of honorary staffs was only put in the scheme because it was the accepted policy of the British Medical Association. It was not intended that the members of hospital staffs should necessarily put the money into their own pockets, although they would be at liberty to do so if they pleased. In reply to a question, he said that in his own area he believed that the number of members of the scheme after eleven months was just below 600. Lord Selby, the honorary secretary of the scheme, told him that the number had been increasing steadily in the latter months.

BEIT FELLOWSHIPS.

THE trustees of the Beit Memorial Fellowships for medical research have recently elected six Fellows, of whom two are medical women. Since the beginning of the present year the annual value of each Fellowship has been £400 instead of £300 as formerly. The usual period of tenure is three years, and research work must be carried on at one of the places recognized by the trustees. It is announced that Professor T. R. Elliott, C.B.E., D.S.O., F.R.S., a former Beit Fellow and now physician and director of the medical unit at University College Hospital, has been appointed a member of the Advisory Board.

The following are the new Fellows, with a short statement of the researches they propose to carry out:

ROBERT KEITH CANNAN, M.Sc., Assistant in Physiological Chemistry, University College, London, who will study chemical aspects of metabolism and digestion, in the Institute of Physiology at University College.

HERBERT DAVENPORT KAY, O.B.E., B.Sc., Demonstrator in Biochemistry, University of Leeds, and formerly Acting Chemical Adviser to G.H.Q., Great Britain, who will investigate the degradation of carbohydrates and allied substances by micro-organisms, at the Lister Institute.

MARY KATHLEEN FORSAITH LANDER, M.B., B.S., M.Sc., formerly Demonstrator of Anatomy, London School of Medicine for Women, who will undertake the following research in the Department of Human Anatomy at University College, London:

Examination of optic regions in primate brains, clinical observations, and physiological experiments with a view to ascertaining the crucial stages of the evolutionary process of development of stereoscopic vision and conjugate movements of the eyes; study of the problem of human philogeny from this standpoint, and the relation of the results obtained to the investigation and treatment of the associated lesions of the nervous system met with in clinical practice.

HARRY GOLDBLATT, B.A., M.D., C.M.McGill, lately Demonstrator in Pathology, Western Reserve University, who will investigate at the Lister Institute the qualitative relation of fat-soluble A deficiency to the development of rickets, and the effect of parathyroidectomy on immunity, with special reference to the natural resistance of rats to tuberculosis.

LOUIS GROSS, M.D., C.M.McGill, Douglas Fellow in Pathology, McGill University, who will undertake microscopic and macroscopic experiments in relation to the condition of intestinal stasis, at the Royal College of Surgeons of England and at the Zoological Society's Gardens.

ETHEL MARJORIE LUCE, B.A., M.D., B.Ch., formerly Demonstrator in Anatomy and in Zoology at Dublin University, who will investigate at the Lister Institute the accessory food factors, with special reference to the relationship of the ductless glands to calcium metabolism.

The office of the honorary secretary of the Beit Fellowships is at 35, Clarges Street, Piccadilly, W., and all correspondence of candidates and Fellows should be sent to that address.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on December 13th twenty-eight cases were considered and £378 10s. voted to twenty-five of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 65, of L.R.C.P. and S. who was a surgeon on a Union-Castle boat and died this year. Applicant is left quite unprovided for, she suffers from severe rheumatic gout and cannot earn her own living. She receives £5 interest from War Loan, and has sold various articles to pay her way. From December 31st, 1921, the Steamship Company have granted her £50 for two years. Voted £10 in two instalments.

M.R.C.S. Eng., aged 59, who through paralysis had to give up practice. He now has to pay £2 2s. a week for attendance, board, and lodging, and his only income is an annuity of £72 5s. per annum and £35 from friends. A son who used to help died in 1918, and a brother was able to allow a small sum, but since taking his pension is unable to continue help. Voted £26 in twelve instalments.

Widow, aged 57, of M.B.Aberd. who died in 1910. Owing to ill health applicant is unable to earn her own living, and at present she is only in receipt of 30s. a week from a daughter. Voted £5.

M.B.Edin., aged 56, who, owing to deafness, had to give up his practice, and recently has been working as a gardener, but has found the work too heavy. He is now dependent on an unmarried sister, whose means are not sufficient for two people. Voted £26 in twelve instalments.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters J. Symonds, at 11, Chandos Street, Cavendish Square, London, W.1. The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for secondhand clothes and household articles for the benefit of the widows and children who in happier times would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

MEDICAL DEFENCE.

DR. PETER MACDONALD of York sends us, with a request for publication, the following letter, which is addressed to Sir Hamilton Ballance, the treasurer of the Wood-Hill Fund:

York, December 17th, 1921.

Dear Sir,

I enclose a small subscription towards the Wood Hill Fund. Had the fund been one to fight an appeal I should have endeavoured to send as large a subscription as I could possibly have afforded.

As it is I send a small subscription, with a moderate amount of enthusiasm only, and solely as an expression of sympathy with Dr. Wood-Hill in his suffering from what I regard as a gross travesty of justice. At the same time I think that the lesson ought to be driven home that the necessity arises solely because Dr. Wood-Hill, like so many other medical men and women, was not a member of one of the medical protection associations.

The reasons why this precaution is so commonly neglected are mainly two: (1) mere thoughtlessness, (2) the stupid instinct for individualism which interferes so much with collective action in medicine. I have no means of knowing which, if either, motive was present in this case, but as an object-lesson to the profession it may be invaluable, and I trust that the sum total of subscriptions on your list may mitigate its cost to Dr. Wood-Hill so as to leave it no more than an interesting episode in his life.

I am sending a copy of this letter to the BRITISH MEDICAL JOURNAL in the hope that the Editor will publish it.

Yours faithfully,
PETER MACDONALD.

MOTOR CARS: THE SPARE PART PROBLEM.

DR. WALTER GARMAN, of Wednesbury, sends us a long letter dissenting from the views expressed by Mr. Massac Buist in our issue of December 17th (p. 1045). Dr. Garman summarizes his own views as follows:

1. Your expert claims to have already counselled medical motorists to buy their cars from makers who are prepared to supply spare parts. If such be the case he counsels wisely. Why it should be supposed that in this matter medical men constitute a special class it is difficult to see, inasmuch as the same considerations which affect them must apply almost equally to business men both for their private cars and for those employed in their business.

2. As regards the obtaining of spare parts he says that it is a *problem which will be present always*. If this accurately represents the position, his outlook for the British motor industry is a sorry one. The Ford Company gives a service by means of 200 to 300 dépôts scattered throughout the length and breadth of the United Kingdom, and to this fact it is due that whatever their drawbacks their vehicles are to be seen upon the road infinitely more frequently than any other make of car, and they preponderate more and more every day. Any company which after any misadventure small or great can make their car fit for the road in as many hours as another company needs in days, weeks, or months, possesses an inestimable advantage.

3. Your expert suggests that makers with a high reputation have put at least twenty different models on the market. So much the worse for them. The Ford Company has made few deviations from their original model, which more than holds its own with all the best makes of to day. With their standardized models they can make it possible to get spare parts everywhere; it is not the streamline body or unique bonnet which appeals to the busy man; when he leaves home his main object is "to get there" and "to get home." This with his Ford car he generally succeeds in doing.

4. In his remarks headed "Post-war British Service Schemes" he unwittingly damns the motor industry in this country, while doing his best to bolster up a rotten state of things. Surely whatever the difficulty is to be encountered the British makers, especially in the present depressed state of the industry, should make a real effort to cater for the needs of medical motorists, whose number is not far short of 20,000, and in catering for them they would also be supplying the needs of commercial men.

5. Your expert offers superfluous advice as to making deposits to cover the cost of spares which may be required. Such a ridiculous proceeding is not likely to be adopted even by so unbusinesslike a class as medical men are supposed to constitute.

6. He objects that a motorist experiencing difficulty in obtaining spare parts is apt to tell all and sundry who will listen to him that no British manufacturer organizes his business properly. Quite so; in so doing he is to all intents and purposes stating a fact.

7. Finally, he naïvely suggests that no sweeping assertion should be made as to the delinquencies of the motor trade when he is dissatisfied, but that he should cite the particular make of car and the name of the agent regardless of the fact that a person so doing might be only adding to his difficulties by finding himself cited to appear to answer a charge of libel.

Dr. Garman's views will, no doubt, receive full consideration from our readers; we will add only that our correspondence shows that a warning as to the inadvisability of making deposits to cover the cost of spare parts is needed.

British Medical Journal.

SATURDAY, DECEMBER 31ST, 1921.

EDUCATION OF THE DEAF CHILD.

PERHAPS no part of the field of observation open to the medical man has been more generally and more persistently neglected than that occupied by little deaf children. For almost the whole of our era these children have been neglected by society and considered a race apart, and even when grown up denied the right of common law and citizenship. For a hundred and fifty years the teacher of the deaf has been at work and the deaf child is now recognized not only as one of ourselves but as fit to receive all we can give him. His capacity for work would seem to be limited only by our lack of ingenuity in fit educational methods to his special case. Such children are not mentally deficient—they are only deaf. The greatest educational triumph of the last century was the lifting of a deaf and blind American child—Helen Keller—from a world of silence and darkness to become a social and literary leader. Yet our profession as a whole has been at no pains to co-operate with the teacher. It is true that every now and then a doctor proposes to leap the barrier, to cure deafness, and to render the work of the special teacher unnecessary. Some of these enthusiasts have been quacks, most of them well-intentioned workers who did not understand the problem set them. None has studied the problem in its clinical, pathological, and educational aspects. Recently a revival of hearing exercises has been heard of. Many years ago Bezold of Munich and Urbantschitsch of Vienna expressed different views as to the value of such exercises. The former held that what took place during such training was a better appreciation—a differentiation of what had been heard from the first; the latter, that real increase of hearing took place. Bezold proved his case by retesting his children after many years with the original tests—the continuous tone series of tuning-forks—and finding the original hearing islands unaltered. Teachers support Bezold. They know that deaf children orally taught improve in their appreciation of the sounds taught, but they believe that this improvement is due to an acquired power of differentiation and not to increase in hearing.

What is the duty of our profession towards deaf children? Apart from curable conditions which are not being discussed here, such as middle-ear deafness, the doctor is a necessary link between the mother and the teacher. The mother of the dumb child appeals first to the doctor and hopes for anything but a verdict of deafness. The doctor, guided by a kindly heart, but basing his opinion on no adequate acquaintance with the history of hereditary deafness, suggests that in time, perhaps at the age of seven, hearing will develop. Now the education of a deaf child should begin not at seven years but at three years or sooner, if the fact of deafness can be established. In the words of a pamphlet that has come into our hands, "there may be some virtue in the number seven, but there is none here nor is there in any other number." There is not a large school or institution for the education of the deaf in this country in which the beginning of the education of a deaf child has not been disastrously deferred by the attitude above referred to.

The years from three to seven are the years of language formation in children, never to be repeated in the case of the deaf child. A gesture or a pointed finger is all the reply the mother is able to give to the child's upturned look. Apart from such natural signs, there is no language common to them both. They do not know—what they will find out later on—that the essence of speech is not voice or even breath, but muscular movement which can be seen and deciphered. If this were not true there would be no hope of oral communication with the deaf at all. In the meantime the deaf child looks in vain to the mouth of the mother for meaning. During a stage of life when every street poster, every street scene, every country view, raises questions in the mind of the child, the mother may only reply by a nod, a shake of the head, or a smile. Now lip-reading is natural. We all do it except when we use the telephone, and could we do it then bad language by users of the instrument would almost disappear! But in connexion with conventional forms of speech, lip-reading involves some training, and as the training in deaf children should begin early, the mother must be the first teacher. The pamphlet above quoted, entitled "What the mother can do for her deaf child," is an attempt to give the mother the key to her deaf child's closed mind. Miss Martin, one of the teachers of the deaf under the Glasgow Education Authority, is its author, and it is published by Messrs. Hill and Ainsworth of Stoke-on-Trent under the auspices of the National College of Teachers of the Deaf and the Glasgow Deaf Children's Society. A short preface is written by Dr. Kerr Love, who urges the need for early training and the folly of waiting for developing hearing. Medical men cannot be expected to study details of educational methods, but may be asked to do all they can to get the necessary special education begun as early as possible. This is the prime duty of the doctor towards the deaf child.

During the last twenty or thirty years much has been done for the welfare of deaf children. Schools are better equipped, teachers are better qualified. Education of these children is now compulsory, and the medical inspection of school children has swept into the schools for the deaf many neglected children. But the age for compulsion is too high. In England it should be reduced from seven to five years. Even then there will be ample scope for such work as Miss Martin has done; for without the co-operation of the medical man and the mother the early years of the deaf child's life must remain dull and blank.

THE HEALTH OF THE ROYAL AIR FORCE.

DURING the war the medical problems of flying, though not entirely neglected previously, came into special prominence, and to meet the urgent need for further knowledge the Medical Research Council appointed the Air Medical Investigation Committee, which, under the chairmanship of Dr. Henry Head, brought out a series of valuable reports. The secretary of the Committee, Lieut.-Colonel Martin Flack, originated his well-known physical efficiency tests for the examination of flying men on admission, and the results thus obtained showed the value of applied physiology. Since the armistice flying problems have attracted less attention, and interest in them is therefore revived by the appearance of the first *Report*

on the Health of the Royal Air Force,[1] submitted by the late Director of Medical Services, Air Commodore M. H. G. Fell, whose great power of organization in the successful initiation of this new medical service is fully recognized by all in a position to judge.

This report deals with the year 1920 and contains statistics (in the presentation of which graphs have been freely employed) as to the Home and Overseas Forces, and interesting information as to the research work in progress, such as the further elucidation of the nature and value of the so-called physical efficiency tests, the physiology and pathology of high altitude flying, the visual requirements of pilots, and in particular the nature of heterophoria and its effect in the production of bad landings, and the investigation in India of the effects of glare in aggravating visual defects. The statistics are carefully drawn up, and have the advantage of showing illness per man, so that if a man has the same disease more than once he does not appear as two patients; thus sandfly fever, which was specially severe at Baghdad, attacked 559 men once, 121 twice, 7 thrice, and 3 men four times, the total number of men attacked being 690, and not 834.

A novel and convenient heading is that of "upper air passage infections" for what are popularly known as colds, coughs, and sore throats; this showed a ratio of 66.7 per 1,000 of the average annual strength. The ratio for venereal disease was 49.6, for tuberculosis 3.9, and the total of all communicable diseases 278.6 per 1,000. During the year there was a steady reduction of venereal disease from 5.7 to 2.7 per 1,000 *per mensem;* but the incidence varied widely in different countries, being 12.7 per 1,000 in Mesopotamia, 97.4 in Egypt and Palestine, 41 in the United Kingdom, and 130.7 in the rest of Europe. The well marked fluctuations in the graphs for venereal disease in Egypt, Palestine, and the rest of Europe, particularly the latter, are due to the small strengths, the multiplicity of units, and the continually altering strengths; the majority of cases under the heading Rest of Europe occurred among the France and Flanders units, which were demobilized in the early spring, and among the personnel on the Rhine and in Berlin.

While neither vaccination against small-pox nor inoculation against enteric fever is compulsory in the Royal Air Force, it has been the policy to point out to all ranks the importance of this protection; and the result has been most satisfactory, for the ratio per 1,000 works out at 0.19 for enteric fever, and there appears to have been only one case of small-pox in the total average strength of 25,932. The chief practical point obtained from investigation of sandfly fever is the importance of eliminating cracks and crevices from floors and walls of buildings, for few men will sleep under sandfly nets on account of the heat and want of ventilation, caused by the fine mesh necessarily employed; anti-fly preparations, such as bamber oil, are useful adjuncts, but their effect is transient, and can never eradicate the disease; the solution of this problem is the suppression of the sandfly, or possibly of the particular species responsible, as has been shown in the case of malaria and anopheles. In the short account of the "Z" expedition, which left England for Somaliland in the autumn of 1919, and was finally disbanded at Suez in April, 1920, there is a graphic description of the first use of an aerial ambulance in desert warfare; the machine was a modified De H. 9, carrying one stretcher and an attendant, and proved that "in operations over country where other transport is so tedious and trying, the aeroplane is a veritable godsend for sick and wounded." Heatstroke and sunstroke occurred in the ratio of 64.5 per 1,000 in Mesopotamia, and 9.7 in Egypt and Palestine, the corresponding deaths being in the ratio of 2.3 and 0 per 1,000.

The statistics of injuries are divided into seven categories, such as flying accidents while on duty, of which there were 71, with 29 deaths, the case incidence among officers and cadets being 21 per 1,000 of strength and the death rate 8.5. There were 25 propeller accidents while swinging propellers on starting aeroplanes; and motor accidents numbered 102, fracture of the lower third of the radius accounting for 59. No statistics of "flying sickness" are given, because it is now becoming clear that the conditions grouped under this title, such as "sickness due to high altitude," "exhaustion," "fainting in the air," "vertigo," and "vomiting," are really symptoms of physiological mal-adaptation to altitude or rotatory movement. In the section on functional disorders among R.A.F. officers, it is pointed out that the mental strain of flying under peace conditions is probably never so acutely felt by a pilot as it was before his first solo flight and during his early training, and that a healthy pilot with the mental aptitude for flying is able to "repress" successfully any but normal reactions to the occasional risks of flying, and to remain unconscious of other types of reaction.

[1] *Report on the Health of the Royal Air Force for the Year 1920.* Vol. i. Air Publication 875. Published by H.M. Stationery Office. 1921. (Pp. 81; 8 charts. 6s.)

INFLUENZA IN AMERICA.

AN interesting study of the epidemiology of influenza, with particular reference to the world-wide outbreaks of that disease in 1889 and during the last year of the great war, has recently been written by Dr. W. T. Vaughan of Harvard Medical School.[1] In this essay will be found collected together a great deal of information as to the history of these epidemics, which have visited the inhabited world at irregular intervals since the year 1173 A.D., at any rate, and possibly since 415 B.C.; the general characteristics of the outbreaks are sketched, the manner of spread in localities, in countries, and in continents, and the general course of the successive epidemics is clearly traced. A full account of the morbidity and mortality of influenza in Boston during the winter of 1920, investigated by the author himself, follows, and chapters are devoted to the connexions between overcrowding and influenza, influenza and other diseases, and the prevention and control of influenza. Epidemiologists all agree in telling us that influenza, having visited us so often, is likely often to visit us again at uncertain dates in the future. Can anything be done by way of prophylaxis? Very little, according to Dr. Vaughan; the individual is advised to avoid crowding at home and abroad, to pay particular attention to hygiene, and to boil all plates and dishes after meals, but it is stated that the use of face masks during epidemic times has proved of little benefit and has often even been detrimental. The closing of schools seems to have little influence on the prevalence of the disease.

What particularly hampers the epidemiologist and medical officer of health in dealing with outbreaks of influenza is the want of knowledge as to its bacterial cause. There is no incontrovertible evidence which renders it possible to say that the influenza bacillus is or is not the cause of the disease; hence practical work in the eradication of influenza must depend

[1] *Influenza: An Epidemiological Study.* By W. T. Vaughan, M.D. The American Journal of Hygiene Monographic Series, No. I. 1921. Baltimore: *The American Journal of Hygiene.* 1921. (Sup. roy. 8vo, pp. 261; 28 charts.)

chiefly, if not solely, on the general methods of preventive medicine.

The same point is brought out, but in fuller detail, in the opulent monograph on *The Pathology of Influenza*[2] issuing from the Yale University School of Medicine in 1920, and based mainly on the investigation of an epidemic of some 1,100 cases of the disease occurring during the last three months of the year 1918, with 280 deaths. Here it is pointed out that the result of an enormous amount of bacteriological study, as recorded in the literature, is to show that numerous organisms have been found more or less constantly in influenza and influenzal pneumonia. These are the influenza bacillus, the pneumococcus group, and several varieties of streptococci. In addition, many other microbes, such as staphylococci, Friedländer's bacillus, diphtheroid bacilli, *Micrococcus catarrhalis*, and undetermined organisms of several varieties have also been reported as present. It must be remembered that the influenza bacillus is one easily missed when it is present, and not rarely believed to be present when it is in fact absent.

The authors of the monograph conclude that the etiology and the portal of entry of the exciting cause of influenza are both unknown. They draw attention to the fact that the organisms associated with influenzal pneumonia are the so-called "mouth organisms" present in the mouths and upper air passages of normal individuals, as well as of influenza patients. They draw an interesting comparison between the respiratory lesions of influenza and those initiated by the inhalation of poisonous gases. In gas poisoning it has been demonstrated that the initial damage to the epithelium of the larger air passages, which may be termed a protective mechanism, is followed by an invasion of the lung by the bacteria of the mouth, resulting in a pneumonia of mixed bacterial origin. The authors argue that there is no reason why we should not consider that the unknown etiological agent in influenza injures the protective mechanism in the same way as poisonous gases do. Similarly, both gas and influenza damage the pulmonary parenchyma itself, so that the bacteria of the air and mouth find their way into the damaged lung, there to initiate histological reactions that may not be distinguishable one from the other. A special word of praise must be given to both the plain and the coloured illustrations that are freely scattered throughout this monograph; we have never seen better.

[2] *The Pathology of Influenza*: I. By M. C. Winternitz, Isabel M. Wason, and F. P. McNamara, from the Brady Laboratory of Pathology and Bacteriology, Yale University School of Medicine, and the New Haven Hospital, London: H. Milford, Oxford University Press. (Med. 4to, pp. 61, 57 figures. 32s. net.)

THE RIVIERA CLIMATE

At a meeting of the Société Médicale du Littoral Méditerranéen at Nice, on December 4th, 1921, Dr. D. W. Samways of Mentone gave an address on the climate of the Riviera, which, he said, did not seem even now to be properly understood. The standard textbooks describe it as warm, dry, and marine, and classified under the heading "Marine Climates" the coast towns of the Riviera. The popular and correct conception of a marine climate was that it should bear the impress of the proximity of the sea. There must be winds from the sea, with humidity, clouds and rain in consequence. The climate would tend to be temperate, soothing and sedative, as was commonly the case in typical places, such as those bordering on the Atlantic Ocean, or seas branching from it. Such a climate was not found on the French Riviera. During the winter season the air was dry; winds, clouds, and rain were rare; and the air was stimulating rather than soothing and sedative. Though the sea was on one side (to the south), it was from the mountains on the other (to the north) that the Riviera receives almost the whole of its air supply in the winter season. It had, therefore, a mountain climate at a low level. Shortly after sunset the air could be felt moving through the Riviera towns from north to south. The smoke from the chimneys turned southward, and could easily be traced passing out over the sea. This movement of the air continued throughout the night on almost all nights during the winter. During the daytime when fine—and more than three-fourths of the days were fine—the same thing happened, but was masked by the fact that the sun blazing on the coast line heated the air and caused it to rise. The air, passing into the coast towns from the mountains, rose in its turn as it also warmed, and so did not blow right through the towns as at night, nor did it make its presence felt, unless an actual wind from the north-west (the mistral), or from the north-east (the bise or bora) were blowing, which was unusual. Dr. Bennet, who was originally largely responsible for the interest taken in the Riviera as a health resort, observed that in the four months December–March of the season 1864–65, out of 121 days the wind was from a northerly direction on 84, "all but invariably days of brilliant sunshine with a blue sky. On the days when the south wind blew there was nearly always cloud and often rain. Thus, during the 121 days of the four winter months there were 29 days of rain and 92 days of fine fair weather. Of these rainy days 20 occurred with southerly winds and 9 with northerly winds." Anyone climbing to the crests of the mountains north of the Riviera towns would, Dr. Samways said, find that on fine days there was almost universally a gentle, but very appreciable, breeze, coming from the north. This air had lost its moisture, having deposited it as snow when it was chilled while passing over the higher mountains further north. On descending the southern slopes near the coast it found that those on which the sun fell perpendicularly in winter had become hot. The air, therefore, gained heat from the rocks over which it travelled and from mixing with the heated air rising from them. In consequence the cold northerly draught was warmed considerably before reaching the Riviera coast towns, and, being warmed, became still drier and lighter. This air, during the day, replaced the warm air rising from the sun-heated belt of land near the sea, namely, from the Riviera and its coast towns. In this respects it contrasted with the night air, which passed right through the towns and out to sea. In winter two kinds of winds came from a southerly direction (from over the sea). There were the true marine winds, from the south-west and south-east, which come from far, and were accompanied by a fall in the barometer and warm, moist, sea-charged air; strong wind, rough sea, cloud and rain were then usual. These winds blew frequently in the autumn, but seldom in the winter. Under their influence the Riviera possessed temporarily a marine climate, and under them only. The other winds coming from the sea were more common in the winter, and arose locally. They were especially prevalent in March, and were due to the sun heating the land and causing the heated air to rise. As it rose it must be replaced, and if air were not sufficiently supplied from the mountains, as sometimes happened, the required air was sucked in from the sea. This caused a local sea breeze, gentle at first, but increasing as the sun became powerful, and dying down as the sun declined. This wind was chiefly felt on the sea front or promenade, and commonly not at all a mile inland, as it had risen and disappeared with the updraught which caused it. This wind was cold and dry, quite unlike an ordinary sea breeze, and closely resembled mountain air. It was the air which had gone out over the sea during the previous night, and was sucked back as an indraught during the day. The proximity of the sea, and the occasional presence of this indraught, have made the unwary, including all writers on the

subject, conclude that the Riviera had a marine climate. The night air, which had spread out over the sea, was sometimes, on sunny days, pushed back again to the land, reversing for awhile the direction of its flow, but remaining mountain-borne air. Taken as a whole, therefore, the Riviera had a mountain climate. Only when there was a true sea breeze from the south-west or south-east, with a falling barometer and cloud or rain, had the sea any direct influence on the temperature, humidity, or other characteristics of the atmosphere. The climate, in fact, for more than nine-tenths of the hours in winter was comparable with that at Leysin or Davos rather than Biarritz or Torquay. With this mountain climate the Riviera had the advantage of being at sea level and of being comparatively warm. It offered the benefit of a mountain climate without the disadvantage, prohibitive to many, of excessive cold, and a highly rarefied atmosphere. Its success as a winter playground and a health resort was primarily due to the sun and the mountains, and only in a very subordinate degree to the sea.

PLAGUE IN SOUTH AFRICA.

An element of mystery has surrounded the repeated outbreaks of plague in South Africa, and until lately the source from which infection arose has remained a matter of conjecture. Some light was thrown on this matter by Dr. J. A. Mitchell, Secretary for Public Health and Chief Medical Officer of the Union, in a paper read before the South African Medical Congress at Capetown last October. Plague, it appears, was introduced into South Africa during the war of 1899–1902 by rats from vessels with cargoes of forage from infected South American ports. Serious outbreaks occurred in the shipping centres, and the disease persisted in some ports up to 1905. An epizootic amongst the local rodents was found associated with these outbreaks, affecting particularly brown and black rats, domestic mice, and wild striped mice. Save for one outbreak in Durban in 1912, no cases were reported in the Union from 1906 to 1914; plague then reappeared, not this time in the ports, but in remote farms in the Cape Province and in the Free State. The mortality was as high as 70 per cent. in some of these isolated epidemics. The farms affected were often widely separated. Whence had the infection arisen? In view of the isolated situation of the farms affected and the long period of persistence, it did not seem probable that human carriers could be the cause of these outbreaks. Accordingly a rodent survey of the areas involved was made by a naturalist, accompanied by an expert trapper and tracker. The districts involved were practically free from the ordinary domestic rodents, but it was found that the gerbille or "nachtmuis" was very common in some parts, and also the multimammate mouse. Further study showed that the outbreaks corresponded roughly with the areas or sandy stretches in which the gerbilles especially abounded. Evidence of recent migration of gerbilles and desertion of burrows was also found, and here and there dried-up carcasses or skeletons of gerbilles. These creatures are purely nocturnal, so that they are seldom seen by man, and they avoid buildings. They are gregarious and migratory, and often travel long distances at night. The almost complete destruction of jackals, lynxes, and cats, and the great development of mealie-growing, have created conditions exceptionally favourable to wild rodents in the parts of the Free State affected. The place of the domestic mouse is taken by the multimammate mouse, which lives sometimes in gerbille burrows and sometimes in dwellings or outbuildings. It is lazy, and never travels far; it prefers any cover, or the burrow of some other animal to digging a hole for itself. Suspicion having fallen on these two rodents, the next step was an attempt to isolate the plague bacillus from them or from their parasites. It was found that these and other wild rodents were flea-infested, especially in summer, the many species of flea recovered including a number which bite man; these fleas were highly susceptible to plague. Repeated examinations of dead rodents were, however, always negative. Healthy wild rodents were placed in cages near suspected burrows in the hope that they would exchange fleas with the inmates, but this method also gave negative results. How direct proof was at last obtained is described in some detail by Dr. Mitchell. It would seem from the outcome of this painstaking inquiry that in South Africa the gerbille and multimammate mouse (and possibly other rodents) act as a reservoir for plague. Infection in man results from bites of fleas which have fed on infected rodents. That plague is not more common is because the complicated chain of infection between rodent, flea and man can seldom be completed in view of the fact that these rodents rarely enter buildings. These findings are not out of keeping with those of other countries where it has been found that plague can persist as an enzootic amongst wild rodents. In California ground squirrels have been found to harbour plague, and the original source of the terrible Manchurian epidemic of pneumonic plague of the winter of 1910–1911 is believed to have been the tarbagan or marmot. The existence of this reservoir of plague is a constant menace in South Africa—a fact recognized by the public health authorities. In the destruction of these rodents gassing with carbon bisulphide has so far been the most effective method; ordinary methods of poisoning and trapping have proved useless.

PRIMARY MALIGNANT TUMOURS OF THE HAEMOLYMPH GLANDS.

It is often said that the day of morbid anatomy, gross and microscopic, has passed; and no doubt the achievements of metabolic research, of chemistry and of serology, and the light they throw on the early and active stages of disease may be regarded as potentially of more practical utility than the old-fashioned study of what are often termed the end-results in the dead-house. On the other hand, the morbid changes in the fixed tissues provide information bearing on the nature and classification of diseases, and we can hardly flatter ourselves that finality has been reached in these respects. For example—our knowledge of the diseases of the lymphatic glands and tissues shows many gaps and unsettled problems. Professor Douglas Symmers[1] of New York, who has published a series of interesting papers bearing on this, now describes for the first time primary malignant disease of the haemolymph glands, in an article entitled "Primary hemangiolymphoma of the hemal nodes, an unusual variety of malignant tumour." The haemolymph, or, as he prefers to call them, the haemal glands, represent "an accessory system of diminutive spleens," and though seldom if ever noticeable in healthy human beings, become visible in some diseases, especially anaemias associated with changes in the spleen and bone marrow, and in syphilis of the spleen, as reddish or reddish-brown bodies in the pre-vertebral fat. Professor Symmers reports fully two cases of haemangiolymphosarcoma arising in the abdomen, where haemolymph glands are most common, with a reddish or bluish-red colour, and microscopically counterfeiting more or less faithfully the histology of haemolymph glands in that there are groups of lymphoid cells separated by innumerable distended blood sinuses with or without a supporting reticulum of connective tissue. One case showed a solitary mass with about eleven secondary nodules or was locally malignant; the other, in a girl aged 3 years, a large abdominal tumour composed of fused haemolymph glands and widespread subperiosteal growths in the skeleton, especially in the skull cap; there was a tumour near the right eye and the neighbouring skin was slightly discoloured. The blood count showed 9,000 white and 1,500,000 red cells. As the adrenals showed nothing of note, the passing resemblance to the group of "suprarenal

[1] D. Symmers, *Arch. Int. Med.*, Chicago, 1921, xxviii, 467–474.

sarcoma in children with metastases in the skull," described by Dr. Robert Hutchison in 1907, may be merely noted with interest. Experience in the *post-mortem* rooms of several hospitals has given Professor Symmers the impression that these primary malignant growths of haemolymph glands occur fairly frequently, but the two reported are the only instances among 7,000 necropsies at the Bellevue Hospital.

INCIDENCE OF AORTIC ANEURYSM.

In the first of what promises to be an interesting series of articles on aneurysm Drs. B. Lucke and M. H. Rea[1] analyse 321 aneurysms found after death at Philadelphia, and, by utilizing statistical reports from other pathological and clinical sources, bring the total available for consideration up to more than 3,000. Some of these 321 aneurysms, involving the heart or its valves (15) or the aorta (278) or its branches (28), were multiple, and hence, out of 12,000 necropsies at Philadelphia, there were 268 cases, or 2.2 per cent., with true intra-corporeal aneurysms. It has long been recognized that the incidence of aneurysms varies in different parts of the world, and on this point an interesting collection of statistics is analysed; out of a total of 1,452 aortic aneurysms found among 160,143 necropsies (0.9 per cent.), the United States showed an incidence of 1 aneurysm in every 41 necropsies, Great Britain 1 in 74, the Scandinavian countries 1 in 109, and Austria and Germany 1 in 198. It must, however, be remembered that in Teutonic hospitals necropsies are the rule, whereas in the United States this is very far from being the case. Clinical records from the British and German armies before the war confirm the greater frequency of aneurysm in Great Britain and the United States of America. The explanation of variations in the incidence of syphilitic lesions, which is so well illustrated by the frequency of aneurysm and the rarity of tabes dorsalis in negroes, may, it is suggested, lie either in a racial predisposition of the vascular system or in the existence of different spirochaetal strains possessing selective affinities and being particularly prevalent in certain countries or races. In the United States aortic aneurysm is commoner and occurs at an earlier age in negroes than in whites, it is also four times more frequent in males than in females, whereas in a statistical collection of 1,274 aneurysms of all kinds the proportion of males to females worked out at 2.7 to 1. The frequency with which aneurysm in the past remained undiagnosed justified Sir William Osler's dictum that there is no disease more conducive to clinical humility than aortic aneurysm; but skiagraphy has rendered recognition much easier, and while noting that a correct diagnosis was made in only 43 per cent. of Lucke and Rea's cases, it must be remembered that their material was collected from records beginning in 1867.

A MEDICAL STOCK-TAKING.

Dr. E. G. Dru Drury, in a paper reprinted from the *South African Medical Record*, takes stock of the profession of medicine.[2] We are not, he says, isolated experts. We learn from all: from our dental brethren, from the nursing profession, from the pharmaceutical chemists, from the diseases of plants, from the instincts of animals, from the arts of primitive people, and, above all, from the history of our ancient and honourable profession, not to be over-enthusiastic for novelty nor contemptuous of our predecessors. If we turn, he continues, to the camp followers or citizen amateurs who hang round the army of medicine in its fight with disease, we may still learn lessons. Proprietary and quack medicines, such systems of cure as cancer curers use, with their revival of a painful bygone method which we abandoned a hundred years ago, the water cure of Sebastian Kneippe, or the hydropathy of Louis Kühne, all give practice in discrimination of error from truth and throw light on the instincts, minds, and emotions of our fellow men. Taking the treatment of bones and joints as an example, Dr. Drury observed that since neolithic man first opened the skull of his drugged tribesman with a flint knife and let out the headache or the demon that possessed him, man has been tinkering away at bone or joint trouble. The use of bone-setting dates far back to an unknown age, and has often been hereditary in families who transmitted their secrets. What did we learn from them? When the "small bone out of place" happens to be fracture-dislocation of the spine or an acute tuberculous joint, the results of bone-setting may be disastrous, and we might then be tempted to use the bitter phrase of Sir Astley Cooper about the science of medicine, that it "is founded upon conjecture and improved by murder." Percival Pott, nursing his ankle in 1756, is concise upon this point: "The people," he says, "regard bone-setting (as it is called) as no matter of science; as a thing which the most ignorant farrier may with the utmost ease become soon and perfectly master of—nay, that he may receive it from his father and family as a kind of heritage." Speaking of the great reputation of a certain Mrs. Mapp, Pott continues: "The desire of health and ease, like that of money, seems to put all understandings and all men upon a level; the avaricious are duped by every bubble; the lame and unhealthy by every quack." Is it too much, asks Dr. Drury, to hope that British medical men may in time rise to the level of Swedish medical education and be drilled in the practice of massage? Not till then, he thinks, shall we have reacted adequately to the stimulus of the bone-setters, and have learned all—and more than all—that they profess to teach.

THE WESTERN UNIVERSITY MEDICAL SCHOOL, CANADA.

The new buildings of the Western University Medical School, London, Ontario, were officially opened on November 17th by the Hon. R. H. Grant, Minister of Education for the Province of Ontario. Addresses were delivered by Mr. Arthur T. Little, chairman of the board of governors, and by Dr. C. R. Somerville, of the Royal Commission on University Education for Ontario. A portrait of the late Dr. H. A. McCallum, M.R.C.P.Lond., the former Dean of the medical faculty, was unveiled by the Hon. W. J. Roche, M.P., Chancellor of the Western University, who paid a high tribute to the memory of Dr. McCallum for his splendid services to the university. On the following day Dr. A. B. Macallum, F.R.S., Professor of Biochemistry in McGill University, addressed the faculty and students, urging that medical research be vigorously prosecuted in the new laboratories. Dr. F. R. Miller, Professor of Physiology in the university, informs us that the present Dean, Dr. Paul S. McKibben, was responsible for the planning of the buildings and for the general supervision of their construction. They are constructed of reinforced concrete, thoroughly fireproof, and are regarded as being among the most up to date on the American continent. The cost has been approximately half a million dollars.

GLASGOW MEDICAL LUNCH CLUB.

For more than a decade in all large towns and business centres luncheon clubs have been formed by business men to further social intercourse and to be of mutual benefit to the members. Meetings are held usually once a week on a fixed day at lunch time, and after lunch a short address is given by an invited guest, or by one of the members. Thus in the course of a season many varied subjects are introduced. Social evenings are held from time to time. These regular meetings have been found so stimulating and helpful that some similar clubs from very small beginnings have developed into strong organizations, whose influence on matters of public interest is now recognized to be con-

[1] B. Lucke and M. H. Rea, *Journ. Amer. Med. Assoc.*, Chicago, 1921, lxxvii, 935-940.

[2] *Stock-Taking*. Presidential address to the Cape of Good Hope Eastern Province Branch of the British Medical Association. Capetown: Townshend, Taylor, and Snashall. 1921.

siderable. Following on these lines it has been decided to form such a club for medical practitioners in Glasgow, and the inaugural lunch was held on December 15th in Ferguson and Forrester's Restaurant, Buchanan Street. This meeting was called under the auspices of the British Medical Association, Glasgow Eastern Division. Dr. Frank W. Martin, chairman of the Division, presided, and Professor John Glaister, M.D., was present as the guest of the club. After lunch a temporary constitution and rules were adopted on the motion of the chairman, and were remitted to a committee, representative of the medical profession in Glasgow as a whole, to amplify or amend. Professor Glaister, in commending the idea of such a club, warmly advocated the need for greater social intercourse among fellow medical practitioners, and indicated generally the lines on which the club might develop so that it would be of the greatest benefit to its members. A wide variety of subjects of address could be chosen, and the subject selected might with advantage frequently be one outside the realm of medicine or surgery. The influence wielded by such a medical organization might prove very helpful in connexion with municipal health problems or State projects. Dr. James Drever, secretary of the Scottish Committee of the British Medical Association, in proposing a vote of thanks to Professor Glaister, strongly supported the aim and functions of such a club. The meeting was in all respects a successful one, and was attended by over forty doctors, representative of the profession in Glasgow and the immediate neighbourhood. The present intention is that meetings should be held weekly on Thursdays at 1 p.m. for 1.15 p.m., and that the liability of members should be limited to payment for the lunches which they actually attend, with an occasional small levy to meet printing and other expenses. The acting secretary is Dr. D. McKail, 2, Morris Place, Monteith Row, Glasgow. The second meeting of this club was held on December 22nd, and was attended by thirty-seven members. Dr. Frank W. Martin presided, and after lunch Sir Kennedy Dalziel addressed the members on the subject of quackery in medicine.

THE FELLOWSHIP OF MEDICINE.

WE announced on December 3rd that during the coming year the Fellowship of Medicine and Post-Graduate Association proposed to arrange a series of courses for medical graduates. The syllabus has now been issued for a six weeks' course in general medicine, to be held in London from January 9th to February 18th. The following hospitals are taking part: Bethlem Royal Hospital (psychological medicine), Cancer Hospital, Chelsea Hospital for Women, Brompton Chest Hospital, Maida Vale Hospital for Epilepsy and Paralysis, Middlesex Hospital, National Heart Hospital, Paddington Green Children's Hospital, Royal Westminster Ophthalmic Hospital, St. George's Hospital (pathology and *post-mortem* demonstrations), St. Mark's Hospital for Diseases of the Rectum, St. Marylebone General Dispensary (infant diet and diseases of infancy); St. Peter's Hospital (genito-urinary disease), Western Hospital, Fulham (infectious diseases). The morning and afternoon of every week-day will be fully occupied, and the time-table has been so arranged that as far as possible the work will be carried out each day at hospitals close to one another in order to economize the time of graduates attending the course. The fee is fifteen guineas, and the names of those wishing to attend should be sent as soon as possible to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1, to whom all inquiries should be addressed.

LECTURES ON BIOMETRICS.

WE are asked to state that a course of six public lectures on the Current Work of the Biometric and Eugenics Laboratories will be given in the Department of Applied Statistics and Eugenics, University College, London, on Wednesdays, February 15th, 22nd, March 1st, 8th, 15th, and 22nd, 1922, at 8 p.m. The order of the lectures is as follows: "Sidelights on the evolution of man: from the knee-joint," by Professor Karl Pearson; "On the inheritance of intelligence," by Miss Ethel M. Elderton; "Scheme of anthropometric measurements in the biometric laboratory," by Dr. Percy Stocks; "The relation of caries in the teeth of school children to health and home conditions," by Mr. E. C. Rhodes; "On the inheritance of certain types of blindness," by Dr. Julia Bell; "On occupational mortality," by Dr. M. Greenwood. The lectures will be delivered in the theatre of the laboratory; they are open to the public without fee, but, as the number of seats is limited, admission will be by numbered ticket for each lecture, for which application should be made to the Secretary, Galton Laboratory, University College, London, W.C.1.

PHANTOM EDITIONS.

A CUSTOM which German publishers seem bent on establishing is a curious example of the working of the German mind, which quite easily believes that a thing can both be and not be. Let it be supposed that before the war a book had reached, say, a sixth edition; a new edition now issued is called "the seventh and eighth." The explanation seems to be that the publisher estimates that but for the war a seventh edition would have been called for a few years ago, and that an eighth edition would have been due now. It ministers to the conceit of authors, and the purchaser or reader of this edition is not deluded—is, perhaps, inclined to smile at what seems the simple cunning of the publisher. But

> What a tangled web we weave
> When first we practise to deceive!

If another edition is published it will doubtless be called the ninth without qualification or explanation, and the reader who then first becomes acquainted with it will be apt to suppose that the book has been more popular than is really the case. It is a stupid little subterfuge, and should be given up for the honour of literature, of which the publishing trade in a sense forms a part.

THE officers of the third International Congress of the History of Medicine are: President of honour, Sir Norman Moore, Bt., M.D.; president, Dr. Charles Singer; treasurer, Mr. W. G. Spencer, O.B.E., M.S.; general secretary, Dr. J. D. Rolleston; vice-presidents, Sir D'Arcy Power, K.B.E., F.R.C.S., Dr. Tricot-Royer of Antwerp, president of the first International Congress, and Drs. Jeanselme and Menetrier of Paris, presidents of the second International Congress.

THE new hospital for Braintree and the district, presented by Mr. W. J. Courtauld, High Sheriff of Essex, to take the place of the small cottage hospital presented by the late Mr. George Courtauld about fifty years ago, was formally opened on December 16th. The entire cost of the site, building and furnishing, including up-to-date *x*-ray apparatus and surgical appliances, has been borne by the donor, while Mrs. Courtauld has given an up-to-date motor ambulance. The hospital contains twelve beds.

FOR the convenience of residents in this country who contemplate a visit to one of the French spas an office has been opened in London, under the direction of Mdlle. Blaise, to give information as to the qualities of French watering places, the manner in which they compare with those of other countries, and the conditions under which they may most advantageously be visited. The office, which is associated with the Service des Stations Thermales, is established at the Office Français du Tourisme, 54, Haymarket, London, S.W.1, and Mdlle. Blaise, who, as has been said, is the chief of the service, will be glad to respond to inquiries.

DR. C. PIRQUET, Professor of Pediatrics, University of Vienna, delivered the third Harvey Society lecture at the New York Academy of Medicine on December 17th, on the subject of the nutritional treatment of tuberculosis in childhood.

MEDICINE IN ASSAM.

WE have received from Dr. W. G. Forde, who dates his letter "United Provinces (India)," a voluminous account of medical work in the tea gardens of Assam. He states that medical men contemplating taking up appointments as tea garden medical officers should be warned as to the nature of their work. It consists, he says, of visiting a group of gardens and supervising the garden hospitals, which are in charge of either subassistant surgeons or compounders. The former, he says, are as a rule capable and do their work well considering the difficulties with which they have to contend. The latter are merely dispensers, with no practical knowledge of therapeutics. The usual routine is for the medical officer to visit each garden once a week, but he has, Dr. Forde says, no control over the hospital staffs, the members of which may be engaged or dismissed without his permission. It is the custom of garden managers to visit the hospitals in the absence of the medical officer, and they are the real administrators of the hospitals and of sanitation, having the final voice in dealing with the recommendations of the doctor. The garden hospitals are mud hovels, and their equipment consists of one pair each of midwifery, artery, and dressing forceps, a tongue depressor, and generally two ordinary scalpels and a few surgical needles; it is therefore impossible to deal with any but the most trivial surgical cases. He has, he says, personal knowledge of three large gardens, employing several thousand coolies, where no dental forceps are supplied. Sanitation, he considers, is greatly neglected. To the excuse that the deficiencies are to be attributed to the depressed state of the tea market, he replies that a slump in tea has existed for less than two years, and that the defective sanitation has always been the normal state. It may be true that the coolies are better off in a sanitary respect than in their own village; but that is, he thinks, beside the point. He himself resigned his appointment after three months and accepted one at a lower salary. The Assam Branch of the British Medical Association is, he presumes, aware of the facts but unable to improve things.

Dr. F. C. McCombie, honorary secretary of the Assam Branch of the British Medical Association, has been consulted; he has been good enough to make some inquiries and send some general information. He thinks that Dr. Forde was unfortunate in going to a newly constituted practice at a time when few tea estates were working at a profit, and most were, in fact, encountering large losses. Most of the difficulties mentioned were due to the financial situation; they appear to have been more or less of a temporary nature, and are now being overcome. Dr. McCombie agrees that, except in the case of a few companies employing a whole-time medical officer, the garden managers are the real administrators of the hospitals and sanitation, and have the final voice in dealing with the recommendations of the doctor. The manager is responsible for finance, and financial considerations enter into most recommendations from the doctor; otherwise it is not customary, Dr. McCombie says, for the manager to interfere in the hospital arrangements, and if changes are thought desirable in the hospital staff the medical officer is consulted. It would, he thinks, be an improvement on estates where the custom does not obtain, if the recommendations of the medical officer with regard to sanitation and the improvement of health, were finally to be laid before the agents or proprietors. As managers are largely paid by commission on profits they are inclined to be biassed against sanctioning expenditure the return on which is not immediately obvious. Dr. McCombie considers that the custom of managers visiting the hospitals is excellent; the object of such visits is usually to see that the orders of the doctor are being carried out. Indian subordinates commonly require a large amount of supervision, and it is most advantageous that the manager should help in this: he can usually do so without interfering with the doctor's province. Most of the larger gardens, Dr. McCombie goes on to state, have well found brick hospitals and are provided with the instruments necessary for emergency operations. Many of the hospitals in charge of compounders should strictly be called dispensaries, as they are situated on out-gardens; patients requiring more advanced treatment are removed from them to the main garden hospital. Though sometimes the picture conjured up by the expression "mud hovel" might apply, many buildings so constructed are quite passable. Nearly all the bungalows in Assam have thatched roofs, and the walls consist of cane plastered over with a mixture of mud and cow-dung. The hospital or dispensary may be of similar construction, and though certainly difficult to keep clean has the important advantage of coolness. Sanitation, Dr. McCombie adds, has been sadly neglected. Partly this is owing to the reasons given above, and partly to the difficulties of carrying out reforms amongst a population ill disciplined, extremely ignorant, and bitterly opposed to any innovation. The planter has nowadays very little control over his coolies, and something more than moral persuasion is required to enforce sanitary decrees. Until such time as legal powers shall be given by Government no great advance in sanitation can be looked for.

Finally, says Dr. McCombie, it is not advisable for the man who is keen only on modern surgery to take up tea garden practice. He cannot expect to find in the jungle all the equipment and staff necessary to an up-to-date hospital. In most districts the weekly visits, the awful roads which have to be travelled in the rains, and the enervating climate, make extensive operative work impossible. To those to whom surgery is not their only hobby, Assam offers many interests. Few branches of medicine excel in interest the study of tropical disease, and Assam offers a large field as yet unexplored. Most of us find that the managers, agents, and proprietors are willing to carry out the recommendations of their medical officers if thereby they can reduce the death rate and sick list and thus render more labour available. Many of the larger companies, especially in Upper Assam, in addition to having brick hospitals with central heating and electric light, leaving nothing to be desired, have sound protected water supplies, carry on extensive quinine prophylaxis, anti-hookworm measures, allowances to women before and after childbirth, and for some years past have been slowly installing septic tank latrines for the coolies, who are generally well housed, and if not able to earn a living wage are assisted by doles, or if due to ill health, suitably treated. But it must always be remembered that this has been slowly brought about by a generation of medical men who, with tact, perseverance, and patience, have gradually got the planter to realize that it is a paying proposition to look after his labour force. It would be advisable for any medical man intending to take up a practice in Assam first to make thorough inquiries about the local conditions of the district in which he proposes to practise; such information I shall always be pleased to supply if possible.

England and Wales.

MEMORIAL TO DR. G. H.-H. ALMOND OF BATH.

THE dedication took place on Sunday, December 18th, at Bath Abbey, of a tablet, erected by his medical colleagues of the city of Bath and the surrounding area, to the memory of George Hely-Hutchinson Almond, M.A., M.B., B.Ch.Oxon., temporary Captain R.A.M.C., who was killed in France on August 9th, 1918, aged 41. A special service having been arranged, a large number of medical men and others attended, including the Mayor of Bath, representatives of the principal hospitals, Dr. A. E. Norburn, Chairman of the Bath Division, British Medical Association, and Drs. G. A. Bannatyne, H. Norman Barnett, C. G. Beaumont, A. de V. Blathwayt, E. J. Cave, W. H. Cooke, Ray Edridge, F. C. Fosbery, Forbes Fraser, R. G. Gordon, G. Hardyman, W. P. Kennedy, Preston King, F. Lace, A. J. Bruce Leckie, C. Curd, J. Lindsay, H. MacBryan, C. A. Marsh, Mary Morris, W. G. Mumford, J. H. Spreat, C. J. Tabor, H. G. Terry, C. J. Whitby, J. Wigmore, and N. Lavers. The Rector and Rural Dean dedicated the tablet after it had been unveiled by Dr. Norburn, who in a short address said that a high sense of duty actuated Almond's life before all else. During the South African war he left his studies at Oxford in order to serve as a trooper with the Yeomanry. Again, in the last war, when the call came, he was one of the first to leave his practice, and was killed by a bomb from an aeroplane, which struck his ambulance and killed eight in all, when victory was already in sight.

Dr. Almond was acting secretary of the local Division of the British Medical Association for some time during the early part of the war, and the arrangements for the memorial tablet were carried out by the Division.

Liverpool School of Tropical Medicine.

In celebration of the opening of the Research Laboratory at Freetown, Sierra Leone, a dinner took place on December 20th at the Adelphi Hotel, Liverpool. To the regret of the distinguished company, the host, Sir Francis Danson, chairman of the Liverpool School of Tropical Medicine, owing to a severe chill, was unable to be present. Dr. Richard Caton presided, and among those present were Lord Derby, Chancellor of the University of Liverpool and President of the Liverpool Chamber of Commerce, the Bishop of Liverpool, the Lord Mayor of Liverpool, Professor Blacklock, the Professors of the School of Tropical Medicine, and many merchants well known in African commerce.

The toast list afforded the speakers ample opportunity for testifying to the beneficial work the school had done during its twenty-two years' existence, and for promoting its further extension in all tropical regions. The first toast, to the founder of revered memory, Sir Alfred Jones, was honoured in silence. Dr. Caton said the objects of the school were twofold in scope: (1) To train medical men in those diseases peculiar to the tropics, and thus enable them to combat successfully their disastrous effects. With this object in view the University bestowed, after examination the diploma in tropical medicine. (2) To promote the study and investigate the cause of disease with the ulterior object of preventing its development. In the accomplishment of the second object, not only would the white man benefit, but the welfare and happiness of the native races be immeasurably increased. The Liverpool School had sent out during its existence no less than forty expeditions, all crowned with successful additions to our knowledge. He mentioned Ismailia, some years ago a malaria-ridden town, now free from this scourge as a result of medical research and untiring effort. Dr. Caton read a letter from Mr. Winston Churchill, the Colonial Secretary, regretting his inability to be present on this occasion. Mr. Churchill warmly acknowledged the good work the school had achieved in the past—"a record of which any institution might be proud." "To those outside Liverpool I would say that were I asked to select the imperial object to which a large sum of money could most profitably be devoted I should name without hesitation the research into the causes of tropical disease and into the means of prevention and cure."

The Bishop of Liverpool proposed the toast of "The Sir Alfred Jones Research Laboratory at Freetown, Sierra Leone." The laboratory was erected on a site 260 feet above sea level, with view over the town and sea. It was designed by a Liverpool man, and would be conducted by Liverpool men. It was intended for pure research work, and had the inestimable advantage of this being carried out on the spot, and therefore in the most favourable conditions for adding to and extending our knowledge of tropical disease. To Professor Blacklock and his colleagues, Drs. S. Adler and E. J. Clark, he wished, in the name of those present, good luck and God-speed. Professor Blacklock expressed on behalf of his colleagues and himself his warm thanks for the honour that had been paid them, and assured his hearers that no effort on their part would be wanting to promote the objects of the new laboratory which all of them had so much at heart. He admitted that Sierra Leone enjoyed in the past a vile reputation, but now he thought it could be said of West Africa that it was not nearly so bad as twenty-five years ago. The site of the new laboratory was excellent, and in its choice they were indebted to both the War Office and the Colonial Office. The keen interest taken by the medical men resident was most encouraging, and among others he mentioned the name of Dr. R. H. Kennan, who is now a member of the staff of the Tropical School.

"The University of Liverpool and the Liverpool School of Tropical Medicine" was proposed by the Lord Mayor of Liverpool. The university was a great asset to the city. It brought culture and high ideals, and illuminated the commerce of a great city. The number of students pre-war was about 1,000; last year over 2,700 students were within its buildings. Referring to the Million Fund in aid of the university, he was anxious that the citizens of Liverpool should not forget its existence. The university was developing along lines of modern thought, and its development must be assured by generous support and noble endeavour. The Tropical School began in 1898. It owed its existence to Sir Alfred Jones, Rubert Boyce, and Ronald Ross, who all realized the importance of the problem of rendering Africa no longer the white man's grave but a country that could be made healthy for all concerned in its further development. The chancellor of the university, Lord Derby, in acknowledging the Lord Mayor's tribute to the influence on city life of the university, said that the university was god-parent to the School of Tropical Medicine. Its objects brought the school more intimately into connexion with commerce and the development of fresh markets for our trade. For the health of the lives of those who were pioneers should be the first consideration, and that fact gave him great satisfaction, as through its connexion with the university the School of Tropical Medicine was doing such splendid work for the country as well as for the empire.

Professor J. W. W. Stephens, F.R.S., responded for the School, and set forth the activities of the various departments, mentioning his colleagues Professor Newstead and Professor Warrington Yorke. The latter was occupied with the classification of parasites, of which the school possessed an unrivalled collection. The ward for tropical diseases in the Royal Infirmary was to be supplemented with one for private patients. Finally he would like it to be known that the activities of the Liverpool School of Tropical Medicine were only limited by the funds at their disposal, and donations and subscriptions from all who valued the work and its beneficent objects were urgently solicited.

Arrangements for Medical Treatment of School Children.

The London County Council, on December 20th, sanctioned arrangements for the treatment of school children in the year 1922–23. Provision is to be made for dealing with 34,650 cases of eye refraction, 17,030 ear, nose and throat cases, 2,628 ringworm cases, 58,990 cases of minor ailments, and 116,160 dental cases. Three additional minor ailment centres and one additional dental centre are to be established. The allowances to surgeons in the eye, throat, and ringworm departments, and the specialists in ionization in the minor ailments department, are to be at the rate of £80 a year for one half day of two and a half hours' duration a week. The anaesthetists in the throat and dental departments are to be paid at the rate of £75 a year for the same service. In the minor ailments department (other than ionization treatment) the session is to be reduced from one of two and a half hours a week to one of two hours a week, and the doctors in this department are to be paid at the rate of £66 a year. Dentists are to be paid at the rate of £60 a year for one weekly session of two and a half hours. The pre-war rates for doctors and dentists were £50 and £40 a year respectively.

The Residential Treatment of Tuberculosis.

The London County Council has received and accepted an offer from the Metropolitan Asylums Board to defray the cost of treatment of insured tuberculous persons in the Board's institutions in the same way as the cost of treatment of uninsured persons is defrayed, subject to the condition that the Council shall pay to the Board in respect of these insured persons a proportion of the block grant payable to the Council by the Government. The Board has also asked, in effect, that the Council will utilize fully the Board's accommodation before availing itself of accommodation in voluntary institutions. The accommodation which the Council will require for 1922–23 will be 2,200 beds (1,500 adults and 700 children), as compared with 2,550 for the current year. Of these beds about 1,400 (900 adults and 500 children) will be in the institutions of the Metropolitan Asylums Board, and 800 in voluntary institutions. In view of the Board's suggestion of the possible discontinuance of the use of voluntary institutions by the Council, the Public Health Committee states the reasons why a considerable amount of accommodation in such institutions must be retained. The improved methods of selection of cases for residential treatment depend on the provision of observation beds which have been reserved at Brompton Hospital and

at the Victoria Park Chest Hospital. It is necessary also to consider the special needs of certain patients (as, for instance, climatic conditions) which might not be fulfilled by any of the Board's institutions. The Public Health Committee reports that the improved methods of selection have resulted in a marked reduction of the number of patients for whom residential treatment is found necessary, that the improved system of classification has ensured that patients have been referred to the particular institutions most suitable to their condition, and that owing to the very disappointing results of residential treatment in moderately advanced cases, patients unlikely to derive appreciable benefit from continued treatment are now given shorter residential treatment for instructional purposes. It is also reported that the number of ex-service men requiring treatment for tuberculosis is steadily diminishing.

FEES OF MEDICAL ADVISERS IN TRAMWAY ACCIDENTS.

In February last the London County Council raised by 50 per cent. the fees paid to the three medical advisers it retains in connexion with claims for compensation arising out of accidents on the tramway service. Before this increase the fee was 10s. 6d. for each medical examination and two guineas a day for attendance in the High Court. Having regard to the decrease in the price of petrol and the cost of living, this 50 per cent. increase is now to be reduced to 40 per cent., and the whole question of placing these fees on a permanent basis is to be considered in a few months' time.

Correspondence.

CEREBRO-SPINAL FEVER AND MENINGOCOCCUS TYPES.

SIR,—The report by Ferdinand Wulff on the recent Danish outbreak of cerebro-spinal fever was reviewed in a leading article in your issue of September 17th, 1921, p. 452, where it was stated that "the prevalent type of the Danish outbreak differs serologically from any of the four types . . . sent to Professor Madsen by Dr. Gordon." Professor Madsen, on learning from Dr. Buchanan that I should like to examine some of the Danish strains, kindly sent me six strains of their predominant type, designated Type A.

I have tested these strains with agglutinating serums prepared by me during the 1915–16 prevalence of cerebro-spinal fever in this country. All six strains were agglutinated by two of my Group 2 serums and were not agglutinated by my Group 1 serums. One of the two Group 2 serums agglutinated three of the strains to nearly the full titre of the serum; the remaining three strains were agglutinated less well. During the work on meningococci at this laboratory it was found that the last-mentioned serum agglutinated 33 out of the 155 cerebro-spinal and nasopharyngeal strains investigated. Only a small proportion, however, of the 33 strains were shown by absorption experiments to be of the same *type*; many which were agglutinated as well as the homologous strain failed to absorb the agglutinin for that strain. Similarly I find that in respect of this particular serum there are marked differences in absorptive capacity between the individuals in this group of Danish strains.

It is evident that these six strains are closely related, and belong to the second of the two chief serological divisions of meningococci. The fact that they are all capable, as stated by the Danish workers, of absorbing the agglutinin from one serum depends on peculiarities of individual serums, and agrees with my experience of absorption experiments with Group 2 strains and serums.

It is quite clear that the predominant type of Danish meningococcus belongs to the same group as many of the English strains, and it is interesting to note that Group 1 meningococci did not occur in the Danish outbreak. During recent years we have had few opportunities of examining strains of meningococci in this laboratory, but the last culture, which came from a case of cerebro-spinal fever occurring in December, 1920, was identified as a Group 1 strain.

As part of the epidemiological study of cerebro-spinal fever, it is important that observations on the prevalent types of meningococci should be continued during the present non-epidemic period.

At the recent conference of the Health Committee of the League of Nations in London the desirability of obtaining such information was emphasized, and it was decided to appoint centres in different countries for the collection and typing of strains of meningococci obtained from the cerebro-spinal fluid in cases of meningitis. In addition, an interchange of such cultures between these countries was proposed, and it was arranged that Dr. Madsen, of the Statens Serum Institut of Copenhagen, would provide the central organization for this purpose.—I am, etc.,

The Pathological Laboratory of the Ministry of Health, Dec. 20th. FRED. GRIFFITH.

MEDICAL ASPECTS OF DELINQUENCY.

SIR,—Dr. Hamblin Smith's paper on this subject, reported in the JOURNAL of December 17th, p. 1035, raises some important questions which before long must be met.

The point to which I particularly wish to call attention is this—the importance of having at least one medical man on every bench of magistrates; still better if this member had some expert knowledge of psychological medicine.

We are at last beginning to understand that the duty of magistrates is rather to prevent crime than to punish it, as crime is very largely—especially in the young—due to conditions which can be fathomed, and in many circumstances changed.

The causes of crime are so numerous and intricate that special knowledge and thought are required to track them out. Few men are so fit to do this as one trained in our profession. I am afraid at present that we as a nation are not sufficiently advanced to advocate with a chance of success a specialist always to sit with a judge or with a bench of magistrates. Still, a step in the right direction would be to have always a physician as one of the magistrates, giving his advice whenever necessary.—I am, etc.,

W. J. TYSON, M.D., F.R.C.P.,
Chairman of the Lilham Division of the Magistrates for Kent.

Folkestone, Dec. 19th.

THE MEDICAL PRACTITIONER AND PROCURED ABORTION.

SIR,—The discussion on this subject in your issue of December 10th, p. 985, raises some interesting and debatable points. Professor Ranken Lyle advises the medical profession to refuse attendance unless consent be given to inform the police. What is the position of the doctor under such circumstances? He is now an accessory after the fact—is he to remain silent? Again, is his position altered if a colleague, holding different views, undertakes treatment? The majority of these cases will require immediate treatment, allowing of no time for consideration of the medico-legal aspect until afterwards, when consent may be withheld. What then?—I am, etc.,

Scotstounhill, Dec. 17th. W. H. STIRLING ARMSTRONG.

LOOSE CARTILAGE.

SIR,—I read Mr. Victor Pennell's article in your issue of December 17th, p. 1026, with great pleasure, and hope that his invitation to surgeons to give their experience will be widely accepted.

It is impossible to deny that the results of surgical interference in cases of "loose cartilage" are not as good as they should be, and with Mr. Pennell's statement that this unsatisfactory state of affairs is due to lateral mobility I am in cordial agreement, but I think that he does not lay sufficient stress on the importance of the muscles in the control of that mobility. Injury to the ligament should be carefully avoided, but ligament deficiency is not commonly the largest factor.

At the Ministry of Pensions Hospital at Shepherd's Bush I see a very fair number of men in whom, for one reason or another, operation for this condition has not been a success. The causes of failure are: (1) Inefficient vasti, especially the internus; (2) adhesions; (3) weakened

internal lateral ligament; (4) incomplete removal of cartilage; (5) osteo-arthritis.

Efficient mobilization under gas followed by re-education of the quadriceps, electrical and gymnastic, will suffice to cure the first two defects. Where this has not sufficed or there is evidence of extensive damage to the internal lateral ligament, I first tried shortening the ligament by excision of the weak part and mattress stitching combined with transplantation of the semitendinosus tendon as an additional ligament. I was not satisfied with this, and now use instead a free strip of fascia lata passing round through antero-posterior holes in the inner condyles of the femur and tibia, making two new ligaments, well incorporated with the capsule by catgut stitches. In my experience the extreme posterior end of the cartilage does not cause trouble if left behind, but the middle portion is sometimes left, and on two occasions I have found that the middle portion had been removed, the anterior and posterior ends being left and becoming thickened like cherries on stalks. This is, of course, unsatisfactory.

Where there is a history of recurrent synovitis and no recent "locking" I do not think that the joint should be opened until mobilization and re-education have been tried, as a cartilage may have been once displaced and afterwards reattached. Where there is a clear history of recent recurrent "locking" the joint should be explored without waiting for muscular development, as this latter is difficult to obtain where there is a gross lesion. There seems to be a vicious circle only to be broken by removal of the cartilage. For operating I prefer Sir Robert Jones's method which certainly does not injure the ligament.

As regards after-treatment I differ from Mr. Pennell as my patients bear weight on their leg on the tenth day, and are treated by re-education (electrical or gymnastic according to their muscular development) from that time onwards, with distinct benefit to functional result.—I am, etc.,

London, W.1, Dec. 20th. P. JENNER VERRALL.

THE ORIGIN OF THE ANGINAL SYNDROME.

SIR,—Whatever the other disadvantages of such maturity, one must have attained one's fifth or sixth decade before, under the most favourable circumstances from the point of view of personal experience, one can have seen, I shall not say many, but a sufficient number of cases of Heberden's disease, to be in a position to speak with authority on that always interesting affection.

Heberden himself when he compiled his *Commentaries* from his notebooks was 72 years of age, and, unless he added to his manuscript, which was published the year after his death at the ripe age of 91, considered he had at that time seen 100 cases. That all these were not of the classical type associated with his name we may gather from the fact that one of them was that of a boy of 12, which can manifestly only have been of endocardial and probably valvular origin. We must remember that that acute observer wrote in pre-auscultatory days.

It is as true now as when Stokes wrote in 1853 (*Diseases of the Heart and Aorta*, page 488) that the affection described by Heberden and Latham is comparatively rare, and when that great physician confessed that he had never seen a case of it. It is refreshing to read such a statement at a time when we are informed by some not only of its frequency but also of its precise nature and eminent curability.

No subject illustrates better the truth of the Hippocratic aphorism concerning the length of art and the shortness of life than the progress we have made in our knowledge of angina pectoris. Its perennial interest and recurrent discussion is maintained by the tragic issue of most cases of "angina vera" and by its still very imperfect elucidation. After what I hope I may with all modesty regard as considerable experience of both "true" and "false" angina I am tempted to assert that Heberden's disease is *almost* always sooner or later, and at times after many years, fatal; that in such cases the "syndrome" is *always* of cardiac origin, and that when a fatal issue does not ultimately ensue we may be tolerably certain that we are not dealing with angina vera but with some more or less painful affection of the thoracic parietes or stomach of little serious moment.

I have used the expression *almost* always fatal, for I have in my own experience known one case of angina gravior, followed by the full picture of cardiac failure, which did apparently recover and die some years later of malignant disease. I am not certain, however, that even this case, had he lived longer, would have been an exception to the rule. Such recoveries, however, no doubt occur from time to time, but I have known the fatal seizure postponed for ten or fifteen years, although I have also seen two deaths in a first attack of genuine angina. The pain in the syndrome of a pseudo-angina may be considerable, but a fatal issue never or "hardly ever" ensues, and its parietal nature is usually indicated by some objective or subjective increase of discomfort in deep and full respiration or "in attempts at it." In such cases its origin is never cardiac.

The opener of the debate at the Harveian Society (BRITISH MEDICAL JOURNAL, December 17th) based his remarks on fifty cases, of which he considered seven were positively and ten probably cases of angina pectoris. I cannot gather for what period these were under observation, or whether any of them manifesting the syndrome died.

Often as the subject has been treated and many as have been the theories advanced to explain the nature of angina pectoris, no account of it has surpassed and few have equalled in accuracy and penetration Heberden's own in his *Commentaries* (p. 309 et seq.). There is, however, one point in his description of which I was long sceptical, but which I have later appreciated, and to which I desire to draw attention as of clinical interest and importance. "The pulses of those in this pain," he remarks, "beat naturally" (*naturaliter prorsus morientur*). That a man even at the point of death, who has had "this pain" may be in perfect subjective comfort and have a pulse normal in rate and rhythm I can affirm, but the rule certainly is that when actually in "this pain" the pulse is either retarded or occasionally intermittent, and usually followed by a rescuing acceleration, which again is succeeded by the normal pulse on the complete subsidence of "this pain." With such a normal pulse, however, and in the complete absence of either subjective discomfort or evidence of cardiac failure, the blood pressure of a patient usually measuring 130 to 150 mm. may have fallen even to less than 100 mm. This is always of grave and usually of immediately fatal augury. I am not aware that this point has been sufficiently recognized by the clinician, but can attest it from personal experience on more than one occasion.

The origin of the syndrome in such cases is unquestionably cardiac, and my own examination after death of cases which have terminated fatally leads me to the conclusion that the cardiac origin of the syndrome is not of one kind only, but of several kinds; it may be in muscle, or in vessel, or in aorta. To relate the data on which I rest this conclusion would, however, be to trespass unduly at present both upon your space and forbearance.—I am, etc.,

ALEXANDER BLACKHALL-MORISON.

London, W., Dec. 19th.

HOSPITALS IN THE TERRITORIAL FORCE.

SIR,—The decision of the Senate of the London University (recorded in your issue of December 10th, p. 997) not to co-operate with the War Office in the staffing of Territorial hospitals is to be regretted from the point of view of the efficiency of these bodies.

The Senate appears to have overlooked the proposal that a "General Hospital list" is to be instituted in which the records of an officer's special qualifications and civil hospital appointments are to be shown. Surely this does away with the risk of ranking and placing officers merely by the length of their territorial service.

Again, the question of professional and administrative rank has been raised, and apparently the Senate objects to the former not being eligible for as high rank as the latter. It would be interesting to know what views on this point hospital physicians and surgeons take who during the late war became commanding officers of Territorial base hospitals.

Unless the War Office distinctly states that the thirty-two officers do not include men acting as house-physicians and surgeons it looks as if that was the intention, for such junior officers have been shown to be required, and without their assistance no operating surgeon or physician could properly undertake the care of the large number of patients contemplated.

The provision that all ranks must be fit for general service indicates that it is contemplated that there shall be an interchange of personnel as well as the whole hospital being moved overseas and there is ample opportunity for those who do not make good being transferred to other positions.

The Senate appears to have forgotten that provision is being made for service at a future date when most of the medical men now practising will have retired (at least I sincerely trust that there will be no war on the scale of the last one for many years). Therefore a certain amount of preliminary training is necessary, and I fail to see the hardship in asking a man to fit himself for service to his country if required. A good many hospital physicians and surgeons preferred to serve for a time with field ambulances, and there a bombing attack may easily give occasion for some knowledge of administration.—I am, etc.,

December 19th. CAPTAIN R.A.M.C.(T.A.).

MULTIPLE TOOTH EXTRACTION.

SIR,—Having read the comments of Mr. Montague Way, in the JOURNAL of December 17th (p. 1055), upon this subject, I would like to suggest that this may have been a case of taking a patient's word of what another doctor has told him. We all know how dangerous a practice this is and how ready patients are, and even how they enjoy, to denounce the treatment of one doctor to another.

Mr. Way's case presents similar circumstances to one of mine not long since, when a lady came to see me on account of deafness in one ear, with the history that her doctor had treated her for some months and she was no better. Upon examination I found a plug of cotton-wool pressing upon the tympanic membrane. I did not remove it but referred her back to her doctor, suggesting to him that if he removed it her deafness might be cured; this turned out to be the case, and so I had the great pleasure of knowing I had not let my neighbour down. Would not this have been a better policy in Mr. Way's case?—I am, etc.,

Southsea, Dec. 19th. ALDRUR M. BARFORD.

SIR,—Is not the craze Mr. Way mentions just as fashionable with the public? Multiple extraction is essential in those oral cesspools where there is extensive ulceration and necrosis of the jaws. But quite a number of young women lose their teeth disadvantageously under the aegis of the dentist, and are subsequently compelled to wear dentures. Many never remove these dentures, for aesthetic and other reasons.

The medical student's dislike of odontology and of psychology is proverbial. These specialities are slurred over, and the practitioner grows up inefficiently equipped. The State, regulating the panel system, leaves the general practitioner with no voice in the matter of the teeth, so it is transferred to the practice of the dentist. Again, the non-panel practitioner is exposed to the same indignity, having to submit to the dictation of the patient through the authority of the dentist.

The spirit of specialism is beyond itself at the present day and must be watched by the general practitioner. In my opinion, a better acquaintance with dental surgery will be to the advantage of the general practitioner, since a large number of diseases are hot-housed in the mouth.

Is it not opportune to add that *x*-ray photography of the mouth and a systematized study of endocrinology are destined to lessen the thousands of edentulous mouths? Nay, may we not say the decline of dentistry and the rise of the general practitioner, to the peace of the human body?—I am, etc.,

Portishead, Dec. 17th. JOHN FELIX BRISCOE.

VENEREAL CLINICS: A LAY POINT OF VIEW.

SIR,—I think you did well to publish "Venerealee's" letter; it does undoubtedly stand for the outlook of a large section of modern youth, and even manhood. Unfortunately this frankly selfish and irresponsible point of view appears at present to be more and more receiving official recognition, sanction, and even approval. There are so many people of weak will nowadays that the bureaucracy finds it most convenient to assume everybody to be willless, everybody to be the slave of his passions, and nobody to have any inclination towards social conduct, except when frightened into it by fear of personal suffering.

Teach our young people at an early age, it is argued, "the facts of sex," and let them be thoroughly imbued with "the knowledge of the principles and practice of immediate self-disinfection" (Dr. H. W. Bayly). Presumably this knowledge should be imparted at school, and might well be an extra "subject" of the leaving certificate examinations. Further, in the cases where said principles and practice break down and one becomes the victim of that ailment which troubles your first correspondent, let nobody forget that there is a second line of defence—namely, "the splendid venereal clinics at the London hospitals," where everybody is so good and kind to you, and whose glorious evangel "Venerealee" would like to see posted up throughout the length and breadth of the land—in fact, "in all the public urinals." Truly the health millennium is almost at our doors!

What nonsense is all this? We doctors are much to blame for letting such a fool's doctrine gain ground. If the "decent-living, hard-working," virtuous, and generally patriotic "average young men" of suburban London and elsewhere are not to be moved by the claims of other people, at least do not let them run away with the idea that infection is the only personal risk they run. Surrender to the appetites is entirely unphysiological (that is, contrary to nature), and, if persisted in, tends steadily towards loss of will-power and of self-confidence, towards neurasthenia and even moral collapse. Health is by no means only a physical matter, as all practising doctors have always been perfectly well aware.—I am, etc.,

Edinburgh, Dec. 18th. A. J. BROCK.

SIR,—In the BRITISH MEDICAL JOURNAL, December 17th (p. 1055), Mr. H. Wansey Bavly regrets the blindness of certain sections of the public, especially women, to the wide incidence of sexual irregularities among men, and attributes a great deal of the difficulty in dealing effectively with this question to this apathy. My experience is that 95 per cent. of young men have irregular moral relations at some period of their life. About 4 per cent. are addicted to masturbation; 1 per cent. are chaste.

Unfortunately Dr. Marion McKenzie and other medical practitioners have not had the opportunity perhaps of observing life in the West End of London. Fifty per cent. of the couples driving away at night from West End restaurants have irregular moral relations. In one such place I saw four ladies who had gonorrhoea, and who were under my treatment, leave with young men; they informed me afterwards there was no harm as they took precautions to prevent infecting their friends. In another similar place two waiters have active syphilis with ulceration of the lips and mucous patches on the lips and mouth, a source of possible infection to any of their customers. Fourteen men I know who have chronic gonorrhoea and uncured syphilis continue to have relationship with women, probably spreading disease. In the majority of cases one or other of the party is under the influence of alcohol, and this would account for the failure of prophylactic measures.

Until such time as the diseases classified as venereal are made notifiable, and the wilful attempt at spreading punished, the present-day prophylactic measures must fail.—I am, etc.,

JOHN ARMSTRONG,
Captain R.A.M.C.(ret.); late Officer in Charge Venereal Wards, Tooting Grove Military Hospital, etc.

London, W., Dec. 22nd.

NEURO-INDUCTION.

SIR,—The report published in the BRITISH MEDICAL JOURNAL dated December 17th, p. 1053, of the paper which I read at the Scottish Division of the Medico-Psychological Association in Edinburgh, compels explanation from me, if I may be kindly allowed. The speakers present were "unanimously of opinion," the report says, that neuro-induction is "simply light hypnosis or the hypnoidal state of Boris Sidis." Now if this were so then I should either be ignorant of the work of Boris Sidis or robbing him of his prior claim; at least I should be guilty of a want of frankness of expression in some way or

another that would not be very respectful towards the readers of my works.

I not only gave a verbal reply to speakers but I afterwards sent a written one to Professor George Robertson to the effect that the technique of neuro-induction is not only new but that it is easy as compared with any other psycho-therapeutic means; moreover, it would seem that I have just as much right to give a particular name as Boris Sidis has in using hypnoidal or William Brown autognosis—even perhaps more so. I further pointed out that in Edinburgh I set out to *demonstrate* not neuro-induction but "autonomous relaxation," which was a part of my exposition of neuro-induction—and one of the most important parts.

Before critics are in a position to judge neuro-induction, and to compare it with hypnosis or the so-called hypnoidal state, they must first make themselves sufficiently clear as to what they mean by the two latter terms, for the whole of psycho-therapeutic literature shows that hypnosis itself, and therefore the hypnoidal state, has never been wholly understood, and has therefore not been fully defined. Even McDougall has failed. I have in my writings set out finally to define it, and I ask all authorities just where I have failed to define it, if they think I have failed. Now, how does the neuro-induction state differ from the hypnoidal? The answer is best given through quotations from the book of Boris Sidis entitled *Normal and Abnormal Psychology*.

On page 347 of this work we find: "The hypnoidic state is desultory, it forms no connected relations in its various reproductions." Also we find on page 349: "In the hypnoidal states fractions of dissociated moments present in the subconscious come up like bubbles to the surface of the patient's consciousness, burst, disappear, and vanish never to come again . . . after the mode of . . . desultory consciousness . . . leaving no traces behind them."

Neuro-induction at once sets out to reach the subconscious, through immediately inducted autonomous relaxation, and it elicits at once *the best thought power that the individual is capable of*. In the technique there is no troublesome or clumsy means of eliciting either hypnosis or the hypnoidal state, such as are commonly employed by Boris Sidis and by those experts who were present when I read my paper in Edinburgh. There is nothing unscientific in the technique of neuro-induction, such as "tiring the patient's eyes" or "making monotonous noises," nor is there anything "desultory" or bubbling or fleeting in the thought reactions; on the contrary, there is scientific instantaneous simplicity of technique producing the clearest and most permanent thought reaction. It is insufficient grasp of the technique and effects of neuro-induction by those who merely listen to a single short address that produces anti- or erroneous criticism. But time and occasions in future will make relative values clearer to estimate.—I am, etc.,

London, W., Dec. 18th. HAYDN BROWN.

THE HISTORY OF BRAIN SURGERY.

SIR,—I have just read with great pleasure and profit your account of Sir Charles Ballance's Thomas Vicary lecture on the history of brain surgery. He deserves our best thanks and congratulations. Of course, one could not expect the lecturer to mention all the names of the men who had taken up brain surgery, but I think it is a great pity the name of Sir William Macewen has been left out. I had the honour and the pleasure to be associated with him as a student between 1880–90 in Glasgow, and a great part of his work then was done on the brain, especially for traumatic epilepsy. Of course Sir William did not publish much about his work till 1888, when he gave an original address on brain surgery before the annual meeting of the British Medical Association in Glasgow that year. There is no doubt that Sir David Ferrier with his "centres" made the study and art of brain surgery possible, but I think Sir William Macewen was a student of it earlier than Sir Victor Horsley; if not, then he was contemporary with him in the surgical treatment of the brain. I have seen a good deal of this work with Macewen and others, and I think we ought to congratulate the workers on their work and the great improvement in the technique. I think with many others of the Glasgow school that it would be a great omission if we did not offer a meed of praise to its present professor of surgery for his fine pioneer work in the domain of brain surgery.—I am, etc.,

Glasgow, Dec. 17th. JAMES CRAIG.

SIR,—In Sir Charles Ballance's very interesting lecture on the history of brain surgery there is one startling omission; no mention is made of the work of Sir William Macewen, the distinguished President-elect of the British Medical Association, "the leader in this country, and, we believe, in the world, on this subject." (See leading article in BRITISH MEDICAL JOURNAL, August, 1888, p. 323.) Surely Sir Charles must have missed a great "alpine peak."—I am, etc.,

Leicester, Dec. 19th. JOHN HORROR DAVIES.

CLAYDEN v. WOOD-HILL.

SIR,—The following is the third list of subscriptions to the Wood-Hill Fund. I shall be much obliged if you will publish it in your next issue.—I am, etc.,

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Honorary Treasurer.

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ACCORDING to the *Journal of the American Medical Association* a medical practitioner at Los Angeles has been fined 100 dollars, with the alternative of 100 days in gaol, for failure to report a case of diphtheria; infliction of the penalty was, however, suspended for two years.

CELEBRATIONS were held at Liége, on December 4th, in honour of the completion of fifty years of scientific work by Professor Léon Fredericq. A bas-relief portrait of himself in bronze was presented to him, and this will be placed later in the Institute of Physiology at Liége. Representatives of the Universities of Lausanne and of Strasbourg conferred honorary degrees upon Professor Fredericq, and congratulatory telegrams were received from all parts of the world.

Obituary.

HARRY LITTLEWOOD, C.M.G., F.R.C.S.,

BREVET COLONEL R.A.M.C.(T.),

Consulting Surgeon, General Infirmary, Leeds.

By the death, on December 19th, of Colonel Littlewood Leeds loses one of the most distinguished of its former citizens, the General Infirmary is deprived of one of the most eminent of its surgeons, the university is made to lament a loyal and valued teacher, and a large circle of friends, both within the profession and among the general public, mourns the loss of one who was highly respected and loved.

Harry Littlewood was born on April 13th, 1861; he was the second son of Charles F. Littlewood, of Hempstead Hall, Norfolk. He received his early education at Norwich and at University College, London. He took the diploma of L.R.C.P.Lond. in 1884, and became F.R.C.S. in 1886. He was created C.M.G. in 1917, and received the honorary degree of M.Sc. from the University of Leeds. He was Vice-President of the Section of Surgery at the Annual Meeting of the British Medical Association at Cambridge in 1920. He was unmarried.

Littlewood went to Leeds as resident surgical officer in the year 1886. He had had a distinguished career at University College Hospital, where he was awarded the Atkinson-Morley Scholarship in Surgery, and where he had filled several junior positions. After a term of four years as resident, he began practice as a consulting surgeon, and was, on the death of Mr. McGill, elected assistant surgeon to the General Infirmary; six years afterwards he was promoted to the full staff, a position which he held for about eighteen years. At the university he held in succession the posts of demonstrator in surgical pathology, lecturer in practical and operative surgery, and then that of professor of surgery. These were the positions in connexion with which his chief public work was carried out, but he held from time to time other honorary posts, and did much work for some of the other medical charities of Leeds and district.

From the time that Mr. Littlewood went to Leeds those who knew him well formed the opinion that he was destined to hold a high place in the distinguished roll of Leeds surgeons. The writer of this notice recalls a remark made to him by the late Mr. McGill: "Littlewood is the best man I have ever had to assist me at an operation." The spirit of loyalty of which this was a manifestation never left him throughout the whole of his long and honourable career; he never would accept credit for that which he had not done; he was generous in all questions as to priority, and he was uniformly encouraging to those who had the happiness to work under him. He rather shunned specialism in surgery, though his reputation as an abdominal surgeon stood deservedly high. In the early days of his career, and especially during the period of his residence in the infirmary, he laid the foundations of a remarkably sound and varied knowledge of orthopaedic surgery, which enabled him during the latter years of the war to organize that branch of work at the 2nd Northern General Hospital. To a mere onlooker some of his finest work would appear to be in connexion with the treatment of aneurysm, and he showed at the meetings of the Leeds and West Riding Medico-Chirurgical Society many cases in which cures had been effected by excision. It is believed that the first specimen which proved the possibility of true ovarian gestation was shown by Mr. Littlewood and Mr. Anning at a meeting in London of the Obstetrical Society in 1899; the report was published in the *Transactions* of that society for the year 1901.

As a teacher Mr. Littlewood was a tower of strength to the Leeds Medical School. At the time when he was a resident the senior interns had great opportunities for teaching, and of this he availed himself very fully. When on the honorary staff he was most assiduous in guiding the students in their studies; his lectures were carefully prepared and his ward visits were always full of interest.

As a consulting surgeon Mr. Littlewood was one of the most successful and distinguished that Leeds has ever had. He was absolutely and most deservedly trusted by his professional clients, and he always gave of his best. When he retired from practice and left Leeds to stay at his small estate at Erpingham and to enjoy that respite from work which he so well deserved and which he so greatly required, his departure was made the occasion of many marks of esteem, and probably the only man who was surprised by his great popularity was himself.

But perhaps in some respects his greatest work was yet to come, for when the war broke out some sixteen months after he had left Leeds, as it was thought for good, he was back in harness again as lieutenant-colonel in charge of the surgical section of the 2nd Northern General Hospital, working under Colonel Dobson, who was one of his own students, and in this capacity he took his full share of operating. When Colonel Dobson was temporarily laid aside by illness Littlewood carried on the administration of the hospital, and, as was well known, was prepared to hand back the reins to his predecessor whenever he felt able to resume the charge. Other work was, however, found for Colonel Dobson, who spent some time in France, and Littlewood remained the administrator till, after the war came to an end, the hospital was handed over to the Ministry of Pensions. It is a pleasure to recall the generous but well-deserved tribute which he paid on some public occasion to the work of Colonel Dobson, who, as he pointed out, was the man who saw clearly the lines on which the 2nd Northern General Hospital would have to be carried out, and who boldly pressed against great forces of resistance for the securing of the splendid buildings at Beckett's Park as its headquarters. In the extensive enlargement of this hospital by the provision of hutments Mr. Littlewood was the leading spirit. Subscriptions poured in when they were asked for by one who was so fully trusted, and the natural desire which every one had to help in all departments of the hospital work was greatly encouraged by the courtesy and patience with which offers were met. The large staff of the hospital were either his old infirmary colleagues or those who came from other parts of the country or from America: to one and all he was the same, and so it came to pass that he retained all his old friends and bound them to him by stronger feelings of affection and respect, and that he also added to the circle of his admirers.

The funeral took place at Ingworth Church, Norfolk, on December 22nd. The Infirmary and the 2nd Northern General Hospital were represented by Dr. Watson, Mr. Walter Thompson, Mr. Dobson, and Mr. Coupland. At the same hour a memorial service was held in the chapel of the General Infirmary, which was largely attended by many of his old friends.

In the course of an appreciation published in the *Yorkshire Post* on the day after Mr. Littlewood's death, Sir BERKELEY MOYNIHAN wrote:

The sudden death of Mr. Littlewood will bring a sense of tragic loss to the multitude of his friends in Leeds, and will be acutely felt by all his old colleagues. He was a man of rare distinction in surgery. He was a witness to the truth that for success in surgery qualities of intellect and of heart must be combined with qualities of character no less distinguished.

As an operator he was safe. The rash adventure was foreign to his nature. He considered all aspects of a difficult case, and was hard to move when once he had reached a decision. He was cautious, but never timid; quick, without haste; full of resource in every emergency. His sagacity was almost faultless. Though his mind moved easily along the old paths, he was always ready to seek the new. He devised fresh methods and new devices, some of which have taken their place in contemporary surgical procedure.

His professional attainments, therefore, were of a very high order, but all his friends will agree that they were not the greater part of him. His qualities of character influenced all he did and said, and they played a conspicuous part in the great influence he had upon many generations of students, among whom his popularity was unsurpassed. Sometimes a little blunt and abrupt in speech, he was direct, sincere, and honest in action and in thought. He was a man to be trusted, one for whom affection grew steadily. His work at the infirmary told upon his health. Mr. Littlewood's retirement from Leeds was the direct consequence of his zealous, devoted, and unceasing work.

After a year's retirement he was back in Leeds at the 2nd Northern General Hospital, of which he took command when Mr. Dobson fell seriously ill. Of his work during the war the city of Leeds may well be proud. He commanded a fine hospital with great capacity and with great distinction. More than once he feared that he would be compelled to resign, but his sense of duty overcame the urgent need he often felt for complete rest. Like many other good men, he has paid the price of his devotion. We can repay him only by grateful remembrance of a life well spent in the service of his fellow men and, when the great call came, in the service of his country.

GEORGE HENRY DARWIN, M.B.E., M.D.St.And., F.R.C.P.Edin., B.Sc.Vict., V.D.

We regret to record the death of Dr. George Henry Darwin, which took place in Manchester on December 6th, at the age of 69, after a few weeks' illness. Dr. Darwin received his medical education at Owens College, Manchester, and qualified in 1880 with the diplomas of L.R.C.P.Edin. and L.R.F.P.S.Glas. and L.M. In 1881 he obtained the Membership, and in 1889 proceeded to the Fellowship of the Royal College of Physicians, Edinburgh. He graduated M.D.St. Andrews in 1895, and later the B.Sc.Vict. was conferred upon him. For many years he practised in West Didsbury, Manchester. He became physician to the Manchester City Mission, and on retirement was appointed consulting physician. On relinquishing general practice he went to reside in Southport, having been appointed advisory medical officer to the Lancashire and Yorkshire Railway.

Dr. Darwin will best be remembered by his devotion to ambulance work and training. He was one of the best known examiners and judges in railway ambulance competitions, and the author of *Ambulance Lectures*, *First Aid Cards*, and *On Hygiene*. He began lecturing in Manchester soon after qualification, and assisted the late Dr. Dacre Fox in his pioneer work among police and workpeople in ambulance training and examination. He was elected to the committee of the Manchester centre of the St. John Ambulance Association in 1889, and was a most valued member of it. He was chairman of the committee for many years up to the time of his death.

About twelve years ago Dr. Darwin was elected to the central executive committee of the St. John Ambulance Association in London, from which he recently retired. For his services in ambulance work he was elected an honorary associate in July, 1890, and was created a Knight of Grace of the Order of St. John in 1897. The great interest in military work which Dr. Darwin took began with his appointment as surgeon-lieutenant to the 2nd Volunteer Battalion Manchester Regiment (now 6th Batt. T.A.), from which he retired with the rank of Surgeon-Major and the Volunteer Officers' Decoration. During the great war he gave voluntary service as medical officer to one of the branches of the 2nd Western General Hospital in Manchester, and was awarded the M.B.E.

A colleague writes: The chief aim and object in Dr. Darwin's life was the spirit of service. To the wide circle of friends who mourn his loss he will be an inspiration and example of one who was always ready to help in any direction. He had a kind and genial disposition, with a sympathetic manner, ever considerate and thoughtful for others.

WILLIAM ROBERT COLVIN MIDDLETON, M.D.Aberd., D.P.H.,

Late M.O.H. Singapore.

The death of Dr. W. R. C. Middleton, which took place on December 8th, at Bexhill-on-Sea, from cerebral thrombosis, will come as a shock to many old friends in the East and at home.

He was the eldest son of the Rev. William Middleton, M.A., Government Chaplain, Karachi, and was born at Bombay in 1863. From an early age he was brought up at Aberdeen, where he was educated at the Grammar School and University. He graduated M.A. in 1883 and M.B., C.M. in 1888. After a year as resident in the Infirmary, and a brief assistantship in England, he went out to a firm of doctors in Singapore. His real bent, however, was towards public health work, and when home on furlough in 1894 he took his D.P.H. The medical officership of health in Singapore was then vacant, and on his return he secured the appointment, which he held until last year. During this long tenure of office he thoroughly reorganized and enlarged the municipal health department, which was growing in importance. Many sanitary improvements were put through and others commenced on his initiative. So highly were his services valued that on his retirement he was, with the approval of the Government of the Straits Settlements, voted a generous honorarium by the Singapore Municipality, and the City Hospital for Infectious Diseases, which he had been instrumental in erecting, was named the Middleton Hospital.

Dr. Middleton was always a keen Volunteer, and, for some time during the war, added to his other duties those of chief medical officer to the troops in Singapore, with the rank of lieutenant-colonel. He took an active part during the Singapore mutiny in 1915. The extra strain, together with long residence in the tropics, told seriously on his health, and, to add to it all, the ship he embarked in to return East after home leave was torpedoed, with the loss of a good many lives. He was never quite the same man again, and eighteen months ago failing health compelled him to retire. In addition to the sterling worth of his character, there was a charm about his personality which, together with his sense of humour, gained him many firm friends as well as the loyalty of those who worked with him. This largely contributed to the success of his endeavours on behalf of the public health of Singapore. He was one of the oldest members of the Malaya Branch of the British Medical Association and a well-known figure in Singapore social life. He leaves a widow and step-daughter, and will be much missed by relatives and friends alike.

The late Dr. Gordon Sanders.—In our last issue we published an obituary notice of Dr. Gordon Sanders who died at Cannes on December 2nd. Sir James Mackenzie, M.D., F.R.S., writes: After a brilliant college career and holding some hospital appointments Sanders settled in Edinburgh, and his friends predicted for him a distinguished future. But within a few years his health broke down and he had to seek a more congenial climate. He studied for a French degree at Montpellier and ultimately settled at Cannes, where he was speedily recognized as a practitioner of outstanding ability and built up a large practice. Unfortunately from time to time his health gave way and he had to give up his practice, so that on recovery he had to begin all over again. This happened several times, but he faced the blows of ill fortune with dauntless courage, and although physically weak yet by conserving his strength he accomplished an amount of work which would have exhausted a stronger man. Those who were favoured to know Gordon Sanders found him a man of unusual type. His long periods of ill health had forced him to spend much time in reading and in contemplation, so that he was not only well versed in medical literature but a discriminating and thoughtful reader of general literature. He had a peculiarly clear and alert mind and a capacity for expression that enabled him to represent his ideas in simple yet exquisite language. The many problems which confronted the practitioner of medicine had been carefully studied by him, and though he never wrote his friends invariably found in him a man of resource, always willing to place his store of knowledge and experience at their disposal. It is needless to say that the patients who consulted him were well served. Indeed it is seldom for a doctor to have been so beloved and trusted by his patients, for in every case they found not only a doctor but a very helpful friend.

Dr. T. Algernon Chapman, F.R.S., died on December 17th at Reigate. Born in 1842, he was educated at the University of Glasgow, where he graduated M.D. with honours in 1863, in which year he also took the diploma of L.R.C.S.Edin. After serving as resident physician and surgeon at the Glasgow Royal Infirmary he joined the staff of the Joint Counties Asylum, Abergavenny, and later became medical superintendent of the County and City Asylum, Hereford. He was elected F.R.S. in 1918 and was also a Fellow of the Entomological Society and of the Zoological Society. He contributed papers to the *Journal of Mental Science* and to the *Transactions of the Entomological Society*.

DR. MATTHEW OWEN COLEMAN, for forty-five years M.O.H. for Surbiton, died on December 11th, aged 77. He was the son of Dr. Matthew Trollope Coleman, was born at Hampton Wick in 1844, and spent his childhood in Surbiton. He was educated at Marlborough College, Guy's Hospital, and the University of Aberdeen. Having obtained the diploma of M.R.C.S.Eng. in 1867, he graduated M.B.Aberd. in 1868 and M.D. in 1871, and in 1893 took the D.P.H. of the English Conjoint Board. Returning to Surbiton, he set up there in general practice, and succeeded his father as M.O.H. for Surbiton in 1876; he continued to hold that office till his death. Dr. Coleman took great interest in local affairs, and was the first superintendent of the local volunteer fire brigade. He held for a number of years a commission as surgeon-lieutenant-colonel of the East Surrey Regiment (Militia), and was associated with the Special Reserve from 1869 to 1909. He was also medical officer to the Surbiton Hospital, his appointment dating back to 1882.

BY the death of Dr. JAMES DONALD Kingston-on-Thames has lost one of its oldest and best known medical practitioners. Born in Essex seventy years ago, he was educated in Scotland at Madras College, St. Andrews, and completed his medical training at Charing Cross Hospital. He qualified with the L.S.A. in 1881, and obtained the diploma of M.R.C.S.Eng. in 1882. He became assistant to the late Dr. Harris, succeeding him fifteen years afterwards as medical superintendent of the Kingston Union Infirmary, a position he held for thirty-five years, so that he was connected with that institution for fifty years. For some time he was parish medical officer and vaccination officer for Kingston, and at the time of his death he was medical officer of health for Ham. Dr. Donald was a man of sterling character and devoted to his work. His unselfish nature and cheerful disposition endeared him to all who knew him.

WE notice with much regret the announcement of the death, at the age of 63, of Mr. CHARLES EDWARD CASSAL, F.I.C., formerly Public Analyst for Westminster, Kensington, Battersea, and the Kesteven and Holland districts of Lincolnshire. He was for some years analyst to the BRITISH MEDICAL JOURNAL, having succeeded the late Dr. Paul and being himself succeeded (after a short interval) by the late E. F. Harrison. Though the son of a Frenchman—his father was professor of French at University College, London—Cassal might have passed in appearance and manner for the typical John Bull. There were, in fact, two Cassals—one in his laboratory, very precise and painstaking; the other out of it, rather vehement in speech and of a combative humour. He held high office in the Institute of Chemistry, was president of the Institution of Chemical Technologists (1914), and for fifteen years (1899–1914) editor of the *British Food Journal*. He joined the 1st London Royal Engineers (Volunteers) in 1885 and was Lieut.-Colonel Commanding from 1902 to 1908. From 1908 to 1914 he was Honorary Colonel Commanding the London Brigade R.G.A.(T.F.).

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on December 19th the following medical degrees were conferred:

M.D.—B. K. T. Collins, J. C. Matthews.
M.B., B.CH.—C. H. Whittle, W. H. Blackburn, G. D. C. Tracy, L. Cunningham.
M.B.—P. D. H. Chapman, H. A. A. Pargeter, *N. D. Dunscombe, J. Whittingdale.
B.CH.—G. H. Ward.

*Admitted by proxy.

The following have been successful at the December final examination:

THIRD M.B.—*Part I, Surgery, Midwifery, and Gynæcology*: L. H. Bartram, W. T. Beswick, T. A. Butcher, S. P. Castell, R. S. Corbett, N. R. Cunningham, E. Donaldson, J. G. Drew, W. F. Eberlie, H. V. Edwards, A. A. Gemmell, L. B. Hartley, C. B. Hawthorne, J. B. Leather, W. B. A. Lewis, A. G. F. McArthur, C. F. McLean, B. Mountain, R. W. Nichol, R. R. Powell, A. A. Prichard, A. E. Roche, J. C. Russell, H. Spibey, R. R. Traill.
Part II, Medicine, Pathology and Pharmacology: G. F. Abercrombie, D. J. Batterham, E. M. Burrell, W. R. Carling, R. S. Corbett, D. Crawford, N. R. Cunningham, C. Dunscombe, W. F. Eberlie, D. D. Evans, D. G. Garnett, B. E. Jerwood, C. McC. Jones, H. W. Leatham, J. B. Leather, W. B. A. Lewis, C. F. McLean, J. H. Porter, H. Spibey, K. H. Tallerman, N. G. Thomson, G. I. F. Tweedie, L. C. Walker, H. L. Willey.
M.CH. EXAMINATION.—R. St. L. Brockman.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

M.D.—*Branch I (Medicine)*: L. Ball (University Medal), L. I. Braun, Nora Crow, E. E. Lightwood, F. Portas, W. M. A. Rahman, N. O. Richards, E. W. Wade, C. H. Warner. *Branch IV (Midwifery and Diseases of Women)*: Margaret M. Basden, S. M. Cohen, Janet McA. McGill (University Medal), P. G. Quinton, Elisabeth H. Schwab, R. Theron. *Branch V (State Medicine)*: G. W. Shore. *Branch VI (Tropical Medicine)*: C. T. Maitland (University Medal).
M.S.—*Branch I (Surgery)*: R. M. Handfield Jones, W. Salisbury.

UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—R. S. van Aalten, G. H. Buckley, *V. Chadwick, N. S. Craig, O. M. Duthie, H. E. Emmett, Caroline M. Edwardes-Evans, W. Geraghty, Marguerite F. Johnstone, Jessie Kilrow, W. L. Martland, Margaret Pownall, H. Rosenthal, J. W. Smith, S. N. Taylor, Nora N. Walker, J. Worthington. *Forensic Medicine*: R. Anderton, H. P. Fay, F. W. W. Fox, C. B. Kirkbride, A. A. Pomfret. *Medicine*: S. Adler, Dorothy M. L. Dyson. *Obstetrics*: R. J. Allison, Dorothy M. L. Dyson. *Surgery*: R. J. Allison.

*Awarded second class honours.

UNIVERSITY OF LEEDS.

A CONGREGATION of the University was presided over by the Vice Chancellor at the School of Medicine on December 22nd for the conferment of the degrees in Medicine. The Vice-Chancellor took occasion to speak of the great loss which the University had sustained in the death of Colonel Littlewood, and made brief but feeling reference to the value of his services and to the affection in which he was held by all. He also referred to certain important improvements which had been sanctioned by the Council for the further organization of the departments of Medicine and Surgery; these will be described in a later issue.

The following degrees were then conferred:

M.D.—L. Gordon.
M.B., CH.B. (with Honours).—*1st Class*: J. T. Blackburn, D. Chamberlain. *2nd Class*: D. I. Currie, H. Duck, W. H. Leake, Hilda Thistlethwaite, J. L. Wesley-Smith, C. H. Wilson.
M.B., CH.B.—V. L. C. Harrop, R. Hodgson, L. E. Holdsworth, Marion Knowles, W. A. D. Lawson, Elsie E. McNeice, H. C. Petch Osra M. Phillips, Phyllis M. Platt, D. Robertson, Harriette A. Wilson.

Before presenting the successful candidates for the recently instituted Diploma of Nursing, the Dean of the Faculty of Medicine presented the matron of the General Infirmary, Miss Euphemia Steele Innes, for the diploma, *honoris causâ*.

The following pass lists have been published:

FINAL M.B., CH.B.—*Part I*: J. Atkinson, Marjorie Baxter, W. H. Bean, Aileen M. Caye, F. Clegg, I. H. Cohen, L. Cohen, M. Cohen, R. E. Crockatt, Dorothy M. Edgecombe, H. Fallows, J. Freeman, H. A. Helliwell, S. Hyman, Marjorie M. Jackson, R. H. Lodge, A. A. Masser, L. Oberman, J. R. Oldie, J. E. Outhwaite, Gwendoline F. Prince, P. Rosenbloom, G. H. Sellers, H. Sheard, D. M. Sutherland, A. L. Taylor, G. M. Wadsworth, A. Walbank, G. F. Walker, J. S. Walker, Gretta M. Wardle, R. Wood.
Part II: Edith Ghosh, S. Levy, Jessie Sheard.

SECOND M.B., CH.B.—*Part I*: C. H. Ackroyd, M. Backwell, E. E. Blomfield, Kathleen Boddy, A. Cannon, G. Chambers, F. R. Curtis, W. D. Dyson, H. Edelstein, J. Ewing, G. K. Fitton, Maria L. Gaunt, Desiree M. B. Gross, H. Hartley, A. Hemingway, Fannie Hirst, M. Hutchinson, J. C. Lamont, E. H. Lodge, E. H. Milner, A. H. Morley, W. Murphy, L. B. Pawson, W. G. Platt, R. S. Pyrah, M. Rabinovitch, H. Ross, E. T. Ruston, N. A. Rymer, P. M. Sawkill, N. A. Scaddeng, J. E. A. Simpson, S. K. Sledge, Ann Sugden, B. C. Thompson, K. A. Turner, E. W. Vincent, J. G. Ward, C. R. Williams, Hester E. Woodcock.
Part II: D. R. Allison, Sarah N. S. Barker, A. Barratt, I. Berenblum, H. Broadbent, R. Broomhead, R. Cohen, J. S. Dinsdale, J. Duncan, W. S. Flowers, A. Franklin, J. R. S. Greenwood, P. V. Hardwick, J. L. Hartley, D. Heap, V. D. Hick, W. R. Hill, W. O. S. Hornby, J. L. G. Iredale, E. L. H. Jones, Esther L. Killick, S. Levitan, G. E. A. Lewis, M. Masser, J. L. Moorhouse, J. H. O'Donnell, S. Silverman, G. W. Taylor, J. E. Teale, G. Thompson, A. C. Welch, Edith A. Whitney.

D.P.H.—H. J. G. Wells.

UNIVERSITY OF DUBLIN.

THE following candidates have been approved at the examination indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene, Bacteriology and Pathology*: *B. Gluck, *F. J. O'Meara, V. O. McCormick, *J. A. Gavnor, *Marjorie F. Sibthorpe, B. W. D. Fayle, J. E. McCormick, N. E. H. P. Williams, Florine I. Irwin, H. O'D. Burke-Gaffney, R. Lipschitz, P. Samolsky, E. G. Copeland, J. H. Stals, W. E. C. Wynne, Eileen A. Boyd, M. Schwartzberg, H. M. Martin, T. G. Wilson, W. E. Callanan, Anne D. Dockrell, E. Harvey, J. H. Hodgman, R. J. G. Hyde, L. S. Levitt, S. D. Gabbe, A. Asherson, R. S. McElroy, R. L. C. Fisher, Bertha H. Lawler, Norah M. Gilcriest, J. Kruger. *Pathology only*: J. Harte, J. F. van Staden. *Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene*: D. J. Malan, H. C. Joly, W. L. Duncan, J. J. Fitzgerald. *Medical Jurisprudence and Hygiene, Bacteriology and Pathology*: E. C. Downer
PART II.—*Medicine*: G. M. Irvine, C. T. de M. Villet, N. McI. Falkiner, W. A. Murphy, C. J. U. Murphy, C. D. Dijkman, Minnie Alper, J. C. Gillespie, T. de Bruijn, J. Lait, F. Malone-

Barrett, A. S. Bradlaw, J. R. Craig, R. Donner, A. Agranat, Vera G. M. Menary, M. W. Kaplan, R. N. Perrott, P. H. S. Fouche, Margery Bouchier-Hayes M. Elion, G. Kirker, R. A. O'Meara, J. D. Watson. *Midwifery:* 'S. G. Rainsford A. Agranat, S. G. Weldon, P. H. S. Fouche, L. O. Vercueil, H. N. Krige, I. P. Myers, J. C. J. McEntee, J. V. Carroll, Ruth Lemon, A. L. Phillips, C. F. Brunton, I. F. A. de Villiers, L. Stazunsky, Charlotte A. Strutt, M. Bewley, May E. Powell, M. W. Kaplan, J. J. P. Kelly, C. E. Ovendale, G. C. Malherbe, R. Lang, V. Robinson, G. Blackall, Ruth F. Flavelle, J. Hofman, Minnie Alper, Dorothy A. Daly. J. H. J. Stuart, Olive V. Fair, L. Phillips, M. G. J. Powell, R. Seale, A. E. Drotske, D. H. Saayman, H. C. Dundon, R. E. Fausset, G. Kirker, M. Sayers, R. L. Hill, H. L. Hanna, G. S. Moran, J. V. Williams, R. R. Baker, J. R. Wills. *Surgery:* 'G. M. Irvine, 'T. de Bruijn, C. D. Dijkman, D. Hugo, I.cG. Sacks, Doris Holland, L. Stazunsky, T. G. Warham, W. A. Murphy, R. Seale, C. T. de M. Villet, I. Marais, L. O. Vercueil, A. Agranat, M. Elion, D. H. Saayman, C. de L. Shortt, J. D. Thompson, A. H. N. Todd, C. E. Ovendale, W. B. Briggs, J. Hofman, H. Hall, G. C. B. Robinson, Beryl F. E. Cockle, Rita Dillon-Leetch, M. W. Kaplan, R. Lang.

D.P.H., PART I. - *Chemistry, Bacteriology, Physics, and Meteorology:* R. W. Power, E. G. Campbell, W. L. Young.

PART II. *Sanitary Engineering, Practical Sanitary Report, Hygiene and Epidemiology, Vital Statistics, and Public Health Law.* F. W. Godbey, W. B. J. Pemberton, A. G. Wright, Jessie O. Gilbert, C. L. McDonogh.

Passed on high marks.

TRINITY COLLEGE.

At the Comitia Hiemalia in Trinity term, held on December 20th, the following degrees were conferred in the Faculty of Medicine:

M.D.—A. J. Horne.

M.B., B.Ch., B.A.O.—A. Agranat, A. S. Bradlaw, Dorothy A. Daly, T. de Bruijn, C. D. Dijkman, M. Elion, Ruth F. Flavelle, Doris E. Holland, G. M. Irvine, M. W. Kaplan, G. C. Malherbe, J. G. M. Molony (*Antea Lie*), W. A. Murphy, G. C. B. Robinson, J. D. Thompson, C. T. de M. Villet.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have passed the examinations indicated:

PRIMARY FELLOWSHIP. R. H. Micks, D. R. Wheeler, Edith F. Willock.

FINAL FELLOWSHIP. W. J. Dunlop, F. Gill, S. J. Healy, W. Napier.

CONJOINT BOARD IN IRELAND.

THE following candidates have passed the examinations indicated:

FINAL PROFESSIONAL. E. S. Becker, E. J. Benson, W. H. Browne, J. F. J. Cleary, J. J. Clune, A. Doran, W. C. Dwyer, J. F. Enright, M. W. Frazer, J. J. Fitzsimons, J. MacF. Gray, M. P. P. Higgins, C. S. Hillis, J. H. Lawlor, Matilda G. Neill, R. H. Nightingale, J. O'Leary, G. S. Rutherford, T. G. Whiteroft.

D.P.H.—Dr. V. J. Glover, Dr. H. L. Mooney, Dr. J. A. Musgrave.

Medical News.

AT the annual meeting of the Harveian Society, in the Medical Society's Rooms, 11, Chandos Street, W.1, on Thursday, January 12th, at 8.15 p.m., Dr. G. de Bec Turtle will deliver the presidential address on "Some points on spasm in the alimentary tract."

A THREE months' course of lectures and demonstrations in hospital administration for the diploma in public health will be given by the medical superintendent, Dr. E. W. Goodall, at the North-Western Hospital, Hampstead, N.W., on Mondays and Thursdays, beginning January 9th, 1922. The fee for the course is £3 3s. Cheques, payable to the Metropolitan Asylums Board, should be sent to the Clerk of the Board, Embankment, E.C.4.

THE first of the series of conferences arranged by the Town Planning Council will be held at the Central Hall, Birmingham, on Saturday, January 28th. Leading employers of labour, medical men, architects and surveyors, and also clergymen and ministers of all denominations in the western Midlands will be invited to attend, and it is expected that women's associations will be largely represented.

THE Right Hon. J. E. B. Seely will preside over the Thirty-third Congress of the Royal Sanitary Institute, to be held at Bournemouth from July 24th to 29th, 1922.

THE Board of Trade announces that the referee, after hearing a complaint under Section 1 (5) of the Safeguarding of Industries Act that santonine had been improperly included in the lists of articles chargeable with duty under Part I of the Act, has given a judgement upholding the complaint; and accordingly santonine is withdrawn from the lists as from December 20th, 1921.

THE winter clinical meeting and dinner of the Edinburgh Branch of the British Medical Association will take place on Friday, February 17th. Further particulars will be published later.

THE Royal Institute of Public Health will hold a Congress in Plymouth from May 31st to June 5th, 1922, under the presidency of Earl Fortescue, Lord Lieutenant of Devon. Besides conferences on various matters, there will be four sections: (1) State Medicine and Municipal Hygiene; (2) Naval, Military, and Air; (3) Bacteriology and Bio-Chemistry; (4) Women and Public Health. The Harben Lectures will be delivered during the meeting by Dr. T. Madsen, Director of the State Serum Institute, Copenhagen. A course of lectures on Tuberculosis and Public Health will be given in the lecture hall of the Institute on Wednesdays, January 11th to March 22nd, 1922, at 4 p.m.

OWING to the exclusion of Germans and Austrians the Finnish ophthalmologists and surgeons have refused to take part in the International Ophthalmological Congress which is to be held at Washington in 1922.

A BILL has been introduced in the United States House of Representatives to regulate the sale of sutures and surgical ligature material. The shipment in inter-State or foreign commerce of sutures or ligature material for human surgical use without sterilization labels or not packed and prepared in containers against contamination is to be forbidden. Every manufacturer must hold a licence granted by the Secretary of the Treasury, who is authorized to enforce the proposed Act, with full powers to enter and inspect any plant manufacturing suture or ligature materials. In case of violation the licence may be revoked, with a penalty of 1,000 dollars fine and with imprisonment of not more than a year.

THE celebration of the fiftieth anniversary of the incorporation of the Presbyterian Hospital, Philadelphia, U.S.A., took place on November 25th.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*: telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*: telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

ANAESTHETICS IN GENERAL PRACTICE.

"M. B.," who seldom gives anaesthetics except for midwifery, asks what is the safest anaesthetic, apparatus, and mode of administration (1) in general surgery, and (2) in midwifery.

INCOME TAX.

"L. S. S.," who desires information on certain points, is advised as follows:

1. The three years' average still applies notwithstanding the change in the proprietorship of the practice, but if at the end of the year it is found that the income has been less than the average a claim to repayment of the tax on the difference can be made.

2. Debts which have been definitely found to be bad can be deducted as an expense, provided that they were brought in as part of the gross income when they were placed on the books—for example, not where the gross receipts are computed on a cash basis. It is not essential that legal proceedings should have been tried.

3. The reason for refusing the allowance for renewal of the motor cycle is not understood; there are presumably some special circumstances, but "L. S. S." does not mention them.

4. We consider that subscriptions to the British Medical Association are allowable as covered by the value of the literature and other information on professional matters thereby obtained. As regards the medical protection society the answer would strictly depend on the individual benefit accruing from the payment of the subscription.

"H. B." asks for an opinion as to the amount he can claim as an expense of replacing his car. The facts appear in the reply.

The amount to be calculated is the cost of buying in 1920 a car similar to that replaced.

	£
1917 cost of original 9.5-h.p. second-hand Hillman ...	200
Assumed 1917 cost of new 9.5-h.p. Hillman	400 (*a*)
Assumed 1920 cost of new 9.5-h.p. Hillman	500 (*b*)
Therefore 1920 cost of second-hand 9.5-h.p. Hillman Car sold for £100; therefore cost of renewing with car of similar power, type, and quality would be £150.	250 (*c*)

(*a*) This figure is guessed, but the actual sum should be ascertainable.

(*b*) As the 11-h.p. Hillman costs £585, £500 is simply estimated as being the cost of a similar 9.5-h.p. car.

(*c*) That is, in the ratio implied by the first three figures. A professional man is not entitled to an allowance for depreciation, and no one is entitled to a loss of capital as such, but Rule (3), applicable to Schedule D, cases I and II, provides that an allowance shall be made for sums expended for the supply of implements, utensils, and articles employed for the purposes of the profession. In the evidence given before the Royal Commission on Income Tax it was stated by an official witness that an allowance for cost of replacement would take into account the enhanced cost of the article replaced.

LETTERS, NOTES, ETC.

WARNINGS.

PROFESSOR THELWALL THOMAS of Liverpool writes: I have just learnt of a man posing as a nephew of mine and a naval officer—calling on doctors in the London area who have been either students or house-surgeons in Liverpool. He endeavours to obtain hospitality and money. He is an impostor.

DR. E. F. PRATT (London, W.) writes: I should like to warn the readers of the BRITISH MEDICAL JOURNAL against a man with leontiasis ossea. He gave me a cheque for 5 guineas, and called the next day and induced me to cash a cheque for £2, as it was Sunday, and he said he had run short of ready cash. I was completely taken in, as he said he was a brother of a man I knew, and seemed to be quite in touch with him and all his family.

"SURGICAL" SCARLET FEVER.

DR. E. T. LARKAM (Acocks Green, Birmingham) writes: If Dr. Raven (December 3rd, p. 942) will refer to the BRITISH MEDICAL JOURNAL of February 9th, 1901, he will find a case of "surgical" scarlet fever described by me. In this case the rash spread around a freshly incised wound of the dorsum of the foot, and was followed a week later by desquamation, which was abundant and became general, and continued for seven weeks. I may add that the patient had been exposed to the infection of scarlet fever.

THE M.B. OF THE UNIVERSITY OF LONDON.

"ONE WHO HAS HAD TO WAIT" writes: I heartily agree with your correspondent (p. 972) on the question of the examination for the M.B.London. There should certainly be an examination between June and the following March. Many a student gets "stale" and disheartened waiting for his next opportunity, and it is more than likely that the University loses a number of its undergraduates, who take the intervening Conjoint examination and drop the London University degree altogether.

EYE-STRAIN AND REFLEX NEUROSES.

DR. A. E. BURROUGHS (Liverpool) writes: Under the heading "Stray Thoughts," appearing in the JOURNAL of December 3rd, p. 972, Dr. Thomas Carruthers draws attention to a case of fortnightly menstruation cured absolutely by the use of spectacles, and asks for the chain of reasoning which led to his prescribing glasses. As Dr. Carruthers hints, "the key was via the nervous system." In persons who have inherited or acquired an unstable nervous system, or "neuropathic disposition" as it has been called, the list of reflex neuroses, the result of eye-strain, is lengthy. I have myself observed a case of painful menstruation which was at once cured permanently by the wearing of glasses, for a very small astigmatic error, insufficient to cause any impairment of vision.

Headache is the commonest of all the evils resulting from refractive errors, as is well known now, although formerly ascribed to disease of the retina, or of the brain, especially in cases accompanied by vertigo and vomiting. A useful guide is contained in the answer to the question, Do the symptoms arise from, or are they made worse by, the prolonged use of the eyes for near or distant vision? According to Sir T. Lauder Brunton, 80 to 90 per cent. of all cases of headache are of ocular origin. Migraine and "habit spasm" are common results of eye-strain, the latter being sometimes confused with chorea. Cases of the cure of epilepsy by the prescribing of spectacles have frequently been reported from America, but the matter is debatable, and I do not think, in our country, we are inclined to go very far along this line of thought. Nevertheless, we are adding every day to the number of cases of "reflex neuroses" authentically cured by the correction of errors of refraction, and Dr. Carruthers's note is of interest, as, singularly enough, there are few references to the effect of eye-strain on disorders of menstruation.

RHEUMATISM AND BACON.

DR. JAMES DAVEY (Que Que, Rhodesia) writes: Dr. Drinkwater's letter under the above heading has interested me very much. Most of my life I have suffered from neuralgic headaches, and recently from muscular rheumatism and sciatica. Owing to the discovery about three years ago that kippered herrings gave me neuralgia in one eyeball (so acute at times that I had to have injections of morphine), I began closely to scrutinize the effect of different foods on my general health. I found that all "cured" meats affected me—some more than others—and that the actual "poison" was the saltpetre used in the curing process. Latterly, by giving up all cured meats and taking a dose of a well known brand of salts containing the sulphates and chlorides of magnesium, sodium, and potassium every morning, my general health has greatly improved, although my fingers and feet are still slightly affected. Like Montaigne's patient, I am very fond of bacon, and only a few days ago I had occasion to visit a farm a long distance in the country, and arrived there just at breakfast time, and was tempted into having eggs and bacon; the result was twelve hours of neuralgic headache. I hope it was the last piece of bacon I shall eat until it can be cured without saltpetre. Is saltpetre used in the manufacture of cigarette and pipe tobaccos?

RUPTURE OF EYEBALL.

MR. A. S. TUXFORD, L.M. and S. (Hong Kong), writes: On October 27th, 1921, a native Murut policeman was admitted to hospital complaining of intense pain in the right eye. He stated that he had come by boat from Sempoma, some fifty miles away, and that when playing football two days earlier the ball hit his eye with violence. Inspection showed that the right eye was ruptured at the top margin of the cornea and that a piece of iris was protruding about 0.5 mm. The eye was badly inflamed. He was given a saline purgative and put on milk diet. The eye was kept moist with a pad soaked in mercury perchloride solution 1 in 4,000. In four days the inflammation had subsided. The protruding portion of the iris was then excised under local anaesthesia, the iris reposited, and the eye bandaged. Two days later the iris appeared to be dragged towards the rupture, so a drop of solution of atropine was instilled, and the iris slowly assumed a normal position. Healing was complete in six days and the man was discharged to duty on November 6th at his own request.

DESTRUCTION OF LICE ON HAIR-CLAD AREAS.

DR. JAMES HOLMES (Chesham Bank, Bury) writes: In reply to Dr. Hamilton's remarks (December 3rd, p. 968) about lice, I would suggest that he gives a full trial to vinegar. The cement holding the "nits" to the hair seems to be of an albuminoidal nature, soluble in acetic acid but not in water. Many years ago I asked the medical officer to an infectious disease hospital what he did if he admitted a woman whose head was full of nits. He replied: "At night we soak the hair in vinegar, put a bathing cap on, and in the morning they all come out like peas from a pod." I have tried this plan in thousands of cases, and never heard of a failure if fully carried out.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 30, 31, 32, and 33 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 29 and 30.

THE appointments of certifying factory surgeons at Dorking (Surrey) and Winchcombe (Gloucester) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

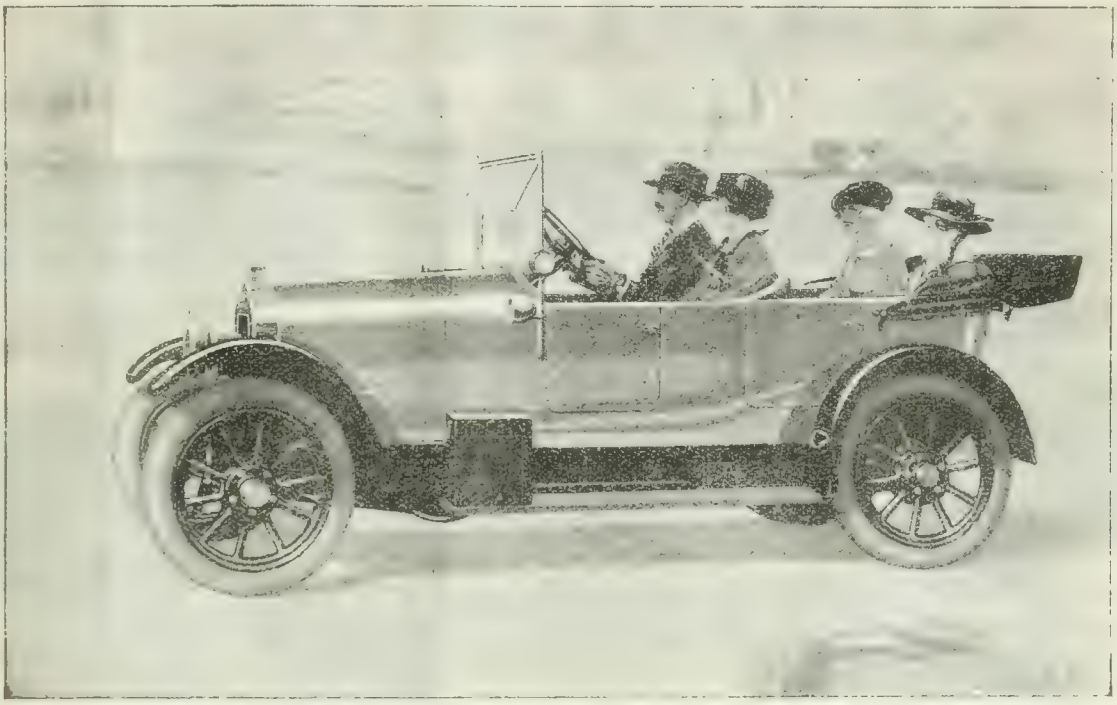
	£ s. d.
Six lines and under	0 9 0
Each additional line	0 1 6
Whole single column (three columns to page)	7 10 0
Half single column	3 15 0
Half page	10 0 0
Whole page	20 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.



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TEN TORPEDO

THIS car has been introduced to provide a small "family" car, high-grade in appearance and finish, but very economical to run. The front seat carries two adults, and the rear seat provides ample accommodation for two children or young persons. The power is ample and gives good hill-climbing qualities combined with low running costs.

It is supplied to two specifications as follows:—

TEN, Torpedo (Specification A)	...	**£525**
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Standard equipment, Dunlop Tyres
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Proprietors - VICKERS LIMITED.
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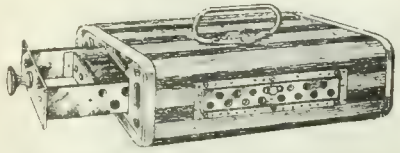
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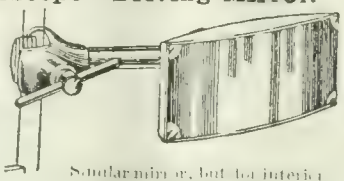
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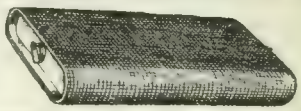
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UP.

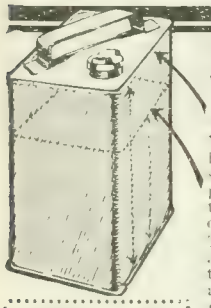
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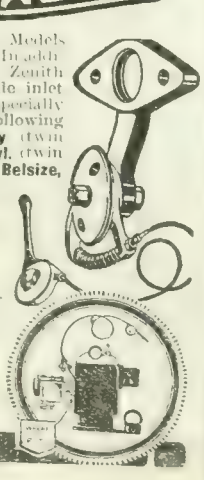
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The "WHALLEY" practically eliminates carbonisation, acts as an efficient air brake and keeps your engine cool—without interfering with the easy starting or functioning of the carburettor at slow speeds with the valve in the closed position.

Costs a Little Saves a Lot

WHALLEY AIR VALVE



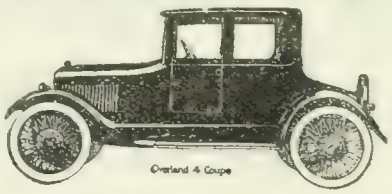
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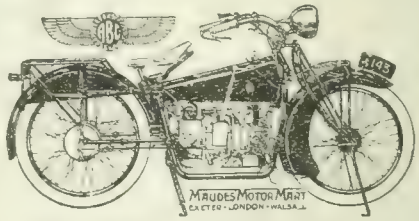
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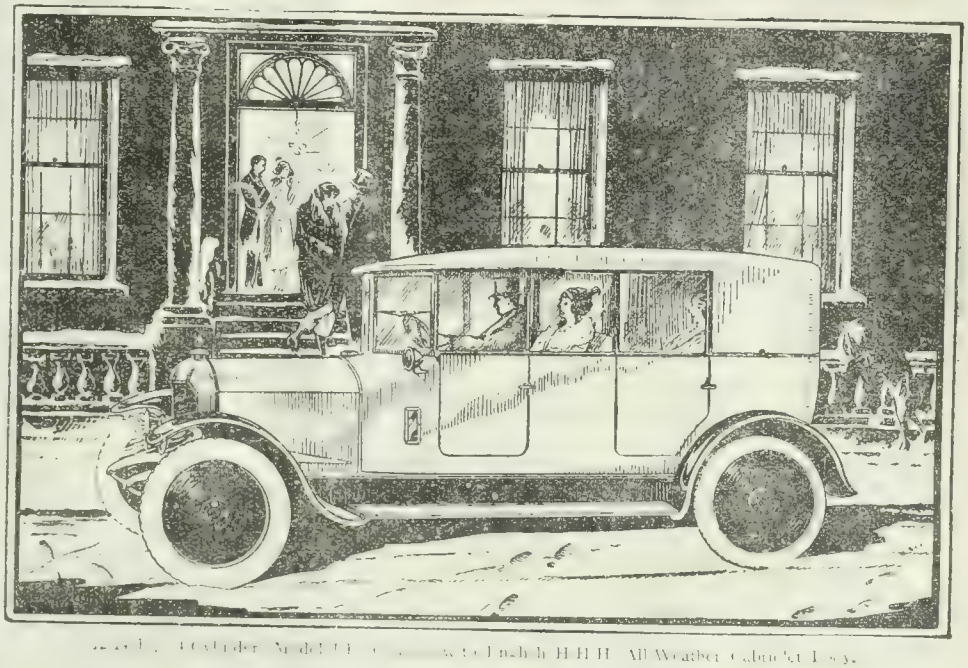
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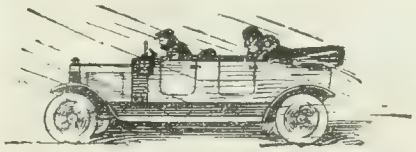
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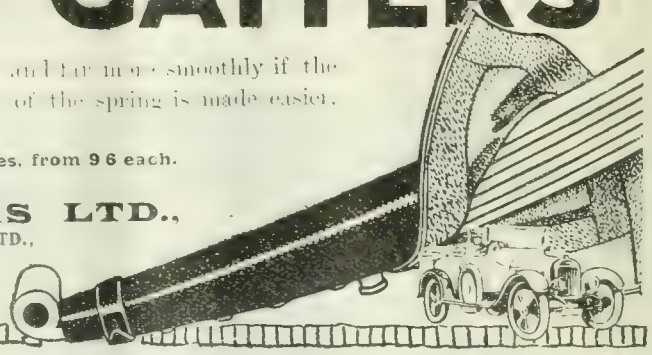
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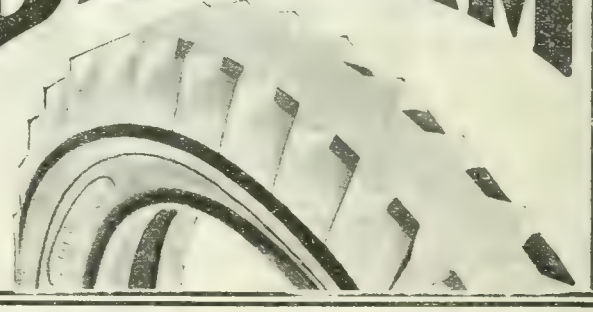
30 × 3½ **£4 18 6.** 815 × 105 **£6 2 0.**

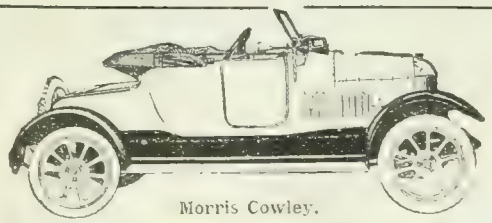
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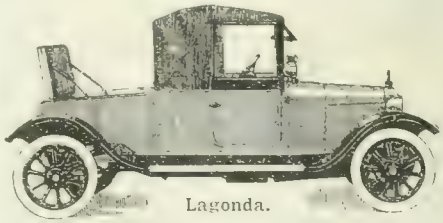
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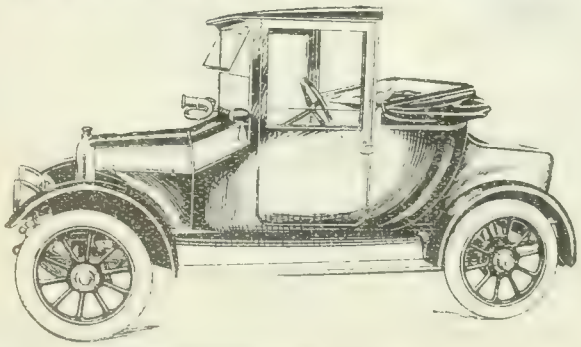
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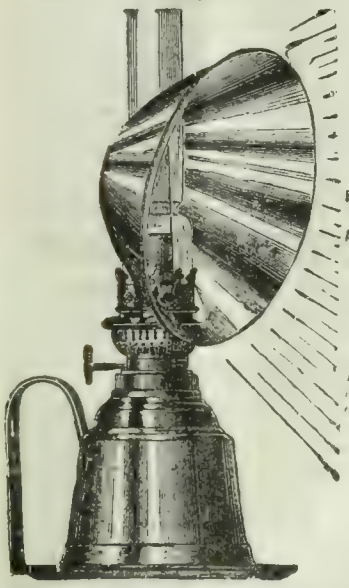
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Illustrated Prospectus and full particulars may be obtained from the Secretary.

C. M. WILSON, (*M.C.*), M.D., F.R.C.P., Dean.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.
(University of London.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the June Examination will begin on Monday, January 23rd, 1922, and will be conducted as follows:—

Anatomy and Embryology.—Professor FRAZER, F.R.C.S.

Physiology and Histology.—Professor COLLINGWOOD, O.B.E., M.D. (Including a Practical Course of Physiological Chemistry).

Time-Table and particulars may be obtained from the School Secretary.

C. M. WILSON, (*M.C.*) M.D., F.R.C.P. Dean.

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THE ROYAL INSTITUTE of PUBLIC HEALTH

Patron:
HIS MAJESTY KING GEORGE V.
Principal:
Colonel Sir WILLIAM R. SMITH, M.D., D.Sc., LL.D., F.R.S.Ed. Barrister-at-Law.

The Course of Instruction for the Degrees and Diplomas in Public Health, with the necessary Laboratory work, can be commenced at any time, and special arrangements are made to suit the convenience of those men and women holding appointments, etc.

The Principal will be pleased to interview intending candidates for the purposes of advice.

Further particulars can be obtained from the Secretary, 37, Russell Square, W.C. 1.

Seamen's Hospital Society.
LONDON SCHOOL of TROPICAL MEDICINE
Endsleigh Gardens, N.W. 1.

Sessions will commence 9th January, 24th April, and 25th September approximately.

For Prospectus and further particulars apply to The Secretary, London School of Tropical Medicine, Endsleigh Gardens, N.W., or to the Head Office, Seamen's Hospital, Greenwich, London, S.E.

UNIVERSITY of LONDON, UNIVERSITY COLLEGE
DIPLOMA IN PUBLIC HEALTH.

Professor Henry R. Kenwood, C.M.G., M.B., D.P.H., F.R.S.E., Medical Officer and Public Analyst for the Metropolitan Borough of Stoke Newington, Medical Officer of Health and Education, Bedfordshire County Council, etc.
Lecturer on Diseases Common to Man and the Lower Animals—A. G. R. Foulerton, F.R.C.S., D.P.H.
Lecturer in Bacteriology—F. H. Teale, M.D., B.Sc., F.R.C.P.
Assistant—M. E. Delafield, M.B., L.R.C.P., D.P.H.
Assistant Lecturer and Demonstrator in Bacteriology—D. Embleton, M.A., M.B., L.R.C.P.
Demonstrator—F. T. Marchant, M.R.San.I.

The Laboratories are open daily from 10 to 5 (Saturdays 10 to 1) for Practical Instruction and Research.

The next Course begins on Tuesday, January 10th, 1922, at 2 p.m.

Demonstrations of Sanitary Appliances and Excursions to places of Public Health interest are undertaken.

Arrangements are made to suit the convenience of those engaged in practice.

A Special Course of Bacteriological Instruction is arranged for D.P.H. Candidates.

Particulars may be obtained on application to WALTER W. SETON, M.A., D.Litt., Secretary, University College, London (Gower Street), W.C.1.

DIPLOMA IN PUBLIC HEALTH,
UNIVERSITY OF CAMBRIDGE

LECTURES and PRACTICAL INSTRUCTION in the subjects of the Examination will begin on 3rd JANUARY and 19th APRIL, 1922, at 9 a.m.

UNIVERSITY LABORATORIES, DOWNING STREET, CAMBRIDGE.

Hygiene, Chemistry, and Physics—M. J. E. Purvis.

Bacteriology and Preventive Medicine—Dr. Graham Smith.—Special Lectures by Professor Nuttall on Protozoal Diseases.

Practical Sanitary Administration, Hospital Administration, School Hygiene, and Vital Statistics—Dr. Laird, M.O.H. for Cambridge and Dr. Robinson, M.O.H. for the Cambridgeshire County Council.

Further particulars may be obtained from Mr. J. E. Purvis, Public Health Chemical Laboratory, Cambridge.

POST-GRADUATE COLLEGE,
West London Hospital, Hammersmith, W. 6.

The Hospital Practice is reserved exclusively for Post-graduates, and a Reading and Writing Room is provided for them. Prospectus from the Dean.

St. Thomas's Hospital.
CLINICAL MEDICAL UNIT.

POST-GRADUATE COURSE IN NEWER METHODS OF CLINICAL INVESTIGATION.

A Special Practical and Systematic Course dealing with recent methods of investigation in such conditions as Albuminuria, Nephritis, Glycosuria, Diabetes, Gastro-intestinal Complaints and General Metabolic Disturbances will be held, commencing on February 6th 1922, and lasting for six weeks.

In addition to the above, the Course will include Demonstrations and Lectures on Neurology, X-Rays, and Modern Cardiographic Methods, together with some Bacteriological work.

Fee for the Course £15 15s. The Course is limited to 8 Students.

Further particulars to be obtained from the Medical Secretary of the School, St. Thomas's Hospital, S.E.1.

St. Thomas's Hospital Medical SCHOOL.

A full-time DEMONSTRATOR OF ANATOMY is required, duties to commence as early as possible. Salary £400 per annum to a man with experience. Reasonable facilities for research and for passing higher examinations. Apply to the Professor of Anatomy.

University of Birmingham.
FACULTY OF MEDICINE.

PROFESSORSHIP OF ANATOMY.

The Council of the University invites applications for the Chair of Anatomy, vacant by the death of Professor Peter Thompson.

The stipend attached is £1,000 a year.

Applications (12 copies) may be accompanied by testimonials, references, or other credentials, and should be forwarded by the undersigned, not later than the 28th February, 1922.

Further particulars may be obtained on application.

GEO. H. MORLEY, Secretary.

Guy's Hospital Medical SCHOOL.

FINAL F.R.C.S. COURSE.

A Course of Instruction for the May Examination will begin on Wednesday, February 1st, and will be completed as follows:

Mr. F. J. Steward and Dr. R. P. Rowlands	Special Clinical Demonstrations.
Mr. R. Davies-Colley	Surgical Pathology.
Mr. L. Bromley	Operative Surgery.
Professor J. H. Eyre	Immunity and Bacteriology.
Professor T. B. Johnston	Surgical Anatomy.
Mr. W. H. Ogilvie	Clinical Classes and Demonstrations.

Inclusive Fee for the whole Course, £21 0 0.

All wishing to enter the Course must lodge their applications on or before Saturday, January 21st, with the Dean, Guy's Hospital Medical School, S.E.1, from whom full details of the Course may be obtained.

Guy's Hospital Medical SCHOOL, London Bridge, S.E.1.

PRIMARY F.R.C.S. COURSE.

A COURSE of INSTRUCTION for the June Examination will commence on Tuesday, January 17th, 1922, at 9 a.m.

ANATOMY—Professor T. B. Johnston.
PHYSIOLOGY—Professor M. S. Pembrey.

Fee £11 4s. 0d. for each subject.

For further particulars apply to the Dean, Guy's Hospital, London Bridge, S.E.1.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Liverpool School of Tropical MEDICINE.

COURSES OF INSTRUCTION (lasting three months) for the Diploma, and also in Veterinary Parasitology, commence about SEPTEMBER 15th and JANUARY 7th. Prospectus from the Dean, School of Tropical Medicine, University of Liverpool.

Lindsey County Council.
LADY ASSISTANT MEDICAL OFFICER.

Applications are invited from registered medical practitioners for the position of Assistant Medical Officer for duty chiefly in connection with eye clinics and maternity and child welfare work.

Salary £550, rising annually by £25 to £700 per annum.

The successful applicant will be required to provide a motor car for the efficient carrying out of the work, but a reasonable allowance will be made to cover expenses.

Applications on forms to be obtained from the undersigned, must be received not later than 9th January, 1922.

R. ASHLEIGH GLEGG,
County Medical Officer of Health,
Public Health Department,
Corporation Street, Lincoln.
14th December, 1921.

The Royal Infirmary, Sheffield.

The weekly Board of Management invite applications for the posts of CASUALTY OFFICER, and EAR, NOSE AND THROAT HOUSE SURGEON. The salary attached to these appointments is £150 per annum, with board and residence.

Applications, together with copies of recent testimonials, should be addressed to—

Board Room, JNO. W. BARNES,
19th December, 1921. Secretary.

Leeds Public Dispensary.

Wanted, SENIOR RESIDENT MEDICAL OFFICER who must have held posts of Resident Physician and Resident Surgeon. Salary £250 per annum, with board, residence and laundry. Separate sitting room. Applications, with copies of three recent testimonials to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Leeds Public Dispensary.

Notice is hereby given that the Special Electing Committee will elect an HONORARY SURGEON to the Institution on Thursday, January 19th. Applications to be sent in by Saturday, January 14th, addressed to the Chairman of the Electing Committee, Public Dispensary, North St., Leeds.

Metropolitan Borough of FULHAM.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Council of the Metropolitan Borough of Fulham invite applications for the appointment of Medical Officer of Health for the Borough, at an inclusive commencing salary of £900 per annum, rising by eight annual increments of £25 to £1,100 per annum; duties to commence on the 17th April, 1922, when the present Medical Officer of Health is due to retire.

Candidates must be registered medical practitioners, and possess the qualifications required by the Public Health (London) Act, 1891, and the Regulations of the Ministry of Health. Practical experience in the duties of a Medical Officer of Health is desirable.

The Officer appointed will be required to devote the whole of his time to the duties of the office, not to engage in private or consulting practice, to attend at the offices of the Council daily, and otherwise to discharge all the duties of the office in accordance with the Regulations of the Ministry of Health and the Standing Orders of the Council.

He will also be required to waive all claim to superannuation under the Superannuation (Metropolis) Act, 1866, and he must pass satisfactorily the usual medical examination as to fitness, and after appointment he must reside within the Borough or within one mile of the boundary thereof.

The appointment will be subject to the approval of the Ministry of Health, and the person appointed shall agree to give three months' notice previous to resigning the office, or to forfeit such sum as may be agreed upon as liquidated damages.

Applications must be made on forms to be obtained from the undersigned, accompanied by copies of not more than three recent testimonials, which must reach me, endorsed "Medical Officer," not later than Saturday, the 14th day of January, 1922.

Canvassing members of the Council, either directly or indirectly, will be deemed to be a disqualification.

J. PERCY SHUTER,
Town Hall, Fulham, S.W.6. Town Clerk.
14th December, 1921.

County Borough of Bolton.
ASSISTANT MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Education Committee invite applications for the appointment of an Assistant Medical Officer of Health and School Medical Officer.

The person appointed will be required to assist the Medical Officer of Health in carrying out the work of the Medical Examination of School Children under the Education (Administrative Provisions) Act, 1907, and also when not occupied in school work, to assist the Medical Officer of Health in other Public Health work, if required so to do. He must be prepared to devote the whole of his time to the duties of the office and not engage in private practice.

Preference will be given to the applicants who
(a) Have had some definite experience in School Hygiene;
(b) Have enjoyed special opportunities for the study of children; and
(c) Have a special knowledge of Diseases of the Eye and Ear. The possession of a Diploma in Public Health will be an additional qualification.

The salary will be £400 per annum, rising by annual increments of £25 to a maximum of £500 per annum, plus bonus. (The bonus at present paid is in accordance with the Civil Service War Bonus, Award 102).

Applications, endorsed "Assistant School Medical Officer," stating age, qualifications and previous experience, and accompanied by copies of not more than three recent testimonials, must be received by me not later than Wednesday, 11th January, 1922.

Canvassing, either directly or indirectly, will be a disqualification.

Dated this 13th day of December, 1921.

FRED. WILKINSON,
Education Offices, Director of Education.
Nelson Square, Bolton.

St. Marylebone Hospital,
Ladbroke Grove, W.10.

A THIRD ASSISTANT MEDICAL OFFICER required (by January 7th if possible). The Hospital has 760 beds, contains a very wide range of clinical material, both acute and chronic, and has a consulting staff of eleven members.

Good off-duty time, quiet quarters, garden with grass and hard tennis courts. Salary £300 per annum. Apply, MEDICAL SUPERINTENDENT. Interview by appointment only. Telephone: Park 4541.

Chartham Mental Hospital,
near Canterbury.

Wanted, ASSISTANT MEDICAL OFFICER with previous experience. Salary £350 to £400 per annum, with board, lodging, washing, etc., valued at £209 per annum. Applications to be sent to the Medical Superintendent at once.

Wanted, an Outdoor ASSISTANT in Colliery and General Practice in Northumberland, to live at Branch. £400 per annum, with Share of Branch profits. Good furnished house, with garden, pleasantly situated. Cycle and motor cycle. Must be British, steady, and energetic. Usual bond. Give experience and recent references. Address, No. 6614, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, Outdoor Assistant-SHIP or MANAGEMENT OF BRANCH, by M.B. Young, married. Ex-H.S. Experienced in private and panel practice. Good surgical experience. State terms. Address, No. 6610, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted. — Single Outdoor ASSISTANT at once, to reside at Surgery, for general practice in South Wales. No midwifery. Salary £450. Usual bond. State age, experience and references. — Address, No. 6626, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted.–Outdoor Assistant-SHIP in the Midlands by a young Medical man at present in Birmingham. Panel and private experience, well received. One with some per spects preferred. Address, No. 6624, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted. Indoor Assistant in country Practice Yorks. Must learn to drive car. Youngish man preferred. Usual bond. £350 all round. - Address, No. 6621, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted, Indoor Assistant in a general practice in the Midlands. Must be of British nationality. Address, No. 6623, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

M.D. (Lond.), requires ASSISTANTSHIP with view to Partnership. Experienced in general practice and surgery. Married. Under 30. Address, No. 6616, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

M.B., B.S., M.R.C.P. (Edin.) desires ASSISTANTSHIP, preferably with view in non-dispensing practice. R.A.M.C. 4 years. Large hospital experience. Age 30, unmarried. Address, No. 6615, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.1.

M.B., Ch.B., Glasgow (25), single, ex-H.S., experienced in general practice, DESIRES ASSISTANTSHIP with view to partnership or succession. Address, No. 6622, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

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Dispenser, lady (Hall), experienced. Disengaged shortly. Please state salary. Address, No. 6618, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

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Wanted by M.B., B.S., a PRACTICE of about £1,500 with some panel in a suburb or central part of London.—Apply, BRUNSELL & Co., Walter House, 418-422, Strand, W.C.2.

Wanted by M.D., D.P.H., PRACTICE of about £1,500 little or no panel. Coast town, and house on rental preferred. Introduction. Capital available. Address No. 6627, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

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L.D.S., giving up motoring through health, desires to sell 1921 ARROL JOHNSON ALL WEATHER CAR. Bought end of July. Not done 1,000 miles, perfect, as new, very cheap. Suitable for a surgeon or doctor.—Address, No. 6619, BRIT. MED. JOUR., 429, Strand, W.C.2.

9 h.p. De Dion Coupé, latest type. In first-class running order and real run well pleased. Fitted with most expensive and excellent all weather body. £190. Will accept 11 h.p. De Dion as part payment.—Write OWNER, 15, Verulam Road, Balham.

1913 De Dion, 7–9 h.p., FOR SALE, 2-3 seater with double dickey. Ideal doctor's car, in very fine condition. Accessories, 4 lamps, clock, speedometer, hood, screens. £140. Crow Bros., Guildford.

Perry Coupé 1917, body finished grey, leather upholstery to match. Lucas lighting, in perfect condition. What Offers? LAVELL & SON, Ltd., Station Road, Kettering.

1921, 15.9 h.p. Humber, 4- seater TOURING CAR, finished Mole, C.A.V. lighting and starting, speedometer, clock, etc. Luxurious Car. What offers?—DAVIS, Hazelwood, Argyll Street, Kettering.

New Studebaker, light six, four seater, Electric Lighting and Starting, speedometer, full equipment. £490. List £530. Address No. 6628, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Henly & Co., can supply any make of Car, for Cash or Deferred Terms. Special Agencies with Morris Cowleys, Angus Sandersons, Humbers, Standards, Citroens. Exchange arranged. Enquiries invited.—91, Great Portland Street, W. Langham 1926.

The Hospital for Sick CHILDREN,
Great Ormond Street, London, W.C.

A CASUALTY OFFICER is required on the 1st February, 1922. Candidates must be registered medical practitioners, and are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, 2nd January, 1922, accompanied by copies of not more than three testimonials given specially for the purpose.
The appointment is made for one year, but may be held, subject to re-election, for a period of three years. The appointment is non-resident, and whole time. Salary £400 per annum with luncheon.
All candidates must appear before the Joint Committees at their meeting on Wednesday, 4th January, 1922, at 5 p.m. precisely.
Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.
By order of the Committee of Management,
JAMES McKAY, Acting Secretary.
December, 1921.

Gloucester County Mental HOSPITAL.

JUNIOR A.M.O. Wanted, Single; male; British. Salary £350 per annum, with board, apartments and laundry. Subject to the provisions of the Asylums Officers' Superannuation Act, 1909.—Apply, stating age and qualifications, with copies of three recent testimonials, to the MEDICAL SUPERINTENDENT.

St. John's Hospital for DISEASES OF THE SKIN,
49, Leicester Square, W.C.2.

A COURSE of PRACTICAL INSTRUCTION in the BACTERIOLOGY, MYCOLOGY and HISTOPATHOLOGY of the SKIN will be held in the Laboratories of the London School of Dermatology, St. John's Hospital for Diseases of the Skin, 49, Leicester Square, W.C.2, commencing the second week in January.
Fees for twelve weekly sessions, 4 guineas (Tuesday or Friday afternoon, 2 to 4 p.m.).
There are also facilities in the Laboratories for more advanced work and for research work.
Applications should be made to the SECRETARY.

Assistant Medical Officer Required at SPRINGFIELD MENTAL HOSPITAL, Wandsworth Common, S.W.17, with Diploma of Psychological Medicine or be prepared to obtain same within two years. Age limit 35 years. Salary £625 per annum, including war bonus and emoluments value at £200 per annum. No married quarters provided. The appointment subject to Asylum Officers' Superannuation Act. Applications to be made to the MEDICAL SUPERINTENDENT.

Beckenham Education Committee require the services of a Part-time OPHTHALMIC SURGEON to examine the eyes and prescribe glasses for school children suffering from defective eyesight. The candidate appointed will be required to attend at times to be arranged at the School Clinic. Salary at the rate of 3 guineas per session of 2½ hours. It is estimated that there will be from 20 to 25 sessions per annum.
Applications, stating age, qualifications and experience, and accompanied by two testimonials of recent date, should be sent to the SECRETARY, Education Committee, Beckenham, not later than Wednesday, 11th January, 1922.
7th December, 1921.

County Hospital, Lincoln.

Wanted, 1st January, 1922, a JUNIOR HOUSE SURGEON (Male). Salary at the rate of £150 per annum, rising to £200 per annum at the completion of six months' approved service. Board residence and washing will be provided.
Candidates for the appointment must be duly registered under the Medical Acts.
Applications, stating age and other particulars, with copies of not more than three recent testimonials, should be addressed to the undersigned, from whom any further particulars may be obtained.
ARTHUR MOORE,
Lincoln. Secretary-Superintendent.
December 27th, 1921.

Walsall General Hospital.

The Committee invite applications from ladies for the post of JUNIOR HOUSE SURGEON and ANÆSTHETIST which will shortly become vacant. Salary £175 per annum, with board, residence and laundry.
Candidates, who must possess registered qualifications, should forward applications, stating age, qualifications, and experience, together with copies of three recent testimonials to the undersigned.
WALTER FRANCOMBE, Secretary.

The Miller General Hospital
FOR SOUTH-EAST LONDON,
Greenwich Road, S.E.10.

HOUSE PHYSICIAN required (three other residents) to commence duty about the middle of January. Salary £150 per annum, with board, lodging and laundry. Applications, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials, to be sent to the SECRETARY.
December 30th, 1921.

London Temperance Hospital

Applications are invited for the post of MALE RESIDENT CASUALTY OFFICER, which will be vacant on January 12th.
Salary £150 per annum, with residence, board, &c.
There is a large Casualty Department which offers very large scope for medical and surgical experience and also in all special departments.
Total attendances last year over 85,000.
Applications to be sent in not later than January 7th, 1922, addressed to the Secretary.

Central London Throat, Nose AND EAR HOSPITAL, Gray's Inn Rd., W.C.1.

A vacancy occurs for FIFTH ASSISTANT SURGEON. Applications should be forwarded not later than January 7th to RICHARD KERSHAW, Secretary.
It is expected that applications will be received from present surgical registrars to the Hospital.

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C. 2.

CONTRACT PRACTICE.

ENGLAND.

Town or District.
MILLHOUSES BROUGH, SOUTH BANK, & ESTON. (Medical Attendance on Members' Families.)
NEWBIGGIN COLLIERY MEDICAL FUND. (Three Houses, Practice, Dispensary, and Apartments.)

WALES.

Town or District.
ABERFELDWR, GLAMORGAN. (Workmen's Contract. (Medical Scheme.)
GALW VALLEY, GLAMORGAN. (Workmen's Medical Scheme.)
GILFACH GOCH, GLAMORGAN. (Workmen's Medical Scheme.)

WALES (continued.)

Town or District.
GLEWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. (Workmen's Medical Scheme.)
MARDY, GLAMORGAN. (Workmen's Medical Scheme.)
OAKDALE, MON. (Medical Officer for Model Village and Cottage Hospital's.)
OGMORE VALLEY, GLAMORGAN. (Workmen's Medical Scheme.)
TONDU and ABERKENFIG, GLAMORGAN. (Workmen's Medical Scheme.)
TONYREFAIL and COED ELY, GLAMORGAN. (Workmen's Medical Scheme).

WALES (continued.)

Town or District.
TREORCHY, PARK & DARE (GLAMORGAN). (Workmen's Medical Scheme.)
YNYSYBWL, GLAMORGAN. (Workmen's Medical Scheme.)

PUBLIC HEALTH.

Town or District.
BURGH OF STIRLING. (M.O.H., Education, Maternity and Child Welfare, and V.D. Officer.)
PORTSMOUTH EDUCATION AUTHORITY. (Assistant School Medical Officer.)
PLYMOUTH EDUCATION AUTHORITY. (Assistant School Medical Officer (Lady).)

(b) South Africa.

Town or District	
NATAL PROVINCIAL ADMINISTRATION. GOVERNMENT HOSPITAL, DURBAN. (Senior Resident Physician.) (Senior Resident Surgeon.)	

(c) Other Colonial Appointments.

Medical practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C. 2.

Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES (Gen. Hospital Staff Appointments.)	Dr. R. H. TODD (Hon. Sec., New South Wales Branch, B.M.A. Building, 135, Elizabeth Street, Sydney, N.S.W.
QUEENSLAND. (Assistant Resident Physicians, Surgeons, etc.)	Dr. R. MARSHALL ALLAN (Hon. Sec., Queensland Branch), Adelaide Street, Brisbane.
VICTORIA. (All Institute or Medical Dispensaries, Manchester Unity Independent Order of Oddfellows).	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), Medical Society Hall, E. Melbourne, Victoria.
WESTERN AUSTRALIA. (All Appointments.)	Hon. Sec., Western Australian Branch, No. 6, Bank of New South Wales Chambers, St. George's Terrace, Perth.

Address, 429, Strand, W.C.2.
December 24th, 1921.

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary.

The Bury Infirmary.

Wanted immediately, a JUNIOR HOUSE SURGEON. Must be duly qualified Medical and Surgical practitioner. Salary £150 per annum, with board, residence and washing.

Applications, stating age and experience, with copies of not more than three recent testimonials, to be sent at once to the Honorary Secretary, Infirmary, Bury, Lancs.

Royal Salop Infirmary.

(Containing 120 Beds.)

HOUSE SURGEON required about the middle of January, 1922. Candidates are invited to send their applications, with not more than three recent testimonials, to the undersigned as early as possible.

There are two Resident Medical Officers, to whom the House Surgeon is senior.

Candidates must be doubly qualified and duly registered.

Salary £275 per annum, with board, residence and washing.

ALFRED SUGDEN, Secretary.

Salop Infirmary, Shrewsbury.
23rd December, 1921.

The Royal Liverpool Children's Hospital,

Myrtle Street, Liverpool.

The Committee of the above Hospital invite applications for the post of HON. ASSISTANT SURGEON. Candidates with special training in Orthopædic Surgery will receive preferential consideration. Applications to be lodged with the Committee at the Hospital before 1st February, 1922.

Union of South Africa.

VACANCY FOR A MEDICAL OFFICER AND NATURALIST ON H.M. SLOOP CROZIER ENGAGED ON HYDROGRAPHIC SURVEY AND FISHERY RESEARCH WORK.

Applications are invited from qualified persons for the above-mentioned post.

Status.—As for a Lieutenant Commander, viz.:

In port, pay 32s. 6d., servant allowance 1s., plus medical staff allowance 5s., equal to 38s. 6d. a day or £702 2s. 6d. per annum.

At sea as for single men, plus quarters and victualling allowance, totalling 3s. 6d. a day for wife and family (or not provided in kind) equal to 42s. a day or £766 10s. per annum.

Lat on allowance of 2s. a day is paid in addition in each case.

Conditions.—Engagement to be for 2 years from the date of arrival in, to the date of departure from, South Africa, with the option on the part of the Government to extend for a further period of one year.

Pay of 32s. 6d. a day only to be paid during the voyage to South Africa. Allowances to commence from the date of arrival at Simonstown.

Duty to be assumed on or about 1st April, 1922.

Extra Concessions.—Free 1st class steamer passage to and from South Africa at beginning and termination of contract. Similar concessions in respect of wife and not more than 4 children under 18 years in the case of girls and 16 years in the case of boys.

Applications, together with copies of testimonials, all of which should be lodged not later than 16th January, 1922, with the Secretary, Office of the High Commissioner for the Union of South Africa, Trafalgar Square, London, W.C.2, from whom forms of application may be obtained.

Bracebridge Mental Hospital,

near Lincoln.

MEDICAL SUPERINTENDENT.

Applications are invited for the post of Medical Superintendent to the above Institution, at a commencing Salary of £750 per annum, rising by annual increments of £50 to £900 per annum, with furnished house, coal, gas, light, laundry, and fruit and vegetable produce. For Superannuation the Emoluments of the Medical Superintendent are valued at £300 per annum.

Applicants must be not more than 40 years of age, and must be fully qualified, with experience of the duties in a public Mental Hospital.

Applications, accompanied by copies of not more than three recent testimonials, and endorsed "Medical Superintendent," should be delivered to me not later than Wednesday, the 4th January, 1922. Canvassing members of the Committee or Visitors will be regarded as a disqualification.

HAROLD E. PAGE,
Clerk to the Committee of Visitors.
5 & 6, Bank Street, Lincoln.

Free Eye Hospital,

Southampton.

Wanted, HOUSE SURGEON, male or female. Must have some knowledge of eye work. Salary £150 per annum, with board, lodging and laundry. Apply, Edward C. REDMAN, Secretary.

The Board of Management of

the PUTNEY HOSPITAL invite applications for the post of HON. SURGEON.

Applications to be made to the Hon. Secretary, Putney Hospital, Lower Common, Putney, S.W.15.

Metropolitan Asylums Board.

THE DOWNS SANATORIUM, Sutton Surrey.

The Metropolitan Asylums Board invite applications for the appointment of JUNIOR ASSISTANT MEDICAL OFFICER (unmarried) in their Tuberculosis Service. The present vacancy is at the Downs Sanatorium, Sutton Surrey, which has 292 beds and 4 Medical officers, and is 12 miles from London. Previous tuberculosis experience is not essential but preference will be given to candidates who can show general hospital experience.

Salary £515 6s. per annum including bonus.

The candidate appointed will be required to reside in the institution and to pay for board, lodging and washing at the rate fixed from time to time by the Board's Finance Committee. At present the rate is £130 per annum.

Applications, to be made not later than 10 a.m. on Thursday, 12th January, on forms obtainable from the Clerk, Metropolitan Asylums Board, Embankment, London, E.C.4., by forwarding stamped addressed foolscap envelope.

20th December, 1921.

Manchester Royal Infirmary.

RADIOLOGICAL REGISTRAR.

The Board of Management invite applications for the above appointment. Candidates must be fully qualified and registered. Preference will be given to those who hold the Cambridge Diploma in Radiology. The appointment (non-resident) is for twelve months, but the holder of the office is eligible for re-election for a further period of one year. Salary £250 per annum. Candidates must state age, and send twelve copies of their application and testimonials to the undersigned on or before Thursday, 26th January, 1922.

By order, FRANK G. HAZELL.
Gen. Supt. and Secretary.

22nd December, 1921.

Derbyshire Royal Infirmary,

Derby. (General Hospital, 320 Beds.)

Applications are invited for the following Resident Appointments:—

HOUSE SURGEON.
ASSISTANT HOUSE SURGEON AND CASUALTY OFFICER.

The appointments are tenable for six months, with a possibility of extension for a further period of six months. Salary £200 per annum, with apartments, board, &c. Applications, with copies of not more than five testimonials, to be sent to the undersigned not later than 14th January.

WALTER BANKS,
Superintendent and Secretary.

23rd December, 1921.

City of London Hospital for

DISEASES OF THE CHEST, Victoria Park, E. 2.

(Bus, Tram and Tram Cambridge Heath, G.E.R.)

Applications for Post of RESIDENT MEDICAL OFFICER (with copies of three testimonials) are invited to be sent to the undersigned on or before Monday, 16th January, 1922. The appointment will be for one year from 11th February, 1922, with eligibility for re-appointment, and subject to the rules and bye-laws of the Hospital. Salary at the rate of £250 per annum, with board, residence and laundry provided.

GEORGE WATTS, Secretary.

Severalls Mental Hospital,

Colchester.

Required ASSISTANT MEDICAL OFFICER (temporary). Must be registered under the Medical Acts. Salary 7 guineas per week, with furnished apartments, board, attendance and washing.

Apply giving full particulars of qualifications, &c., to the Medical Superintendent.

Kent & Canterbury Hospital,

Canterbury.

Applications for the post of HONORARY OPHTHALMIC SURGEON at the above Hospital are invited from gentlemen who are Graduates in Surgery of a University of Great Britain or Ireland, or Fellows or Members of the Royal College of Surgeons of England.

Application, accompanied by copies of not more than six testimonials, must reach the undersigned on or before 24th January, 1922.

Further particulars of the appointment may be obtained upon application.

T. P. CARROLL, Secretary.

20th December, 1921.

Kent & Canterbury Hospital,

Canterbury. (111 Beds.)

Required, on 1st January, RESIDENT MEDICAL OFFICER. Salary £175 per annum. The work is equally divided between two resident medical officers, and special opportunities exist for gaining experience in ophthalmic and venereal work.

Applications, with copies of testimonials, should be addressed to the undersigned.

T. P. CARROLL, Secretary.

20th December, 1921.

St. Mark's Hospital for

CANCER, FISTULA, and other DISEASES of the RECTUM, City Road, E.C.1.

Part-time PATHOLOGIST required. For particulars apply to the SECRETARY.

St. Mark's Hospital for

CANCER, FISTULA, and other DISEASES of the RECTUM, City Road, E.C.1.

X-RAY MEDICAL OFFICER required. For particulars apply to the SECRETARY.

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fully realise the importance of the Company's MEDICAL TRANSFER DEPARTMENT, and with a view of rendering to the Profession a service of the utmost efficiency, the Department has now been placed under the direct control of the Company's GENERAL MANAGER, whose experience of over 40 years in the City, will in future place at the disposal of the Profession generally a MEDICAL TRANSFER DEPARTMENT, the basis of which will be

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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls, Day or Night. Skilled Masseurs and Masseuses and good Valet Attendants supplied.

Terms from £3 3s. 0d. Apply, THE SECRETARY or LADY SUPERINTENDENT.

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LONDON—8, Hinde Street, Manchester Sq., W.1.
MANCHESTER 237 BRUNSWICK STREET (*Facing Queen's College*)
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Edinburgh: 2715 CENTRAL	ASSUAGED, EDINBURGH

Please address all communications, W. WALSHE, Secretary

City of Birmingham.

MENTAL HOSPITAL SERVICE.

RUBERY HILL AND HOLLYMOOR MENTAL HOSPITAL.

VACANCY FOR A JUNIOR ASSISTANT MEDICAL OFFICER.

Candidates must be legally qualified, single, age not exceeding 35 years.

The Hospital is approved for the purposes of the examinations for the Diploma of Psychological Medicine and the M.D. Mental Diseases) of the University of London.

Facilities are provided for Research work.

Salary for the present appointment, £400 per annum, with apartments, board, laundry and attendance, and a war bonus for contribution purposes of £50 per annum.

Pensionable under the Asylum Officers' Superannuation Act of 1909.

Applications with copies of not more than three recent testimonials should, not later than January 14th, 1922, be forwarded to

T. C. GRAVES, B.Sc., M.D. Lond., F.R.C.S.Eng., Deputy Medical Superintendent,
Rubery Hill Mental Hospital,
Rubery.

The General Hospital, Birmingham.

Applications are invited for the following Resident Appointments:—

HOUSE PHYSICIAN. Vacant January 17th, 1922.

HOUSE SURGEON to Special Departments (Skin and Venereal). Vacant now.

Further particulars on application.

Candidates, who must be fully qualified and registered, should send in their applications to the undersigned not later than January 2nd, 1922, together with certificates of birth.

RESIDENT MEDICAL OFFICER. Vacant December 9th. Candidates must be Graduates of a University of the United Kingdom. Salary £155 per annum.

The appointment will be made at 12 noon on Friday, January 6th, 1922, when candidates will be expected to attend.

Applications to be sent to the undersigned on or before January 2nd, 1922.

A. H. LEANEY, House Governor.

Ancoats Hospital, Manchester.

The RESIDENT SURGICAL OFFICERSHIP (grade of Clinical Assistant) will become vacant on 28th February, 1922. Salary £250 with board, lodging, etc. Candidates must be fully qualified, and those with a record of previous resident appointments will be preferred.

A vacancy for a HOUSE SURGEON (male) will occur on the 15th February, 1922. Candidates must be fully qualified. Salary £150, with board, lodging, etc.

Applications, with testimonials, to be forwarded to the undersigned by Monday, 16th January, 1922.

HERBERT J. DAFFORNE, Secretary.

Macclesfield General Infirmary.

Wanted, SENIOR HOUSE SURGEON.

Candidates must be doubly qualified and duly registered. Salary at the rate of £180 per annum, rising £10 annually to £200, with board, residence and washing.—Applications, stating age and experience, together with copies of testimonials, to be sent to the SECRETARY.

Urgent.—Jenny Lind Hospital for Children, Norwich.

Appointment of LADY RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, furnished apartments, and laundry (not exceeding 5/- per week). Candidates must be fully qualified and registered. Duties to commence in January. Appointment to be for six months, and renewable for a similar term at the expiration thereof. Applications, stating age, nationality, and qualification, together with copies of not more than four testimonials, should be sent to the undersigned, from whom further information can be obtained.—H. HARPER SMITH, Honorary Secretary, London and Provincial Bank Chambers, Norwich.

December 24th, 1921.

THE ASSOCIATION OF CERTIFICATED BLIND MASSEURS,

224-6-8, GREAT PORTLAND STREET, LONDON, W. 1.

(Telephone: LANGHAM 2542).

First President of the Association
The Late SIR ARTHUR PEARSON, Bart., G.B.E.

Fully-qualified Blind Masseurs and Masseuses (trained at St. Dunstan's and the National Institute for the Blind) can be obtained on application to the Secretary.

ST. LUKE'S HOSPITAL.

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NORTHERN BRANCH.—Apply, LADY SUPERINTENDENT, 57, Clarendon Rd., Leeds. 'Phone Leeds 2616.

St. John's and St. Thomas's

HOUSE.—Trained and experienced MEDICAL, SURGICAL, MATERNITY NURSES and MASSEUSES can be obtained by application, personally or by letter, to the Sister in Charge, 12, Queen's Square, W.C.1. (Tel. No. 7161 Museum), or to Matron, St. Thomas's Hospital (Tel. 4191 Hop). Telegraphic address: "Private Nurses, London."

Telephone: Langham 2728.
Telegrams: "Assistiamo, London."

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(In conjunction with the MALE NURSES' ASSOCIATION),

29, York Street, Baker Street, London, W.1.

(Mrs.) MILLICENT HICKS, *Superintendent.*
W. J. HICKS, *Secretary.*

BLUNDELL & CO.,

Walter House, 418-422, Strand, W.C.2.

(Entrance Bedford Street.)

Telephone: 7148 GERRARD.
Cable Address: (via Eastern) "RECALIAGE, LONDON."

LOCUMS SUPPLIED.

West End. — Electro Therapeutic PRACTICE of £500 with unlimited scope. Practice has been let down but could very soon be doubled. Good house. Long lease. Rent covered by sub-letting.

Easy Terms.—Partnership with success on. Half share of £2,400 in mining district near the sea. Premium £1,400 on easy terms.

South-West County.—Old established PRACTICE in country town with cottage hospital in beautiful district. Practice doing over £1,000. Panel 850. Appointments £70. House with very nice garden. Rent £45.

London, N.E. — Very old- established PRACTICE of over £1,700. Appointments £220. Panel 1,000. Could be increased. Long lease. Rent £77. Premium £2,000.

Scotland. — Unopposed PRACTICE of £1,500, of which £300 is non-panel and appointment. Good house can be bought for £1,000.

Home County.—Middle and working class PRACTICE of £1,000 increasing in nice town with cottage hospital, up the river. Panel 700. Rent £44.

S.W. London.— Partnership. Third Share worth about £400, with handy increase. Good house and garden. Can be rented.

Surrey.–Third share of £2,000 in delightful residential district. Half share later. Surgeon could have hospital appointment.

N.E. London. — Cash and panel PRACTICE of over £3,000. Panel 1,400. Convenient residence.

Glos. — Old-established PRACTICE of £1,500 in beautiful district with mild climate. Panel 1,500. Commodious house, with garden and garage, can be bought for £1,200, part on mortgage.

South Coast. — Partnership. Half-share of £1,650 in favourite watering place, with Cottage Hospital. House can be rented. Good private practice with small panel.

Lincs.—Unopposed Practice of over £1,400. Panel 600. Good fees. House with good garage.

Scotland.—Practice in nice country town. Receipts £1,200. Panel 450. Rent £50.

Lady Partner wanted for half Share of £1,500, near London.

Within 20 miles.— Practice of £1,250 average, in nice residential district. Excellent house. Rent £75. Scope for panel. Cottage hospital. Premium £1,350.

London, S.E. — Practice of £1,650, including 1,200 panel, rapidly increasing. Long lease. Rent £75.

Wales.—Surgeon required as PARTNER. Third Share of £3,000 in good town.

South Devon. — Old-estab. good-class PRACTICE in suburb of favourite watering place. Receipts £1,250. Panel 750. Appointments £75. Little midwifery. Excellent house, with room for tennis court, can be bought.

Lancs.–Old-established, good class non-panel PRACTICE in best town. Receipts £1,600. Vendor retiring to specialise. Good house in nice position.

Scotland. — Increasing V.D. PRACTICE now doing £1,500.

Sussex. — Practice of £600 held by vendor for 40 years in seaside place. House and Practice £3,000.

Yorks. — Agricultural unopposed PRACTICE of £1,300 in nice part. Good house. Rent £50.

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Purchasers stating their requirements can hear of other Partnerships or Practices not advertised.

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British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

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CONTAINING

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THE GENERAL MEDICAL COUNCIL

MEDICAL BILLS IN PARLIAMENT

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NAVAL AND MILITARY APPOINTMENTS

CORRESPONDENCE, ETC.

VOLUME II, 1921.

London:

PRINTED AND PUBLISHED AT THE OFFICE OF THE BRITISH MEDICAL ASSOCIATION,
429, STRAND, W.C.

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Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 2ND, 1921.

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SPECIAL NOTICE TO MEMBERS.

Every Member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he or she belongs.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

SUPPLEMENTARY REPORT OF COUNCIL, 1920-21.

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Preliminary.

HONOURS.

219. The Council has pleasure in announcing the following list of members upon whom honours have recently been conferred by H.M. The King:—

Created K.C.B.

Surgeon Rear-Admiral P. W. Bassett Smith, C.M.G.

Created K.C.I.E.

Major-Gen. The Hon. Wm. Rice Edwards, C.B., C.M.G., I.M.S.
Dr. Wm. Henry Willcox, C.B., C.M.G.

Created Knights.

Dr. J. W. Browne, LL.D.
Dr. F. Conway Dwyer, F.R.C.S.I.
Dr. Thomas Lewis, C.B.E., F.R.S.
Brig.-Gen. Donald Johnstone McGavin, C.M.G., D.S.O.
Dr. Sydney Russell Wells.
Dr. James Craig, P.R.C.P.I.

OBITUARY.

219. The following is a supplementary list of Members whose death the Association has to deplore:—

Name.	Offices held in the Association.
Dr. Daniel Albert Robert Farquharson	A Member of the Executive Committee and a former Chairman of the Gateshead Division of the North of England Branch, and a former Member of the Council of that Branch.
Dr. Horace Jeffries	A former Member of the Executive Committee of the Bolton Division of the Lancashire and Cheshire Branch, and a former Member of the Council of that Branch.
Dr. William Moir	A former Chairman of the Blackburn Division of the Lancashire and Cheshire Branch.
Dr. F. J. White	A Member of the St. John, New Brunswick, Branch Council.

Dr. Walter Ernest Barrett, the Hon. J. L. Beeston, Dr. Alfred A. Brown, Dr. Lewis Buchanan, Major William Barbour Alexander Kennedy Cullen, I.M.S., Dr. Neil Fullarton, Dr. Alfred James Graves, Dr. John Joseph Hanley, Dr. Wilfred Francis Hawkins, Dr. Thomas Edward Honey, Dr. Anthony Kidd, Dr. Samuel Thomas Knaggs, Surg.-Lt.-Col. L. Manche, R.A.M.C., Dr. William Adam Michie, Dr. William Maskelyne Parham, Dr. Frederick Harold Pickin, Dr. Robert Millner Smyth, Dr. Francis Snow, Dr. Peter Tytler, Dr. Thomas Watt, Dr. Robert Herbert Wilson, Dr. Joseph Farrall Wright, Dr. Joseph Young.

ELECTION OF RIGHT HON. SIR HENRY CRAIK, M.P., AS HONORARY MEMBER.

219 (A). The Council has pleasure in recommending the Representative Body to elect the Right Hon. Sir Henry Craik, K.C.B., M.P., as an Honorary Member of the Association.

Sir Henry was a Member of Parliament for the Glasgow and Aberdeen Universities from 1906 until the Scottish Universities combined in 1918, when he became one of the members for the combined Universities. He has always been one of the most sympathetic members of the House of Commons to the

claims of the medical profession, and the Association has often sought his help—never in vain.

Recommendation.—That the Right Hon. Sir Henry Craik, K.C.B., M.P. for the Scottish Universities, be elected an Honorary Member of the Association.

Finance.

(Continuation of para. 19 of Annual Report).

220. The Council is pleased to report that the figures of income for the period January 1st to May 31st, 1921 show a considerable increase over those of the corresponding period of last year. This is due in the main to the increase in the annual subscription on January 1st, 1921, from £2 2s. 0d. to £3 3s. 0d. and to the revised scale of charges for advertising in the *British Medical Journal*. The receipts from subscriptions from January 1st to May 31st, 1921, were £10,119 as against £6,041 in 1920 over the same period. The revenue from advertisements for the same period has amounted to £6,216 as compared with £4,947 in 1920. The publishing and other sundry receipts are up, making a total increase of £5,625 over the corresponding period of 1920.

Expenditure shows a decrease of £3,605 as compared with the 1920 figures.

Organisation.

QUESTION OF SITES WHEREBY THE ASSOCIATION MAY BECOME IN PART A FEDERATION.

(*See* Report of Council, *B.M.J. Supplement*, March 5th, 1921, pages 55-63, and Annual Report of Council, paras. 126-129, p. 119 and pp. 148-150.)

221. The Council has received from the Solicitor of the Association (Mr. W. E. Hempson), who has been travelling abroad for his health, a report of conversations held by him with prominent members of the Association during visits paid by him to Canada, New Zealand and Australia. Mr. Hempson received a warm welcome from the Officers of the Branches, and in New Zealand and Australia sought opportunities of discussing with them the work of the Association and especially the draft Articles and By-laws to provide federation facilities. In the opinion of the Council these conversations have been most helpful as a preliminary to the Conference on that subject which is to be held on July 5th, and the Council has tendered to Mr. Hempson its thanks for all the trouble he has taken.

222. Mr. Hempson has also forwarded to the Council a letter from Dr. R. H. Todd, the Honorary Secretary of the Australian Federal Committee, Honorary Secretary and Representative of the New South Wales Branch and representative of the Federal Committee at the July 5th Conference. It would appear to the Council from Dr. Todd's letter and Mr. Hempson's report, that the Australian Branches do not regard the draft federation Articles and By-laws (*B.M.J. Supplement*, March 5th, 1921) as offering a satisfactory solution of the difficulties experienced by the Australian Branches as regards the organisation of the Association in the Commonwealth.

223. In its report on the subject in the March 5th *Supplement*, the Council pointed out that the draft Articles and By-laws embodying federation facilities would be definitely put forward by the Council for approval and adoption by the Annual Representative Meeting at Newcastle, and Extraordinary General Meetings in July and August, only in the event of these suggested new Articles and By-laws being approved by the July 5th Conference of representatives of the Oversea bodies and of Ireland, with representatives of the Council. Bearing in mind the fact that it was primarily to meet the case of the Australian Branches that the suggested federation Articles and By-laws were drafted, the Council has thought it advisable, having regard to the whole position, to suspend for the present the calling of the proposed Extraordinary General Meetings. They can easily be arranged for later if the proposals should prove acceptable to the Dominions' representatives and to the R.B.

VISIT OF MEDICAL SECRETARY TO LANCASHIRE AND CHESHIRE BRANCH.

224. The Council has received from the Medical Secretary a report as to visits paid by him to twelve of the Divisions of the Lancashire and Cheshire Branch, where he was accompanied by the Chairman of Representative Meetings. The Council notes that at the meeting of the Blackpool Division the following resolution was passed :—

> "That this meeting of medical practitioners of the Blackpool Division strongly condemns the British Medical Association for the feeble and ineffective action invariably taken when dealing with matters affecting the welfare of the profession."

The Council also observes that the Lancashire and Cheshire Branch Council has passed the following resolution :—

> "The Branch Council considers that the visit of the Medical Secretary and the Chairman of Representative Meetings was of much benefit to the Association, and looks forward to similar visits in the near future. It regrets the action of the officials of the Blackpool Division in supporting the resolution passed at the Blackpool meeting to the effect that the 'B.M.A. invariably lets the profession down.' The Branch Council is of opinion that the Blackpool Division is morally bound either to repudiate this resolution or to bring the matter forward and justify its contention at the A.R.M."

With this opinion the Council entirely agrees, and whatever attitude the Blackpool Division may take, the Council considers that it may well be left to the discretion of the Branch Council to take what further action it deems desirable.

Medico-Political.

MEDICAL CERTIFICATES OF INABILITY TO ATTEND SCHOOL.

(Continuation of para. 198 of the Annual Report, p. 127.)

225. The replies received up to date from the 326 Education Authorities who were informed that the Association was of opinion that where an Elementary School Authority required a Certificate of inability of a child to attend school the fee for such certificate should be paid by the Education Authority, now total 71. Of these (a) 24 are acknowledgments; (b) 9 state that the onus of payment is on the parent; (c) 6 provide a certificate and pay; (d) 2 provide a certificate and pay for those for which they ask; (e) 3 provide certificate but do not pay; (f) 2 pay in necessitious cases; (g) 2 are not in sympathy; (h) 19 have decided to take no action; (i) 3 provide a S.M.O. from whom certificates are obtained free of charge; and (j) 2 provide certificates through the S.M.O. in cases of hardship.

DANGEROUS DRUGS REGULATIONS.

(Continuation of paras. 213-4 of Annual Report of Council, page 129.)

226. The Regulations under the Dangerous Drugs Act, 1920, as revised by the Committee appointed by the Home Secretary after hearing the evidence placed before it by representatives of the Association and the Pharmaceutical and other Societies, have now been published (for report on the Regulations *see* Supplement, 4th June, 1921, pp. 210 and 211). The Regulations and the report of the Committee justify the belief expressed by the Council that an independent Committee of enquiry would agree that the Draft Regulations were hopelessly impracticable. The criticisms of the Association have received full consideration, and most of them have been met. The Regulations are greatly improved from the point of view of practicability; they contain one clause at least which the Council considers will be of distinct public benefit, namely, that which provides that medicines containing "the drugs" shall not be procurable from a chemist except on a doctor's prescription. The Council decided to raise no further opposition to the Regulations, but agrees with the opinion expressed by its witnesses before the Committee, namely, that with the exception of the provisions whereby the distribution of "the drugs" from the manufacturer to the distributor can be checked, and the clause just mentioned, the effect of the Regulations will not be commensurate with the trouble which they will cause to doctors, chemists and patients. The Regulations come into effect on September 1st, 1921.

ADVERTISEMENTS OF DRUGS FOR SELF-MEDICATION; PROPRIETARY MEDICINES BILL; AND UNQUALIFIED MEDICAL PRACTICE.

227. The A.R.M., 1920, passed the following resolutions :—

> *Minute* 167.—Resolved: That the Council be instructed to consider what steps can be taken to deal with the undue advertising of drugs in various forms, for self-medication.
>
> *Minute* 168.—Resolved: That, in the opinion of the Representative Body, serious steps should be taken in the public interest by the Association to bring to the notice of Parliament the injurious effects of unqualified practice in medicine and surgery.

The Council considered it advisable to defer any action until the effect of the Government's Proprietary Medicines Bill could be estimated. This Bill, founded on the strong report of the Select Committee on Proprietary Medicines, has been under discussion between the Ministry of Health and the various bodies and interests concerned since its introduction into the House of Lords last year, the idea being to get, as far as possible, an agreed measure. The state of Parliamentary business makes it unlikely that the Bill will

be introduced again this year. Steps are being taken to try to interest the Parliamentary Labour Party in the subject. The Council therefore suggests that the instructions contained in Minutes 167 and 168 of the A.R.M. 1920 be continued.

Women Doctors and Income Tax for Income derived from War Work.

228. The Council has received a report that the Inland Revenue Commissioners had ruled that income derived by civilian doctors from attendance on Auxiliary Female Units, (*e.g.* Q.M.A.A.C., W.R.A.F. and W.R.N.S.) except during service abroad, was not admissible for "Service" rate of Income Tax. The Council has instructed the Medico Political Committee to see if it can find a suitable case for a test action. If it can the Council will consider the desirability of taking the matter to the High Court. So far as can be ascertained 45 medical women are affected by this ruling, of whom 27 are members of the Association.

Fees for Certifying Factory Surgeons.

(Continuation of para. 206 of the Annual Report of Council, p. 128.)

229. The Chief Inspector of Factories (Home Office), accompanied by Dr. T. M. Legge, C.B.E., received Dr. W. F. Dearden, the Medical Secretary and the Assistant Medical Secretary (Dr Lord), as a deputation from the Association of Certifying Factory Surgeons and the B.M.A., on Thursday, 2nd June, 1921, and discussed matters affecting the remuneration and position of Certifying Factory Surgeons. The Chief Inspector sympathetically noted the points put before him and promised to give them his early attention.

Derbyshire Colliery Appointments.

230. The Council is glad to report that the Chesterfield Division has induced the Colliery Field Clubs in its area, with two exceptions, to increase the rate of remuneration of their Medical Officers to a minimum of 21/8 per annum per family, or to such a flat rate as will amount to not less than 21/8 per married man per annum, and that some clubs are paying at a higher rate. This is a great improvement on former conditions and contract colliery practice in Derbyshire is now brought into line with that in the neighbouring County of Nottingham.

Travelling Allowances of Practitioners attending Coroners' Courts.

(Continuation of paragraph 200 of Annual Report of Council, p. 127.)

231. Thirty-three replies have now been received from the 62 County Councils in England and Wales to the Association's letter suggesting that travelling allowances should be granted to medical practitioners attending Coroners' Inquests. Of these replies, 15 are merely acknowledgments; 7 state they already pay these expenses; 1 has now decided to pay; 6 are taking no action; 2 are deferring action until they see what effect representations to the Home Office may have; and 2 have decided to support the representations of the Association to the Home Office. The Council, considering the results so far obtained to be encouraging, has decided to ask those Divisions in whose areas allowances are not paid to take action locally with a view to obtaining payment, using as a precedent the areas in which these allowances are paid.

Grant from Central Emergency Fund to Tasmanian Branch.

(Continuation of paras. 185 and 204-5 of the Annual Report of Council, pp. 125 and 128.)

232. The Tasmanian Branch, in its efforts to resist the introduction of the recently passed Medical Acts of Tasmania, expended a sum of approximately £253, and is raising this money by a voluntary levy, £138 so far having been contributed. The Medico-Political Committee, the members of which are the Trustees of the Central Emergency Fund, has made a grant of £100 from the Central Emergency Fund. The Council is glad to report this practical expression of sympathy with one of its Oversea Branches which, by legislative and administrative methods of which fortunately we have no practical experience in this country, has been placed in a very unenviable position.

Fees for Medical Examination of Candidates for the Civil Service.

233. The Council is pleased to be able to report that it has succeeded in obtaining an increase of the fees for the medical examination of candidates for the Civil Service from 10s. 6d. to 15s. A fee of 21s. was suggested, and the analogous case of the Insurance Companies which pay a guinea for a somewhat similar examination was quoted, but the Civil Service Commissioners could not be induced to recognise that the cases were on all fours.

Fees for Admiralty Surgeons and Agents.

(Continuation of para. 217 of the Annual Report of Council, p. 129.)

234. The Council, in thanking the Admiralty for the increase in the fees paid to Admiralty Surgeons and Agents for visits and mileage, has pointed out that when the fee for the medical examination of recruits for the Admiralty comes under consideration it should be the same whether the candidate is finally accepted or not, and that the present system of paying 5s. if the recruit is finally accepted, and 2s. 6d. if rejected, should be abolished.

Post Office Medical Officers.

(Continuation of para. 191 of the Annual Report of Council, p. 126.)

235. A total of over 1,000 Post Office Medical Officers who are members of the Association have now indicated that they desire the Association to be recognised by the Postmaster-General as their mouthpiece. Only 29 replies in the negative have been received. The Council is therefore informing the P.M.G. to this effect, and again asking him to receive a deputation from the Association to discuss several matters concerning the terms and conditions of employment of P.O.M.O.'s.

Employment of Married Medical Women.

236. The Council was informed that the Glasgow Corporation was proposing to dismiss its married medical women officers, not because of any failure on their part to carry out their duties but because their husbands ought to be able to support them. The medical women who were threatened with dismissal appealed to the Council for support, as did the Medical Women's Federation. The Council thereupon informed the Glasgow Corporation that it regarded this threat as an unjustifiable interference with the private affairs of a section of the medical profession. The Council has been informed that no further action has been taken, and that the matter is likely to drop altogether. The London County Council, which proposed to adopt a similar measure, has decided to continue the services of its married medical women officers for three years, dating from October 21st, 1921.

Dogs' Protection Bill.

237. The Council is watching the progress in Parliament of the Dogs' Protection Bill, which was read for the second time in the House of Commons on June 3rd, and is in communication with the Medical Parliamentary Committee on the subject.

Fees for Medical Examination of Emigrants to Australia.

238. The Acting Chief Medical Officer of the Commonwealth of Australia applied to the Association asking what it considered an adequate fee for the medical examination of ex-soldiers their wives and families emigrating to Australia, the fee being paid by the emigrants themselves. The Council after consideration of all the circumstances, including the form which has to be filled up, has replied that it considers that there should be a fee of 10s. 6d. for each adult and 2s. 6d. for each child under 16 years of age, examined and reported upon.

Professional Secrecy.

(*See also* paras. 151-152 Annual Report of Council, p. 122.)

239. It was reported to the Council at its meeting on June 22nd that certain events had recently occurred which raised acutely the question of further interference by Courts of Law with the confidential relations between doctors and patients. The first was the action of Mr. Justice Horridge, who, at the Chester Assizes on 9th June, 1921, compelled Dr. John Elliott, O.B.E., of Chester, Superintendent of the local V.D. Clinic, in spite of a strong protest on his part, to disclose certain information which had come to his notice in his official capacity. It will be remembered that when the V.D. Clinics were established the Local Government Board made a special feature of the secrecy which was to be observed as regards treatment in these institutions. The other case was one in which the Medical Officer of Health of Ilford was compelled to produce as evidence in a divorce case a form of notification of birth which had been sent to him in his official capacity. He also protested and was supported in so doing by his Council.

240. The Council came to the conclusion that a decided stand ought to be taken by the medical profession. It has, therefore, sent the following resolution to the Ministry of Health, accompanied by a request that the Minister shall receive a deputation from the Association to discuss with him the steps which ought to be taken to prevent the occurrence of such incidents in the future:

> "That the Council of the British Medical Association has learnt with great concern of the position created by the recent decision of a Judge that the medical officer of a venereal disease clinic must give evidence in a civil case as to the medical condition of a patient under his care at a venereal disease clinic, thus violating the confidence between doctor and patient and the direct undertaking given by the Local Government Board that all proceedings at such clinics should be absolutely secret and confidential. In drawing the attention of the Ministry of Health to these facts the Council of the Association would urge that such legislative steps should be taken as would render such an occurrence impossible in the future."

National Health Insurance.

Winding up of Central Insurance Defence Fund.

241. In 1918 the Representative Body expressed the opinion that the balance in hand of the Central Insurance Defence Fund should either be returned to the donors or a scheme for its utilisation submitted to them for their approval. The Council (the members of which for the time being are Trustees of the Fund) accepted this advice and decided that the Fund be closed and the subscribers informed (i.) that the Fund had been closed; (ii.) that a new fund had been opened, with the reasons for taking that step, and (iii.) that the balance of their subscriptions would be returned to them if they so desired, but that it was hoped they would allow it to be transferred to the new Fund, and that their consent to do so would be assumed unless they applied for its return.

242. The new Fund referred to is the National Insurance Defence Trust, the Trustees of which are the members for the time being of the Insurance Acts Committee. The formation and objects of this Trust were approved by the Council at its meeting in October, 1918, and were reported to and approved by the Representative Body in 1919. The objects of the new Trust were drawn up as nearly as possible on the lines of the old Defence Fund, but extended so as to make the Trust available for any possible contingency that might arise from any extension of National Health Insurance that might be proposed, or any other form of State Medical Service.

243. The Council in 1918, left it to the Insurance Acts Committee to decide when the appropriate time had arrived at which an attempt might be made to induce subscribers to the old Fund to transfer their balances to the new Fund, and at the end of last year the Committee decided that that time had arrived.

244. The procedure and circular letters issued to subscribers in connection with the winding up were prepared under the advice of the Solicitor of the Association, so as to give no ground for complaint on legal grounds. For a similar reason the Committee decided that the whole of the work of circularising subscribers and winding up the Fund should be done by professional auditors. Accordingly the auditors of the Association (Messrs. Price, Waterhouse & Co.) were asked to carry out the work. The process has now been completed and there is a balance of over £10,000 available for transference to the new Trust. Appended will be found the report of the auditors, giving details of their action and as to the amounts returned and those available for transfer to the Trust (*see* Appendix A.). It will be noted that a few of the subscribers desired that their balances should be handed to certain medical charities and this has been done. The balance remaining after the winding up has been transferred to the National Insurance Defence Trust.

Scope of Insurance Practitioner's Agreement.—Treatment of Insured Persons in Hospital.

245. A recent understanding between the Ministry of Health and the Insurance Acts Committee has given rise to the question as to whether or not an insurance practitioner's agreement only covered what was understood as domiciliary attendance or included attendance upon an insured person in an institution where the treatment was clearly within the "range of service." The Council is of opinion that the mere removal of an insured person to an institution does not necessarily take the patient outside the insurance practitioner's contract, and it has under consideration the question of the limitations, if any, which should be placed upon this general rule in particular instances.

Association of Panel Committees.

246. The attention of the Council has been drawn to a circular letter issued by the above body dealing with the formation of an Association of Panel Committees and urging Panel Committees to take their interests out of the hands of the British Medical Association and transfer them to a body directly and entirely elected by Panel Committees. A circular was issued to all Local Medical and Panel Committees and Divisions and Branches replying to the various points in the Association of Panel Committees' circular to which exception is taken.

Nursing Service for Insured Persons.

247. Attention having been drawn to proposals for the provision, in various parts of the country, of a nursing service for insured persons, and questions arising thereout as to the administration, etc., of such proposed service, the Council has expressed the opinion that a nursing service should be considered as being of the nature of medical benefit and administered accordingly, *i.e.*, by Insurance Committees. This opinion has been conveyed to the Ministry of Health, Queen Victoria Jubilee Institute for Nurses, the Association of Approved Societies, and the Association of Insurance Committees.

National Insurance Defence Trust.

248. The audited statement up to December 31st, 1920, of the above Trust, of which the members of the Insurance Acts Committee are the Trustees, is appended herewith for the information of the Representative Body and the members of the Association (*see* Appendix B.)

Hospitals.

Governmental Committee of Inquiry into Financial Position of Voluntary Hospitals.

(Continuation of para. 252 of Annual Report.)

249. The Committee presided over by Viscount Cave has reported, but there has not yet been time for the Council fully to consider the Report. The Council notes with interest, however, the recognition of the position of the Association by the Committee when it recommends the setting up of a Hospitals Commission for the administration of the fund which it is asking the Government to place at the disposal of the hospitals to tide over their present difficulties. The proposed Commission is to be appointed by the Minister of Health and to consist of not more than twelve members. Of these the Chairman and three others are to be appointed by the Minister of Health, one by the Secretary for Scotland, and of the remainder the Committee considers that one should be nominated by each of the following bodies: The Joint Committee of the Red Cross Society and the Order of St. John of Jerusalem, King Edward's Hospital Fund for London, the British Hospitals Association, the Royal College of Physicians, the Royal College of Surgeons, the British Medical Association, and the Scottish Committee of the British Medical Association.

Naval and Military.

Question of the Expansion of the Forces in the event of a National Emergency.

250. The A.R.M., 1919, instructed the Council to enquire and report in what ways the Association could assist in keeping medical practitioners acquainted with Army Medical Service conditions. The Council has given this matter careful consideration and interviewed the D.G., A.M.S., on certain points which arose out of the Army Estimates for 1920. The Council has now appointed a Special Committee consisting of those members of the late Central Medical War Committee who are members of the Council, and representatives of the R.N. Medical Service, the R.A.M.C., the R.A.F.M.S., and the R.A.M.C.T., to deal with the question of the expansion of the Forces in the event of a national emergency, and the point raised by the A.R.M., 1919, will be dealt with consequentially by that Committee.

Senior Surgeon Commanders, R.N.

(Continuation of para. 261 p. 134 of Annual Report.)

251. The Council in its Annual Report stated that it had addressed a letter calling the First Lord of the Admiralty's personal attention to the hardship which was being inflicted on those Senior Surgeon-Commanders compulsorily retired. A reply has now been received from the First Lord to the effect that he appreciates the very small extent to which the retired pay of these officers has been raised; that he realises also that even this small increase is reduced by the loss of pay

which some of these officers have no doubt suffered as a result of earlier compulsory retirement; but that the new scheme of pay could not be modified to meet the case of a particular group of officers without giving rise to similar claims from other officers who have only benefited to a minor extent and whose claims it would be very difficult, if not impossible, to resist; and that whilst he sympathised with the officers affected he could not usefully add anything to the previous ruling, which was that the Lords Commissioners of the Admiralty did not feel justified in recommending the Government to modify for the benefit of individual officers a scheme which had recently been adopted at great cost to the State and which was so beneficial to officers (including medical officers) of the Naval Service, as a whole.

252. This reply seems to suggest that if an injustice is a solitary case or not common something can be done, but not if the injustice is wide-spread. The Council does not accept this reasoning and has approached Commander P. T. Dean, V.C., M.P. for Blackburn, who has promised to lay the case of these officers before the Parliamentary Naval and Military Committee. The result of any action which that Committee may be able to take in the matter is now awaited.

PAY OF I.M.S. ADMINISTRATIVE OFFICERS.

(Continuation of para. 264, p. 135 of Annual Report.)

253. In April last an official communiqué was issued by the India Office giving the rates of pay for I.M.S. Officers on the civil side. It was at once noted that the salaries of the Director-General and Surgeons-General had not been increased since the revision of 1919, and the Council took the matter up with the Secretary of State for India. The Council has expressed its opinion that these officers have a real grievance, which is accentuated by the low rate of exchange and the decision to abolish exchange compensation allowance. The Council has also pointed out that it was led to expect by the letter from the India Office of March 15th, 1921, that the salaries of these officers would be revised, and has strongly urged that a material increase should be made in their rate of pay.

Medico-Sociological.

254. The Council has pleasure in presenting to the Representative Body the Report of the Medico-Sociological Committee (Appendix C.) on the Value of Maternity and Child Welfare work in Relation to the Reduction of Infant Mortality. The Report itself explains fully the experimental character of the work of the Committee. The report is being circulated to the medical and lay press, and to all local authorities throughout England and Wales, and is being placed on sale.

255. The various Maternity and Child Welfare Societies are being approached with a view to securing the nomination of the Association's representatives upon the central executives of those bodies. Divisions are urged to endeavour to secure representation upon the executives of the various maternity and child welfare bodies in their localities, thereby doing their utmost to secure that the work of the Maternity and Child Welfare Centres is conducted on lines which the profession can support.

Scotland.

FEES TO DOCTORS CALLED IN BY MIDWIVES.

(Continuation of para. 268 of Annual Report, p. 135.)

256. The Scottish Committee decided to take no objection to the scale proposed by the Scottish Board of Health (£1 17s. 6d. including one subsequent visit) if it were made clear that subsequent necessary visits would be paid for either under the Midwives Act or under Maternity and Child Welfare Schemes. The Board was so informed, and has stated that it is asking all Local Authorities that have Maternity Service and Child Welfare Schemes in operation to make provision under the Scheme for the payment of 2s. 6d. per visit for such subsequent visits. The Committee has informed the Board that this fee cannot be accepted.

Medical Representation in Parliament Fund.

257. No meeting of the Committee which administers this Fund has been held this session. As there appeared to be no likelihood of an early General Election it was felt that there was no need to spend any money on holding a meeting. But, as in the nature of things, a General Election is coming nearer, and as it is still hoped to raise the money necessary to assist another suitable candidate to get into Parliament, it is probable that a meeting will be held early next session and another general appeal issued to the profession.

258. The audited statement as to the Fund up to December 31st, 1920, appeared on page 147 of the *B.M.J. Supplement* of April 30th, 1921 (Annual Report of Council), and showed a balance in hand of £1,060. Since that date the sum of £192 6s. 6d. has been received. Many of those subscribers who promised annual subscriptions have not yet sent the subscription for 1921, and it is hoped that they will do so as soon as possible. The state of the Fund makes the promised support to the one selected candidate (Dr. Brackenbury) somewhat precarious, and makes it impossible to encourage other candidates to come forward.

APPENDIX A.

REPORT OF MESSRS. PRICE, WATERHOUSE & CO., ON WINDING UP OF CENTRAL INSURANCE DEFENCE FUND.

3, Frederick's Place,
Old Jewry, E.C. 2.,
13th May, 1921.

Dear Sir,

Central Insurance Defence Fund.

In accordance with instructions received from you, we have carried out the liquidation of the above Fund and beg to submit our Report on the same.

We received from you in December last the Registers of those who had subscribed to the Compensation Fund. From these, lists were prepared and copies of a circular dated 17th January, 1921, were posted to the registered addresses of all the subscribers intimating the winding up of the Fund, and setting forth the proposed basis of distribution of 12s. 6d. in the £ on the amounts received. With the circular was enclosed a printed form designed in order that the subscribers might advise us whether they desired payment of the dividend available or whether they were willing that the amount due to them should be transferred to the National Insurance Defence Trust. The circular stated that if the form was not returned within two months of the date of issue, the consent of the subscribers would be assumed to the transference of the balance to the National Insurance Defence Trust.

The number of subscribers to whom circulars were sent was about 9,500 and there were returned to us 2,527 forms in reply. An analysis of the replies is as follows:—

		£ s. d.	£ s. d.
1,227	Subscribers desire payment of the dividend amounting in total to		1,914 5 5
1,289	Subscribers desired that the amounts due to them amounting in total to ... should be transferred to the Defence Trust		2,225 11 11
5	Subscribers requested that the amounts due to them amounting in total to ... should be paid over to the Medical Benevolent Fund.	12 10 0	
5	Subscribers requested that the amount due to them amounting in total to ... should be paid over to the Funds of Epsom College.	11 17 6	
1	Subscriber desired that the amount due to him of ... should be given to the Funds of any Medical Charity.	12 6	
			25 0 0
2,527			

The Fund was kept open until the 30th April in accordance with your suggestion in order that no subscriber should suffer through delay in receiving the circular, but it will be observed that by far the greater number of subscribers (say 74%) of the total did not return forms and were therefore apparently willing that the dividend due to them should be transferred to the Defence Trust.

Cheques in payment of the dividend due to the subscribers who asked for payment were forwarded immediately after receipt of the forms, the total of such payments amounting as stated above to £1,914 5s. 5d. In certain cases it transpired that the subscribers were dead and payments were made to their legal personal representative on production of proof of their title.

At the 1st January, 1921, the Fund comprised the following: -

£12,550 War Loan Bearer Bonds (the cost of this was £11,924 11s. 4d.)

Cash at Bank and on Deposit £2,140 9s. 3d.

To meet the distribution £2,000 War Loan was sold realising £1,701 1s. 0d., and thus leaving £10,550 War Loan available for transfer to the Defence Trust. These Bonds are in the custody of the Bankers of the British Medical Association.

A statement of the cash transactions is as follows:—

	£	s.	d.
In hand at the 1st January, 1921, as above...	2,140	9	3
Proceeds of £2,000 War Loan sold	1,701	1	0
Deposit Interest	10	13	3
	3,852	3	6
Deduct: —			
Dividends to Subscribers as above	1,914	5	5
Stamps on cheques 12 10 0			
Postages 35 2 1			
47 12 1			
	1,961	17	6
Balance at the Bank after providing for cheques not yet presented .. .	1,890	6	0

This amount, subject to the payment of the subscriptions designated to special Charities, as mentioned above, amounting to £25, and after payment of our charges for carrying out the liquidation, which we estimate will amount to £500, will be available for transfer to the National Insurance Defence Trust. The total amount to be received by the National Insurance Defence Trust may therefore be taken at about £10,649 6s. 0d., thus:—

£10,550 War Loan at say 88%...				9,284	0	0
Cash at Bank remaining as above	1,890	6	0			
Less: Payments to be made ...	525	0	0			
				1,365	6	0
				£10,649	6	0

We are, dear Sir,
Yours faithfully,
(Sgd.) PRICE, WATERHOUSE & CO.

The Medical Secretary,
British Medical Association.

APPENDIX B.

NATIONAL INSURANCE DEFENCE TRUST.

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDING 31ST DECEMBER, 1920.

RECEIPTS.				PAYMENTS.			
1920.				1920.			
1st Jan.	£	s.	d.	1st Jan.	£	s.	d.
To BALANCE FROM 1919 —				By Legal Charges ..		8	13 0
At Bankers on Current Ac	254	0	3	,, Printing, Stationery and Postages .		9	5 0
At Bankers on Deposit Ac	978	0	0	,, Railway Fares			10 2
	1,232	0	3	,, Arbitration Fees		52	10 0
,, SUBSCRIPTIONS FROM 1st Jan. to 31st Dec., 1920	5,222	13	8	,, Clerk's Salary .. .		10	0 0
,, Interest on Deposits and Dividend	179	16	9	.. Bank Charges and Transfer Fee ..			7 8
,, £100 5% National War Bonds, 1922, transferred from Drs. Larking and Baker ..	100	0	0	,, Audit Fees		10	10 0
	5,502	10	5	.. Balances —			
				Cash at Bankers on Current Account ..	£153 4 6		
				Cash at Bankers on Deposit Account ..	6,200 0 0		
				£100 National War Bonds, 1922 ..	100 0 0		
					6,453	4	6
	£6,734	10	8		£6,734	10	8

We have compared the above account of Receipts and Payments with the books and vouchers of the Trust and find it correct. We have certified the War Loan held by the Bank and Bank Balances at the 31st December, 1920

(Signed) PRICE, WATERHOUSE & Co.

3, FREDERICK'S PLACE,
OLD JEWRY, E.C. 2.,
30th March, 1921.

APPENDIX C.

THE VALUE OF MATERNITY AND CHILD WELFARE WORK IN RELATION TO THE REDUCTION OF INFANT MORTALITY.

REPORT BY THE MEDICO-SOCIOLOGICAL COMMITTEE OF THE B.M.A.

APPOINTMENT OF AND REFERENCE TO COMMITTEE.

1. This enquiry has been conducted by the Medico-Sociological Committee of the British Medical Association, a Committee appointed experimentally by the Council of the Association in October, 1920, "To consider social and economic questions affecting the public welfare as to which the medical profession has special knowledge; and to take such steps as may be found necessary in order to create or develop public opinion thereon." The Committee was given power to co-opt not more than eight additional members for the consideration of the subject which the original appointed members might select. After discussion the original members selected "The Value of Maternity and Child Welfare Work in relation to the reduction of Infant Mortality" as the first subject for consideration, and proceeded to co-opt as additional members certain persons having a special knowledge of the subject

COMPOSITION OF COMMITTEE.

2. The original appointed members were:

The Officers of the Association, namely, the Rt. Hon. Sir T. Clifford Allbutt, K.C.B., Regius Professor of Physic University of Cambridge (President); T. W. H. Garstang, M.A., M.R.C.S., D.P.H. (Chairman of Representative Meetings); R. A. Bolam, M.D., M.R.C.P., Hon. Physician Skin Department Royal Victoria Infirmary, Newcastle-on-Tyne (Chairman of Council); G. E. Hasbp, M.D., D.P.H. (Treasurer): together with E. B. Turner, F.R.C.S. (Chairman Medico-Political Committee); N. Bishop Harman, M.A., M.B., B.Ch., F.R.C.S., Senior Ophthalmic Surgeon West London Hospital and Ophthalmic Surgeon to Belgrave Hospital for Children (Chairman Hospitals Committee); H. B. Brackenbury, M.R.C.S., L.R.C.P. (Chairman Insurance Acts Committee); T. Ridley Bailey, M.D., M.O.H., and School Medical Officer, Bilston (Chairman Public Health Committee); and the following other members of the Council of the Association, E. Rowland Fothergill, M.B., B.S. (Hove); A. Forbes, M.B., C.M. (Sheffield); A. C. Farquharson, M.D., D.Sc., D.P.H., M.P.; and S. Morton Mackenzie, M.A., M.B., B.Ch. (Dorking).

The President, the Chairman of Council, and the Treasurer of the Association were unable to attend the meetings of the Committee and therefore do not sign the report.

3. The following accepted appointment on the Committee:

Mrs. Ogilvie Gordon, D.Sc., Ph.D., J.P. (nominated by and Vice-President of the National Council of Women of Great Britain and Ireland); Miss Jeannette Halford, Secretary, National League for Health, Maternity and Child Welfare (nominated by the League); Miss Olive Haydon (nominated by the Midwives' Institute), formerly a practising midwife, an Inspector of Midwives and Teacher of Midwifery, and now Hon. Secretary and co-founder of the Loughborough Junction Maternity and Child Welfare Centre, and a member of the Central Midwives Board; Mrs. H. B. Irving, Hon. Secretary National Baby Week Council; J. R. Kaye, M.B., C.M., D.P.H., M.O.H. West Riding of Yorkshire (nominated by the County Councils Association); Mrs. Kent Parsons, Public Health Department, Tottenham (nominated by the Women Sanitary Inspectors' and Health Visitors' Association); Eric Pritchard, M.A., M.D., M.R.C.P., Physician Queen's Hospital for Children and Physician for Infant Consultations, St. Marylebone Dispensary, Hon. Secretary of the National Association for the Prevention of Infant Mortality. The Women's Co-operative Guild, while unable to send a representative, forwarded its views on some of the points raised in the questionnaire issued by us.

Chairman: Dr. E. Rowland Fothergill was appointed Chairman.
Secretary: Dr. Alfred Cox, O.B.E., Medical Secretary of the Association has acted as Secretary of the Committee.

WITNESSES.

4. A questionnaire was circulated to and answers were received from the following bodies and persons, to whom we desire to tender our thanks:

W. A. Brend, M.A., M.D., B.Sc. (author of "Health and the State," "Bills of Mortality"); A. H. Bygott, M.D., D.P.H., M.O.H. West Suffolk (whose name was suggested by the Association of County Medical Officers of Health); T. Shadick Higgins, M.D., B.Sc., D.P.H., M.O.H. St. Pancras (whose name was suggested by the Society of Medical Officers of Health); Medical Women's Federation (witness, Miss Rose Molloy, M.B., B.Ch., Assistant M.O.H. Birmingham); the Midwives Institute; the National League for Health, Maternity and Child Welfare; Harold Scurfield, M.D., D.P.H., late M.O.H. Sheffield; W. Shackleton, M.R.C.S., L.R.C.P., a general practitioner in Bradford and a member of the City Council; the Women's Sanitary Inspectors' and Health Visitors' Association; Professor J. Robertson, C.M.G., O.B.E., M.D., B.Sc., M.O.H. Birmingham; J. J. Buchan, M.D., D.P.H., M.O.H. Bradford. All who replied to the questionnaire except the two last name-l appeared and were further questioned by us.

We have held nine meetings.

DEFINITION OF THE TERM "MATERNITY AND CHILD WELFARE WORK."

5. The expression "Maternity and Child Welfare Work" is generally held to cover the following activities—the instruction of mothers in the hygiene of pregnancy and the feeding and management of young children up to 5 years of age; the provision of free meals for expectant and nursing mothers and of dairy and dried milk for young children; provision of medical advice and treatment for mothers and babies at special centres, and in lying-in wards in hospitals or special homes; the supervision of mother and child by home visiting; the provision of "home helps" during confinement; regulation of conditions of employment of expectant and recently confined women.

DEVELOPMENT OF THE WORK.

6. The development of this work has depended on two main factors—the desire to ameliorate individual suffering, and efforts to increase national efficiency. Both factors were stimulated by the Great War—the discovery of large numbers of men whose low physical standard it was contended was due in great measure to insufficient attention in infancy and childhood, and the loss of large numbers of men, rendering it more than ever desirable to rear as well as possible and as many as possible of the present and coming generations.

Three stages of development of this work may be distinguished in this country. From 1900 to 1914 the period of private effort and permissive legislation. From 1914 to 1918 encouragement by the Government of local effort. Since 1918, the great development of State aid and control.

7. **1900-1914.** Previous to the earlier of these years philanthropic agencies had been at work, and they received an impetus about 1900 from the awakening public interest in the falling birth rate and in the physical condition of the population as revealed by the experiences of the Boer War. The first milk depôt was founded at St. Helens in 1889; the first Infant Consultation Centre was started by Dr. Eric Pritchard at Marylebone in 1906; and the first School for Mothers was founded by Dr. J. F. Sykes (at that time M.O.H. of St. Pancras) and a group of women in that Borough in 1907. Several conferences on infant mortality organised by a Voluntary Committee in 1906 were opened by Mr. John Burns, then President of the Local Government Board. Several associations for promoting the health of mothers and infants were founded about this time. The medical inspection of school children was made obligatory in 1907, and the Notification of Births Acts (at first only permissive) was passed the same year. Beginning in 1908 the Board of Education made annual grants to Education Authorities for Schools for Mothers.

8. **1914-1918.** The Local Government Board issued a circular in 1914 laying down the conditions of exchequer grants in aid of Maternity and Child Welfare work, the grants being payable to both voluntary and public schemes. The circular described a complete scheme as consisting of ante-natal clinics, home clinics, home visiting of expectant mothers, a maternity hospital or beds at a hospital, adequate provision of skilled attendance in child birth, treatment in hospital of complications arising from confinement, provision of baby clinics which were to be available for children until they attained school age, and systematic home visitation of infants and children under school age. Notification of births was made compulsory in 1915. In November, 1915, the Local Government Board issued a memorandum elaborating in detail the scheme already outlined, and indicating the relations of the Centres and Health Visitors to midwives and general practitioners. The first Local Government Board Grant in Aid was made in 1914.

9. **1918** *onward.* In 1918 the Maternity and Child Welfare Act was passed. It was permissive, and gave local Authorities power to make such arrangements as might be sanctioned by the Local Government Board for attending to the health of nursing mothers and children up to five years of age. In July, 1919, there were in existence 1,550 Centres distributed as follows:—County Councils, 270; Sanitary Authorities, 620; Voluntary Agencies, 660. The report of the Chief Medical Officer of the Ministry of Health published in 1920 showed that there were then 1,751 centres of which 693 were provided by voluntary associations. On January 1st, 1921, there were, in England and Wales, 1,923 centres, of which 735 were provided by voluntary societies. The total grant from Government sources has risen from £56,809 in 1915-16 to £777,000 in 1920-21.

10. The policy of the Ministry of Health as detailed in its latest report on the subject (Annual Report of Ministry of Health, 1919-20, Part 1, pp. 44-45) may be summed up as follows:—

(a) Development of centres where none exist, with arrangements at each for consultations, and for treatment of women and children who cannot afford a private doctor;

(b) The appointment for all large districts of medical officers, preferably women, with special qualifications for the work.

(c) The employment of more Health Visitors and improvement of their training;

(d) Extension of midwifery service so that every woman may have within reach a competent midwife;

(e) Provision of sufficient hospital accommodation for diseases of pregnancy, confinements, and illnesses of infants and young children;

(f) Provision of maternity homes and home nursing for maternity cases and illnesses of young children, especially ophthalmia neonatorum, measles, whooping cough, epidemic diarrhœa, and poliomyelitis;

(g) Supply of adequate nourishment for expectant and nursing mothers who cannot afford to obtain it.

ADMINISTRATION.

11. The administration of schemes under the Act is carried on by a special statutory committee of the Local Authority, composed as to two-thirds at least of members of the Council. At least two of the members must be women. Individual Centres are generally conducted by sub-committees which usually include representatives of the Maternity and Child Welfare Committee of the Authority, together with representatives of other local bodies interested. The Local Government Board circular of 1919 strongly recommended that voluntary workers and women should be included. There are still a considerable number of Centres (about one-third of the whole) which are conducted by voluntary committees.

12. There is much diversity as to management and staffing of the centres, but the tendency seems to be for the work to be under the control of a part-time or whole-time medical officer acting under the Medical Officer of Health, and very often the medical officer is a woman. Some Centres are staffed by local practitioners. The Representative Body of the British Medical Association in 1916 recommended the fullest possible utilisation of the services of local practitioners, but the rapid development of the system during the absence at the War of a large number of practitioners, combined with considerations of administrative convenience, has led to the adoption of the employment of whole-time officers in an increasing degree.

13. The following tables show for England and Wales (i.) mortality rate under 1 year per 1,000 births since 1871 (ii.) Infant mortality according to age-periods per 1,000 births, 1898-1919; and (iii.) Causes of deaths under 1 year per 1,000 births in 1914:—

(i.) Mortality Rate under 1 year per 1,000 births.

1871-1880	149
1881-1890	142
1891-1900	153
1901-1910	128
1911	130
1912	95
1913	108
1914	105
1915	110
1916	91
1917	96
1918	97
1919	89
1920	80

(ii.) Infant Mortality according to age-periods per 1,000 births, 1898-1919.

Year.	Under 1 month.	2-3 months.	Total under 3 months.	4-6 months.	7-12 months.
1898	—	—	75·1	35·2	50·1
1899	—	—	76·9	35·7	50·0
1900	—	—	74·2	32·7	47·3
1901	—	—	71·8	32·0	44·5
1902	—	—	68·4	25·8	38·7
1903	—	—	67·6	26·2	37·8
1904	—	—	70·9	30·1	44·3
1905	41·8	24·8	66·6	24·8	36·8
1906	41·9	25·7	67·6	27·0	37·9
1907	40·7	23·3	64·0	21·3	32·3
1908	40·3	24·2	64·4	23·8	32·4
1909	39·7	20·4	60·1	19·2	29·4
1910	38·5	20·0	58·5	18·8	28·2
1911	40·6	24·8	65·4	26·1	38·5
1912	38·4	17·6	56·0	14·8	23·9
1913	39·4	20·3	59·7	19·8	28·9
1914	38·5	19·4	57·9	18·8	28·0
1915	38	19	57	19	34
1916	37	17	54	15	22
1917	37	17	54	16	26
1918	36	17	53	16	28
1919	40	15	55	13	21

(iii.) Deaths in the year 1914 (in England and Wales) under 1 year per 1,000 births (as compiled by Dr. W. A. Brend from the Registrar-General's figures).

		Total for whole of England and Wales	County Boroughs of North.	Rural Districts of South.
Total respiratory diseases ..		26·65	35·03	13·86
Pneumonia ..	10·40		14·03	6·01
Bronchitis	7·75		10·76	4·69
Whooping Cough ..	4·38		5·31	2·14
Measles ..	2·14		3·77	·27
Pulmonary Phthisis ..	·35		·43	·29
Other respiratory diseases	·03		·73	·46
Diarrhœa and Enteritis		17·37	23·54	6·11
Developmental conditions ..		35·97	39·42	28·84
Other Diseases.. ..		25·63	31·78	16·72
All causes ..		104·62	129·77	[illegible]

CAUSES AND INCIDENCE OF INFANT MORTALITY

14. The causes of, or factors in, infant mortality may be grouped as follows:—

A. Inherent "stock" variations.

B. Environmental.

A. Inherent.

We have had the advantage of discussing with Dr. Brend the conclusions he drew from a statistical review of infant mortality presented to the Medical Research Committee in 1917, and which he considers to have been greatly supported by the recent investigations of Professor Arthur Robinson into "Pre-natal Death" (reported in the "Edinburgh Medical Journal" of March and April, 1921). Dr. Brend is of opinion that a certain number of deaths per 1,000 of those born, which occur in the first month, are due to pre-natal biological causes resulting from the experiments continually being made by nature. Some the these experiments result in monstrosities, some end in miscarriages, others cause pathological changes which are not visible but are sufficient to render the child incapable of survival. He considers that there is a non-preventable infant mortality of from 25 to 30 per 1,000, and that these deaths occur almost entirely in the first month after birth.

B. Environmental.

15. The environmental factors may be grouped as:—(1) Before birth, (2) at birth, (3) after birth, and include the following: parental vice, malnutrition or disease of mother, lack of skilled attendance, defective sanitation, poverty, bad housing, overcrowding, industrial employment of mother, ignorance of mother, lack of breast feeding, atmospheric impurity chiefly due to factory and house smoke.

16. The *incidence* of mortality falls, as is shown by Table (ii.), chiefly on the first three months of life, especially in the first week; in this country it is higher in the urban than in the rural areas; it is higher amongst illegitimate than amongst legitimate children; it varies, broadly speaking, with density of population; and it is higher among the industrial than among other classes.

THE CAUSES OF THE DIMINUTION OF INFANT MORTALITY.

17. In accordance with our reference we have devoted our attention to the question of how far the diminution of infant mortality which has taken place in recent years can be ascribed to the work of the Maternity and Child Welfare Centres. We have had the advantage of discussing this question with persons who have had much practical experience in this work; several of them have also had long practical experience of the ordinary sanitary measures carried out by Local Authorities. All the witnesses ascribe a considerable portion of the diminution of infant mortality to Maternity and Child Welfare work, using the term in its broadest sense to include not only the work done at the Centres, but the auxiliary work of the Home Visitors and the indirect educational influence exercised by the mothers who have attended the Centres. The Medical Officers of Health who have given evidence were particularly anxious that the work at the Centres should not be divorced in our mind from the other practical preventive work carried on by them. They regard that general work as a developing whole of which the Centres are a developing part. The women witnesses who have had practical experience had no doubt as to the value of the Maternity and Child Welfare work, though they admitted it was difficult to prove it by figures. Figures were however produced from Tottenham, in which it appeared that one Ward, the poorest and most thickly populated in that district, had shown during the past few years a greater improvement in the infant mortality rate than any other, and this was attributed to the fact that the Centre work had been earlier and more actively developed in that Ward than in the others. On the other hand, our attention has been drawn to figures which seem to show that the curves of infant mortality follow practically the same course in towns where Centres are active as in those in which they are not. It is very difficult to compare the influences exercised by Maternity and Child Welfare work and by the other health agencies respectively. The greatly improved economic conditions of large sections of the population during the war, together with the restrictions on the consumption of alcohol, undoubtedly have had considerable effect but, on the other hand, overcrowding has increased, and the mortality rate was falling before the war. It was pointed out also that so far as general sanitary improvements as a factor are concerned, though they had long ago begun to affect the general death rate, it was only comparatively recently that the infant rate had begun to fall. We do not attempt to settle the value of statistical data which are open to, and are used for, widely differing inferences. It seems obvious, however, that the main causes of preventable infant mortality as catalogued above are beyond the *direct* control of Maternity and Child Welfare work. This work can have a direct effect only (a) on those causes due to accident or neglect at birth, by the provision of skilled attendance and proper conditions of delivery; (b) on those causes due to maternal ignorance, by dispelling that ignorance.

18. We are satisfied that Maternity and Child Welfare work has contributed to an appreciable extent to the reduction of infant mortality that has taken place, but we are of opinion that it is too early yet to determine what that extent has been. The problem is very complex, and other contributory causes were at work before the Centres existed and are still continuing to operate, such as the Midwives Act, Notification of Births Act, general sanitary improvements, recent great improvements in the economic condition of large sections of the population and recent favourable climatic conditions—less rigorous winters and cool wet summers, together with the increased attention that is being paid to the "racial poisons"—alcohol, syphilis and tubercle. But the effect of almost all the causes of infant mortality can be lessened by educating the mother to avoid or overcome them or minimise their effects, and by the formation, through the agency of the mothers, of an enlightened public opinion willing and anxiouse to combat these other direct causes by the appropriate means.

19. The influence on infant mortality of atmospheric pollution by smoke, not only by its irritant action on the respiratory organs but by deprivation of sunlight, is admittedly very great, and we are of opinion that every step should be taken by the Government and Local Authorities to reduce this pollution to a minimum.

HOW CAN THE WORK AND INFLUENCE OF THE CENTRES BE IMPROVED?

(a) *Maternal Welfare.*

20. We now proceed to consider how far the value of Maternity and Child Welfare work can be increased. So far as the *Maternity* part of the work is concerned it appears to us that the intention of the Ministry of Health to increase the provision of sufficient and suitable midwives and to secure the availability of skilled medical attendance when required, deserves the active support of the public and the medical profession.

21. We are of opinion that every effort should be made to improve the economic position and prospects of midwives and midwifery nurses in order to induce them to settle in both urban and rural areas; and that every encouragement should be given to them by Local Authorities where there is difficulty in securing a sufficient supply.

22. We consider that the intention of the Ministry to provide sufficient hospital accommodation for diseases of pregnancy and for difficult confinements, and maternity homes for normal confinements which cannot safely or coveniently be conducted in the patients' homes, needs to be prosecuted much more vigorously. There are still many areas in which such accommodation is entirely lacking or is very insufficient.

(b) *Infant Welfare.*

23. This work is manily conducted in or grouped round the Centres. These Centres are used in three ways:—(a) for educational, advisory, and preventive work; (b) for

the treatment of actual disease in infants; (c) for the provision of food and clothing or other material goods when necessary or desirable.

24. Nearly all the witnesses agreed that it is detrimental to the interests of the work to encourage the opinion that the Centre is a place to which to bring babies when they are ill, and that the real object of the Centres should be to induce mothers to bring the babies when they are well in order that they may be kept well. With this opinion we are heartily in agreement.

25. We have had a considerable amount of evidence to the effect that the gratuitous supply of artificial food and dried milk has proved detrimental to the best interests and influence of the Centres. The people who go to them mainly for what they can get very cheaply or for nothing are not as a rule the kind of people who value or will benefit by the educational work of the Centre.

26. As regards the question of *treatment* t the Centres we realise that it is difficult to draw a definite line between educative and preventive advice on the one hand and medical treatment on the other. At all Centres cases will occasionally present themselves in which very simple remedies for minor and transitory disorders may properly be given or ordered. We are of opinion that the primary and main object of the Centres should be educational, preventive and advisory; that no treatment should be given for conditions which in the absence of the Centre would be immediately recognised as calling for the attendance of a medical practitioner; and that it is against the best interests of the work to encourage or allow women to go to the Centres for what they can *get* rather than for what they can *learn*. We attach great importance to a clear understanding on this point, both in order to regulate the proper use of the Centre and to secure the hearty co-operation of the doctors of the district.

27. It has been argued by some that the necessary education of the mothers can be secured without the Centres by a combination of two other agencies—(a) the teaching by a doctor in the home, (b) the instruction of the elder girls at school in homecraft and mothercraft. We are of opinion that these agencies alone, though they should be encouraged and developed, would not cover all the ground even if everywhere available. It is found that many women evince no real interest in the subject of maternity until they are, or are about to become, mothers themselves, and all those who have practical acquaintance with the work attach great importance to the spirit of emulation aroused in the mothers by the presence of many babies week by week at the Centres.

MANAGEMENT AND STAFFING OF THE CENTRES.

28. In a good many areas Maternity and Child Welfare work and the establishment of Centres for this purpose have been begun by voluntary agencies entirely. In a large number of cases the work has now been taken over by the Local Health Authority, while, in other cases, the Authority has itself initiated the work. It is held by many that on financial grounds it will be necessary that the work should everywhere be supported by, and conducted under the auspices of, the Local Authority, and also that many women will more readily avail themselves of rate-maintained Centres than of the voluntary ones, because they regard the former as in the nature of a right, while the latter partakes of charity. However this may be, we think there are advantages in associating with this work a body of voluntary workers, the whole of the work being under the control of the Medical Officer of the Authority, in order that there may be proper co-ordination of all the preventive agencies.

29. There can be no doubt as to the desirability of securing the sympathy of the medical profession and midwives if the Centres are to be really successful, and we have had evidence that in some areas at any rate this is not forthcoming. This appears to have been due mainly to the fact that the promoters of some of the Centres have sought to turn them into what is practically an Out-patient Department for mothers and babies, and by means of solicitation by Home Visitors and by generous gifts of milk, etc., have tried to teach expectant mothers that the Centres are the places to which they should go and should take their babies for medical advice and treatment.

30. If we are right in believing that the legitimate sphere of the Centres is educative, preventive and advisory, and if this idea is cordially accepted by and acted upon by those in charge of the Centres, the goodwill of the medical profession and others concerned in a similar way can easily be secured. To this most desirable end we would strongly recommend (a) that the local medical profession, nurses and midwives should be assured that the activities of the Centre will be limited to the sphere above described, and (b) that these professions should be represented on the Statutory Committee of the Authority and on the Committees controlling the Centres, their representaives being nominated by their local organisations whenever such exist.

31. The method of *staffing the* Centres is a more difficult subject. Medical Officers to conduct this work may be recruited from two sources—either from among newly qualified men or women who intend to take up the work as an entrance to a public health career, or from among practitioners in general or consulting practice. Medical education at present, though not ignoring the subject of infant welfare, cannot be said to devote sufficient attention to it. The first method of recruiting, therefore, will provide officers who are not only unprepared but are entirely lacking in experience. No doubt by devoting themselves to the work they will rapidly become expert in some of its aspects, but if their life work is to be confined within these narrow bounds it becomes monotonous and is, in fact, a blind-alley occupation. If Maternity and Child Welfare work be only part of their work as officers in the public health service it may easily lose its expert character, and the appointment would tend to be regarded as merely a step to positions of greater importance in the service.

32. On the other hand, the experience of a suitable "family doctor" of some years' standing would be a very valuable asset in the work. His (or her) experience of the homes of the people, his knowledge of their home and industrial life, his public reputation, should all be useful. But most general practitioners are not, and would not claim to be, well fitted to undertake the continuous educative work which is the primary function of the Centre. In some areas it may be found that there are no such practitioners able and willing to undertake the work, but where there are such the utilisation of their services would offer some very obvious advantages. It is in any case essential for the success of the work that three conditions should be fulfilled:—(a) the medical officers should have knowledge of the work, and a real interest in it; (b) the appointment should be for a period sufficiently long to avoid frequent changes with the consequence that mothers and babies would be seen by different doctors in their visits to the Centres; and (c) the practitioners who accept the appointments should recognise that in doing so they have undertaken a public duty which must be carried out irrespective of the claims of their other work.

33. There is much to be said for the employment in these appointments of women practitioners, but many men are both specially qualified for and interested in the work and they should certainly not be excluded from it.

34. In order to increase the value of Maternity and Child Welfare work we are of opinion that it is most desirable that there should be available, as a necessary complement to it, proper domiciliary attendance by a "family doctor" whenever treatment is needed.

CONCLUSIONS AND RECOMMENDATIONS.

The following is a summary of our conclusions and recommendations:—

1. Maternity and Child Welware work has contributed in an appreciable degree to the reduction of infant mortality that has taken place, but it is too early to determine to what extent it has been effective (par. 18).

2. The effect of many of the causes of infant mortality can be lessened by the education of women at Centres and in their homes (par. 18).

3. The educational work amongst the mothers on the racial poisons (alcohol, syphilis and tubercle) and on the influence on infant mortality of pollution of the air by smoke and other impurities with the consequent deprivation of sunlight, should be encouraged and extended (pars. 18 and 19.)

4. The instruction of the elder girls at school in homecraft and mothercraft should be developed and encouraged (par. 27).

5. Every effort should be made to improve the economic position and prospects of midwives and midwifery nurses; and encouragement should be given to them by Local Authorities wherever there is difficulty in securing a sufficient supply (par. 21).

6. The provision of sufficient Hospital accommodation for diseases of pregnancy and difficult confinements, and maternity homes for normal confinements which cannot conveniently be conducted in the patients' homes, should be made general as soon as possible (par. 22).

7. The primary and main object of Maternity and Child Welfare Centres should be educational, preventive and advisory; no treatment should be given for conditions which, in the absence of the Centre, would be recognised as calling for the attendance of a medical practitioner; it is against the best interests of the Centres to encourage women to go to the Centre for what they can *get* rather than for what they can *learn* (par. 26).

8. There are advantages to the work in associating with the Centres a body of voluntary workers, but the whole of the work should be under the control of the Medical Officer of Health in order that all the preventive agencies may be co-ordinated (par. 28).

9. The support of tthe local doctors, nurses and midwives can and ought to be secured. This can be done if (a) it is made clear that the sphere of the Centres is restricted as recommended above, and, (b) if members of these professions are represented on the Statutory Committee and the Committees controlling the Centres, these representatives being nominated by the local organisations of these professions wherever such exist (par. 30).

10. The experience of the "family doctor" would be useful in the work at the Centres; but that practitioners accepting the appointments must have knoweldge of and a real interest in the work; the appointment should be for a long enough time to be administratively convenient; and those appointed should clearly realise that in accepting the post they must undertake to carry on the work irrespective of other claims on their time (par. 32).

11. For every mother and child up to five years of age there should be available domiciliary attendance by a family doctor (par. 34).

12. In order that medical practitioners should be fully equipped for Maternity and Child Welfare Work is desirable that the medical student should be educated in and be encouraged in the practice of duties in relation to (1) personal and domestic hygiene, and (2) industrial hygiene and other spheres of preventive medicine.

E. ROWLAND FOTHERGILL (Chairman).
T. RIDLEY BAILEY.
H. B. BRACKENBURY.
A. C. FARQUHARSON.
A. FORBES.
T. W. H. GARSTANG.
M. M. OGILVIE GORDON.
JEANNETTE HALFORD.
N. BISHOP HARMAN.
M. OLIVE HAYDON.
DOROTHEA IRVING.
J. R. KAYE.
S. MORTON MACKENZIE.
J. KENT PARSONS.
ERIC PRITCHARD.
E. B. TURNER.

ALFRED COX (Secretary),
British Medical Association,
429, Strand, London, W.C. 2.

June, 1921.

British Medical Association.

CURRENT NOTES.

The Annual Exhibition.

THE Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., in connexion with the Annual Meeting of the British Medical Association will be held this year in the St. George's Drill Hall, St. Mary's Place, Newcastle-upon-Tyne. Arrangements for the Exhibition are now practically complete, and there will be a large and representative display of the latest inventions and improvements in surgical instruments, appliances, etc., and of developments in medicinal and dietetic preparations. The hall lends itself admirably for the purpose of this exhibition, for it has an area of over 17,000 square feet on one floor. It is situated within a minute's walk of the College of Medicine, where the Reception Room will be arranged; members will thus be afforded a good opportunity of inspecting the exhibits. Luncheons, afternoon teas, etc., will be provided in the Exhibition, and a first class orchestra will play daily.

The Question of Federation.

A conference will be held at 429, Strand, W.C. 2, on Tuesday, July 5th, at 10 a.m., for consideration of the reports of the Council on the question of the Association becoming in part a federation (BRITISH MEDICAL JOURNAL SUPPLEMENT, March 5th, 1921, p. 55, and April 30th, p. 119, paras. 126–9, and p. 148), and matters connected therewith. Invitations to attend the Conference have been sent to representatives specially appointed for the purpose by the Oversea Branches and Federal Committees, by the Irish Committee (British Medical Association), by the Joint Organization Committee (Ireland), and by the Irish Medical Association; the representatives in the Representative Body and Members of Council appointed by the Oversea Constituencies and Branches and Ireland (1920–21 and 1921–22); and the members of the Organization and Dominions Committees and Scrutiny Subcommittee of the Organization Committee. The Conference will report to the Annual Representative Meeting at Newcastle.

Medico-Sociological Committee.

The Council, at its meeting on June 22nd, received the report of the Medico-Sociological Committee on "The value of maternity and child welfare work in relation to the reduction of infantile mortality." The Council decided that this document should be presented to the Representative Body and published in the SUPPLEMENT; it is printed in full at p. 6 this week. The report will also be circulated to local authorities and to other bodies interested in maternity and child welfare work which have either been represented on the Medico-Sociological Committee or have nominated witnesses; copies will subsequently be placed on sale, price 3d. The thanks of the Council have been accorded to the co-opted members of the Committee and to those who gave evidence before it. The names of all who thus rendered assistance in this inquiry are printed in the body of the report.

The Chairman of the Naval and Military Committee.

During the meeting of the Council on June 22nd Lieut.-Colonel R. H. Elliot, I.M.S.(ret.), Chairman of the Naval and Military Committee, made a personal announcement. He told the Council of a gift of plate which had just been made to him in acknowledgement of his work for the Indian Medical Service. He had received the intimation from India with regret in one way, because he would have much preferred the gift to have been made to the Association, and not to himself as an individual. Colonel Elliot warmly acknowledged the support always given by the Council to the Naval and Military Committee, and stated his conviction that but for the British Medical Association the Indian Medical Service would be "back in the mud." It was the Association which had done everything for the I.M.S., and other Services were now waking up to what had been accomplished. He said that he had accepted the plate as a representative for the time being of the British Medical Association, regarding it as a mark of appreciation for the great work the Association had done on behalf of the Indian Medical Service. The Chairman of the Council said that he thought the I.M.S. officers making the presentation had acknowledged very handsomely their debt of gratitude to the very energetic Chairman of a very energetic Committee, and in this opinion the Council cordially concurred. The silver salver bears the following inscription: "Presented by the Undersigned Officers to Lt.-Col. R. H. Elliot, I.M.S. (retired), in appreciation of his able and successful work on behalf of the Indian Medical Service. 1921."

The Solicitor's Visit to the Dominions.

The Supplementary Report of Council printed in this week's SUPPLEMENT contains a reference to the visit paid by Mr. W. E. Hempson, solicitor of the Association, to Canada, New Zealand, and Australia, during the course of which he had a number of conversations with prominent members of the Association in those countries. He has reported to the Council that he everywhere received a warm welcome from the officers of the oversea Branches, and that while in New Zealand and Australia he had many opportunities of discussing the work of the Association, and in particular the Federation proposals. The Organization Committee expressed the opinion that these conversations had been most helpful, and the Council on

June 22nd passed a vote of thanks to Mr. Hempson for the trouble he took, while travelling abroad for his health, to get into touch with representatives of the Association overseas, and discuss with them matters of importance to the Association. In the hope of finding a solution of the Federation problem which will best meet the needs of the Association overseas, including Australia, the Council has decided to postpone for the present the calling of the Extraordinary General Meetings announced in the SUPPLEMENT of March 5th, 1921, p. 56.

The Annual Meeting at Glasgow, 1922.

The Glasgow and West of Scotland Branch met at the Faculty Hall, Vincent Street, on Wednesday, June 15th, to make tentative arrangements for the annual meeting of the Association in Glasgow in 1922. Sir William Macewen, F.R.S., future President-Elect, was in the chair. A Selection Committee was appointed for the purpose of submitting to a future meeting names for membership of the General Committee. Dr. George A. Allan, 22, Sandyford Place, Glasgow, and Dr. James Russell, 12, Royal Crescent, Crosshill, Glasgow, were appointed Interim Secretaries, and will be glad to hear from those interested.

Association Notices.

NOTICES OF MOTION BY DIVISIONS FOR THE ANNUAL REPRESENTATIVE MEETING, NEWCASTLE, 1921.

By WEST DORSET DIVISION:

Federation.

That the principle of federation be agreed to, but confined to bodies limiting their membership to medical men.

By ST. HELENS and WARRINGTON DIVISIONS:

Legal Defence of Members of the Association.

That it be an instruction to the Council to consider whether the time is now opportune for the British Medical Association to undertake the legal defence of its members in all professional matters, including individual medical defence, and to report to the Annual Representative Meeting, 1922.

By SHEFFIELD DIVISION:

Central Medical Committee.

That this meeting endorses the view expressed by Dr. Addison, as Minister of Health, that in taking action to bring together a body representative of the whole profession for the purpose of consultation by the Government, the British Medical Association is the most suitable body to take steps for its organization.

Journal Committee and Editorial Staff.

That this meeting desires to express its great appreciation of the good work done by the Journal Committee and Editorial Staff, and congratulates them on the considerable sum realized by sales to non-members.

By BIRMINGHAM CENTRAL DIVISION:

Membership of Branch Councils.

That Recommendation 46 of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, p. 111) be amended by the deletion of the words "(i.e., one from each Division)."

Professional Secrecy.

That (with reference to para. 153 of the Annual Report of Council—SUPPLEMENT, April 30th, 1921, p. 122) the Association use all its powers to support a member who refuses to divulge, without the patient's consent, information obtained in the exercise of his professional duties.

Salaries of Professors and Teachers.

That the first Recommendation contained in para. 197 of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, p. 126) be amended to read as follows:

"That in view of the long period required for the education of a medical practitioner, the salaries of Medical Professors, Teachers, or Laboratory Workers, should be at a higher rate than at present."

Maximum Payment for Admission of Private Patients to Voluntary Hospitals.

That (with reference to the Seventh Recommendation in para. 251 of the Annual Report of Council—SUPPLEMENT, April 30th, 1921, p. 133) there should be a fixed maximum of payment for patients admitted as private patients to voluntary hospitals.

By NOTTINGHAM DIVISION:

Disposal of Surplus Funds of Approved Societies.

That the Representative Body considers it desirable that one of the first benefits to be supplied by the approved societies out of their surplus funds should be "nursing benefit."

Administration of Nursing Schemes.

That all nursing schemes should be administered by the Insurance Committees as a part of medical benefit, and that the nurses should always act under the doctor's instructions.

Use of Existing Nursing Associations.

That, where possible, use should be made of existing "nursing associations."

By NORTH CARNARVON AND ANGLESEY DIVISION:

Payment of Expenses of Representatives.

That the Council consider and report on the desirability of paying the out-of-pocket expenses of Representatives who attend meetings of the Representative Body.

By PRESTON DIVISION:

Fees for Medical Practitioners called in on the Advice of Midwives.

That the Representative Body express the opinion that the fee of one guinea paid to medical practitioners called in on the advice of midwives for attendance at or in connexion with an abortion or miscarriage, including all necessary subsequent visits during the ten days after and including the first visit, is inadequate, and instructs the Council to consider the advisability of taking steps with a view to the fee being increased.

By BUCKINGHAMSHIRE DIVISION:

Independent Committee to Investigate Expenditure of the Association.

That this meeting views with alarm the growing expenditure of the Association, and is of opinion that an independent committee should be appointed to investigate and, if possible, suggest economies.

By Dr. W. B. CRAWFORD TREASURE (Cardiff):

Professional Secrecy.

That the Representative Body protests strongly against the compulsory violation of professional secrecy on the part of a medical witness in a recent action in a civil court, and calls on the Government to take such action as is necessary to protect medical men from the obligation to divulge professional confidence in any court of law.

By LEINSTER BRANCH:

Irish Health Grants.

That it be an instruction to the Council to use the influence of the Association in whatever way it may think best to secure:

(1) That the State contributions towards the salaries of Poor Law medical officers in Ireland should not be diverted to other purposes; and

(2) That in the differences which have arisen between the Government and the local authorities in Ireland, the services directly concerning health should be regarded as immune, and State funds ear-marked for such services should not be diverted to other purposes.

By EAST YORKSHIRE DIVISION:

Establishment of Principles for Dealing with Local Authorities re Paying Patients in Poor Law Hospitals.

That it is important that definite principles should immediately be established for dealing with local authorities on the question of paying patients in Poor Law hospitals.

By REIGATE DIVISION:

Election of Twelve Members of Council.

That the method of election of twelve members of Council by twelve groups of U.K. Representatives remain as at present.

By BRIGHTON DIVISION:

Economies in Committee Expenditure.

That it be an instruction to the Finance Committee carefully to consider whether further drastic economies cannot be effected in the expenses of the various Committees, especially as regards printing.

Federation: Memoranda for Guidance of Representative Body in connexion with Approval of Corporate Members and Nominating Bodies.

That similar possibilities be offered for a Division as are proposed for a Branch under Rule 10. (See Appendix II to Annual Report of Council, SUPPLEMENT, April 30th, 1921, pp. 148–150.)

Professional Secrecy.

That the Recommendation contained in para. 153 of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, p. 122) be amended by the deletion of subpara. (*a*) of para. (1), and the deletion of the words "for instance in the notification of certain diseases" from subpara. (*b*) of para. (1).

Proposed Central Medical Committee.

That any scheme placed before the Minister of Health by which it is considered the collective opinion of the members of the medical profession in active practice can be obtained on questions of policy should be submitted to and approved by them; that it be an instruction to the Council to submit to all members of the medical profession in active practice, either directly or through the Division organization, the proposed scheme with a questionnaire and the aggregate voting thereon be recorded and forwarded to the Division and Representative Body together with the report on action taken.

Admission of Patients for Hospital Treatment.

That the second Recommendation in para. 251 of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, p. 133) be deleted, and the following substituted therefor:

> That inability to pay for adequate treatment shall be the consideration for the admission of all patients for hospital treatment: this shall not apply to Poor Law cases.

Subsidizing by Government of Hospitals in Financial Difficulties.

That the fourth Recommendation in para. 251 of the Annual Report of Council be deleted, and the following substituted therefor:

> That at the present time of financial difficulty it is desirable that the Central Government should subsidize voluntary hospitals. The subsidies here proposed should be made through some central hospital fund, and should not carry the right of any control in the management beyond that allowed to an ordinary private subscriber.

Support for Voluntary Hospitals by Employers, Approved Societies, and Insurance Companies.

That the fifth recommendation in para. 251 of the Annual Report of Council be amended by the insertion of the words "Approved Societies" after "Employers" in the third line.

Formation of Medical Staff Fund.

That the eighth recommendation in para. 251 of the Annual Report of Council be deleted, and the following substituted therefor:

> That in the event of decisions being taken which would lead to patients making payments not exceeding the cost of their individual maintenance, no portion of such payment should be passed into a fund allocated to the Honorary Medical Staff. That when the Board of Management of a Voluntary Hospital enters into a financial arrangement with a public authority, an employer of labour, Approved Society, Insurance Company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and at least a fifth part of all such receipts should be passed into a fund which is at the disposal of the Honorary Medical Staff of that Hospital.

Rider: That it be an instruction to the Council to bring this resolution to the notice of the Secretary and the Senior Honorary Medical Officer of each Voluntary Hospital, with a request that the policy therein outlined be adopted by the Board.

Future of Poor Law Infirmaries: Admission of Private Patients employing their own Doctor.

That the following be added to Recommendation 1 of Appendix VIII of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, pp. 157–159):

> In addition these beds should be available for (i) those patients on the waiting list of a voluntary hospital, and (ii) those able to be transferred from such hospitals, provided that the patients in both classes are capable of being attended by a general practitioner of ordinary competence and skill.

Representation of Profession on Management Committee.

That Recommendation 7 of Appendix VIII of the Annual Report of Council be amended by the substitution of the words "nominated by members of the local profession" for "small but" in the second line.

Use of Sick Wards in Workhouses for Chronic Cases.

That Recommendation 9 of Appendix VIII of the Annual Report of Council be deleted and the following substituted therefor:

> That to meet the need of accommodation for senile and chronic cases a part of the Poor Law institution be separated from it whenever possible, which should be formed into an infirmary dependence under the control of the medical superintendent of the infirmary.

Provident Scheme for Hospital Benefits and Additional Medical Services.

That the Draft Scheme prepared by Sussex of an organization for a National Provident Scheme be approved by the Representative Body as conforming to the policy of the Association on Voluntary Hospitals.

By EDINBURGH AND LEITH:

Question of Recognition of Divisions and Branches which have not adopted Rules.

That the recommendation in para. 62 of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, p. 112) be amended by the deletion of all words after "Organization" in the seventh line.

Representation of Scotland on the Central Council.

That the first Recommendation in para. 92 of the Annual Report of Council (SUPPLEMENT, April 30th, 1921, p. 115) be amended to provide that the two representatives of Scotland on the Central Council shall be elected, as at present, one by the Eastern and one by the Western group of Representatives.

By GLASGOW EASTERN:

Vaccination.

That the General Medical Council be petitioned to declare that it be regarded as infamous conduct in a professional respect for any public vaccinator or practitioner to train other than medical students in the operation of vaccination.

COUNCIL, 1921–22.

NOTICE is hereby given that nominations for candidates for election as Members of Council by Grouped Representatives for the year 1921–22, under By-law 46 (*c*), will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative

Meeting on Friday, July 15th, 1921. Each nomination must be on the prescribed form (A.R.M. 10), copies of which will be forwarded by the Medical Secretary on application. The voting papers will be issued at the Representative Meeting.

SUGGESTED CHANGES OF AREAS.

DIVISIONS OF KENT BRANCH.

NOTICE is hereby given to all concerned of the following proposals made by the Kent Branch:

That the existing Ashford and Canterbury and Faversham Divisions be discontinued, the following changes of boundaries being made in order to give effect thereto:

(1) *Ashford Division.*

(*a*) The M.B. and R.D. of Tenterden to be incorporated in the Maidstone Division.

(*b*) The M.B.'s of Lydd and New Romney, the U.D. of Ashford, and the R.D.'s of East Ashford, Romney Marsh, and West Ashford to be incorporated in the Dover and Folkestone Division.

(2) *Canterbury and Faversham Division.*

(*c*) The M.B. of Queenborough, the U.D.'s of Sheerness, Milton Regis, and Sittingbourne, and the R.D.'s of Sheppey and Milton to be incorporated in the Rochester, Gillingham, and Chatham Division.

(*d*) The C.B. of Canterbury, the M.B. of Faversham, the U.D.'s of Whitstable and Herne Bay, and the R.D.'s of Blean, Bridge and Faversham to be incorporated in the Isle of Thanet Division.

Written notice of the proposals has been given to the Divisions concerned, and the matter will be determined in due course by the Council. Any member affected by the proposed change, and objecting thereto, is requested to write, giving the reason therefor, to the Medical Secretary, 429, Strand, W.C.2, not later than August 2nd, 1921.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH: EALING DIVISION.

A MEETING of the Ealing Division was held on June 23rd, when Dr. BELL, Chairman of the Division, presided.

The General Practitioner and the Hospital Question.

Dr. ANDERSON, the Deputy Medical Secretary of the Association, delivered an address entitled "The position of the general practitioner in relation to the hospital question." He gave a general review of the whole hospital problem, starting with the resolutions which had been passed at the Conference of Representatives of Voluntary Hospitals which was held in December last. He enumerated briefly the chief points contained in the summary of evidence which representatives of the Association had submitted to the committee presided over by Lord Cave which inquired into the financial position of voluntary hospitals throughout the country. He also indicated the salient matters which had been dealt with in the Council's Report on the Future of the Poor Law Infirmaries, and drew the attention of the members present to the situation which now exists with regard to the admission of paying patients to the West Middlesex Hospital (known formerly as the Brentford Union Infirmary), and to the fact that the private practitioner had no right of entry. Dr. Anderson also explained the medical provident scheme which had been drafted by the Council of the Metropolitan Counties Branch. This scheme, he stated, was adapted from the Sussex Provident Scheme, and contained a suggested organization for London. Dr. Anderson pointed out that admirable as the scheme might be in many respects, it still made no provision which would enable the general practitioner to take part in the institutional treatment of his patient on the lines laid down in the interim report of the Consultative Council. He questioned whether the scheme could be a success unless the payments which were to be made by those who were to be entitled to benefit were arranged upon some contributory method which was compulsory, so as to secure a regular income without which the scheme was bound to be a failure.

Several members took part in a subsequent discussion, and the proceedings terminated with a hearty vote of thanks to Dr. Anderson for his address.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.

THE annual general meeting of the City Division was held at the Metropolitan Hospital on May 27th, when Dr. CUTHBERT DIXON was in the chair. The Treasurer's account and report were received and passed.

The following officers were elected for ensuing year:

Chairman: Dr. C. E. Evans. *Vice-Chairman:* Dr. Hands. *Secretary:* Dr. Worley. *Representatives in Representative Body:* Dr. Thomas and Dr. Worley. *Deputies:* Dr. Ross, Dr. Jackson.

The points raised by the Willesden Division in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of January 29th were discussed and approved. The Representatives were given a free hand in the main as regards their action at the Annual Representative Meeting, but were instructed to take special action with regard to three clauses.

Dr. BRACKENBURY explained the National Provident Scheme for Hospitals and Additional Medical Services, which was followed by a brisk discussion. A hearty vote of thanks was accorded to Dr. Brackenbury for attending the meeting and giving the members the opportunity of hearing the scheme explained by one so well qualified to do so. A vote of thanks to Dr. H. Cuthbert Dixon, the retiring chairman, for the able and untiring manner in which he had performed his duties during the past year, was carried unanimously.

KENT BRANCH.

THE annual meeting of the Kent Branch was held on June 9th at the London County Council Mental Hospital, Bexley (by kind permission of the Asylums and Mental Deficiency Committee). Members and their wives, to the number of about fifty, were entertained to lunch by the President-elect. At the meeting the annual report and financial statement were presented. Three scientific meetings had been held (see SUPPLEMENT, June 4th, 1921, p. 207), and one addressed by Lord Dawson of Penn on primary health centres. Margate, Dover, Dartford, and Maidstone had been visited, and the average attendance had been twenty-five. Twenty-five candidates were elected during the year, the present membership being 363. A series of scientific meetings arranged in the Maidstone and Tunbridge Wells Divisions during the winter were well attended.

The officers for 1921–22 were elected as follows:

President: Lieut.-Colonel T. E. Knowles Stansfield, C.B.E. (Dartford). *President-elect.* Dr. P. G. Lewis (Folkestone). *Vice-Presidents:* Mr. W. E. Sutcliffe, O.B.E. (Margate), Mr. T. F. Hugh Smith (Dartford). *Honorary Secretary and Treasurer:* Dr. E. A. Starling (Tunbridge Wells).

The PRESIDENT, Medical Superintendent of the Mental Hospital, then delivered his presidential address on "Our C 3 Population," dealing chiefly with the causes of mental deficiency—those associated with prenatal conditions, infancy and adolescence. Subsequently the President and Mrs. Stansfield gave a garden party, to which a large number were invited besides the members. The string band of the Royal Engineers, the beauty of the grounds, and the charming hospitality of the host and hostess, made the day a great success. This is the first occasion on which ladies have been invited.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.

THE annual meeting of the Division was held at Newtown St. Boswells on June 10th. The following officers were appointed:

Chairman: Dr. P. J. Henderson. *Vice-Chairman:* Dr. George Henderson. *Representative in Representative Body:* Dr. W. L. Cullen. *Deputy Representative:* Dr. J. S. Muir. *Honorary Secretary and Treasurer:* Dr. M. J. Oliver (re-elected). *Representative on Scottish Committee:* Dr. J. S. Muir.

A hearty vote of thanks was accorded to Dr. Fleming for his conduct in the chair during the past year; Dr. MUIR, in proposing it, referred to the great success of the annual dinner at Kelso, held under Dr. Fleming's auspices.

A communication was read from Dr. Barrie, medical officer of the Hawick Maternity and Child Welfare Committee, with reference to an account for fees for attendance on the scale approved as a minimum by the Association, and stating that the Board of Health had refused to approve the account. The Board had stated that the maximum fee they could approve was 13s. 4d. per hour. After discussion, the Honorary Secretary was directed to communicate with the practitioners in Hawick with a view to supporting Dr. Barrie, and to communicate with practitioners in other maternity centres.

Mr. HENRY WADE, D.S.O., C.M.G., gave a most interesting and practical address on the modern treatment of fractures, and exhibited splints and models showing methods of treatment. At the conclusion many questions were asked and much interest was taken in the exhibits.

A hearty vote of thanks was accorded to Mr. Wade for his address, and the CHAIRMAN, in proposing the motion, said the members were greatly indebted for his very clear and practical exposition of modern methods.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.

THE annual meeting of the Buckinghamshire Division was held on June 14th at the Crown Hotel, Aylesbury, when Dr. KENNISH was in the chair.

The minutes of the last meeting were read and confirmed.

The following officers were elected for the year:

Chairman: Dr. Huggins. *Vice-Chairman:* Dr. Rose. *Secretary and Treasurer:* Dr. Perrin. *Representative in Representative Body:* Dr. Rose. *Deputy Representative:* Dr. Selborne Bailey.

A vote of thanks was accorded to the retiring secretary, Dr. Larking, for his service during the last twelve years.

On considering the report of the Central Council of the Association attention was drawn to the continuous increase of the expenses incurred. Every year it went up and no efforts seemed to be made to put a stop to it. The present Treasurer did not seem to exercise his influence for economy nearly to such an extent as previous ones. The following resolution was carried unanimously:

That this Division views with alarm the growing expenditure of the Association and is of opinion that an independent committee shall be appointed to investigate and, if possible, suggest economies.

Dorset and West Hants Branch: West Dorset Division.

THE annual meeting of the West Dorset Division was held on June 8th, when the following officers were elected:

Chairman: Dr. P. W. MacDonald. *Vice-Chairman*: Dr. J. F. L. Whittingdale, O.B.E. *Honorary Secretary and Treasurer*: Dr. A. N. Haig. *Representative in Representative Body*: Surgeon-Lieut.-Colonel Decimus Curme.

The Division model rules of organization were considered and adopted as amended.

In reference to the question of federation, the following resolution was unanimously passed:

That the principle of federation be agreed to, but confined to bodies limiting their membership to medical men.

South-Western Branch: Plymouth Division.

THE annual general meeting of the Plymouth Division was held on June 8th. Colonel A. B. Soltau, C.M.G., C.B.E., having completed his year of office as Chairman, was unanimously thanked, and Dr. C. L. Lander, D.S.O., M.C., was chosen as his successor for the ensuing year. Dr. S. Noy Scott was re-elected honorary secretary.

The annual report of the Central Council and the agenda of the Representative Meeting were considered, and it was resolved to hold another meeting early in July for the same purpose. The Representative was requested to vote for federation with medical societies only. It was resolved to hold a clinical meeting in September, and if possible at the South Devon and East Cornwall Hospital.

Yorkshire Branch: Sheffield Division.

A GENERAL meeting of the Sheffield Division was held on June 17th, when Dr. H. CAIGER presided. The annual Report of Council was discussed and the following resolutions passed:

1. That this meeting endorses the view expressed by Dr. Addison, as Minister of Health, that in taking action to bring together a body representative of the whole profession for the purpose of consultation by the Government, the British Medical Association is the most suitable body to take steps for its organization.
2. That this meeting desires to express its great appreciation of the good work done by the Journal Committee and Editorial Staff, and congratulates them on the considerable sum realized by sales to non-members.

The Representatives were instructed to oppose the motion by the Portsmouth Division (SUPPLEMENT, April 30th, p. 160) which proposes to preclude whole-time officers of public authorities from private practice during and for five years subsequent to their appointments, the opinion being expressed by the meeting that in this proposal much too wide powers were asked for.

MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The summer meeting will be held at 3 p.m. on Wednesday, July 6th, at the Grosvenor Hotel, Swanage, Dr. F. C. Bottomley, O.B.E. (President), in the chair. Mr. A. Basil Rooke, F.R.C.S. (Vice-President), will read a paper on "Some diagnostic problems in general practice." Luncheon will be served at the Grosvenor Hotel at 1.30 p.m.; price 4s. Tea will be provided after the meeting by the kind invitation of the Swanage practitioners. Members are invited to view the new Children's Hospital at Swanage. Arrangements will be made for those not travelling by private cars from Bournemouth and district to travel by motor coach or taxis. Application should be made to Dr. Asten, Talbot Hill, by July 3rd.

EAST YORKS AND NORTH LINCOLN BRANCH. The sixty-fifth annual meeting of the above Branch will be held at Grimsby on Friday, July 15th. The place and hour of meeting will be announced later. Business: Election of officers and presidential address. Nominations must be in the hands of the honorary secretary before July 1st.

OXFORD AND READING BRANCH.—The annual meeting of the Branch will be held at Maidenhead on Wednesday, July 6th, at the Town Hall at 3.30 p.m. Any members wishing to show cases or read notes should communicate at once with Dr. E. W. Squire, 223, King's Road, Reading. Dinner will be arranged afterwards at one of the riverside hotels. Those intending to be present and having room in their cars or requiring a lift are asked to write to the secretary.

SURREY BRANCH.—The annual meeting of the Surrey Branch will be held at Guildford on Friday, July 8th.

EIGHTY-NINTH ANNUAL MEETING

OF THE

British Medical Association.

NEWCASTLE, JULY, 1921.

ACCOMMODATION AT NEWCASTLE.

(REVISED LIST.)

Hotels.

No single rooms are now obtainable. It is still possible for two members to engage a room with two beds. The Clyde and Norfolk are strictly commercial hotels. Doctors bringing their wives with them should apply to the other hotels on the list. N.B.—Early application should be made for such accommodation as remains.

Application for accommodation at any of the hotels outside Newcastle should be made to the representative of the Hotels, Lodgings, and Billetting Committee resident in that town. The names and addresses of these doctors are published in each case.

These hotels are specially suited for members who intend to make their visit coincide with their annual holiday. Details as to distance and train service are inserted, so that members may judge of their convenience in attending sectional meetings and evening functions. It is possible, of course, that the train services may be modified before the date of the meeting, and the hotel tariffs quoted are also liable to alteration. The prices quoted are for single persons per night. Members, when making application for rooms at hotels, should head their note-paper "Annual Meeting, British Medical Association."

NEWCASTLE-UPON-TYNE.

	Bed and Breakfast.	Lunch.	Dinner
Turk's Head	11/-	3/-	5/-
County	From 9/6	3/-	4/6
Douglas	12/6	3/6	6/-
Tyne Temperance	9/-	—	—
Clyde	8/-	—	—
Norfolk	8/-	3/-	—

Several of the above hotels, as indicated, do not give lunch or dinner. There are abundant restaurants in the town where such meals can be obtained, as also at the other hotels included in the list.

St. Margaret's	10/6	3/-	4/-
Imperial	10/6	3/-	5/-
Kensington	8/6	2/6	3/6
Osborne	10/6	3/6	5/-

These hotels are chiefly residential. They each expect to have a number of rooms available at the date of the meeting.

Teas can be had at all the hotels mentioned above, and some will quote terms which are inclusive for the day or week. Particulars could be obtained by application to the Manager. All these hotels are within a short distance of the Reception Room.

WHITLEY BAY.

Popular seaside resort; bathing, boating, etc. On coast, close to Tynemouth. Train service: journey, half an hour by electric train, every quarter or half hour. Late trains available till 11.45 p.m.

Waverley	9/-	3/-	4/-
Royal	10/6	4/-	5/-
Avenue	10/-	3/6	5/-
Esplanade (a number of rooms with twin beds)	8/6	3/6	6/-

Local Representative: Dr. N. R. Rawson, Rydal House, Esplanade, Whitley Bay.

TYNEMOUTH.

Popular seaside resort. Attractions and train service are the same as for Whitley Bay. Journey 24 minutes.

Bath Hotel	8/-	3/-	3/6
Morro House (Boarding House, Mrs. Sainsbury, Syon Street, Tynemouth)	6/-	—	2/6

Local Representative: Dr. J. A. Hislop, Public Health Offices, Tynemouth.

DURHAM.

Train service: 40 minutes slow; 20 minutes express. Morning trains convenient, and last train 10.50 p.m.

County: Bed and breakfast, 10/6; inclusive charge per day, £1 1s.
Three Tuns: Bed and breakfast, 9/-; inclusive charge per day, 17/6
Rose and Crown: Bed and breakfast, 8/-; inclusive charge per day, 16/-
Other meals can be obtained at the above hotels.
Avenue Hotel (Temperance): Terms moderate.

Local Representative: Dr. F. F. T. Hare, The Avenue, Durham.

SOUTH SHIELDS.

Frequent train service; journey 34 minutes. Convenient trains. Last train 11.45 p.m.

	Bed and Breakfast.	Lunch.	Dinner.
Golden Lion	8/6	3/6	4/6
Regent	8/6	2/6	5/-
Royal	10/6	4/-	5/-

Local Representative: Dr. W. Campbell Lyons, 11, Ogle Terrace, South Shields.

SUNDERLAND.

Seaside resort. Golf, etc. Numerous and convenient trains; journey 22 minutes express). Last train from Newcastle, 11.18 p.m.

Grand	8/6	3/-	4/-
Queen's	8/6	3/6	4/6
Roker	8/-	2/6	4/6
Park Hotel	8/6	4/6	4/6

Local Representative: Dr. H. Boyd Cunningham, 13, Ward Terrace, Sunderland.

HEXHAM.

Very beautiful old market town, abounding in natural and historical interest. Situated on the Tyne about twenty miles from Newcastle. Golf, etc. Convenient and frequent trains; journey, 35 minutes express; 50 minutes slow. Last train 9.50 p.m.; 10.45 p.m. Thursdays only.

Hydropathic.	Special terms for doctors attending the meetings, 12/- per day.		
Royal	8/-	—	3/-
Abbey	8/6	(Inclusive charge per day, 14/-)	

Local Representative: Dr. J. A. Jackson, Carntyne, Hexham.

CORBRIDGE.

A lovely residential spot in the beautiful Tyne valley, about five miles east of Hexham, and of great archaeological interest. Train service: Express 40 minutes; convenient morning trains. Last train from Newcastle 9.50 p.m.; 10.45 p.m. Thursdays only.

Wheatsheaf, Tyndale, Angel — Bed and breakfast, between 5/- and 7/6.

Local Representative: Dr. D. N. Jackson, Bridge House, Corbridge.

MORPETH.

Another fine old market town. Train service: Express 40 minutes; convenient trains. Last train from Newcastle 8.55 p.m.; 10.52 p.m. Thursdays only.

George and Dragon, Queen's Head, New Phoenix — Terms on application.

Local Representative: Dr. H. O. Dickie, Ward House, Morpeth.

CHOLLERFORD.

Quaint and picturesque village, near Roman wall and camp; 26 miles from Newcastle. Fishing, motoring.

The George: For terms apply to the Manager.

The hotels at Hexham, Morpeth, Corbridge, and Chollerford are on main roads to Newcastle, and would be very well suited for doctors bringing their cars with them. Many of the hotels quote reduced figures for double rooms when shared by two people. Inquiry should be made about this when engaging rooms.

Hostels.

Easton Hall, Eskdale Terrace, Jesmond, Newcastle. — This students' hostel has been very kindly put at the disposal of the Association. It is in the residential quarter of Newcastle, and quite near the Reception Room. The rooms, though small, are very comfortable, and there are writing and reception rooms. Each room has a single bed, and only men can be taken. There are several tennis courts in the grounds, which would be available for the members. Rooms only available from Monday, July 18th, to Saturday, the 23rd. Terms: Bed and breakfast, 8s. if member stays longer than two nights, 10s. if staying for one or two nights only. Tea (1s.) and dinner (3s. 6d.) will be provided if sufficient notice is given each day.

School of Cookery, Northumberland Road, Newcastle. — A limited number of rooms have been placed at the disposal of the Association from the 15th to the 22nd July. Terms: Bed and breakfast only (10s.). The school is situated directly opposite to the Reception Room.

Application for rooms at Easton Hall and the School of Cookery to be made to Dr. E. Farquhar Murray, 52, Jesmond Road, Newcastle.

Fenham Training College for Women.—By the courtesy of the Reverend Mother of the Convent of the Sacred Heart, Fenham, the rooms at the Training College under the control of the Convent have been placed at the disposal of the Association. The Committee have reserved this accommodation for medical women attending the meeting. The Training College is situated in large and beautiful grounds, and is only two or three minutes' walk from Fenham tram terminus. Terms: Bed and breakfast, 8s.; dinner (optional) 3s. 6d.; tea, 1s. Application for rooms should be made to Dr. Ethel Williams, 3, Osborne Terrace, Newcastle.

Lodgings.

A list of lodgings is available, and members desiring such accommodation should note the following instructions when making application to the Honorary Secretary, Hotels, Lodgings, and Billetting Committee, 52, Jesmond Road, Newcastle-upon-Tyne, who will send the addresses of lodgings most likely to meet their requirements.

1. Engaging rooms for a week will be much easier than for a night or two. The majority of landladies want this, although a number state terms for a night.
2. The charges for bed and breakfast range from 6s. to 12s. 6d. The range, therefore, should be stated.
3. The number for whom accommodation is required should be stated, and whether doctors, lady doctors, or doctor and wife.
4. The majority of the landladies offer only bed and breakfast. It should be stated if more meals are required.
5. The exact dates of arrival and departure should be given.
6. When writing state if, failing accommodation being found in lodgings, the member would be willing to put up at an hotel, hostel, or elsewhere.

Medical Women.

Those who propose to come to the Meeting and have any difficulty in finding accommodation are requested to communicate with Dr. Ethel Williams, 3, Osborne Terrace, Newcastle-on-Tyne, who is Chairman of the Lady Doctors' Subcommittee.

Guild of St. Luke.

Members of the Guild of St. Luke who are coming to the Meeting are invited to apply to Dr. George Foggin, 3, Windsor Crescent, Newcastle-upon-Tyne, who will make arrangements for their accommodation.

Tariff for Meals.

Breakfast, lunch, tea, and dinner, also cold supper (till 10 p.m.) can be obtained at the Grand Assembly Rooms, Barras Bridge, which is to be a medical club during the meeting. Similar meals will be supplied at the Medical Institute, 7, Windsor Terrace, which is only a few minutes' walk from the Assembly Rooms.

The following Hotels and Cafés have agreed to supply meals at the undermentioned prices:

Name.	Lunch.	Tea.	Dinner.
Central Exchange Hotel	*À la carte*	From 1/6	4/-
Tyne Hotel	Sunday only, 3/6	Plain, 1/6; meat or fish, 3/-	—
Douglas Hotel	3/6	Plain, 1/6; high tea, from 3/6	5/-
County Hotel	3/6	1/- and 1/6	5/-
Imperial Hotel	3/6	1/3	4/6
Station Hotel	4/-	1/6	7/6
St. Margaret's Hotel ...	3/6	Plain, 1/6; high tea, 2/6	4/6
Tilley's Restaurant ...	5/- and 3/6*	—	5/- and 7/6
Emerson's Restaurant ...	2/6*	—	3/- and 4/-
Empire Cinema Café ...	2/-	—	—
Trocadero Restaurant ...	3/-	Plain, 1/-; meat, 2/6	4/6
Drawing Room Café ...	2/1	1/-	Not supplied
Coxon's Café	2/6	1/3	Not supplied

* Also *à la carte*.

General Information.

The Honorary Secretary of the Hotels and Lodgings Committee, Dr. E. Farquhar Murray, 52, Jesmond Road, Newcastle-upon-Tyne, will gladly give any information about accommodation to members who apply to him. No anxiety need be felt on the question of securing accommodation if members will only make arrangements in good time.

INSURANCE.

LONDON INSURANCE COMMITTEE.

Excessive Prescribing.

AT the meeting of the London Insurance Committee on May 26th, a statement was made on the special investigations which have been proceeding for some months into cases of excessive prescribing. The first difficulty was to arrive at a datum line above which a prescription might be regarded as apparently excessive. The plan was followed of adding 10 per cent. to the average cost of prescriptions for the area; this brought the figure to 11d., and it was soon evident that if a

clean cut was made at this level the number of prescriptions extracted for detailed examination would be far more than any staff could manage. Ultimately it was decided that the prescriptions of all practitioners whose average per prescription exceeded 13d. should be submitted to the Panel Committee for investigation. In the last quarter for which details were available the average cost per prescription was 9.58d., and the number of doctors whose average exceeded 12d. per prescription was 36. In 1916 the average cost per prescription was 5½ d., and the great increase was due to the additional remuneration to chemists and to the rise in the cost of drugs and appliances. A reduction of 2½ per cent. in the present cost of prescriptions would save £5,000 a year. The Panel Committee had found the high cost of prescriptions to be due to the prescribing of larger quantities of lint, wool, and other dressings than the nature of the case demanded, to the prescribing of liniments, paints, and ointments in unnecessarily large quantities on the first occasion of treatment; to the prescribing of rectified spirit when methylated spirit would serve the purpose, and to the prescribing of proprietary preparations when non-proprietary preparations, whose formulae were published in standard works of reference, would appear to be equally efficacious. The Panel Committee was kept informed by the Insurance Committee of all cases of apparent extravagance in prescribing, but up to the present only one case had been reported to the Insurance Committee by the Panel Committee for surcharge.

The view of the Panel Committee, as put forward by its chairman, Dr. Cardale, was that by educational work in the shape of intimations as to the high cost of drugs and also warning letters to practitioners whose prescriptions were unusually costly, it had succeeded in keeping down the cost of prescriptions without impairing the efficiency of treatment. Dr. Cardale thought that very little excessive prescribing went on, and what there was was not the prescribing of expensive preparations so much as the unnecessarily liberal use of certain familiar articles on the part of certain doctors. The Committee passed a resolution that the results obtained in connexion with the preparation of reports and statistics incidental to the investigation by the Panel Committee of excessive and extravagant prescribing had not been commensurate with the expenditure incurred.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments and promotions are announced by the Admiralty:—Surgeon Commanders: A. C. Bean to the *Dido*, R. H. Atkins to the *Blenheim*, C. H. L. Petch to the *Dauntless*, J. McA. Holmes, D.S.O., to the *Pembroke* for R.N. Hospital, Chatham, J. H. Lightfoot to the *Tiger*. Surgeon Lieutenant Commanders: F. C. Alton, O.B.E., to the *Valiant*, J. H. B. Martin to the *Fisgard*, additional for R.N. Barracks, J. P. Shorter, D.S.C., to the *Resolution*, H. St.C. Colson to the *Malabar* for R.N. Hospital, Bermuda. Surgeon Lieutenants W. J. Colborne to the *Comus*, C. N. Carter to the *Victory*, additional for Haslar Hospital.

Surgeon Lieutenants (ret.) A. L. Robinson, G. A. Jackson, and W. L. Cowardin have been promoted to the rank of Surgeon Lieutenant Commander (ret.), seniority respectively May 12th, 1916, May 14th, 1917, and May 19th, 1919.

ARMY MEDICAL SERVICE.

Temporary honorary Colonel C. J. Bond, C.M.G., relinquishes his commission and retains the honorary rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonels C. A. Stone and H. W. H. O'Reilly are placed on retired pay.

Temporary Captains relinquish their commissions and retain the rank of Captain: J. P. Bonfield, M.C., C. F. Simpson, B. N. Sinclair.

ROYAL AIR FORCE.

MEDICAL BRANCH.

The date of appointment of the following Flight Lieutenants to permanent commissions is antedated to August 1st, 1919: D'A. Power, M.C., K. Biggs, M.C., T. C. StC. Morton.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captain J. Grant-Johnston to be D.A.D.M.S., South Midland Division.

Captains to be Majors: B. E. Potter, A. R. Muir.

Major J. A. Paterson, M.C. (late R.A.M.C.), to be Lieutenant, with precedence as from May 29th, 1916, and relinquishes the rank of Major.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel W. H. Stephen resigns his commission and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

DEFENCE FORCE.

R.A.M.C.—To be temporary Majors: J. W. Littlejohn, M.C., A. Baird (Lieutenant-Colonel, R.A.M.C., retired pay—April 11th to April 24th inclusive). To be temporary Captain: E. W. Wesley.

2nd South Midland) Field Ambulance (D.F.).—The following officers relinquish their commissions: Temporary Lieut.-Colonel R. A. Broderick, D.S.O., M.C., temporary Captains L. G. Parsons, H. W. Featherstone.

1st (Welsh) Field Ambulance (D.F.).—To be temporary Major: R. A. Beaver, O.B.E., April 15th (substituted for notification in the *London Gazette* of May 24th, 1921, appointing this officer as temporary Quartermaster with the rank of Captain).

1st (West Lancashire) Field Ambulance (D.F.).—R. R. Thompson, M.C. (Captain R.A.M.C.), is granted the rank of temporary Major. Temporary Major F. W. B. Young relinquishes his commission.

2nd (Wessex) Field Ambulance (D.F.).—To be temporary Major: T. M. Jamieson. To be temporary Captains: W. J. Radford, W. L. Cowardin, H. G. Ludolph, G. H. S. Letchworth.

DIARY OF SOCIETIES AND LECTURES.

HUNTERIAN SOCIETY, 13, Upper Wimpole Street, W.—Wed., 9 p.m., Special meeting for election of president and officers for 1921-1922.

ROYAL SOCIETY OF MEDICINE.—Mon., 8.30 p.m., resumed discussion: The Problem of the Private Clinic System in Great Britain. If thought desirable the following resolution may be moved: "That in the opinion of this meeting the time is ripe for the formation of Group Clinics in this country, and that sympathetic encouragement should be given to them by the profession and by its governing bodies."

UNIVERSITY OF LONDON.—Tues., 5 p.m., Semon Lecture (at 1, Wimpole Street, W.) by Dr. W. Jobson Horne: The Relationship of the Larynx to Pulmonary Tuberculosis.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.1.—Thurs., 4 p.m., Dr. Langmead: Pulmonary Tuberculosis.

LONDON HOSPITAL MEDICAL COLLEGE, E. *Surgical Unit:* Tues. and Thurs., 4.15 p.m., Mr. H. S. Souttar: Injuries of the Peripheral Nerves.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., In- and Out-patient Clinics, Operations, etc. *Lecture-Demonstrations:* 3 p.m., Tues., Mr. C. H. Hayton: Diseases of the Larynx—(1) inflammatory, (2) destructive. Wed., Mr. W. E. Tanner: Some Common Affections of Joints. Fri., 4.30 p.m., Dr. C. E. Sundell: Breast Feeding, Weaning.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward visits 2 p.m., In-patient Clinics and Operations. *Lectures*, 5 p.m., Mon., Mr. Armour: Diseases of the Gall Bladder and Ducts; Tues., Mr. Baldwin: Surgery of the Rectum; Wed., Dr. Simson: Sterility; Thurs., Dr. L. Williams: Vitamins and Internal Secretions; Fri., Mr. Addison: Inflammation and Tumours of the Breast.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JULY.

1 Fri. London: Agenda Committee, 2.30 p.m.
Cambridge and Huntingdon Branch, Annual Meeting, Harlech House, Burwell, 12.30 p.m. Luncheon, 1.30 p.m.
5 Tues. Conference on Question of the Association becoming a Part a Federation, 429, Strand, London, W.C., 10 a.m.
6 Wed. London: Hospitals Committee, 2.30 p.m.
Dorset and West Hants Branch, Summer Meeting, Grosvenor Hall, Swanage, 3 p.m. Luncheon, 1.30 p.m.
Oxford and Reading Branch Annual Meeting, Town Hall, Maidenhead, 3.30 p.m.
7 Thur. London: Science Committee, 2.30 p.m.
8 Fri. Surrey Branch Annual Meeting, Guildford.
15 Fri. East Yorks and North Lincoln Branch, Annual Meeting, Grimsby.

APPOINTMENTS.

BEATTY, W. J., L.R.C.P.Edin., L.R.F.P.S.Glas., Medical Referee under the Workmen's Compensation Act, 1906, for the Middlesbrough Stokesley and Guisborough County Courts, vice Dr. Samuel Walker.

HAIRE, Norman, Ch.M., M.B.(Sydney), Clinical Assistant, Out-patient Department for Women and Children, London Lock Hospital.

SHEEN, A. W., C.B.E.(Military), M.S., F.R.C.S., Professor of Surgery, Welsh National School of Medicine, as from October 1st, 1921.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTH.

RIGGALL.—On June 20th, at 31, Wimpole Street, W.1, the wife of Robert M. Riggall, L.R.C.P.Lond. and Edin., of a daughter.

MARRIAGE.

EDWARDS—JONES.—June 25th, 1921, at Bryn Du (C.M.) Church, Llanfaelog, Anglesea, Thomas P. Edwards, M.D., B.S.Lond., D.P.H. Cantab., of Ardwyn, Ruthin, N. Wales, to Eveline daughter of the late D. H. Jones (Carnarvon) and of Mrs. Jones, Morianfa, Rhosneigr, N. Wales.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 9TH, 1921.

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British Medical Association.

CURRENT NOTES.

Conference with Oversea Representatives regarding Federation.

A Conference was held at 429, Strand, on Tuesday, July 5th, 1921, at 10 a.m., of Representatives of the Overseas Branches and Representatives of the Home Branches with regard to providing facilities for federation. The Conference adjourned at 1 o'clock to Gatti's Restaurant, Strand, when the Home Representatives entertained the Overseas Representatives to lunch. The President, who proposed the toast of the guests, said that it was a great occasion, as it was a meeting in miniature, as it were, of the British Empire in the form of faculty of medicine. The Conference had shown what a good thing it was that people in the old country should be made to see with others' eyes, and had proved the necessity of building not too solidly, but like the Japanese, so as to stand earthquakes. It was necessary to have an elastic constitution which would stand great expansion on occasion. Members of the Association at home were thankful to hear of the great influence of the Association in the Dominions: its membership in many of them was almost coterminous with the whole profession and he was convinced that it would become so here in time. There were present visitors from Australia, Tasmania, South Africa, New Zealand, Assam, and West Indies, all high in the counsels of the Association in their own districts. He mentioned Dr. Irving of New Zealand, and Professor Jasper Anderson of South Africa, and coupled the toast with the name of Dr. Todd of New South Wales.

Dr. Todd, in responding, said that in going round Australia before he began his journey to this country it had been strongly impressed on him that the Australian Branches did not want to be separated from the parent body. He acknowledged that there were difficulties for the Association in arranging to meet the needs of some of the oversea bodies, but he believed that they could and would be overcome. He thanked the Home members on behalf of the Oversea representatives.

The following is a list of those present at the luncheon:

Overseas Representatives.

Dr. A. Jasper Anderson (Cape of Good Hope, Western Province, Branch)
Dr. R. Gordon Craig (Victorian Branch)
Dr. W. M. Crofton (Dublin Division)
Dr. H. Curwen (Zanzibar Branch)
Dr. J. Marshall Day (Irish Medical Association)
Dr. T. P. Dunhill (Representative on Council of South Australian Branches)
Mr. C. H. Gick (Irish Medical Association)
Dr. J. Giusani (representative on Council of Munster Branch)
Mr. F. A. Hadley (Western Australian Branch)
Dr. W. Irving (New Zealand Branch)
Dr. W. F. Law (British Guiana Branch)
Dr. R. W. Leslie (Belfast Division)
Dr. E. Magennis (Irish Medical Association)
Dr. W. O'Sullivan (Vice-President Irish Medical Committee)
Dr. W. Rabilly (Munster Branch)
Dr. E. H. Strong (Matabeleland Division)
Dr. R. H. Todd (Australian Federal Committee)
Dr. A. Simpson Wells (Cape of Good Hope, Western Province, Branch)
Dr. E. Wells Witham (Assam Branch)

Home Representatives.

Right Hon. Sir T. Clifford Allbutt, K.C.B., M.D., F.R.S. (President)
Dr. T. W. H. Garstang (Chairman of Representative Meetings)
Dr. R. A. Bolam (Chairman of Council)
Dr. G. E. Haslip (Treasurer)
Dr. F. J. Baildon
Dr. H. S. Beadles
Dr. R. C. Buist
Mr. Russell Coombe
Dr. D. Ewart
Dr. E. R. Fothergill
Dr. J. S. Darling
Dr. T. D. Greenlees
Dr. R. Wallace Henry
Dr. I. W. Johnson
Dr. S. Morton Mackenzie
Sir Jenner Verrall, LL.D.
Dr. J. F. Walker
Dr. Alfred Cox (Medical Secretary)
Dr. G. C. Anderson (Deputy Medical Secretary)
Dr. A. D. Macpherson (Assistant Medical Secretary)
Mr. W. E. Hempson, Solicitor to the Association.

Honorary Degrees.

The University of Durham intends, during a congregation to be held on the afternoon of July 21st, to confer the following honorary degrees in connexion with the forthcoming visit of the British Medical Association to Newcastle:

D.C.L.—Sir William Macewen, C.B., Professor of Surgery, University of Glasgow; Sir Thomas Oliver, M.D., Professor of the Principles and Practice of Medicine in the University; and Sir Humphry Davy Rolleston, K.C.B., M.D.

D.Hy.—Mr. Thomas Eustace Hill, M.B., O.B.E., late Professor of Public Health in the University; and Dr. James Wilkie Smith, M.D.

D.Sc.—Sir Arthur Keith, M.D., F.R.S., Hunterian Professor of Anatomy, Royal College of Surgeons.

D.Litt.—Sir Dawson Williams, M.D., C.B.E., Editor of the British Medical Journal.

M.A.—Mr. Alfred Cox, M.B.Dunelm., O.B.E., Medical Secretary of the British Medical Association.

The Secretaries' Conference at Newcastle.

The Conference of Honorary Secretaries of Divisions and Branches held last year at Cambridge, with Dr. E. A. Starling of Tunbridge Wells in the chair, was attended by more than eighty, and furnished an instructive interchange of views and experiences. The Organization Committee has decided that the programme of the Secretaries' Conference at Newcastle this month shall include a discussion on the difficulties met with by Honorary Secretaries; it will be opened by Dr. L. A. Parry of Brighton, representing

a Division mainly urban. It is hoped that a Secretary of a mainly rural Division will follow. There will also be an address on the work and expenses of Divisions and Branches by Dr. T. W. H. Garstang, Chairman of Representative Meetings. The Committee has left further arrangements for the Secretaries' Conference in the hands of the Chairman of the Organization Committee, the Propaganda Subcommittee, and the Medical Secretary. As already announced in the SUPPLEMENT, the Conference will be held at 2 p.m. on Wednesday, July 20th, and the Secretaries' dinner will take place in the evening at 6.30 o'clock.

The Macdonald Presentation.

The Macdonald Presentation Fund has now been closed with the exception of any belated subscriptions which may arrive. The presentation to Dr. J. A. Macdonald will be made by the retiring President, Sir Clifford Allbutt, before the President's address, on Tuesday, July 19th. The following additional subscriptions have been received:

	£	s.	d.
Brought forward	959	0	6
Dr. Henry Whitehouse, Glasgow	1	1	6
Dr. John Hunter, Edinburgh	0	10	6
Per Dr. J. Mills of Ballinasloe:			
Dr. M. J. McDonough	1	0	0
Dr. D. Crowly	1	0	0
Dr. R. A. Welsh, Ackington, Northumberland	1	1	0
Colonel L. J. Blandford, C.B.E., Bleabeck, Worcester	1	1	0
Dr. A. R. F. Exham, Market Drayton ...	0	10	6
Dr. T. S. Taylor, Hailsham, Sussex	1	0	0
Dr. John Sinclair, Braehead, Bo'ness	0	10	0
Dr. G. O. Pierce, Barking, Essex	1	1	0
Dr. H. Gibbons, Market Harboro' ...	0	10	6
Dr. G. F. P. Gibbons, Market Harboro' ...	0	10	6
	£968	17	0

NATIONAL PROVIDENT SCHEME FOR HOSPITAL AND ADDITIONAL MEDICAL SERVICES.

A MEETING of the Willesden Division was held on June 21st, when the Chairman, Dr. C. T. F. SCOTT, introduced Mr. McAdam Eccles, who had attended to explain the draft suggested organization prepared by the Metropolitan Counties Branch Council—for London of a national provident scheme for hospital and additional medical services (published in the BRITISH MEDICAL JOURNAL SUPPLEMENT, April 30th, 1921).

Mr. MCADAM ECCLES, in explaining the scheme, said that it might be most helpful if he first set out what the scheme proposed to provide and what it did not provide. It provided for in- and out-patient hospital treatment, consultations at home of patient and at hospital, visiting, nursing, dental treatment, x-ray examination and treatment, massage, laboratory investigations, and a motor ambulance service. The scheme did not provide general practitioner treatment, tuberculosis treatment, V.D. treatment, or any other treatment provided by State or local authorities. All the facilities which the scheme proposed, with the exception, perhaps, of the consultations, were more or less already provided in some shape or form, but they had never been grouped together before under any one scheme.

The advantage of the scheme, so far as the patient was concerned, was that it avoided payment during illness, as provision therefor had been made by the prospective patient while in health. It provided free consultations, either at home or at the hospital, at a time separate from the ordinary consultation times of the hospital, and at which consultations the general practitioner concerned could be present if he so desired, or could send a note as to the patient's condition. Owing to the income limit there would be no investigation into the patient's economic condition by any almoner, such as was necessary in connexion with ordinary admissions to hospital, the only recommendations necessary being the membership card and the general practitioner's recommendation. It provided nursing, upon which point it might interest the meeting to know that experts upon this question were of opinion that Greater London needed 500 additional nurses. The scheme provided the means for paying adequate salaries to such 500 additional nurses. The existing ambulance services of London were under six different heads, and it was the desire of the scheme to co-ordinate and augment such existing services. The provision allowed for by the scheme would probably permit, if necessary, of one extra ambulance for each metropolitan borough—30 in all. Lastly, the advantage of the scheme to the patient was that it tended to foster the—unfortunately fast disappearing—trait of being satisfied that even if his subscriptions brought no individual benefit he was helping his needy neighbours.

The advantages of the scheme to the general practitioner were that all the facilities of the service would be through the general practitioner, under co-operation, of course, with the officers of the hospital; the opportunity for consultations at the home of the patient when the patient was too ill to leave his bed, and only then when the general practitioner desired a consultation. Objections had been raised at other meetings at which he had explained the scheme that there might probably be a very large number of patients who might desire a consultation at home which the general practitioner did not consider necessary, with the result that he lost the patient. He did not, however, think that there would be any real difficulty on this point. A second objection raised was that, so far as insured persons were concerned, while the consultant would receive a fee the practitioner would not, to which the answer was the scheme might provide for a consultation fee to the general practitioner payable out of the consultation pool. Further advantages to the general practitioner were that he would be able to retain a much more direct contact with his patients attending the hospital under the scheme than he was able to do at present. Under the scheme they would have the necessary administration facilities to secure the general practitioner having a fuller note with regard to his patient than now obtains even at the best administered hospital. The scheme also placed at the use of the general practitioner greater facilities as regards laboratory, etc., facilities.

As to the advantages of the scheme to the consultants, he did not think he need worry that meeting with these, beyond stating that as hospitals would, of course, receive something out of the scheme, it was suggested that 25 per cent. thereof should go to a hospital staff fund. From this might be allocated £30,000 for post-graduate work, and it was very interesting to note that the report (published that week) of the Government Committee upon post-graduate work suggested the creation of a fund of £28,000 for such work, an indication of the exactness with which the scheme had been drawn up.

The advantages to the nation were that the scheme was going to maintain the voluntary hospital system because it was a voluntary insurance; that it provided prompter treatment of cases needing in-patient hospital treatment, with corresponding saving of life and shortening of convalescence; and that it secured the maintenance of the supply of clinical material for medical and nursing education in the teaching schools.

Turning to the statistical aspect of the question, Mr. McAdam Eccles stated that the scheme had been drawn up with a view to embracing the whole of what was known as Greater London—that is, the Metropolitan Police area—in which area there was some 5 million people who should have in-patient hospital treatment if they so needed. At present the hospitals were carrying out the work for that population, and admitting that the scheme will not increase the population nor increase the sickness incidence among people requiring hospital treatment, it was necessary to endeavour to ascertain what accommodation was required. In England, for the last two years, the sickness incidence of people in hospitals was 2 per cent., upon which basis there should be hospital provision in Greater London for 100,000 people. The average stay of an in patient in the London hospitals was 21.2 days, which meant that, strictly speaking, one hospital bed should accommodate 17 patients a year. If it were taken that each hospital bed would accommodate 10 persons per year, a very little calculation showed that 10,000 beds were required for the 100,000 in-patients in London. As the ordinary beds in London hospitals totalled 12,000 there should be a sufficient number of beds existing at the present moment, but the trouble was they were not used economically, and there was practically no co-ordination among the hospitals. If the whole of the 5 million people joined the scheme, and it was found that there were not sufficient beds, use could be made of the beds in the existing Poor Law hospitals by, of course, the scheme paying for such use. The whole scheme was so easy, because the greater its success, the greater the income with which to provide the necessary facilities.

In answer to a member, Mr. McAdam Eccles stated that if Poor Law hospitals were used the patients of the scheme might have the benefit of the services of the staff of the voluntary hospital to which the beds in the Poor Law hospital were attached—just as happened now in the case of St. Mary's Hospital.

Mr. McAdam Eccles went on to refer to the report of Lord Cave's committee on hospitals, published since the framing of the scheme, and suggested that if the Government made the grant of £1,000,000, suggested by the committee, the King's Fund should distribute the amount among the London hospitals, and its distribution should be, to a very large extent, provisional to the showing by the hospital of a fairly likely method of financing themselves in the future. In other words, it should not be given to hospitals who tried to help themselves by begging because of the bad state of their finances. Mr. McAdam Eccles also urged the closer co-operation of the King Edward Hospital Fund and the Hospital Saturday Fund. As regards the finances of London hospitals, Mr. McAdam Eccles stated that, although the 115 London hospitals received more in 1920 than in any previous year, there was a total deficit of nearly £500,000, owing to the great increase in cost of every department.

In answer to questions by various members present, Mr. McAdam Eccles stated that he did not think the premiums payable were high, because so many bad lives had to be taken into account; that any person eligible to join the scheme who did not do so would be required to pay for any necessary treatment obtained at a hospital with which the scheme had entered into agreement; and that under the scheme the money would be forthcoming for the financing of convalescent homes, to the greater benefit of the patients and the hospitals.

A resolution was adopted to the effect that the meeting of the medical practitioners of the Willesden district approved in general of the national provident scheme for hospital and additional medical services.

A vote of thanks was passed to Mr. McAdam Eccles.

British Medical Association.

EIGHTY-NINTH ANNUAL MEETING, NEWCASTLE-UPON-TYNE, JULY, 1921.

Patron: HIS MAJESTY THE KING.

President: The Right Hon. Sir T. CLIFFORD ALLBUTT, P.C., K.C.B., F.R.S., Regius Professor of Physic, University of Cambridge.

President-Elect: DAVID DRUMMOND, C.B.E., M.A., M.D., D.C.L., Vice-Chancellor and Professor of the Principles and Practice of Medicine, University of Durham.

Chairman of Representative Meetings: T. W. H. GARSTANG, M.A., M.R.C.S., D.P.H.

Chairman of Council: R. A. BOLAM, M.D., M.R.C.P.

Treasurer: G. E. HASLIP, M.D.

PROGRAMME.

The President, Professor DAVID DRUMMOND, will give an Address, in the King's Hall, Armstrong College, on Tuesday, July 19th, at 8 p.m.

The ANNUAL REPRESENTATIVE MEETING, in the King's Hall, Armstrong College, will begin on Friday, July 15th, at 10 a.m., and be continued on the following days.

The REPRESENTATIVES' DINNER will be held on Friday, July 15th, at 7.15 p.m.

The statutory ANNUAL GENERAL MEETING will be held in the King's Hall, Armstrong College, on July 19th, at 2 p.m., and the Adjourned General Meeting at 8 p.m.

The Annual Dinner of the Association will take place on Thursday, July 21st, at 7.30 p.m. Members wishing to attend are requested to notify the Local General Secretary, 6, Kensington Terrace, Newcastle-upon-Tyne, preferably by filling up and forwarding the form on page 231 of the SUPPLEMENT of June 18th. The price of the ticket is 20s., which should be remitted with the application.

A united religious service will be held on Tuesday, July 19th, at 5 p.m., at St. Nicholas Cathedral. A Roman Catholic Service will be held at St. Mary's Cathedral on Thursday, July 21st, at 9.15 a.m.

The Conference of Secretaries will be held at 2 p.m. on Wednesday, July 20th, and the Secretaries' Dinner will take place in the evening at 6.30.

A Special Address on "Industrial Hygiene: its Rise, Progress and Opportunities," will be given by Sir Thomas Oliver, LL.D., M.D., F.R.C.P., on Wednesday, July 20th, at 8 p.m.

The Popular Lecture, on "Evolutionary Wounds," will be delivered by Sir Arthur Keith, M.D., F.R.S., on Friday, July 22nd, at 7.30 p.m.

THE SCIENTIFIC SECTIONS.

The Sections will meet from 10 a.m. to 1 p.m. Laboratory and Clinical Demonstrations will be given on Wednesday, July 20th, Thursday, July 21st, and Friday, July 22nd, between 3 p.m. and 4.30 p.m.

The following Sections meet on three days—Wednesday, Thursday, and Friday, July 20, 21, and 22.

MEDICINE.

President: Professor THOMAS BEATTIE, M.D., F.R.C.P.

Vice-Presidents: The Right Hon. LORD DAWSON of PENN, G.C.V.O., M.D., F.R.C.P.; Professor A. J. HALL, M.D., F.R.C.P.; G. S. HAYNES, M.D., M.R.C.P.; J. WILKIE SMITH, M.D.

Honorary Secretaries: C. E. LAKIN, M.D., F.R.C.P., (105, Harley Street, London, W.1); W. T. RITCHIE, O.B.E., M.D., F.R.C.P.Ed. (14, Rothesay Place, Edinburgh); Professor W. E. HUME, C.M.G., M.D., F.R.C.P. (4, Ellison Place, Newcastle-on-Tyne).

The following provisional programme has been arranged:—

July 20th 10 a.m.).—Discussion: Visceral Syphilis, especially of the Central Nervous System and Cardio-vascular System. To be introduced by the Right Hon. Sir CLIFFORD ALLBUTT, K.C.B., F.R.S., followed by Dr. Gordon Holmes, Professor Reynolds, Dr. John Cowan, Dr. A. G. Gibson, Dr. John Eason and Dr. Ivy McKenzie.

July 21st 10a.m.). Discussion: Asthma and Allied Disorders. To be opened by Sir HUMPHRY ROLLESTON, K.C.B., followed by Dr. John Freeman, Dr. A. F. Hurst, Mr. Frank Coke, Dr. Mackenzie Wallis and Dr. Charles McNeil.

July 22nd (10-11.30 a.m.). -Discussion: Encephalitis Lethargica. To be opened by Dr. EDWIN BRAMWELL, followed by Dr. Wilfred Harris, Professor A. J. Hall, Dr. C. H. Melland. 11.30 a.m.-1 p.m.:—Joint Discussion with the Section of Physiology, Pharmacology, Therapeutics, and Dietetics: Renal Efficiency Tests. To be opened by Professor H. MCLEAN, followed by Professor Francis D. Boyd, C.B., M.D., Dr. R. L. Mackenzie Wallis, and Dr. D. Wells Patterson.

In the afternoons of Wednesday, Thursday, and Friday, from 3 to 4.30, cases will be demonstrated by the honorary medical staff in the medical wards of the Royal Victoria Infirmary. Short papers and demonstrations will be arranged during the same hours.

Members wishing to take part in the above discussions, or to give demonstrations, are asked to communicate with Dr. W. E. Hume, Honorary Secretary, Section of Medicine, 4, Ellison Place, Newcastle-on-Tyne, in order that he may forward a copy of the opener's remarks when available.

SURGERY.

President: Professor J. RUTHERFORD MORISON, D.C.L., LL.D., F.R.C.S.

Vice-Presidents: Professor H. BRUNTON ANGUS, F.R.C.S.; ARTHUR COOKE, F.R.C.S.; W. J. GREER, F.R.C.S.I.; A. M. MARTIN, M.B.

Honorary Secretaries: W. GIRLING BALL, F.R.C.S. (77, Wimpole Street, London, W.1); J. M. RENTON, F.R.C.S. (16, Sandyford Place, Glasgow, W.); G. GREY TURNER, M.S., F.R.C.S., F.A.C.S. (The Hawthorns, Osborne Road, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (Morning Session).—Discussion: Acute Pleural Empyema. To be opened by Mr. HENRY WADE, C.M.G., D.S.O., M.D., F.R.C.S.Edin. (Edinburgh).

In the afternoon, at 3 o'clock, demonstrations will be given by Professor RUTHERFORD MORISON, at the War Pensions Hospital, of cases and specimens illustrating (1) Bipp, (2) Bone Cavities, (3) Bone Grafts. Cases will also be shown by other members of the staff.

July 21st (Morning Session).—Discussion: Compound Fracture of the Thigh and Leg. To be opened by Mr. NAUGHTON DUNN, M.A., M.B., Ch.B.Aberd. (Birmingham).

In the afternoon, at 3 o'clock, demonstrations will be given at the Royal Victoria Infirmary of cases and specimens illustrating Compound Fracture of the Thigh and Leg.

July 22nd (Morning Session).—Discussion: The Diagnosis and Treatment of Injuries of the Intestines. To be opened by Mr. GORDON TAYLOR, O.B.E., M.S. (London).

In the afternoon, at 3 o'clock, demonstrations will be given by Mr. G. GREY TURNER at the Royal Victoria Infirmary of six cases of implantation of the ureter into the bowel.

Operations will be arranged by the staff of the Royal Victoria Infirmary for each afternoon at 2 o'clock.

One or two short papers will also be read on each day after the discussion.

Anyone wishing to take part in the discussions or demonstrations is invited to communicate with the Secretaries, and those wishing to read short papers are asked to send a summary, to be brought before the officers of the Section. There will also be an exhibition of specimens illustrating the subjects for discussion, and members are asked to advise the Secretaries of any specimens they propose to exhibit.

PATHOLOGY AND BACTERIOLOGY.

President: Professor MATTHEW J. STEWART, M.B., M.R.C.P.

Vice-Presidents: J. F. GASKELL, M.D., F.R.C.P.; JAMES A. MURRAY, M.D.

Honorary Secretaries: R. R. ELWORTHY, O.B.E., M.D., M.R.C.P. (West London Hospital, Hammersmith, London, W.6); A. F. BERNARD SHAW, M.D., M.R.C.P.I. (Pathological Department, College of Medicine, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.).—Discussions: (1) Haemochromatosis; (2) The Streptococci.

July 21st (10 a.m.).—Papers: The Relation of Carcinoma to Infection, by Dr. W. FORD ROBERTSON. Observations on Malignant Melanoma, by Professor M. J. STEWART and Dr. H. H. GLEAVE. Other papers will be announced later.

July 22nd (10 a.m.).—Joint discussion with the Section of Medicine on (1) Encephalitis Lethargica; (2) Renal Efficiency Tests.

Anyone wishing to take part in the discussions is invited to communicate with the Secretaries, and those wishing to read short papers are asked to send a summary to be brought before the officers of the Section. There will also be an exhibition of specimens illustrating the subjects for discussion, and members are asked to advise the Secretaries of any specimens they propose to exhibit.

Pathological Museum.

The Pathological Museum Committee proposes to arrange the material under the following heads: (1) Exhibits bearing on discussions and papers to the various Sections; (2) specimens and illustrations relating to any recent research work; (3) instruments relating to clinical diagnosis and pathological investigation; (4) individual specimens of special interest or a series illustrating some special subject. It is proposed to gather together a series of exhibits illustrating the pathology of individual cases. Such exhibits will include a brief clinical history of the case and mounted specimens of the different organs and tissues illustrating the pathological changes and the correlation of the lesions. Other interesting specimens will be welcomed. The Honorary Secretary of the Pathological Museum Committee is Dr. A. F. Bernard Shaw, Pathological Department, College of Medicine, Newcastle-upon-Tyne. The museum will occupy a central position in the same building as that in which the sectional work is carried on. Every care will be taken of specimens, and the contents of the museum will be insured. It is hoped to make arrangements for exhibitors to demonstrate their specimens.

PREVENTIVE MEDICINE WITH INDUSTRIAL DISEASES.

President: Sir THOMAS OLIVER, LL.D., M.D., F.R.C.P.
Vice-Presidents: Sir JOSIAH COURT, M.R.C.S.; T. EUSTACE HILL, O.B.E., M.B.; I. G. MODLIN, O.B.E., M.D.
Honorary Secretaries: C. M. WILSON, M.C., M.D., F.R.C.P. (64, South Audley Street, Grosvenor Square, W.1); W. H. DICKINSON, O.B.E., M.B., D.P.H. (91, Newbridge Street, Newcastle-on-Tyne).

The following provisional programme has been arranged:
July 20th (10 a.m.).—Discussion: The Effect of Health Legislation on the Health of the People. To be opened by Captain WALTER E. ELLIOT, M.C., M.P.
July 21st (10 a.m.).—Discussion: The Importance of Industrial Medicine to the Community. To be introduced by Professor COLLIS (Cardiff).
July 22nd (10 a.m.).—Proposed joint meeting with the Section of Medical Sociology.

ORTHOPAEDICS AND DISEASES IN CHILDREN.

President: A. H. TUBBY, C.B., C.M.G., M.S., F.R.C.S.
Vice-Presidents: R. C. ELMSLIE, O.B.E., M.S., F.R.C.S.; H. MORLEY FLETCHER, M.D., F.R.C.P.; LACHLAN G. FRASER, M.D.; Sir HENRY M. W. GRAY, K.B.E., C.B., C.M.G., F.R.C.S.; A. E. MORISON, F.R.C.S.Edin. (Director of Demonstrations).
Honorary Secretaries: C. MAX PAGE, D.S.O., F.R.C.S. (134, Harley Street, London, W.1); FRANK HAWTHORN, D.S.O., M.D. (10, Ellison Place, Newcastle-on-Tyne); H. R. SOUPER, M.D. (Ministry of Pensions Hospital, Castle Leazes, Newcastle-on-Tyne).

The following preliminary programme has been arranged:
July 20th (10 a.m.).—*Chairman:* Mr. A. H. Tubby. Discussion: The Early Diagnosis and Treatment of Anterior Poliomyelitis. To be opened by Dr. FARQUHAR BUZZARD (London), followed by Mr. R. C. Elmslie (London), Mr. McCrae Aitkin (London), Mr. W. R. Bristow (London), Dr. Tulloch (Dundee), and Dr. Howard Humphris (London). Papers: Dr. MURK JANSEN, The Polyarticular Muscles as the Cause of Arthrogenetic Contractures. Mr. HARRY PLATT: Birth Palsy.
July 21st (10 a.m.).—*Chairman:* Dr. H. Morley Fletcher. Discussion: Blood Diseases in Children. To be opened by Dr. HUGH THURSFIELD followed by Dr. J. S. McCracken (Newcastle-upon-Tyne). Papers: Dr. LEONARD FINDLAY (Glasgow), Prenatal Treatment of Syphilis; Dr. JOHN THOMSON (Edinburgh) and Mr. TYRRELL GRAY (London), Hypertrophic Pyloric Stenosis.
July 22nd (10 a.m.).—*Chairman:* Sir Henry M. W. Gray. Discussion: Tuberculosis of Bone in Children; General Principles of Treatment. To be opened by Sir H. J. GAUVAIN (Alton), followed by Mr. John Fraser (Edinburgh), Dr. Camac Wilkinson (London), and Mr. F. C. Pybus (Newcastle-upon-Tyne). Paper: Dr. H. M. CARGIN (M.O.H. West Hartlepool), Milk Control.
Demonstrations.—The following demonstrations will be held in the War Pensions Hospital, Castle Leazes, Newcastle-upon-Tyne, by permission of Colonel F. J. Greig, C.M.G., A.M.S.(R.): *July 21st*, 3 to 4.30 p.m., Congenital Heart Lesions, by Dr. W. E. HUME (Newcastle-upon-Tyne); Congenital Dislocations of the Hip—Late Results, by Mr. A. M. MARTIN (Newcastle-upon-Tyne). *July 22nd*, 3 to 4.30 p.m., Bone Grafting for Cranial Defects, by Mr. A. E. MORISON (Sunderland); Hydrocephalus, by Dr. J. D. LICKLEY (Newcastle-upon-Tyne); On Finer Adjustment, with especial reference to the Hand, by Dr. F. A. HORT (Pensions Hospital, Sunderland). Should time permit discussion will be welcomed.

Contributors wishing to show specimens should communicate with Dr. Souper, Ministry of Pensions Hospital, Newcastle-upon-Tyne, who will arrange with the Secretary of the Pathological Museum Committee for the storage and exhibition of the specimens during the meeting.

The following Sections meet on two days—Wednesday and Thursday, July 20 and 21.

NEUROLOGY AND PSYCHIATRY.

President: Professor A. W. MACKINTOSH, M.D., F.R.C.P.Ed.
Vice-Presidents: A. HELEN A. BOYLE, M.D.; E. FARQUHAR BUZZARD, M.D., F.R.C.P.; HARRY CAMPBELL, M.D., F.R.C.P.; HORSLEY DRUMMOND, M.D.
Honorary Secretaries: ANTHONY FEILING, M.D., F.R.C.P. (41, Devonshire Street, London, W.); GEORGE HALL, C.M.G., M.D., M.R.C.P. (1, Eslington Road, Jesmond Road, Newcastle-on-Tyne).

The following provisional programme has been arranged:
July 20th (10 a.m.).—Discussion: The Diagnosis and Treatment of Borderland Cases. To be opened by Professor G. M. ROBERTSON (Edinburgh) and Dr. JAMES COLLIER (London).
July 21st (10 a.m.).—Papers: (1) Dr. HARRY CAMPBELL (London), The Nervous Diathesis and the Blood. (2) Dr. G. RIDDOCH (London), Some Points in the Management and Treatment of Paraplegia. (3) Dr. F. M. R. WALSHE (London), Observations on the Mechanism of Symptom Production in Disease and Injury of the Nervous System. (4) Dr. A. E. A. CARVER (Birmingham), Epilepsy from the Psychological Standpoint. (5) Dr. JUDSON BURY (Manchester), Remarks on the Pathology and Symptoms of Paralysis Agitans. (6) Dr. DOUGLAS ADAMS (Glasgow), The Early Diagnosis and Treatment of Disseminated Sclerosis.

OPHTHALMOLOGY.

President: Professor J. D. WARDALE, M.B., B.S.
Vice-Presidents: H. P. BENNETT, M.B.; Lieut.-Colonel R. H. ELLIOT, M.D., F.R.C.S., I.M.S. (ret.); HARRY M. TRAQUAIR, M.D., F.R.C.S.Ed.
Honorary Secretaries: N. B. B. FLEMING, M.B., Ch.B. (9, Harley Street, London, W.1); STANLEY ROBSON, M.S., F.R.C.S.Ed. (Milton House, Rowlands Gill, co. Durham).

The following provisional programme has been arranged:
July 20th (10 a.m.).—Discussion: The Causes and Prevention of Blindness. To be opened by Mr. BISHOP HARMAN, F.R.C.S. (London).
July 21st (10 a.m.).—Discussion: The Treatment of Corneal Ulcers. To be opened by Mr. J. V. PATERSON, F.R.C.S.Edin. (Edinburgh).

OTO-RHINO-LARYNGOLOGY.

President: G. WILLIAM HILL, M.D., B.Sc.
Vice-Presidents: R. GORDON BELL, M.D., F.R.C.S.Edin.; JAMES DON, M.D.; DAN MCKENZIE, M.D., F.R.C.S.Edin.
Honorary Secretaries: LIONEL COLLEDGE, M.B., F.R.C.S. (22, Queen Anne Street, London, W.1); W. FRANK WILSON, M.B., B.S. (97, Jesmond Road, Newcastle-upon-Tyne).

The following provisional programme has been arranged:
July 20th (10 a.m.).—Discussion: Problems in connexion with the Early Diagnosis and Treatment of Meningitis occurring in Aural Cases. To be opened by Sir CHARLES BALLANCE, K.C.M.G., C.B.
July 21st (10 a.m.).—Discussion: The Various Problems presented by Haemorrhage occurring in connexion with Operations on the Tonsils. To be opened by Dr. BROWN KELLY (Glasgow).

PHYSIOLOGY, PHARMACOLOGY, THERAPEUTICS, AND DIETETICS.

President: H. H. DALE, C.B.E., M.D., F.R.S.
Vice-Presidents: Professor A. V. HILL, M.A., D.Sc., F.R.S.; Professor JOHN C. MEAKINS, M.D.; Professor J. A. MENZIES, M.D.; ALFRED PARKIN, M.D., M.R.C.P.
Honorary Secretaries: O. INCHLEY, M.A., M.D. (Babraham, Cambridge); Miss MILDRED ATKINSON, B.Sc. (College of Medicine, Newcastle-on-Tyne).

The following provisional programme has been arranged: Papers from 10 a.m. to 1 p.m., and demonstrations from 3 p.m. to 4.30 p.m.
July 20th (10 a.m.).—Paper by Professor A. V. HILL, D.Sc., F.R.S.: The Use of the Hot Wire for Investigating (*a*) the Time Relations of the Pulse; (*b*) the Characteristics of Voluntary Contraction in Man. Paper by Dr. W. R. GROVE and Dr. H. W. C. VINES: The Etiology and Treatment of Varicose Ulcers. Paper by Professor H. H. DALE, F.R.S.: Anaphylatoxin.
In the afternoon (Wednesday, July 20th) Professor J. A. MENZIES, Miss M. ATKINSON, and Dr. G. A. CLARK will give a demonstration on The Passage of Sulphate through the Cells of the Tubules of the Kidney of the Frog.
July 21st.—(10 a.m.) Paper, with lantern demonstration, by Dr. H. MUIR EVANS: The Poison Organs and Venoms of Venomous Fish. Paper by Professor C. H. BROWNING: Recent work on Chemo-therapy. Paper by Dr. G. ARBOUR STEPHENS: Acid Feeders, and the Deleterious Effects of too much Acid in the Food. Paper by Dr. J. SIM WALLACE, D.Sc., L.D.S.: The Physiology of Oral Hygiene.
July 22nd.—Joint discussion with the Section of Medicine on Renal Efficiency Tests.

VENEREAL DISEASES.

President: Colonel L. W. HARRISON, D.S.O., R.A.M.C.
Vice-Presidents: JAMES CHARLES BUCKLEY, M.D.; CHARLES GIBBS, F.R.C.S.; MARY RAW, M.B.
Honorary Secretaries: KENNETH M. WALKER, O.B.E., F.R.C.S. (86, Harley Street, London, W.).; JAMES HUDSON, M.D. (42, Crossley Terrace, Newcastle-on-Tyne).

The following provisional programme has been arranged:
July 20th 10 a.m.).—Treatment of Syphilis in Man, by Dr. R. MacKenna. Syphilis in Women and Children, by Professor Walter Swayne.
July 21st (10 a.m.).—Treatment of Gonorrhoea in Men, by Dr. David Lees. The Standard of Cure in Gonorrhoea, by Dr. Townley Clarkson.

In the afternoon of Wednesday (July 20th) a demonstration will be held of Methods of Diagnosis and Treatment in Venereal Diseases, Dark-ground Illumination Work, Models of Venereal Disease Clinics, etc.

The following Section meets on two days Thursday and Friday, July 21 and 22.

OBSTETRICS AND GYNAECOLOGY.

President: Professor R. P. RANKEN LYLE, M.D.
Vice-Presidents: Lady BARRETT, M.D.; W. R. GROVE, M.D.; WILLIAM ROBINSON, F.R.C.S.
Honorary Secretaries: GORDON LEY, F.R.C.S. (5, Wimpole Street, London, W.1); MABEL R. CAMPBELL, M.A., M.B. (49, Wingrove Road, Newcastle-on-Tyne); E. FARQUHAR MURRAY, M.D., F.R.C.S. (52, Jesmond Road, Newcastle-on-Tyne).

The following provisional programme has been arranged:
July 21st (10 a.m.). Discussion: The Rôle of Caesarean Section in Midwifery. To be opened by Dr. EARDLEY L. HOLLAND (London) and Dr. J. M. MUNRO KERR (Glasgow). Paper: The Treatment of Advanced Malignant Disease of the Cervix, by Dr. ARTHUR BURROWS (Manchester), to be followed by a discussion.
July 22nd (10 a.m.).—Discussion: The Neurasthenic Element in Midwifery and Gynaecology. To be opened by Dr. ARCHIBALD DONALD (Manchester) and Dr. FARQUHAR BUZZARD (London). Papers to be followed by discussion: (1) Curettage, (*a*) Diagnostic, (*b*) Treatment of Uterine Haemorrhage, by Dr. H. BECKWITH WHITEHOUSE (Birmingham). (2) The Position of the Medical Practitioner called in to attend a case of Procured Abortion, by Dr. JOHN CAMPBELL (Belfast).

The following Sections meet on one day as indicated.

Wednesday, July 20th.

AMBULANCE AND RED CROSS.

President: Sir JAMES CANTLIE, K.B.E., F.R.C.S.
Vice Presidents: ROBERT ANDERSON, M.D.; SIR G. T. BEATSON, K.C.B., K.B.E., M.D.; Major-General Sir G. J. H. EVATT, K.C.B., M.D.; Rev. C. F. TOWNLEY, M.A.
Honorary Secretaries: R. M. VICK, O.B.E., F.R.C.S. (The Warden's House, St. Bartholomew's Hospital, E.C.1); H. L. RUTTER, M.B.E., F.R.C.S. (31, West Parade, Newcastle-on-Tyne).

The following provisional programme has been arranged:
1. Short address by President on the Claim of "First Aid" to be regarded as a Special Branch of Practical Surgery.
2. Discussion on an X-Ray Motor Ambulance Wagon Service for Great Britain, and description of the work in London and fifty miles round. Display map, with centres from which areas are worked.
3. Discussion on Stretcher Slings; the Question of Carrying Loaded Stretchers on the Shoulders; the Yoke Sling.
4. Thomson's Machine for Armless Men. Demonstration by an armless man.
5. Display of several devices by Dr. Highet of Reading—car, boat, and barges; carriage of sick and wounded; an improvised ambulance wagon; invalid carrying chairs.

PROCTOLOGY.

President: J. P. LOCKHART-MUMMERY, F.R.C.S.
Vice-Presidents: HENRY B. DENSHAM, M.B.; W. ERNEST MILES, F.R.C.S.; D. P. D. WILKIE, O.B.E., F.R.C.S.
Honorary Secretaries: CECIL W. ROWNTREE, F.R.C.S. (9, Upper Brook Street, London, W.1); HAMILTON DRUMMOND, F.R.C.S. Edin. (6, Saville Place, Newcastle on-Tyne).

July 20th (10 a.m.).—Discussion: The Surgical Treatment of Internal Haemorrhoids. To be opened by SIR CHARLES GORDON-WATSON, K.B.E., and Mr. D. P. D. WILKIE, F.R.C.S. (Edinburgh).

Thursday, July 21st.

DERMATOLOGY.

President: JOHN FARQUHAR CHRISTIE, M.A., M.B.
Vice-Presidents: ERNEST DORE, M.D., F.R.C.P.; ARTHUR D. HEATH, M.D., M.R.C.P.; D. WELLS PATTERSON, O.B.E., M.D., M.R.C.P.
Honorary Secretaries: WILLIAM JENKINS OLIVER, M.A., M.B. (58, Queen Anne Street, London, W.1); SYDNEY THOMPSON, M.B., B.S. (19, Windsor Terrace, Newcastle-on-Tyne).

The following provisional programme has been arranged:
July 21st (10 a.m.).—Discussions: (1) Cutaneous Sensitization and Focal Sepsis in the Etiology of certain Skin Affections. To be opened by H. W. BARBER, M.B., M.R.C.P. (2) The Association of Skin Tuberculosis with Visceral and other Tuberculous Manifestations. To be opened by GEORGE H. LANCASHIRE, M.D. (3) Dermatological Cases attending the Pensions Boards. To be opened by HENRY MACCORMAC, C.B.E., M.D., F.R.C.P. (with the permission of the Ministry of Pensions).

Friday, July 22nd.

MEDICAL SOCIOLOGY.

President: Sir JENNER VERRALL, LL.D., M.R.C.S.
Vice-Presidents: CHARLES BUTTAR, M.A., M.D.; A. C. FARQUHARSON, M.D., M.P.; E. ROWLAND FOTHERGILL, M.B., B.S.
Honorary Secretaries: J. F. WALKER, M.B. (Rocklands, Clifton Terrace, Southend-on-Sea); MABEL G. BRODIE, M.B. (Maternity and Child Welfare Offices, 42, Old Elvet, Durham).

The following provisional programme has been arranged:
July 22nd (10 a.m.).—Discussion: The Relation of the Medical Profession to Local Authorities in respect to Rate-provided Hospitals and Clinics. To be opened by Sir GEORGE NEWMAN, Chief Medical Officer of the Ministry of Health; Mr. DAVID ADAMS (Newcastle-upon-Tyne), and Dr. MIDDLETON MARTIN (M.O.H. Gloucestershire).

RADIOLOGY AND ELECTRO-THERAPEUTICS.

President: ROBERT KNOX, M.D.
Vice-Presidents: W. HOPE FOWLER, F.R.C.S.Edin.; ROBERT EDWARD HOWELL, M.B., C.M.
Honorary Secretaries: JAMES METCALFE, M.D. (123, Harley Street, London, W.1); THOMAS LOWE BUNTING, M.D. (6, Portland Terrace, Newcastle-on-Tyne).

The following provisional programme has been arranged:
July 22nd (10 a.m.).—Discussion: On the Changes induced in Blood Constituents by Radiations: (*a*) Experimental evidence, Professor SIDNEY RUSS and Dr. ARCHIBALD LEITCH; (*b*) Clinical observations, Dr. MOTTRAM, Dr. GAMLEN, Dr. J. B. WATERS, Dr. METCALFE, Dr. HOPE FOWLER and others. On Morbid Conditions of the Blood: (1) The Anaemias, (2) Leukaemia, (3) Banti's disease, etc. Opening paper by Professor G. L. GULLAND, C.M.G. (Edinburgh). Discussion on Surgical Diathermy, to be opened by Dr. CUMBERBATCH, followed by Dr. HOWARD HUMPHRIS, Dr. SABERTON and others.
Dr. KNOX and Mr. THOMSON WALKER will give an afternoon demonstration, with lantern slides and prints, of Radiography and Pyelography in Gall Bladder and Renal Conditions.
Exhibition of radiograms, etc., in the Pathological Museum.
A visit will be paid to the *x*-ray and electro-therapeutic departments of the Royal Victoria Infirmary, Newcastle-upon-Tyne.

UROLOGY.

President: J. W. THOMSON WALKER, O.B.E., F.R.C.S.
Vice-Presidents: P. J. CAMMIDGE, M.D.; JOHN CLAY, C.B.E., F.R.C.S.; H. C. PEARSON, F.R.C.S.Ed.
Honorary Secretaries: SYDNEY G. MACDONALD, F.R.C.S. (51, Queen Anne Street, London, W.1); W. S. DICKIE, O.B.E., F.R.C.S. (Ardencapel, Southfield Road, Middlesbrough).

The following provisional programme has been arranged:
July 22nd (10 a.m.).—Discussion: The Diagnosis and Treatment of Cystitis. To be opened by J. F. DOBSON, M.S., F.R.C.S. (Surgical). Papers: Experimental Evidence bearing on the Source of the Amylolytic Ferment in the Urine, by P. J. CAMMIDGE, M.D.; Open Prostatectomy, by J. W. THOMSON WALKER, M.B., F.R.C.S.; Treatment of Bladder Growths, by SYDNEY G. MACDONALD, M.B., F.R.C.S.

PROVISIONAL TIME TABLE.

The following is the provisional time table for the Newcastle-upon-Tyne Meeting, 1921:

FRIDAY, JULY 15TH, 1921.
10 a.m.—Annual Representative Meeting.
7.15 p.m.—Representatives' Dinner.
8.30 p.m.—Reception for Ladies.

SATURDAY, JULY 16TH.
9.30 a.m.—Representative Meeting.

MONDAY, JULY 18TH.
9.30 a.m.—Council Meeting.
10 a.m.—Representative Meeting.

TUESDAY, JULY 19TH.
9.30 a.m.—Representative Meeting.
2 p.m.—Annual General Meeting.
5 p.m.—United Religious Service at St. Nicholas Cathedral.
8 p.m.—Adjourned General Meeting, President's Address.

WEDNESDAY, JULY 20TH.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m.—Sectional Meetings.
2 p.m.—Secretaries' Conference.
3 to 4.30 p.m.—Demonstrations.
6.30 p.m.—Secretaries' Dinner.
8 p.m.—Special Address on Industrial Hygiene.

THURSDAY, JULY 21ST.
9.15 a.m.—Roman Catholic Service, St. Mary's Cathedral.
10 a.m. to 1 p.m.—Sectional Meetings.
3 to 4.30 p.m.—Demonstrations.
7.30 p.m.—Annual Dinner.

FRIDAY, JULY 22ND.
10 a.m. to 1 p.m.—Sectional Meetings.
3 to 4.30 p.m.—Demonstrations.
7.30 p.m.—Popular Lecture.

SATURDAY, JULY 23RD.
Excursions.

The Honorary Local General Secretary of the Meeting is Mr. R. J. Willan, M.V.O., O.B.E., F.R.C.S., 6, Kensington Terrace, Newcastle-on-Tyne.

RECEPTION FOR LADIES ACCOMPANYING REPRESENTATIVES.

A reception will be given by the Ladies' Executive Committee on Friday, July 15th, at 8.30 p.m., in the lower suite of the Grand Assembly Rooms, to all ladies accompanying Representatives. Tickets may be obtained prior to the meeting by application to Miss Willis, Medical Institute, 7, Windsor Terrace, Newcastle-on-Tyne, and on the morning of Friday, July 15th, from the Clerk at the Representative Meeting, King's Hall, Armstrong College.

APPLICATIONS FOR TICKETS.

The attention of members attending the Annual Meeting in Newcastle-upon-Tyne is specially drawn to the fact that invitations for functions held during the meeting can only be obtained by personal application to the Reception Room.

APPLICATIONS FOR ACCOMMODATION.

MEMBERS proposing to attend the Annual Meeting should bear in mind that they may not be able to obtain adequate accommodation, even at some distance, unless it is reserved well beforehand. As the hotels will be unable to reserve this accommodation much longer it is essential that applications should be sent in at once.

Lists of hotels, etc., and revised particulars about accommodation at Newcastle were printed in the SUPPLEMENT of July 2nd. The Honorary Secretary of the Hotels and Lodgings Committee is Dr. E. F. Murray, 52, Jesmond Road, Newcastle-upon-Tyne, who will gladly give any information about accommodation to members who apply to him.

Association Notices.

ANNUAL GENERAL MEETING, 1921.

THE Annual General Meeting will be held in the King's Hall, Armstrong College, Newcastle-on-Tyne, on Tuesday, July 19th, 1921, at 2 p.m. Business: (1) Minutes of last meeting. (2) Appointment of auditors. (3) Report of Election of President for year 1922–23.

COUNCIL, 1921–22.

NOTICE is hereby given that nominations for candidates for election as Members of Council by Grouped Representatives for the year 1921–22, under By-law 46 (*c*), will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting on Friday, July 15th, 1921. Each nomination must be on the prescribed form (A.R.M. 10), copies of which will be forwarded by the Medical Secretary on application. The voting papers will be issued at the Representative Meeting.

MEETINGS TO BE HELD.

EAST YORKS AND NORTH LINCOLN BRANCH.—The sixty-fifth annual meeting of the above Branch will be held at Grimsby on Friday, July 15th. The place and hour of meeting will be announced later. Business: Election of officers and presidential address. Nominations must be in the hands of the honorary secretary before July 1st.

Meetings of Branches and Divisions.

CAMBRIDGE AND HUNTINGDON BRANCH.

THE seventy seventh annual meeting of the Branch was held at Burwell, on July 1st, when the President, the Right Hon. Sir CLIFFORD ALLBUTT, was in the chair. The following officers were elected for 19.1–1922:

President: Mr. O. R. Ennion. *President-elect*: Mr. Arthur Cooke. *Vice-Presidents*: Dr. B. E. Fordyce, Dr. F. E. Beckett. *Honorary Secretary and Treasurer*: Dr. G. S. Haynes.

The newly-elected President and Mrs. Ennion entertained to lunch some sixty members and their wives, and afterwards Mr. ENNION delivered an address on his experiences with the 1st East Anglian Field Ambulance at Gallipoli, for which he was heartily thanked by Dr. GRIFFITHS on behalf of those present. Subsequently the President and Mrs. Ennion gave a garden party, which was largely attended; so ended a very successful and enjoyable meeting.

CAMBRIDGE AND HUNTINGDON BRANCH: ISLE OF ELY DIVISION.

A SUCCESSFUL meeting of the Isle of Ely Division was held at the Griffin Hotel, March, on June 14th. The proceedings commenced with a luncheon, to which Dr. Alfred Cox (Secretary of the British Medical Association) and all the members and non-members of the Division had been invited. Dr. G. H. LUCAS, Chairman of the Division, presided, and in a few appropriate remarks welcomed Dr. Cox and the non-members as guests that day. He expressed the hope that on the next occasion the members would have the pleasure of including those who were now non-members as loyal members of the Division. After luncheon and the loyal toasts Dr. COX addressed the meeting, and touched upon the work of the Association generally during the past year. He instanced many of the ways the Association had time after time come to the aid of practitioners in various parts of the country where they themselves, as individuals, would have been helpless in their struggle with various bodies for fair conditions of service or an adequate remuneration.

A general discussion on various points followed, and finally Dr. C. E. STEPHENS, in proposing a hearty vote of thanks to Dr. Cox, said he was sure he was voicing the unanimous feeling of the meeting in thanking Dr. Cox for his visit to the Division that day, and for putting before them so clearly the great work the Association was doing for the profession generally. He felt convinced that if only the non-members and those members who were somewhat apathetic would become active members of their respective Divisions, the British Medical Association would be in such a strong position that it could undoubtedly obtain for its members whatever was reasonable both as regards conditions of service and remuneration. Dr. COX briefly thanked the meeting, and expressed the hope that his visit had been helpful.

EAST YORK AND NORTH LINCOLN BRANCH: EAST YORK DIVISION.

THE annual meeting of the East York Division was held at the Hull Royal Infirmary on June 17th, when the following officers were elected:

Chairman: Dr. H. L. Evans. *Vice-Chairman*: Dr. J. Nelson. *Honorary Secretary and Treasurer*: Dr. J. MacNidder. *Representative in Representative Body*: Dr. E. Barker.

The question of paying patients in Poor Law hospitals was discussed, and the following resolution was adopted for presentation to the Representative Meeting:

> "That it is important that definite principles should immediately be established for dealing with local authorities on the question of paying patients in Poor Law hospitals.

The annual report of the Division showed that during the year five very successful meetings had been held. In November a clinical meeting took place; in December the question, "Is a medical strike justifiable?" was discussed at a well-attended meeting; in February Dr. Spilsbury gave a lecture on criminal abortion; and in March a further clinical meeting was held, when Dr. J. E. Bannen read a paper on *x* rays in general practice, and showed a large number of radiographs.

The annual dinner of the Division, which took place on March 18th, was very successful. The membership of the Division is practically the same as the previous year, and has not suffered from the increased subscription.

EDINBURGH BRANCH: EDINBURGH AND LEITH DIVISION.

THE annual meeting of the Edinburgh and Leith Division was held on June 16th, when Dr. R. THIN, Chairman of the Division, presided.

With reference to the Dangerous Drugs Act, it was reported that after conference with the Edinburgh branch of the Scottish Chemists' Federation, the Chairman and Secretary sent a letter to the local members of Parliament and members of the Government on the subject, following the opinion expressed by the Division on October 19th, 1917.

It was reported that in consequence of a letter sent by the Executive Committee of the Division to the Public Health Committee of the Corporation expressing dissatisfaction with the arrangements for obtaining medicines after hours, on Sundays and on holidays, the Town Clerk had requested the attendance of a deputation, and that Drs. Thin and Keppie Paterson had been appointed for the purpose.

Some discussion took place on income tax deductions, and a letter from the Medical Secretary was read on the subject. Advice in individual cases was given from the Central Office and answers printed in the correspondence columns of the BRITISH MEDICAL JOURNAL. A copy of the memorandum on the subject issued by the Medical and Dental Defence Union of Scotland was distributed to each member present.

With reference to payment for attendance on cases in answer to police calls, it was reported that though four doctors were appointed by the Corporation for attendance on street accidents in addition to other duties, and that all messages for such accidents should be sent to them, yet at times other practitioners had been called, but no payment for services had been obtained. It was considered that it would be desirable if possible to obtain a test case.

The letter from the M.O.H. on domiciliary treatment of tuberculosis cases was read, and the SECRETARY gave explanations that he had received from Dr. Guy, the City Tuberculosis Officer, as to its meaning and the necessary procedure to be followed.

A recommendation from the Executive Committee for the furtherance of social functions was heartily supported. A committee was appointed to make arrangements, including Dr. Lamond Lackie (convener), Drs. Thin, Comrie, and Stevens.

The annual report of the Division was summarized by the Secretary, showing an increase in membership, which now amounted to about 300.

Drs. R. Thin and J. D. Comrie were unanimously nominated as candidates for election to the Scottish Committee.

The Annual Report of the Council was considered and instructions were unanimously given to the Representatives to support amendments to recommendation on para. 62, p. 112: That this Recommendation stop at the word "organization," the rest of the sentence to be deleted. Para. 92, p. 115: To support an amendment on this Recommendation that the two Representatives for Scotland be elected as at present, one by the eastern and one by the western group of Representatives, and also to attend to the amendment on the subject of federation with other bodies, and published on p. 182, SUPPLEMENT, May 14th.

The Division recorded its deep appreciation of the services rendered by Dr. G. Keppie Paterson as secretary and treasurer on his retiral from that office, which he had held for nineteen years, first, in connexion with the North-East Division of Edinburgh and, after union, of the combined Edinburgh and Leith Division.

The following office-bearers and committee were elected for 1921–22:

Chairman: Dr. R. Thin. *Vice-Chairmen:* Drs. Isabel Venters, J. Playfair. *Secretary and Treasurer:* Dr. J. D. Comrie. *Co-Secretary:* Dr. G. Keppie Paterson. *Representatives in Representative Body:* Drs. J. Stevens, C. M. Pearson, J. D. Comrie. *Deputy Representative:* Dr. J. Eason.

METROPOLITAN COUNTIES BRANCH: CHELSEA DIVISION.

A MEETING of the Chelsea Division, to which all the medical practitioners in the district were invited, was held at Fulham Town Hall on June 23rd, when Dr. JACKSON was in the chair. Mr. MCADAM ECCLES kindly explained the national provident scheme for hospitals, and opened a discussion on the subject. It was fully discussed, and the following resolution was adopted with only one dissentient:

> That the medical practitioners present at this meeting in the area of the Chelsea Division of the British Medical Association approve in general of the national provident scheme for hospitals and additional medical services.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.

AT the annual meeting of the East Hertfordshire Division held at Ware, on June 15th, the following officers were elected:

Chairman: Dr. Lawson Smith. *Vice-Chairman:* Dr. Ledward. *Honorary Secretary and Treasurer:* Dr. de Vine. *Representative in Representative Body:* Dr. de Vine. *Deputy Representative:* Dr. Ledward.

The revised ethical rules were adopted.

The new model organization rules were adopted as amended.

The geographical relationship of the Division to the Metropolitan Counties Branch was discussed, and, on the motion of Dr. LAWSON SMITH, seconded by Dr. MACFADYEN, it was resolved:

> That steps be taken for the transference of the East Herts Division from the Metropolitan Counties Branch to the Cambridge and Huntingdon Branch, where work, interests, and sympathies would be more in common.

The business of the Annual Representative Meeting was discussed. On the question of federation or affiliation it was feared that this might move towards trade unionism, which it was considered would be disastrous to the profession. It was also felt that if the British Medical Association would make itself responsible for the formation of a Consultative Committee, all bodies coming in on a numerical equality, great benefit to the Association and to the profession generally would be obtained.

On the motion of Dr. SHELLY, seconded by Dr. MACFADYEN, the Division approved of that part of the scheme only so far as it referred to oversea bodies and Ireland, and it was decided that the Representative be instructed to support that portion. The Division also approved of the formation of any Consultative Committee (or similar body) on which the British Medical Association would be associated with all other bodies representing the various branches of the profession for the purpose of negotiating with the Government.

A discussion on the Report of the Central Council, including the improvement of the machinery of the Association, was opened by Dr. STURGE. The Representative was instructed to vote in accordance with the recommendation of the Council.

Dr. Gordon Dill's national provident scheme for hospitals and additional medical services was fully explained to the meeting by Dr. MACFADYEN, and, after discussion, the matter was referred to the executive.

After the meeting the members of the Division with their wives were entertained at the Manor House, Ware, by Dr. and Mrs. Boyd.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.

THE annual general meeting of the Lambeth Division was held on June 8th at Bethlem Royal Hospital, when the following officers were elected for the year:

Chairman: Dr. A. F. W. Denning. *Vice-Chairman:* Mr. G. F. Gubbin. *Representative in Representative Body:* Dr. James Stewart. *Representative on Branch Council:* Dr. H. Harvey Norton. *Honorary Secretary:* Dr. E. L. M. Rusby.

Dr. HARVEY NORTON gave a lucid description of the National Provident Scheme for London.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

THE annual meeting of the Portsmouth Division was held at the Royal Portsmouth Hospital on June 9th, when Dr. J. E. F. PALSER was in the chair. After the Annual Report of the Council of the Association had been adopted by the Division and the annual accounts of the Division had been passed, the following officers were elected for 1921–22:

Chairman: Dr. J. H. F. Day. *Vice-Chairman:* Dr. E. J. Davis Taylor. *Honorary Medico-Political Secretary:* Mr. C. A. Scott Ridout. *Clinical Secretary:* Mr. C. P. Childe. *Honorary Librarian:* Dr. W. Carling. *Representative in Representative Body:* Dr. D. A. Sheahan.

After the business of the meeting Dr. A. CAMBELL gave an interesting lecture upon "Some points in the modern treatment of venereal disease." Considerable discussion followed, and Dr. Cambell replied to many questions raised.

INSURANCE.

LONDON INSURANCE COMMITTEE.

THE present members of the Committee, who ordinarily would have retired on June 30th, are to be continued in office until October 31st, pending the decision of Parliament on the bill providing for a future reduction in the size of Insurance Committees.

The Committee agreed with the Panel Committee that, subject to the approval of the Minister of Health, a woman medical practitioner who had limited her acceptances to women patients should have the units credited to her for the distribution of the practitioners' fund reduced, not by 7½ per cent., as in the case of other practitioners, but by 3¾ per cent.

LEICESTER LOCAL MEDICAL AND PANEL COMMITTEE.

THE Leicester Panel Committee, at a meeting held on June 8th, had under consideration a circular letter and circulars explaining the aims and policy of the Association of Panel Committees.

The Committee saw no reason for deviating from the position they took up in December last on this question, and reaffirmed the following resolution, which was then passed unanimously:

> "That the Leicester Panel Committee strongly deprecates any action by the Panel Committee for the County of London or other body which will impair the usefulness of the Insurance Acts Committee of the British Medical Association; that the Insurance Acts Committee is representative of panel practitioners throughout England and Wales, and also of the profession as a whole, and is in a much stronger position to negotiate with the Government than any purely sectional body would be; and that this Committee is unanimously of opinion that the proposal of the Panel Committee for the County of London is not in the best interests of the profession."

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: A. J. Hewitt to the *President* for hospital course, A. R. Fisher to the *Impregnable*, G. D. Bateman to the *Marlborough* on recommissioning, A. T. Rivers to the *Calcutta*, C. H. H. Robinson to the *Vivid* for R.N. Barracks (temporary). Surgeon Lieutenant Commanders: A. R. Sharred to the *Impregnable*, E. Heffernan to the *Tamar*, R. F. P. Cory to the *Royal Oak*, J. Kirker to the *Pembroke*, additional. Surgeon Lieutenants: G. Ambrey to the *Marlborough*, G. M. Graham to the *Malcolm*, G. L. Ritchie, M.C., to the *Vidette*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Captain and Brevet Major W. F. Christie retires, receiving a gratuity, and is granted the rank of Major.

Captains P. J. Ryan, M.C., and W. Walker, M.C., relinquish the acting rank of Major.

Captain H. A. Hill, from R.A.M.C.(S.R.), to be Lieutenant with the temporary rank of Captain, with seniority, June 3rd, 1918.

The following temporary Captains relinquish their commissions and are granted the rank of Captain: W. M. Muirhead, F. Whitby, H. Abernethy.

INDIAN MEDICAL SERVICE.

The services of Major R. S. Townsend, M.C., are placed temporarily at the disposal of the Chief Commissioner of Delhi.

The services of Major F. P. Mackie, O.B.E., of the Bacteriological Department, are placed at the disposal of the Government of Assam.

The services of Major G. G. Jolly, C.I.E., are placed at the disposal of the Chief Commissioner, Delhi, for appointment as officiating health officer, Imperial City, Delhi.

Captain W. L. Forsyth, M.B., Ch.B., has been appointed to officiate as Professor of Pathology, King Edward Medical College, Lahore.

Colonel G. J. H. Bell, C.I.E., M.B., has been granted five months' leave.

Lieut.-Colonel H. R. Nutt, M.D., F.R.C.S., has been appointed to officiate as Professor of Surgery, King George's Medical College, Lucknow.

Lieut.-Colonel C. A. Sprawson, C.I.E., M.D., F.R.C.S., has been appointed sub-pro-tempore to be Principal, King George's Medical College, Lucknow.

Captain G. Shanks, M.D., has been appointed sub-pro-tempore to be Professor of Pathology, Medical College, Calcutta.

Major J. R. J. Tyrrell has been granted six months' leave.

Colonel R. Heard, M.D., has been appointed as Honorary Surgeon to His Excellency the Viceroy and Governor-General in India.

The following officers have, in consequence of ill health, been permitted to retire: Lieut.-Colonels H. Burden, C.I.E., R. Steen, H. Smith, C.I.E., P. B. Haig, C.B., Major M. J. Quirke.

DEFENCE FORCE.

ARMY MEDICAL SERVICE.

R.A.M.C. - The following temporary Captains relinquish their commissions: G. M. Campbell, M.C., W. T. Briscoe, A. H. D. Smith, M.C.

6th (London) Field Ambulance (D.F.).—Temporary Major J. H. Barry, D.S.O., M.C. (Captain, R.A.M.C.), from 4th London Field Ambulance (D.F.), to retain the rank of temporary Major while commanding a field ambulance.

1st (North Midland) Field Ambulance.—To be temporary Major: S. T. Beggs (Captain, R.A.M.C.—brevet Major, R.A.R.O.). To be temporary Captain: N. S. Tirard.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain R. Magill, D.S.O., to be Major.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major W. Bowater, M.C., to be Lieut.-Colonel and command 1st South Midland Field Ambulance.

Captain C. W. T. Baldwin is seconded whilst holding a temporary commission in the R.A.F.

Captain (acting Major) R. Briercliffe, O.B.E., relinquishes the acting rank of Major on vacating the appointment of D.A.D.M.S. (August 25th, 1920).

Captain A. U. Webster, M.B. (late R.A.M.C.) to be Captain, with precedence as from February 10th, 1919.

The following officers resign their commissions: Major F. W. Johnson, O.B.E., T.D., and is granted the rank of Lieutenant-Colonel with permission to wear the prescribed uniform. Major C. H. Bullen, and retains the rank of Major. Captains C. B. Johnstone, M. T. Ascough, M.C., and A. P. Thomson, M.C., and are granted the rank of Major. Captains J. Howard, W. J. Lacy-Hickey, M.C., and J. G. Hayes, and retain the rank of Captain.

2nd London Sanitary Company.—Captain F. Fletcher resigns his commission and retains the rank of Captain.

Sanitary Service.—Major H. H. Littlejohn resigns his commission and retains the rank of Major.

DIARY OF SOCIETIES AND LECTURES.

SOCIETY FOR THE STUDY OF INEBRIETY, 11, Chandos Street, W.1.—Tues., 4 p.m., Dr. W. A. Potts: Alcohol and Alcoholism in Relation to Mental Deficiency.

POST-GRADUATE COURSES AND LECTURES.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Daily (except Sat.), 10–11.15 a.m., Instrumental Methods of Examination, 11.12.30 p.m., Demonstrations; 2–5 p.m., Out-patients. 5 p.m., *Lectures*: Mon., Dr. B. T. Parsons Smith: Anatomy and Development of the Heart. Tues., Sir Russell Wells: Diseases of Aortic Valve. Wed., Dr. F. W. Price: Diseases of Mitral Valve. Thurs., Dr. J. S. Goodall: *X* rays in the Diagnosis of Cardio-vascular Lesions. Fri., Dr. R. O. Moon: Heart Disease in Children.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., In- and Out-patient Clinics, Operations, etc. *Lecture-Demonstrations*:—3 p.m., Tues., Mr. C. H. Hayton: Anatomy of the Ear, Methods of Examination. Wed., Mr. W. E. Tanner: Specimens illustrating Acute Abdominal Emergencies. Fri., 4.30 p.m., Dr. C. E. Sundell: Bottle Feeding.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patient Clinics and Operations. *Demonstrations:* Mon., 12.15 p.m., Dr. Burnford: Pathological. Tues., 12 noon, Mr. T. Gray: Fractures. Wed., 12 noon, Mr. Sinclair: Surgical Diseases of the Abdomen. Thurs., 10.30 a.m., Dr. Simson: Gynaecological. Fri., 10 a.m., Dr. G. Stewart: Neurological. Sat., 10 a.m., Medical Registrar: Medical Ward Cases. *Lectures*, 5 p.m.: Mon., Mr. D. Buxton: Irregularities of the Teeth and their Sequelae. Tues., Mr. Addison: Inflammation and Tumours of the Breast. Wed., Dr. Pritchard: Forms of Arthritis and their Treatment. Thurs., Mr. P. Dunn: Tobacco Amblyopia. Fri., Dr. Pritchard: Meningitis.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JULY.

Annual Meeting, Newcastle-upon-Tyne.

15 Fri. Annual Representative Meeting, 10 a.m.
Representatives' Dinner, 7.15 p.m.
Reception for Ladies accompanying Representatives, 8.30 p.m.
16 Sat. Annual Representative Meeting, 9.30 a.m.
17 Sun. Representatives' Motor Excursion Party.
18 Mon. Council Meeting, 9 a.m.
Annual Representative Meeting, 9.30 a.m.
Election Returns Committee (on termination of Annual Representative Meeting).
19 Tues. Annual Representative Meeting, 9.30 a.m.
Annual General Meeting, 2 p.m.
Annual Representative Meeting, immediately following Annual General Meeting.
Election Returns Committee (on termination of Annual Representative Meeting).
United Religious Service, St. Nicholas Cathedral, 5 p.m.
President's Address: Adjourned Annual General Meeting, 8 p.m.
20 Wed. Council Meeting, 9 a.m.
Meetings of Sections, 10 a.m.
Conference of Honorary Secretaries, 2 p.m.
Dinner of Honorary Secretaries, 6.30 p.m.
Special Address on Industrial Hygiene, 8 p.m.
21 Thur. Meetings of Sections 10 a.m.
Roman Catholic Service, St. Mary's Cathedral, 9.15 a.m.
Annual Dinner of the Association, 7.30 p.m.
22 Fri. Meetings of Sections, 10 a.m.
Popular Lecture, 7.30 p.m.
23 Sat. Excursions.

The Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., will be open at the St. George's Drill Hall, St. Mary's Place, Newcastle-upon-Tyne, from Tuesday, July 19th, to Friday, July 22nd, from 9 a.m. to 6 p.m. daily.

15 Fri. East Yorks and North Lincoln Branch, Annual Meeting, Grimsby.

APPOINTMENTS.

CROOKSHANK, F. G., M.D., F.R.C.P., Physician to In-patients, the Prince of Wales's General Hospital, N., and the French Hospital, W.C.

FORT, H. M., M.B., Ch.B.Vict. Manch., Certifying Factory Surgeon for Oldham West.

WORSTER-DROUGHT, C., M.A., M.D., M.R.C.P., Assistant Physician, West End Hospital for Diseases of the Nervous System.

YOW, C. W., M.B. Edin., Senior House Surgeon and Registrar to the Royal Eye Hospital, Southwark, S.E.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

BLAXLAND.—On June 22nd, at St. Ethelbert's House, Norwich, the wife of Jasper Blaxland, M.S.Lond., F.R.C.S., of a son.

HENDRY.—On June 26th, at 3, Elphinstone Road, Southsea, to Agnes, wife of Major A. Hendry, R.A.M.C., a son.

MARRIAGES.

EMINSON—DAVIDSON.—On June 7th, at Christ Church, Mussoorie, U.P., by Rev. A. H. Tilt, Basil Franklin Eminson, Captain I.M.S., son of Dr. and Mrs. T. B. Franklin Eminson, Scotter, Lincs., to Mary (May), daughter of Mr. and Mrs. John Davidson, Aboyne, Aberdeen.

FRY—MIALL-SMITH.—On July 1st, at the Ethical Church, Bayswater, Hubert John Burgess Fry, B.A., M.D., B.Ch., B.Sc., M.R.C.S., L.R.C.P., D.P.H., to Gladys Miall-Smith, B.Sc., M.B., B.S., M.R.C.S., L.R.C.P., D.P.H.

DEATH.

BUCKLEY.—On the 3rd inst., at 58, Brunswick Street, Manchester, John Buckley, L.S.A. (late of Chesterfield), the beloved husband of Ada Buckley. R.I.P.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 16TH, 1921.

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British Medical Association.

CURRENT NOTES.

Reasons for Not Joining the Association.

Most of the answers received from the non-members to whom a recruiting circular was recently sent, if not very helpful, at any rate make interesting reading. A good many correspondents state that they are too old to join or have retired from practice. The following is a selection of actual remarks made in writing, arranged so as to bring out the not unsuspected difficulty of pleasing everybody:

"The Association is becoming more and more a pro-panel organization."

"I am an insurance practitioner and the Association is little use to me. It is run by the consultant element."

"The BRITISH MEDICAL JOURNAL is the organ of panel practitioners."

"The JOURNAL gives too much space to abstruse scientific matters of no use to the general practitioner."

"In the present state of affairs a general practitioner must choose between the Association and a trade union. I have chosen the latter."

"The Association is a trade union, and I dislike trade unionism and all its ways."

"I do not belong to the British Medical Association because it is not a purely scientific society. It should leave medical politics alone."

"The Association does not sufficiently look after the interests of the general practitioner."

One correspondent blames the Association for reduction of the insurance capitation fee from 13s. 6d. to 11s., oblivious of the fact that it never was 13s. 6d. Several revive ancient history by saying that their objection to the Association is due to its action during the inception of the national insurance system, but they do not by any means agree as to what the action ought to have been. A few of the letters have been useful as pointing to improvements that might be made in the Association or its JOURNAL, but the great majority are neither helpful nor intended to be so.

Certificates for Pensions for Blindness.

The Association having been informed that honorary officers of ophthalmic hospitals were being asked to supply, without a fee, certificates to enable applicants for pensions for blindness to obtain such pensions, made a protest to the Board of Customs and Excise, which is the body that deals with this question. The Board's answer was that if such a demand were being made it was contrary to the spirit of instructions which had been issued, and that suitable notice had been taken of the case to which attention had been directed. Since that reply was received an honorary officer to a London ophthalmic hospital has received a further application, and on the last occasion the applicant produced a letter from the pensions officers stating that it would certainly be no use his applying for a pension for blindness if he did not produce some proof that he was a blind person. A further protest was made, and the Board now declares that there is no reason to think that the Board's instructions are being generally misinterpreted in the country, as this is the only complaint received since February. The Medical Secretary would be glad to have the experience of honorary officers to ophthalmic hospitals in provincial towns in regard to this matter.

Post-Graduate Medical Committee's Report.

The JOURNAL of June 25th contained, at p. 942, a full analysis of the report of the Committee appointed by the Ministry of Health on January 26th, 1921, with the Earl of Athlone as Chairman, "to investigate the needs of medical practitioners and other graduates for further education in medicine in London, and to submit proposals for a practicable scheme for meeting them." During this inquiry a memorandum was furnished to the Committee by the British Medical Association, and oral evidence was given by the President of the Association, Sir Clifford Allbutt, Dr. C. O. Hawthorne, and Mr. R. J. Willan. The Council of the Association has now appointed a small committee to consider the report of the Committee. The Committee's recommendations, as summarized in the concluding paragraph of its report, are as follows:

1. A school attached to a hospital centrally situated in London should be devoted solely to post-graduate medical education.
2. The school should be a school of the University of London, and receive substantial financial assistance from the Treasury through the University Grants Committee.
3. In addition to the courses provided at the Central School for the full-time instruction of general practitioners, and at existing post-graduate colleges and schools, further facilities for post-graduate study should be made available at non-teaching hospitals and in Poor Law infirmaries.
4. It is desirable that increased use should be made of cottage hospitals in which all general practitioners of the neighbourhood should have the right, if they so desire, to treat their patients.
5. A much larger number of resident appointments and clinical assistantships should be created in hospitals and Poor Law infirmaries.
6. A central office should be established to co-ordinate and develop the work of post-graduate education in London. In the administrative building should be provided not only offices but the accommodation necessary for social purposes.
7. An Institute of State Medicine should be established by the University of London in which instruction should be given in public health, forensic medicine, industrial medicine, and in medical ethics and economics.

Grant to the Tasmanian Branch.

In the JOURNAL of April 19th, 1919, p. 485, and of July 17th, 1920, p. 81, articles were printed summarizing the serious medico-political situation which had arisen in Tasmania in consequence of recent legislation adopted by the Tasmanian Government. In this way the history of the dispute was placed before members of the Association and the profession generally. The position in Tasmania was also brought to the notice of the Representative Body at Cambridge last summer, as recorded in the SUPPLEMENT of July 10th, 1920, p. 38. At the last meeting of the Council the Medico-Political Committee reported that a grant of £100 would be made out of the Central Emergency Fund to the voluntary fund now being raised in Tasmania to defray the expenses of the Tasmanian Branch in its unsuccessful efforts to resist the introduction of the new Medical Acts. The Committee considered that a grant from this country would be much appreciated by the Tasmanian Branch, not only because the Branch is small in numbers, and therefore finds it difficult to raise the money, but far more because the grant would show that the British Medical Association at home is watching the Association's affairs in Tasmania with interest and sympathy.

Paying Patients in Poor Law Hospitals: Manchester Scheme.

As a result of a conference between the Manchester Board of Guardians and representatives of the medical profession in Manchester the following scheme has been agreed upon for the use of beds in Poor Law hospitals by paying patients:

1. Any scheme must be subject to the administrative superintendence of the medical superintendent of the hospital in which the beds are provided.
2. The beds shall be available for cases sent in by any medical practitioner, who shall be allowed, if he desires, to attend, treat, or operate on them himself with the assistance of the resident medical and nursing staff of the hospital.
3. Patients shall be admitted to any of the beds with the recommendation of a medical practitioner, where possible, subject to the final approval of the medical superintendent of the hospital.
4. The guardians suggest that any tariff of fees which may be charged for attendance and treatment by the practitioner in charge of the case should be arranged by the medical association.
5. Any practitioner may, if he desires, attend and treat gratuitously any patient recommended for admission by him who can only afford the standard hospital fees for maintenance and treatment. Intention to do so must be stated at time of admission.
6. The visiting staffs of the hospitals shall be entitled to send in and treat their own private patients on the same conditions as outside medical practitioners.
7. The above scheme is suggested provisionally as one likely to allow free development of this new departure in the provision of hospital accommodation for paying patients. Modifications and additional regulations in matters of detail will, it is anticipated, prove necessary, but these, in the opinion of the conference, should be made from experience gained in the working of the scheme.

This scheme is so drawn up as to provide an opportunity for the general practitioner to participate in institutional treatment, and the opportunity is one of which advantage should be taken by the medical men in the area concerned. Other areas would do well to try and get similar regulations embodied in any schemes which are drawn up by their boards of guardians.

Income Tax Assessment.

The following particulars, which have been supplied by a gentleman who is a chartered accountant, and whose wife is engaged in general practice, will be of interest to medical men. Our correspondent states that in making the returns for income tax it has always been his custom to include the whole of his wife's earnings derived from panel and private practice in one lump sum, and against that to charge the proper amounts for rent, rates, gas, light, locumtenent's fees and expenses, and all the other usual expenses which are allowable for deduction, and to arrive at the assessable profit on the three years' average under Schedule D.

When the accounts for the year to March 31st, 1920, were put in the local inspector objected to the deduction of the salary paid to locumtenents during holidays on the ground that this expense was one of the holiday and not of the practice. Our correspondent, considering the contention to be ridiculous, seeing that the earnings of the locumtenent had been included on the credit side of the account, applied to Somerset House. That authority said it agreed with the inspector. Our correspondent then appealed to the local commissioners, who came to the curious decision that in so far as the expense of the locumtenent was necessitated by the private practice so much of it as represented the proportionate cost compared with the fees earned should be allowed as a deduction, but as the panel receipts fall within Schedule E no expenses of a locumtenent could be allowed against these; the fee paid to the locumtenent should therefore be split, part allowed and part disallowed. The inspector was not satisfied and asked for a case to be stated. The matter has, however, been settled by the following letter from the inspector: "With reference to the appeal in the above case I am pleased to inform you that the Board of Inland Revenue have reconsidered the matter and have decided that they will offer no objection to the allowance of the cost of a locumtenent. The full cost will therefore be allowed in the accounts."

Our correspondent suggests that practitioners should include their panel receipts with those of their general practice and so obtain the benefit of an average and the allowance of all expenses incurred in the panel practice, and that they should further charge, not only the fees paid to locumtenents, but the cost of housing and feeding the locumtenent or an assistant. The thanks of the profession are due to our correspondent for the tenacity with which he has followed up a matter of considerable interest to all general practitioners.

Arrangements for the Annual Representative Meeting.

The Annual Representative Meeting is being held in the King's Hall, Armstrong College, Newcastle-upon-Tyne, on Friday, July 15th, and following week-days, as may be necessary. The printed Agenda and other documents were issued from the head office on July 7th. The Representatives' dinner is being held on the evening of the first day's session (July 15th) at the Grand Assembly Rooms, Barras Bridge, Newcastle. (This will be known throughout the Annual Meeting as "The Assembly Rooms Club.") A reception for ladies accompanying Representatives and Members of Council has been arranged for the same evening by the Ladies' Executive Committee. On Saturday afternoon there will be a ladies' tennis party, and in the evening a smoking concert at 8 o'clock, to which ladies also are invited. On Sunday there will probably be a motor excursion in private cars for Representatives, Members of Council, and ladies accompanying them; while on Monday morning ladies will be shown over the Old Castle and Black Gate, and a ladies' excursion to Tynemouth has been arranged. From the night of Thursday, July 14th, onwards a smoking room at the Grand Hotel, Newcastle, has been reserved for Representatives and Members of Council.

The Annual Exhibition.

The Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., in connexion with the Annual Meeting of the British Medical Association will be held this year in the St. George's Drill Hall, St. Mary's Place, Newcastle-upon-Tyne. Arrangements for the Exhibition are now complete. There will be a large and representative display of the latest inventions and improvements in surgical instruments, appliances, etc., and of developments in medicinal and dietetic preparations. The hall is admirably suited for the purpose of this exhibition, for it has an area of over 17,000 square feet on one floor. It is within a minute's walk of the College of Medicine, where the Reception Room will be situated; members will thus be afforded a good opportunity of inspecting the exhibits. Luncheons, afternoon teas, etc., will be provided in the Exhibition, and a first class orchestra will play daily.

Association Notices.

ANNUAL GENERAL MEETING, 1921.

THE Annual General Meeting will be held in the King's Hall, Armstrong College, Newcastle-on-Tyne, on Tuesday, July 19th, 1921, at 2 p.m. Business: (1) Minutes of last meeting. (2) Appointment of auditors. (3) Report of Election of President for year 1922-23.

British Medical Association.

EIGHTY-NINTH ANNUAL MEETING, NEWCASTLE-UPON-TYNE, JULY, 1921.

Patron: HIS MAJESTY THE KING.

President: The Right Hon. Sir T. CLIFFORD ALLBUTT, P.C., K.C.B., F.R.S., Regius Professor of Physic, University of Cambridge.

President-Elect: DAVID DRUMMOND, C.B.E., M.A., M.D., D.C.L., Vice-Chancellor and Professor of the Principles and Practice of Medicine, University of Durham.

Chairman of Representative Meetings: T. W. H. GARSTANG, M.A., M.R.C.S., D.P.H.

Chairman of Council: R. A. BOLAM, M.D., M.R.C.P.

Treasurer: G. E. HASLIP, M.D.

PROGRAMME.

The President, Professor DAVID DRUMMOND, will give an Address, in the King's Hall, Armstrong College, on Tuesday, July 19th, at 8 p.m.

The ANNUAL REPRESENTATIVE MEETING, in the King's Hall, Armstrong College, begins on Friday, July 15th, at 10 a.m., and will be continued on the following days.

The statutory ANNUAL GENERAL MEETING will be held in the King's Hall, Armstrong College, on July 19th, at 2 p.m., and the Adjourned General Meeting at 8 p.m.

The Annual Dinner of the Association will take place on Thursday, July 21st, at 7.30 p.m. Members wishing to attend should immediately notify the Local General Secretary, 6, Kensington Terrace, Newcastle-upon-Tyne, preferably by filling up and forwarding the form on page 231 of the SUPPLEMENT of June 18th. The price of the ticket is 20s., which should be remitted with the application.

A united religious service will be held on Tuesday, July 19th, at 5 p.m., at St. Nicholas Cathedral. A Roman Catholic Service will be held at St. Mary's Cathedral on Thursday, July 21st, at 9.15 a.m.

The Conference of Secretaries will be held at 2 p.m. on Wednesday, July 20th, and the Secretaries' Dinner will take place in the evening at 6.30.

A Special Address on "Industrial Hygiene: its Rise, Progress and Opportunities," will be given by Sir Thomas Oliver, LL.D., M.D., F.R.C.P., on Wednesday, July 20th, at 8 p.m., in the King's Hall.

The Popular Lecture, on "Evolutionary Wounds," will be delivered by Sir Arthur Keith, M.D., F.R.S., on Friday, July 22nd, at 7.30 p.m., in the King's Hall.

On Tuesday, July 19th, at 9.30 p.m., there will be a reception in the Assembly Rooms Club, and on Wednesday, at 9 p.m., a reception in the Hancock Natural History Museum. On Thursday, at 10 p.m., there will be a dance in the King's Hall, and on Friday, at 8.30 p.m., a reception and dance at the Assembly Rooms Club.

On Wednesday, July 20th, at 3.45 p.m., the Lord Mayor of Newcastle will give a garden party in Jesmond Dene.

THE SCIENTIFIC SECTIONS.

The Sections will meet from 10 a.m. to 1 p.m. Laboratory and Clinical Demonstrations will be given on Wednesday, July 20th, Thursday, July 21st, and Friday, July 22nd, between 3 p.m. and 4.30 p.m.

The following Sections meet on three days—Wednesday, Thursday, and Friday, July 20, 21, and 22.

MEDICINE

President: Professor THOMAS BEATTIE, M.D., F.R.C.P.

Vice-Presidents: The Right Hon. LORD DAWSON of PENN, G.C.V.O., M.D., F.R.C.P.; Professor A. J. HALL, M.D., F.R.C.P.; G. S. HAYNES, M.D., M.R.C.P.; J. WILKIE SMITH, M.D.

Honorary Secretaries: C. E. LAKIN, M.D., F.R.C.P., (105, Harley Street, London, W.1); W. T. RITCHIE, O.B.E., M.D., L.R.C.P.Ed. (14, Rothesay Place, Edinburgh); Professor W. E. HUME, C.M.G., M.D., F.R.C.P. (4, Ellison Place, Newcastle-on-Tyne).

The following provisional programme has been arranged:—

July 20th (10 a.m.).—Discussion: Visceral Syphilis, especially of the Central Nervous System and Cardio-vascular System. To be introduced by the Right Hon. Sir CLIFFORD ALLBUTT, K.C.B., F.R.S., followed by Dr. Gordon Holmes, Professor Reynolds, Dr. John Cowan, Dr. A. G. Gibson, Dr. John Eason and Dr. Ivy McKenzie.

July 21st (10 a.m.).—Discussion: Asthma and Allied Disorders. To be opened by Sir HUMPHRY ROLLESTON, K.C.B., followed by Dr. John Freeman, Dr. A. F. Hurst, Mr. Frank Coke, Dr. Mackenzie Wallis and Dr. Charles McNeil.

July 22nd (10-11.30 a.m.).—Discussion: Encephalitis Lethargica. To be opened by Dr. EDWIN BRAMWELL, followed by Dr. Wilfred Harris, Professor A. J. Hall, Dr. C. H. Melland. 11.30 a.m.-1 p.m.:—Joint Discussion with the Section of Physiology, Pharmacology, Therapeutics, and Dietetics:—Renal Efficiency Tests. To be opened by Professor H. MCLEAN, followed by Professor Francis D. Boyd, C.B., M.D., Dr. R. L. Mackenzie Wallis, and Dr. D. Wells Patterson.

In the afternoons of Wednesday, Thursday, and Friday, from 3 to 4.30, cases will be demonstrated by the honorary medical staff in the medical wards of the Royal Victoria Infirmary. Short papers and demonstrations will be arranged during the same hours.

Members wishing to take part in the above discussions, or to give demonstrations, are asked to communicate with Dr. W. E. Hume, Honorary Secretary, Section of Medicine, 4, Ellison Place, Newcastle-on-Tyne, in order that he may forward a copy of the opener's remarks when available.

SURGERY.

President: Professor J. RUTHERFORD MORISON, D.C.L., LL.D., F.R.C.S.

Vice-Presidents: Professor H. BRUNTON ANGUS, F.R.C.S.; ARTHUR COOKE, F.R.C.S.; W. J. GREER, F.R.C.S.I.; A. M. MARTIN, M.B.

Honorary Secretaries: W. GIRLING BALL, F.R.C.S. (77, Wimpole Street, London, W.1); J. M. RENTON, F.R.C.S. (16, Sandyford Place, Glasgow, W.); G. GREY TURNER, M.S., F.R.C.S., F.A.C.S. (The Hawthorns, Osborne Road, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (Morning Session).—Discussion: Acute Pleural Empyema. To be opened by Mr. HENRY WADE, C.M.G., D.S.O., M.D., F.R.C.S.Edin. (Edinburgh). Short Papers: Sir HAMILTON A. BAILANCE, The Best Method of Operative Approach in Cases of Acute Appendicitis, illustrated by lantern slides. Mr. G. H. EDINGTON, An Analysis of a Series of Cases of Intussusception.

In the afternoon, at 3 o'clock, demonstrations will be given by Professor RUTHERFORD MORISON, at the War Pensions Hospital, of cases and specimens illustrating (1) Bipp, (2) Bone Cavities, (3) Bone Grafts. Cases will also be shown by other members of the staff.

July 21st Morning Session.—Discussion: Compound Fracture of the Thigh and Leg. To be opened by Mr. NAUGHTON DUNN, M.A., M.B., Ch.B., followed by Mr. Hamilton Russell, Mr. Max Page, D.S.O., Mr. Henry Wade, C.M.G., D.S.O., Mr. G. H. Edington, and Mr. Grant Andrews. Short Papers: Mr. HAMILTON RUSSELL (Melbourne); Theory and Method in Extension of the Thigh. Mr. MARCUS MAMOURIAN, The Bone Graft.

In the afternoon, at 3 o'clock, the demonstrations will be at the Royal Victoria Infirmary by Mr. HAMILTON DRUMMOND and Mr. F. C. PYBUS.

July 22nd (Morning Session).—Discussion: The Diagnosis and Treatment of Injuries of the Intestines. To be opened by Mr. GORDON TAYLOR, O.B.E., M.S. (London), followed by Mr. James Berry, Mr. Zachary Cope, and Mr. Hamilton Barclay. Short Paper: Mr. CHARLES P. CHILDE, The Employment of Crushing Instruments and the Cautery in Intra-abdominal Operations, with demonstration of some special instruments.

The afternoon demonstration will be at the Infirmary, when Mr. JOHN CLAY, C.B.E., will show cases after splenectomy, etc., and Mr. G. GREY TURNER six cases after transplantation of the ureter into the bowel.

Anyone wishing to take part in the discussions or demonstrations is invited to communicate with the Secretaries, and those

wishing to read short papers are asked to send a summary, to be brought before the officers of the Section. There will also be an exhibition of specimens illustrating the subjects for discussion, and members are asked to advise the Secretaries of any specimens they propose to exhibit.

PATHOLOGY AND BACTERIOLOGY.

President: Professor MATTHEW J. STEWART, M.B., M.R.C.P.
Vice-Presidents: J. F. GASKELL, M.D., F.R.C.P.; JAMES A. MURRAY, M.D.
Honorary Secretaries: R. R. ELWORTHY, O.B.E., M.D., M.R.C.P. (West London Hospital, Hammersmith, London, W.6); A. F. BERNARD SHAW, M.D., M.R.C.P.I. (Pathological Department, College of Medicine, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.).—Discussion: Haemochromatosis. To be opened by Professor JOHN SHAW DUNN and Dr. MAXWELL TELLING, followed by Dr. J. F. Gaskell, Dr. Mackenzie Wallis, and Professor M. J. Stewart. Discussion: The Streptococci. To be opened by Professor J. MARTIN BEATTIE, followed by Dr. Warren Crowe, Dr. H. J. Dible, and Dr. J. W. McLeod.

July 21st (10 a.m.).—Papers: The Relation of Carcinoma to Infection, by Dr. W. FORD ROBERTSON. Observations on Malignant Melanoma, by Professor M. J. STEWART and Dr. H. H. GLEAVE. The Pathology of Gastric and Duodenal Ulcer, by Dr. A. G. GIBSON. Chronic Duodenal Ileus, by Mr. D. P. D. WILKIE, F.R.C.S. Experimental Tar Cancer in Mice, by Dr. J. A. MURRAY and Dr. W. H. WOGLAM. Other papers will be announced at the meeting.

July 22nd (10 to 11.30 a.m.).—Joint discussion with the Section of Medicine: Encephalitis Lethargica; 11.30 to 1 p.m., Joint discussion with the Section of Medicine and the Section of Physiology, Pharmacology, Therapeutics, and Dietetics: Renal Efficiency Tests.

Demonstrations.

July 21st (at 3 p.m.).—"Protein Tests in Asthma," by Dr. MACKENZIE WALLIS, in the Pathological Laboratory.
July 22nd (at 3 p.m.).—"Renal Function Tests," by Dr. MACKENZIE WALLIS, in the Pathological Laboratory.

Anyone wishing to take part in the discussions is invited to communicate with the Secretaries, and those wishing to read short papers are asked to send a summary to be brought before the officers of the Section. There will also be an exhibition of specimens illustrating the subjects for discussion, and members are asked to advise the Secretaries of any specimens they propose to exhibit.

Pathological Museum.

The Pathological Museum Committee proposes to arrange the material under the following heads: (1) Exhibits bearing on discussions and papers to the various Sections; (2) specimens and illustrations relating to any recent research work; (3) instruments relating to clinical diagnosis and pathological investigation; (4) individual specimens of special interest or a series illustrating some special subject. It is proposed to gather together a series of exhibits illustrating the pathology of individual cases. Such exhibits will include a brief clinical history of the case and mounted specimens of the different organs and tissues illustrating the pathological changes and the correlation of the lesions. Other interesting specimens will be welcomed. The Honorary Secretary of the Pathological Museum Committee is Dr. A. F. Bernard Shaw, Pathological Department, College of Medicine, Newcastle-upon-Tyne. The museum will occupy a central position in the same building as that in which the sectional work is carried on. Every care will be taken of specimens, and the contents of the museum will be insured. It is hoped to make arrangements for exhibitors to demonstrate their specimens.

PREVENTIVE MEDICINE WITH INDUSTRIAL DISEASES.

President: Sir THOMAS OLIVER, LL.D., M.D., F.R.C.P.
Vice-Presidents: Sir JOSIAH COURT, M.R.C.S.; T. EUSTACE HILL, O.B.E., M.B.; I. G. MODLIN, O.B.E., M.D.
Honorary Secretaries: C. M. WILSON, M.C., M.D., F.R.C.P. (64, South Audley Street, Grosvenor Square, W.1.); W. H. DICKINSON, O.B.E., M.B., D.P.H. (91, Newbridge Street, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.).—Discussion: The Effect of Health Legislation on the Health of the People. To be opened by Captain WALTER E. ELLIOT, M.C., M.P.

July 21st (10 a.m.). Discussion: The Importance of Industrial Medicine to the Community. To be introduced by Professor COLLIS (Cardiff).

July 22nd (10 a.m.).—Proposed joint meeting with the Section of Medical Sociology.

ORTHOPAEDICS AND DISEASES IN CHILDREN.

President: A. H. TUBBY, C.B., C.M.G., M.S., F.R.C.S.
Vice-Presidents: R. C. ELMSLIE, O.B.E., M.S., F.R.C.S.; H. MORLEY FLETCHER, M.D., F.R.C.P.; LACHLAN G. FRASER, M.D.; Sir HENRY M. W. GRAY, K.B.E., C.B., C.M.G., F.R.C.S.; A. E. MORISON, F.R.C.S.Edin. (Director of Demonstrations).
Honorary Secretaries: C. MAX PAGE, D.S.O., F.R.C.S. (134, Harley Street, London, W.1.); FRANK HAWTHORN, D.S.O., M.D. (10, Ellison Place, Newcastle-on-Tyne); H. R. SOUPER, M.D. (Ministry of Pensions Hospital, Castle Leazes, Newcastle-on-Tyne).

The following preliminary programme has been arranged:

July 20th (10 a.m.). *Chairman:* Mr. A. H. Tubby. Discussion: The Early Diagnosis and Treatment of Anterior Poliomyelitis. To be opened by Dr. FARQUHAR BUZZARD (London), followed by Mr. R. C. Elmslie (London), Mr. McCrae Aitkin (London), Mr. W. R. Bristow (London), Dr. Tulloch (Dundee), and Dr. Howard Humphris (London). Papers: Dr. MUKK JANSEN, The Polyarticular Muscles as the Cause of Arthrogenetic Contractures. Mr. HARRY PLATT: Birth Palsy.

July 21st (10 a.m.). *Chairman:* Dr. H. Morley Fletcher. Discussion: Blood Diseases in Children. To be opened by Dr. HUGH THURSFIELD followed by Dr. J. S. McCracken (Newcastle-upon-Tyne). Papers: Dr. LEONARD FINDLAY (Glasgow), Prenatal Treatment of Syphilis; Dr. JOHN THOMSON (Edinburgh) and Mr. TYRRELL GRAY (London), Hypertrophic Pyloric Stenosis.

July 22nd (10 a.m.).—*Chairman:* Sir Henry M. W. Gray. Discussion: Tuberculosis of Bone in Children; General Principles of Treatment. To be opened by Sir H. J. GAUVAIN (Alton), followed by Mr. John Fraser (Edinburgh), Dr. Camac Wilkinson (London), and Mr. F. C. Pybus (Newcastle-upon-Tyne). Paper: Dr. H. M. CARGIN (M.O.H. West Hartlepool), Milk Control.

Demonstrations.—The following demonstrations will be held in the War Pensions Hospital, Castle Leazes, Newcastle-upon-Tyne, by permission of Colonel F. J. Greig, C.M.G., A.M.S.(R.): *July 21st*, 3 to 4.30 p.m., Congenital Heart Lesions, by Dr. W. E. HUME (Newcastle-upon-Tyne); Congenital Dislocations of the Hip—Late Results, by Mr. A. M. MARTIN (Newcastle-upon-Tyne). *July 22nd*, 3 to 4.30 p.m., Bone Grafting for Cranial Defects, by Mr. A. E. MORISON (Sunderland); Hydrocephalus, by Dr. J. D. LICKLEY (Newcastle-upon-Tyne); On Finer Adjustment, with especial reference to the Hand, by Dr. F. A. HORT (Pensions Hospital, Sunderland). Should time permit discussion will be welcomed.

Contributors wishing to show specimens should communicate at once with Dr. Souper, Ministry of Pensions Hospital, Newcastle-upon-Tyne, who will arrange with the Secretary of the Pathological Museum Committee for the storage and exhibition of the specimens during the meeting.

The following Sections meet on two days—Wednesday and Thursday, July 20 and 21.

NEUROLOGY AND PSYCHIATRY.

President: Professor A. W. MACKINTOSH, M.D., F.R.C.P.Ed.
Vice-Presidents: A. HELEN A. BOYLE, M.D.; E. FARQUHAR BUZZARD, M.D., F.R.C.P.; HARRY CAMPBELL, M.D., F.R.C.P.; HORSLEY DRUMMOND, M.D.
Honorary Secretaries: ANTHONY FEILING, M.D., F.R.C.P. (41, Devonshire Street, London, W.1); GEORGE HALL, C.M.G., M.D., M.R.C.P. (1, Eslington Road, Jesmond Road, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.). Discussion: The Diagnosis and Treatment of Borderland Cases. To be opened by Professor G. M. ROBERTSON (Edinburgh) and Dr. JAMES COLLIER (London).

July 21st (10 a.m.).—Papers: (1) Dr. HARRY CAMPBELL (London), The Nervous Diathesis and the Blood. (2) Dr. G. RIDDOCH (London), Some Points in the Management and Treatment of Paraplegia. (3) Dr. F. M. R. WALSHE (London), Observations on the Mechanism of Symptom Production in Disease and Injury of the Nervous System. (4) Dr. A. E. A. CARVER (Birmingham), Epilepsy from the Psychological Standpoint. (5) Dr. JUDSON BURY (Manchester), Remarks on the Pathology and Symptoms of Paralysis Agitans. (6) Dr. DOUGLAS ADAMS (Glasgow), The Early Diagnosis and Treatment of Disseminated Sclerosis.

OPHTHALMOLOGY.

President: Professor J. D. WARDALE, M.B., B.S.
Vice-Presidents: H. P. BENNETT, M.B.; Lieut.-Colonel R. H. ELLIOT, M.D., F.R.C.S., I.M.S. (ret.); HARRY M. TRAQUAIR, M.D., F.R.C.S.Ed.
Honorary Secretaries: N. B. B. FLEMING, M.B., Ch.B. (9, Harley Street, London, W.1); STANLEY ROBSON, M.S., F.R.C.S.Ed. (Milton House, Rowlands Gill, co. Durham).

The following provisional programme has been arranged:

July 20th (10 a.m.).—Discussion: The Causes and Prevention of Blindness. To be opened by Mr. BISHOP HARMAN, F.R.C.S. (London).

July 21st (10 a.m.). Discussion: The Treatment of Corneal Ulcers. To be opened by Mr. J. V. PATERSON, F.R.C.S.Edin. (Edinburgh).

OTO-RHINO-LARYNGOLOGY.

President: G. WILLIAM HILL, M.D., B.Sc.
Vice-Presidents: R. GORDON BELL, M.D., F.R.C.S.Edin.; JAMES DON, M.D.; DAN MCKENZIE, M.D., F.R.C.S.Edin.
Honorary Secretaries: LIONEL COLLEDGE, M.B., F.R.C.S. (22 Queen Anne Street, London, W.1.); W. FRANK WILSON, M.B., B.S. (97, Jesmond Road, Newcastle upon-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.). Discussion: Problems in connexion with the Early Diagnosis and Treatment of Meningitis occurring in Aural Cases. To be opened by Sir CHARLES BALLANCE, K.C.M.G., C.B.

July 21st (10 a.m.). Discussion: The Various Problems presented by Haemorrhage occurring in connexion with Operations on the Tonsils. To be opened by Dr. BROWN KELLY (Glasgow).

PHYSIOLOGY, PHARMACOLOGY, THERAPEUTICS, AND DIETETICS.

President: H. H. DALE, C.B.E., M.D., F.R.S.
Vice-Presidents: Professor A. V. HILL, M.A., D.Sc., F.R.S.; Professor JOHN C. MEAKINS, M.D.; Professor J. A. MENZIES, M.D.; ALFRED PARKIN, M.D., M.R.C.P.
Honorary Secretaries: O. INCHLEY, M.A., M.D. (Babraham, Cambridge); Miss MILDRED ATKINSON, B.Sc. (College of Medicine, Newcastle-on-Tyne).

The following provisional programme has been arranged: Papers from 10 a.m. to 1 p.m., and demonstrations from 3 p.m. to 4.30 p.m.

July 20th (10 a.m.).—Paper by Professor A. V. HILL, D.Sc., F.R.S.: The Use of the Hot Wire for Investigating (*a*) the Time Relations of the Pulse; (*b*) the Characteristics of Voluntary Contraction in Man. Paper by Dr. W. R. GROVE and Dr. H. W. C. VINES: The Etiology and Treatment of Varicose Ulcers. Paper by Professor H. H. DALE, F.R.S.: Anaphylatoxin.

In the afternoon (Wednesday, July 20th) Professor J. A. MENZIES, Miss M. ATKINSON, and Dr. G. A. CLARK will give a demonstration on The Passage of Sulphate through the Cells of the Tubules of the Kidney of the Frog.

July 21st.—(10 a.m.) Paper, with lantern demonstration, by Dr. H. MUIR EVANS: The Poison Organs and Venoms of Venomous Fish. Paper by Professor C. H. BROWNING: Recent work on Chemo-therapy. Paper by Dr. G. ARBOUR STEPHENS: Acid Feeders, and the Deleterious Effects of too much Acid in the Food. Paper by Dr. J. SIM WALLACE, D.Sc., L.D.S.: The Physiology of Oral Hygiene.

July 22nd.—Joint discussion with the Section of Medicine on Renal Efficiency Tests.

VENEREAL DISEASES.

President: Colonel L. W. HARRISON, D.S.O., R.A.M.C.
Vice-Presidents: JAMES CHARLES BUCKLEY, M.D.; CHARLES GIBBS, F.R.C.S.; MARY RAW, M.B.
Honorary Secretaries: KENNETH M. WALKER, O.B.E., F.R.C.S. (86, Harley Street, London, W.).; JAMES HUDSON, M.D. (42, Crossley Terrace, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.).—Treatment of Syphilis in Man, by Dr. R. MacKenna. Syphilis in Women and Children, by Professor Walter Swayne.

July 21st (10 a.m.).—Treatment of Gonorrhoea in Men, by Dr. David Lees. The Standard of Cure in Gonorrhoea, by Dr. Townley Clarkson.

In the afternoon of Wednesday (July 20th) a demonstration will be held of Methods of Diagnosis and Treatment in Venereal Diseases, Dark-ground Illumination Work, Models of Venereal Disease Clinics, etc.

The following Section meets on two days - Thursday and Friday, July 21 and 22.

OBSTETRICS AND GYNAECOLOGY.

President: Professor R. P. RANKEN LYLE, M.D.
Vice-Presidents: Lady BARRETT, M.D.; W. R. GROVE, M.D.; WILLIAM ROBINSON, F.R.C.S.
Honorary Secretaries: GORDON LEY, F.R.C.S. (5, Wimpole Street, London, W.1); MABEL R. CAMPBELL, M.A., M.B. (49, Wingrove Road, Newcastle-on-Tyne); E. FARQUHAR MURRAY, M.D., F.R.C.S. (52, Jesmond Road, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 21st (10 a.m.).—Discussion: The Rôle of Caesarean Section in Midwifery. To be opened by Dr. EARDLEY L. HOLLAND (London) and Dr. J. M. MUNRO KERR (Glasgow). Paper: The Treatment of Advanced Malignant Disease of the Cervix, by Dr. ARTHUR BURROWS (Manchester), to be followed by a discussion.

July 22nd (10 a.m.).—Discussion: The Neurasthenic Element in Midwifery and Gynaecology. To be opened by Dr. ARCHIBALD DONALD (Manchester) and Dr. FARQUHAR BUZZARD (London). Papers to be followed by discussion: (1) Curettage, (*a*) Diagnostic, (*b*) Treatment of Uterine Haemorrhage, by Dr. H. BECKWITH WHITEHOUSE (Birmingham). (2) The Position of the Medical Practitioner called in to attend a case of Procured Abortion, by Dr. JOHN CAMPBELL (Belfast).

The following Sections meet on one day as indicated.

Wednesday, July 20th.

AMBULANCE AND RED CROSS.

President: Sir JAMES CANTLIE, K.B.E., F.R.C.S.
Vice-Presidents: ROBERT ANDERSON, M.D.; Sir G. T. BEATSON, K.C.B., K.B.E., M.D.; Major-General Sir G. J. H. EVATT, K.C.B., M.D.; Rev. C. F. TOWNLEY, M.A.
Honorary Secretaries: R. M. VICK, O.B.E., F.R.C.S. (The Warden's House, St. Bartholomew's Hospital, E.C.1); H. L. RUTTER, M.B.E., F.R.C.S. (31, West Parade, Newcastle-on-Tyne).

The following provisional programme has been arranged:

1. Short address by President on the Claim of "First Aid" to be regarded as a Special Branch of Practical Surgery.
2. Discussion on an X-Ray Motor Ambulance Wagon Service for Great Britain, and description of the work in London and fifty miles round. Display map, with centres from which areas are worked.
3. Discussion on Stretcher Slings; the Question of Carrying Loaded Stretchers on the Shoulders; the Yoke Sling.
4. Thomson's Machine for Armless Men. Demonstration by an armless man.
5. Display of several devices by Dr. Highet of Reading—car, boat, and barges; carriage of sick and wounded; an improvised ambulance wagon; invalid carrying chairs.

PROCTOLOGY.

President: J. P. LOCKHART-MUMMERY, F.R.C.S.
Vice-Presidents: HENRY B. DENSHAM, M.B.; W. ERNEST MILES, F.R.C.S.; D. P. D. WILKIE, O.B.E., F.R.C.S.
Honorary Secretaries: CECIL W. ROWNTREE, F.R.C.S. (9, Upper Brook Street, London, W.1); HAMILTON DRUMMOND, F.R.C.S. Edin. (6, Saville Place, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 20th (10 a.m.).—Discussion: The Surgical Treatment of Internal Haemorrhoids. To be opened by Sir CHARLES GORDON-WATSON, K.B.E., and Mr. D. P. D. WILKIE, F.R.C.S. (Edinburgh).

Thursday, July 21st.

DERMATOLOGY.

President: JOHN FARQUHAR CHRISTIE, M.A., M.B.
Vice-Presidents: ERNEST DORE, M.D., F.R.C.P.; ARTHUR D. HEATH, M.D., M.R.C.P.; D. WELLS PATTERSON, O.B.E., M.D., M.R.C.P.
Honorary Secretaries: WILLIAM JENKINS OLIVER, M.A., M.B. (58, Queen Anne Street, London, W.1); SYDNEY THOMPSON, M.B., B.S. (19, Windsor Terrace, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 21st (10 a.m.).—Discussions: (1) Cutaneous Sensitization and Focal Sepsis in the Etiology of certain Skin Affections. To be opened by H. W. BARBER, M.B., M.R.C.P. (2) The Association of Skin Tuberculosis with Visceral and other Tuberculous Manifestations. To be opened by GEORGE H. LANCASHIRE, M.D. (3) Dermatological Cases attending the Pensions Boards. To be opened by HENRY MACCORMAC, C.B.E., M.D., F.R.C.P. (with the permission of the Ministry of Pensions).

Friday, July 22nd.

MEDICAL SOCIOLOGY.

President: Sir JENNER VERRALL, LL.D., M.R.C.S.
Vice-Presidents: CHARLES BUTTAR, M.A., M.D.; A. C. FARQUHARSON, M.D., M.P.; E. ROWLAND FOTHERGILL, M.B., B.S.
Honorary Secretaries: J. F. WALKER, M.B. (Rocklands, Clifton Terrace, Southend-on-Sea); MABEL G. BRODIE, M.B. (Maternity and Child Welfare Offices, 42, Old Elvet, Durham).

The following provisional programme has been arranged:

July 22nd (10 a.m.).—Discussion: The Relation of the Medical Profession to Local Authorities in respect to Rate-provided Hospitals and Clinics. To be opened by Sir GEORGE NEWMAN, Chief Medical Officer of the Ministry of Health; Mr. DAVID ADAMS (Newcastle-upon-Tyne), and Dr. MIDDLETON MARTIN (M.O.H. Gloucestershire).

RADIOLOGY AND ELECTRO THERAPEUTICS.

President: ROBERT KNOX, M.D.
Vice-Presidents: W. HOPE FOWLER, F.R.C.S.Edin.; ROBERT EDWARD HOWELL, M.B., C.M.
Honorary Secretaries: JAMES METCALFE, M.D. (123, Harley Street, London, W.1); THOMAS LOWE BUNTING, M.D. (6, Portland Terrace, Newcastle-on-Tyne).

The following provisional programme has been arranged:

July 22nd (10 a.m.).—Discussion: On the Changes induced in Blood Constituents by Radiations: (*a*) Experimental evidence, Professor SIDNEY RUSS and Dr. ARCHIBALD LEITCH; (*b*) Clinical observations, Dr. MOITRAM, Dr. GAMLEN, Dr. J. B. WATERS, Dr. METCALFE, Dr. HOPE FOWLER and others. On Morbid Conditions of the Blood: (1) The Anaemias, (2) Leukaemia, (3) Banti's disease, etc. Opening paper by Professor G. L. GULLAND, C.M.G. (Edinburgh). Discussion on Surgical Diathermy, to be opened by Dr. CUMBERBATCH, followed by Dr. HOWARD HUMPHRIS, Dr. SABERTON and others.

Dr. KNOX and Mr. THOMSON WALKER will give an afternoon demonstration, with lantern slides and prints, of Radiography and Pyelography in Gall Bladder and Renal Conditions.

Exhibition of radiograms, etc., in the Pathological Museum.

A visit will be paid to the *x*-ray and electro-therapeutic departments of the Royal Victoria Infirmary, Newcastle-upon-Tyne.

UROLOGY.

President: J. W. THOMSON WALKER, O.B.E., F.R.C.S.
Vice-Presidents: P. J. CAMMIDGE, M.D.; JOHN CLAY, C.B.E., F.R.C.S.; H. C. PEARSON, F.R.C.S.Ed.
Honorary Secretaries: SYDNEY G. MACDONALD, F.R.C.S. (51, Queen Anne Street, London, W.1); W. S. DICKIE, O.B.E., F.R.C.S. (Ardencapel, Southfield Road, Middlesbrough).

The following provisional programme has been arranged:

July 22nd (10 a.m.).—Discussion: The Diagnosis and Treatment of Cystitis. To be opened by J. F. DOBSON, M.S., F.R.C.S. (Surgical). Papers: Experimental Evidence bearing on the Source of the Amylolytic Ferment in the Urine, by P. J. CAMMIDGE, M.D.; Open Prostatectomy, by J. W. THOMSON WALKER, M.B., F.R.C.S.; Treatment of Bladder Growths, by SYDNEY G. MACDONALD, M.B., F.R.C.S.

DEMONSTRATIONS.

There will be demonstrations in connexion with the various scientific sections on the afternoons of Wednesday, Thursday, and Friday, July 20th, 21st, and 22nd, at 3 o'clock. For the most part these will be held in the wards and special departments of the Royal Victoria Infirmary; but the demonstrations in the Section of Surgery on July 20th will be given at the War Pensions Hospital, and those of the Section of Ambulance and Red Cross at the Northumberland Fine Reserve Brigade Station, Scotswood Road. A detailed list of demonstrations will be issued at the time of the meeting and announcements will also be made at the Sectional Meetings.

TIME TABLE OF THE MEETING

The following is the provisional time table for the Newcastle-upon-Tyne Meeting, 1921:

FRIDAY, JULY 15TH.

10 a.m. —Annual Representative Meeting, Armstrong College.
7.15 p.m. —Representatives' Dinner, Assembly Rooms Club.
8.30 p.m. —Reception for Ladies, Assembly Rooms Club.

SATURDAY, JULY 16TH.

9.30 a.m. —Annual Representative Meeting.
8 p.m. —Representatives' Smoking Concert, Assembly Rooms Club.

MONDAY, JULY 18TH.

9.30 a.m. —Council Meeting, Armstrong College.
10 a.m. —Annual Representative Meeting.

TUESDAY, JULY 19TH.

10 a.m. to 6 p.m. —Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., St. George's Drill Hall, St. Mary's Place.
9.30 a.m. —Annual Representative Meeting.
2 p.m. —Annual General Meeting, King's Hall, Armstrong College.
*5 p.m. —United Religious Service at St. Nicholas Cathedral.
*8 p.m. —Adjourned General Meeting, President's Address, King's Hall.
*9.30 p.m. —President's Reception, Assembly Rooms Club.

WEDNESDAY, JULY 20TH.

9 a.m. —Council Meeting, Armstrong College.
9 a.m. to 6 p.m. —Annual Exhibition, St. George's Drill Hall.
10 a.m. to 1 p.m. —Sectional Meetings.
2 p.m. —Secretaries' Conference, King's Hall.
3 to 4.30 p.m. —Demonstrations.
5.45 p.m. —Lord Mayor's Garden Party, in Jesmond Dene.
6.30 p.m. —Secretaries' Dinner, College of Medicine.
8 p.m. —Special Address on Industrial Hygiene, King's Hall.
*9 p.m. —Reception by Branch Council in Hancock Natural History Museum.

THURSDAY, JULY 21ST.

9 a.m. to 6 p.m. —Annual Exhibition, St. George's Drill Hall.
*9.15 a.m. Roman Catholic Service, St. Mary's Cathedral, Clayton Street.
10 a.m. to 1 p.m. —Sectional Meetings.
3 p.m. —Convocation for Degrees at Durham.
3 to 4.30 p.m. —Demonstrations.
7.15 p.m. —Annual Dinner, Assembly Rooms Club.
8.20 p.m. —Entertainment at Hippodrome.
10 p.m. Dance in the King's Hall.

FRIDAY, JULY 22ND.

9 a.m. to 6 p.m. —Annual Exhibition, St. George's Drill Hall.
10 a.m. to 1 p.m. —Sectional Meetings.
3 to 4.30 p.m. Demonstrations.
7.30 p.m. —Popular Lecture, King's Hall.
*8.30 p.m. —Reception and Dance, Assembly Rooms Club, given by the Proprietors of the *Newcastle Chronicle*.

SATURDAY, JULY 23RD.

1.9 a.m. Excursion to the Roman Wall.

*Academic dress or uniform, with decorations, should be worn.

The Honorary Local General Secretary of the Meeting is Mr. R. J. Willan, M.V.O., O.B.E., F.R.C.S., 6, Kensington Terrace, Newcastle-on-Tyne.

PATHOLOGICAL MUSEUM.

A Pathological Museum has been arranged in the Dissecting Room of the College of Medicine. It will be opened on Monday, July 18th, at 9 a.m., and will remain open during the week of the meeting. The Museum will include exhibits bearing on discussions and papers in the Sections, specimens and illustrations relating to recent research work, and instruments or appliances relating to clinical diagnosis and pathological investigation. There will also be a collection of *x*-ray and other photographs, and a series of exhibits illustrating the pathology of individual cases. Exhibitors will have an opportunity of demonstrating their specimens.

RECEPTION ROOM.

The reception room for members and visitors attending the annual meeting is situated in the Examination Hall of the College of Medicine, Northumberland Road. It will be open for the purpose of registration on Monday, July 18th, from 2.30 to 6 p.m., and on Tuesday, Wednesday, Thursday, and Friday, from 9 a.m. to 5 p.m. Copies of the *Handbook* of the meeting and a souvenir *Guide Book* will be obtainable there, together with full particulars of all entertainments and excursions. Adjoining the reception room there will be a reading, writing, and smoking room, where daily papers, time-tables, etc., will be provided. An official of the North-Eastern Railway will attend the reception room daily from 9.30 to 10.30 a.m., and from 1.30 to 2.30 p.m., to give travellers information about train services.

The meetings of the Annual Representative Body and the Council will be held at Armstrong College. The Scientific Sections will hold their sessions at Armstrong College and the College of Medicine. During the meeting the offices of the Honorary Local General Secretary, the Honorary Local Treasurer, and the Financial Secretary will be at the College of Medicine. The Assembly Rooms Club is at the Grand Assembly Rooms in College Road, off Barras Bridge, on the route between the College of Medicine and Armstrong College. It will be open daily from 9 a.m. as a meeting place for members and their friends, and meals will be served there for those who give notice. All members of the Association have been made temporary honorary members of the Medical Institute, 7, Windsor Terrace, Newcastle.

A list of owners of motor cars, taxicabs, and motor garages, with their scale of charges, will be posted up in the Reception Room, at the Assembly Rooms Club, and at the Ladies' Club, 27, Eldon Street.

EXCURSIONS.

The following is a brief summary of the arrangements for excursions printed in the *Handbook* of the meeting. During the week of the meeting inquiries and applications for tickets should be made at the Excursion and Entertainment Department in the Reception Room at the College of Medicine, where the latest information will be obtainable. Tickets for entertainments and excursions will be issued according to priority of application at the Reception Room after 10 a.m. on Tuesday, July 19th.

Morning excursions for ladies to places of interest in Newcastle and the neighbourhood have been organized for Monday, Wednesday, Thursday, and Friday. Details of these will be found in the *Handbook*. The meeting place in most cases will be the Ladies' Club, 27, Eldon Street, off Barras Bridge. Opportunities for playing lawn tennis, golf, and croquet will be provided.

Afternoon Excursions

Wednesday, July 20th.—(1) Electric Supply Works at Carville. (2) Shipbuilding yard at Wallsend. (3) Glass works, gasworks, and locomotive works at Gateshead.

Thursday, July 21st.—1. Excursion to Durham for Convocation and garden party; Cathedral and Castle. (2) Motor works at Birtley. (3) Electric works at Carville and shipbuilding yard at Wallsend. (4) Chesters Roman Camp and Museum; Hexham Abbey. (5) Glass works, paper mills, and confectionery works, Gateshead. (6) Old Castle, Black Gate Museum, and Trinity House.

Friday, July 22nd.—1. Tour of River Tyne from Elswick to Tynemouth by S.Y. "Sir William Stephenson." (2) Chollerford. (3) Blanchland. (4) Factories in Newcastle, Gateshead, and Pelaw. (5) Electric works at Carville. (6) Old Castle, Black Gate Museum, and Trinity House.

Saturday, July 23rd. Excursions to Barrasford and Stannington Sanatoriums.

On Saturday, July 23rd, there will be a whole-day excursion to the Roman Wall and Northumberland Lakes by char-a-banc, leaving the Reception Room at 10 a.m. (tickets 15s., including lunch and tea).

APPLICATIONS FOR TICKETS.

The attention of members attending the Annual Meeting in Newcastle upon-Tyne is specially drawn to the fact that invitations for functions held during the meeting can only be obtained by personal application at the Reception Room.

ACCOMMODATION AT NEWCASTLE.

Members proposing to attend the Annual Meeting should bear in mind that they may not be able to obtain adequate accommodation, even at some distance, unless it has been reserved well beforehand.

Lists of hotels, etc., and revised particulars about accommodation at Newcastle were printed in the SUPPLEMENT of July 2nd. The Honorary Secretary of the Hotels and Lodgings Committee is Dr. E. F. Murray, 52, Jesmond Road, Newcastle-upon-Tyne.

ACADEMIC DRESS.

IT is hoped that members will wear decorations with academic dress or uniform on the following occasions:

TUESDAY, JULY 19TH.

5 p.m.—Religious Service in St. Nicholas Cathedral.
8 p.m. President's Address in King's Hall, Armstrong College.
9.30 p.m. Reception by President in Assembly Rooms Club.

WEDNESDAY, JULY 20TH.

9.15 a.m.—Mass at St. Mary's Cathedral.
9 p.m. Reception by North of England Branch Council in Hancock Museum.

THURSDAY, JULY 21ST.

3 p.m.—Special Convocation for Honorary Degrees at Durham.

FRIDAY, JULY 22ND.

8.30 p.m.—Reception in Assembly Rooms Club.

Messrs. Gray and Sons, of 39-42, Saddler Street, Durham, and 6, St. Mary's Place, Newcastle, official robe makers to the University of Durham, Messrs. Ede and Ravenscroft, 93 and 94, Chancery Lane, W.C.2, and Messrs. Nathan and Ravenscroft, 4, Hardman Street, Liverpool, will be prepared to supply Durham robes (on hire) for these functions.

Members are advised to communicate with the robe makers in advance stating their requirements.

Meetings of Branches and Divisions.

SUSSEX BRANCH.

The Financial Position of Voluntary Hospitals.

A CONFERENCE of the members of the honorary acting staffs of the voluntary hospitals of Sussex, convened by the Council of the Sussex Branch of the British Medical Association, was held at Brighton Dispensary on June 17th, when Dr. F. LOUD, the president, was in the chair, and twenty-three other members of hospital staffs, including representatives of hospitals at Brighton, Hove, Worthing, Lewes, and Hastings were present.

The financial position of voluntary hospitals was discussed, and the eight recommendations of the representatives of the staffs of all the English and Welsh voluntary hospitals especially affecting medical men, made at the meeting in London on Dec. 21st, 1920, were endorsed with the following modifications and additions.

For the fourth, which recommends that in times of financial difficulty it is desirable that the Central Government should subsidize voluntary hospitals, and that such subsidy in the case of any individual hospital should take the form of a contribution proportional to the income received by the hospital from voluntary and other contributions—(the subsidies here proposed should be made through some central hospital fund)—the following should be substituted:

That to meet the present necessity the State should make a temporary grant to voluntary hospitals through some central hospital fund and that such grant, in the case of any individual hospital, should take the form of a contribution proportional to the income received by the hospital from voluntary and other contributions.

In the sixth recommendation that every patient of a voluntary hospital, who is not a necessitous person, should make a contribution during treatment towards the cost of maintenance—after the word contribution there should be inserted "in proportion to his or her means."

It was resolved not to endorse the eighth recommendation, which reads as follows:

That in the event of decisions being taken which would lead to patients paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which such honorary medical staff may determine.

In substitution for Recommendation 8 the conference suggested the following:

1. That in the event of decisions being taken which would lead to patients individually paying, in part or in whole, the hospital maintenance fees, no portion of such payments should pass to the control of the honorary medical staff; and
2. That in the event of decisions being taken which would lead to the payment of hospital maintenance fees by some contributory method or by State aid or rate aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which the honorary medical staff concerned may determine.

It was decided that the above recommendations should be sent to the Minister of Health and to Sir James Galloway, Chairman of the December Conference of the Staffs of the English and Welsh Voluntary Hospitals.

It was resolved that a circular letter be sent to the honorary medical staffs of the voluntary hospitals of Sussex intimating (1) that this conference commended to their favourable attention the Sussex Provident Scheme, and informing them that the Committee of the Provident Scheme would be pleased to send a delegate to give full information to any committee formulating a similar scheme, and also to incorporate with themselves committees of Provident Schemes in other areas; and (2) pointing out that in justice to themselves they should require their hospital committees to terminate agreements with educational committees which do not pay the scale of fees for the treatment of school children approved by the British Medical Association.

METROPOLITAN COUNTIES BRANCH.

THE sixty-ninth annual general meeting of the Metropolitan Counties Branch was held on June 24th, when Dr. E. W. GOODALL, O.B.E., President, was in the chair.

The following officers were declared to have been elected for the ensuing session:

President: Dr. H. B Brackenbury. *President elect*: Mr N. Bishop Harman. *Past-President*: Dr. E. W. Goodall. *Vice-Presidents*: Dr. Christine Murrell, Dr. H. Harvey Norton, Dr. William Paterson, Dr. Charles Sanders. *Honorary Treasurer*: Mr. Comyns Berkeley. *Honorary Secretaries*: Dr. F. W. Goodbody, Dr. W. E. A. Worley.

The CHAIRMAN moved the adoption of the Report of Council for the year 1920-21. Dr. HARFORD drew attention to the paragraph relating to the Consultative Committee's Report, and expressed disappointment that nothing had been done with so valuable a document, as the profession was looking to the British Medical Association for a lead on the various matters raised. The report was subsequently agreed to.

The report of the representatives of the Branch on the Central Council for 1920-21 was received. On the motion of Mr. BISHOP HARMAN, seconded by Dr. WILLIAM PATERSON, it was agreed to thank the four representatives—namely, Drs. Percival Barnes and Buttar, Lord Dawson of Penn, and Mr. McAdam Eccles for their past services.

The CHAIRMAN, on behalf of the Branch Council, moved a resolution to alter Rule 11 of the rules of the Branch, so that it should read as follows:

11 The management of the affairs of the Branch shall be vested in the Branch Council, which shall consist of the officers of the Branch, together with the representatives of the Branch on the Council of the Association and such members of the Branch as are also members of the Council of the Association, etc.

He stated that Dr. Hawthorne had raised the question whether this resolution was in order or not. He had considered the matter, and for reasons which he gave he ruled that it was in order. He wished, however, to point out that a proposed revision of the rule for Branches was to be brought before the forthcoming Representative Meeting. The motion upon being put to the meeting was lost.

The CHAIRMAN, in inducting his successor, Dr. Brackenbury, said he needed no introduction to such a meeting, as wherever the BRITISH MEDICAL JOURNAL was circulated his name was a household word. He had attained the highest position his local fellow citizens could confer upon him before he interested himself intimately in the affairs of the Association, and was therefore equipped with an experience which many could not possess. He hoped his year of office would be as pleasant as his had been as regards the Branch Council, and felt sure that he would receive that courtesy and assistance from its members without which no chairman could hope to succeed.

Dr. H. B. BRACKENBURY then took the chair, and delivered an address, which will be published in full.

On the motion of Sir JENNER VERRALL, supported by Dr. HAWTHORNE, a hearty vote of thanks was accorded to Dr. Brackenbury for his interesting address.

A hearty vote of thanks was accorded to the retiring President (Dr. Goodall) and the Honorary Secretary (Dr. J. A. Percival Parnes).

NORTH OF ENGLAND BRANCH.

THE annual meeting of the North of England Branch was held at the Medical Institute J. Wickie Smith Memorial, Newcastle, on July 7th.

There was a large attendance, and previous to the meeting the retiring President, Dr. R. A. Bolam, and the incoming President, Dr. T. Eustace Hill, entertained those present to luncheon in the institute, when more than 70 sat down to an excellent repast. At the conclusion of the luncheon the Branch Poet recited to the company an ode, which happily referred to some of the more prominent celebrities and their characteristics. The recitation was a source of much enjoyment.

In addition to the usual business of the meeting the following officers were elected for the ensuing year:

President: Dr. T. Eustace Hill, O.B.E., Darlington. *President-Elect:* Dr. C. G. Maclagan, Berwick. *Vice-Presidents:* Dr. H. B. Densham, Stockton; Mr. G. Grey Turner, M.S., F.R.C.S., Newcastle. *Scientific Secretary:* Mr. R. J. Willan, M.V.O., O.B.E., F.R.C.S. *Honorary Secretary:* Dr. James Don.

After the business meeting many of the members adjourned to the City of Newcastle Golf Course, where a match was played between representatives of the North and South, resulting in a victory for the latter.

The day was delightful, the attendance was all that could be desired, and it was generally agreed that the meeting was one of the most successful annual meetings ever held.

SURREY BRANCH: GUILDFORD DIVISION.

AT a meeting of the Guildford Division on June 23rd, Mr. ALWYN SMITH, O.B.E., D.S.O., gave a most successful and useful practical demonstration of the treatment of fractures, illustrating some of the results obtained by means of slides.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders W. T. Hayden to the *Carysfort*, J. G. Peebles to the *Columbine* for Port Edgar base, G. C. Cross to Royal Naval Hospital, Hasler, M. W. Haydon to the *Cleopatra*, E. T. Burton to the *New Zealand* on becoming flagship, T. W. Myles, C.B.E., to the *Pembroke* for Royal Naval Hospital, Great Yarmouth (temporary). Surgeon Lieutenant Commanders G. D. G. Fergusson to the *Enchantress*, E. C. Holton, O.B.E., to the *Victory* for Royal Marine Artillery Division, Eastney, P. B. Wallis to the *Victory* for Royal Naval Barracks.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS

Captain and Brevet Major F. C. Cowtan resigns his commission on appointment to the R.A.F.

Captain J. A. Binning retires, receiving a gratuity.

The following temporary Captains relinquish their commissions: (Acting Major) G. Cooper, and is granted the rank of Major. Hugh H. Perry, and retains the rank of Captain.

To be Captains: Lieutenant (temporary Captain) E. P. N. Creagh, Lieutenant (temporary Captain) A. H. Clarke, M.C. (March 1st, 1920; substituted for notification in the *London Gazette*, April 8th, 1920).

ROYAL AIR FORCE.

MEDICAL BRANCH.

Flight Lieutenants to be Squadron Leaders: D'Arcy Power, M.C., J. Rothwell, K. Biggs, M.C., A. J. O. Wigmore.

Flight Lieutenants to be honorary Squadron Leaders: A. E. F. F. Huntsman, G. D. Kerr.

REGULAR ARMY RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain J. W. O'Brien, M.C., is removed, the King having no further occasion for his services, May 12th, 1921.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieutenant J. P. Kitson (late R.A.M.C.) to be Captain.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel (Brevet Colonel) C. J. Jacomb-Hood having attained the age limit is retired, and retains his rank with permission to wear the prescribed uniform.

DEFENCE FORCE.

ARMY MEDICAL SERVICE.

R.A.M.C.—To be temporary Captains: E. H. Mayhew, April 15th, 1921 (substituted for notification in the *London Gazette* of May 11th, 1921 appointing this officer as temporary Lieutenant), John Marshall, G. H. H. Waylen, H. H. Back.

The notification regarding O. H. Mayor in the *London Gazette* of April 27th, 1921, is cancelled.

1st Lowlands Field Ambulance (D.F.).—Temporary Major L. P. Cathcart relinquishes his commission.

1st South Midland Field Ambulance (D.F.).—Temporary Captain C. W. J. Brasher relinquishes his commission.

3rd (Wessex) Field Ambulance (D.F.).—To be temporary Captain A. E. Knapp.

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE.—Tues., 5 p.m., General Meeting of Fellows. Ballot for election to the Fellowship.

POST-GRADUATE COURSES AND LECTURES.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—Daily, 10–11.15 a.m., Instrumental Methods of Examination; 11.15–12.30 p.m., Demonstrations; 2–5 p.m., (except Sat.), Out-patients. 5 p.m., *Lectures:* Mon., Dr. F. W. Price: Auricular Flutter. Tues., Sir Russell Wells: Angina Pectoris. Wed., Dr. J. Parkinson: Diseases of the Myocardium. Thurs., Dr. P. Hamill; Cardio-vascular Neuroses. Fri., Dr. R. O. Moon: Prognosis of Heart Disease.

NORTH EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2 p.m., In- and Out-patient Clinics, Operations, etc. *Lecture-Demonstrations:*—3 p.m., Tues., Mr. C. H. Hayton: Diseases of the Middle and Internal Ear. Wed., Mr. T. H. C. Benians: Every-day Bacteriology of Sputum. Fri., 4.30 p.m., Dr. C. E. Sundell: Dyspepsias of Infants.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In-patient Clinics and Operations.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

Annual Meeting, Newcastle-upon-Tyne.

JULY 15TH TO 23RD.

For detailed time-table see p. [illegible] Supplement.

The Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., will be open at the St. George's Drill Hall, St. Mary's Place, Newcastle-upon-Tyne, from Tuesday, July 19th, to Friday, July 22nd, from 9 a.m. to 6 p.m. daily.

APPOINTMENTS.

MANCHESTER ROYAL INFIRMARY.—House-Physicians: G. Hislop, M.B., B.S., R. Williamson, M.B., Ch.B. Vict., W. J. Ford, M.B. Sydney. House-Surgeon: H. W. Harley, M.B., B.S. Melb. Assistant Surgical Officer: G. B. Warburton, Ch.M., F.R.C.S.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

SPENCE.—At Collingwood Private Hospital, Newcastle-upon-Tyne, on July 8th, the wife of G. R. Spence, M.B., Ch.B. (*née* Inez Thomson), of a daughter.

WESTBY.—On June 27th, to J. T. Westby, M.B., B.Ch., and Marjorie Westby, L.R.C.P. and S.I. (*nee* McMullen), 2, Radcliffe Gardens, South-ea, a son.

MARRIAGES.

COLDWELL—SMITH.—On June 29th, at St. James's Church, Piccadilly, W., by the Rev. Prebendary Cronshaw, M.A., Walter Herbert Coldwell, M.B., B.S., to Barbara Joan Smith, younger daughter of Mr. and Mrs. A. E. Smith, the Quarry, Warwick.

TODD—FINDLAY.—At Polkokshields East U.F. Church, on June 30th, by Rev. David Sommerville, M.A., assisted by Rev. A. Brown, Robert Taylor Todd, M.B., Ch.B., of 58, Melbourne Street, Leicester, son of the late Henry Todd and Mrs. H. Todd, the Crescent, Polkokshields, Glasgow, to Janey Miller, second daughter of Mr. and Mrs. Jas. Findlay, 41, Sutherland Avenue, Polkokshields.

DEATHS.

MENZIES.—On July 8th, at the Towers, Hart Hill, Luton, the residence of his brother, James Acworth Menzies, M.D., of 3, Fenwick Terrace, Newcastle-on-Tyne. Interment, St. Andrews Cemetery, Newcastle-on-Tyne, Tuesday last, July 12th.

SAVAGE.—On July 5th, at his residence, 26, Devonshire Place, Sir G. H. Savage, M.D., F.R.C.P., aged 78. A funeral service was held on Friday, July 8th, at St. Marylebone Parish Church. Cremation at Golders Green. Interment at Sevenoaks Parish Church.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 23RD, 1921.

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EIGHTY-NINTH ANNUAL MEETING
OF THE
British Medical Association.

NEWCASTLE-UPON-TYNE, 1921.

ANNUAL REPRESENTATIVE MEETING.

Friday, July 15th.

THE nineteenth Annual Representative Meeting was held in the King's Hall, Armstrong College, Newcastle-upon-Tyne. The proceedings were opened, with Dr. T. W. H GARSTANG in the chair, at 10 a.m. on Friday, when about 180 Representatives and a number of members of Council were present. On the platform with Dr. Garstang were Professor David Drummond, President-elect of the Association, Dr. R. A. Bolam, Chairman of Council, Dr. Wallace Henry, Dr. G. E. Haslip, Treasurer, and the Medical Secretary and Deputy Medical Secretary.

The CHAIRMAN OF REPRESENTATIVE MEETINGS, in welcoming the Representatives, said that this was the largest Representative Meeting ever held, with the exception of those held at the time of the national insurance struggle, 1911–13, which were a few units larger in membership.

The return of Representatives was received, together with the notification of substitutes and apologies for absence.

STANDING ORDERS.

The CHAIRMAN moved the adoption of the standing orders, together with an addition to standing order No. 8, that the Council should report to the Representative Body on all motions involving special expenditure of which not less than two months' notice had been given in the JOURNAL. This was agreed to, as were further amendments to standing orders to deal with the procedure for the election of four members of Council under by-law 46 (*d*) and of standing committees under standing order 47.

The CHAIRMAN then moved the report of the Agenda Committee. It was agreed to discuss the question of medical ethics as the first business on Friday afternoon; to follow this with the report of Council under the heading "Naval and Military," and, further, on the motion of Mr. MCADAM ECCLES, that the question of the proposed Central Medical Committee should be discussed immediately afterwards; and also that the question of federation should be dealt with as first business on Saturday morning.

The Admission of the Press.

Dr. P. R. COOPER (Mid-Cheshire) moved that the lay press should be excluded from the meeting and that a *précis* of the proceedings should be supplied to them for publication. He said that he had no complaint to make with regard to matters published by the lay press previously, but certain statements might be made which it would be injudicious to spread broadcast, and it did not seem right to put it upon the conscience of the press as to whether they should or should not publish what was said. The best way of avoiding trouble altogether would be not to have the press present.

Dr. B. E. FORDYCE (Cambridge and Huntingdon) said that the *précis* of the meeting at Cambridge last year, published in the JOURNAL, did not by any means show fully the proceedings of the meeting.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said that the Representatives should take into account the fact that a verbatim report of the meeting would occupy not one but many copies of the JOURNAL, and that amount of space could not be afforded. Therefore it was necessary that there should be in the published report some curtailment of speeches, if not the omission of some altogether. That was the responsibility of the editorial staff.

Mr. BISHOP HARMAN thought it desirable to have the lay press present; the lay press had been very useful in the past. Dr. FERDINAND REES said that it seemed to him they were sufficiently guarded by the undertaking which the press had given in previous years. He would rather trust to the public press than to the preparation of a *précis* by the officers.

The motion of Dr. Cooper was negatived by a large majority, and it was agreed that the representatives of the press should be admitted on the understanding that they would not report any matters which the meeting decided should be regarded as private. The CHAIRMAN OF REPRESENTATIVE MEETINGS said that this question cropped up every year, and it might be wise to embody it in a standing order. The meeting agreed that a standing order on the subject should be submitted next year.

OFFICIAL WELCOME.

Professor DAVID DRUMMOND, President-elect of the Association, who was heartily welcomed on rising, said that he would like to take the opportunity of joining with his colleagues, the Representatives of the North of England Branch, in giving a hearty welcome to the Representative Body, and of assuring them that Newcastle had endeavoured to arrange as happy a time as possible. (Applause.)

The LORD MAYOR OF NEWCASTLE (Councillor T. W. Rowe, J.P.) paid a visit to the meeting, accompanied by the city mace-bearer and sword-bearer. He was received with loud applause. It fell, he said, to his lot to welcome many organizations, but to extend a welcome to the distinguished members of this Association was a privilege of which he was particularly proud. When the Association last visited Newcastle in 1893 the gathering was in no way comparable with the present assembly. The Association had not then developed the very effective means it now possessed of ascertaining the views of the medical profession on public matters. It was now one of the finest associations in the world. (Applause.) Newcastle would never be found wanting in paying homage to those whose great mission in life was to heal the sick and to relieve suffering humanity. The city held a very important position in connexion with the work they had so much at heart. They had in their midst the University of Durham College of Medicine, one of the finest schools of the kind in the country. (Applause.) They also had one of the most efficient hospitals in the world, the Royal Victoria Infirmary, which had been visited by distinguished members of the medical profession from all parts of the world, who spoke in the highest terms of its beautiful construction and wonderful equipment. The Lord Mayor proceeded to refer to the interesting coincidence that three of the principal officers of the Association were connected with the locality — Professor Drummond, Dr. Bolam, and Dr. Cox. Tyneside was proud of these men. (Applause.) The Lord Mayor, while fearing that the mention of names might leave him open to the suggestion of invidious distinctions, felt he was safe in referring to the distinguished work in surgery of Professor Rutherford Morison. Expressing the wish that the Association might this year surpass all previous gatherings in the advancement of the objects it had at heart, the Lord Mayor said Newcastle had achieved some fame as a place where new programmes might be conceived, and he hoped it might add to that reputation in connexion with these important meetings. (Laughter and applause.)

The CHAIRMAN OF REPRESENTATIVE MEETINGS, in acknowledging the welcome, assured the Lord Mayor that the whole of the members present were well acquainted with the good work of the medical school in Newcastle; it was a very happy coincidence that the President, the Chairman of the Council, and the Medical Secretary should all be connected with the place of meeting. It had never happened before. Referring to the fact that the Lord Mayor represented all classes of the community, Dr. Garstang said in the present day there was a good deal of change going on in the relations between the profession and the public. It was very important indeed that the profession and the different classes of the public should have the fullest possible knowledge of each other. He assured the Lord Mayor that they anticipated a most delightful and profitable time in Newcastle.

ANNUAL REPORT OF COUNCIL.

The CHAIRMAN OF COUNCIL (Dr. R. A. Bolam) moved:

That the Annual Report of Council, 1920–21, Balance Sheet and Financial Statement for 1920, Estimate of Income and Expenditure for 1921, and Supplementary Report of Council, 1920–21, be received.

The motion was agreed to.

PRESIDENT, 1922–23.

The election of Sir William Macewen, C.B., LL.D., M.D., F.R.C.S., F.R.S., D.Sc., Regius Professor of Surgery, University of Glasgow, one of the honorary surgeons to H.M. the King in Scotland, as President of the Association for 1922–23, was carried with acclamation.

Dr. W. MUIR SMITH (Eastbourne) called attention to the omission of the name from the list of honours of Sir Charles O'Brien Harding, J.P., who was knighted in 1920. The CHAIRMAN said that the correction would be made.

ANNUAL MEETING, 1923.

On the motion of the CHAIRMAN OF COUNCIL, it was agreed that the Annual Meeting for 1923 should be held at Portsmouth.

New Honorary Member.

The Right Hon. Sir Henry Craik, K.C.B., M.P. for the Scottish Universities, was elected an honorary member of the Association.

It was agreed to approve the remainder of the Annual Report of Council under "Preliminary."

FINANCE.

The TREASURER (Dr. G. E. Haslip), in moving approval of the section of the Annual Report of Council on "Finance," said he wished to refer to it in some detail because there was a depreciation in the surplus funds of £12,000. In considering that sum it was necessary to have regard to three points. The valuation of the freehold was £124,500, but a reserve had been formed by writing off £1,000 per annum for the past five years from the valuation of the premises; and those premises, situated as they were on a valuable site in the Strand, had not, in fact, depreciated to that extent. Secondly, the sum of £4,000 had been expended in improving and renovating the premises, leaving them in better condition, which accounted for £9,000 of the deficit. Lastly, the paper stock accounted for about another £3,000, so that the deficit was not so serious as it seemed. Dr. Haslip referred in some detail to the abstracts of receipts and expenditure given in the Annual Report, and concluded his remarks by saying that the increased activity of the Association necessitated increased expenditure, and that the figures before the meeting provided the justification for the increase of subscription to £3 3s. recommended by the Council last year.

Dr. E. A. STARLING (Tunbridge Wells) remarked that his experience was that the very great majority of new candidates elected to the Association—at any rate in his Branch—had come to the Association through the work of the Propaganda Subcommittee, and as Branch Secretary he wished to express his gratitude for what had been done. (Hear, hear.)

In reply to questions, the CHAIRMAN explained that the motion was that the report under "Finance" be approved, and this needed no seconder. Dr. R. GORDON BELL (Sunderland) thereupon moved that the word "not" be inserted before the word "approved." The CHAIRMAN said that this was a direct negative, and could not be taken as an amendment; but Dr. Gordon Bell was entitled to state his objections.

Dr. GORDON BELL said it would not have been possible to gather from the Treasurer's manner that the financial position of the Association was exceedingly grave. It was the duty of the meeting to reject this section of the report. The revenue account for 1919 practically balanced itself, as an excess of income over expenditure of £5,204 was due to the receipt of £5,000 from H.M. Government for expenses incurred mainly in previous years. The revenue account for 1920 resulted in an excess of expenditure over income of £12,095, notwithstanding an increase in normal income of £11,000—namely, from subscriptions £4,000, JOURNAL £6,300, and rents £700. The increased income of £11,000 was totally expended, and the deficit of £12,000 incurred. The balance sheet showed a surplus of £127,319, which was mainly represented *per contra* by the value of free-

hold premises £124,516. The investments of £7,872 were counterbalanced by an overdraft at the bank of £11,962. The Association ought to liquidate its investments to wipe out the overdraft. The increased subscription had produced only £3,920 more income during 1920, but was estimated to produce a further £10,000 in 1921. Arrears of subscription £1,417 were written off in 1919, and a further amount of £2,132 was written off in 1920. The number of subscriptions in arrear appeared to have increased during the year from £384 to £741. The estimate (SUPPLEMENT, April 30th, p. 108) would be of increased value if it showed how last year's estimate had been realized or otherwise. They had budgeted for an increase of £10,000, but five months had elapsed and they had only £4,000. Details were not available, but the estimate for 1920 was for a net deficit of £3,443, which had turned out to be £12,095, and the difference of £3,652 required some explanation. Advertisements in arrear had increased from £4,093 to £5,343, and represented one-sixth of the year's income for advertisements. The budgeted increase of £5,000 was not being realized.

Dr. P. R. COOPER (Mid-Cheshire) raised the question of the legal expenses in the Pratt case. The TREASURER said that this item was for the plaintiff's costs. All the other costs had been paid off long since. Dr. COOPER said that it seemed to him a very big item for legal expenses. What could they do to prevent this occurring in future?

The TREASURER emphatically denied the assertion of Dr. Bell that the finances of the Association were in an unhealthy state. The Association was not a commercial concern. Last year he had to stand the criticism of members who told the Council that it was underpaying the staff. He did not know whether Dr. Bell had ever attended a business meeting where a shareholder had stood up to tell the board of directors that they were paying too little for the work done. The salaries of the staff were increased last year by the sum of £5,100. That was a large item, and it was the opinion of the Council that the increase was justified in every way. (Hear, hear.) If the members wished for details of the increased expenditure he would furnish them. Like a large number of medical societies, the Association had been giving too much for its old subscription. When they had a staff of six professional men, when they had a JOURNAL which was the most paying property they could possibly have—for if it were not for the JOURNAL at the back of the Association they could not do the medico-political work they were now doing—to think that all this could be done on a two-guinea subscription was out of the question. From the Supplementary Report of Council it would be seen that the revenue from January to May—five months—had increased and expenditure had decreased, which made a difference already of £7,000 in the present year. In his opinion, this was most encouraging. Again, last year, over £3,000 went in legal expenses; Representatives might not be aware that the Pratt case cost just upon £10,000.

Dr. GORDON BELL objected that Dr. Haslip could only deal in his reply with the points raised in the discussion. The TREASURER said that he must deal with the causes of increased expenditure. The CHAIRMAN said that the Treasurer was fully entitled to defend the balance sheet and accounts as presented. Various items of increased expenditure had been attacked, and the Treasurer had to explain why they had been incurred and point out that some of them were not so bad as they seemed.

Dr. GORDON BELL: A member replying on a discussion is limited to what has been mentioned in the course of discussion.

The CHAIRMAN reminded Dr. Bell that the Representative Meeting was not conducted strictly on the lines of a business meeting (of a company); discussion was allowed according to the ordinary rules of debate.

The TREASURER said that he would take first the general Association expenditure. The actual expenditure was £5,472; they had estimated for £4,200. Certain expenses were incurred during the year which were not allowed for in the budget owing to unforeseen eventualities, and that was the difficulty in the finance department of the Association. They never knew what orders they were going to receive from the Council in the way of spending money when special expenditures were necessary. A member, for example, would bring forward a resolution for a special committee—one such last year, a Committee on Medical Sociology, cost £80, and they had no idea that that £80 would have to be budgeted for. A meeting was called hurriedly by the Organization Committee on the question of federation in connexion with the Overseas Branches, and the railway fares to that conference cost £64 for nine members. He had desired to mention this in detail to show the difficulty of trying to budget in exact figures. Dr. Macdonald's visit to South Africa, again, came to £600. The expenditure on scientific grants was heavier by £100 than anticipated. He did not know whether Representatives wanted him to go into more details. ("No.") The actual expenditure on the central premises account greatly exceeded anticipations. The cost of decorations and structural alterations in the main building and basement largely accounted for the enhanced figures. Rates, again, were increased by 1s. 7d. in the £. The cleaners received a higher wage. The Council decided to make an alteration in the basement at 429, Strand, and to utilize a part of it which had been empty for over ten years; and they still hoped that some use might be made of the part which had been left untouched. The expenses of the Scottish and Irish Committees were also increased; so had the expenditure on the Library. Postage on the JOURNAL showed an increase of £1,600, and would have been much heavier had the Government persisted in its proposal for the extra penny on postage overseas. The Finance Committee had no wish to shirk responsibility. The books of the Association were open to inspection by any member. But if the expenditure was to be kept down it was a matter for the committees which took their instructions from the Council, which in its turn was guided by the feeling of the Representative Body.

Dr. JAMES STEWART (Lambeth) said he was one of the oldest members of the Association, and had attended the Annual Meeting on more than fifty occasions. (Applause.) Having gone very carefully through all the various items of the balance sheet he was bound to say that he knew of no occasion on which a Treasurer had so clearly, manfully, and thoroughly explained the position as Dr. Haslip had done that morning.

The motion approving the Annual Report of Council under "Finance" was then put and carried, with four dissentients.

The Financial Secretary.

The TREASURER said that this was the last occasion on which Mr. W. E. Warne, the retiring Financial Secretary and Business Manager, would be present in an official capacity. Mr. Warne had been in the service of the Association for forty years, and it was only right before he left that they should tender him their hearty thanks for his services, and also wish him good health and happiness in his retirement. (Applause.)

The CHAIRMAN OF COUNCIL said that Mr. Warne was one of those officials behind the scenes whose name did not as often appear in the Association's publications as it might do. Mr. Warne had for many years made a hobby of the Association's business, in particular of all that appertained to the details of advertisements and printing and the organization of the exhibition which was so satisfactory a feature of the Annual Meeting. The Council was extremely sorry to lose him, and they knew that his deep interest in the Association would keep him in touch with them for a considerable time yet.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said that it was unnecessary for him to convey formally to Mr. Warne the feeling of the meeting, but he did wish to endorse heartily all that had been said.

Mr. WARNE made a brief speech in acknowledgement of the kindness he had received during his forty years' service for the Association. He had always felt very proud to be considered one of the staff.

The TREASURER introduced to the meeting the new Financial Secretary (Mr. Ferris Scott), who was cordially received. Mr. SCOTT said that as a newcomer it was difficult for him to say anything, except that he felt very proud to occupy the position. He could hardly hope to equal Mr. Warne's length of service, but he trusted that when his time of retirement came as many good wishes would follow him as followed Mr. Warne.

THE EXPENDITURE OF THE ASSOCIATION.

Dr. E. R. FOTHERGILL (Brighton) moved:

That it be an instruction to the Council carefully to consider whether further drastic economies cannot be effected in the expenses of the various committees, especially as regards printing.

The motion, he said, had been brought forward at the Division meeting by the honorary secretary without notice to the Executive; but when the matter had been brought to his attention he looked into it with the Treasurer, who had suggested that a good deal of Committee expense was caused by him (the speaker). (Laughter.) The Committees on which he was a burden were three—namely, the Insurance Acts Committee, the Ministry of Health Committee, and the Organization Committee. If he must take blame, he felt able to take credit; and the expenditure of the Insurance Acts Committee was down by £1,400. The Ministry of Health Committee had spent £300 more, but a large part of that had been spent on a conference of medical officers of health and other men of standing who dealt with Lord Dawson's report. In a case like that it was unfair to saddle a particular committee with the expense. The Organization Committee had spent £1,000 more, but that was really expenditure on behalf of the Propaganda Committee, at any rate to the extent of about £794; £230 had been spent on the printing of a *Handbook*, and £526 on lists of non-members. In Dr. Fothergill's view that was Central Office expenditure, and should not be attributed to a particular committee. As representing the Division he hoped the Council would be able to effect economies, but, speaking personally, he did not see how they could do it. (Laughter.)

The CHAIRMAN suggested that as Dr. Fothergill, in bringing forward the motion, had practically opposed it, he might see his way to withdraw it. Dr. FOTHERGILL replied that if the Treasurer would look into the matter that would probably meet the wishes of his Division.

The TREASURER said that if Dr. Fothergill had turned over a new leaf he would be glad to hear it—(Laughter)—but there were many motions on the agenda from Brighton, and therefore a good deal of expense was caused by the fact that there was such an energetic member representing Brighton. Dr. Fothergill was a man of extraordinary ideas. It was the ideas that did not bring forth fruit which cost the money, and in future all resolutions from Brighton would be very closely scrutinized. (Laughter.)

The motion was then withdrawn.

Dr. H. ROSE (Bucks) moved:

That this meeting views with alarm the growing expenditure of the Association, and is of opinion that an independent committee should be appointed to investigate, and if possible, suggest economies.

There were two ways of meeting expenditure. One way, which might almost be called the Government way, was to increase taxation; the other way was to look at expenditure and try to decrease it. His Division came to the conclusion that there was no attempt to decrease expenditure. He thought the meeting would agree with him that there was no calling higher than that of the general practitioner, the man who was prepared to go at two o'clock in the morning into working people's cottages to do a tracheotomy and be spat upon with diphtheria bacilli. Having more or less retired from general practice, he could speak with greater freedom concerning such men. What were the average earnings of the general practitioner? Deducting from their receipts the necessary expenses, there were very few men in his area who were making £1,000 a year net. Therefore his Division felt that salaries of £1,500, £1,800, and £2,000 a year paid by the Association were excessive. The Government had already commenced economy in regard to War Pensions Committees, Insurance Committees, and the like, and it was for the Council of the Association to consider whether it could in any way reduce expenditure.

Mr. N. BISHOP HARMAN (Marylebone) moved as an amendment:

That this meeting views with satisfaction the growing volume of work that falls to be done by the British Medical Association, approves the consequent increase of expenditure necessarily involved, and commends the Council for the economy and diligence of its administration.

If the meeting elected an independent committee as well as the new Council, it would be doubling expense, thus doing the very thing it was desired to avoid.

Dr. W. PATERSON (Willesden) seconded.

Dr. C. O. HAWTHORNE (Marylebone) did not think such an amendment should be moved by a member of the Council. The financial policy of the Council had been definitely arraigned. The Treasurer had been congratulated upon his extremely lucid statement, but he had not addressed himself to the particular criticisms advanced by Dr. Bell, and there were several points on which further information was desirable. Therefore he thought it was reasonable that a small committee composed of men who were specially competent upon the business side should be appointed, so that they might be further assured that the Association was on a perfectly stable and sound basis.

Dr. GORDON BELL said it had been stated recently that a sum of £1,333, a rise of £500, under the heading of contributions to the JOURNAL, had been mainly paid to members of their own staff. He had no knowledge of this, and could not confirm it or deny it. If members of the staff did receive such extra payment they put themselves in a false position. An independent committee would be able to ascertain how far such statements were true. It seemed to be urged that policy was to dominate finance, whereas finance must dominate policy. (No, no.) The best way in which to secure general satisfaction was to support the Buckinghamshire amendment.

Mr. E. B. TURNER (Kensington) said he could not vote for the Buckinghamshire motion, nor could he support Mr. Harman. To appoint a special committee with a view to securing further economy would be futile, and would only land the Association in further expense.

Dr. H. B. BRACKENBURY hoped the meeting would vote against both the motion and the amendment. They would be going too far to vote an expression of unlimited satisfaction, because they had to recognize the fact that the balance sheet was not entirely satisfactory. Indeed, the Treasurer had not pretended that it was. It was because the financial position had been unsatisfactory that they had to raise the subscription. He had understood that the Treasurer intended by his remarks to convey that while they were business men in one sense, they were not directly concerned with the production of dividends. (Hear, hear.) Medical men were not necessarily bad financiers, but what the Association existed for was not to make profits, but to do valuable professional work, and for that purpose it must have an efficient administrative staff. There was no comparison whatever between such a body and a concern that aimed at dividends. The Association existed to produce results. (Hear, hear.) He was sure that the utmost care was taken by the Finance Committee in scrutinizing each item of expenditure.

The TREASURER explained to Dr. Bell that the overdraft was of a purely temporary kind. It was the amount on December 31st. The overdraft in November was far less. In October there was practically none at all. In January, 1921, there was practically no overdraft. Would Dr. Bell suggest that they should sell investments in order to carry them over a three months' difficulty? At the present time the balance on deposit was £11,000. (Hear, hear.) With regard to contributions to the JOURNAL, not one penny was paid to members of the staff in 1920 for any contribution to the JOURNAL. For some years practically no money had been paid to members of the staff for contributions, and that was one of the reasons why the salaries of the staff were increased. The increase in salaries to the editorial staff was intended to cover all such contributions. The amounts paid to their professional staff had been the subject of discussion, it would be remembered, and the question was practically settled last year. They recognized that they must give adequate pay if work of a very special character was to be performed efficiently.

Mr. A. LUCAS (Birmingham Central) said it would be impossible to do any more by setting up an independent committee. They had hardly expected that the present balance sheet would be a good one, and that was why they had to raise the subscription; already the result of that action had been seen.

Mr. E. B. TURNER, resuming his speech, which had been interrupted by a point in procedure, said that a committee such as was proposed by Buckinghamshire would be not only useless but extremely expensive. A committee of that sort would have to represent every part of the Association, and the railway fares alone might run into £100 a meeting. A committee of that sort had to meet very often. Every item of expenditure was most carefully

considered by the Finance Committee, and every inclination to economy encouraged.

Mr. BISHOP HARMAN, by leave of the meeting, withdrew his amendment, and Dr. ROSE then withdrew his original motion also.

THE "BRITISH MEDICAL JOURNAL."

Dr. J. A. MACDONALD, who was received with hearty applause, moved the Annual Report of Council under the heading "Journal." The gratitude of the Association, he said, was due to Mr. Albert Lucas for acting so ably as Chairman of the Journal Committee during the difficult period of the war. (Applause.) The position of the JOURNAL at the present time was one of which the Association had a right to be proud, and he hoped it would continue to increase in influence and usefulness. There was now a full editorial staff. The editorial work of the JOURNAL was carried on during the war period by the sheer devotion and sacrifice of the Editor. (Applause.) So much was this the case that last year his health was really in a precarious condition, and he was echoing the sentiment of the Representatives in congratulating Sir Dawson Williams on the improvement of his health. (Applause.) The JOURNAL now had an excellent assistant editor, and with a new subeditor there was every prospect of a peculiarly strong editorial staff. In South Africa he had heard almost without exception expressions of strong approval of the JOURNAL, though there were undoubtedly one or two criticisms, very trenchant, but not much to the point.

The report under this heading was then approved.

Dr. H. ROSE (Buckinghamshire) moved that reports of Division meetings should be published in full in the SUPPLEMENT. He said that in the country it was difficult to get any considerable numbers to attend Division meetings; if reports of country meetings were published, they would stimulate interest.

Dr. MACDONALD said that it would be utterly impossible to do as this resolution proposed; full reports of these meetings would occupy far more space than could be afforded. One meeting a report of which was sent up would have required eight pages. The matter must be left to the discretion of the editorial staff.

Dr. ROSE withdrew his motion.

Dr. T. RUSSELL (Glasgow Eastern) moved that more space should be devoted to clinical articles bearing on the general practitioner's work. Dr. P. R. COOPER thought it a very good suggestion. Dr. MACDONALD said that this was a hardy annual. The idea was one with which the Journal Committee had much sympathy, but it was not very easy to carry out. It had been tried again and again by the editorial staff to get articles of the character mentioned by Dr. Russell. The general practitioner was really well served by the smaller books continually issuing from the press and obtainable from the library of the Association. But the Committee and the editorial staff would always bear the requirement in mind. They would take this motion into sympathetic consideration and do whatever they could.

The motion was agreed to.

Mr. H. CAIGER (Sheffield) moved the following resolution, which was agreed to without discussion:

> That this meeting desires to express its great appreciation of the good work done by the Journal Committee and Editorial Staff, and congratulates them on the considerable sum realized by sales to non-members.

Mr. Caiger added that it was satisfactory to note that the receipts from the sale of the JOURNAL to non-members, as shown in the balance sheet, amounted to £7,000, which showed that the JOURNAL was much appreciated.

PROFESSIONAL SECRECY.

Dr. R. LANGDON-DOWN, Chairman of the Central Ethical Committee, moved the following recommendation of the Council:

> 1. That when a medical practitioner refuses to divulge information which he has obtained in the exercise of his professional duties in such circumstances as the following:
>
> (a) In a court of law when the court has ruled that information so obtained must be disclosed;
>
> (b) where it is already provided by Act of Parliament that he must do so, for instance, in the notification of certain diseases;
>
> such action must be taken entirely on his own responsibility, and the Association cannot be expected to support him or protect him from consequences he may incur in so doing.
>
> 2. That if attempts be made to add additional exceptions to the general rule of the profession as regards professional secrecy, the Association recognizes that it will be necessary, after consideration, (i) to resist by all lawful means any such encroachment, and (ii) where such encroachment is attempted, to accord support by any means in the power of the Association to any individual practitioner who may be assailed through such new encroachment.

Dr. Langdon-Down said that the report of the Council so far as it concerned medical ethics, was concentrated practically entirely on the point of professional secrecy, to which a considerable amount of attention had been given last year. The instruction passed last year had been as follows:

> That the Council consider the extent to which and the ways in which the Association is prepared to support its members in maintaining professional secrecy.

He moved the recommendation with great confidence in the wisdom of it. That was the view of the Council as expressed last April. It would be observed that it rested on the principles enunciated in the resolution passed at Cambridge last year after the debate on the matter. The text of the resolution as passed last year was as follows:

> That having further considered the question of professional secrecy, viewed from the standpoint of the medical profession, and with special regard to venereal diseases, the Representative Body reiterates the opinion that a medical practitioner should not, without his patient's consent, voluntarily disclose information which he has obtained from such patient in the exercise of his professional duties.

Although the proposal he was now making rested almost entirely upon that position, it was challenged by amendments of various kinds, and the matter was one of such gravity and importance that he was anxious that the steps by which his position had been arrived at should be understood. In 1919 communications had come to the office which were passed on to the Central Ethical Committee, suggesting that in view of the problems attending the treatment of venereal diseases a shifting of opinion was occurring as to the question, and that the time had come to make some relaxation to meet the case. That was considered by the Central Ethical Committee and considered again by the Council, and the Council had come to the conclusion that the facts put forward did not justify such a relaxation as was suggested, and it proposed to the Representative Body to reiterate an opinion which had been passed by that body some years before after considerable debate, a resolution in the main corresponding to that previously adopted. The only essential changes made in the resolution as proposed and as passed were the addition of the words "viewed from the standpoint of the medical profession" and the omission of the words "under any circumstances," which words preceded and modified the main term of the motion, "voluntarily disclose." The net effect of that resolution had been to establish the main position unchanged, but slightly to relax the stringency of the wording. All that had been said in debate and the reasons and instances which were in the mind of the meeting could not appear in the resolution, for reasons to which he need not refer; but he thought he might be justified in reminding the meeting that those were the main points covered by the word "voluntarily." He regarded the matter as not a voluntary act if a recognized properly constituted court of law ordered the disclosure. In the same way he regarded it as an involuntary act where an Act of Parliament imposed a duty out of harmony with the commonly accepted customs and principles. There was another well-defined class of cases outside those two, where the duty of the practitioner as a private citizen might be held to outweigh his duty as a medical practitioner, as in preventing crime when no other method appeared open to him, and where it was in the interests of the patient himself that a disclosure should be made, whether the patient was able to sanction it or not. So the Representative Meeting, after due discussion, had come to the conclusion that there were well-recognized classes of cases in which the doctor was absolved from breaking away from the traditional rule of professional secrecy. Following that, a proposal had been moved by the Representative of the Portsmouth Division to the effect that doctors should be put in the same position in regard to that matter as the clergy and the members of the legal profession. On that, a very careful and exhaustive statement of the

position was made by the Solicitor, coupled with words of caution and advice, and the proposal was negatived. In Part (1) of the motion the Council had tried to answer the question remitted to it as to the obligations and responsibilities which the Association might be expected to undertake in such matters in strict harmony with the actual resolution passed last year in the light of those facts which he had just stated. The Association could not be expected to indemnify or protect a man in any effective way from the consequences which ensued to a man who felt it to be his duty to disobey the ruling of the court or an Act of Parliament. With regard to Part (2) of the motion, he thought that was less likely to arouse opposition. The attitude of the Council was to consider carefully any further exceptions from the habitual rule of secrecy. So far he had been able to voice the opinion of the Council and of his Committee; but further action had been taken by the Council, as would be seen by a reference to the Supplementary Report of the Council (SUPPLEMENT, July 2nd, pages 239–240) on two cases which had been reported in the press, and more especially in one particular case, when the following resolution had been passed:

> That the Council of the British Medical Association has learnt with great concern of the position created by the recent decision of a judge that the medical officer of a venereal disease clinic must give evidence in a civil case as to the medical condition of a patient under his care at a venereal disease clinic, thus violating the confidence between doctor and patient and the direct undertaking given by the Local Government Board that all proceedings at such clinics should be absolutely secret and confidential. In drawing the attention of the Ministry of Health to these facts the Council of the Association would urge that such legislative steps should be taken as would render such an occurrence impossible in the future.

So far as that part of the work of the Council went he had at present received no support from his Committee, and only a partial direction from his Subcommittee. He would leave Mr. Turner to bring that matter before the meeting, when it would probably be his (Dr. Langdon-Down's) duty to express some divergence between his views and those of the Council.

Mr. E. B. TURNER asked permission to make a general statement on the position before any amendments were moved. This, he said, was a matter which would almost surmount in importance anything that was done at this meeting. (Applause.) It was a matter in which this Association should absolutely state its policy, and if possible see that that policy was carried into effect, so that all support possible should be given to any man who might find it necessary to stick to his colours.

Dr. H. G. DAIN: Is Mr. Turner moving my amendment?

Mr. TURNER replied that he was only anxious to put the matter generally. With regard to the clinics started by the Local Government Board there was a definite assurance that treatment should be absolutely secret. Yet in several cases doctors had been told they must divulge information secretly given. It seemed to him this was a matter in which they could no longer sit on the fence, and he would vote for any such amendment as was on the paper.

Dr. FOTHERGILL, on a point of order, urged that the amendments should be taken.

Mr. TURNER, deferring further remarks, therefore gave way to Dr. DAIN, who moved, on behalf of Birmingham:

> That the Association use all its power to support a member who refuses to divulge, without the patient's consent, information obtained in the exercise of his professional duties.

Dr. Dain said it had been hoped that the Council would take a much stronger attitude. His Division did not agree with the Report of Council, which suggested that it was in the public interest that the doctor should tell when ordered by the judge to do so. It might simplify an action if the doctor obeyed such an order, but it would not necessarily be in the interests of the public. (Hear, hear.) There was the question of the effect upon the public of the knowledge that a doctor would tell when he was ordered. In the opinion of Birmingham, when a medical man refused to disclose such information, the Association should stand behind him. (Hear, hear.) They were all perfectly aware that they were bound by certain rules of professional secrecy. In one recent case a doctor had the additional advantage of acting for a Government department, which guaranteed to the patients secrecy, yet in the face of that, when the judge ordered him to do so, he told. If that was to be the position, then the whole basis of confidence between their patients and themselves was going to be destroyed. It was certain that the public had not the slightest doubt about the matter. (Hear, hear.) The ordinary layman was quite positive that his doctor should never under any circumstances tell anybody. (Applause.) The public understood the position perfectly. It was a curious fact that the law itself had supported the recognition of the doctor's obligation to secrecy. They might remember a case in which a doctor suffered severely at the hands of the law for giving away information that had come to him professionally. The law, however, did not recognize that they had any right to refuse to obey the orders of the Court. So far as the statutes were concerned the lawyers were no better off than doctors. Yet so far as the common law was concerned, the lawyer was in a pretty strong position on most counts. Not only was he not expected to tell, but he would not be asked to tell. It was well known that if a Roman Catholic priest was ordered to divulge information obtained in the confessional he would refuse. He was under an absolute oath, and the law knew it would be useless to attempt to compel him. Why should a doctor tell just because a judge ordered him to? If he refused, nothing more was said about it. Though there had been numbers of cases in which doctors refused, nothing happened. In a good many States in the United States of America a doctor was not only not compelled to give evidence, but he was not allowed to give evidence in civil or criminal cases on information that had come to him. In France the doctor was punished if he revealed confidential secrets. In New Zealand the doctor was protected by the law from divulging such information in civil cases only. It was quite true that there were arguments why in some circumstances information should be divulged. Why should not the same protection be given to the doctor as was given to the lawyer? He read an extract from a statement made by Vice-Chancellor Knight Bruce in the case of Pearse *v.* Pearse (1846). The Vice-Chancellor, referring to the suggestion that a solicitor should give certain information, said:

> "The discovery and vindication and establishment of truth are main purposes certainly of the existence of courts of justice; still for the obtaining of these objects, which, however valuable and important, cannot be usefully pursued without moderation, cannot either be usefully or creditably pursued unfairly or gained by unfair means, not every channel is or ought to be open to them. The practical inefficacy of torture is not, I suppose, the most weighty objection to that mode of examination, nor probably would the purpose of the mere disclosure of truth have been otherwise than advanced by a refusal on the part of the Lord Chancellor in 1815 to act against the solicitor, who, in the cause between Lord Cholmondeley and Lord Clinton, had acted or proposed to act in the manner which Lord Eldon thought it right to prohibit. Truth, like all other good things, may be loved unwisely—may be pursued too keenly, may cost too much. And surely the meanness and the mischief of prying into a man's confidential consultations with his legal adviser, the general evil of infusing reserve and dissimulation, uneasiness, and suspicion and fear, into these communications which must take place, and which, unless in a condition of perfect security, must take place uselessly or worse, are too great a price to pay for truth itself."

(Applause.) I think, Dr. Dain continued, "medical adviser" might be substituted for "legal adviser" in that document. (Hear, hear.) It was true that a doctor might be committed for contempt of court if he refused to give information when ordered to do so, but medical practitioners must be prepared to take risks in order to make good their position, and they should be warmly backed up by the Association.

Dr. G. PARKER (Bristol) said that there were two grounds for professional secrecy. One was the implied contract. It had always been believed by patients that the doctor would observe good faith towards them and keep their secrets, and a vast number of secrets had been committed to medical men in the belief that they would keep the implied undertaking. Then there was another reason for it—a utilitarian reason. If the State did not grant the right of professional secrecy, all these people suffering from various diseases must go untreated and take the chance of non-recovery and death. It was of the highest importance to the community in general that every man should have the freest access to the means of treatment and recovery. It was in the interest of the State and the community to ensure the right of maintaining the absolute

secrecy to which they had been accustomed. He felt that the meeting should support most strongly the point made by a previous speaker, who argued that the lawyers had laid down a very strange piece of doctrine in saying that doctors could not maintain this secrecy in open court. To his mind the lawyers as a body had given a judgement in their own cause. From the time of the Duchess of Kingston's case onwards they had laid it down that doctors must reveal in court everything they (the lawyers) wished. Why? In order to save themselves trouble. The lawyers were put there to search for the elucidation of all mysteries, and it was their business to get the evidence and means of proof, not to come to the doctors and ask them to commit a moral crime in order to make the lawyers' job easier. If the people of this country were definitely appealed to, they would be brought to see that they had extremely strong grounds for maintaining that secrecy in the courts as well as outside. In various other countries secrecy was maintained, and it was only within the last one hundred or one hundred and fifty years that the right had been questioned here. With regard to one class of professional secrecy, the medical profession would have to make up its mind whether it would "go the whole hog" and maintain secrecy in every case, or whether it would allow the diseases concerned to be compulsorily notifiable.

Dr. J. A. MACDONALD supported the amendment by Birmingham. He did not think it went as far as he himself was prepared to go. This question of professional secrecy was one that went to the root of the whole of their dealings with their patients. Whether it was by verbal contract or implication, the medical man practically invited his patients to tell him what was the matter, and assured them that the secrecy would be inviolate. How far one was to go in this matter was difficult to decide, because the Government had taken it into its hands to lay down that there were certain conditions under which medical men must give information. The Government compelled them to give information, not to the public at large, as in the court of law, but to certain people who were supposed themselves to keep this secret. He wished to know what Birmingham meant by "supporting a member." If it meant moral support, that would be forthcoming, but the Association under its present rules could not spend a penny in his support. It was of no use appealing to legislation in this matter. There had been no legislation freeing lawyers from this necessity; it had simply come to be the case that lawyers were not asked questions in these cases. That was the position they must try to establish, but in order to do so medical men must be ready to take responsibility upon themselves. Every man who was prepared to stand up for the dignity of his profession and the sanctity of his conduct had got to face this position. If the court committed him for contempt—and this meant imprisonment for as long as he did not purge his contempt—he must be prepared for the consequences. Dr. Macdonald hoped the Association would say that it was prepared to support any man who took up that position against any power that might be in the land, legal or otherwise.

Dr. C. E. S. FLEMMING asked whether it was better that an occasional crime should go undetected and unpunished because a medical man refused to give evidence, or that a large amount of disease should go undetected and untreated because medical men did not have the confidence of their patients. If a crime went unpunished because a medical man refused to commit such a breach of professional duty, what a number of crimes would be proved and punished if the solicitor was compelled to state the information he had received from his client in an assumed confidence! Either they must have the law made for them by Parliament—and was this likely in a lawyer-ridden assembly?—or the alternative was that they by their courage, persistence, and insistence should make for themselves that law which the solicitors and the priests had made for themselves.

Dr. D. A. SHEAHAN (Portsmouth) supported the Birmingham amendment, but from a somewhat different standpoint from that of other speakers. He did it because he did not wish his profession to be placed in a position inferior to that of the lawyer, the priest, or the parson. Further, it was he who brought the matter before his Division in Portsmouth last year and also before the Representative Meeting. Although the decision was against him and against that principle last year, he believed the decision would now be reversed. He felt that the action of the Council—and he was a member of the Council—was weak in admitting the word "voluntarily" to the resolution proposed last year: "The practitioner should not, without his patient's consent, voluntarily disclose information . . ." They simply wanted to be put in the same position as the other professions spoken of. They had to stand firm and show that they were determined that their position should not be any less dignified or honourable than that of the lawyer and the priest. The Government would then climb down. If there were three or four strong men who would say "I respectfully decline to give away the confidence of my patients," then the judge would perhaps apply the law made by judges or by regulation of the court and commit that man. He was sorry Dr. Elliott did not make up his mind to go to prison for three or four weeks; perhaps it would only have been days, or perhaps not at all. But if there were strong men ready to go to prison for a little while there would be such a fuss and furore that the medical profession would soon gain its position.

Dr. H. B. BRACKENBURY (North Middlesex) asked forbearance while he did the unpopular thing of throwing doubts on the wisdom of passing the Birmingham amendment, which invited them to give a universal guarantee. It was because the Council thought there was something doubtful about that course that they adopted the resolution they did. He was entirely in spirit with the last three or four speakers, and believed they were all of that spirit. But in a matter like this they had to make some very nice distinctions, and in such an assembly that was not easy; yet the distinctions were all-important. What was meant in both resolutions by "in the exercise of his professional duties"? Had he been in Dr. Elliott's case he should not have done as he did, and should have rejoiced if the judge had sent him to prison, though he doubted if the judge would have done so. It was not the case of simply being asked, as some assumed, "Did So-and-So suffer from such a disease, for which he consulted you?" There would be no question about that coming under the term "professional duties." But the position of the doctor was not that of the lawyer or the priest. In the case of the lawyer, he was consulted specifically by the litigant or the criminal for the purpose of that litigation or in relation to his defence. The priest was consulted as a moral adviser on a point of morals and religion, which of course pervaded every action of life. The priest was only protected—if he might use the word—when he did it specifically under the seal of the confessional. In the case of the doctor there might be all sorts of things told him from time to time which had only the remotest bearing, or perhaps no bearing at all, on his being able to look after the health of the patient, or on which he was bound to advise. But when it was a case of doctor and patient, everything that might be said by that patient to that doctor must be protected in a court of law. But he was not sure that he could go so far as to give a universal guarantee—and he thought that was the Council's case—that in every case of refusal, whatever the circumstances, the whole powers of the Association should be behind the man who refused. In the great majority of cases they would be, but he could conceive of some cases in which public opinion would be dead against the doctor, and in which professional opinion would be actually against him, because it could not be said that in every case that was a distinct relationship between doctor and patient in regard to the particular question that was asked. He did not maintain that the wording of the resolution was of the best; it did not say that the Association would not stand behind a man, but only that it did not pledge itself to do so in every case in any circumstances whatever; and this should be made plain.

Sir JENNER VERRALL said that the words "in the exercise of his professional duties" made it quite clear that the respective positions were those of doctor and patient. In every civilized community every member of that community should so order his action that he should be made useful to the community generally. Probably the public knew, but he would like the point emphasized, that they were adopting this attitude, not because they wanted matters made easy for them as doctors, but because they desired their action, balancing one thing with another, to be useful to the community at large. It seemed to him on the face of it that it might be convenient to those conducting legal inquiries that every doctor who knew

anything with regard, for instance, to a certain crime should voluntarily communicate it, and that every doctor should be bound to do as Mr. Justice Avory at Birmingham sought to lay down—namely, in a case where he knew an illegal operation had been performed, that he should go and give information to the police. Representatives of the Association had an interview with the then Lord Chief Justice (Lord Reading) and a galaxy of lawyers, who sought to persuade them to take this course, but it was made plain that the medical profession would never consent. If the resolution were passed, he would himself like it confined to criminal cases, but he was not going to argue that point. He believed the public would be with the medical profession if they said that where it was clear that information had been gained under the respective positions of doctor and patient the doctor would not disclose it. The public would be convinced that on the whole it was not in the interests of the medical profession that that position should be maintained, but in the interests of the community, and they would support the profession through thick and thin.

Dr. T. RUSSELL (Glasgow) said that in the Sheriff's Court in Scotland a man would only go to prison for twenty-four hours in such a case as that foreshadowed.

Dr. WALLACE HENRY (Leicester) said that three months ago an attempt was made to force a medical man in Ireland to divulge secrets, and the Royal Colleges of Surgeons and Physicians in Ireland took action, and there was a deadlock. An Irish representative, correcting this statement, said that the matter dropped.

Dr. BUTTAR remarked that everybody would be agreed that in such a case as Dr. Elliott's that kind of secrecy should be inviolable.

The CHAIRMAN OF COUNCIL said that he intervened to reinforce to some extent the warning Dr. Brackenbury had given. They in that hall and the profession generally would have one opinion at the present moment as to what ought to be. A thing they wanted to avoid was anything which should prejudice the ultimate goal. They had been told that there was no statute in the land protecting lawyers or the clergy, and it was conceivable that it might be difficult to get Parliament to take the attitude that any statutes should be passed to deal with this matter. The law was the result of a series of decisions extending over a great number of years, the position having varied from time to time. The Council took what it thought at the moment was the safest line, but held a watching brief to make further progress when it seemed possible. The position had been rendered very difficult by the recent decision (in Dr. Elliott's case.) The profession could not allow information to be divulged in the case of a poor man attending the venereal clinic and refused in the case of a rich man attending the consulting room. The law must always be subject to the opinion of the community. The law was a mirror—it might be a dim one—of public opinion for the time being. Professional men would not violate confidential communications, and must be established in that security, but care must be taken in this matter. Dr. Bolam suggested that the meeting should direct the Council to take immediate steps to establish the position that a medical practitioner should not be compelled to divulge in a court of law any information which he had obtained in his relation as professional adviser to a patient. In that case a loophole was left to any man who thought in his conscience that the interests of the community demanded in a specific case that he should act as an ordinary citizen. He suggested this as a first step. No man should be compelled; at the present moment he was compelled by the custom of the law—in the discretion of the judge, as the solicitor to the Association was careful to remind him. Certain Government departments were very apprehensive that some of these revolting cases, in which medical evidence was necessary, would not come to a proper issue unless the doctor gave certain information. These particular cases were very difficult to bring under medical supervision at any time. He hoped the meeting would think a little before it made this a definite policy of the Association.

Dr. R. J. ROWLETTE (Dublin) described certain events relating to this question in Ireland. Some months ago the military authorities in many parts of Ireland issued an order in terms such as these—he quoted from memory—"Directed to the person in charge of such-and-such a hospital. You are hereby directed to report to me the names and addresses and other particulars of any patient treated in your hospital for such-and-such injuries. Such a report is to be made from day to day. Any infringement of this order will be an offence, and dealt with accordingly." This was served on the secretaries of the several voluntary hospitals in Dublin, and to the medical officers in charge of infirmaries all over the country. Immediately on receipt of that order the Irish Medical Secretary drew the attention of the Royal College of Surgeons in Ireland to the matter. The Council of the Royal College at once approached the military authorities in Ireland. The Commander-in-Chief gave them a sympathetic hearing, and they put the professional point of view, stating that they would advise any of their Fellows and Licentiates that obedience to such an order would be improper. The Commander said the authorities could not withdraw the order. What else he said it was not permissible to divulge; but for five months no proceedings had been taken to enforce the order on any medical man in Ireland, and no medical man in Ireland had obeyed it. (Applause.) Within the last two months, however, two doctors in Ireland (one in county Dublin and one in county Clare) had been put in gaol—one of them released and re-arrested—without any offence being charged against them, and no offence could be imagined in their case except disobedience to this particular order. In the very peculiar conditions under which they were living in Ireland during the past few months, it was encouraging to find that that order, promulgated by the full authority of the military organization, had not been put in force to a wider extent and had not been put in force because the profession would not obey it.

Dr. HASLIP referred to the remarks of the Chairman of Council, with which he disagreed. He did not agree that the doctor should be the judge as to whether he should divulge information or not. The priest absolutely declined to speak, and the doctor should do the same.

The SOLICITOR (Mr. W. E. Hempson) said he was glad to have an opportunity of putting before the meeting one or two matters in connexion with this subject, so that they might realize how far they were going and take the step with their eyes open. In the amendment by Birmingham, moved by Dr. Dain, there were one or two verbal matters which he would like to point out. In regard to the expression "the Association use all its power to support a member who refuses to divulge," would it not be better to make it clear whether this meant a member of the Association or a member of the profession. (Dr. Dain explained that this meant a member of the Association.) The Solicitor then asked what was intended to be conveyed by the words "in the exercise of his professional duties"; did that mean in the active exercise of them, and would not the form of words "in the relation of professional adviser to a patient" more closely meet it? As he understood it the clear intention was that this resolution should apply to both criminal and civil matters. (Hear, hear). In his mind there appeared to be a differentiation in point of difficulty between the two. He was looking at the opposition that might be met, and he desired to point this out so that the Representatives might weigh it for themselves. The Solicitor then gave in some detail an illustrative case showing the position that might arise if a medical witness in a criminal prosecution refused to give evidence on matters of fact when ordered to do so by the court. He explained that his object was to illustrate the possible difficulty that might be encountered by laying down a hard and fast rule absolutely precluding a doctor in the witness box from giving any evidence of fact. If the Birmingham amendment stood and was passed in its original form it must be taken that it applied and was meant to apply to both criminal and civil cases. So far as he had been able to ascertain, the only country in which there was this protection with regard to medical men in criminal cases was America. It was not so in France. In France the position was protected in civil cases but not in criminal cases; in New Zealand and in certain parts of Australia he believed the law was the same.

Mr. Hempson asked the meeting to consider how its wishes could be carried out in practice, and how far it was proposed to support a member of the Association who refused to give evidence in a criminal or a civil court when attending on subpoena. Reverting to the hypothetical case he had cited of a doctor's refusal to answer questions held by the Court to be vital to the case, whether for the defence or for the prosecution. Mr. Hempson said:

"Assume he is committed and goes to prison under the circumstances I have indicated. As soon as you get one exception outside you open the door to many others, and if you make one sweeping governing resolution like this, with no possible exception to it, I assume that you must stand by it, because the press will take very important notice of this, and you will be supposed to have looked at the whole matter with careful thought and have seen the possibility of being brought to such a position of decision as I indicate to you. It is not that I am trying to influence your decision; it is that I am putting before you a state of things which may possibly be difficult for you to decide. The judge is supreme in this matter, and he might say, 'I regard this as a gross and perverse contempt of court. I commit the witness until he purges his contempt.' If so, how are you going to secure his release? I do not know of any appeal against the judge's decision, though possibly counsel might be sought by him with the other judges upon it, and particularly if the principle involved had so important a backing as the British Medical Association, which is well known in Government circles. Well, if that man remains there, what are you going to give him in point of support? Are you going to give him moral support or financial compensation? I do not know quite what arises out of your resolution in these connexions. They, however, involve matters of substance which it is my duty to put before you in the way I have done. Taking the civil side of the case, Dr. Elliott was before an implacable and strong-minded judge, and I have little doubt but that he ran imminent risk of being committed. I take it this is regarded as a case in which the profession under the particular circumstances prevailing ought to be absolutely protected. There was a pledge given in respect to those clinics which appears to have been violated; but you might get a case outside that, affecting the question of divorce—either the continuation of two people living together or their separation through the medium of the Divorce Court which might be an act of right and justice. Many cases may occur under similar circumstances, varying in degree and varying in the evidence which would have to be given. Now, in arriving at this resolution you are excluding, as it appears to me, any loophole by which you can escape from the one hard-and-fast line that you have laid down there. That may be your intention; if it is you have done it, but I am sure you will all agree with me that it was my duty to put before you those matters on which I have touched to-day."

Dr. LANGDON-DOWN said he thought it was his duty to say at least a few words in regard to the course that was proposed. It seemed to be suggested in many of the speeches that there was a new attitude on the part of the public towards the profession. From the days of Hippocrates the position had been well understood. In his injunctions to the profession Hippocrates told them they should not divulge what it was not proper should be divulged; but he recognized quite clearly that there must be exceptions. "I fear," continued Dr. Langdon-Down, "that you have unconsciously, out of a sense of professional dignity, perhaps professional pride, and I regret to say perhaps professional jealousy, elevated this sound and true and proper principle of holding your tongue to a much higher level than it was ever intended to take. I do not think you are justified in claiming that the public has a right to feel aggrieved or taken in or betrayed when the doctor acts in obedience to a court of law. The public interest has been our guide in the past and must be in the future." Dr. Langdon-Down added that it was essentially a grievance of the public, and if there was any grievance the right appeal would be to Parliament. They would be in the position to weigh the pros and cons of the interests of public health on the one side, and of public justice on the other. Doctors must not set themselves up as judges of particular cases in which they might defy the law, or say that in no case would they obey the law. By their silence in some cases they might conceivably inflict injustice upon innocent people. The duty of the profession was to advise the public, both in the courts and in Parliament, of the ways in which any exceptions to secrecy might be prejudicial. Of course they did not want to become common informers, and they must be very careful to prevent anything that might put them in the position of being compelled by law to shelter wrongdoers. The case of France had been quoted. He believed medical men in France were writhing under the law that compelled them to remain silent, and would be glad to have it rescinded.

In replying to the debate,

Dr. DAIN said he agreed with the Solicitor to the Association that the wording of the amendment might be a little clearer, and he was quite willing to insert words to show that the support offered was to members of the "British Medical Association." In cases that had been referred to it was an admitted fact that a certain individual had been to a surgery, or had been treated at a clinic, therefore there was no need to call a doctor to speak of a fact already established. Of course, his amendment did not imply that they should finance a man if he was sentenced to a long term of imprisonment, but it did suggest that they should organize that man's work so that his income did not suffer. They should certainly organize public opinion so that a man should not be allowed to remain in prison. With regard to the question of notifying a case of scarlet fever, of course the Association would not be asked to support a member in such a case as that.

Dr. BRACKENBURY: Your amendment does not say so.

Dr. DAIN agreed that the wording might be defective. He would suggest to the Chairman of the Council a simple way of dealing with this matter. In a court of law a priest was not called upon to divulge information because it was known he would not do so. If he did he would promptly be turned out of the Church or deprived of his priesthood. "So," continued Dr. Dain, "if the General Medical Council will take up the attitude that a doctor who tells should be struck off the *Register*, the question would be solved in the simplest possible way." (Laughter.) Dr. Dain said, in conclusion, that there were other organizations that might collaborate with the Association in giving protection to doctors under certain circumstances.

Dr. FOTHERGILL raised the point as to whether the vote on this occasion could be taken as representing the policy of the Association, seeing that two months' notice had not been given of the Birmingham amendment by publication in the SUPPLEMENT.

The CHAIRMAN, after consultation with the Solicitor, said it could only be passed as an opinion, having great moral weight, or as an instruction to the Council to do certain things in readiness for next year. It could not now be taken as representing the settled policy of the Association.

Dr. NOY SCOTT (Plymouth): If this motion is passed, will it affect the particulars we have to put on record cards?

The CHAIRMAN: I do not see that that has anything to do with it.

Dr. FOTHERGILL said that as it had been adopted he withdrew the amendment standing in the name of Brighton.

The Birmingham amendment was then put in the following amended form:

> That the Association use all its power to support a member of the British Medical Association who refuses to divulge without the patient's consent information obtained in the exercise of his professional duties, except where it is already provided by Act of Parliament that he must do so.

This was agreed to, and afterwards passed as a substantive motion by a large majority, which, the Chairman remarked, was considerably more than a two-thirds majority.

Dr. HAWTHORNE asked what was to happen in the case of a gentleman of tender conscience who swore in the witness-box that he would tell the whole truth, and after giving that solemn oath, felt he must withhold evidence.

Several members pointed out that what a witness said was "The evidence I shall give shall be the truth," and so on.

Dr. HAWTHORNE: He may say the only way in which he can escape is by refusing to give evidence or to take the oath at all? ("Not necessarily.")

Dr. W. B. CRAWFORD TREASURE (Cardiff) moved:

> That the Representative Body protests strongly against the compulsory violation of professional secrecy on the part of a medical witness in a recent action in a civil court, and calls upon the Government to take such action as is necessary to protect medical men from the obligation to divulge professional confidence in any court of law.

Dr. Treasure remarked that they all agreed with the first part of this motion. In regard to the second, surely they must take some steps to secure action. In spite of what had been said as to the pains and penalties that might be inflicted on doctors who refused to divulge information there were ways and means of acting. Even judges were not supreme in this country. The King might exercise his prerogative of mercy through the Home

Secretary, who was to a great extent responsible to public opinion. It was surely open to the profession to bring pressure to bear upon the Home Secretary so that any medical man who was sent to gaol in these circumstances might very quickly be released. "We cannot take this thing lying down," exclaimed Dr. Crawford Treasure.

Lord DAWSON asked whether there was any real point in discussing this motion. Were not all questions of principle covered by the Birmingham resolution? Was it desirable to go beyond the principle established by the Birmingham resolution to select a particular individual in a particular trial for an expression of regret or censure? The meeting had really arrived at the essential conclusion, and no further discussion seemed necessary.

The motion was lost.

Dr. FOTHERGILL then proposed, and it was agreed, that it be an instruction to the Council to act on the motion of Birmingham just passed as a resolution of the Representative Body, and to submit the same to the next Representative Meeting with a view to considering the advisability of this resolution becoming the policy of the Association.

NAVAL AND MILITARY.

Lieut.-Colonel R. H. ELLIOT, I.M.S. (ret.), moved a resolution, which was adopted with applause, that Major-General Sir William Macpherson, K.C.M.G., C.B., A.M.S. (ret.), be elected to represent the Army Medical Service on the Council for the period 1921–23, and stated that in his opinion the Association was very fortunate in securing such an excellent representative of the army.

In moving the Report of Council under this heading Colonel ELLIOT said that the question of the complaints made by naval medical officers had been pushed to the very last point to which they could carry it. They were told that the Parliamentary Naval and Military Committee might be able to do even more than the Association, but on approaching Commander Dean, V.C., M.P., and Viscount Curzon, M.P., they were told by the latter that he would take up individual grievances, and that in the present state of finance it would be impossible to go further. Viscount Curzon (who had understood that the deputation was simply a collection of individuals) asked why they did not go to the British Medical Association, because "they (the Association) have more power than anybody else." When the deputation said that they represented the British Medical Association, they were told that if the Association could not do it the Parliamentary Committee was very unlikely to be able to do so.

With regard to the Indian Medical Service, many officers of the Service, including many senior officers, had stated that with the concesssions gained as a result of the work of the Association there was widespread satisfaction in the Service. If it were only a question of the conditions there would be no doubt that recruiting would be very brisk indeed. Many of them might be aware that the officers of the Service showed their appreciation of what the Association had done for them by presenting him (Colonel Elliot) with a handsome piece of plate. He would rather that the present had been made to the Association, but on every occasion he had impressed it upon the officers of the Service that everything had been done for them by the Association. (Applause.)

PROPOSED CENTRAL MEDICAL COMMITTEE.

The CHAIRMAN OF COUNCIL moved the approval of the portion of the Annual Report of Council under "Proposed Central Medical Committee representative of the profession as a whole to consult with the Minister of Health on questions of policy affecting the profession." Dr. Bolam said that this matter for the moment was in a position somewhat of abeyance. The report was a record of certain steps that were taken, and difficulties, of course, naturally arose, as they always did when they attempted to get a united voice for the whole profession. The position had been very much complicated by the fact that a new Minister of Health had been appointed, and they were awaiting an intimation from the Minister that negotiations on this question should be reopened. There was, of course, a tremendous amount of detailed work to overtake, and a large question of policy like this had naturally been somewhat shelved, but they had an assurance that it was not forgotten.

The meeting approved the report, and a discussion then arose on some motions by Portsmouth pressing for the election, organized and conducted by the British Medical Association, of a body that would voice the collective opinion of the profession to the Ministry of Health.

Dr. FOTHERGILL said that the Council appointed a committee to consider this problem. This committee did not report to the Council at once, but forwarded to the Minister a memorandum stating that this was the opinion of the Association. He maintained that the approval of this report established a precedent that a committee could say to a Minister on their behalf, "This is the opinion of the Association." He was willing, with that caveat, to let it go by the board, but he thought the fact ought to be known.

The CHAIRMAN OF COUNCIL said that there were circumstances in negotiations when it became necessary that someone should take the responsibility of saying what was the opinion of the Association. It was not possible to call a Representative Meeting every five minutes for that purpose. He might remind the "constitutionalists" that at the Council meeting the action of the Committee was approved. He might add that they were extremely glad to have the support of the Medical Women's Federation, which would stand with them in this matter.

Mr. BISHOP HARMAN said, with regard to the proposed Central Medical Committee, that he was present at the meeting with Dr. Addison at the Ministry of Health, and that the Minister had almost petulantly said that he could not see half a dozen bodies on the same matters, and urged the formation of some body which would represent the whole medical profession. When the Minister put forward that view the Council had acted as indicated in their report, and he thought the Representative Body must support that action. Now, of course, there was a new Minister—a new Pharaoh who knew not Joseph—and his views on the subject were not known, but he was a shrewd business man, who might not have such a tender heart towards medical men as Dr. Addison. He thought, therefore, that the action of the Council should be approved.

Dr. F. REES said that, after reading the report, he was surprised to find that such bodies as the Medico-Political Union and the National Medical Union were omitted. He did not think that was a proper thing to do, and he would like to have an explanation of that omission.

Lord DAWSON said that he understood that the series of resolutions was to bring about an object which must be the warm desire of every member of the profession—namely, the attainment of greater unity. He urged, however, great caution and circumspection on the part of the Council, and he thought the best way would be to refer the matter to the Council for them to consider and report back to the meeting at some future date. Lord Dawson referred to Dr. Addison's words in the memorandum on p. 123 of the SUPPLEMENT of April 30th, 1921: "I am leaving out of account for the moment the Consultative Council, which is now a part of the Ministry." He wished to remind the meeting that the profession owed a good deal to the formation of the Consultative Council. No doubt it was as yet immature, but it was formed, largely owing to the pertinacity and foresight and sympathy of Dr. Addison, and in a sense it connected the profession with the Ministry in a way which constituted a Charter, and that Consultative Council, by representing the large body of the medical profession, maintained a balance between the permanent officials at the Ministry and the profession outside. That was an additional reason for leaving the matter to the Council, especially as the Consultative Council was an independent authority, with right of access to the Minister.

Dr. E. R. FOTHERGILL demurred to the statement of Lord Dawson that the Consultative Council was in any sense a representative body. It had no mandate from the British Medical Association, and if it were to be recognized as in any way representative of the Association then the Association was doomed. In the same way, if the Divisions formed Consultative Committees for particular areas the local authorities would brush the Division or the Branch on one side. Dr. Fothergill, however, expressed his approval of the policy of broadening the basis of consultation, because medical men could not afford to be divided in the face of the enemy.

Dr. JAMES STEWART (Lambeth) said that nothing should be allowed to induce members of the Association to relin-

quish the position they had attained. As an Association they had shown that they were willing to give voice to the views of all and sundry in the profession; but the Minister of Health could not compel them to admit as fellows others who had not the same position as they had; and he would ask the Council to be very chary of granting any privileges to outside bodies for the purpose of consultation with the Minister of Health.

Dr. BRACKENBURY said that he was absolutely in accord with the action taken by the committee, and he desired that the other resolutions should not be passed at all. They all agreed with Dr. Fothergill; he thought Lord Dawson agreed with him.

Lord DAWSON: Dr. Fothergill's speech was a travesty of what I said.

Dr. BRACKENBURY said that the Consultative Council held a position of its own which it was good for the profession that it should hold. It was a check upon the bureaucracy, and he would like the meeting to know that its position was by no means as safe as might be supposed. There were difficulties from the bureaucratic or non-professional side, which would like to do all it could to displace the Consultative Council. "Do not let us have the civil servants and the non-medical element at the Ministry of Health supreme, without any distinctly professional check upon it in some form or other. The Consultative Council, however appointed, is by its statutory position a professional check upon bureaucracy. It is desirable we should uphold the Council with all the power we have." A united profession was something unattainable. In the medical profession there would never be even one minority, but a number of small minorities. The line the British Medical Association had taken was as outlined in the report on the means of obtaining the collective opinion of the medical profession on questions of policy (SUPPLEMENT, April 30th, p. 156). Another body, even if the electoral machinery was started by the Association, would undermine the Association's position. He claimed that the Association was itself capable of sufficiently representing the profession. It was wise for the Association to ask all representatives of subsidiary and sectional interests in the profession to accompany it, but when it was asked that the invitation be extended to other bodies, whom it was known did not intend, either temporarily or permanently, to work harmoniously with the Association, it would be a farce for the Association to set up some organization which would rope these other bodies in as well, and pretend that they were all going to the Ministry of Health as a united profession. "Let us do nothing that will undermine the position of the British Medical Association, and let us accept the Consultative Council in an entirely different capacity, as an extremely able body of persons, who will see that medical opinion is at the service of the Ministry, which shall not be left to the sole will of the bureaucrats."

Dr. MCGREGOR ROBERTSON (Glasgow) supported the point made by Mr. Bishop Harman. One could not suppose, he said, that the Minister of Health—a servant of the State placed there by popular election—can refuse to receive at any time an authorized declaration from so great a body as the British Medical Association; and when, therefore, it was proposed that the Association should sacrifice its independence the suggestion was absurd. There never would be a united medical profession, and still less was that likely to be brought about by many associations of members of the medical profession. The British Medical Association, if this idea matured, would have to come to some compromise with one body and another. It would not be presenting its own independent point of view; it would be presenting the minimum which had been left to it. The Association ought to be able to present its own considered and independent judgement—not that judgement modified by other bodies which were not a part of its corporate existence. For these reasons he hoped that this suggestion for the formation of a central committee might now drop.

Mr. MCADAM ECCLES wished to utter a note of warning. They ought not to let this matter lie passively on the table. A new Minister of Health was now in office. It was of extreme importance that the Representative Body this year should definitely and quite clearly instruct its Council to see that the British Medical Association—which, they all agreed, was the best body to voice the opinions of the profession—should have its rightful position. There was a danger that with a new Minister of Health there might be a considerable amount of wire-pulling whereby bodies might be made to represent that they were truly representative when, as a matter of fact, they were to a large extent mere cliques. He venturey to urge that this Representative Body should definiteld instruct the Council to ensure that the prestige and authority of the British Medical Association was in no way undermined.

The CHAIRMAN OF COUNCIL said it had been asked why advances had not been made to certain bodies that had been named. They would see that in the report on this subject (SUPPLEMENT, April 30th, p. 124) wide powers had been taken. They said they would go so far as to establish a Joint Representative Committee, including those with whom they had been accustomed to work harmoniously in the past. They also took power that before making representations to the Ministry of Health they should if necessary ascertain the opinion of other bodies whom they had not been able to persuade to work harmoniously with them, on a definite basis of representation, such as they had themselves. Now one body mentioned was the Medico-Political Union. On its own statement this contained 75 per cent. who were members of the British Medical Association, and it would be impossible to accord a very large representation to a body which in the first instance was small and had three-quarters of its strength in their (the Association's) ranks. "There were claims made by certain bodies," continued the Chairman, "to which we as your representatives could not accede. We must bear in mind the position which we have achieved in many years of strenuous effort as the greatest organized body in the profession with a democratic constitution and a force behind it, in considering association with bodies which had no working machinery to deal as we do with democratic matters, and who have no funds behind them. We had to remember that the burden of any battle would fall upon us. Therefore, while we were prepared to be generous to any faction, we could not relinquish our position to any body who neither by birth nor by education—(Laughter)—could be called our equal."

The motion approving the report on the subject of the proposed committee was agreed to.

Mr. BISHOP HARMAN moved, and Dr. HAWTHORNE seconded, as a rider, the addition of the words, "And that these matters be remitted to the Council."

This also was carried.

The next five motions on the agenda were as follows:

By Portsmouth: That the Representative Body is of opinion that the collective opinion of the medical profession can be adequately and truly expressed to the Minister of Health only through a body elected directly by the profession for that purpose, such body to have the power, if thought advisable, to co-opt for any special purpose representatives of the medical profession not exceeding one-third of the total number of the Committee.

By Portsmouth: That this election should be organized and conducted by the British Medical Association.

By Sheffield: That this meeting endorses the view expressed by Dr. Addison, as Minister of Health, that in taking action to bring together a body representative of the whole profession for the purpose of consultation by the Government, the British Medical Association is the most suitable body to take steps for its organization.

By Brighton: That any scheme placed before the Minister of Health by which it is considered the collective opinion of the members of the medical profession in active practice can be obtained on questions of policy should be submitted to and approved by them; that it be an instruction to the Council to submit to all members of the medical profession in active practice, either directly or through the Division organization, the proposed scheme with a questionnaire, and the aggregate voting thereon be recorded and forwarded to the Division and Representative Body, together with the report on action taken.

By East Hertfordshire: That this meeting approves of the formation of any consultative committee (or similar body) on which the British Medical Association would be associated with all other bodies representing the various branches of the profession for the purpose of negotiating with the Government.

Dr. FOTHERGILL moved that all of these should be remitted to the Council. They expressed the views of groups of doctors in the Divisions, and certainly ought not to be put into the waste-paper basket.

Dr. SHEAHAN (Portsmouth) expressed his willingness to accede to this course, and the CHAIRMAN having remarked that the Council would be only too willing to consider all such suggestions, the motion was adopted.

ORGANIZATION.

EFFICIENCY OF THE ASSOCIATION'S CONSTITUTION AND MACHINERY.

Mr. RUSSELL COOMBE (Chairman of the Organization Committee) moved that the following recommendation of the Council be adopted:

That Article 3 be brought up to date so as to provide that any medical practitioner who does not reside within the area of any Branch, and who, though not registered in the United Kingdom, *is possessed of a qualification registrable there*, shall be eligible for membership of the Association.

This was agreed to, as was the following recommendation by the Council, also proposed by Mr. Russell Coombe:

That it be an instruction to the Council to take steps for verbal amendment of By-law 5 (1) so as to provide that candidates for membership resident in the United Kingdom shall forward their applications to *the Head Office*, and that thereupon the latter *shall at once notify both the Division and Branch Secretaries concerned*.

Dr. J. L. SPEIRS (Gateshead) moved:

That the names of candidates for membership of the British Medical Association should be brought before the Division in which they reside.

They felt very strongly, he said, that all candidates should come in the first place before the Division. The essential unit of the Association was the Division.

The CHAIRMAN pointed out that this motion was now out of order, since a motion had just been carried which directed that these applications shall be sent to the Division for information.

Dr. J. W. BONE (Bedfordshire) moved that new members be elected by a general meeting of the Division in which they resided, and not by the Branch Council. The present method was a bad one. The Divisions met more quickly than the Branch Councils, and at the Branch Council meetings in rural areas there was seldom more than one man who could vouch for a candidate. If the election was by the Division in which the candidate resided, practically everybody present would know all about the candidate.

Dr. Bone altered his motion so that it became an instruction to the Council, and after a brief discussion, in which Mr. RUSSELL COOMBE reminded the meeting that it had been threshed out very fully before, and that it had been decided that as some Divisions were very small in numbers this course was not desirable, the motion was lost by a large majority.

The following recommendations of Council were then agreed to:

That it be an instruction to the Council to take steps for amendment of By-law 6 (4th and 5th lines) so as to provide that only two approving signatures shall be required in respect of a candidate not resident within any Branch area.

That it be an instruction to the Council to take steps for amendment of By-law 6 (last line but one) so as to provide that in respect of the proposed election by the Council of a candidate not resident within a Branch area, notice shall be sent to each member of the Council *with the Agenda* of the meeting at which the election is proposed to be held.

That it be an instruction to the Council to take steps for amendment of By-laws 16 and 19, as to local management of Branches and Divisions, so as to make it quite clear that a Branch Council or Division Executive Committee may *not* include persons not members of the Association.

A further motion with regard to members of Council and members *ex officio* of a Branch Council was postponed until the Representative Body had had an opportunity of determining how the Council should be elected.

On a further recommendation of Council:

That it be an instruction to the Council to take steps for amendment of By-law 16 so as to provide that the *Honorary Secretaries of the Divisions* of a Branch (that is, one from each Division) shall be members *ex officio* of the Branch Council,

Mr. ALBERT LUCAS (Birmingham Central) moved that the recommendation be amended by the deletion of the words, "one from each Division." His own Division was very large, with several hundred members, and they found it necessary to have two secretaries, a junior and a senior, and they considered it an excellent thing that the junior secretary as well as the senior should be a member of the Branch Council.

Mr. RUSSELL COOMBE said that if two secretaries of a Division were members *ex officio* of a Branch Council, it would be possible for such a Branch as Lancashire and Cheshire to have two secretaries for each Division and make a Branch Council out of the question.

The amendment was negatived and the original motion carried. The following motions, recommendations of the Council, were also agreed to without discussion as instructions to the Council:

To take steps for amendment of By-laws 16 *d* and 19 *c* so as to give Branches and Divisions the power of placing upon their Councils and Executive Committees not only members of Local Medical Committees and medical members of Insurance Committees under the National Insurance Act, 1911 (as at present), *but medical members of any local council or committee under any Act whatsoever, and representatives of any local medical societies* (being in either case members of the Association).

To take steps to bring By-law 19 *c* into line with By-law 16 *c*).

To take steps for the insertion of a new By-law empowering the Council to organize any Branch which may have become unorganized or inactive, and to act for such Branch pending its reorganization.

To take steps for amendment of By-law 17 to read as follows (*b*), (*c*), *and* (*d*) *are proposed additions to the present By-law*):

Branch Council and Work of Divisions.

17. It shall *inter alia* be the duty of every Branch Council:

(*a*) To advise the Divisions forming the Branch in matters of policy affecting the medical profession, with a view to promoting a common policy throughout those Divisions.

(*b*) To suggest to the Divisions concerned, where considered necessary or desirable by the Branch Council, or in the case of inactivity of a Division, to the Council, such modification of Division areas as would, in the opinion of the Branch Council, contribute to the more effective working of such Division or Divisions, and to advise the Council thereon from time to time.

(*c*) To call, when deemed necessary or desirable by the Branch Council, joint meetings of the members of two or more Divisions for the purpose of discussing matters in which those Divisions are jointly interested.

(*d*) To take, where considered necessary or desirable by the Branch Council, action to organize any Division which may have become unorganized or inactive and pending such reorganization to act for such Division.

(*e*) To report to the Council upon the questions dealt with by such advice or action in all cases in which such a report is considered by the Branch Council to be necessary or desirable, or is requested by the Council.

The Representative Meeting adjourned at 6.15 p.m.

Saturday, July 16th.

On the resumption of the meeting at 9.30 a.m. the minutes of the previous day's proceedings were confirmed.

Professional Secrecy.

Arising out of the minutes dealing with professional secrecy, Dr. A. FORBES (Sheffield) asked permission (which was granted) to read a letter he had just received from a medical witness in a recent divorce case which he thought shed fresh light on this question.

THE QUESTION OF FEDERATION.

Mr. RUSSELL COOMBE (Chairman of the Organization Committee) brought forward the question of federation, and detailed the history of the matter. He knew that a large number of members of the meeting were familiar with the details of the federation question, but there were some who approached the matter to-day for the first time. This question had been going on for twenty-seven years, and had been one of increasing anxiety to the Association; he said "increasing anxiety," because they desired to meet the laudable and necessary requirements of the overseas bodies. Unfortunately they had been steadily met by legal difficulties. He referred to Mr. Gore-Brown's opinion, and this was the legal position which had dominated the whole procedure. Mr. Gore-Brown's was a definite opinion that an incorporated body could not be a member of the Association. If a Branch incorporated, it became a complete new body. They had to take that as the position. The advice of the legal profession was further sought, and the joint opinion of counsel (Mr. C. E. E. Jenkins, K.C., and Mr. T. R. Colquhoun Dill) was that although it was impossible to retain as members of the Association Branches which had incorporated, and had

thereby become separate entities, it was possible so to rearrange the Association that it might become a Federation and thereby contain such bodies. They proceeded to take the advice of their legal counsellors as to the steps which would procure this. A letter was written to the Overseas Branches telling them what was being done and saying very clearly that the home Association sought no alteration in the relation of the Overseas Branches to itself, and that it would be better pleased were it possible to continue the existing arrangement. That brought them up to the date of the Conference held on July 5th last. In the meantime the Solicitor had been touring in Australia for the benefit of his health, and he had come to realize that federation was not what the overseas bodies wanted. Amongst others, Mr. Hempson met Dr. R. H. Todd, and he was so impressed with what Dr. Todd said to him that it was thought desirable to ask Dr. Todd to meet Mr. Hempson and the members of the Committee which had been dealing with this matter. It was further arranged that Dr. Todd and Mr. Hempson should see the standing counsel for the Association, Mr. Dill. A document was placed before the Conference of July 5th containing the result of the conference between Mr. Dill and Dr. Todd and Mr. Hempson; and it was the view of the Conference that Mr. Dill's opinion had crystallized a new situation entirely. As a result of that conference, fully set out in a document which was in the hands of Representatives, certain recommendations were proposed for submission to the meeting, and the first, which he moved forthwith, was:

> That the proposals published in the BRITISH MEDICAL JOURNAL SUPPLEMENTS of March 5th and April 30th as to "the question of steps to be taken whereby the Association may become in part a federation" be withdrawn, pending further consideration of the matter.

The CHAIRMAN explained that if this recommendation was agreed to the whole of the recommendations on this subject in the agenda would be passed on for consideration and brought up again next year.

Dr. BRACKENBURY said he understood that the matter proposed to be withdrawn affected not only the Overseas Branches but also other matters.

Mr. RUSSELL COOMBE said that what was intended was to deal with the question of Overseas Federation first, and afterwards to proceed to other matters, such as the question of affiliation of non-medical bodies, and so on.

Dr. J. A. MACDONALD moved an amendment to the proposed resolution to the effect that the words "so far as they refer to the Overseas Branches" be added, so as to confine the recommendation to the question of the Overseas Branches. This amendment was formally seconded.

Dr. C. E. DOUGLAS (Fife) suggested that as members generally had very vague ideas on the whole matter it would be well if Dr. Todd of Australia were asked to address the meeting.

The CHAIRMAN said that that matter had not been overlooked, but it would be better to call upon Dr. Todd to address the meeting on the next recommendation. The first recommendation was not intended to exclude discussion of the points raised, but simply to clear out of the way the matters on the agenda dealing with the Articles and By-laws in regard to Federation. It was not proposed to refer back all the amendments and suggestions appearing on the agenda, some of which dealt with questions of principle on which it would be absolutely necessary to get the views of the Representative Body, so that the Organization Committee should not waste its time during the ensuing year by elaborating things which, when they finally came before the Representative Body, would be thrown out.

After some discussion as to the procedure to be adopted, Mr. RUSSELL COOMBE said he accepted Dr. Macdonald's rider limiting the recommendation to the Overseas Branches. The recommendation, with that rider incorporated, was then carried *nemine contradicente*.

Mr. RUSSELL COOMBE then moved a recommendation which was moved and carried by Dr. Todd at the recent Conference:

> That if possible provision be made in Regulations of the Association to allow the Overseas Branches to retain the character and status, the rights, powers, and duties of Branches, although incorporated, such steps being taken as may be necessary to protect the Association from liability for any act of the incorporated body.

Dr. R. H. TODD (Honorary Secretary of the Australian Federal Committee), on being invited to speak on this recommendation, was received with hearty applause. He thanked the members for their kindly greeting. He hoped the meeting would feel that they in Australia had just the same hopes, aspirations, and desires, as the members of the profession in this country, and that they tried to do their work in the best possible way. He had acceded to a request that he should come to England in connexion with the present proposal, and had represented the Association in Australia at the Conference with Overseas Delegates which was held in London on July 5th. At the present meeting he was acting in another capacity, for the Federal Committee in Australia had no right to representation in the Representative Body, and he came as Representative of the New South Wales Branch. There were other members there who represented other branches—namely, Victoria, South Australia, Tasmania, Queensland, and Western Australia. At the July Conference he had set out his views and arguments in some detail, as he felt it was his duty to make the position as clear as possible. They had in their hands the report of the proceedings of that Conference, so that it was not necessary for him now to speak at so great length. He thought the Conference did right in approving the proposition he had put before it. This matter had troubled the Council for a good many years. It largely arose from the fact that the Branches in Australia were not comparable in every respect with the Branches in the United Kingdom. It should be borne in mind that each Branch in Australia was a Branch in a sovereign State, and was really comparable not with a Branch in the United Kingdom, but with the Association as a whole. A Branch in the United Kingdom had at its disposal the Central Office of the Association. If it wanted anything done it could put forward motions at the Representative Meeting and the matters could be passed on to the Council to take the necessary action. If they in Australia, where they had many Governments, had to rely on the Council to act for them, an impossible position would be created. The work of the Council would be very much increased and there would be a great waste of time. As a fact, the Branches in Australia had automatically developed so that they could take responsibility for the organization of the profession in their respective States, and for doing in those States what the Association as a whole did in the United Kingdom. The Association had seen the wisdom of making special rules for the Overseas Branches, and if they studied the articles closely they would find a number of other rules which, though technically applying all over the world, were inapplicable, in consequence of the distance, to Overseas Branches. The Branches in Australia felt that they wanted a more compact organization. They found that it was necessary, or at all events advisable for them, if they desired to have influence and authority with the profession, that they should be able to do more for their members than the Branches in the United Kingdom did for their members. They found it advisable that they should have their own Journal, their own libraries, and their own buildings. They had obtained legal advice on the matter from time to time, and had found that they would best serve their purpose by becoming corporate bodies registered under the Companies Acts of their respective States, as companies limited by guarantee and not by shares, and being incorporated, as scientific or benevolent bodies are incorporated, in a class known as companies not for gain—that is to say, in the same way as the Association in the United Kingdom is registered. Application was made by the Branches in Australia, each, he thought, separately and independently, to allow of that being done. With every possible wish on the part of the Council and the administration here to do what the Branches in Australia wanted, the Council had been confronted with certain legal opinions and administrative difficulties, which hitherto they found it impossible to overcome. But in looking back upon the history of the legal opinions referred to, it had been found that at no time had the direct question of whether an Overseas Branch could remain a Branch although incorporated been asked and answered. The recent Conference had had to consider all the different legal opinions which the Chairman of the Organization Committee had referred to—namely, that of Mr. Gore-Browne, and some previous ones of Mr. Buckley,

Mr. John Dixon, and Mr. Palmer, together with more recent opinions of Mr. Jenkins and Mr. Colquhoun Dill. They in Australia felt satisfied that the particular language in which they were expressed did not necessarily have the meaning which the Council had thought was implied. At the Conference which met on July 5th he went through all those matters, and, as the Chairman of the Organization Committee had told them, his proposition was referred to counsel for an opinion. Mr. Colquhoun Dill had given a written opinion. In it he said: "It would no doubt be legally possible for the persons constituting the members of a Branch of the Association to form themselves into a corporation under the laws of the Dominion or State which comprises the area of the Branch. Such a step would not destroy the individual membership of the Association which those persons enjoyed." That was all that he (the speaker) had contended for, and he was pleased to find that Mr. Dill in that opinion expressed in definite language that what they in Australia proposed was a legal possibility. Then the questions arose, Was it practicable, and, if so, was it advisable, for the Association to allow Overseas Branches to remain Branches although incorporated? Those were the questions which remained to be determined. He was quite sure their colleagues in Australia would be with him when he said that it was not their wish to have the alterations in the regulations made unless the Association could be properly protected against any possible injurious effects of such incorporation. For his part, he was quite satisfied that the Association could be fully protected. If there were any risk, they might at all events trust the men overseas to play the game. (Hear, hear.) He did not think they would take any advantage of their position and depart willingly from the principles and objects of the Association. If the Association were sufficiently in touch with them, and if the rules and regulations under which they were constituted were definite and sufficiently often brought to their minds, there could be no real risk of divergence. His contention was that if in a corporate body overseas the Memorandum of Association coincided in all essential particulars, *mutatis mutandis*, with the Memorandum of Association of the Association, there could be no possibility of divergence. The possibility of a corporate body overseas altering its Articles of Association in a way unsuitable had been pointed out by counsel, and it was recognized that if it did so the position might be awkward. But if the Association at home were sufficiently in touch with those corporate bodies, there was little to be feared. The alteration of Articles of Association in an unsuitable way was not likely to be deliberate because of the loyalty of the men overseas, and if it were done by inadvertence or ignorance, it could be corrected on attention being drawn to it. There would, of course, be provision in the regulations by which the corporate body would not be allowed to be the agent of the Association or in any way to incur liability on its behalf. That would be fundamental; and a similar provision would be made in the Articles of the Association. Some members laid great stress on the possibility of the Association being liable for the acts of the corporate body, even though it was provided in the Articles that no liability should be incurred. He thought that, even if there were liability, it would be less than it is now. A Branch or Division could not, as a matter of fact, do any act in law, not being a corporate body, and the Association itself is liable for the acts of its officers; but if the Branches or Divisions were corporate bodies they would be the bodies to accept immediate responsibility for the acts of their officers, and to that extent the Association would be protected. In order to do the work of the Association properly in Australia, it was considered necessary that the Branches there should have a corporate existence. As a matter of fact, the Association was the only organization in the country representing the medical profession; there were no competitors, and the Government and the general public and the public institutions looked upon the British Medical Association as representing the profession perhaps even more than was the case in England. It was not out of any desire to be different that the Branches in Australia had appealed for the separate regulations, but in order that they might, while still retaining their position as Branches, carry on the work of the Association more satisfactorily. A question had been asked as to why it was that the Branches in Australia felt disappointed with the proposals of the Organization Committee. The chief thing which had disappointed them was that the proposals required that in order to attain their object of becoming corporate bodies they would have to go outside the Association altogether, and then, after incorporation, come back to the Association and say, "Please admit us as 'corporate members.'" They felt that there ought to be some way by which the Australian Branches could remain in the Association and yet get what they thought was for their benefit and for the benefit of the Association as a whole. (Applause.) Dr. Todd expressed his thanks, on behalf of the Australian Branches, to the Organization Committee and the kindred committees which had worked with them, and to the Council as a whole, for their great kindness, and for the thoroughness with which they had dealt with this question. He felt that the administration of the Association had always done all that it could possibly do for the members in Australia. There was no thought in Australia that the administration had not wished to meet the views of the Australian Branches. He also expressed his thanks to the officers for the way in which they had always kept in touch with Australia, and the keen interest they had taken in the work overseas. In Australia the members looked upon the work of the Association in the United Kingdom as their model, and tried to follow the methods of procedure adopted in England. They also greatly appreciated the resolutions of the Council and of the Representative Body, and endeavoured to apply them in their own locality wherever practicable, with a view to having consistency in the work of the Association in medical politics on the other side and at home. (Loud applause.)

Dr. MACDONALD: I should like to ask Dr. Todd a question. It is rather an important point. In the conference that was held with Mr. Colquhoun Dill, Dr. Todd, and Mr. Hempson, did Mr. Dill state that it was possible for the members of a corporate body to remain individually members of the Association?

Dr. TODD read Mr. Colquhoun Dill's opinion as follows: "It would, no doubt, be legally possible for the persons constituting the members of a Branch of the Association to form themselves into a corporation under the laws of the dominion or State which comprises the area of that Branch. Such a step would not destroy the individual membership of the Association." It was clear to him (Dr. Todd) that a Branch remained a Branch although incorporated.

Dr. MACDONALD asked further whether Mr. Dill stated that it was possible for a Branch of the Association to become an incorporated body and still remain a Branch of the Association. In the opinion just read to them Mr. Dill did not make that statement.

Dr. TODD thereupon quoted from a later document not before the meeting, and containing an opinion by Mr. Colquhoun Dill obtained since the Conference of July 5th. The opinion was dated July 11th, and was as follows: "In my opinion the memorandum of association is not inconsistent with the admission of corporate bodies as Branches of the Association." Nothing could be clearer than this.

Dr. MACDONALD: It quite satisfies me, sir.

Dr. D. A. SHEAHAN said that it was difficult for the Representative Body to come to conclusions about certain matters when some documents dealing vitally with the matter were only in the hands of a few members.

The CHAIRMAN replied that the opinion was only given on July 11th and the Representative Meeting began on the 15th, before there was time fully to circulate it.

Dr. FOTHERGILL said that at the Cambridge meeting last year it was desired to do something to help the Overseas Branches to remain in touch with the Association. The committee which was authorized to go into the matter had held innumerable meetings and produced a scheme for federating outside bodies, giving them an absolutely free hand to do as they liked in their own Dominion. The scheme had been put to the Australian and other Branches, and they did not like it. Why did they not like it? They felt that they were not sufficiently closely allied with the Association. It seemed to him when they heard from Australia that the Overseas Branches wanted to retain closest co-operation with the Association that they should here and now welcome them with open arms, and authorize the Council to get out a detailed scheme.

The recommendation of the Council that, if possible,

provision should be made in the regulations of the Association to allow the Overseas Branches to retain the character and status of Branches, although incorporated, was agreed to with acclamation.

Mr. RUSSELL COOMBE moved the last recommendation from the Conference:

> That provision be made in the Regulations of the Association for Federal Councils of the Association in Australia and South Africa, consisting in either case of representatives of the Branches concerned, to carry out in their countries, on behalf of the local Branches collectively, the objects of the Association, and generally to have the powers and duties of the existing Federal Committees.

Dr. FOTHERGILL said he had sent to the Chairman notice of an amendment which he understood Mr. Russell Coombe would accept. Only Australia and South Africa were mentioned, but other dominions might very shortly find such an idea of federal bodies useful. Instead of the words "Australia and South Africa," he proposed the words "Overseas Dominions and India," so that the whole of our Empire might adopt the federal system if it wished.

Mr. RUSSELL COOMBE accepted the alteration, and the motion thus amended was adopted with applause.

NOMINATIONS.

At this juncture the proceedings were interrupted for some announcements.

The CHAIRMAN reported that the only nomination received that morning for the office of the Chairman of Representative Meetings for next year was that of Dr. Wallace Henry of Leicester. (Applause.) He (the Chairman) had taken the announcement of this result out of the hands of the Medical Secretary because he wished to add his personal congratulations and to express the wish that Mr. Henry might have as happy a time as he had had in the chair. (Applause.)

Dr. WALLACE HENRY thanked the meeting very sincerely for the high honour conferred upon him. He would do everything he possibly could to promote the interests of the Association and advance the welfare of the medical profession in this country and overseas. (Applause.)

Invalid Nomination.

The question was raised with regard to a technical error in nomination for membership of the Insurance Acts Committee, the name of Dr. Fothergill having been written upon a wrong form. The suggestion was made that the error was that of headquarters in not sending the proper form.

The CHAIRMAN OF COUNCIL, on behalf of the office, stated that the error could not have been that of headquarters in sending out the nomination papers, but was due to the proper nomination form not having been applied for, and the CHAIRMAN OF REPRESENTATIVE MEETINGS, in view of an expression of feeling from a section of the meeting that the technicalities should be adhered to, said he was reluctantly compelled to rule that the nomination was invalid.

THE QUESTION OF FEDERATION.

Mr. RUSSELL COOMBE (Chairman of the Organization Committee) moved the adoption of the following Recommendation of Council:

> That the Annual Representative Meeting, 1921, having considered the opinion of the Representatives of the Oversea Bodies and Ireland, approve and adopt the draft Articles and By-laws submitted by the Council with a view to placing the Association in a position to become in part (if and as found desirable) a federation; and instruct the Council to submit those Articles to Extraordinary General Meetings of the Association on July 19th and (if adopted by the Extraordinary General Meeting on July 19th) August 3rd, 1921, for final adoption as Articles of the Association.

Mr. Russell Coombe said they had dealt with Oversea bodies. He thought the fact should be made clear that the federation scheme now put forward had the approval of the members representing Ireland.

After some discussion as to the best form of procedure, it was agreed to take first an amendment by Reigate.

Dr. S. MORTON MACKENZIE (Reigate) thereupon moved that, as regards the present policy of the Association, the minute of the Representative Meeting of last year should be rescinded, in so far as it contemplated that there might be admitted to affiliation any bodies other than a purely medical body or bodies representing substantially an ex-Branch or group of ex-Branches of the Association outside Great Britain. He explained that what his Division wanted was a reversal of the decision come to at Cambridge last year in regard to non-medical and allied bodies. The question had never been properly discussed by the Association. Was the proposed federation going to be a panacea for all the ills that the British Medical Association was heir to? It was said it would strengthen the Association. Perhaps if they got every medical body in the United Kingdom to federate with them, they would be strengthened. He could not, however, picture the Royal College of Physicians or the Royal College of Surgeons coming, hat in hand, and saying, "Please may we federate with you." The only real way to strengthen the Association was to increase its membership. (Hear, hear.) It was also argued that there were many bodies demanding federation. He could not discover them, though he would be greatly influenced if he did find any such strong demand. There were four medical societies which they might possibly federate if they took power under the by-laws; they had a membership of about 2,900. Of these, so far as could be reckoned, 1,500 were already members of the Association. It was surely unnecessary to federate, since they would only get an increased membership of perhaps 1,400 who could now become members of the Association. At the present time they would weaken their position very much. From a financial point of view there would be, he urged, no great advantage in federation. They would have to charge these societies a federation fee of at least a guinea and a half, and it was hardly likely that any society would want to ask its members to pay that in addition to its own subscription. As a member of the Council he could testify to the fact that if any medical body wrote to them for help the letter was always received with the utmost cordiality, and the machinery of the Association was placed at the writer's disposal. They would not get any more if they did federate. He knew of no more unfortunate time for the bringing forward of this proposal. As they knew, the Federation of Medical and Allied Societies was trying to do this identical thing. They would run the risk of inviting the criticism that they were taking this action in a spirit of competition. He was not afraid of the body he had mentioned, and was quite prepared to let it run its allotted span. He wanted the British Medical Association to maintain its present position. (Applause.)

Dr. BRACKENBURY moved as an amendment to delete from Dr. Mackenzie's motion the words "or bodies representing substantially an ex-Branch or group of ex-Branches of the Association outside Great Britain." The effect of that amendment would be still to allow the Council to consider and bring up for decision next year the possibility of affiliation—not federation—of medical bodies in the United Kingdom, and he thought that that was a wiser course than absolutely closing the door to that possibility. He was entirely at one with the remarks of the previous speaker with regard to the other federation to which he had referred; but if other sectional bodies of the profession in Great Britain desired to become affiliated to the Association as the parent of that paramount body, he thought it would be unwise to close the door to them. He viewed with anxiety the tendency of certain sectional bodies—such as the medical officers of health—to affiliate with (say) engineers, town clerks, treasurers, and other officials of local authorities, and he thought that that was an additional reason for keeping the door open to any sectional bodies who might wish to become affiliated to the Association. If the resolution was carried without his amendment the matter could not be considered.

Dr. W. B. CRAWFORD TREASURE (Cardiff) asked whether it was in order to discuss an amendment to an amendment, as the original proposal was printed as an amendment.

The CHAIRMAN replied that that point of procedure had already been settled. It had been agreed that the removal of certain of the proposals of the Organization Committee should not prejudice the discussion on the following amendments. The original proposals to which they were amendments had gone, and the amendments had become independent motions.

Mr. RUSSELL COOMBE said that if the proposals were considered by counsel and drafted they would have to be adopted or rejected next year, and therefore it was important not to leave the matter over for rediscussion next year, which would mean delaying it until 1923. He would therefore ask Dr. Brackenbury to accept that.

Dr. BRACKENBURY said that he appeared to have been misunderstood by the previous speaker. The effect of his amendment would be to say that the Association should not affiliate with any non-medical body at all. That also would be the effect of the resolution as amended; the resolution as amended would say that the Association was not to affiliate with any medical body. The effect of his amendment was to leave that open to the Association, but the exact method would have to come up before another meeting.

Dr. S. NOY SCOTT (Plymouth) asked the Chairman whether he agreed that Dr. Brackenbury's amendment would rule out all useful discussion in the coming year on the part of the Council.

The CHAIRMAN said that the question was perfectly reasonable; but, as he had often said, it was easier to propound a question than to answer it with authority. It was quite clear, however, that the Council could consider whatever it liked, but it must be guided by any definite resolution passed by the Representative Meeting. It would depend upon the exact wording of whatever resolution was passed.

Ultimately it was agreed to give precedence to an amendment by Edinburgh and Leith before taking a vote on the Reigate motion.

Dr. J. STEVENS (Edinburgh and Leith) moved:

> That as regards the present policy of the Association Minute 44 of the Annual Representative Meeting, 1920 (SUPPLEMENT, July 3rd, 1920, p. 7), be rescinded, in so far as that Minute contemplated that there might possibly be admitted to affiliation with the Association any body or bodies other than a purely medical body or bodies.

He said that the Association sent deputations to the Government representing the medical profession. Suppose the Association made itself into a body representing other than medical interests, would the Government not reply to it that it did not represent the profession, but merely a congeries of interests?

Dr. FOTHERGILL said that this amendment entirely limited the discussion to the possibility of affiliation with non-medical bodies. There was no proposal to affiliate with any non-medical body at the present moment. From the SUPPLEMENT of April 30th (page 149) it would be seen exactly what the Organization Committee proposed; there was no intention whatever to offer to a non-medical body any representation in the Representative Meeting. There was no suggestion that the British Dental Association, for example, should be brought into that meeting or into the Council. Bodies which might desire to affiliate were offered one or two benefits, and the Association hoped to receive certain benefits in return. If the Association was dealing with any matters which affected these outside interests, those interests would be represented on the Committee concerned. They would also be given an opportunity of coming as a deputation before the Council and the Representative Meeting, and of accompanying the Association in deputation to the Government. In the same way if these other bodies were dealing with matters affecting medical men, it was expected that they would inform and collaborate with the Association. It might be said that this could be done at present without affiliation at all, but it was only done imperfectly. A situation would arise one of these days when the question of dental treatment would become an acute one in the medical profession. It was not possible any longer to live isolated. If nurses and others with whom they had daily co-operation could work with them on lines of policy amicable to medicine it would be of great advantage.

Dr. HERBERT JONES (Hereford) described the relations between the Society of Medical Officers of Health and the British Medical Association. Twenty years ago the relations were not very friendly, but now, without any question of federation or affiliation, the relations were of the happiest. It seemed to him that instead of having federations with affiliated societies, it was along such lines that the Association ought to go. The Association ought to make itself so useful and helpful to the other bodies that they would gratefully come into co-operation, and indeed, would be obliged to come in. Dr. Brackenbury had said that the Society of Medical Officers of Health had been courting the National Association of Local Government Officers, but that was only in respect to the particular question of salaries and Whitley Councils, and involved no disloyalty whatever to the British Medical Association. With regard to the policy of admitting non-medical societies, the point had to be borne in mind whether the medical societies with whom it was proposed to federate would welcome these outside bodies into alliance. He was pretty certain that the Society of Medical Officers of Health would not affiliate if non-medical bodies were admitted, and it was extremely likely that other medical societies would take the same line.

Mr. BISHOP HARMAN warned the meeting against the risk of losing the substance whilst grasping at a shadow. At present they were an Association of so many thousand individual medical members representing every kind of practice, and the Association tried to speak for them all. The introduction of other societies would bring in a new factor. They would be no longer solely concerned with the views of the Divisions and Branches, but with outside associations, and thus there would be brought about a confusion of counsel. There was another possibility: combinations might grow to such an extent that they passed the wit of ordinary men to use them. At present the Association was a distinct body, unified in a certain purpose; if an attempt were made to launch out in this fashion it might well mean detriment and not gain.

Dr. A. C. FARQUHARSON, M.P., said that during the last few years he had had it impressed upon him what an invaluable asset this Association was, and how desirable it was to preserve its identity and individuality. Over and over again in official quarters he had seen considerable hesitancy over anything which involved running counter to the expressed wish of the Association. To whittle down in any way that authority, however desirable might be the result in the interests of outside bodies, would be to weaken almost to the extent of destruction the position the Association had gained for itself by its efforts of past years. The Association in a spirit of altruism would lose the substance and position it now enjoyed. He would suggest to Dr. Fothergill that instead of seeking to establish a more or less cumbrous permanent combination he should content himself with occasional combinations for temporary ends. The matter of the Dangerous Drugs Regulations had been mentioned. What was there to prevent an occasional combination of pharmacists and doctors? A continuous affiliation or association of pharmacists and doctors was not required to meet the needs of a particular situation like that. To create cumbrous machinery for such a transient purpose was not proceeding in the right way.

Dr. C. O. HAWTHORNE said that if this motion of Edinburgh and Leith were passed, the meeting would have said definitely that affiliation with non-medical bodies was not to be contemplated. It was unfortunate that the discussion should be complicated by several different propositions, for federation, or for affiliation, and for either one or the other with medical bodies and with non-medical bodies. Could they not have a distinct proposition from the platform on each of these questions?

It was agreed to take the Edinburgh and Leith motion, not as an amendment to the Reigate motion, but as a separate and precedent motion. It was then put to the meeting, and carried with very few dissentients. The CHAIRMAN announced that it had been carried by more than the requisite two-thirds majority.

Discussion then reverted to the Reigate motion, which was in the following terms:

> That, as regards the present policy of the Association, Minute 44 of the Annual Representative Meeting, 1920 (SUPPLEMENT, July 3rd, 1920, p. 7), in so far as that Minute contemplated that there might possibly be admitted to affiliation any body or bodies other than a purely medical body or bodies representing substantially an ex-Branch or group of ex-Branches of the Association outside Great Britain, be rescinded.

This was carried with very few dissentients. The CHAIRMAN declared that more than the requisite two-thirds majority had been secured.

Sir JENNER VERRALL said that the position was perfectly clear. By a very large majority the meeting had decided that the Representative Body should retire from the position it adopted last year. Seeing that the question so far as it concerned Australia had been hung up, he did not think this was a happy time for dealing with the particular limitation as to what bodies they would and would not admit.

Dr. J. McGregor Robertson (Glasgow) held that the meeting should first of all have been asked whether it approved of federation or affiliation at all. The meeting had not really considered whether affiliation or federation with even purely medical bodies was desirable. It had been said that federation meant an accession of strength, but exactly the reverse was the case when they were dealing with such bodies as the British Medical Association. He was one of the first members of a Central Committee, constituted in 1909 and consisting of all the organizations in the nursing profession, for securing the Nurses' Registration Act. An Act was obtained, but in an emasculated form because the promoting body had been a federation. Although that Central Committee—embracing nine bodies—was unanimous in desiring an Act and more or less agreed as to details, there were personal points of view that prevented a complete, loyal, strong support of the one thing desired. The Minister of State was therefore able to separate the federation and to pass an Act which did not commend itself to any of the bodies, still less to all of them combined. It was impossible to have a federation without compromise. Supposing federation took place, they would gain nothing with any Government department in an interview with a Minister of State. If there were any special object to be gained, and there were various medical bodies agreed upon it, they could go together to the Minister for that purpose and dissolve as soon as the purpose had been gained. The speaker pointed to the recent break-up of the Triple Alliance as an illustration of his contention. "What," he proceeded, "is the League of Nations but a federation which has failed?" (Cries of "No, no.") "The great nation which was its main supporter or advocate stepped out. If that is not a failure in federation, what is?" Dr. McGregor Robertson concluded by saying that any federation even with purely medical bodies would do nothing less than weaken the authority and prestige of their organization.

Dr. J. A. Macdonald said he was not speaking against the ultimate idea of federation with medical bodies in the United Kingdom, although he was gravely doubtful whether that was going to be of any advantage to the Association; but his main reason for opposing federation at the present time was that they had come to a position that day, on fresh knowledge, with regard to the Overseas Divisions which required very careful consideration. Whatever form their arrangements with those bodies ultimately assumed, they would require draft by-laws and articles entirely different from those they had at the present time. If they accepted the principle of federation with bodies within the British Isles they would need another set of by-laws and regulations entirely different from those with regard to the Overseas Dominions, and they would be in a hopeless muddle. By accepting the Reigate resolution they would be in the position at the end of that year to come to something like common ground on the whole question of federation.

Dr. B. E. Fordyce (Cambridge) moved that the resolution be now put. This was agreed, but prior to its being put Dr. Morton Mackenzie exercised his right of reply. He said he thought Dr. Brackenbury knew him well enough to be sure that if in six months or six years there were any advantage in federating with any other society he would be one of the first to bring it forward. At the present time he agreed with Dr. Macdonald that this was the most inauspicious moment for bringing it forward.

The Reigate amendment was then carried by a large majority.

Before the lunch adjournment the Treasurer announced that a revised print of Sir Clifford Allbutt's portrait was on view in the vestibule.

EFFICIENCY OF CONSTITUTION AND MACHINERY OF ASSOCIATION.

Question of Subdivisions.

Mr. Russell Coombe moved that the following recommendation of Council be adopted:

> That it be an instruction to the Council to take steps for deletion of By-law 21 (1) as to Subdivisions.

Dr. C. Buttar: Will that interfere with the splitting up of Divisions for any particular purpose?

The Chairman: Oh no, not in the least. The Division will still be able to manage its own affairs in its own way.

The motion was agreed to.

Joint Committees of Divisions.

Mr. Russell Coombe moved that the following recommendation of Council be adopted:

> That it be an instruction to the Council to take steps for amendment of By-law 21 (3) to read somewhat as follows:
>
> "(3) Where the members of two or more Divisions desire to meet in combination for the purpose of discussing matters in which those Divisions are jointly interested or for the appointment of Joint Committees as aforesaid, such meetings shall be convened *by the Honorary Secretaries of those Divisions*, or by agreement, by one of such Secretaries, or, if necessary, by the Branch Council."

This was agreed to.

Ordinary and Supplementary Grants.

Mr. Russell Coombe further moved the adoption of the following recommendation:

> That it be an instruction to the Council to take steps for amendment of By-law 23 (1) by addition of a provision to the effect that, in exceptional circumstances, and at the discretion of the Council, a portion of the ordinary annual grant to a Branch may be paid by the Treasurer of the Association *direct to a Division or Divisions of a Branch* instead of to the Branch.

There were Branches, he remarked, which were not always organized, and it was sometimes difficult to get the money.

Dr. Stevens: Would a notification be sent to the Secretary of the Branch?

Mr. Russell Coombe: I think that would not be done unless the Branch was failing in its duty to the Division. The money would not be paid direct to the Division unless the Branch failed in its duty to do so.

The Chairman: It is quite an exceptional provision.

The motion was carried.

Mr. Russell Coombe moved the adoption of the following recommendation:

> That it be an instruction to the Council to take steps for verbal amendment of By-law 26 ("Application of Grants") to read, in the last line but two: ". . . such sum *or sums* as the Branch Council may *from time to time* consider necessary to enable the Division to defray its expenses."

The question had been raised, he said, whether, after the Council had paid a grant to a Division, any application for a further sum should be made to the Central Council. The object of the motion was to save the time of the Central Council.

Dr. Hawthorne moved as an amendment that the recommendation included in paragraph 55 of the Annual Report of the Council should be amended to read as follows:

> That it be an instruction to the Council to take steps to redraft By-law 26 so that after the word "expenses" (line 3) the By-law shall read, "and shall pay to each of its constituent Divisions the sum necessary to meet the ordinary expenses of the Division. In addition the Branch Council may on application from any Division included within the area of the Branch, and on conditions defined by the Branch Council, make an additional grant or grants to a Division in order to meet any extraordinary expenses contemplated by the Division. In the event of the Branch Council refusing an application of this order it shall be open to the Division concerned to appeal against the decision to the Council of the Association."

Dr. Hawthorne recognized the skill and diligence which Mr. Russell Coombe and the Committee had brought to the discharge of a tedious and delicate task, but said there had been some difference of opinion as to the interpretation of the By-law governing the distribution of money by the Branch Council. The central authorities had now recognized that the by-law must be altered. In practice it came to this: the by-law in question was put into the melting-pot, and it must come out in a form agreeable to the wishes of that meeting. He objected that the words "from time to time" were neither dignified nor precise. What they wanted to secure was the financial autonomy of the Division. Under the present arrangement and the arrangement proposed, finance as between Branch Council on the one hand, and the Division on the other, was either inquisitive, or it was loose. He wanted also to secure for the Division the opportunity to get from the Branch Councils a further allowance of money if the Division contemplated some expenditure or enterprise that might reasonably be described as outside the ordinary expenditure of the Division. As he read the by-laws, every time the Division wanted more money it must apply to the central organization. There should be no ambiguity as to the relations between the Branch Council and the Division.

Mr. BISHOP HARMAN seconded the amendment. During the past year this particular by law had been a bone of contention in the Metropolitan Counties Branch. Dr. Hawthorne desired the autonomy of Divisions in financial matters, but he did not think this proposal would produce it. The Divisions in financial matters must necessarily be controlled by the whole organism, and the next grade in the organism was the Branch Council, and after that the Central Council. A Division could not be allowed autonomy in financial matters; it would ruin the Association if this were conceded. This proposal did not allow it.

Dr. FOTHERGILL hoped that the amendment would be thrown out and the proposal of the Organization Committee accepted.

Dr. E. A. STARLING (Tunbridge Wells) hoped the meeting would not pass the amendment. The Branch Council was composed of representatives from all the Divisions within its area, and he did not think that in Branches other than the Metropolitan Counties any such trouble had arisen. It stood to reason that a council composed of members of separate Divisions would not be unjust or unwise in its dealing with any particular Division. He had seen in the reports of Divisions sent up to the Branch Council various items tendered for expenses which were unsuitable or indeed illegal—the cost of a wreath as a tribute to a departed member, for instance. Some body, such as the Branch Council, must have a certain amount of supervision over the expenditure of Divisions. In his experience, all reasonable expenses had been invariably allowed and supported by the Branch Council.

Dr. BRACKENBURY supported Dr. Hawthorne's amendment. He thought that Dr. Fothergill's objection was ruled out because the Branch Council was bound to pay the ordinary expenses, though not necessarily at one time. With regard to the objections of the last speaker, he thought that the amendment left the control with the Branch. The words of the amendment were more precise than those of the resolution, and therefore he would support the amendment.

Sir JONNER VERRALL opposed the amendment. The words in the original motion happened to be his own, and he really thought that the form of words gave the members the initiative, and was not subject to the objections urged against it.

Dr. SHEAHAN (Portsmouth): Supposing the expenses came to more than the 6s. capitation grant, what would happen then?

The CHAIRMAN: Someone would have to go without.

Dr. HAWTHORNE having replied to the debate, the amendment was put to the meeting and declared lost by 76 votes to 47. The original motion was then put to the meeting and carried by acclamation.

ORGANIZATION RULES.

Mr. RUSSELL COOMBE proposed the following resolution:

That the Annual Representative Meeting, 1921, strongly urges the Divisions and Branches in the British Islands not already in possession of rules of organization of date subsequent to November, 1918, to adopt forthwith rules of organization based upon the latest Model Rules of Organization supplied by the Council.

Dr. F. C. MARTLEY (Kensington) proposed as an amendment to delete the words "based upon the latest Model Rules of Organization supplied by the Council," on the ground that the rules at present were complicated, verbose, and utterly unsuited for business men. The amendment was formally seconded.

Mr. RUSSELL COOMBE said he had seen the rules proposed by the Kensington Division, which were much shorter than the Model Rules, and he had come to the conclusion (which he believed was shared by the Medical Secretary) that the present Model Rules of Organization were somewhat unnecessarily elaborate, and therefore he was prepared, on behalf of the Organization Committee, to withdraw the words which Dr. Martley wished to omit.

The motion as amended was then carried.

ETHICAL RULES.

Mr. RUSSELL COOMBE then moved the following two resolutions, which were agreed to without discussion:

That the Annual Representative Meeting, 1921, strongly urges all Divisions and Branches in the British Islands which have not already adopted the revised rules governing procedure in ethical matters as approved by the Representative Body, 1919, to adopt those rules forthwith.

That it be a standing instruction to the Council to report to the Annual Representative Meeting the names of all Divisions and Branches in the British Islands which are without either rules of organization or the revised ethical rules approved by the Representative Body in 1919.

Mr. RUSSELL COOMBE then moved:

That it be an instruction to the Council to take steps for amendment of Article 12 (2) to provide that no new group of members within the British Islands shall be finally recognized as a Division or as a Branch until such Division or Branch shall have adopted rules of organization and the current rules governing procedure in ethical matters, and until such rules shall have been approved by the Council.

Dr. J. STEVENS (Edinburgh and Leith) proposed an amendment to delete the latter part with regard to the adoption of the model rules for ethical procedure, as under Rule 29 members might be ostracized. In his Division there were a good many doctors who were not members of the Association, and in order to enforce the rules it was necessary that all medical men should support them.

Dr. C. O. HAWTHORNE (Marylebone) supported Dr. Stevens's amendment. What was proposed by the Organization Committee was to refuse recognition to any new Division which did not adopt the model ethical rules; but the authorities did not propose to cut off from the communion of the Association any existing Division which did not adopt the ethical rules. That was an inconsistency which he could not support. The result of it might be that there would be two classes of Divisions—one subscribing to the ethical rules and the other not.

Mr. RUSSELL COOMBE said that that division of Branches and Divisions into two was already in existence at present, and it was hardly possible to conceive that a Branch or a Division could be turned out of the Association because it did not adopt the ethical rules. A Branch or Division which did not adopt the ethical rules penalized, and heavily penalized, its members; they could not conduct an ethical inquiry nor could they be allowed the use of the "Important Notices" in the JOURNAL, and therefore he thought his motion reflected a perfectly sound policy.

On the vote being taken Dr. Stevens's amendment was declared lost by a large majority.

The motion of Mr. Russell Coombe was then carried by acclamation.

Oversea Divisions and Branches.

Mr. RUSSELL COOMBE moved the following recommendation of Council:

That it be an instruction to the Council to draw the attention of those Oversea Divisions and Branches, not in possession of such rules, to the importance of every Division and Branch having up-to-date rules of organization and rules governing procedure in ethical matters; and to draw the attention of all the Oversea bodies to the importance of keeping the Council duly supplied with copies.

This was adopted.

POSTAL VOTES BY DIVISIONS AND BRANCHES.

Dr. B. E. FORDYCE (Cambridge and Huntingdon) moved an instruction to the Council to make provision so that a postal vote on any question of policy or otherwise might be taken by any Branch or Division after the question had been discussed at a meeting of that Branch or Division, and if the members present at that meeting deemed such a vote desirable. On the previous day the Representative for Buckinghamshire had spoken of the great difficulty of getting Representatives to attend the meeting, but in his (Dr. Fordyce's) county there was invariably an attendance of members even from the remoter parts of the Division, and the attending members communicated subsequently to others the views which had been expressed. The idea behind his motion was that in no case should the postal vote be taken except after a discussion at the meeting.

Dr. GARSTANG, in order that he might speak to the resolution, vacated the chair in favour of Dr. Wallace Henry. As the oldest existing member of the Organization Committee, having consequently additional knowledge of what the Committee had been doing for a considerable time, he wanted to point out the fatal weakness of the proposal, and why it should not be adopted in any such bald form. He would be the strongest supporter of the postal vote in every case if they could once invent a means by which the men who were to vote would know what they were voting

about. It had been exceptionally difficult, particularly during and after the war, to get an ordinary Division together in any strength. If ten or twelve members were present out of ninety or a hundred, and that was to be a qualification for the remainder to vote blindly by post, the strongest objection was on the ground that the men were not instructed. On many points that might not matter, for many questions came before a Division which were not vitally important, but the resolution spoke of "questions of policy." "Policy," he presumed, meant the policy of the Association, and they could not afford to have that policy settled by the votes of individuals, however worthy as such, who had no thorough information on the points upon which they were to vote.

Dr. Garstang then returned to the chair.

Dr. HASLIP said he could not allow the remarks of Dr. Garstang to go unchallenged. He did not accept the statement that no one knew how to vote unless he attended the meeting, nor did he consider that the members of the Association were so completely ignorant that they did not know what they were voting for, especially when they took the trouble to vote. The difficulty in the Association was that members did not trouble to vote. In that Representative Meeting they were 200 out of a membership of 20,000. That was the trouble which the trade unions were in at the present time. They were governed by a very small number, and when it came to a real fight they could not guarantee that the members outside would follow them. The Association had had experience under the Insurance Act, and knew exactly the difficulty. He had attended some very anti-Association meetings, just to hear their side, and one of the strongest points brought up against the Association was that members who could not attend the meeting had no voting power, or no voice in the Association. That might be right or wrong, but the last sentence in the Cambridge resolution was perfectly clear; they simply asked that when a Division meeting was called, even to decide any serious question of policy, the members of that Division should have the right of saying among themselves that they did not think it fair that they, a small meeting, should decide the policy, and might decide upon a postal vote. Surely there was no harm in that.

Dr. H. ROSE (Bucks) strongly supported the Cambridge resolution. The postal vote was perfectly safeguarded since it was not to be taken unless those present at the meeting deemed it necessary.

Dr. WALLACE HENRY pointed out that those who supported the resolution lost sight of the fact that the postal vote would diminish the attendance at the meetings. If men did not attend and hear both sides—and a great many of those important questions had two sides—it was impossible for them to give an intelligent vote.

Dr. F. REES (West Cornwall) said it had been remarked that they were in the same difficulty as the trade unions, but he was not sure he would not prefer to have an association or a trade union governed by resolutions that had been decided after discussion even in small meetings than by resolutions decided by a postal vote. Every one present must have been struck by the way in which his judgement had been affected by discussion. He did not mind confessing that his opinion had been changed time after time by hearing what had taken place in the meeting. He agreed that the postal vote might tend to diminish attendance at meetings, but suggested that something should be inserted in the resolution which would guarantee that a statement of the pros and cons of the matter under discussion should be sent to every member of the Division when he was asked to vote.

Mr. N. BISHOP HARMAN considered there would be a difficulty if there were a fairly sharp division of opinion in a meeting. One man in the minority might demand a postal vote, and it would be a hard thing for the majority to refuse it. The result would be that those who discussed these subjects on the spot would lose the habit of making up their minds. A dangerous practice had arisen in that Representative Meeting, when at the end of the proceedings there were a number of resolutions they had no time to discuss, of referring them to the Council, and the same sort of thing would happen in the Divisions—"Don't bother to make up your mind; have a postal vote!"

Dr. A. LYNDON (Guildford), as President of the Surrey Branch, where there were no large towns, hoped the amendment would be carried. It was all very well for London men, who did not have much trouble in getting to meetings. It was a different thing in the country, where one perhaps had to travel thirty miles to a meeting. A postal vote would often be of great value.

Dr. J. J. ANNING (Leeds) said his constituency had discussed this question at length and had instructed him to oppose any limitation of postal voting. They felt that times might arise when a postal vote would be most necessary in order to feel the pulse of a district.

Dr. HERBERT JONES (Hereford) remarked that it was difficult very often to get a direct answer, Yes or No, to a question. Even at this meeting they often had to ask the Chairman what was meant by a question. It was rather unfortunate that the analogy of trade unions had been suggested. They all knew that in the recent miners' strike the men had to answer Yes or No without really understanding what they were asked. What was wanted was that they should go about their constituencies and get to know exactly what members were feeling.

Dr. G. LOCKE (Hastings) said he regarded the postal vote in quite a different light. He had had to do with a Division which had suffered rather severely from syncope. They lost a lot of members who, though they did not attend meetings, got it into their minds that the British Medical Association did nothing. If they had had a postal vote these lax members who had drifted would have known—and could not have pretended they were ignorant—that much was being done and that important resolutions were being dealt with.

The motion was lost, but the CHAIRMAN observed that it was not by a large majority. A show of hands appeared to indicate 47 for and 56 against.

AMENDMENT OF BY-LAWS.

The following recommendations of Council, proposed by Mr. RUSSELL COOMBE (Chairman of the Organization Committee), were agreed to without discussion:

That it be an instruction to the Council to take steps for amendment of By-law 35 (3) so as to provide (simply) that the Council shall have power to give separate representation to *any* Division, though of fewer than 50 members, when it appears to the Council to be desirable.

That it be an instruction to the Council to take steps for amendment of By-law 35 (1) so that the Representatives shall be elected not more than 9, *nor less than 2 months* before the A.R.M. at which they take office.

When Mr. RUSSELL COOMBE moved the next recommendation—

That it be an instruction to the Council to take steps for amendment of By-law 35 (1 last line but one), so as to provide that *the Executive Committee(s) of the Division(s) comprised in the Constituency shall decide* whether the election of the Representative(s) is to be by General Meeting of the Constituency or by postal vote—

Dr. HAWTHORNE pointed out that where a constituency had two Divisions one Executive Committee might vote in one direction and another in the opposite direction. In order to ensure a final decision he moved that the words "meeting together" be inserted.

Mr. RUSSELL COOMBE accepted this, and the motion thus amended was agreed to.

Mr. RUSSELL COOMBE moved the following recommendation:

That it be an instruction to the Council to take steps for amendment of By-law 35 (2) so as to provide that, in the case of a Constituency containing more than one Division, the meeting for election of the Representative(s) shall be called, or the voting papers issued, *by the Secretary of the largest Division*, or, failing action by him, by the Council.

Dr. STEVENS moved that the word "Branch" should be inserted before the last word in this motion.

Mr. RUSSELL COOMBE said that it was the Central Council that was intended.

Mr. F. G. S. HEANEY: In no other respects has the Branch Council anything to do with the constitution of this Representative Meeting.

Mr. BISHOP HARMAN: Surely the matter is entirely between the Division and the Central Office.

The MEDICAL SECRETARY explained that it was felt it would be a pity to multiply machinery unnecessarily. Things like this could be done very much more easily, if necessary, by those at headquarters. (Hear, hear.)

The amendment by Dr. Stevens was lost.

On the suggestion of Mr. BISHOP HARMAN, it was agreed that the words "of the Association" should be added to the motion, which was then carried.

MEETING OF CONSTITUENCY BEFORE REPRESENTATIVE MEETING.

Mr. RUSSELL COOMBE further moved an instruction to the Council to take steps for amendment of the by-laws so as to provide that a meeting of the constituency should be held within the twenty-eight days before the Annual Representative Meeting, to consider the agenda and instruct representatives.

The CHAIRMAN said that "constituency" might include one or more Divisions acting for an election.

Dr. STARLING said that the requirement of twenty-eight days before the meeting was a great tax upon a constituency. Twenty-eight days was not sufficient.

The CHAIRMAN explained that this alteration in the by-law was intended to give the Divisions more facilities and not less. The existing by-law provided that the meeting must be held not less than twenty-one days before the Representative Meeting, so that they were shut out from meeting at all to instruct representatives during the last three weeks.

Dr. WALLACE HENRY pointed out that what was proposed applied only in a limited number of constituencies where the representatives were elected by means of voting papers.

Dr. J. STEVENS said that this revision of the by-law, coupled with a previous one, involved that two meetings must be held in the early summer before the Representative Meeting. It was far better to have one good meeting than two poor ones. He thought it would be far better to drop this altogether and leave the constituencies to do as they chose in the matter.

Mr. RUSSELL COOMBE pointed out that the previous meeting was only required for the election of the Representative who might be elected not more than nine nor less than two months before the Representative Meeting. The second meeting was for the purpose of considering the agenda, and under the proposed method it would be possible for the meeting in the constituency to consider both the principal and the supplementary report of Council at one meeting.

Dr. WALLACE HENRY, in reply to a question, said that the constituency would be disfranchised if the meeting were not held.

An amendment to change the number of days from twenty-eight to forty-two was lost; and the original recommendation was adopted.

Dr. J. B. WILLIAMSON (South Shields): What am I to do if I represent two Divisions which instruct me in different directions?

Mr. RUSSELL COOMBE: That is the reason for using the word "constituency."

ELECTION OF REPRESENTATIVES AND BUSINESS OF MEETINGS.

A number of recommendations of Council were then carried without discussion as instructions to Council. These provided for the amendment of by-laws to provide that notice of the names and addresses and mode of election of the Representatives be sent to the head office not less than six weeks before the Representative Meeting; that the name and address of the new Representative should be forwarded as soon as may be to the head office; that each constituency should elect its Deputy Representative at the same time as it elected its Representative for the year; that the Council should submit to the Representative Meeting a recommendation as to where the next Representative Meeting should be held; that Special Representative Meetings should be convened at any time on the requisition of the Council or of not less than twenty constituencies; that free and full discussion should be in order, if on reference to counsel it was found that the present wording would tend to prevent such discussion at a special meeting; and certain other amendments providing for alterations in the procedure of elections and resolutions, which were set out in full in the SUPPLEMENT of April 30th, pp. 114 and 115, paragraphs 79 to 81, and 88. On a recommendation to make voting by show of hands unless, before such vote was taken, fifteen representatives requested that the vote be taken by roll call, but if a vote by card was requested by a majority of the representatives present, the vote should be by card, Dr. H. C. BRISTOWE (Bristol) moved to amend the recommendation by substituting "not less than thirty" for "a majority." The amendment was lost, but on the proposition of Mr. BISHOP HARMAN, it was agreed to insert certain words, "upon the Chairman proceeding to take the vote of the meeting," before "a vote by card."

COMPOSITION OF COUNCIL.

Mr. RUSSELL COOMBE moved to instruct the Council to substitute for existing By-law 46 (*c*) and (*d*), a paragraph somewhat as follows:

> "(c) 16 by the Representatives of Constituencies present at the Annual Representative Meeting, namely, 12 by the Representatives (acting together) of the Constituencies in England; 1 by the Representatives acting together of the Constituencies in Ireland; 2 by the Representatives (acting together) of the Constituencies in Scotland; and 1 by the Representatives (acting together) of the Constituencies in Wales."

Dr. MORTON MACKENZIE (Reigate) moved as an amendment that the method of election of twelve members of Council by twelve groups of Representatives in the United Kingdom should remain as at present. He said that one of the great points about the Association was that it spread its representation all over the kingdom. If the proposal of the Council was carried, some of that territorial advantage would be lost. Twenty-four members of Council were elected territorially by direct vote in groups of Branches; twelve by the Representatives of certain grouped Branches, and four by the Representative Body as a whole. The "reformers" would take away those twelve representatives and add them to the four already elected by the Representative Body as a whole. In the Council's resolution he did not see that there was any guarantee that the whole of the sixteen might not be elected by one area, and he was anxious to conserve the territorial position as at present. Every member of a Division was at present represented by two members of Council, one of them directly elected by the Branch, and the other by his Representatives at the annual meeting. The Council's proposal was the result of a compromise and foreshadowed a bad procedure altogether.

Dr. FOTHERGILL said that at the time the Association was reorganized the question was whether the Representative Meeting should elect the executive body. Before the Representative Meeting came into existence the Branches had elected the whole of the Council. As a compromise the Council was formed by some members elected by the Representative Body as well as others elected by the Branches. The election by a meeting of three or four in a group did not give a candidate as fair chance as if he was elected by a larger constituency. It had been suggested that the twelve elected from England might all come from, say, London, but that could be met by a rider instructing the Council to prepare a scheme by which the Representative Body should elect the members from various parts of England, practically on the same grouping as at present. He believed that the whole of the Representative Body should take a bigger hand in electing its own executive.

Mr. BISHOP HARMAN agreed that there must be some alteration in the arrangement for electing the Council. Any elections that took place in the Representative Body ought to be made by that body as a whole.

Dr. J. W. BONE (Bedfordshire) supported the Reigate amendment. What the Council proposed was a mere piece of constitution-mongering. They had in the past elected members of the Council in the three ways described, and he disagreed with those who declared that the method was a bad one. He thought that those men who were elected by their neighbours in their several areas were quite as much honoured as those who were elected by the full meeting. The method proposed by the Council would undoubtedly tend to bring within its membership the brilliant platform men, but the men who did the best work were not necessarily the best orators. He asked them to stick to a well-tried system.

Dr. E. A. STARLING (Tunbridge Wells) also supported the amendment. He urged the meeting to maintain the method of election as at present. He belonged to a group consisting of five different [illegible], and they had to elect one member of Council at that meeting. It was unfortunate that the election had to take place so early in the meeting; this made it somewhat difficult to judge the merits of the

respective candidates. For some time it had been the practice in his group to hold a preliminary meeting and interview the various candidates. If the suggested alteration were carried out such a proceeding as that would not be so useful, even if it were at all possible. He thought it most important that the Association should retain a certain amount of geographical representation.

Dr. J. A. MACDONALD said there was no doubt that it was originally intended that the Council should be elected by the Representative Body and form its executive, but a compromise had to be arranged. But in the years of experience they had gained wisdom. It was certainly a great advantage to have a number of men who were experienced in the work of the Association. He deprecated taking away their power from the grouped Representatives. However much they all tried to avoid it, the man who caught the attention in the Representative Meeting was apt to be the man with the glib tongue, and this was not always the best man to represent the group. The members in a candidate's immediate area must necessarily know him best.

Dr. H. F. OLDHAM (Lancaster) remarked that almost the greatest strength they had in the Association was the connexion between a member of the Council and his constituency. Those Branches which sent direct representation to the Council were those which they would generally find were the strongest. It was often the case that men would not come to meetings because they said it was no use; they had not direct connexion. With direct representation there would be much greater interest. If it were possible to see that every Branch had representation on the Council the membership of the Association would be considerably higher than it was at present.

Dr. W. J. LEIGHTON (Preston) said that, as one of the newcomers to the Representative Body, he supported the Reigate amendment. As he sat there he had felt—to put it bluntly—that there were certain representatives who insisted on having the ear of the meeting, and who were, therefore, well known to the other members; while there were others who, though equally efficient, were not well known. It was the efficient man on committees that they wanted on the Council. ("Hear, hear.")

Mr. E. P. TURNER welcomed discussion of this matter by the Representative Meeting. Ever since he had been a member of this body and of the Council he had thought there were flaws and deficiencies in the method of election to the Council that should be considered. That the election by grouped Branches should be held so early in the meeting was a great error. It might be considered whether nominations might not be sent in beforehand and printed—(Hear, hear)—so that those who voted in the various groups should know for whom they were voting and have an opportunity of considering them carefully.

Dr. A. LYNDON observed that while he had not considered the present system altogether satisfactory, after Dr. Macdonald's speech he felt he must support it with all its imperfections. He could not vote for any arrangement that might permit all these sixteen members to come from one constituency—from a London constituency, for example.

Dr. C. O. HAWTHORNE objected to the term "tea party" as applied by Mr. Harman to the election by representative groups. He had been a member of the Representative Meeting for seven or eight years, and his complaint in connexion with these elections was that there had been no tea and no party—in other words, the elections, nominally by groups, were, so far as his personal experience was concerned, conducted entirely by a few individuals. It was against that that he protested, and the term he would apply to it would be "hole-and-corner." At the same time he was entirely in sympathy with those who desired to secure an accurate and full representation of the different territorial divisions of the country, but he desired to secure it by a different route from that at present in existence, and from that with which the Representative Meeting was now concerned. At the proper time he would be prepared to move another amendment, which would secure a redistribution in such a fashion as to make it certain that the medical profession throughout the country secured its accurate representation in the Council of the Association.

Mr. F. J. S. HEANEY (Liverpool), as a Branch Secretary, joined in opposition to changing the method of election. In those portions of a Branch area which had no direct connexion with the Council, interest in the Association flagged considerably. There was a certain false analogy abroad that the Representative Meeting stood for the Parliament of the medical profession. The failure in that analogy was that the Representative Meeting met once in the year for three days or thereabouts, and that was the only opportunity the constituencies had of being heard centrally. If, however, the constituencies got a liberal representation on the Council, the Association would be continually in contact with the country. On the other hand, he thought a good deal of force lay in the objection that due notice was not given of the men who were going to be put up for election by the group Representatives. That matter might be dealt with, and if it were it would meet all the present objections to the mode of election.

Dr. S. T. LORD (Rochdale) said he was in the unfortunate position of having been ordered by his Division to vote for the Representative Meeting as the electors of the members of Council; but he found now that he would be in error if he obeyed that injunction—"so possibly you may not see me again after this!" There was a possibility of a great area like the Metropolitan or Lancashire and Cheshire swamping the rest of the meeting. He did not think it was a probability, but the possibility should not be allowed. The election by territorial areas certainly brought fresh blood into the Council. "It also gives a chance to those men who are pretty solid in their way, and have not that wonderful gift of the gab that tells so strongly in the Representative Meeting." (Laughter.)

Dr. J. D'EWART (Manchester) disagreed with the change proposed in a method of election which had proved effective in the past. There had been times in the history of the Association when the actions of the Council had been very suspect by members, certainly in the distant constituencies. He did not suggest that members of the Council had not acted in the best interests of the Association as they saw fit at that particular time, but there had been elements of distrust. Would the plan now proposed enable an astute wirepuller to form a caucus and rush in a considerable number of individuals who had failed to carry the support of their own immediate constituencies? The Representative Body must not only abstain from evil, but from the appearance of evil.

Dr. MORTON MACKENZIE, in reply, said that before a change of method was accepted a strong case must be made out that the present method was a bad one. But he did not think a strong case had been made out. He was aware that there were faults in the present procedure. He thought that the election by grouped Representatives ought not to be conducted at so early a stage of the meeting; it might be postponed to the second day without much difficulty. The Organization Committee might also be asked to consider whether the number of those directly elected from the Representative Meeting should be increased from four to six or eight.

The Reigate amendment was then put and carried, with two or three dissentients.

On this becoming the substantive motion,

Mr. BISHOP HARMAN moved as an amendment that the method of election of members of Council be remitted to the Council for further consideration and report. There were protests at this, and Mr. RUSSELL COOMBE reminded the meeting that a year ago the Representative Body appointed a committee to investigate the various regulations of the Association, to scrutinize them, and to see what alterations could be made; and the question of elections to Council was threshed out in the fullest possible manner. To refer the matter back to the Council would only mean that the same ground had to be gone over again.

The amendment was lost.

Dr. MACKENZIE moved as a rider:

> That it be an instruction to the Council to consider the desirability of increasing the number of directly elected representatives from the Representative Body by adding to the Council for that purpose.

Mr. HARMAN: Can one move a rider to one's own amendment?

The CHAIRMAN: The amendment is no longer Dr. Mackenzie's. It was accepted by and belongs to the meeting.

Dr. STEVENS did not think the matter could be left as it was. The conditions existing in Scotland should be retained.

The TREASURER said the Representatives must understand what they were doing. They had given Scotland practically local government. They had given them a Scottish Committee, they had given them a full-time Scottish Medical Secretary; yet Scotland wanted exactly the same representation that she had before. He was rather surprised that those who talked of economy on the previous day had not seen the point. He might tell them the railway fares of members attending meetings in London were becoming a very serious item. They ought to consider whether Scotland was entitled to the representation she had had in the past.

Dr. MACKENZIE said the intention of the rider was to get the Council to see whether they could not increase the number to six or eight.

Dr. HAWTHORNE thought Dr. Mackenzie should have been satisfied with his amendment. He was now re-opening the whole question. He (Dr. Hawthorne) would give notice of a motion to the effect that the number of Representatives elected by Branches and by group Branches be increased from 24 to 36.

The CHAIRMAN: Dr. Mackenzie's rider is not a rider at all. It is a new motion. It is what I hope will be the first of a few simple resolutions.

Dr. HAWTHORNE: Then I submit, being a new proposition, not on the agenda paper, it is out of order.

The CHAIRMAN: In that event, Dr. Hawthorne's motion will go the same way. (Laughter.)

Dr. BRACKENBURY asked if, in any event, it was not open to the Council to consider the desirability of increasing the number of direct Representatives.

The CHAIRMAN: Of course the Council can consider it. There are plenty of members of the Council here, and they can hear what is going on.

Dr. BRACKENBURY: Then I submit there is no need of any additional resolutions at all.

The CHAIRMAN: The matter can be initiated here and now by discussion. We are all aiming at the same thing, and I suggest that this meeting should give a definite ruling to the Council.

Dr. FOTHERGILL: Could not Dr. Mackenzie's motion be withdrawn and the matter brought up at the Council?

Dr. MACKENZIE said he hoped it would not be withdrawn, but would be voted upon quickly. That Representative Body ought to express a definite opinion.

Dr. BRACKENBURY said if an opinion was to be expressed he would support Dr. Mackenzie. Certainly four was too small a number for them to elect—(Hear, hear)—and some small increase might well be considered by the Council.

It was agreed that a vote should be taken on Dr. Mackenzie's rider, which was then carried by 57 to 43.

The motion of which Dr. Hawthorne had given notice was withdrawn.

Dr. FARQUHARSON, M.P., asked whether there should not be a two-thirds majority, and the CHAIRMAN replied in the negative, as the matter was not one of policy but of organization.

Representation of Wales on Council.

Dr. W. E. THOMAS (North Glamorgan and Brecknock) said he desired to move, in place of the amendment on the paper, the following:

> That, in the opinion of this meeting, Wales should be represented on the Council by at least one member elected in the Representative Meeting by the Welsh Divisions in a group.

Dr. Thomas asked that this should be passed as a simple matter of justice, for Wales was beyond doubt inadequately represented on the Council.

Dr. J. CANTLEY (Salford): Would the effect of that be another increase in the Council of one member?

The CHAIRMAN said that it would most likely mean a rearrangement of constituencies; but the subject would have to go before the Council, who would report to the Representative Body in due course. Dr. J. A. MACDONALD suggested that the resolution proposed by Wales had been dealt with in a previous amendment and rejected, but the CHAIRMAN disagreed with this view.

Dr. BRACKENBURY said that the resolution was not merely for increasing *somehow* the representation of Wales; it was for increasing the representation of Wales in a particular manner which had been rejected previously.

Dr. MACDONALD: That is my point.

Dr. F. REES said it could not mean an increase of the representation of Wales, because at present Wales was not represented at all. It was merely an instruction to the Council to consider whether it would be fair to Wales to let her have a representative.

Mr. BISHOP HARMAN suggested the inclusion of the words "the Council should consider whether"; and in this form the motion was agreed to.

Branch Councils.

Mr. RUSSELL COOMBE moved the following recommendation of Council:

> That it be an instruction to the Council to take steps for amendment of By-law 16 (*a*) so as to provide simply that the Branch Councils in the United Kingdom shall include, as member(s) *ex officio*, the member(s) of the Council, if any (other than representing the Services or the Overseas Branches) *resident in the area* of the Branch.

Dr. FOTHERGILL asked the Chairman of the Organization Committee whether, as the election of the Council was to continue as in the past, he would withdraw the resolution, it having been understood that this would only be pressed if the new organization came into being. The view was that it would be physically impossible for a man to attend all the Branches.

Mr. RUSSELL COOMBE intimated that he could not withdraw the resolution, because it came forward formally, and South Staffordshire should have an opportunity of moving an amendment of which notice had been given.

Dr. H. C. MACTIER (South Staffordshire) moved to amend the recommendation so as to provide that the Branch Councils in the United Kingdom should include as members *ex officio* such of the twenty-four members of the Council elected under By-law 46 as belonged to them, but should not include those elected by the Representative Body unless they were resident in the area of the Branch. In a great many cases, he said, it was a physical impossibility now for the members of the grouped Branches to be *ex officio* members of all the Branches in the group. But the members directly elected represented much smaller constituencies, and it was only right that they should be in touch with their constituents.

Dr. HAWTHORNE contended that the proposals from the Council and from South Staffordshire amounted to one and the same thing. The effect in either case would be that residence on the part of a member of Council would give him a qualification to sit in the Branch Council of the area in which he resided. That violated a very sound constitutional and democratic principle. It imposed upon a constituency a representative who had not been elected by that constituency. (Hear, hear.) Supposing a man were elected M.P. for Birmingham and chose to live in Wolverhampton; according to the principle which the Representative Meeting was asked to confirm in the two propositions he would become automatically a member of the Wolverhampton Town Council! That was not the worst of the case. The gentleman who was intruded on the Branch Council might shortly before have been rejected as a member of that Branch Council. If a man were such a useful and proper person to sit on the Branch Council, he had easy access to it through the ordinary method of election. But apart from the method of election, the proposal to multiply the number of members of a council was unfortunate. It was right that members of Council elected by a Branch should sit on the Branch Council, because that was the organ and instrument by which they were elected, and there they met their constituents. At the proper opportunity he would move that only members of the Council should sit in a Branch Council who had been elected to the Central Council by the members of the corresponding Branch.

Dr. MACTIER withdrew his amendment on the understanding that at the end of the Council's recommendation should be added, instead of "Branch," "the Branches which elect them." Dr. HAWTHORNE had an amendment, which he withdrew on an assurance that the change proposed was such as to secure that no member should be on the Branch Council unless he had been elected by the Branch which nominally elected that Branch Council.

Other Alterations.

It was also agreed that the Council should be instructed to take steps to provide that no one should be eligible for election as a member of Council of the Association to

represent a Branch or Group in the United Kingdom unless at the time of election he had been a member of the Association for at least the three years immediately preceding the election. A further motion, which was agreed to, was that provision should be made for the Past Chairman of Representative Meetings to be a member of Council *ex officio* for the year immediately following his period of office as Chairman; and, on the motion of the CHAIRMAN OF COUNCIL, the same provision was made in the case of the ex-Treasurer. The Deputy Chairman of Representative Meetings was also to be a Member of the Council *ex officio*.

Dr. OLDHAM pointed out that these resolutions meant an increase of three in the membership of the Council, but Dr. BRACKENBURY said in reply that each of these officers held office for more than one year—the Treasurer for an indefinite period—and therefore the criticism did not hold good.

The SOLICITOR was asked whether these new provisions in the by-laws would render nugatory the previous election of an individual who became *ex officio* a member of Council, and he said in reply that it did not, unless this was so provided. If so provided, it might be held to create a vacancy and enable another person to be elected. This would have to be a matter of direct provision, or else difficulties would arise. The meeting had better make its intentions clear with regard to this matter, and insert the provision in the by-laws. His own ruling would be that if a man was entitled to sit on the Council by virtue of an election, and it was provided in the by-laws that he be *ex officio* a member, it did not, unless so provided, vitiate the election and so create a vacancy.

Dr. MACDONALD: If a man wishes to resign his ordinary membership as soon as he becomes *ex officio* a member of Council is it not competent for him to do so, and for his constituency to elect another member in his stead?

The SOLICITOR: Certainly. A man could resign his position, and that would create a vacancy entailing another election.

The debate was then adjourned.

ELECTIONS.

The MEDICAL SECRETARY announced the result of the election of twelve members of Council by Grouped Representatives as follows:

Dr. A. C. FARQUHARSON, M.P., North of England, North Lancashire and South Westmorland, Yorkshire
Dr. F. RADCLIFFE, Lancashire and Cheshire.
Dr. J. W. BONE, East York and North Lincoln, Midland, Cambridge and Huntingdon, East Anglian, South Midland.
Dr. T. RIDLEY BAILEY, Birmingham, Staffordshire, North Wales, Shropshire and Mid Wales, South Wales and Monmouthshire.
Mr. W. MCADAM ECCLES, Metropolitan Counties, Inner Group.
Dr. H. B. BRACKENBURY, Metropolitan Counties, Outer Group.
Dr. A. O. HOLBECHE, Bath and Bristol, Gloucestershire, West Somerset, Worcestershire and Herefordshire, Dorset and West Hants, South-Western, Wiltshire.
Dr. S. MORTON MACKENZIE, Oxford and Reading, Surrey, Southern, Sussex, Kent.
Dr. C. E. DOUGLAS, Aberdeen, Northern Counties, Dundee, Perth, Edinburgh, Fife.
Dr. C. F. ROBERTSON, Glasgow and West of Scotland, Border Counties, Stirling.
Dr. J. S. Darling, Munster, Ulster.

There was no nomination for the Connaught, Leinster, South-Eastern of Ireland Group.

The MEDICAL SECRETARY announced that the following had been elected as members of Council by the Representative Body:

Dr. H. G. DAIN, Dr. J. A. MACDONALD, LL.D.
Dr. R. LANGDON-DOWN, Mr. E. F. TURNER.

Dr. H. B. BRACKENBURY (Hornsey) as Deputy Chairman of Representative Meetings.
Dr. W. CRAIG (Pathhead, Ford, Midlothian), as the Scottish Member of the Insurance Acts Committee.

The meeting adjourned at 6.30 p.m.

Monday, July 18th.

The Representative Meeting resumed its deliberations at 9.30 a.m., with Dr. GARSTANG again in the chair.

EFFICIENCY OF THE CONSTITUTION AND MACHINERY OF THE ASSOCIATION *(continued)*.

A motion which had been debated on Saturday, that the Council be instructed to take steps for the amendment of Article 32 so as to provide that the Deputy Chairman of Representative Meetings should be a member of the Council *ex officio*, was again submitted to the meeting and adopted without further discussion.

Mr. RUSSELL COOMBE (Chairman of the Organization Committee) then moved the adoption of a series of recommendations of Council concerning the filling of vacancies in Council and Committees, references to and consultations between Committees, and election of officers. The recommendations were set forth in the SUPPLEMENT of April 30th, pages 116 to 119, paragraphs 97 to 125. All of them were in the form of instructions to the Council to take steps for the amendment of the by-laws or of the references to Committees in the direction stated.

Vacancies on Council and Committees.

It was agreed that, in the event of a vacancy (other than a casual vacancy under By-law 55) among the elected members of the Council, the Council should in its discretion take steps to fill such vacancy, either by an election conducted in the usual way or by itself appointing a member to fill the vacancy; and that each Committee should have power to fill any casual vacancy arising amongst its appointed members.

Chairmen of Committees.

It was also agreed that the Council should take steps for the amendment of By-law 70, to read that each standing Committee, except the Scottish, Irish, Welsh, and Dominions Committees, should appoint from its own number a member of Council as chairman.

Consultation between Committees.

Proposed new by-laws were agreed to making it competent for any committee to consult, report to, or make suggestions to any other committee, and for any subcommittee to act similarly in regard to any other subcommittee of the same parent committee, also for each standing committee to have power to call to its assistance for special purposes persons specially qualified to assist in any branch of its reference. The CHAIRMAN explained that this second proposal was not a proposal for permanent co-option, but merely to provide for temporary help.

Absence from Committee Meetings.

It was agreed that if an appointed member of any committee or subcommittee be absent from three successive meetings he should (in the absence of good and approved reason) be deemed to have resigned his membership of the committee.

Finance Committee.

A recommendation of Council was moved, to instruct the Council to amend the schedule providing for the composition of the Finance Committee by the omission of the special appointment of members thereto by the Council, which was adequately represented on the Finance Committee by committee chairmen.

Mr. BISHOP HARMAN asked why the Hospitals and Public Health Committees were not represented by their chairmen on the Finance Committee.

Mr. A. LUCAS said that the Hospitals and Public Health Committees had not been spending committees like the others; therefore it had never been considered necessary for the chairmen to be members of the Finance Committee.

Mr. BISHOP HARMAN said that both these committees were likely to become very important spending committees in the near future. He moved an amendment to include the chairmen of these committees.

The amendment was lost and the original motion carried.

It was also agreed to take steps to amend the reference to the Finance Committee so as to read somewhat as follows:

> "To certify the accounts prior to their presentation to the Council; to advise (*a*) on the administration of any funds held in trust by the Association not administered by any other Committee, and of the Superannuation Fund; (*b*) as to the appointment of administrators for any such funds; (*c*) as to the financial bearings of any proposals involving special expenditure; and (*d*) as to the financial position and real estate of the Association."

Dr. J. A. MACDONALD asked what was the meaning of the last clause of the new reference.

Mr. BISHOP HARMAN said that the Premises Committee, which it was proposed to abolish, had hitherto done the work specified in that clause.

SIR JENNER VERRALL suggested, and it was agreed, that the clause should read: "(c) as to the financial position of the Association and the administration of its real estate." The omission from the schedule of the provision for a Premises Committee was also agreed to.

Organization Committee.

Mr. RUSSELL COOMBE then moved a further instruction to Council to take steps for amendment of the reference to the Organization Committee so as to read somewhat as follows:

"(a) To organize systematic endeavours to maintain and increase the membership of the Association; to make reports to other Committees and the Council accordingly; and to advise and assist Divisions and Branches in the strengthening of their organization, including the organization of their work for the promotion of the medical and allied sciences;

"(b) To advise as to the interpretation of alteration of the existing, or the adoption of new, Regulations and By-laws; as to questions of areas of existing, or formation of new, Divisions and Branches; as to grouping for electoral purposes; and as to the Rules (other than those relating to ethical matters) of Divisions and Branches and combinations thereof;

"(c) To advise as to the ordinary and supplementary grants to Branches and Divisions."

Dr. F. C. MARTLEY asked for the definition of a supplementary grant to a Division. Dr. BRACKENBURY said that the meeting had already recognized that there was an ambiguity about this matter, and had passed a resolution for the purpose of making it clearer. Mr. COOMBE, after consultation with the Solicitor, said that the Solicitor's opinion was that this was not a legal matter, and referred the meeting to By-law 24, which dealt with the subject.

The motion was agreed to.

Journal Committee.

It was agreed to take steps to provide that the Representative Body and Council should each appoint four members, and the Organization Committee one member, to the Journal Committee; also to amend the Committee's reference so as to read: "To consider matters connected with the JOURNAL and any other publications of the Association which do not come within the scope of other committees."

Science Committee.

The composition of the Science Committee was amended to provide that the Representative Body should appoint four and the Council six members, and the reference was directed to be amended so as to read somewhat as follows:

"To advise and, when so directed, act for the Council in all matters not specifically referred to other Committees which concern the work of the Association for the promotion of the medical and allied sciences, including the conditions of award of scholarships or grants given by the Association or under trusts undertaken by the Association; the arrangement of Committees for special scientific work; the provision of lecturers on scientific and clinical subjects to the Divisions and Branches or otherwise; and all matters connected with the library and its management."

Medico-Political and Parliamentary Committee.

On a motion instructing the Council to take steps for the alteration of the name of the Medico-Political Committee to "Parliamentary and Medico-Political Committee," and to instruct the Committee to deal with parliamentary and medico-political questions, and generally with all matters involving the public relations not specially referred to other committees,

Dr. DAIN asked whether it was intended by the alteration of the name of this committee to include in the functions of this committee the work done by the Ministry of Health Committee. That committee was elected from year to year, but the business it was concerned with would now be largely parliamentary, and definite arrangements for all business arising in connexion with the Ministry were necessary. It did not appear to him that provision was made for the situation in these alterations.

In reply to Dr. C. E. ROBERTSON (Glasgow) who asked whether it was proposed to drop the Ministry of Health Committee, the CHAIRMAN said that the existing Medico-Political Committee, in whose title a change was proposed, was one of the standing committees whose duties and powers were fixed by the by-laws. The Ministry of Health Committee was not a standing committee. It was an *ad hoc* committee appointed, not by the Representative Meeting, but by the Council, for a special purpose during a special period, and he was not in a position to prophesy what view the new Council would take as to what *ad hoc* committees it would appoint for next session.

Dr. ROBERTSON asked if it could not be decided now what to do with the Ministry of Health Committee, and the CHAIRMAN replied that the meeting could give a definite instruction to the Council. Dr. ROBERTSON expressed the opinion that if the point were first decided the meeting would be better able to deal with the title of the Parliamentary Medical Committee.

Mr. BISHOP HARMAN explained that there had been a subcommittee of the Medico-Political Committee for many years entitled the Parliamentary Subcommittee. That subcommittee had the business of lobbying members of Parliament on certain specific matters relegated to it. There was, however, some disadvantage in going to the Lobby as chairman or member of a subcommittee. It was on this account that the change of name was suggested.

Dr. E. A. STARLING (Tunbridge Wells) thought that in the case of such a long name the tendency would be to abbreviate it and call it "the Parliamentary Committee," so that the "medico-political" might be forgotten. It should be made clear that whatever the committee decided was decided by a body well qualified to deal with medical matters. He suggested that the medico-political affairs of the profession, so far as the Association was concerned, were more important to the members than parliamentary affairs. Therefore "medico-political" should come before "parliamentary." (Hear, hear.)

The CHAIRMAN OF COUNCIL accepted this and the motion thus amended was agreed to.

Insurance Acts Committee.

Mr. RUSSELL COOMBE moved to amend the schedule to the by-laws so as to define more clearly the method of election of the twenty-two practitioners referred to in the second paragraph of the schedule.

After some discussion as to the precise meaning and effect of the motion, the motion was withdrawn.

Dr. B. E. FORDYCE (Isle of Ely) moved that the co-opted and *ex officio* members of the Insurance Acts Committee should not exceed one-fifth of the total number. The matter was exercising the minds of many Divisions, and should be settled by the Representative Meeting. As the great bulk of the work was panel work, it would be reasonable to increase to four-fifths the proportion of those members of the Committee elected directly, partly by the Representative Body and partly by the Local Medical and Panel Committees on nomination in their groups; it was at present two-thirds. The work of the Committee had been admirable, and the exceptional ability and energy of its chairman was universally recognized. The question before the meeting was whether in the circumstances of the present day a proportion of one-fifth was not sufficient to safeguard the other interests committed to the Committee, and to keep up a definite link with the other work of the Association. The funds of the Association were not strictly chargeable with the bulk of the work of the Committee. For that purpose the National Insurance Defence Trust was formed some three years ago, and in spite of repeated appeals the contributions to that fund had been lamentably small—at the moment out of 200 Panel Committees only 87 were subscribing to the fund; 113 subscribed nothing. The reason for that was probably the old cry; "No representation, no taxation." From 1912 onwards there had been many confident predictions that the Insurance Act would split the Association from top to bottom. No doubt that was an exaggeration, but there was some sign of a split, which was disconcerting to those who had to do the work of Panel Committees in the Divisions. Those were the views of the Ely Division, and he believed they represented the views of a great many Divisions throughout the country.

Dr. H. B. BRACKENBURY thought all would agree with the spirit of what had been said, but its substance was vitiated by a number of misconceptions. The Insurance Acts Committee consisted at present of thirty-two members. Six were elected by Representatives of constituencies, eighteen were selected on a territorial basis from among practitioners nominated by the Local Medical Committees and Panel Committees, four others were nominated (one

each) by the Hospitals Committee of the Association (from the staff of a voluntary hospital), the Medical Women's Federation, the Society of Medical Officers of Health, and the Poor Law Medical Officers' Association. Altogether, there were twenty-eight elected members. That left only four who could be properly called *ex officio* members—one-eighth, not one-fourth or one-fifth, of the thirty-two. The financial argument used by the Representative of the Isle of Ely seemed to support that position, because if the finance was largely the finance of the Association, it seemed essential that the Treasurer of the Association, by virtue of his office, should be a member of that Committee. The requirements of the Ely resolution were not only met, but more than met. It depended exactly upon what was meant by "co-opted" and "*ex officio*," and unless those who were co-opted because they were elected by an appropriate body were to be included among co-opted members, there was no need for the resolution. If election by such bodies as he had named were to be stopped, the value of the Insurance Acts Committee would be diminished, not improved. He therefore submitted that the Ely resolution should be withdrawn.

Dr. FORDYCE agreed, and withdrew the resolution accordingly.

Mr. E. B. TURNER moved that at least one of the non-panel members of the Insurance Acts Committee should be in general practice in an industrial area. He said that in the composition of the Insurance Acts Committee it was provided that there should be at least four non-panel members on it, either *ex officio*, or, if the number so obtained was not sufficient, by election. It was desirable, however, that there should be at least one non-panel member who was actually at work in an industrial district. He moved to instruct the Council to consider the advisability of adding to the committee some representation of non-panel interests in industrial districts.

Dr. BRACKENBURY said that Mr. Turner was under a misapprehension in supposing that there was no such representation at present upon the committee. Dr. Radcliffe of Oldham was an excellent representative of non-panel practitioners in the industrial areas. It did not require any such instruction or authority to provide that there should be proper representation of non-panel practitioners. He would deprecate any further increase to any considerable extent in the size of the committee.

Dr. J. STEVENS supported Mr. Turner's proposition. He wished to know whether any one of the non-panel men on the committee had identified himself with the non-panel attitude in opposition to the Insurance Act.

Mr. Turner's motion to instruct the Council to consider the advisability of increasing the non-panel representation was carried.

ANNUAL MEETING.

Mr. RUSSELL COOMBE moved to instruct the Council to take steps to provide for a (standing) Arrangements Committee, somewhat as follows:

> "The Arrangements Committee shall consist of the officers of the Association, together with six members elected by the Council and six members elected by the Local Committee of Management of the Annual Meeting. The duty of the Arrangements Committee shall be to consider and advise the Council as to the appointment of officers of sections and readers of addresses at the annual meeting, and such other matters affecting the arrangements for the Annual Meeting as shall be referred to it."

Dr. J. D'EWART pointed out that this proposal would add some twenty new members to the committee.

The CHAIRMAN OF COUNCIL said that every year such a committee was appointed by the Council, and all that was now proposed was to take from the Council the duty of providing for such a temporary committee and make it a standing one.

Mr. RUSSELL COOMBE suggested that after the word "officers" the words be added "mentioned in By-law 68," according to which the President of the Association, the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer, were *ex officio* members of all committees. He assumed that it was these officers it was intended to include; this would limit the number to four, or, if the Deputy Chairman were included, to five.

Dr. F. C. MARTLEY (Kensington) moved that it be an instruction to the Council to provide that no non-member of the Association should take part in the Sections at the Annual Meeting. Any member of the medical profession in the three kingdoms could join this Association. To his certain knowledge a member of the profession who was announced to take part in the discussions in one of the Sections was not a member of the Association, and lost no opportunity of running the Association down. He amended his resolution to provide that no member of the medical profession who was eligible for membership of the Association, but who was not a member of the Association, should take part in the Sections at the Annual Meeting.

The CHAIRMAN OF COUNCIL said that the motion would cut out a certain small number of men who in the technical sense might be considered eligible for membership. Certain members of the General Medical Council considered that in the exercise of their duty to that body they should not be members of the Association, although very favourably disposed to it. There were also certain civil servants who were precluded from joining such an organization; but it was very undesirable that they should be excluded from taking part in the scientific side of the work.

The TREASURER supported the position taken by the Chairman of Council, and added that it had in many cases been found, when names had been selected for the office of presidents and vice-presidents of Sections, that the gentlemen were not members of the Association, whereupon they had been asked to join before accepting office, and this had proved an excellent recruiting procedure. There were many scientific men who did not worry their heads about the Association's affairs and neglected to become members. The scientific meetings furnished an opportunity to introduce them into the Association. If Dr. Martley's motion were accepted it would be a great mistake by diminishing the broad-minded attitude of the Association.

Dr. C. O. HAWTHORNE, while not by any means unsympathetic to the considerations put forward by the Chairman of Council and the Treasurer, had very little sympathy with the gentleman who waited until he received some kind of decorative distinction—(Hear, hear)—and only then became a member of the British Medical Association. What were they going to say of the strong, silent men in the Divisions of whom they heard so much at the previous day's proceedings and who had been working for years with very little recognition? It was now put forward as a reasonable policy that a gentleman who had been obstinate in refusing ordinary opportunities of salvation should be put into a secure position by giving him some form of decorative distinction. (Laughter.) If this motion by Dr. Martley would cut out certain individuals who felt their official position compelled them to abstain from joining the Association, yet who might quite well take prominent and useful positions as officers of Sections, he suggested that a schedule of exceptions should be prepared. It was said that there were only a few cases. He was not going to quote names, but he remembered that he called attention last year to a list of names put forward for officers of Sections at Cambridge, and out of something like twenty-one names there were six who were eligible for membership and yet were not members of the British Medical Association. All must recognize that such a state of affairs should not exist.

Dr. W. F. DEARDEN (Manchester) asked whether there was any objection by any Government department to medical members of any branch of the Civil Service joining the British Medical Association. He did not know of any. Were there not a good many distinguished members of the medical profession who were in the Government service and were also members of this Association?

The CHAIRMAN said that they did not know that there was any official ruling on the point at all. It was more the moral sense of the individuals concerned, who might feel they were in an awkward position.

Mr. E. B. TURNER moved that there should be added to Dr. Martley's motion the words:

> "except in such circumstances as the Arrangements Committee may consider exceptional."

He thought that would prevent any man coming forward simply for advertisement, but would give an opportunity of selecting such gentlemen as the members of the General Medical Council, and would cover certain exceptional cases.

Dr. MARTLEY accepted the addition to his motion.

Dr. H. ROSE (Buckinghamshire) thought there ought to

be a clear understanding as to the position of Civil servants. He had been a member for twenty-five years, and was surprised to hear that the Government might object to any man being a member of the Association. The mere membership of the Association ought to put a man above suspicion in regard to any Civil Service appointment.

Dr. WALLACE HENRY said that one member in his Division received a Government appointment some time ago. He had been on the Executive Committee, but he said he would have to withdraw, because the Minister said he hoped he would attend all the Division meetings which were scientific, but he did not wish him to take part in administrative work. In brief, he could be a member of the Association, but was asked not to take part in administration.

Dr. H. CAIGER (Sheffield) said that a personal friend of his—the late Mr. Pye-Smith, of Sheffield, a member of the General Medical Council—would have been cut out by this resolution. He was a most loyal and highly respected member of the Association, but after his election to the General Medical Council, as a matter of conscience he felt it his duty to resign his membership. That was a point of honour they could all respect. (Hear, hear.) He thought it was far better to leave things as they were.

Dr. STEVENS moved that the next business be proceeded with. Dr. BRISTOWE seconded. This was lost.

Dr. Martley's motion was then carried by a large majority.

THE REPRESENTATIVE BODY.

Further motions proposing that the Chairman and Deputy Chairman of Representative Meetings should be styled Chairman and Deputy Chairman of the Representative Body; and that the Chairman should, not only during his period of office but for one year thereafter, be a member of the Representative Body *ex officio*, and that the Deputy Chairman should be an officer of the Association, were agreed to.

Mr. A. LUCAS (Birmingham Central) opposed the last motion on the ground that it meant a further increase in the numbers on the Council, involving an increase of expenditure which he calculated would be certainly between £50 and £150, and possibly much more. He quite agreed that the Deputy Chairman of the Representative Meeting should be a member of the Council, but he was confident that any member of the Council who read his minutes carefully would be sufficiently familiar with the work of the Council without his being made an officer.

Dr. BRACKENBURY also opposed the motion. He thought that to add the Deputy Chairman of the Representative Meeting to the officers under Article 68 would seem to involve an entirely unnecessary expenditure. Not only could any member of the Council make himself familiar with the work of the various committees, but in the case of the Deputy Chairman he would have one year at least before he sat in the chair of the Representative Meeting, in which he would be *ex officio*, as Chairman, a member of the committees.

Dr. MACDONALD supported Mr. Lucas and Dr. Brackenbury in their opposition on the grounds they had mentioned, and also on the ground that it was a mistake to alter the balance of power between the *ex officio* and the elected members. He thought the *ex officio* representation on the committees was quite strong enough at present, and it would be a mistake to increase it.

Mr. TURNER said that although he was still of the same opinion, he did not desire to press for the addition of the words he had suggested.

The CHAIRMAN asked if it was distinctly understood after the discussion that Article 36 was referred to. The position was purely honorary, and there were no further duties.

The motion was then carried.

Mr. RUSSELL COOMBE (Chairman of the Organization Committee) moved that steps should be taken to amend the by-laws so as to require that the Deputy Chairman should be elected annually at the Annual Representative Meeting; and that By-law 62 be amended to read for "groups of Branches" "body or bodies." Both proposals were agreed to.

Membership of Branch Councils and Division Executive Committees.

On the motion of the CHAIRMAN OF THE ORGANIZATION COMMITTEE, By-law 17, formerly 16, and By-law 19, formerly 20, were amended to provide that only members of the Association should be eligible for membership of Branch Councils and Division Executive Committees.

SUBSCRIPTION TO THE ASSOCIATION.

Mr. RUSSELL COOMBE moved that By-law 11 be amended to read as follows:

1. On and after January 1st, 1922, the annual subscription to the Association shall be as follows:

A. As to Members Resident in any Part of the United Kingdom.

(i) For a member of not less than ten years' standing who has definitely and permanently retired from the active practice of the medical profession, and has signed and transmitted to the Treasurer a declaration to that effect two guineas.

(ii) For any member of not less than forty years' standing two guineas.

(iii) For a member admitted to membership before the expiration of two years from the date of his registration under the Medical Acts—one guinea and a half until December 31st next occurring after the expiration of four years from the date of such registration.

(iv) For two members being a husband and his wife residing together—four guineas and a half.

(v) Except as otherwise herein provided—three guineas.

B. As to Members Resident Outside the United Kingdom.

(i) For any officer of the Royal Navy Medical Service, the Army Medical Service, the Royal Air Force Medical Service, or the Indian Medical Service—two guineas.

(ii) For any other member—one guinea and a half.

Provided that any member, wherever resident, who is admitted on or after July 1st in any year, shall pay only half his current subscription for that year.

2. For the purposes of this by-law a member shall be deemed to reside in that place in which his ordinary place of abode is situate at the time at which according to the regulations his subscription is considered due.

In reply to questions, Mr. RUSSELL COOMBE said that "ten years' standing" meant standing in the Association, and that a locumtenent was practising his profession.

Dr. J. A. MACDONALD asked whether a man who received an appointment to a Government office was practising his profession in the meaning of the phrase.

Mr. RUSSELL COOMBE replied that such a man was appointed as a medical officer and earning his living as such owing to the fact that he was a medical man. In reply to a question from Dr. D'EWART as to the position of a medical officer of health, he pointed out that he was appointed because he was a medical man.

Dr. R. D. MOTHERSOLE (Bolton) asked why members of His Majesty's Forces residing abroad were charged a higher rate than other members residing abroad.

The CHAIRMAN answered that there were no such members who were permanently residing abroad. They were all liable to move about, and to be at home from time to time.

A MEMBER: Except the Indian Medical Service.

Dr. R. E. B. YELF (Oxford) asked if the Treasurer would give an opinion on the necessity of raising the subscription to 3 guineas.

The TREASURER replied that he thought the balance sheet showed that it was necessary.

Dr. MACDONALD asked whether, if a man under B (i) of the resolution retired from the service and remained abroad he came under B (iii). Mr. RUSSELL COOMBE answered in the affirmative. Dr. E. A. STARLING asked if it were not a fact that a man under B (ii) generally paid a fairly large subscription to the Branch to which he belonged? and the CHAIRMAN replied that that was so.

In reply to inquiries, the CHAIRMAN said that so far from a falling off in membership since the subscription had been raised, there had been a continued increase. (Hear, hear.)

The resolution was carried.

Dr. W. SNODGRASS moved that the Financial Secretary should annually look over the list of members to find out how many were of forty years' standing, and to inform them of the fact that they would only have to pay two guineas subscription. This was agreed to, but motions by Dr. T. RUSSELL (Glasgow) that the Council should have full power to consider all applications from senior members and to remit subscriptions in whole or in part, and also that it should have power to deal with subscriptions in cases of two or more members living in the same house and related by blood or marriage, were lost.

Subscriptions by Members of the Services.

The CHAIRMAN said that Lieut.-Colonel R. H. Elliot had desired to move that it be an instruction to the Council to

consider the advisability of establishing a two-guinea flat rate of subscription for all active members of the services. This was put forward with the approval of the Naval and Military Committee as being a final settlement of the question of fluctuation in their subscriptions by putting them on one sound basis which would be agreeable, they believed, to all members of the services. In the absence of Lieut.-Colonel Elliot, who was examining at Oxford, Dr. Buttar would move the resolution.

Dr. BUTTAR said that he was present throughout the whole of the discussion of this matter in the Naval and Military Committee, and the result was a unanimous opinion in that Committee that the subscriptions for Service members should be reduced to two guineas. The amount of subscription was at present regulated by the actual place on the globe in which a particular man was situated at the time when his subscription became due. The Service members were very liable to frequent changes of residence, with the consequence that their subscriptions would be continually changing, and this would lead to great irritation. The naval officer might be in home waters or on shore, or in a distant part of the globe when sending his subscription, and it would be difficult to know whether the subscription was three guineas or two. An officer who was home on leave, his leave expiring on January 7th, might find himself liable to a three-guinea subscription on January 1st, and a two-guinea subscription on January 8th, after rejoining his ship. There might be long intervals of time between the services which the Association was able to render to Service members, and it was bad policy to subject such men to the irritation of a change of subscription according to whether they happened to be at home on leave or abroad at the time when the subscription became due. He would like members to be told the view of the Treasurer and his officials; he believed it would be found that to collect the subscriptions as at present would involve a great amount of work, and that it would be much more convenient to introduce a flat-rate system. The small reduction in the subscription was likely to result in an increase of membership, which would probably counterbalance the loss on the number of Service men who happened to be in England, and who would consequently pay two guineas instead of three.

Dr. MACDONALD formally seconded.

Dr. C. E. DOUGLAS (Fife) supported the motion on the ground that a difference ought to be made on account of the services which the gentlemen in question were rendering.

The TREASURER said it would be extremely difficult to tell when an officer was not living abroad.

The motion was agreed to.

Mr. BISHOP HARMAN said that it should be made clear that territorial officers were not included in the Army Medical Service for this purpose.

The CHAIRMAN said that this would no doubt be taken into consideration.

Expressions of Gratitude.

Mr. RUSSELL COOMBE, in moving that the remainder of the Annual Report of Council under "Organization" be adopted, said that the amount of work thrown upon the Organization Committee by the resolution of last year was very large. It was impossible for that committee as a whole to undertake the work, and it became necessary to appoint a subcommittee known as the Scrutiny Committee. That committee had met innumerable times, on the average once a fortnight right throughout the year. Sir Jenner Verrall, as one of very large experience in reference to by-laws and the constitution of the Association, had been asked to act as chairman, and he had done yeoman service. (Applause.) Mr. Russell Coombe added that he, as chairman, wished to place on record his deep gratitude to Sir Jenner Verrall for the invaluable work he had done.

Mr. McADAM ECCLES moved:

That this meeting of the Representative Body places on record its deep appreciation of the careful and strenuous work of the Chairman of the Organization Committee, Mr. Russell Coombe, and the Chairman of the Scrutiny Subcommittee, Sir Jenner Verrall, in the preparation of the report on the constitution of the Association.

Mr. McAdam Eccles said it was really wonderful how Mr. Russell Coombe, while living 200 miles from London, had got through such a vast amount of this extra work. To Sir Jenner Verrall was owed gratitude for thirty years' service, and now for this additional valued work.

Mr. BISHOP HARMAN seconded. It had been his ill fortune to be a member of the Scrutiny Committee, and he had had to attend many meetings. He had sat under many chairmen, but never under the guidance of a chairman more diligent, more judicious, or more felicitous in an extremely hard piece of work than Sir Jenner Verrall.

The motion was carried with acclamation.

Mr. RUSSELL COOMBE, who was received with applause, said in reply he had been only too glad to do what was a labour of love.

On rising, Sir Jenner Verrall was received with such a prolonged demonstration that he was too affected to do more than say a brief word of thanks.

Proposed Student Class of Members.

Dr. J. L. SPEIRS (Gateshead) moved:

That in order to stimulate the interests of senior students of medicine in the work of the British Medical Association, and so tend to secure their adherence at the outset of their careers as practitioners, the British Medical Association institute a student class of members at a reduced fee, with the privilege of attending scientific meetings and receiving a free copy of the JOURNAL weekly.

Dr. Speirs thought that men might become associated with the Association at a much earlier age. Perhaps, he suggested, the Editor of the JOURNAL might co-operate in the matter by making the JOURNAL attractive to senior students. There were many ways in which that could be done.

Mr. McADAM ECCLES said that, being a teacher in a fairly large school, he was very deeply interested in this question of student class membership. He thought, as they had been pleading for economy, the latter part of the resolution as to the distribution of free copies of the JOURNAL should be omitted. The JOURNAL was not quite a journal for the student, and the students could always see the copies placed in the libraries of every one of the medical schools. They had been requested by the Council—in the medical schools, at any rate, of London—to put up notices concerning the British Medical Association, and most of the schools had done so. Students often asked, however, "Where do we come in?" The answer had to be, "You don't come in until you are qualified." That rather disgusted some of the questioners, so he thought a student class would be desirable, but not a free issue of the JOURNAL.

Dr. NOY SCOTT suggested that once a month there might be a students' issue of the JOURNAL in which subjects might be dealt with from the students' point of view.

Mr. RUSSELL COOMBE said that the question of students was a perennial one. The student was not overburdened with money and was hardly likely to pay a subscription to the Association. The annual meetings of the Association were always held at a time when students were absent from the universities.

After further discussion the motion was lost.

Basis of Representation in Representative Body.

Dr. WALLACE HENRY moved that the by-laws should be altered so as to provide that representation at the Annual Representative Meeting should be based on the number of members of the Division at an earlier date than April 30th. It was necessary for members to make arrangements for attending the Representative Meeting and for their summer holidays a long time ahead, and this was particularly the case with those who had partners. The question arose acutely in his Division because sometimes they were under 150 and sometimes over. His colleague, Dr. Fagge, who was fortunately present, because on April 30th they were above the 150, had to make his summer arrangements at a very early date.

Mr. RUSSELL COOMBE said he would like to remind Dr. Wallace Henry that it was possible to elect Representatives months before the Annual Representative Meeting. Therefore if the matter was taken logically the list should be taken as at November 1st, which would be practically impossible. He therefore hoped that Dr. Wallace Henry would not press the matter.

Dr. WALLACE HENRY said that he must press the motion, and it was carried

Legal Defence of Members.

Dr. F. P. BASSETT (St. Helens and Warrington), in moving that the Council should consider whether the time was opportune for the Association to undertake the legal defence of its members, said that he understood that there was a legal difficulty, which would be dealt with by the Solicitor.

The SOLICITOR said: This is no new question. In or about the year 1896, before I was appointed your legal adviser, the question which is raised in this resolution was brought up and considered by the Association, and it was sought to bring the power to do this within Clause 3, Subclause 8 of your Memorandum, known as the Objects Clause. At that time the opinion was taken of Mr. Buckley, Q.C. (who is now Lord Wrenbury), as to whether or not you had powers under that clause in the Memorandum to permit of you taking up mundane matters of this nature. He definitely advised that it could not be done. It does not appear to me that the law has altered in that respect. Anyhow, it would, in my view, and in the view of that high authority on company matters, be necessary for you to get an extension of your powers under your Memorandum. I doubt very much whether it would be allowed to be grafted upon a scientific association such as you are, and for those reasons I should not hold out a hopeful view as to having the Memorandum altered so as to make the subject of medical defence germane to your original constitution, or one to which the Court would give its assent; and, therefore, I think that that would be the result at which the Council would be bound to arrive after careful consideration of the matter.

Dr. HAWTHORNE was of opinion that the motion should be rejected on its merits and apart from any legal technicalities. He had the greatest regard for the capacity of the Council and also for the versatility of its members, but the Council should not be saddled with such matters as this. There was the less reason for burdening them with that matter inasmuch as there already existed associations for the purpose, and every wise practitioner would belong to one or other of those defence associations. He wished to spare the Council a burden for which he believed they themselves would recognize they were unfitted. (Applause.)

By leave of the meeting Dr. BASSETT then withdrew his motion.

Payment of Representatives' Expenses.

Dr. J. R. PRYTHERCH (North Carnarvon and Anglesey) moved that the Council should consider and report on the desirability of paying the out-of-pocket expenses of Representatives who attend meetings of the Representative Body. The principle was recognized by the General Medical Council—its members were, he believed, handsomely paid for their services—by the House of Commons, and by local authorities, who, on promoting a bill, had paid representatives.

Dr. HASLIP (Treasurer) said that that question had been most seriously considered before the war, when a special committee went thoroughly into it, and they found that the cost would then be £2,000 a year; members could calculate what it would be likely to cost to-day.

Dr. PRYTHERCH withdrew his motion.

The Supplementary Report under the heading of "Organization" was then approved.

Election of Four Members of Council.

Mr. RUSSELL COOMBE moved that the four members of Council to be elected by the Representative Body as a whole should be restricted to persons who had done official work in connexion with the Association for some period.

Mr. TURNER seconded, and said that it was never intended that these four seats should be an avenue whereby gentlemen made their first appearance in the official work of the Association.

Dr. J. D'EWART opposed this limitation of choice. The Representative Meeting, he said, should have the right to send whom it wished to the Council.

Dr. C. E. S. FLEMMING also objected, and pointed out that what had been referred to as an unwritten law of the Association had had several exceptions in the past.

The CHAIRMAN OF COUNCIL suggested to the mover and seconder that they should withdraw the proposal. As Chairman he reflected, he believed, the wishes of the Council when he urged that everything should be left to the discretion of the Representative Body in choosing members for these seats. Moreover, there might be occasions when it would be difficult to find suitable person who had been the necessary time—three years, he believed, was suggested—on the Council, having entered that body by another method of election.

The motion was, by leave, withdrawn.

SCIENCE.

REMUNERATION OF LABORATORY AND RESEARCH WORKERS.

The CHAIRMAN OF COUNCIL (in the absence of Sir Clifford Allbutt, Chairman of the Science Committee) moved:

That the minimum commencing salary of a whole-time medically qualified laboratory or research worker, who is permanently and exclusively employed as such, should not be less than £500 per annum.

This was agreed without discussion.

The CHAIRMAN OF COUNCIL further moved:

That those medically qualified laboratory or research workers holding part-time appointments should receive remuneration for the time engaged at the rate of not less than £500 per annum.

This was also agreed, and the remainder of the Annual Report of Council under "Science" was then approved.

STATE REWARD FOR SCIENTIFIC RESEARCH.

Dr. J. W. SMITH (Hexham) moved:

That this meeting notes with regret the results of the efforts of the Association in connexion with the reward of scientific workers as detailed in the Annual Report of Council (SUPPLEMENT, April 30th, p. 121), and deplores that the British Empire, with its world-wide possessions, cannot suitably reward the men who have done so much to render life supportable in its many climates, and instructs the Council to take all possible steps to induce H.M. Government to provide efficient reward for scientific work carried out in the interest of the State.

Dr. Smith observed that the discoveries referred to had rendered immense service to the British Empire. It seemed preposterous that work such as that should not be rewarded by the State. It would be generally admitted that a large part of the future of medicine lay with the research worker. There was an extraordinary amount of such work to be done. There was, for instance, the cause of cancer still to be discovered. The man who discovered that and the means of curing it would confer such advantage on the whole of the Empire as could in no way be regarded as adequately rewarded by any pecuniary payment whatever.

Dr. BOLAM accepted the proposition, because, as he pointed out, the SUPPLEMENT showed that they had strained every nerve to find a way of attaining the object the motion had in view. The last paragraph of the Report of the Committee indicated that they had co-operated with the British Science Guild in efforts to find some way by which that might be done. Up to the present moment they had been frustrated, but they meant to lose no opportunity in the future.

The resolution was carried.

Publication of British Medical Association Lectures.

Dr. J. D'EWART (Manchester) moved an instruction to the Council to publish the British Medical Association Lectures in book form. He said that seventeen of these lectures were given last year, and it was considered that a certain number of them were worth a longer life than they would have in a periodical publication. If they were published in permanent form—six, eight, or ten of them at a time—they would become a very valuable means of post-graduate study for members of the Association. Such a course would increase the value of money already spent. Moreover, the scientific value of the Association would be thereby appreciated. The cost of printing need not be great, for the type used in the JOURNAL could be used again. In reply to a question, Dr. D'Ewart stated that the proposal was not that the volume should be supplied gratuitously to all members, but that it should be sold.

The TREASURER said that the publication of the proceedings of the clinical meeting held in London in 1919 was not an encouraging experience. It was one of the best clinical meetings ever held by the Association. The Council passed a resolution that the proceedings be published for the use of members. Two thousand copies were printed, but although a notice to that effect was widely published, applications for copies were received

from scarcely more than 200 members. If the suggestion of Manchester were carried out, he was afraid that the same thing might happen.

The CHAIRMAN OF COUNCIL said that it was difficult for him to accept the suggestion of Manchester, but any energetic Division or Branch could obtain reprints of a lecture without any special cost to the Association.

Dr. W. F. DEARDEN did not think reprints of individual lectures would get the wide distribution they deserved.

Dr. HAWTHORNE said he understood Dr. D'Ewart contemplated publishing, as pamphlets, lectures which had already been published in the JOURNAL. He argued that this proposal was unnecessary, and if adopted would mean a waste of money. It took no account whatever of the right an author had in his own production. Technically, he supposed the author gave his copyright to the JOURNAL, but by courtesy he could incorporate his lecture in any book which he published. Those who were sufficiently old would remember a correspondence in the BRITISH MEDICAL JOURNAL on "How to use the JOURNAL." He ventured to make a contribution to that correspondence, and to explain how, economically, it was possible for any one to collect all the articles he wanted out of the JOURNAL by keeping them on a certain type of file. He had in the corridor leading from his consulting room all the papers from the BRITISH MEDICAL JOURNAL and other journals, filed and indexed, so that in a moment he could turn to any article which had appeared during the last twelve years and read it at his leisure. (Hear, hear.) That method was perfectly simple, and should be adopted by every practitioner. They must not rely on sixpenny pamphlets, which would remain on shelves and become covered with dust.

The motion was lost by an overwhelming majority.

SIR CLIFFORD ALLBUTT, VICE-PRESIDENT OF THE ASSOCIATION.

The CHAIRMAN OF COUNCIL moved that the Right Hon. Sir T. Clifford Allbutt should be elected Vice-President of the Association in recognition of his services as President from 1916 to 1921, and this was carried with hearty applause.

MISSTATEMENT IN THE PRESS.

Dr. A. LYNDON called attention to an inaccurate report appearing in the *Observer* on the previous day as follows: "It was also agreed that the collective opinion of the medical profession could only be adequately and truly expressed to the Minister of Health through a body elected directly by the profession for that purpose, such body having the power of co-option for any special purpose of representatives of the medical profession." This was an incorrect reflection of what the meeting had actually decided. The Annual Representative Meeting had remitted the matter to the Council, and had decided nothing.

The CHAIRMAN said that no doubt the Press would take notice of the correction.

[*The conclusion of the report of the Annual Representative Meeting will appear next week.*]

ANNUAL GENERAL MEETING.

THE Annual General Meeting was held in the King's Hall, Armstrong College, Newcastle-upon-Tyne, on Tuesday, July 19th, at 2 p.m. The President, the Right Hon. Sir CLIFFORD ALLBUTT, K.C.B., F.R.S., took the chair.

INDUCTION OF PRESIDENT, 1921–22.

The PRESIDENT said that his important function was to induct his successor. During the years of his own presidency, when he had many duties to discharge, some onerous and others not onerous, he had formed many new friendships and increased and intensified other more intimate friendships with those with whom he had been brought in contact in the various committees and in the general management of the Association. If, by attempting to perform his duty so far as he could, he had been of any service to the Association, he assured them that the rewards on his side had been ample. In the first place he had formed the most valuable and helpful friendships to which he had already alluded, and in the second place he had been permitted to see the working of the Association from the inside. It had been to him a matter of the very greatest interest to form an acquaintance with the work of those gentlemen in whom the Association placed its confidence, and to know how loyally their tasks were performed. But there was combined with this loyalty and zeal—an unusual combination—great openness of mind, a love of the Association and a desire for its progress, and also a degree of adventure and initiative which was simply invaluable in a great institution. These men had imagination, hope, and foresight, and it had been the greatest possible gratification to think that the profession was managed—because the Association was the profession in large part—by men such as these. (Applause.) It was now his duty—a somewhat sad one—to leave the chair and to introduce to the Association one who, as everybody knew in Newcastle, and far beyond Newcastle, was a distinguished representative of medicine. Professor Drummond had been honoured by the Association in being chosen as President, and he had honoured the Association by his acceptance of that office.

Sir CLIFFORD ALLBUTT, amid loud applause, then inducted Dr. David Drummond, C.B.E., M.A., D.C.L., to be President for 1921–22, and invested him with the presidential badge of office.

Dr. DAVID DRUMMOND took the chair, and in acknowledging the warmth of his reception, said that he was greatly impressed with the honour and responsibility conferred upon him in being elected President of that great Association. For the honour he must express his gratitude and admit his unworthiness. With regard to the responsibility he must claim their indulgence and thank them for their confidence. The difficulty of maintaining the standard set him by his distinguished predecessors he felt very keenly, and this feeling became the more acute when he realized that it fell to his lot to follow in the steps of one of the most able and most popular in the long list of Presidents. He felt, however, that each President must plough his own furrow, and each place of meeting must render its hospitality in its own way. In Newcastle they had made no attempt to compete with their friends in Cambridge, nor with their hosts of previous years. Newcastle had ploughed its own furrow and gone its own way, and had attempted to make the Association meeting a success on its own lines. (Applause.) From president to president, individuals could not be compared, nor could cities be compared. We changed and removed our tabernacles, but held fast to the spirit of our work. Just as a soul in its passage through life changed its body but retained the spirit of its being, so in passing from Cambridge to Newcastle, from Newcastle to Glasgow, and from Glasgow to Portsmouth, the Association carried with it its determination to use all its means and subdue all its powers to the whole-hearted service of humanity. He thanked them most sincerely for their kindness and would do his best, though he knew he would fall far short of his predecessor. (Applause.)

The MEDICAL SECRETARY then read the notice convening the meeting.

MINUTES.

The PRESIDENT moved:

That the Minutes of the last Annual Meeting, held in Cambridge on Friday, June 29th, 1920, be approved and signed as correct.

This was agreed to.

APPOINTMENT OF AUDITORS.

Dr. J. W. SMITH moved:

That Messrs. Price, Waterhouse and Co. be and they are hereby appointed Auditors of the British Medical Association until the next Annual General Meeting at a remuneration of two hundred guineas.

Dr. RIDLEY BAILEY seconded, and this was agreed to.

PRESIDENT-ELECT.

The PRESIDENT reported that Sir William Macewen, C.B., LL.D., M.D., F.R.C.S., F.R.S., D.Sc., has been elected by the Annual Representative Meeting as President of the Association for the year 1922–23. (Applause.)

Sir WILLIAM MACEWEN, who was present, was introduced to the meeting by the PRESIDENT, and thanked the Association for electing him President for the following year. He could have wished that the mantle would fall on younger and abler shoulders, but on behalf of Glasgow and the West of Scotland he could promise them a very hearty welcome. (Applause.)

VOTE OF THANKS TO PAST PRESIDENT.

The CHAIRMAN OF COUNCIL (Dr. Bolam) moved:

That the hearty thanks of this Annual General Meeting of the Association be given to the retiring President, the Right Hon. Sir T. Clifford Allbutt, K.C.B., F.R.S., for his services as President from 1916 to 1921.

He said that there could never be an easier task than to commend such a resolution to a meeting of the profession. When the Association, long years ago as it seemed to-day, approached Sir Clifford Allbutt and asked him to spare time from his academic duties to take part in the more prosaic everyday business of the Association with all its many medico-political activities, they had no thought that he would enter so whole-heartedly as he had done into every detail of the work. He had interested himself in a way that was neither simulated nor superficial. He had shown a deep grasp of every problem which interested members of the profession. Long service in the profession surely entitled him to leisure, but he spared himself in no sense whatever. To every call made upon him he responded, often at great personal trouble, and, he feared, sometimes fatigue. In London, in negotiations with various departmental bodies, they had had the advantage of his prestige and ripe experience, and he could assure the meeting that this Association owed more than he could ever tell to the help of Sir Clifford Allbutt during the last few strenuous years. Turning to Sir Clifford Allbutt, Dr. Bolam said: "We give you our heartfelt thanks for all you have done for us. We know that you will still preserve your kindly interest in all our doings. You will carry with you our heartfelt wishes for your happiness, and you will leave behind you an enduring and fragrant memory."

The vote of thanks was carried with hearty acclamation, all present standing.

Sir CLIFFORD ALLBUTT, who was received with renewed cheering, said that he felt it very difficult to reply to the very kind words which, he thought, had sprung far less from his merits than from the great generosity of the speaker and of the audience. He had always had a very strong interest in the British Medical Association from the earliest time of his connexion with it, because, as he had said on the previous evening, and now said to a larger audience, their profession, on account of the peculiarity of its engagements, tended to keep men very much, he would not say isolated, but very much occupied in their own spheres. Their work was an intimate work, in homes and families, and the other side of that was that it tended to a very great extent to keep medical men away from each other and to prevent anything like congregation of their profession on a large scale and that brotherhood and good feeling and that great influence for good which large numbers would bring with them. He had always felt that the Association was a means not of breaking down loyalty of doctors to their private work, but of adding to it greater interest in public affairs, fostering a spirit of large compromise and mutual help and association. That, he thought, was the object and purpose of the Association in a very great measure, beside, of course, its political work and other public duties. He thought what he might call the internal effect upon themselves was perhaps the most important function which this Association performed. When he heard the very kind words which Dr. Bolam had used he could not help wondering whether in some way or other he had not played quite fair and had made himself appear much better than he really was. ("No, no.") As they wished him to do so, however, he would accept from his heart those generous expressions and also all the help and kindliness and goodwill that had been extended to him. He felt too deeply to say more, but he thanked them very very sincerely. (Applause.)

The meeting was then formally adjourned until 8 p.m. to hear the President's address.

REPRESENTATIVES AND COUNCIL DINNER.

THE Representatives and Members of Council dined together on Friday evening, July 15th, at the Grand Assembly Rooms, Barras Bridge. There was a very large company—about 150—present. Dr. T. W. H. GARSTANG, Chairman of the Representative Body, presided, and proposed the loyal toast.

Dr. J. A. MACDONALD, in submitting the toast of "The Chairman," described him as one who always gave the greatest satisfaction to the members of the body over which he presided. "He is the essence of justice, and takes infinite trouble to see that everyone receives fair play, but if anyone presumes to trespass on his liberty he gets what he deserves." The toast was drunk with musical honours.

The CHAIRMAN expressed the gratitude of the company to Dr. Maclay, Secretary of the Dinner Committee, and Dr. J. D. Wardale, the Chairman, who was unable to be present. The local Executive Committee had decorated a number of them with ornaments, and particularly their President (Dr. David Drummond) had been presented with a special badge by that committee; this was an indication of the spirit of good fellowship animating them.

Dr. R. A. BOLAM proposed "The Staff," emphasizing the indebtedness of the Association to its permanent officials. In speaking of the work of the heads of departments and clerical staff, he made special allusion to Mr. Warne, the Financial Secretary, whose lifework had been spent with the Association. The Editorial Department had an extraordinarily arduous time at that particular moment. Dr. Bolam coupled with the toast the name of the Medical Secretary, which was enthusiastically received.

Dr. COX, in his reply, assured the company that that toast was a great event in the yearly life of the staff. He was speaking for his colleagues when he said that they greatly appreciated the confidence of the members of the Association. Indeed, he thought he might say it was rather more than appreciation—it was affection. (Hear, hear.) It was twenty-eight years since he joined the Association. He had sat under Sir Victor Horsley, Dr. Macdonald, Sir Hamilton Ballance, Dr. Maclean, Sir Jenner Verrall, Mr. Turner, and Dr. Garstang. It was very pleasant to hear the words spoken that evening by his old fellow-student, Dr. Bolam. It was a great thing to have a Chairman of Council who, in spite of bad health, had spent on an average three nights a week in the train for the sake of the Association. Dr. Cox referred also to Dr. Don, his successor in the secretaryship of the North of England Branch, and mentioned with great satisfaction the presence of Dr. R. H. Todd of New South Wales. Ninety-five per cent. of the medical men in Australia were members of the British Medical Association, and a man dare not apply for an appointment unless he were a member of the Association.

Dr. TODD was called upon from all parts of the room. In expressing his appreciation of the privilege of speaking for Australia, he declared that the idea current in some quarters that there was a desire on the part of the Australian Branches to seek independence was quite erroneous. They were thoroughly loyal not only to the Association but also to the Empire. ("Hear, hear," and applause.)

Following the dinner there was a reception by the Ladies' Executive Committee to the ladies accompanying Representatives and Members of Council. Mrs. Drummond received the guests, and a delightful programme of music and recitals was arranged by Mrs. Maclay, with the assistance of Mr. Ellison Fenwick's orchestra.

Association Notices.

ELECTION OF SCOTTISH COMMITTEE, 1921-22.

THE following have been elected:

GROUP I.—Dr. Thomas Fraser, Aberdeen; Dr. F. K. Smith, Aberdeen.

GROUP II.—Dr. D. E. Dickson, Lochgelly; Dr. G. W. Miller, Dundee.

GROUP III.—Dr. J. D. Comrie, Edinburgh; Dr. Robert Thin, Edinburgh; Dr. Joseph Hunter, Dumfries.

GROUP IV.—Dr. J. Grant Andrew, Glasgow; Dr. William Lawson, Glasgow; Dr. John Ritchie, Glasgow.

GROUP V.—Dr. W. Douglas Frew, Kilmarnock; Dr. J. B. Miller, Bishopbriggs.

The Scottish members of Council are also *ex officio* members of the Committee—namely:

Dr. C. E. Douglas, Cupar; Dr. D. Lawson, Banchory; Dr. H. Miller, Hamilton; Dr. C. L. Robertson, Glasgow; Dr. W. Snodgrass, Glasgow; Dr. John Stevens, Edinburgh.

SUGGESTED CHANGES OF AREAS.

Proposed Transference of East Hertfordshire Division from Metropolitan Counties Branch to Cambridge and Huntingdon Branch.

NOTICE is hereby given to all concerned of the following proposal made by the East Hertfordshire Division:

> That the East Hertfordshire Division be transferred from the Metropolitan Counties Branch to the Cambridge and Huntingdon Branch.

Written notice of the proposal has been given to the two Branches concerned, and the matter will be determined in due course by the Council. Any member affected by the proposed change, and objecting thereto, is requested to write, giving reasons therefor, to the Medical Secretary, 429, Strand, W.C.2, not later than August 30th, 1921.

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH: ROCHDALE DIVISION.

A MEETING of the Rochdale Division was held at Rochdale on July 6th, when Dr. BATEMAN was in the chair. The annual report of the Central Council was considered, and the representative was instructed by the meeting. It was agreed that the Division Model Rules of Organization be adopted with certain modifications in matters of detail to be considered at the next meeting.

NORTHERN COUNTIES OF SCOTLAND BRANCH: INVERNESS DIVISION.

THE annual meeting of the Division was held in Inverness on June 22nd, when Dr. T. MACDONALD (Beauly), chairman, presided. The following were elected office-bearers for 1921-22:

Chairman: Dr. John MacDonald (M.O.H. Inverness shire). *Vice-Chairman:* Dr. Thos. MacDonald. *Honorary Secretary:* Dr. John W. Mackenzie, O.B.E., T.D. (Inverness). *Representative in Representative Body:* Dr. J. Munro Moir. *Deputy Representative:* Dr. Jas Murray.

A vote of thanks was accorded to Dr. Thomas MacDonald, the retiring chairman, for his conduct in the chair during the past year.

Dr. JOHN MACDONALD initiated a discussion on the new procedure regarding the domiciliary treatment of tuberculosis, brought about by its transference to the local authority, and with reference to the Circulars No. 5 and 7 of the Scottish Board of Health, 1921. A small Subcommittee was appointed to investigate the question of fees and mileage to be paid by the District Committees of the County Council to medical men for carrying out the work.

The new proposed scheme of the Inverness County Education Authority regarding medical inspection of school children was discussed, and a similar Subcommittee was appointed to discuss fees and mileage with the Chief School Medical Officer with a view to a satisfactory arrangement with the educational authorities on behalf of the medical practitioners concerned in county.

Dr. Kenneth Gillies (Inverness) was nominated a candidate for the Scottish Committee, Group I, on behalf of the Division.

SOUTH MIDLAND BRANCH: BEDFORD DIVISION.

THE annual meeting of the Bedford Division was held at Bedford on June 9th. Previous to the meeting the members were entertained to luncheon by the chairman, Dr. A. E. Street.

The annual report having been read and adopted, the following officers were elected:

Chairman: Mr. W. A. Sharpin. *Vice-Chairman:* Dr. C. I. Harmar. *Honorary Secretary and Treasurer:* Dr. E. R. Fasnacht.

Address on Liver Abscess.

Sir JAMES CANTLIE, K.B.E., gave an interesting address, in the course of which he demonstrated his method of mapping out the abdominal and thoracic organs by means of a stethoscope and a vibrating tuning-fork. Collections of fluid could, he said, be distinguished from consolidation by the fact that the tuning-fork gave no sound when over the former. He then discussed the diagnosis and treatment of liver abscess, of which he had had a large experience in China. When pus had been found by means of an exploratory puncture with a hypodermic needle the surgeon should be prepared to operate at once, as, the capsule of the liver being very thin, rupture of the abscess might take place into the pleura, stomach, or colon. He used a large trocar and cannula 3½ inches in length, and a drainage tube with a knob formed on the end was pushed through the cannula by a forked metal rod, which held it in place whilst the cannula was withdrawn. A long tube was connected to the end of the drainage tube by a glass connector and the end dropped into a bucket beneath the bed. When bile began to flow through the tube the latter was withdrawn. The danger in this operation was puncture of the inferior vena cava, with immediately fatal results. From measurements of a large number of museum specimens he had found that the vein was situated equidistant from front, side, and rear, at a distance of 4½ in. from the surface, when the circumference of the chest was 32 in.; consequently with the above trocar there was no danger of wounding the vein.

Sir James then gave his views as to the anatomy of the liver, which he considered to be in reality a double organ. Although the lobes of the liver were unequal, the hepatic arteries, veins, and ducts were of the same size. By means of injections he had found that fluid introduced into one hepatic vessel would not penetrate to the other side of the liver, apparently from the presence of a septum. In case of direct violence causing rupture of the organ between the right and left lobes there was little or no haemorrhage. For this reason a hepatic abscess originating in one lobe never involved the other lobe, and this applied also to cancer and hydatid cysts.

Referring to modern methods of treatment, he remarked that the tendency seemed to be "One disease, one tabloid." He thought that the old method of giving a combination of drugs had much to recommend it. Morphine had not all the virtues of opium, nor emetine of ipecacuanha. Certainly by the use of emetine liver abscess had become rarer, and blood disappeared from the stools in dysentery, but there often remained a condition of post-dysenteric colitis due to ulceration of the sigmoid flexure. He had been very successful in treating these cases by the application of pure carbolic acid through the sigmoidoscope. In malaria it was good practice to begin with a calomel purge, followed by a combination of quinine, arsenic, and opium.

A hearty vote of thanks was accorded to Sir James Cantlie for his very instructive address.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

THE annual meeting of the Branch was held at Lancaster on June 29th.

Dr. A. T. Barling was elected President, and Drs. Parsons and Rutherford Vice-Presidents for the ensuing year.

The members subsequently visited the County Hospital, where Dr. BURY gave a pathological and microscopical demonstration, followed by an *x*-ray demonstration by Dr. EDMONDSON. The members were afterwards entertained to tea by Dr. Barling. Dr. OLDHAM intimated that he intended to present a cup to be competed for annually by the golfing members of the Branch.

OXFORD AND READING BRANCH.

THE annual meeting of the Branch was held in the Town Hall, Maidenhead, on July 6th, when Dr. A. EDGE, President, was in the chair. The model Branch rules were adopted with some modifications.

The following officers were elected for the ensuing year:

President: Mr. W. J. Foster. *President-elect:* Dr. W. Duigan. *Vice Presidents:* Dr. W. Collier and Dr. A. Edge. *Honorary Secretary and Treasurer:* E. W. Squire.

Dr. C. R. ELGOOD exhibited slides from a case of encephalitis lethargica; Dr. H. C. WILSON showed a case of injury to the neck causing partial paralysis of right arm and leg and sensory disturbances in the left arm and chest wall. After tea, Dr. A. C. INMAN (Brompton Hospital) gave an excellent address on the present position of vaccine-therapy, and Dr. W. COLLIER addressed the meeting on the proposed scheme for the training of nurses.

Mr. J. L. JOYCE subsequently read a much appreciated paper on diagnostic problems in the surgery of the abdomen. The members afterwards dined at Skindle's Hotel.

YORKSHIRE BRANCH.

THE annual meeting of the Yorkshire Branch was held at Bradford on June 30th. Dr. A. Manknell was elected President for the ensuing year, and the retiring President, Dr. James Allan, was elected permanent Vice-President. The Wakefield Division was invited to nominate the President-elect. Dr. R. A. Veale was elected Honorary Secretary and Treasurer. Dr. MANKNELL gave his presidential address, "Reflections of a general practitioner," which will be published at a later date. Mr. H. CAIGER read a paper, "Some notes on the ophthalmic pensioner," and cases and specimens were shown by Dr. VALLOW, Dr. WRANGHAM, and Mr. MCEWAN.

WEST SOMERSET BRANCH.

THE West Somerset Branch held its seventy-ninth annual meeting on June 24th on the summit of the prehistoric camp at Ham. Members were fortunate in having, as cicerone, their president, Dr. Hensleigh Walter, a well-known archaeologist, who, with his father and grandfather before him, have been instrumental in building up the famous collection of prehistoric and Roman specimens which may be seen in the museum in Taunton Castle; no less than a thousand of these specimens were presented by the Walter family during three generations. It had been decided to get away from medicine as soon as the business meeting was concluded, and so, having elected officers for the coming year, the members adjourned for lunch, after which a most interesting paper was read by the President. Flint arrow-heads, scales of armour, coins, tiles, and, in fact, numberless exhibits, dating from present times through the Norman, Saxon and Roman periods and the Bronze right up to the Stone age, being shown. A stroll was then taken round the camp—a vast space three miles about—where Dr. Walter pointed out the proofs, in the walls of presently-worked quarries, of how, in prehistoric times men had lived there, leaving the ashes from their fires mingled with the soil to a depth of several feet, which must have taken several centuries to accumulate, and how later the Romans had adapted part of the hill to their fortifications, piling up earth-

works upon this ash-mixed ground, and again later still, others, probably the Normans, had covered the Roman fortifications with the rubble when quarrying for building stone. To the medical mind, worn almost to breaking point in its attempt to keep pace with the mercurial movement of medical science, contemplation of the slow but steady processes of ancient time came as balm to the sorely wounded. It is now twenty-eight years since a meeting of the Association was held on this spot, on that occasion under the aegis of the present president's father. The hope was generally expressed that it would not be so long again ere another such meeting is held there.

The following officers were elected for 1921-22:

President Dr. H. Walter. *President-elect:* Dr. N. O. Burns. *Honorary Secretary and Treasurer:* Dr. A. J. H. Iles. *Representative in Representative Body:* Dr. J. A. Macdonald, LL.D. *Deputy Representative:* Dr. A. J. H. Iles.

The annual report of the Branch Council stated that during the year there had been four meetings of the Branch at the Taunton and Somerset Hospital in addition to the annual meeting held at the County Hotel, Taunton, last summer. These had been of a political nature with the exception of one, on the occasion of which the President, Dr. BIRKBECK, read a paper on "Surgical experiences on active service." The Council met three times during the year. The treasurer's report showed a credit balance of £5 19s. 9½d., as against £1 8s. 5½d. in the previous year. "It does not follow that the strength of the Branch is in keeping with that of its balance sheet, and it is felt that things would be much more satisfactory if members would make an effort to be present in greater numbers at meetings, and would bring forward medical and especially clinical matters for discussion. . . . The advantages of membership of the Association are not to be gauged by how much head office is able to do for and on behalf of each individual member, but rather by what it has done, and still is doing, for the betterment of the lot of the practitioner at large—especially those whose environment has led them into contract practice—and by the position which it has attained in the political world, where the nation's health is at the present juncture so much to the fore." The report expressed the hope that every man who was engaged in active practice would, if he had not already done so, join the Association, and that those who have at any time resigned from membership would rejoin. The Council expressed its gratitude to and admiration of the public-spirited feeling of those members who, though not in active practice, maintained their connexion with the Association in their membership, and hoped that the number might increase in the interest of the profession at large. The report ends thus: "Dr. J. A. Macdonald has again acted with his usual zeal as representative of the Branch and also as a member of the Council of the Association. During the winter months he was sent on a mission to the Branches in the Dominion of South Africa, which mission had, as we read, proved an entire success."

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

The annual meeting of the Branch was held at Worcester on June 30th, when Dr. STEED, the president, was in the chair. Prior to the meeting twenty of the members lunched together. The formal business having been disposed of, Dr. Steed vacated the chair and introduced his successor, Dr. HOLBECHE (Malvern). Dr. STEED read a paper on enlargement of the thyroid, especially in the young, and urged early treatment. Mr. DUGGAN showed cases of functional paralysis from the orthopaedic clinic and described the treatment. Mr. AINSLIE discussed the treatment of piles, operative and other, and described an operation which he had found most successful. Mr. J. L. STRETTON showed specimens of renal and biliary calculi of special interest, and Mr. BATES showed several pathological specimens and exhibited (1) A case of congenital syphilis in an infant with fracture of both bones of both forearms. (2) Mediastinal tumour (?) with enlarged glands of the arch. It was decided to hold the autumn meeting at Hereford on September 29th.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commanders T. W. Myles, C.B.E., to the *Pembroke*, for R.N. Hospital, Great Yarmouth (temporary); F. G. H. R. Black to R.N. Hospital, Haslar; M. J. Laffan to the *Dublin*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Captains H. Bedingfield, D.S.O., and W. P. Mulligan, O.B.E., retire, receiving a gratuity.

Captain D. T. M. Large relinquishes the temporary rank of Major.

Temporary Captain D. R. Alexander, M.C., relinquishes his commission and retains the rank of Captain.

Capt. (A.) H. A. Crouch, M.C., is placed on the half-pay list under the provisions of Article 312, Royal Warrant, March 9th, 1921.

Temporary Captain G. W. Will to be Captain, with seniority, April 12th, 1918.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain G. G. Allan relinquishes his commission on account of ill health caused by military service, June 3rd, 1921, and retains the rank of Captain.

OVERSEAS FORCES.

SOUTH AFRICAN MEDICAL CORPS.

Temporary Captain E. Hill, M.C., relinquishes his commission on account of ill health, April 14th, 1918 (substituted for notification in the *London Gazette*, May 14th, 1919).

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

Captain (Bravet Major) C. H. Frankau, C.B.E., D.S.O., resigns his commission and is granted the rank of Colonel.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel A. D. Moffat, T.D., having attained the age limit, is retired and retains the rank of Lieutenant-Colonel with permission to wear the prescribed uniform.

Captain C. H. Welch to be Major.

To be Captains: Captain W. Leslie, M.C. (late R.A.M.C.), with precedence as from July 21st, 1918. Captain K. B. Dickson (late R.A.M.C.), with precedence as from April 1st, 1920.

Captain J. J. Scanlan, having attained the age limit, is retired and retains the rank of Captain.

5th Southern General Hospital.—Captain T. Holmes resigns his commission and retains the rank of Captain.

DEFENCE FORCE.

ARMY MEDICAL SERVICE.

3rd (South Midland) Field Ambulance (D.F.).—To be temporary Captain: B. Astley-Weston, April 11th (substituted for notification in the *London Gazette* of May 11th appointing this officer as temporary Lieutenant).

South Midland Sanitary Section (D.F.).—To be temporary Captain: W. H. S. Dunn.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecta, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (3 lines).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Visits of Post-Graduates to Wards; 2 p.m., In-patient Clinics and Operations.

APPOINTMENTS.

JOLLY, R. H. H., M.D.Lond., D.P.H., Medical Officer of Health for the County Borough of Wolverhampton.
PINNOCK, D. Denham, M.B.Melb., F.R.C.S., Assistant Surgeon, London Temperance Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **9s.**, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

HOLMES.—On July 11th, at Eldon House, 2, Promenade Square, Harrogate, to Kathleen Mary St. Lo (*née* Auber), the wife of Geoffrey Holmes, M.B., B.Ch.Cantab.—a son.

HORSBURGH.—On July 12th, at Eastmount, Dover Street, Ryde, Isle of Wight, to Dr. and Mrs E. Leslie Horsburgh—a son.

MOORE.—July 12th, at 56, St. Paul's Road, Clifton, Bristol, the wife of Clifford A. Moore, M.S., F.R.C.S.—of a son.

MARRIAGE.

KEYMS BENNETT.—On June 16th, at St. James's, Piccadilly, by the Rev. H. F. Webb-Bowen, John Johnstone Keyms, L.R.C.P. and S. Ire., only son of the late William Keyms, Esq., of Bantry, co. Cork, and of Mrs. Keyms, Barnard House, Richmond, Surrey, to Alice, second daughter of the late Frank Bennett, Esq., of Cregane Manor, Rosscarbery, co. Cork.

DEATH.

DUNCAN.—On July 12th, at Brighton, Mary Adelaide, widow of Peter Charles Duncan, M.D., M.R.C.S., L.S.A., aged 81.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 30TH, 1921.

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EIGHTY-NINTH ANNUAL MEETING
OF THE
British Medical Association.

NEWCASTLE-UPON-TYNE, 1921.

ADJOURNED ANNUAL GENERAL MEETING.

The adjourned Annual General Meeting was held in the King's Hall, Armstrong College, at 8 p.m., on July 19th. The chair was occupied by Dr. DAVID DRUMMOND, C.B.E., M.A., D.C.L., President of the Association. On the President's left was the Right Hon. Sir Clifford Allbutt, K.C.B., F.R.S., Past-President. Others on the platform were the Lord Mayor of Newcastle (Councillor T. W. Rowe, J.P.), Sir William Macewen, C.B., LL.D., M.D., F.R.C.S., F.R.S., D.Sc. (President-elect), Dr. R. A. Bolam (Chairman of Council), Dr. Wallace Henry (Chairman of Representative Meetings), Sir Jenner Verrall, Sir James Barr, Dr. T. W. H. Gresswell, Dr. G. E. Haslip (Treasurer), and Dr. Alfred Cox (Medical Secretary).

INTRODUCTION TO THE PRESIDENT OF FOREIGN GUESTS AND OF DELEGATES FROM OVERSEAS DOMINIONS.

The following foreign guests and delegates from Overseas Dominions were presented by the Chairman of Council to the President: Dr. Brooker Mills (Philadelphia), Dr. D. H. E. Lines (Tasmania Branch), Dr. R. H. Todd (New South Wales Branch), Dr. J. C. Douglas (New South Wales Branch), Mr. J. C. G. Macnab, F.R.C.S. (Witwatersrand, South Africa, Branch), Dr. W. Nunan (Bombay Branch), Mr. D. C. Trott (Bermuda Branch), and Dr. W. H. Fry (Malaya Branch).

PRESENTATION OF THE ASSOCIATION'S GOLD MEDAL OF MERIT.

The CHAIRMAN OF COUNCIL said: I have the honour to present to you, Sir, for the award of the Association's Gold Medal of Merit, one who is well known, not only in our Association and in England, but throughout the medical world, for his literary and scientific distinction. (Applause.) The Gold Medal of this Association was instituted in 1877 and may be awarded by the Council to anyone who has conspicuously raised the character of the medical profession, whether by scientific work, individual attainments, or for special services rendered to the Association. On every one of these grounds—every one of them—we have always felt that Sir Dawson Williams was worthy of the highest honour this Association could possibly do him. (Applause.)

After a very brilliant academic career, Sir Dawson Williams entered upon the profession of a practising physician, and even in his very early days he was attracted to the literary side of medicine. It is recorded that while a consultant he acted in the capacity of what was then known as hospital reporter, gathering in clinical material for the medical press. Gradually he shifted his activities entirely to the literary side of the profession. For eighteen or nineteen years he has devoted the whole of his time to raising the *British Medical Journal* to its proud position as the premier organ of medical science throughout the Empire. Those who have been associated with him are well aware of his outstanding personal qualities. To the outer world he has often appeared to be reticent and overmodest, and it is perhaps only those who have been brought into close intimacy with him who are aware how largely in his debt for kindly assistance are many in our profession who have achieved literary repute. His constant desire has been to help any who come to him in search of advice. It has been said that the one quality which makes a successful journal is tact on the part of the editor. There may be unbounded capital and plenty of literary resources,

but failing tact no journal will ever be a success. I think that is the secret of the extraordinary success of our Editor and of our journal. (Applause.) I think also that he fulfils that definition of an ideal editor, whose artistic taste for the literary perfection of his paper is a ruling passion, stronger than personal feeling or prejudice, and only second to his love of fair play. (Applause.)

I present to you, Sir, one who is endeared to all of us by his personal qualities, one who has raised our profession by his activities in the literary world, and one who, we hope, will be spared for many years to continue with us in the full enjoyment of his work. (Applause.)

Sir DAWSON WILLIAMS then came to the dais and, amid loud acclamation, was invested by the President with the Association's Gold Medal of Merit for his distinguished services to the Association and the medical profession as Editor of the *British Medical Journal*.

PRESENTATION TO DR. J. A. MACDONALD.

The PRESIDENT: Now I have much pleasure in calling upon Sir Clifford Allbutt, who has just vacated the chair, to make a presentation to Dr. J. A. Macdonald, past Chairman of Council, formerly Chairman of Representative Meetings.

Sir CLIFFORD ALLBUTT: Not for the first time to-day you have relinquished to me, Dr. Drummond, the very agreeable duties which more properly perhaps would have fallen to yourself. But I am very happy in being allowed to undertake those duties, and none of them could give me more pleasure, or you more satisfaction, than that which falls to me at this moment. I have to offer to Dr. Macdonald on your behalf a token of our friendship. The great debt of gratitude which is owing to him from us all is such that no gift or present we could make to him would be in any way adequate to the help he has given us. But at any rate, what we do offer is a token or symbol of that gratitude which I am sure we all feel down to the very bottom of our hearts. (Applause.)

Dr. Macdonald's education began—that, perhaps, is going too far back, but at any rate an early part of his education was one which has stood him in very good stead since, his education as an international footballer. (Laughter.) We have had many opportunities of seeing its advantages. In that arduous service he developed that love of adventure, that sportmanship, and that keen judgement which have so greatly distinguished him in his later career. In recounting Dr. Macdonald's services to the Association I will begin—though I might begin earlier—with his services as Chairman of the Representative Body, a position which he occupied for the usual period, I think, of three years. After this he became Chairman of Council, and during his tenure of that office I had, perhaps, a better opportunity of witnessing the work he did. I also had the great advantage of his friendship during the time—many years—in which we were both of us direct representatives of the profession in the General Medical Council. He still occupies his place in that body—that is to say, he and a few colleagues are the most trusted general practitioners in England. (Applause.) When a man has been put in that position by the universal suffrage of his profession we know that his profession has trusted him and believed in him, and has felt that its destinies were safe in his hands. Especially during the troublous time of the war, when he was Chairman of our Council, it was a great comfort to have a steersman at the helm who had such sound judgement, such great grasp of business, and in whom was reposed such general trust. There are institutions which are greater than the British Medical Association, at any rate there is one, and that is the House of Commons. I venture—with some diffidence, because I am comparing the smaller institution with the larger—to suggest the likeness which Dr. Macdonald bears in our Council and in the Association at large to Mr. Lowther (as he was then) in the House of Commons. (Applause.) The two men showed very much the same qualities when presiding over assemblies, and one invaluable quality stood out in both—namely, a saving sense of humour. We all call it that, because we all recognize how very often humour just saves the situation. Many a time when nerves were a little fretful there was always this quiet determined man with his sense of humour, which always, I think I may say, succeeded in turning the tide and smoothing things over. In this way, as in many others, Dr. Macdonald did our Association invaluable service. In the next place—my account of Dr. Macdonald's services is very bald, owing to the shortness of time—I may remind you that in 1914, such was the confidence of the Association in Dr. Macdonald that he was sent as an ambassador on behalf of the Association to New Zealand and Australia and the Far Eastern Branches. In 1920, when the war was over, he took up again this ambassadorial duty, and was sent on our behalf to South Africa. I might appeal to those overseas friends who are with us to-day to testify also—what we all know, some of us very intimately, others only in a general way—to the very great success of those missions. He was just the very man to go out for us to represent us to the Dominions, and this he has done admirably, strengthening the sentiment of alliance between us and our brethren and so largely strengthening the Association. (Applause.)

When I have mentioned these services—three or four years as chairman of the Representative Body, ten years (I think) as chairman of Council, and these two very long ambassadorial voyages—you may imagine what that means to a man in a large and important general practice; he works, as I understand, without a partner, and the sacrifice that he has made on our behalf in giving up such large slices of time must have been very great indeed. One wonders how it was possible, but for what he has done we must be deeply grateful to him. For his services he has our thanks. He has, what is greater still, I have no doubt, the sense of having done his duty, and this will be to him his great reward. But at the same time we think it is only right and just to offer to him a token of our love and gratitude, and it is this which I now present to him.

Sir Clifford Allbutt then, amid loud applause, presented to Dr. Macdonald a cheque for £942 6s. 7d.

Dr. MACDONALD said: Mr. President, Sir Clifford Allbutt, Ladies and Gentlemen, I have undertaken many tasks in my life, but really I think the one that falls to my lot at the present moment is the most difficult I have ever undertaken—that is, to return you my thanks for this testimony of what work I have done for the British Medical Association. That testimony was not required at all. Nevertheless I am very grateful for it. Twenty years ago, when this Association of ours was a much more humble institution than it is now, when it had nothing like the influence that it has now, I was one of a congress that met in Manchester in the year 1900. I think the only other one who is left of those who met there, still in active connexion with the Association work, is my friend Dr. Cox, the Medical Secretary of the Association. (Applause.) There began the reorganization of the Association which has led it through gradual stages to its present proud position as probably the greatest association, at any rate the most influential association, of medical men there is in the world. (Applause.) That may seem to be a very proud boast, but I am speaking advisedly in saying so, because there is not a department of British Government at the present day which undertakes anything in which the health of the nation plays any part that does not consult the British Medical Association. (Applause.) I can relate, for example, a little incident that occurred only about a fortnight ago, when a deputation of the British Medical Association went to consult certain members of Parliament in a certain matter in which we wanted to support the interest of some of our men. The deputation was met by Viscount Curzon. He said to them, "What is the good of your coming to us? Why don't you go to the British Medical Association?" They said, "We are the British Medical Association." "Oh," he replied, "then there is nothing more to be said, for you will get what you want." (Laughter and applause.) Ladies and gentlemen, in the course of the twenty years in which I have served the British Medical Association, if I have performed some small part in raising that Association from the position which it occupied in 1900 to the position it holds in 1921, I am perfectly well paid for what I have done, and I am very proud of the work so far as I have taken part in it. Still, the proudest part of it is that to-night here I should thus be recognized by my brethren of my own profession. (Applause.) That I should receive this token from them is to me the proudest moment of my life. That they should

recognize that I have done something for the good of our great profession is something of which I shall never cease to be very proud. To you, Sir, continued Dr. Macdonald, turning to the Past President, I must say it is a great added pleasure to me to receive this token from your hands, and to hear from you, a master of English unexcelled in England, words which will be to me a pleasant memory as long as I live. (Applause.)

PRESIDENT'S ADDRESS.

The PRESIDENT then delivered his address from the chair, which was printed in the last issue of the BRITISH MEDICAL JOURNAL (at p. 103). At the close,

Dr. WALLACE HENRY, Chairman of Representative Meetings, in proposing a hearty vote of thanks to the President, said he performed the pleasant duty with peculiar pleasure because their new President was one of many distinguished men who had come from his (the speaker's) own university across the Irish Sea. (Applause.) Many honours and distinctions had come to the President, but he was sure Dr. Drummond looked back with pleasure to the old days behind the walls of Trinity College. The honours he had received had been many and various. They were not limited to this country, but many came from across the seas. The articles the President had written were of such a character that no physician could be considered to know his work unless he had mastered them and read them thoroughly. They in Northumberland and Durham had appreciated his worth, making him their Professor of Medicine and Vice-Chancellor of their University. (Applause.) With such a record of distinction and such a record of scientific knowledge behind him it would ill become him (the speaker) to criticize any part of the address. Yet there was one criticism he would like to offer. On one occasion when Dr. Berry, the great preacher from Wolverhampton, preached in New York, Mark Twain said to him in the vestry, "You will not do for us in New York, for New York people when the service starts like to sit in the corners of the pews and think of the gains and losses of the past week and arrange their work for the future. They could not do that to-day." (Laughter.) Many of them in that room had been engaged in strenuous work during the past four days, and perhaps needed a little quiet meditation. (Laughter.) Their President, however, had so gripped their attention and held it right through the address that their thoughts had never wandered. It was one of the most delightful addresses he ever had the privilege of listening to. In culture, in thought, it was entrancing. Every man and woman in that room would go away with a new inspiration. (Applause.)

Sir JAMES BARR, a Past President of the Association, in seconding the vote of thanks, said the President in his fascinating address had dealt with past, present, and future. It was an American who said we only had to do with the present, because the present would soon be past and the future would soon be present. (Laughter.) A layman said to him the other day, "What is all this I hear about errors in diagnosis? I suppose they are about 95 per cent." (Laughter.) He replied, "I don't think it is as bad as that, but if it is I would strongly recommend you to keep out of the hands of medical men, for in that case there are nine chances to one that you will be treated for a disease from which you do not suffer." (Laughter.) If they were going to advance in the medical profession it must be along pathological lines. He would have been glad if the President had told them a little more about the prevention of disease. The address had been listened to with the keenest attention, and he hoped they would study it carefully when it appeared in the JOURNAL. Under the instructions of such a man as the President the students of Newcastle-on-Tyne would have something to look up to.

Dr. DRUMMOND, in responding to the vote, which was accorded with prolonged acclamation, said that it really ought to have been given to the most estimable Editor, under whose instructions the address was reduced by twenty-five minutes. (Much laughter.) So, on the Editor's behalf and his own, he thanked them. (Laughter.)

Those present then adjourned to the Assembly Rooms Club, where the President and Mrs. Drummond gave a largely attended reception.

ANNUAL REPRESENTATIVE MEETING.

Monday, July 18th (continued).

HOSPITALS.

ADVANTAGES OF VOLUNTARY METHOD OF ADMINISTRATION.

MR. BISHOP HARMAN, in moving;

> That the Representative Body desires to record its belief that the voluntary method of administration of the voluntary hospitals of the country is to the advantage of the public, medical science, and the medical profession, and that it should be maintained,

said that not for ten years had the Hospitals Committee had such a volume of work of far-reaching importance as during the past twelve months. The conditions that followed the war had been so exceptional that the hospital question had been thrust upon the public. He related the steps which led up to the formation of Lord Cave's Committee, and also summarized the resolutions of the Conference of Medical Members of Hospital Staffs, called by the Association last December. The resolutions had been approved by the Hospitals Committee and forwarded to the Council. The action of the Government in appointing Lord Cave's Committee made it necessary for the Association to give evidence before that Committee. The resolutions passed by the December conference were, therefore, in an exceptional position. They had not only been before the Divisions, but had become in a sense public property. The Government had approved them to a considerable extent. The recommendations of Lord Cave's Committee were in nearly every instance in accord with the evidence which the Association had laid before it. He pleaded that the resolutions should be accepted, if necessary with riders, but not with amendments, which would interfere with the original wording.

Dr. F. REES (West Cornwall) asked what was meant by voluntary administration. How did this administration differ from any other administration of any other public body? He could not see how the administration of the voluntary hospital to which he was attached differed in any essential principle from the administration of the municipal isolation hospital. From the point of view of the finance of the administration, he was inclined to think that the municipal administration was distinctly better. He thought that in dealing with this question medical practitioners were in some danger of being influenced by fear of the bogey of socialism.

Dr. NOY SCOTT warmly supported the recommendation. In the last speaker's remarks he saw a tendency to yield to State control of the hospitals. That would be a most lamentable thing. Rather than that he would see many hospital beds closed until voluntary subscriptions enabled them to be opened again. (Hear, hear.)

Dr. F. RADCLIFFE (Oldham) said he had served under both voluntary and State-managed hospitals. He was quite sure that the determining factor in the management of the general hospital was the good of the patients. The determining factor in the management of the hospitals of boards of guardians was fear of the poll. What the medical profession wanted was the good of the patients, not fear of the poll. (Hear, hear.)

Dr. A. LYNDON supported the motion. All the meeting was asked to do was to record its belief that the voluntary method was to the advantage of the public.

Dr. C. E. S. FLEMMING said he had had experience of voluntary hospitals and of hospitals run by local authorities. He came to the conclusion that the advantage of voluntary hospital committees was that they were imbued with a finer spirit through the influence of their medical members. His experience of the public authority was that it had not got what might be called the hospital spirit. It was rather a difficult thing to define, but he suggested that public authorities were rather inclined to estimate the value of the work done in the hospital by counting heads. They had not, he was sure, got the same appreciation of the scientific work, and certainly not the same appreciation of the value of clinical research. He was afraid that was a point public authorities would never adequately appreciate.

Dr. HASLIP asked what was meant by "voluntary administration." In the great London hospitals the hospital secretary or house-governor was really the administrator, and he was paid a very good salary.

Mr. BISHOP HARMAN asked if the British Medical Association was any less a voluntary association because it paid its officials. Because a hospital paid its officers it was none the less a voluntary institution. The governing board of a hospital was the essence of its administration. He did not for a moment belittle the work done in State institutions, but after a long experience he contended that for elasticity and freedom the voluntary hospitals must be maintained. A doctor (Dr. Maudsley) left the greater part of his fortune to promote a voluntary hospital in the sphere of medicine which was the best provided for by the State—namely, the care of the mentally infirm.

The motion was carried with apparently only one dissentient.

NECESSITOUS PERSONS.

Mr. BISHOP HARMAN moved the adoption of the recommendation of Council:

> That necessitous persons shall continue to be treated free.

This, he said, was carrying on in practice the original purpose with which the old hospitals were founded as charities for the treatment of those who were poor. It might be that the time was coming when there would be no poor. Meanwhile, there was no reason why they should cease to recognize the essential foundation of these institutions as places for the help of the poor and necessitous.

Dr. FOTHERGILL (Brighton) moved as an amendment:

> That inability to pay for adequate treatment shall be the consideration for the admission of all patients for hospital treatment: this shall not apply to Poor Law cases.

Dr. Fothergill explained that Brighton had paid close attention to this question. At one of many meetings the staffs of the whole of the voluntary hospitals in Sussex were represented. The word "necessitous" was a Poor Law term, well understood. They failed to see why this Representative Body should depart from the opinion it expressed in 1908.

Dr. F. REES said he maintained that they should do away with a horrible old system and make treatment in hospitals a matter of citizenship. Every citizen should have the right of admission to a national hospital for treatment. They were in danger of making class distinctions, which was a wrong thing to do at this time of day. Who were the most necessitous people in this country to-day? The working classes supported the hospitals out of their wages, and could not enter them as objects of charity. It was the new poor who required greater consideration; were they to go into hospitals as objects of charity? That was an abominable system.

Dr. BRACKENBURY said the last speaker appeared to maintain that if a contribution was sent to a hospital by a body of working men any working man could go into the hospital without becoming an object of charity. Whether it was desirable or not that there should be a charitable element, in any case the contributions of these working men did not pay for their medical and surgical treatment. (Hear, hear.) The fact remained that the staffs of the hospitals treated them on a charitable basis.

Dr. E. W. G. MASTERMAN asked what was meant by "Poor Law cases." The vast majority of hospital patients to-day were qualified to be admitted to Poor Law institutions if they needed it. If what was meant was that if cases were transferred from Poor Law institutions to hospitals the Poor Law guardians should pay for them, he thought everyone would agree; but he did not think that the wording of the resolution made that plain.

Dr. FOTHERGILL said that if it was wished to add the words, "This shall not apply to Poor Law cases, which should be paid for by the Poor Law authority concerned," he had no objection.

Dr. A. E. COPE (Westminster) asked whether the real meaning was not that no patient should be refused treatment in a voluntary hospital on the ground of his inability to pay.

The CHAIRMAN OF COUNCIL suggested that the original motion should stand with the addition of the words, "Nevertheless, this shall not in any way invalidate the decision of the Representative Body of 1908 that the services of the profession should not be given gratuitously to patients who are maintained by public funds."

Dr. FOTHERGILL said that the word "necessitous" appeared to have a special significance in the Poor Law world, and that it was desirable to get rid of it.

Dr. D'EWART concurred.

Mr. BISHOP HARMAN said that the Hospitals Committee did not wish to do anything to conflict with the preceding decision; but in view of the possibility suggested by Brighton he was prepared to accept a rider in the words: "This shall not apply to patients transferred from the Poor Law authority."

Dr. FOTHERGILL pressed for the deletion of the word "necessitous."

Mr. BISHOP HARMAN said he was unable to accept that, because in plain English necessitous persons were persons who could not pay.

Dr. J. CANTLEY (Salford) suggested that the opening paragraph of a later amendment covered the ground that a person who was necessitous in the sense spoken of was one who was unable to pay for adequate treatment.

Dr. G. PARKER (Bristol) suggested the omission of the word "necessitous," and the substitution of some such words as "who are unable to pay for adequate treatment."

Mr. W. MCADAM ECCLES (Marylebone) said that in the days of the formation of the voluntary hospitals most, if not all, the charters were granted with the word "necessitous." Since then the Poor Law had come into existence, and the word had been taken out of its original meaning, and it was because of its occurring in the charters of so many of the old hospitals that the Hospitals Committee had retained that word. Three types of persons were being admitted to the hospitals at the present day: first, the necessitous poor, who went to them in preference to the infirmaries; secondly, those who came by making a payment on admission; and thirdly, those who were sent by the Poor Law infirmaries. With the first class it was still hoped to deal, and that was the origin of the motion by the Hospitals Committee. The second class would be the subject of discussion later. With the third class they were absolutely adamant that the Poor Law authorities should maintain them, and maintain them fully, whilst they were in the voluntary hospital.

Dr. C. BUTTAR suggested that the way to meet the difficulty was that after the words "hospital treatment" in the Brighton amendment, the following should be added, "but that the services of the profession should not be given gratuitously to patients who are maintained in whole or part by public funds."

Dr. W. J. LEIGHTON (Preston) pointed out that there were other authorities than Poor Law authorities that were sending patients into voluntary hospitals, such as county councils, with their tuberculosis departments; therefore some other words than "Poor Law" should be inserted to include these.

Dr. HAWTHORNE proposed that the motion and amendment should be amalgamated in the following terms:

> That necessitous persons—that is, persons unable to pay for adequate treatment—shall continue to be treated free, but this principle shall not apply to any such persons for whose care a public authority is responsible.

Mr. BISHOP HARMAN accepted this form on behalf of the Hospitals Committee.

Dr. J. A. MACDONALD drew attention to a definition of the word "necessitous" given some time ago by the legal authorities of the Ministry of Health. According to them everybody was necessitous who required treatment. It was therefore a most dangerous word to use.

Dr. J. CANTLEY (Salford) moved the omission of the word "necessitous."

Dr. G. PARKER (Bristol) seconded.

Mr. BISHOP HARMAN said there was good reason to leave the word in provided the explanation were given.

Dr. A. E. COPE asked whether the meeting had considered what effect the resolution would have upon the shilling or so paid by out-patients.

The CHAIRMAN OF COUNCIL suggested that the last speaker was confusing adequacy of pay and adequacy of treatment.

Mr. W. MCADAM ECCLES said such persons did not pay for treatment, but for maintenance in part or whole, or out-department expenses. They paid nothing for treatment.

Dr. COPE remarked that the point he desired to make was that the hospitals were not free now.

Dr. BRACKENBURY suggested that the wording of the Brighton amendment at the beginning was very much better than that of Dr. Hawthorne. It was difficult to define a person who ought to be treated free by a hospital as a person who was unable to pay for adequate treatment. It was dangerous to say that they must have provision for patients making some payment for treatment, and the Brighton wording covered that. Then they must proceed with something like the latter part of Dr. Hawthorne's or Dr. Buttar's amendment, but the criterion for free treatment must not be defined as being inability to pay for adequate treatment.

Dr. DAIN said that the Brighton amendment suggested that payment should be the consideration for the admission of patients to hospital treatment, and that was not what the mover meant. Payment was a consideration, but the first consideration was the medical necessity of the patients.

Mr. BISHOP HARMAN said that when these resolutions were drawn up the word "necessitous" had its old meaning of "poor," but since then the word had been defined in quite another sense. He was willing to withdraw his own resolution and accept the Brighton amendment, which was a reaffirmation of the 1908 resolution:

> That inability to pay for adequate treatment shall be the consideration for the admission of all patients for hospital treatment.

After some further discussion, the CHAIRMAN said that the difficulty the proposers of these various alternatives had found in framing one complete resolution led him to suggest that the meeting had better pass first a simple statement that inability to pay for adequate treatment should be the consideration for the admission of all patients for hospital treatment, and leave the development of separate motions or riders to come on afterwards.

Dr. BUTTAR said that he desired the rider to read: "But that such treatment should not be given gratuitously to patients who are maintained in whole or in part by public funds."

Dr. A. C. FARQUHARSON, M.P., appealed to the meeting not to devote too much attention to matters of detail. The Representative Body did itself some injustice and fettered itself to a considerable extent by passing too many motions which concerned matters less of broad principle than of machinery. These details should be left to the executive. The whole scheme of hospital administration was wide and important and very complicated. Detailed rules might be made to operate harshly. The question of inability to pay was one which brought them face to face with a whole gamut of difficulties. Enunciation of broad principles would appeal to the public mind and secure public support, but insistence on rules and regulations would alienate public opinion.

Dr. C. E. ROBERTSON asked for a definition of "public funds" in Dr. Buttar's rider.

The CHAIRMAN: Anything coming from taxation or rates.

Dr. MCGREGOR ROBERTSON said that each voluntary hospital had its own rules and regulations, and he did not think that it was well for that assembly to attempt to deal in detail of this kind. It was well to carry the resolutions in the broad sense, but it was not well to go into small details.

Dr. Buttar's rider was lost by a considerable majority, and the Brighton amendment as accepted by the Chairman of the Hospitals Committee was agreed to.

Dr. MACDONALD asked what was the effect of this decision on the treatment of poor people in the hospitals.

The CHAIRMAN: The decision of the meeting is "That inability to pay for adequate treatment shall be the consideration for the admission of all patients for hospital treatment."

SUBSIDIZING OF VOLUNTARY HOSPITALS FROM RATES.

The CHAIRMAN OF THE HOSPITALS COMMITTEE moved, and it was agreed:

> That it is undesirable that the voluntary hospitals should be subsidized by the Local rating authorities, except in so far as payment is made for the examination and the care of patients for whom these authorities are responsible.

Dr. W. SNODGRASS moved as a rider to add to the above:

> "And unless it be understood that such subsidy does not give the rating authority the right to interfere with the administration of the hospital."

In Scotland they were opposed to governmental or municipal subsidies, if such subsidies carried with them interference with the administration of the hospital. They did not object to money being given to a hospital by a corporation or by the Government, but they did object to a subsidy which carried with it the right of administration.

Dr. C. E. ROBERTSON seconded Dr. Snodgrass's rider.

Dr. H. M. EVANS (Suffolk) said that in his district they had come to certain agreements with local authorities, one being that the Mayor or his representative should be a member of the committee. If this rider were passed the position would be made awkward.

Dr. F. REES said that the meeting had got itself into a difficult position. It had said that representation must go with taxation; but now said, "Have all the money you can get, but do not give representation to those who give it."

Dr. C. E. ROBERTSON (Glasgow) thought that if the proposal was carried as it stood the rating authority would not be able to contribute anything to the support of the local general hospital, except payment for those persons for whom it was responsible. The Corporation of Glasgow was the rating authority for about a million people. If it voted a contribution out of the rates it would be entitled to representation. The Corporation, however, had a fund called "the common good," profits from certain municipal enterprises, and from that fund could vote sums to certain social and philanthropic objects. Nothing must be done to prevent the rating authority giving aid in that way to the hospitals of Glasgow.

Dr. BRACKENBURY said that the local authority had its responsibility to the ratepayers, and if the latter were dissatisfied they had their remedy. If the local authority chose to make a contribution to the local hospital he did not see why the Representative Body should say it ought not to do so.

Mr. BISHOP HARMAN said that there had been a strong propaganda last year in favour of the voluntary hospitals being supported by the county councils. A leading hospital man in London supported that idea with all the force of his well-known advertising capacity. A meeting of hospital doctors said it was a vicious principle, as it would bring voluntary hospitals into direct competition with rate-aided hospitals; public authorities could not be expected to support voluntary hospitals alongside their own and leave the former complete liberty of action.

The rider was lost by a considerable majority.

SUBSIDIZING OF HOSPITALS IN FINANCIAL DIFFICULTIES.

The CHAIRMAN OF THE HOSPITALS COMMITTEE then moved the recommendation of Council:

> That in times of financial difficulty it is desirable that the voluntary hospitals should be subsidized by the central Government, and that such subsidy in the case of any individual hospital should take the form of a contribution proportional to the income received by the hospital from voluntary and other contributions. The subsidies here proposed should be made through some central hospital fund.

The suggestion was modelled upon the established usage in regard to universities. The Government did not give money direct to universities but to a committee which doled it out. The Government had adopted this proposition, so there was no need to discuss it.

There was, however, an amendment by Brighton, which was moved by Dr. FOTHERGILL:

> That the recommendation of Council be deleted and the following substituted therefor:
>
> That at the present time of financial difficulty it is desirable that the central Government should subsidize voluntary hospitals. The subsidies here proposed should be made through some central hospital fund, and should not carry the right of any control in the management beyond that allowed to an ordinary private subscriber.

Dr. Fothergill remarked that Brighton felt the committees would have to be carefully watched, so that they should not have any more power of interfering with the management of a hospital than the ordinary subscriber had.

Dr. BUTTAR suggested that the motion and amendment should be referred back to the Council.

Dr. FARQUHARSON, M.P., supported this view, and Dr. Buttar's suggestion was agreed to.

SUPPORT FOR VOLUNTARY HOSPITALS BY EMPLOYERS AND INSURANCE COMPANIES.

The CHAIRMAN OF THE HOSPITALS COMMITTEE moved:

That greatly extended support for voluntary hospitals should be sought from employers and insurance companies, seeing that they benefit largely both directly and indirectly by the services of the voluntary hospitals."

Dr. A. E. COPE (Westminster) moved that the next business be proceeded with, on the ground that medical men were not concerned with the manner in which the money for hospitals was raised.

Mr. BISHOP HARMAN said that as medical men had been largely responsible for the foundation of the hospitals, so they were interested in their maintenance. The Association had given evidence before a committee appointed by the Government on that particular matter, and that evidence and advice had been appreciated; and the same course had been taken by another very well known medical corporation of great antiquity, though after some hesitation.

On being put to the meeting the motion to proceed to the next business was lost, and the original recommendation of Council carried.

Contributions by Patients towards Maintenance.

The CHAIRMAN OF THE HOSPITALS COMMITTEE moved, and it was agreed:

That every patient of a voluntary hospital who is able to do so should make a contribution, during treatment, towards the cost of maintenance, unless the contributory method of subscription is adopted as essential in industrial areas. In view, however, of the increased cost of maintenance, etc., the Representative Body considers that the contributory rates paid by workmen should be materially increased.

PAYMENT OF PRACTITIONERS FOR SERVICES RENDERED TO PAYING PATIENTS IN HOSPITAL.

The CHAIRMAN OF THE HOSPITALS COMMITTEE then moved:

That where voluntary hospitals provide accommodation for patients who are able to pay for it, no fixed rate of payment for professional services rendered to such patients should be established; the fees so payable to remain, as at present, a matter of arrangement between patient, family physician, and consultant.

Dr. G. PARKER (Bristol) moved an amendment substituting the words "subject to a maximum fee to be fixed by the committee of the hospital in consultation with the staff" for the words "as at present." The point his Division had in mind was that it was very undesirable that the hospital should be utilized for the accommodation of really wealthy patients. The wealthier the patient the more the hospital was disorganized, and the more the staff were subject to accusations of using their position unfairly. Therefore their opinion was that if paying patients were admitted, admission should be limited to persons of moderate means. He knew that the situation in different hospitals—such as the cottage hospital where every man attended his own patients, the larger hospitals, the school hospitals, and others—differed enormously. Therefore it was hard for the staff of one class of hospital to realize the kind of regulations needed by the other type; but, so far as could be judged, there was a great deal of value in the limitation of the class of patients.

Dr. E. R. FOTHERGILL regarded the question as one for every hospital board to settle for itself when it opened its beds.

Mr. BISHOP HARMAN did not see the necessity for the interference of the committee of a hospital; it was a private arrangement between doctor and patient. This accommodation was for paying wards or annexes.

Dr. C. O. HAWTHORNE pointed out that that did not appear on the record. He gathered that Mr. Bishop Harman was thinking not of the staff of the hospital, but of patients admitted to a hospital partly used for patients being attended by their private medical adviser. If the motion were passed as it stood, the physician or surgeon to the hospital would be allowed to make a private bargain for fees for patients in his wards.

A REPRESENTATIVE: They do so.

Dr. HAWTHORNE replied that he had been associated with hospitals for years and had never heard of such a thing being done. If it were, he should expect the Board to dismiss the physician or surgeon from the staff. If it were put, "Persons who are attended by their personal medical advisers," it was clear the staff was excluded; but a member of the staff was bound to give his time and treatment to all the patients admitted, and it would be intolerable if he could go from bed to bed and find out who were paying for maintenance and say, "Now, can you not pay a fee for treatment?"

The CHAIRMAN OF COUNCIL submitted that there were occasions when a patient would be willing to go into a general ward, though his circumstances were such that he was able to pay the whole cost of maintenance, and enter into an arrangement with his private practitioner. That might be the case somewhat rarely, but the possibility of it should not be ignored.

Dr. H. G. DAIN (Birmingham) said that in a hospital which devoted part of its accommodation to paying patients those patients were probably not in a position to pay full nursing-home fees, and to them such accommodation was a great advantage. If the staff or the members of the profession who attended them in those private wards could charge unfettered fees, it would tend to shut out people of moderate means for whom those wards were a great boon. There was a reason for the staff not being permitted to charge more than certain maximum fees fixed in advance. The maximum would not always be charged. The plan was carried out in a number of hospitals and worked very satisfactorily.

The Bristol amendment was lost.

An amendment by Birmingham Central, that there should be a fixed maximum of payment for patients admitted as private patients to voluntary hospitals, was withdrawn.

The original resolution was passed in the following form:

That where voluntary hospitals provide accommodation for paying patients, no fixed rate of payment for professional services rendered to such patients should be established; the fee so payable to remain, as at present, a matter of arrangement between patient, family physician, and consultant.

FORMATION OF MEDICAL STAFF FUND.

Mr. BISHOP HARMAN further moved as a recommendation of Council:

That in the event of decisions being taken which would lead to patients paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which such honorary medical staff may determine.

Dr. G. PARKER moved as an amendment the insertion of "at the request of the medical staff" after "passed."

The CHAIRMAN OF COUNCIL hoped that the amendment would not be accepted. This was not a matter which should be left to the discretion or the punctilio of any staff in the country. It concerned vitally the prospects of hospital working throughout the country in future years. If any staff did not wish to take this money, it could return it in any form it pleased. But there should be some acknowledgement, however small, of the principle that medical treatment was not to be given gratuitously to people who were in some sense able to pay for it. It was important to preserve the principle.

Dr. W. J. LEIGHTON (Preston) agreed with the Chairman of Council. The position of a great many doctors whom he represented was that they were prepared to do everything in their power for the type of person who was necessitous. But when the State in any of its activities, such as the school medical service, stepped in and made itself responsible for the treatment of any class of the community, then the State ought to pay the doctors for that treatment. They felt in the provinces that they had been very badly let down by the way in which the London hospitals and surgeons accepted the responsibility of treatment of school children without any return.

Dr. F. REES said that some of the staffs of the hospitals were so much afraid of their boards of management that they had not the courage to insist on carrying out the resolution of the Association that a percentage of payment for all State patients should go to the staffs.

Dr. PARKER said that in his own experience the staffs did receive a percentage for all patients paid for by the State and for all patients who could afford it.

The amendment was lost.

Dr. FOTHERGILL moved the first part of an amendment

by Brighton, to the effect that the following be substituted for the recommendation of Council:

> That in the event of decisions being taken which would lead to patients making payments not exceeding the cost of their individual maintenance no portion of such payment should be passed into a fund allocated to the honorary medical staff.

The doctors in Sussex considered that if a patient could only afford to pay a few shillings it would be worse than derogatory to them to say they wanted any of that money. It would do doctors in a district much harm if it was thought they were so grasping.

The CHAIRMAN OF COUNCIL opposed the amendment and hoped the meeting would have nothing to do with it.

Dr. BRACKENBURY agreed that it would be a bad thing for the profession if the staff of a hospital collected any portion of a small sum paid by a poor man. There was another difficulty, however, that had to be faced. If they said they would not take any such money there was a danger lest societies which sent in contributions in bulk would hand over the money to individuals who were going to the hospitals. Either the profession had to take the odium cast upon them by taking a proportion of small individual contributions, or they had to run the risk of what might be called manipulation or improper economy on the part of big societies in regard to their contributions. It was a most unfortunate dilemma, but he would rather take the latter risk than the former. (Hear, hear.) The esteem in which the profession was held by the public was due largely to the fact that so much voluntary service was being given. He did not think it ought to be given where the State made itself responsible in any way whatever. If, however, a poor man came into a hospital and could not pay as much as the full maintenance charge, the staff of the hospital ought to be content to receive no part of what he did pay.

Dr. J. D'EWART said that the meeting was asked to legislate for a bad case, which would lead them into difficulties. It was for necessitous cases that the profession had offered to give free medical attendance; and a person was necessitous when he could not himself pay or get someone else to pay for him. That person would certainly be treated. But it was necessary to differentiate between that class of person and the class which was receiving State or other aid. That principle must be maintained.

Dr. HASLIP said that it was almost impossible to find a form of words which would maintain the principle and yet cover so many different grades of cases, from the absolutely necessitous to those who were able to pay an adequate amount.

Mr. BISHOP HARMAN pointed out that the words in the original motion had been before the community for a long period, and very little objection had been taken to them. Lord Cave's Committee had recognized that medical men were prepared to do as much philanthropic work as other sections of the community, but in view of the various degrees of patients it was also recognized by that committee that doctors must be put on a different basis from that on which they had stood in the past. If the principle were established, the hard cases could be dealt with fairly by the hospital boards. He would therefore advise the meeting to throw over the rather weakly, sickly, and sentimental amendments and stick to the plain point of principle.

Dr. FOTHERGILL replied that his remarks applied with more force in the country than in London.

On a vote the first part of the Brighton amendment was declared lost by a considerable majority.

Dr. FOTHERGILL proceeded to move the second part:

> That when the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, insurance company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and at least a fifth part of all such receipts should be passed into a fund which is at the disposal of the honorary medical staff of that hospital.

He said that this dealt with a question which the meeting must ask itself—namely, whether they were going to insist on the contribution covering treatment as well as maintenance. He urged that at least one-fifth of the contribution should be allocated to treatment.

The CHAIRMAN OF THE HOSPITALS COMMITTEE said he was prepared to accept the amendment as a rider with a slight alteration in phraseology, substituting for "at least a fifth part" the words "a percentage." He thought it was a great mistake to put a definite sum in a primary resolution. Dr. FOTHERGILL accepted the alteration.

Dr. C. O. HAWTHORNE agreed that the Brighton rider was simply an extension of the principle of the Council's recommendation, and the principle in his judgement was a bad one. He agreed with Dr. Brackenbury, and would not repeat his arguments. If this were made the rule and policy of the Association and every member of the medical staff of a hospital required to demand the "pound of flesh," the Association would be taking a step which the medical staffs of the voluntary hospitals would not follow. He was quite sure that the medical staffs of hospitals would continue, as they had always done, to treat people who could not pay, but would be willing to demand as a right a contribution for the treatment of all patients in the hands of some public authority. If in the case of patients who were able to pay £2 or £3 a week to cover the cost of maintenance the staffs were to be told that they must demand some portion of that money which was directly contributed for maintenance, the staffs would be driven into a position in which they would be compelled, should the Association insist, to withdraw themselves from membership. They had been told that afternoon that the penetrating arguments of the Hospitals Committee had convinced Lord Cave's Committee that this principle was an adequate one. But a motion was to come before them later, proposed by the Council, which was in direct contradiction to the findings of Lord Cave's Committee—namely, in respect to paragraph 50 of the Committee's report.

Dr. BRACKENBURY urged that there should be a straight vote on the two points raised. All were agreed that the staff should have a proper proportion of the amount paid by the State or local authorities, but some of them would not take any proportion from a poor individual who himself paid.

Dr. F. RADCLIFFE said that to charge a fee, and in addition, when a patient went into the paying ward, to get another 20 per cent. of whatever was paid for maintenance, would place them in a most undignified position. They would be brought into disrepute with the public if they attempted anything of the kind. There was one institution in the North of England which, he believed, got from contributions of this kind about 90 per cent. of its income. It was just about able to carry on. If they were going to ask that 20 per cent. of the whole income be handed over to the staff it would land that infirmary in perpetual debt.

The CHAIRMAN OF COUNCIL said he was sorry to appear so persistent, but he must make a further appeal. In 1917 the Representative Body had agreed to a principle that moneys might in certain circumstances be paid to a fund to be called the Medical Staff Fund. One of the ways in which it was suggested this money should be disposed of was by making a grant to any recognized medical benevolent fund or institution. If they considered such money ought to go back to the institution in which they were working, what was there to prevent them from so disposing of it? Surely, if they did that they would be preserving their principle, and that in a way both dignified and definite. He appealed to the meeting to pass these recommendations as they were.

Dr. BRACKENBURY asked if the 1917 resolution did not only refer to communal payments.

The CHAIRMAN OF COUNCIL: Exactly. But since then the profession has gone a great deal further. (Hear, hear.)

Dr. J. W. BONE (Bedfordshire) moved that the motion by the Chairman of the Hospitals Committee should be amended by the omission of the words "either individually or"; he thought that would do away with much of the difficulty. This amendment was lost.

Dr. WALLACE HENRY observed that Dr. Fothergill had said he was convinced that the provincial hospitals would not support the proposition put forward by the Council. That proposition was drafted by the staff of a large provincial hospital after very careful consideration of the whole matter. They brought together a conference of various other provincial hospitals and put the matter before them, and their suggestion met with a very large amount of approval. To suggest that it was going to be rejected by provincial hospitals was a statement Dr. Fothergill had made out of his own imagination.

Dr. FOTHERGILL replied that he had made no such statement on the motion under discussion.

The CHAIRMAN OF THE HOSPITALS COMMITTEE stated that the proposition was drawn up by the Leicester Royal Infirmary for the Conference of Hospital Staffs last December. At that conference there were representatives of 27 principal London hospitals and of 71 principal provincial hospitals, those hospitals being in almost every case represented by both a physician and surgeon on their staff; 100 of the representatives were engaged in consulting work in their private capacity, and 37 in general practice. The final clause of the report said: "The Leicester resolution was then put and carried unanimously." There need therefore be no fear of the effect of that resolution on the minds of hospital staffs, whether of London or the provinces.

The addition of certain words to the resolution was accepted, and it was carried by more than a two-thirds majority in the following form:

> That in the event of decisions being taken which would lead to patients (other than paying patients as referred to in the previous decision) paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which such honorary medical staff may determine.

Dr. FOTHERGILL moved as a rider, and it was resolved:

> That when the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, insurance company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and a percentage of all such receipts should be passed into a fund which is at the disposal of the honorary medical staff of that hospital.

Dr. E. R. FOTHERGILL moved that the resolution should be brought to the notice of the secretary and the senior honorary medical officer of each voluntary hospital, with a request that the policy therein outlined be adopted by the board. This was carried.

Report of Lord Cave's Committee.

The CHAIRMAN OF COUNCIL moved:

> That this meeting disagrees with the following paragraph 50 (pp. 31–32) of the Report of the Government Committee on Voluntary Hospitals, and maintains that the essence of the voluntary hospitals system is the independent and voluntary management, and that this is in no way related to the conditions of service of the medical staff:
>
> 50. In connexion with the grants by public authorities it appears desirable to refer to the practice which obtains in some hospitals of carrying a proportion (from 10 per cent. to 20 per cent.) of these grants to a staff fund which is placed at the absolute disposal of the honorary staff. In some of these hospitals, as at St. Bartholomew's, at the Royal Infirmary, Manchester, and at the Radcliffe Infirmary, Oxford, the fund has hitherto been applied by the staff to such purposes as the purchase of expensive apparatus or books, and the support of young practitioners taking up special branches of work; but in other cases the fund has been divided among the staff. The practice is supported by the British Medical Association on the ground that patients sent by a public authority are in the position of paying patients, and that in the fees paid for such patients the medical practitioner is entitled to share. On the other hand, the honorary staffs of some hospitals are unwilling to share in such a fund; and two distinguished physicians expressed the view that if the medical staffs came to be subsidized to any substantial extent "the bottom would drop out of the voluntary system." It should be remembered also that, although the services of the staff are honorary, they obtain a valuable return in the form of medical and surgical experience and the enhanced reputation which accrues to a member of the visiting staff of a great hospital. If the system of carrying a percentage to a staff fund is confined to cases where the full cost of maintenance and treatment is paid by or on behalf of the patient, not much objection can (we think) be taken to it; but any extension of the practice beyond those limits appears to us to endanger the future of the voluntary hospitals.

The resolution was carried.

PAYING PATIENTS IN POOR LAW HOSPITALS.

The CHAIRMAN OF THE HOSPITALS COMMITTEE moved the adoption of the report on the future of Poor Law infirmaries, with recommendations as to the utilization of Poor Law infirmaries for civil needs. (Appendix VIII to Annual Report of Council, SUPPLEMENT, April 30th, pages 157–159.)

Dr. C. BUTTAR (Kensington) moved that the report be referred back, on the ground that several very important principles involved had not been thoroughly considered. There were two principles set out in para. 254 of the report of Council (SUPPLEMENT, April 30th, page 134). The first was that paying patients should be admitted to Poor Law hospitals only on the recommendation of their private practitioners. That, probably, all would accept. The second was that patients should be permitted to have in attendance their own doctor whilst inmates of the Poor Law hospital or infirmary. That was a point on which all were not agreed. Much consideration would have to be given to the position taken up by the superintendents of Poor Law infirmaries and in future by medical officers of health if those places ever became municipal hospitals. Nobody had defined what was meant by the administrative supervision by medical superintendents. The trouble was that the question had to be thought of from two points of view. It was quite possible in cottage hospitals or quite small infirmaries in a neighbourhood where there were not many doctors to make arrangements fairly easily by which paying patients might be attended by their own practitioners, but from his visits to various big infirmaries, in some of which they were already beginning to run some of those systems, he was not sure that the plan could be maintained. Before they suggested that it was the right thing to do they ought to hear carefully a large number of the superintendents of those infirmaries. The case of Bradford, now called a municipal hospital, but still an infirmary, had been considered, but at Isleworth, on the outskirts of London, there was what was called the West Middlesex Hospital, which was only another name for the Brentford Poor Law Union Infirmary. It was being run not only as an infirmary, but he believed also as a sort of municipal hospital for the treatment of diseases like tuberculosis, and in addition was to have, if it had not already, beds for all patients. The system adopted there was to take only paying patients on the recommendation of the doctor; therefore the first half of the proposition had already been accepted there. But those patients could not be attended by the doctors who sent them in. Therefore it would be necessary to confer with the medical superintendents and with the boards of guardians to whom they were responsible before it would be possible to get the principle accepted.

Dr. A. C. FARQUHARSON, M.P., seconded the proposal to refer back the recommendation. The whole of this question hinged upon the character of the new health authority. When the Ministry of Health Act was passed in 1919, the then Minister of Health (Dr. Addison) made a definite promise that some new health authority would be created to take over all questions affecting the administration of the Poor Law. We were now well into 1921, with a new Minister of Health, and not a single word had been heard on the subject; he did not think there was the slightest possibility of the new health authority being created in the life of the present Government. The profession was laying its cards on the table, was defining a set of principles to be put into practice in detail before even the character of the body which was to undertake the things they were asking for was known. It was in no spirit of fault-finding that he supported the reference back. It would be well to wait for legislative developments. There would be plenty of opportunity for the discussion and treatment of this question. Several of the points laid before the meeting would not be accepted under any circumstances, and he did not want to see the British Medical Association pledging itself to a line of action when it might be found not at all an easy matter to retire gracefully from the decisions of the Representative Meeting. No harm would be done by waiting; the weapons would remain clean and the powder dry for the proper opportunity.

Dr. E. W. G. MASTERMAN said that the urgent question was that of paying patients in Poor Law infirmaries. It was a question which had been before at least twenty boards of guardians, and various schemes had been put forward and turned down. The boards of guardians were going to act without the profession, and were giving instructions to carry out the system of taking in private patients to a certain though not to the full extent. Several

boards were going ahead with a scheme. One important point concerned the right of the practitioner who sent in cases to attend them himself. Boards of guardians had to be educated to accept that. They would not accept it at present, and it was illegal on a strict interpretation of the law. He thought it a perfectly sound principle. The report touched on the utilization of infirmaries for medical education. This was being brought about in several ways, both in laboratory work and in association with teaching hospitals.

Mr. F. J. S. HEANEY described how the West Derby board of guardians (Liverpool) were practically setting up as a medical corporation, and without any of the restraints of medical etiquette. They were charging an inclusive fee for accommodation and treatment, and were advertising freely. He hoped that this tendency would be stopped. He deprecated this matter being sent back to the Council; it was urgent, and a definite lead ought to be given.

Dr. F. RADCLIFFE (Oldham) spoke as one who was at the same time a general practitioner and an officer of a Poor Law institution which had been taking paying patients longer than any other in the country. He wanted the Representatives to look carefully into these propositions. He did not think there were many Poor Law institutions in this country which could set aside accommodation for a particular purpose. The institutions had to take all that came to their door. There were very great administrative difficulties in the way, to which Dr. Buttar had not done justice, nor could the speaker. If the profession really wanted this thing, it would be better not to ask for it themselves but to await the demand of the lay public and back it up.

Dr. MACDONALD said if they were to wait to do anything until the Government made up its mind as to what it would do they might wait until the Greek kalends. At any rate, they could deal with the authorities at present in existence. If there was any necessity he hoped the British Medical Association would be able to convince the Government as to the way it should go. He had good authority for saying that there was no difficulty in carrying out the scheme suggested. Dr. Radcliffe had called to mind some most transcendental ideas as to objections, but what they wanted was practical politics. These schemes were being elaborated all over the country at the present time, and they must take action to protect their own interests. Their principles were being put into operation quite satisfactorily in Manchester and other places.

Dr. D'EWART said that in Manchester the utilization of Poor Law infirmaries had been dealt with some time ago. Manchester was not the first. Quite a large number of Poor Law authorities in its immediate vicinity had been dealing with the matter for some considerable time. Oldham, for example, had done so. When the guardians dealt with it first they dealt with it on their own lines. They had no guidance. In Manchester the profession went to the board and asked why it had not been consulted in the matter. The guardians replied they did not know that the medical men wanted to be consulted. The attention of the guardians was drawn to the fact that the Ministry of Health had instructed them they must consult the profession in a matter of this kind. The board immediately appointed a subcommittee to meet a subcommittee of the doctors, and to discuss what should be done. There was a perfectly amicable meeting, and both on the part of the guardians and on the part of the practitioners it was felt something should be done. In Manchester they found the hospitals in the same condition as elsewhere—overcrowded, overworked, and under-financed. The result of this meeting of hospital doctors, general practitioners and members of the board of guardians was that they set to work to formulate a scheme which was practically the scheme before this Representative Meeting. That scheme was now in working order at some of the largest hospitals in this country—one with about 2,000 beds, and another with about 1,400. The scheme was working perfectly satisfactorily, administrative difficulties being dealt with as they arose. There were difficulties, but given goodwill on both sides there was no reason why they should not be overcome. When they could go to boards of guardians and say, "Here is a scheme we as the profession have propounded and which is in working order, and a success," then they went with stronger power and met with far less difficulty.

Dr. BUTTAR asked what exactly was meant by "administrative superintendence" in the scheme described by Dr. D'Ewart. Dr. D'EWART said that, so far, the administrative details had had reference to such things as the time and mode of admission and the dieting of patients.

The motion to refer back was lost by a large majority.

The CHAIRMAN OF THE HOSPITALS COMMITTEE then proceeded to move one by one the thirteen recommendations attached to the Report on the future of Poor Law infirmaries (SUPPLEMENT, April 30th, pp. 158–159). He pointed out that the Manchester scheme, which was published in the SUPPLEMENT of July 16th, included every one of the recommendations. There were, besides, about twenty schemes in existence, in every one of which one or other of the recommendations was accepted. He then moved the first of the thirteen recommendations, "Admission of private patients employing their own doctor," to which Dr. FOTHERGILL moved a rider:

> In addition these beds should be available for (i) those patients on the waiting list of a voluntary hospital, and (ii) those able to be transferred from such hospitals, provided that the patients in both classes are capable of being attended by a general practitioner of ordinary competence and skill.

Mr. BISHOP HARMAN claimed that there was no new principle in this rider; all that was desired could be obtained under the original recommendation. It was far better that it should not be specified in set words which might place a limit upon future action. The rider was lost.

The first six recommendations were then carried without discussion. (They were set out fully in SUPPLEMENT, April 30th, pages 158 and 159.) On Recommendation 7 ("Representation of profession on Management Committee"), an amendment was moved by Dr. FOTHERGILL, and accepted with a variation by Mr. BISHOP HARMAN, so that the recommendation read:

> That municipal hospitals should be controlled by an *ad hoc* committee, on which there should be a small but definite representation of the medical profession nominated by members of the local profession.

Recommendation No. 8 ("Hospital benefits not to be confined to particular parish or union") was carried, and Mr. BISHOP HARMAN said that he was willing to accept in substitution for No. 9 ("Use of sick wards in workhouses for chronic cases") some words proposed by Dr. FOTHERGILL:

> That to meet the need of accommodation for senile and chronic cases a part of the Poor Law institution be separated from it whenever possible, which should be formed into an infirmary dependence under the control of the medical superintendent of the infirmary.

The four remaining recommendations were carried, and the meeting then reverted to the formal motion for the adoption of the Report on the future of Poor Law infirmaries, with recommendations as to the utilization of Poor Law infirmaries for civil needs.

POOR LAW INFIRMARIES IN RURAL AREAS.

Dr. H. C. BRISTOWE (Bristol) moved as an amendment:

> That this report shall apply only to Poor Law hospitals in urban areas, and that any question of utilizing such hospitals in rural areas must, if occasion arises, be considered *ab initio*.

In rural areas the Poor Law infirmaries were scattered without regard to convenience of access; moreover, many of the conditions laid down were inapplicable to them. To take the first of the recommendations there was no medical superintendent. The only superintendent was the workhouse master. Further, it was impossible in such cases for general practitioners to send their patients to those purely Poor Law infirmaries. Some were five, ten, or even further miles away. He argued the whole question very fully on the Consultative Council's Report when Lord Dawson went down to Bristol, and pointed out that they could not possibly use those places, even in the way of Primary Health Centres. They were useless to the practitioners in the locality, and would be so to the majority of the persons residing in that area who were ratepayers and would naturally consider themselves entitled to use such hospitals.

Dr. H. C. MACTIER seconded the amendment.

The discussion on this amendment had not concluded when, at 6.30 p.m., the meeting automatically stood adjourned.

Tuesday, July 19th.

On the resumption of the Representative Meeting the discussion of Dr. H. C. Bristowe's rider was continued.

Dr. A. LYNDON urged that as the conditions in London were not the same as in the country, the whole matter of this rider should be remitted to the Council. Dr. BRISTOWE expressed his readiness to accept the suggestion; this was agreed to, and the report was then adopted.

FEE FOR X-RAY EXAMINATION.

The CHAIRMAN OF THE HOSPITALS COMMITTEE moved, and with a variation suggested by Mr. McADAM ECCLES it was agreed:

That the fee to the practitioner conducting x-ray diagnosis and treatment of tuberculous cases referred to hospitals by local authorities should be 21s. per case, or £5 5s. per session not exceeding 2½ hours, in which not more than six cases should be dealt with.

FEES OF OPHTHALMOLOGIST TO POOR LAW INFIRMARY.

The CHAIRMAN OF THE HOSPITALS COMMITTEE moved the recommendation of Council:

That the remuneration of an ophthalmic specialist for attendance on Poor Law patients in infirmaries should not be less than two guineas and mileage if outside London, and three guineas in London, as attendence fee, together with five guineas for each operation performed.

This recommendation arose out of actual applications by members of the Association for guidance on these particular points. It must be remembered that a mileage fee could be obtained in the provinces and not in London. The fee for operation was recommended to be the same in both instances.

Dr. J. J. TISDALL (Liverpool) opposed the resolution. It was one of the pinpricks that the Council was administering to the members, doubtless for their good. It showed a want of vision on the part of the Council—an inability to understand the mentality of the great number of their constituents. Julius Caesar divided Gaul into three parts, but it was left for the Council of the Association to divide Britain into two parts, the greater part being that contained inside the magic boundary of London, the lesser part extending to Shetland Islands and Land's End. On the last occasion on which a similar resolution was brought up at this meeting the only argument was that the expense of living in London was greater than in the provinces. In Liverpool they were not prepared to accept the distinction between the three-guinea men in London and the two-guinea men outside it. Why should this discrimination be made? His own Division would want some stronger reasons. There were men in the large towns of England and Scotland who believed that the work they were doing for the British public was as valuable as that of the proudest consultant in London. They looked upon this matter very seriously in Liverpool. In various parts of the country there was discontent with the way in which the affairs of the Association had for some time been conducted, and this was a most unfavourable time for the Council of the Association to spring this upon them. This was a striking example of the way in which the Council was sinking the interests of the provincial men in favour of those who lived in London.

Mr. H. CAIGER (Sheffield) said that as "a very obscure ophthalmologist," who had perhaps the smallest ophthalmological practice in Sheffield, he yet had a few patients who had been to London and were dissatisfied, and whom he had fortunately been able to satisfy. (Laughter.) He felt it, therefore, his duty to oppose this resolution.

Dr. C. O. HAWTHORNE said he would have very much more sympathy with the opposition to this proposal if the last speaker had been consistent and thorough, and had been prepared to move as an amendment that the fee in Sheffield should be three guineas and the fee in London two guineas. (Laughter.) It was to that end his argument tended. He (Dr. Hawthorne) had no personal concern with the fees under this particular heading, but it was of course notorious that in London the expenses of living were very much more considerable than those in the provinces. ("No," and "Question.") Well, he was in the position of the gentleman who recommended honesty to his son as the best policy, because he had tried both. (Laughter.) He had experience of both London and the provinces. Professional fees, generally speaking, were higher in London than in the provinces. It was not because gentlemen in London desired to place themselves on a higher platform even than Sheffield. It was because the market price, so to speak, was determined by the circumstances of the two districts.

Dr. D'EWART: Pull our fees to your level. (Hear, hear.)

Dr. HAWTHORNE: All right. Raise your environment to my level. (Much laughter.) Proceeding, Dr. Hawthorne said his difficulty with regard to this proposal did not refer to the fees but to the phrasing. The word "specialist" was not a professional term. It had no legal value and no legal protection. It could be used by any man, woman, or child—(Laughter)—without calling down any penalty or restriction from the law. Therefore it ought to be severely discouraged in professional practice. The term obviously here was "ophthalmic surgeon." An ophthalmologist was a person who was interested in ophthalmology, and embraced everybody from the gentleman who taught physiology to the gentlemen of the Spectaclemakers' Company. So long as he called himself an ophthalmic surgeon he enjoyed the protection of the law. Nobody could pretend as against him to have any formal legal qualification.

Dr. BRACKENBURY thought that members would not wish to be unfair to London. For this purpose London meant a very large area. It referred to infirmaries to which an ophthalmic surgeon living in the centre of London might have to travel over a radius of about thirty or forty miles. The point was that the fee for the London man did not carry with it any mileage at all. This by itself was surely an argument for some differentiation in the fee.

Dr. D'EWART asked why there should not be a salary for this particular occupation instead of these fees. In Manchester an ophthalmic surgeon was paid £500 a year for attendance on these individuals.

Dr. H. JONES (Hereford) thought there could be nothing more improper than a differentiation in the fees, and he hoped the proposal would not be carried.

Dr. J. STEVENS said he would support the amendment from the wilds of Scotland. (Laughter.) It was a poor country compared with England, but they got as much money as they could. (Laughter.) He thought the question of mileage should be dissociated entirely from the question of the fees.

Mr. BISHOP HARMAN said he would withdraw the word "specialist" and would substitute the word "surgeon," and to make the meaning clear he suggested the addition after the word "mileage" of the word "fee." He wondered that the meeting did not insist on the practitioner in London charging double the fees charged in the provinces for the protection of the provincial doctor!

The resolution, as amended, was then put to the meeting and lost on a show of hands by 44 to 38.

Mr. BISHOP HARMAN moved that the remainder of the Annual Report of Council under "Hospitals" be approved, and the motion was carried without discussion.

NATIONAL PROVIDENT SCHEME FOR HOSPITAL AND ADDITIONAL MEDICAL SERVICES.

Mr. McADAM ECCLES (Marylebone) moved:

That the draft scheme (based on the Sussex scheme) prepared by the Metropolitan Counties Branch Council of an organization for London of a national provident scheme for hospital and additional medical services be approved by the Representative Body as conforming to the policy of the Association in regard to voluntary hospitals.

The reference to the scheme was the SUPPLEMENT for April 30th, 1921 (p. 161). There was an error in the heading, "Medical Provident Scheme"; it should be "Hospital Provident and Additional Medical Services Scheme." The report of Lord Cave's Committee referred to a provident scheme for hospital benefits and additional medical services. The scheme was inaugurated in Sussex by Dr. Gordon Dill, and the Cave report stated: "The scheme is interesting and well worth consideration." The Metropolitan Counties Branch Council had prepared a draft of a suggested organization of the scheme for London, and it was believed that it in no way contravened the policy of the Association in regard to voluntary hospitals; but he would be glad to be confirmed in that respect by the Representative Body.

Mr. H. S. SOUTTAR (Marylebone) seconded, and asked not only for the approval but for the interest and support of the scheme by every member of the Association. The scheme had been called revolutionary by some of his

colleagues at the London Hospital. It was revolutionary, and in his view the state of the metropolitan hospitals, from a financial point of view, made revolutionary proposals imperative. The London Hospital, in spite of the begging powers of its chairman, was absolutely bankrupt. The Representative Meeting was not the place to go into details, but he had been chairman of a committee which had discussed the matter at great length, and it was considered that on an actuarial basis the scheme would provide the funds for running the hospitals. He had been astonished to hear it suggested on the previous day that it was not the business of doctors to trouble about funds. In his opinion it was the business of every medical man to see the manner in which the funds were raised. Surely it was better that the patient should obtain what he got, not as a matter of charity, but as a matter of right, for which he had paid previously. Finally, the scheme would bring into partnership the consultant and the general practitioner, to the immense advantage of both.

Dr. F. REES (West Cornwall) uttered a warning of the danger that the hospitals might set up a sort of new hospital club for the purpose of getting the money. That might be very detrimental to the general practitioner.

Dr. C. O. HAWTHORNE (Marylebone) moved as an amendment:

> That as at present informed the Representative Body has no reason to believe that the draft scheme, based on the Sussex scheme, prepared by the Metropolitan Counties Branch, is in conflict with the policy of the Association in regard to voluntary hospitals.

In the original motion, he said, there were two separate and distinct propositions. In one it was declared that the scheme was not contrary to the policy of the Association; the other approved the scheme. The two propositions were entirely different, and it was quite possible to adopt one and leave the other. The speeches to which they had listened led them in the direction of expressing a formal approval of the scheme as printed in the BRITISH MEDICAL JOURNAL. If they were asked to do that they should be asked to do so quite plainly and without any possibility of the adoption of such a scheme by a side wind. That would involve a long discussion, for they could not carry a long series of proposals such as were found in the scheme *en bloc*. If the proposal were simply that they did not condemn the scheme as contrary to the policy of the Association, the proposal should not have been brought forward at all. Until someone would stand up and say that this was contrary to the policy of the Association, why should Mr. McAdam Eccles and Mr. Souttar ask them to declare that it conformed to that policy? The scheme had been before the Metropolitan Counties Branch Council, and was carried by a large majority there, but if there was to appear an organized body of opinion in favour of it, it should have been sent to the various Divisions of the Metropolitan Counties Branch to give them an opportunity of expressing their views. If the motion were passed, the Representative Body would be quoted as lending approval to the scheme without having discussed it, when they probably only intended to say that it was not contrary to the hospital policy of the Association.

Dr. F. REES contended that the proposal was quite contrary to the resolution of the Representative Body, which had declared that a percentage of the money collected should be handed over to the staff.

Mr. BISHOP HARMAN said that the scheme, whatever its perfections or imperfections, conformed to the policy of the Association, since it recognized definitely the staff fund. It was not like the scheme for industrial contributions, which contained no such recognition. Technically the industrial contributions were charitable contributions, but out of them had grown a demand for the right of treatment in hospitals. Under the Oxford scheme, started by the Radcliffe Infirmary, there was no security that those brought in under the scheme were fit and proper persons for treatment, and there was no recognition of the staff. But the Sussex scheme included these points. There had been no time to deal with it with a view to official recommendation, but it did conform with the policy of the Association as laid down the previous day in a series of resolutions. He agreed with Dr. Hawthorne's argumentative point, but thought that some general blessing might be conferred upon the scheme.

Dr. W. F. DEARDEN (Manchester) asked whether there was any difference between this scheme and the old scheme of provident dispensaries.

Dr. BRACKENBURY said he was glad the amendment had been proposed, because all that the Representative Body could at present be called upon to say was that the scheme was an experiment and consistent with the policy the Association had advanced. ("No.") He wished to speak from the point of view of the general practitioner, who would be affected by the scheme. Personally, as a general practitioner, he welcomed the scheme whole-heartedly. At the present moment within the metropolitan area their patients were taken to the various London hospitals and received treatment, very few questions being asked. Under this scheme no one could receive any attention at the hospital unless sent there by the doctor. From the point of view of the Association that was a great gain for the general practitioner. Of course, emergencies, street accidents, and the like were excepted. In London general practitioners sometimes found a very great difficulty in obtaining the special hospital facilities they required for their patients. They had at times to stand at the telephone for half an hour cadging round for things they ought to have at their disposal. Under this scheme, if the patient were included under the scheme, they would get with great facility exactly the things they thought the patient should have. When a patient went to the hospital under the scheme and had a consultation, he could not be continued in treatment at the hospital without the consent both of the hospital physician and surgeon and of the general practitioner whose patient he was. These were in a sense details, but they affected the principle. The two principles that the scheme recognized were: first, that there should be earmarked a proportion of the contributions for the benefit of the hospital staffs, and, secondly, that the hospitals should not be used nor treatment given, whether as in-patient or out-patient, without the consent of the general practitioner concerned. On those grounds it would not be improper that the Representative Body should give a general blessing to the scheme, but they were not even asked by the amendment to do that. He hoped if they were, they would do it almost unanimously; but all they were asked to say was that this was a useful experiment which they recognized as being within the limits of the policy laid down by the Association.

Dr. FOTHERGILL complained that the Sussex scheme was being discussed under the Metropolitan Counties scheme, with which he had nothing to do. The CHAIRMAN suggested that the schemes had so much in common that to save time they might well be taken together.

Dr. G. E. HASLIP said that he did not like the wording of Dr. Hawthorne's amendment. If Dr. Hawthorne would alter it so as to withhold approval of the scheme until more was known about it he would support him. He would warn the meeting very seriously before giving absolute approval to the scheme.

Dr. H. F. OLDHAM said that both these schemes had been well advertised to the meeting, but their details could not be discussed that day owing to the shortness of time. He suggested that both the motion by Mr. Eccles and a subsequent motion by Dr. Fothergill on the Sussex scheme, as well as Dr. Hawthorne's amendment, be withdrawn for the present, or that the meeting proceed to the next business.

The motion to proceed to the next business was agreed to, and the Supplementary Report of Council under "Hospitals" was approved.

MINISTRY OF HEALTH.

THE REPORT OF THE CONSULTATIVE COUNCIL.

Mr. E. B. TURNER (Chairman of the Ministry of Health Committee) moved that the Annual Report of the Council under "Ministry of Health" (SUPPLEMENT, April 30th, 1921) be approved. As they would see, he remarked, there were no recommendations from that committee, but he wanted them before they voted on it to refer to the Report and to the three Appendices, which had to do with matters which were, and would be still more, of very great importance. The work of the committee during the year was to carry into effect two minutes of the Representative Meeting last year with regard to submission to the Divisions, and thereafter to a special Representative Meeting, of the general principles underlying the Report of the Consultative Council set up by the Ministry of

Health. From the Appendices attached to the Report they would see the way in which the committee attempted to carry out that mandate. In order to ascertain the opinions of the Divisions in case it might be necessary hurriedly to formulate a policy for the Association they sent out a series of questions. From the answers to those questions it should be possible to formulate a very definite policy. It appeared that one question was not thoroughly understood, so it was restated. They knew what their Divisions thought about the restatement, so he need not enlarge on that. The committee, having gone into the report of the Consultative Council, was suddenly faced with the matter of the Bradford and Willesden municipal excursions into the provision of medical treatment, and had to take very rapid action. They put the matter before the Minister of Health, he thought, with very great success. (Hear, hear.) A stop was at once put to a great many of these excursions into this realm. This had practically been the work of the committee during the year. After the Council had considered the whole Report, the question was mentioned of calling a special meeting of the Representative Body to consider the answers, but it was decided that there was no necessity to involve the Association in such expense and trouble, as no legislation was contemplated.

Dr. E. A. STARLING said he had been asked to say a few words on behalf of Dartford, the Representative for Dartford unfortunately having been summoned home owing to the illness of his wife. The Dartford Division contained several urban and rural district authorities, and besides containing many factories and workshops, had also many hospitals of all kinds. There was very strong complaint that the keenness and efficiency of the great bulk of general practitioners was being ignored, though they formed the backbone of the whole profession. In fact, the general practitioner was being gradually squeezed out. In November Lord Dawson kindly came to attend two meetings in the Division, and it was agreed, as a result of his influence, to form a local medical advisory committee. That committee had met, and had functioned. What was the result? A local authority appointed a medical officer of health in one of the districts, without advertisement of the vacancy, and the man who received the appointment possessed no public health qualification. Representations were made to the Ministry of Health and the appointment was quashed. Now this might have been done just as well by the local Branch or Division of the Association. (Hear, hear.)

Dr. W. N. WEST WATSON (Bradford) wished to add a word or two on the effect produced by the Medical Advisory Committee which was elected democratically from the whole of the profession in the Bradford area. There was published in the JOURNAL an account of the medical officer's scheme for setting up a municipal general hospital, with all the usual departments under specialists. That scheme was so enormous, and on the face of it so expensive, that they in Bradford felt that such a thing should not be allowed to go on if it were possible to prevent it, both as members of the medical profession and as ratepayers. Later in the JOURNAL there was an account of the setting up of the Medical Advisory Committee and also the report representing the views of the local profession, which was sent in to the health authorities. This report cut the ground from under the feet of the health authorities, and he wished to notify the result. Since the report was submitted there had been various meetings and informal talks with the medical officer of health and others, and he had now in his possession, signed by the medical officer, various amendments and addenda to the original scheme, with the result that no one would recognize the revised scheme as the outcome of the original. The health authorities had practically agreed to every statement of the Medical Advisory Committee's report. They had even come down from 1,148 beds, to start with 600, which the Medical Advisory Committee suggested as necessary for Bradford. They had taken the medical men's suggestion as to staffing, as to non-duplication of work carried on by the voluntary hospitals of the city, and as to a joint board to prevent overlapping. They were to have no out-patient department, no casualty department, no eye, or ear, or other special departments. The authorities found themselves after the war with a tremendous surplus of beds taken over from the guardians, and they set to work to formulate this very big scheme. They had now got a large number of beds and were going to use them by moving into these beds a number of their isolated clinics scattered all over the city. He hoped the Medical Advisory Committee would shortly send to the JOURNAL a short account of how the position in Bradford now compared with the original scheme.

In reply to Dr. RADCLIFFE,

Dr. WATSON added that the scheme would have meant an addition of close on 3s. in the £ on the rates. The local Medical Advisory Committee was very strongly supported by a body named the Property Owners' and Ratepayers' Association, and by the Chambers of Commerce and Trade. Every Labour member who stood at the last municipal election was turned down, and it was hoped to turn the remainder down next November. (Laughter.)

Dr. W. PATERSON (Willesden) said that the conditions in Willesden were very much the same as in Bradford. Thanks to the prompt action of the Ministry of Health Committee he thought the whole scheme of Willesden had fallen to the ground.

The Annual Report of Council under "Ministry of Health" was approved.

SERVICES RENDERED FOR STATE OR MUNICIPALITIES.

Dr. C. BUTTAR, on behalf of Kensington, moved:

> That it be an instruction to the Council to report whether additional medical services instituted or paid for by the State or municipality should be open to all members of the community, and, if so, on what terms or arrangements as to payment.

He did not wish to express any personal opinion on the matter. The Labour party had leanings towards making additional medical services available to all members of the community who chose to avail themselves of them. On the other hand, he gathered that the medical profession was inclined to introduce some sort of limitation on the kind of people who should be entitled to use those services. The matter was therefore one for consideration and was probably not ripe for a dogmatic resolution.

Dr. F. RADCLIFFE opposed the motion on the ground that it was bad policy to allow it to be supposed that medical men thought it might be desirable to extend the provision of medical services by the State or by municipalities. He urged that no suggestions in that direction should come from medical men.

Dr. HASLIP said he could see no harm in referring the matter to the Council.

Dr. FOTHERGILL (Brighton) suggested the omission from the motion of the eleven words at the end, after the word "community." Dr. I. W. JOHNSON (Bury) seconded this amendment, and the amendment was carried. Dr. BRACKENBURY said he was glad the amendment had been passed because it made the original resolution absurd. No suggestion for the extension of free services should emanate from the Association.

Mr. E. B. TURNER, speaking on behalf of Kensington and not as Chairman of the Committee, said that Kensington felt as whole-heartedly as did Dr. Brackenbury with regard to the limitation of the services; but the Association had not yet faced the matter and put forth a definite policy, and therefore the matter should be considered by the Council.

Dr. FARQUHARSON, M.P., said that the merits of the case ought not to be discussed on the terms of the motion. Mr. E. B. TURNER said that Kensington merely wished the matter to be digested and brought before the Association later. Dr. FARQUHARSON said that on the remarks of Mr. Turner he hoped the meeting would regard the motion on its merits, and on its merits give it an emphatic negative.

Dr. H. F. OLDHAM (Lancaster) also urged the rejection of the motion.

Dr. W. E. THOMAS (North Glamorgan and Brecknock) moved an amendment to the effect that it should be an instruction to the Council to oppose by all means in its power any further extension of medical services to be paid for by the State. Mr. W. J. GREER (Monmouthshire) seconded, but the amendment was lost by a large majority.

Dr. BUTTAR again explained that he had expressed no personal opinion, but the Kensington Division did not consider the matter yet ripe for a dogmatic statement. If a direct negative were given, of course that would answer the question of Kensington, but he still thought it was a matter for consideration by the Council.

On a show of hands the motion was lost.

METHOD OF ELECTION OF MINISTRY OF HEALTH COMMITTEE.

Dr. A. LYNDON (Guildford) moved:

That the Representative Body is of the opinion that the present method of election of the members of the Ministry of Health Committee is unsatisfactory, in view of the great importance to the profession of the work entrusted to that Committee, and accordingly instructs the Council to take immediate steps to convert the Ministry of Health Committee into a Standing Committee elected in the same manner as the Medico-Political Committee.

His reasons for so moving were that the Ministry of Health Committee was an *ad hoc* committee appointed by the Council, which was an undemocratic proceeding, and that the ordinary standing committees could do its work equally well in ordinary circumstances.

Mr. E. B. TURNER suggested that, as there was no necessity for the committee to continue in being at present, the matter should be left in the hands of the Council, and it should be left to the wisdom of the Council not to reopen the committee unless the action of the Government or the apprehended action of the Government made it necessary. The Council could not absolutely bind itself not to reopen it, but he (Mr. Turner) would give his undertaking to the mover of the resolution to use his influence on the Council against the reopening of the Committee. Dr. LYNDON then withdrew his motion.

Mr. RUSSELL COOMBE said the Council should consider the relations of the various committees which had been for a long time overlapping. He would like to move that it be an instruction to the Council to consider the relations of committees now concerned with public health services, and to report, with proposals for reorganization, to the next Representative Meeting.

Mr. BISHOP HARMAN asked if that was not what the Scrutiny Subcommittee had been doing in the past two years. Mr. RUSSELL COOMBE said this was one of the things that had escaped the Scrutiny Subcommittee. It was felt—he thought he was speaking rightly—that the time had not been ripe to deal with it. Now, however, the time was probably ripe.

Dr. FOTHERGILL said the Council appointed a committee with exactly this reference. Why bring it up here?

The CHAIRMAN: The Organization Committee?

Dr. FOTHERGILL: No. A meeting of the Chairmen of the Committees concerned was to consider the whole problem and report to the Council.

The CHAIRMAN OF COUNCIL said the Office Committee and the Finance Committee had viewed with grave concern the continued activities of committees like the Ministry of Health Committee, in face of their obligation to continue the standing committees. It was quite obvious that if the Ministry of Health Committee were discontinued there would be very little overlapping to legislate for. It was quite within the province of the Organization Committee to put anything in the way of overlapping to the Council.

Dr. J. MCGREGOR ROBERTSON moved:

That, owing to the health services of the country being separately administered in Scotland by the Scottish Board of Health, with the Secretary for Scotland as the Minister responsible to Parliament, the Ministry of Health Committee is not at present adequate, either by composition or by mode of election, for the consideration of the medical and allied services of the whole country; that it be relegated to the Council to consider the whole question of the terms of reference and mode of appointment of this Committee, with this suggestion: that the Committee should be in three parts—(1) The Ministry of Health Committee of England and Wales; (2) the Ministry of Health Committee of Scotland; (3) the Ministry of Health Committee of Ireland.

The mover urged that there was a danger, owing to the separation of the administration of England and Wales, and of Scotland, that the influence and power of the British Medical Association might be curtailed. There was a certain cleavage introduced which was greatly to the disadvantage of the medical profession as a whole. For example, it was certainly understood that in the case of the Nurses' Registration Bill there would be one standard for the whole kingdom and one register. Yet they found there were three standards of training, three standards of examinations, and three registers. In regard to venereal disease propaganda, no part of the money granted by the Government in England could be spent in Scotland. Scotland applied for a similar grant and was refused, and it was only after very strong representations were made to the new Board of Health in Scotland that a small sum was secured. The Scottish members were anxious that they should lose none of the influence of the British Medical Association, and there should certainly be adequate Scottish representation on the Ministry of Health Committee.

Dr. W. SNODGRASS formally seconded the resolution. He suggested that they should have a general committee to deal with the general policy and a local committee.

Dr. J. STEVENS (Edinburgh) suggested that Dr. Drever, the Scottish Medical Secretary, should be asked to make a statement with regard to the present position in Scotland, because they had a Ministry of Health Committee there of which the Scottish Committee of this Association formed an important part.

Mr. TURNER stated that Scotland had been deliberately left out because Scotland had its own Consultative Council and Ministry of Health Committee. If the Council of the Association found it necessary to reappoint a Ministry of Health Committee, he was certain that they would be glad to appoint a Scotsman as liaison officer, in the same way as they did in the Central Medical War Committee, when they had the great advantage of the services of Professor Littlejohn. Scotland had its own committee and must work out its own salvation. Dr. McGregor Robertson was very anxious to have the Association behind him, and so was he (the speaker). But Scotland had Home Rule, and if they appointed a liaison officer that would meet the position. He asked Dr. McGregor Robertson to withdraw his resolution.

Dr. J. MCGREGOR ROBERTSON replied that he was emphasizing the inevitable tendency of division. To say, "You have Home Rule in Scotland; do as you like!" was to do the greatest disservice to the Association. His desire was that that Representative Body should say that in health matters there was no Home Rule, but an imperial policy and an imperial desire to weld more firmly the medical profession of the three kingdoms into one strong, united, loyal body.

The resolution was lost.

MEDICO-POLITICAL.

SALARIES AND SUPERANNUATION OF PROFESSORS AND TEACHERS.

Mr. TURNER moved:

That in view of the longer period required for the education of a medical practitioner as compared with other professions, the salaries of medical professors, teachers, or laboratory workers should be at a higher rate than for other professions.

Dr. H. G. DAIN (Birmingham) moved as an amendment the omission of the reference to other professions. His Division had no objection to the motion, but did not wish to put other people in an invidious position.

Mr. TURNER accepted the suggestion, and the resolution was passed in the following form:

That in view of the long period required for the education of a medical practitioner, the salaries of medical professors, teachers, or laboratory workers should be at a higher rate than at present.

Non-Professorial Staffs.

Mr. TURNER moved as a recommendation of Council:

That the essentially whole-time non-professorial medical teaching staff should be divided into three grades as defined below, and with salaries as stated:

Grade III.—Comprising those who are junior workers temporarily employed on probation; no person shall remain in Grade III for more than two years.

That the minimum salaries for Grade III be as follows:

1st year	£300
2nd ,, ...	£350

Grade II.—Comprising laboratory or research workers, or teachers, who are permanently and exclusively employed as such.

That in accordance with Minute 65 of A.R.M. 1920, the minimum commencing salary for Grade II shall be £500 per annum, and that the full scale of this grade shall be as follows:

1st year	£500
2nd ,, ...	£550
3rd ,, ...	£600
4th ,, ...	£650
5th ,, ...	£700
6th ,, ...	£750

and that this scale should not preclude a further increase in salary when circumstances render it desirable.

Grade I.—Comprising those of Grade II whose qualifications or duties justify a position of seniority in status and a higher remuneration.

That the minimum salaries for Grade I be as follows:

1st year	£700
2nd ,,	£800
3rd ,,	£850
4th ,,	£900
5th ,,	£950
6th ,,	£1,000

and that this scale should not preclude a further increase in salary when circumstances render it desirable.

That after the probationary period (that is, Grade III) has been completed, dismissal should only be possible on grounds of neglect of duty, improper conduct, or incapacity.

Dr. HASLIP wished to know what this would mean if passed. When appointments were advertised at a lower figure than the Association had decided, the advertisements were not published in the JOURNAL. Was this intended in the case of these non-professorial staffs?

Dr. TISDALL said that by this resolution the Association would come up against the prerogatives of every teaching body in the country.

Dr. F. W. GOODBODY (Marylebone) said that the scale was on the same lines as the scale which university teachers in the United Kingdom had been actively working at for the last eighteen months. The scheme had been laid before a great many universities and university colleges, and there had been a tendency to accept it in principle, but they had not been able to accept it as as a concrete proposition, many of the colleges being in the same position financially as the hospitals. It had also been favourably considered by the University Grants Committee. He hoped they would not be absolutely prevented from advertising in the JOURNAL a post whose emoluments did not quite come up to the standard proposed, but that they would make this scheme a thing to be worked for and realized as soon as possible.

Dr. MACDONALD said that Dr. Goodbody had raised a point which gave a great deal of trouble to the Journal Committee. The committee had to decide whether it should or should not advertise positions in the JOURNAL. If a hard and fast line were laid down as proposed in the resolution the committee would know where it stood. He desired that a lead should be given to the Journal Committee.

Dr. W. E. THOMAS pointed out the difference between a university authority and authorities which were empowered to levy rates.

Dr. BRACKENBURY hoped that some discretion would be allowed to the Journal Committee. The case of the universities was not the same as that of local authorities. In dealing with the latter a hard and fast rule could be laid down, because such bodies could levy rates, and in the case of a rate-levying body there could be no positive inability to pay. But it was open to a university to say, "We quite agree with you, but we have not got the money to pay for it." He pleaded for some simple addition to the resolution to clarify the position.

Dr. OLDHAM suggested that the resolution should run: "That in the opinion of the Representative Body the essentially whole-time non-professorial medical teaching staff should as far as possible," etc.

Sir JENNER VERRALL appealed to the meeting not to leave the matter in the form proposed by Dr. Oldham. Either this proposal should be absolutely left alone or plainly settled.

Mr. BISHOP HARMAN also urged that the motion be rejected or accepted as it stood. Much had been heard of inability of universities to pay, but not a word of tenderheartedness for those teachers who had been sweated and overworked for years, and it was time that the Association should take some part in fighting the battles of men who, by reason of their engrossment in their work, were somewhat unfitted for fighting their own. He recommended that the motion be made the policy of the Association.

Dr. HASLIP supported what Sir Jenner Verrall had said. This matter must not be left at a loose end. Unless the Journal Committee had some distinct lead it would not know whether to refuse or accept advertisements. He suggested that a minimum wage be fixed and the matter left there. A man might not be worth more money in his second year and yet might be quite content to remain where he was. Research workers often were actuated rather by love of their work than by love of money.

The CHAIRMAN OF COUNCIL said that here, as in every series of resolutions dealing with salaries, they had to consider the effect of their action upon one of the most valuable properties of the Association. Advertisements for these appointments were taken, as a rule, by the medical papers. There had been an increasing tendency for advertisements of this type to be accepted by lay papers, especially in instances when it might be considered against the policy of the profession to take service under the terms offered. There might be a stern fight in some cases to carry out a scale of the kind proposed. The present was a period of great change in values, and within the next six or nine months there might be even greater changes. His personal opinion was that it was advisable for them to hold their hands in this matter, while endeavouring step by step to attain what was, as they all admitted, a desirable object.

Dr. H. JONES (Hereford) hoped they were not going to throw over their colleagues for the sake of a few extra coppers in the JOURNAL advertisement account. He mentioned that in the case of one appointment of medical officer of health, where the salary offered was £650, the advertisement was refused by the JOURNAL and by other medical papers, and although the advertisement was put in the lay papers there was not a single applicant for the post. In the Society of Medical Officers of Health it was impressed upon their colleagues that they should never apply for an appointment advertised in a lay journal only.

A motion to proceed to the next business was carried.

THE WORK OF THE MEDICO-POLITICAL COMMITTEE.

Mr. E. B. TURNER, in moving that the report under "Medico-Political" be approved, recounted the work of the Council under this heading during the year. Officially and unofficially, the need for the restoration of the fee for the notification of infectious diseases was impressed upon the Ministry of Health. Sympathetic replies had been received, but what delayed the whole matter was the fact that we were not yet at peace. A good deal had also been done in the matter of the taxation of motor cars in accordance with the recommendation of the last Representative Meeting, and in pressing home what the Association desired on this matter they were working in absolute unison with the motor authorities. The effort to obtain recognition of the Association as the mouthpiece of the Post Office medical officers had advanced to a stage at which the case was now before the Postmaster-General. It had probably never got so far as that before, having been "stellenbosched" among the permanent bureaucrats. On the matter of the Tasmanian dispute, the Medico-Political Committee, as trustees of the Central Emergency Fund, had voted the Tasmanian Branch £100 to cover the expenses which the Branch incurred in fighting this just cause. Very prompt action was taken with regard to the Dangerous Drugs Regulations. The moment those regulations were laid on the table of the House the Medical Secretary considered them, and the Committee took up a very strong line, joining in this with the pharmacists. Members of Parliament responded to the stimulus of the Association, and at the meeting at the House those who attended were particularly anxious that their names should be noted as being present. The result was that a committee was appointed after the Home Office had distinctly decided that there should be no committee at all, and the whole circumstances had been considerably improved. Dr. Cox and Dr. Bone gave evidence before this committee, and practically every one of the objections of the Association had been sustained. The work done by Dr. Cox and Dr. Bone was so excellent that it would be a very gracious thing if the Representative Meeting would recognize it by a vote of thanks. (Loud applause.) They gave up time, energy, and brains, and did their work exceedingly well. The work of these two gentlemen helped materially to carry the matter to a successful issue. (Applause.) He would like to move that a very hearty vote of thanks be accorded to Dr. J. W. Bone and Dr. Alfred Cox for their work in connexion with the Dangerous Drugs Committee. ("Agreed," and applause.)

Dr. JAMES STEWART (Lambeth) seconded. As a very old member of the Association he knew what hard work was involved. These two men had done double work, and done it doubly successfully.

The motion was carried with acclamation.

Dr. BONE remarked that he had enjoyed doing the work, and Dr. COX added that he had enjoyed nothing so much for a long time.

A motion by North Glamorgan and Brecknock, "That the Representative Body instruct the Council to press for the restoration of the 2s. 6d. notification fee forthwith, and without further delay," was adopted.

Dr. T. RUSSELL moved, on behalf of Glasgow Eastern: "That this meeting is of opinion that the postage on bacteriological specimens sent to medical officers of health for diagnosis of suspected infectious diseases should be refunded." He pointed out that it was in the interests of the community that these specimens should be sent. Dr. BONE thought they should not go round cadging for such small sums, and hoped this matter would be thrown out. The motion was lost by a very large majority.

There was a motion on the agenda by Buckinghamshire that in the event of a medical man having two cars, only one being used at a time, the licence for the second car should be halved. In the absence of the Representative the CHAIRMAN withdrew it.

Medical Certificates of Inability to Attend School.

Dr. T. RUSSELL (Glasgow Eastern) moved:

That this meeting expresses the opinion that education authorities which desire certificates of health should either provide certificates through their own staff or pay the medical attendant a fee for the same.

Dr. Russell said the parents should not be required to pay, nor the doctor to give the certificate for nothing out of sympathy. No certificate was required for a child in bed.

Dr. H. G. DAIN (Birmingham) moved to omit the words "through their own staff or," and Dr. D. A. SHEAHAN (Portsmouth) seconded

Dr. AGNES ESTCOURT-OSWALD (North-East Essex) said that these certificates were being issued by the staffs of the education authorities every day; the practice was not likely to stop, and it would be impossible to work the exclusion and readmittance of school children if it were not done by their own staffs.

Dr. BRACKENBURY said there were certain cases in which it was quite legitimate for the certificate to be given by the staff of the authority. He therefore thought it would be a mistake to pass the resolution without those words. But if they passed it with them there were many cases in which it would be impossible to enforce it, and particular cases in which they would not wish it to be enforced. There were dangers both ways, and they had better express no opinion.

Dr. H. F. OLDHAM (Lancaster) hoped the resolution would be withdrawn. The condition it attempted to establish existed in many parts of the country. It was only a matter of time before these certificates would either be paid for or provided by the school staff.

Dr. G. M. FOX (Walsall) said that the tendency was for too much of that kind of work to be thrown upon the school medical officers to the detriment of the general practitioner. He supported the amendment.

Mr. TURNER hoped that before voting members would read what the Annual Report of Council had to say on the subject (SUPPLEMENT, April 30th, p. 127). They would then see that everything had been done that the committee had been asked to do, and that they had met with a very considerable amount of *non possumus*, or received no answer at all. Mr. WALLACE HENRY moved the previous question, which was carried.

Fees and Travelling Allowances of Medical Witnesses.

On a motion by Buckinghamshire calling for an adequate travelling allowance for attendance at a coroner's court, and a fee of two guineas for giving evidence and one of three guineas for a necropsy, these fees to apply also to the staffs of hospitals,

Mr. TURNER said that no alteration of these fees could be made without legislation, but the matter had been pressed and would continue to be pressed upon Government departments until there was parliamentary time and willingness to make an amendment of the whole of coroners' law.

The motion was withdrawn.

Fees for Medical Practitioners called in on the Advice of Midwives.

On a motion by Cleveland, that the fee for suturing the perineum, for removal of adherent or retained placenta, for exploration of the uterus, for the treatment of *post-partum* haemorrhage, or for any operative emergency arising directly from parturition, including all subsequent necessary visits during the first ten days inclusive of the day of birth, should be increased from one guinea to two guineas,

Dr. BRACKENBURY stated that last year at Cambridge an undertaking was given to ask practitioners throughout the country for information as to the character of the cases for which they received the fixed fee of one guinea. The Minister of Health had alleged that this fee of one guinea covered all sorts of cases, the large majority of which were of the most trivial kind. Until the Council could combat that position by means of information received directly from practitioners, they were not in a position to argue that the fee should be more than a guinea. This information had been asked for in most pressing terms, both in the SUPPLEMENT and in the Medical Secretary's Monthly Circular, but without avail. It was very desirable that practitioners should inform headquarters exactly what they had to do in these cases, otherwise the decision at Cambridge accepting the one guinea fee should be adhered to.

The motion was referred to the Council, together with further motions by Cleveland and Preston, pressing for an increased fee for attendance at or in connexion with an abortion or miscarriage.

Whole-time Officials and Private Practice.

Dr. SHEAHAN (Portsmouth) moved:

That the Representative Body is of opinion that medical men practising as whole time officials of public authorities should be precluded from practice for private reward in the same district (i) while holding their appointments, and (ii) for a period of five years subsequently, except with the consent of the local medical profession.

He added that it was considered very unfair that young men should be imported into towns and enter into competition with the older men already established there. The words "except with the consent of the local medical profession" would safeguard exceptional cases.

Dr. E. W. G. MASTERMAN (Camberwell) opposed the motion on the ground of its unfairness towards medical officers in Poor Law infirmaries.

Dr. F. RADCLIFFE asked the Solicitor whether, even if one felt sympathy with the motion, it could have any effect in so far as it would be acting in restraint of trade.

The SOLICITOR (Mr. W. E. Hempson): I see difficulty in dealing with the matter at all. I had already mentioned to the Chairman a difficulty with regard to the concluding words, "except with the consent of the local medical profession." I know of no way in which you could arrive at that, and presumably you would have to make that consent unanimous. As it seems to me the only way in which this matter could be carried out legally would be to make it a condition of restraint in holding the appointment; this would have to be entered into in a bond in the document by which the appointment was conferred; and then you would have to consider the question which is raised by Dr. Radcliffe as to whether the law would consent to it. Provided the consideration was clearly stated, I think it would be within the power of the medical man to bind himself to that effect; and I think that the law, if it could be shown that the consideration was accepted by him as a condition precedent to his placing himself under that obligation, would give effect to it by way of injunction. I do not think it would bear the construction placed upon it by Dr. Radcliffe.

Mr. H. CAIGER (Sheffield) opposed the motion, which was ultimately withdrawn.

Federation of Medical and Allied Societies.

Dr. D. E. FINLAY (Gloucestershire) moved:

That the Representative Body is of the opinion that the Association should agree to appoint accredited representatives to the Federation of Medical and Allied Societies.

The motion was defeated without discussion, not a single hand being held up in its favour, and a further motion by Thanet, which was formally moved by the CHAIRMAN (in the absence of the representative), instructing the Council, in view of the disorganized state of the profession, to consider the question of the amalgamation of the Association with other medico-political bodies, was similarly negatived.

Treatment of School Children.

Dr. H. M. EVANS (Suffolk) moved for a reaffirmation of the policy of the Association on the question of the treatment of school children by the education authorities with a view to the more general employment of the general practitioner. He supported the motion in a speech which was indistinctly heard at the press table.

Dr. BRACKENBURY said that he understood the proposal was simply to reaffirm the policy of the Association, and to this there could be no objection.

The motion was agreed to.

Duty of Council as to Fees.

Dr. B. G. BASKETT (South Essex) moved:

That when the Representative Body has fixed fees, salaries and conditions of service for work done for local authorities, and payment for which work is subject to approval by a Government department, it shall be the duty of Council to bring pressure to bear on the Government department concerned to sanction such salaries, fees and conditions of service.

This was carried without discussion.

In the absence of the representative for Thanet the following motion was referred to the Council:

That inasmuch as the non-conformity of the London County Council to the Association's scale of fees for part-time medical practitioners for ophthalmic work, and *x*-ray treatment of tinea, handicaps practitioners in certain parts of the country in their efforts to obtain the fees on that scale, the Representative Body instructs the Council to consider the matter with a view to such action as may be possible being taken to remedy this state of affairs.

Mr. E. B. TURNER (Chairman of the Medico-Political Committee) moved that the Supplementary Report of Council under "Medico-Political" be approved, and added that a deputation would shortly be sent (it was hoped) to the Minister of Health on the question of professional secrecy. An appointment with the Minister had been postponed owing to the Representative Meeting.

Dr. HAWTHORNE invited the attention of the chairman of the Committee with regard to the action of the Paddington local health authority on a matter relating to an individual member of the Association, who had suffered an injustice, and asked whether the matter had been overlooked.

Mr. TURNER said that the matter had not been overlooked; the Committee had come to the conclusion that the best chance of redress was to get the medical members of Parliament to take it up, but the shortness of the time at the disposal of those members had prevented them so far from discussing the matter with the Association. The difficulty had been to arrange a day when the medical members of Parliament could and would meet the Committee.

Tasmanian Medical Act.

Dr. D. H. E. LINES expressed the thanks of the Tasmanian Branch for the grant of £100 made to enable them to defray legal expenses. They had had a very serious dispute, and things were none too good with them. It was not merely the amount of money granted he wished to refer to, but also to thank the Council, the Representative Body, and the Committee for the time, care, and thought they had given to questions pertaining to overseas matters. They in Tasmania deeply appreciated that. When they recognized the care of the mother Association for her children on the other side of the world, was it any wonder that they did not desire, as had been aptly expressed in another place, to go out of one door and in by another? They wished to remain in the Association. (Applause.)

The remainder of the report of the Committee was then approved.

NATIONAL HEALTH INSURANCE.

CONSTITUTION OF INSURANCE ACTS COMMITTEE.

Dr. BRACKENBURY (Chairman of the Insurance Acts Committee) moved:

That the Chairman for the time being of the Conference of Representatives of Local Medical and Panel Committees called by the Insurance Acts Committee of the British Medical Association be a member *ex officio* of the Insurance Acts Committee.

Dr. BRACKENBURY explained the position. Up to last year the Insurance Acts Committee itself appointed the Chairman of the Conference of Panel Committees. Last year it was decided that the Conference should appoint its own chairman, as was most proper. It was essential that the chairman so appointed, when he came to preside over the conference, should be well acquainted with all the affairs with which that conference had to deal. In order that that might be so, he should be a member of the Insurance Acts Committee.

The motion was agreed to.

Dr. BRACKENBURY then moved the approval of the remainder of the report under "National Health Insurance."

Dr. FOTHERGILL suggested that the Representative Body be asked to approve the scheme for disposing of the Defence Fund. The matter, however, was not discussed.

Insurance Record Cards.

With regard to the next motion by Mid-Cheshire:

That the Representative Body considers the insurance record cards are unnecessarily irksome and impracticable, and that the scheme by Dr. Locket, as published in the SUPPLEMENT of February 19th, 1921, be considered by the meeting,

the CHAIRMAN said Mid-Cheshire happened to be his own constituency, and he was prohibited by the rules of the Association from acting on behalf of the constituency so long as he was chairman of the meeting. At the same time he could put *pro forma* motions, the proper mover of which was not present. He therefore moved this as representing the Division.

Dr. F. REES wondered what had become of all their old records. Were they reduced to pulp during the war because of the shortage of paper? What was to become of all their present records? Was it supposed that they would have a record of every insured person's life in order that some person might go through all the records and trace the beginnings of certain diseases? He did not think that that would ever be done. These cards would be of no possible use. He supposed regional officers who at present had not much to do would go round and see that the cards were filled in properly. The whole thing was futile and ridiculous.

Dr. BRACKENBURY said whatever their feelings might be with regard to the record cards he hoped the motion would be withdrawn. The position was that they had agreed that the internal details with regard to the administration of the Insurance Act could be best dealt with not at that Representative Meeting but at a conference of the Panel Committees. The Insurance Acts Committee was at this moment engaged in the task of collating all the objections they had received—and they were many—to the cards, or the form of the cards, or the procedure in connexion therewith. They were drawing up a reasoned memorandum, setting out what the objections were and making suggestions. Their report would be placed before the Conference of Representatives of Panel Committees in October, which would determine what action should be taken.

The motion was withdrawn.

NURSING BENEFIT.

Dr. C. J. PALMER formally, and, he said, with some diffidence, moved a motion by Nottingham:

That the Representative Body considers it desirable that one of the first benefits to be supplied by the approved societies out of their surplus funds should be "nursing benefit."

The motion was withdrawn, as was another motion by Bournemouth urging the disposal to hospitals of the surpluses of approved societies.

There were next considered two motions by Nottingham:

That all nursing schemes should be administered by the Insurance Committees as a part of medical benefit, and that the nurses should always act under the doctor's intructions.

That, where possible, use should be made of existing "nursing associations."

When Dr. C. J. PALMER moved the first of these, Dr. FOTHERGILL said the wording was extraordinary. Surely "all nursing schemes for insured persons" was intended. Dr. BRACKENBURY said the correct wording would be "established as additional benefits under the Act." This was accepted by the mover.

Dr. A. LYNDON said in all parts of the country there were efficient nursing services, not only for insured persons, but for uninsured. He mentioned a local association

which would strongly resent being placed under the Insurance Committee or any other public authority.

The CHAIRMAN said he understood these resolutions did not apply in any way to existing voluntary nursing associations. They were directed at nursing associations which had been or might be set up by approved societies for the benefit of insured persons only.

Dr. BRACKENBURY pointed out that the approved society as an additional benefit might establish a nursing scheme. In all cases of which he had heard a contract with existing nursing associations was entered into. It was for existing associations to say whether they would enter into such a contract. Nothing they could do could take away from the approved society the right of using its surplus funds to establish a nursing scheme.

Dr. MCGREGOR ROBERTSON said he did not understand the resolutions at all. He moved that they be referred to the Council for consideration. Dr. C. E. ROBERTSON (Glasgow) seconded.

Dr. W. J. LEIGHTON sincerely hoped the scheme in the second motion would be carried through. Personally he had the greatest confidence in the Queen Victoria Jubilee Institute, Queen Alexandra's nurses, and other such associations, but he would not trust any nursing organization which was under the thumb of the approved societies. If the approved societies started their own nursing associations they would be receiving private reports from their own officials that might bear very hardly upon the patient's panel doctor.

Dr. BRACKENBURY said that under the Insurance Act approved societies, if they had a surplus, were entitled to set up certain things which were called "additional benefits." These were administered wholly and solely by the approved societies themselves unless they were declared by the Ministry of Health to be in the nature of medical benefit. The urgency of the thing was that approved societies under that clause were now proposing nursing schemes as additional benefit and it seemed important that when these schemes were sanctioned by the Ministry it should be declared that they were in the nature of medical benefit so that in the administration the profession should be represented.

By 45 votes to 35 it was decided that the two motions should be referred to the Council.

Tuberculosis Mortality.

Dr. B. G. M. BASKETT (South Essex) moved on behalf of South Essex:

> That this meeting calls attention to the slackening of the fall in tuberculosis mortality from 1896 onwards, culminating in an actual rise in the death rate after the Insurance Act; and instructs the Council to institute an inquiry into the effect of the Act upon the nutrition of the poor.

The basis of his argument, he said, was that national mortality from tuberculosis depended upon the rate of wages. He had been working at this subject for the past twelve years. He never yet found a case where a rise in the death rate had not been preceded three years before by a fall in wages, nor had he ever seen the converse. Tuberculosis mortality was an extraordinary index of economic conditions. Was there any fair man who could say that any other school of thought than his (the speaker's) could have foreseen that in 1912 there would be a rise in 1915, or could have foreseen in 1916 there would be a rise in 1918? For a long time there was a fall of 200 per million. If it had continued to fall at the rate at which it fell at the end of Mr. Gladstone's life, instead of being somewhere about 1,000 per million deaths now it would be only 400. Six hundred lives per million were being wasted somehow. It had been pointed out that poor people had to save money out of their food. They had to consider the effect of such legislation as the Insurance Act, because poor families went short of food in order that they might make insurance payments for medical benefit.

The motion was lost, and the Annual and Supplementary Reports of Council under "National Insurance" were approved.

A motion by Tunbridge Wells, moved by Dr. E. A. STARLING, instructing the Council to further the just claims of insurance practitioners for the preservation of the capital value of their panel practices, was adopted without discussion, and with an expression of thanks by Dr. Starling to the Insurance Acts Committee for what it had already done in this matter.

PUBLIC HEALTH AND POOR LAW.

SECURITY OF TENURE OF HEALTH OFFICERS.

Dr. T. RIDLEY BAILEY (Chairman of the Public Health Committee) moved that the report of Council under this heading be approved. There was one item in the report, he said, which made it not only important but actually momentous. This dealt with the security of tenure of medical officers of health. For more than twenty years the Association had been fighting to secure that medical officers of health should have security of tenure. From time to time they had failed, but at last they were glad to report that success was complete, for the bill (the Public Health [Officers] Bill) had passed both Houses of Parliament and only awaited Royal assent. It was only fair that it should be said one of their own members present that day had been the leader in this movement; he had given his time and energy for practically twenty years, and he (Dr. Ridley Bailey) was glad to say he had been associated with him during the whole of that period. That Association owed a deep debt of gratitude to Dr. Herbert Jones. (Applause.) It was interesting to know that he actually attended in the Lobby during the passing of the bill through the House of Commons. The Association also owed a great debt to Sir Philip Magnus, who had crowned many services for them by what he had done in connexion with this bill. He secured the passage of the bill, not exactly as they wanted it, but to all intents and purposes in its essence. The excellent account in the JOURNAL of July 16th (p. 83) would give them the history of this movement.

The motion was agreed to.

On the motion of Dr. C. E. ROBERTSON, it was agreed that where the words "Poor Law" occurred the word "English" should be inserted.

Dr. T. RIDLEY BAILEY moved a vote of thanks to Dr. Herbert Jones and Sir Philip Magnus for their arduous work in connexion with this matter. This was carried with loud applause, and Dr. HERBERT JONES briefly responded.

Vaccination.

Dr. T. RUSSELL (Glasgow East) moved the following:

> That the General Medical Council be petitioned to declare that it be regarded as infamous conduct in a professional respect for any public vaccinator or practitioner to train other than medical students in the operation of vaccination.

This was agreed to without discussion.

MEDICO-SOCIOLOGICAL.

On the motion of Dr. FOTHERGILL (Chairman of the Medico-Sociological Committee) the Report of the Council under "Medico-Sociological" was approved. Dr. Fothergill then moved that the Supplementary Report of Council under "Medico-Sociological" be generally approved. This included the report of the Committee on the Value of Maternity and Child Welfare Work. This, he said, was the first time the British Medical Association had adopted the line, through the Council, of going outside its own individualism. They had adopted what was a temporary measure—namely, that of securing the co-operation on a committee of interested laymen—to see how it succeeded. This report was unanimous, and that was an enormous gain when the Association for the first time took up such an important problem.

Dr. D'EWART wished to draw attention to the fact that this report did in essence absolutely bless the infant and child welfare centres. Did they wish as general practitioners, knowing what they did know about these centres, to give them their unqualified approval? ("No.") He was amazed to hear Dr. Fothergill refer to the matter as he had done. He (Dr. D'Ewart) wished to criticize the report considerably, but could not say more at this late hour of the meeting.

Dr. FOTHERGILL: We are not "blessing" this report.

Dr. D'EWART: Read it. It is blessing the system.

Dr. FOTHERGILL said they agreed that the way in which many centres were conducted was detrimental to the health of the public, but they said these should be amended on certain lines. It would be seen from the report that they emphasized the fact that the main object should be educational and advisory. He recommended the meeting to read carefully the resolutions in the report.

Dr. J. STEVENS urged that this matter required most careful consideration, and ought not to be rushed. Dr.

McGREGOR ROBERTSON hoped it would not be approved now, as there were several important questions to be raised.

The CHAIRMAN pointed out that the mover had replied, so there could be no further comments.

The motion to approve the report was lost by a large majority.

Dr. C. E. S. FLEMMING: Has the report been circulated?

The CHAIRMAN: Yes; it has been circulated as the report of the Committee.

SCOTLAND.

Dr. W. SNODGRASS (Chairman of the Scottish Committee) moved that the Report of Council under "Scotland" be approved. He expressed high appreciation of the action taken by Dr. Drever, the Scottish Secretary, for the work he had done in securing the terms resolved upon at the last annual meeting for attendance on school children. It was due to Dr. Drever's energy, tact, and ability that they had been able to obtain amendments of the fees offered by the education authorities. (Applause.)

Dr. J. B. SIMPSON (Caithness and Sutherland) referred to the Highlands and Islands Medical Service. The practitioners there had received a supplementary grant amounting to an increase of 60 per cent., or a little over, on the mileage grant for 1920. They were quite aware that this had been given them by the Scottish Board of Health, not as a result of their own efforts, but owing to the persistence and diplomacy of the Scottish Committee, not forgetting the Scottish Medical Secretary, who had rendered most excellent service in this cause. They were anxious to provide a good medical service for the Highlands and Islands. The people deserved it. He hoped that the Association would back up in every possible way this mileage grant which had now been secured. By their mileage grant they stood or fell. If good men were wanted in these regions they must be provided with a grant to enable them to travel about to see their patients. It seemed likely that before long an attempt would be made to reduce these grants, and he hoped that this would not succeed.

The report was approved.

WALES.

Dr. CRAWFORD TREASURE (Chairman of the Welsh Committee) moved the Report of Council under "Wales," and in doing so referred to the activity and success of the Contract Practice Subcommittee under the chairmanship of Dr. Ewen Maclean. He would like to thank the Medical Secretary for the great assistance he had given them in this matter of contract practice. The subject was very important, and those who were working in other parts of the country might readily find these schemes cropping up in their area unless they were strongly and persistently combated in their native habitat.

The report was approved, and a motion to amend the constitution of the Welsh Committee so as to provide for the inclusion of the secretaries of the North Wales and South Wales and Monmouthshire Branches was referred to the Council to consider.

IRELAND.

Irish Health Grants.

Dr. R. C. PEACOCKE (East Leinster) moved an instruction to the Council to use the influence of the Association in whatever way it might think best to secure:

1. That the State contributions towards the salaries of Poor Law medical officers in Ireland should not be diverted to other purposes; and
2. That in the differences which have arisen between the Government and the local authorities in Ireland the services directly concerning health should be regarded as immune, and State funds earmarked for such services should not be diverted to other purposes.

This question was one, he said, which practitioners in Great Britain might not know very much about. But the diversion of existing grants to other purposes was being carried out under a recent Act called the Criminal Injuries Act, and was inflicting great hardship upon the sick poor. It was desired to have the backing of that meeting in whatever way was possible to right the wrong which was being done.

The resolution was agreed to, and the Report of Council under "Ireland" was approved.

OVERSEAS BRANCHES.

The Report of Council under "Overseas Branches" was approved, on the motion of Dr. J. A. MACDONALD, in the absence of the Chairman of the Dominions Committee.

MEDICAL REPRESENTATION IN PARLIAMENT FUND.

Mr. BISHOP HARMAN (Chairman of the Parliamentary Elections Committee), in moving the Report of the Council under this heading, said that the enthusiasm of the Representative Body on this matter had not been sustained, or at least it had not crystallized into hard cash. One candidate was being supported at present, but one was not enough if the Association was to escape the charge of partiality in politics. Support should be given to candidates of different political complexions. At the very least they should have £850 a year as settled income, enabling them to spend £600 on expenses of candidates, and to put enough by to enable £1,000 to be spent, say, every four years at a general election. The report was approved.

THE BLACKPOOL RESOLUTION.

Dr. BRACKENBURY referred to a matter mentioned in the Supplementary Report of Council (SUPPLEMENT, July 2nd, p. 2) concerning the resolution passed by the Blackpool Division condemning the Association for "the feeble and ineffective action invariably taken when dealing with matters affecting the welfare of the profession." The Lancashire and Cheshire Branch Council was of opinion that the Blackpool Division was morally bound either to repudiate this resolution or to bring the matter forward and justify its contention at the Annual Representative Meeting. This subject ought not to be passed over, and he suggested that the Blackpool representative be invited to give an explanation.

Dr. H. T. BARTON (Blackpool) offered a brief explanation. He said that, in the first place, the Branch Secretary wrote to say that the Medical Secretary was visiting Lancashire and would be glad to come to Blackpool. The Division Secretary replied that they would be glad to see the Medical Secretary, but he must expect considerable criticism. The reply of the Branch Secretary was: "Dr. Cox likes opposition; the more the better." A meeting, therefore, was arranged, and the members in his Division made it a condition that if Dr. Cox came he (the speaker) as representative should frame a resolution as strong as he pleased and should "go for the gentleman." It took him (the speaker) twenty minutes to state his case. He gave about six instances in which the members had been "let down" by the Association, going back as far as 1912. Not one of these points was touched upon by Dr. Cox in his reply. The resolution of the Division to which Dr. Brackenbury referred was passed without dissent, but with a few abstentions. To justify the action of the Division he would have to go into old history, and there had been plenty of time wasted at the meeting that day without that. But he would like to say that in 1911–12 his Division trusted the Association. The record since then had been less satisfactory, and the climax was the manner in which the question of the fee for notification of infectious diseases was treated. The Association should have done more than send two or three men, however able, to argue on the subject. On the other hand, on the hospital question the Council had gone a long way further than his Division had been prepared to go. It had taken him all his time to keep the Division within the Association. It was a small Division at the periphery, but the Association was a democratic one, and they at Blackpool had every right to express their views. (Some applause.)

The CHAIRMAN OF COUNCIL said that although the representative from Blackpool might be able to cite some half-dozen instances in which the Association had not, to his thinking, come up to the standard he desired, it would be well that his Division should express itself accurately, for surely no Blackpool member would contend that the Association always and invariably took the attitude complained of. He was a little surprised that even in this enervating atmosphere the statement of the Blackpool representative should have elicited any applause. His attitude, if carried into every peripheral part of the Association would lead to positive chaos.

Dr. E. F. THOMAS (City of London) thought that the executive had shown weakness in some respects. The Association had let the profession down over the Insurance

Act, and later over the capital value of practices. The Blackpool speech was intended to stimulate the Council and to urge them to greater endeavours.

Dr. E. A. STARLING said that such resolutions as that of Blackpool were generally due to the fact that the people who passed them had failed to get what they wanted. But it did not follow that if they had got what they wanted it would have been good for the whole profession. His own Division was extremely grateful for what the Association had done, and although it did not consider that all the officials were perfect angels, it did believe that they had done most admirable work. (Applause.)

Dr. JAMES STEWART said that he had been for very nearly fifty years a member of the Association. He had never held office, and was not retained in any way to speak for the Council. As a humble member of the Association, he was full of admiration for the earnestness, devotion, and skill of the executive.

Dr. H. G. DAIN said that the officers and Council were just as strong as their constituents made them, and to complain of the executive was merely a reflection upon the power behind it. A Division which passed a resolution like Blackpool's did not understand its own weakness. (Applause.)

The subject dropped, and the Annual and Supplementary Reports of Council were approved.

ELECTIONS.

Before the Medical Secretary read the election returns, Dr. MARTLEY desired to draw attention to the practice of canvassing for votes in the meeting, and requested the Council to frame a by-law on the subject. It was resolved to proceed to the next business.

The MEDICAL SECRETARY read the returns of elections to the various standing committees.

Finance.—Dr. J. D'Ewart (Manchester), Mr. N. Bishop Harman (London), Mr. Albert Lucas (Birmingham), Dr. Milner M. Moore (Eastbourne).

Organization.—Dr. F. J. Baildon (Southport), Dr. E. R. Fothergill (Hove), Dr. T. W. H. Garstang (London), Dr. H. F. Oldham (Morecambe).

Journal.—Dr. C. O. Hawthorne (London), Dr. J. A. Macdonald, LL.D. (Taunton), Dr. C. E. Wallis (London).

Ethical.—Dr. James Don (Newcastle-upon-Tyne), Dr. John Goff (Windlesham, Surrey), Dr. Arnold Lyndon (Hindhead, Surrey), Dr. H. C. Mactier (Wolverhampton), Dr. Milner M. Moore (Eastbourne), Dr. John Stevens (Edinburgh).

Medico-Political.—Dr. J. W. Bone (Luton), Dr. C. E. S. Flemming (Bradford-on-Avon), Dr. T. W. H. Garstang (London), Dr. H. C. Mactier (Wolverhampton), Mr. E. B. Turner (London), Sir Jenner Verrall, LL.D. (Harpenden).

Public Health.—Dr. W. F. Dearden (Manchester), Dr. D. D. Gold (Hereford), Dr. F. Radcliffe (Oldham), Dr. E. H. Snell (Coventry), Dr. W. Johnson Smyth (Bournemouth).

RESOLUTIONS OF THANKS.

On the motion of the CHAIRMAN, resolutions of thanks were accorded to the General Executive Committee, the Reception Committee, and the Local Honorary Secretary for the arrangements made in connexion with the business meetings of the Representative Body; to the Hotels, Lodgings, and Billeting Committee, the Soiree Committee, and the Local Entertainments and Ladies' General Committees for the housing and entertainment of representatives and their ladies; also to the Council of Armstrong College for granting the use of King's Hall. The Chairman stated that the Representative Body had never been treated with greater kindness and hospitality, and they were all full of admiration for the excellent arrangements that had been made for their convenience and comfort.

All these resolutions were passed with acclamation.

After the minutes had been confirmed,

Dr. J. A. MACDONALD moved a vote of thanks to Dr. Garstang for his conduct of the chair. Dr. Garstang's steadfastness and judicious firmness in handling the meeting had been evident, he said, to everyone.

Dr. JAMES STEWART seconded the vote of thanks, which was carried with applause.

Dr. GARSTANG acknowledged the compliment. His tenure of office for three years, although it had entailed a good deal of work, and at times had been a severe strain, would be a most pleasant recollection.

Dr. WALLACE HENRY proposed a vote of thanks to the staff, which was heartily accorded, and was acknowledged by the MEDICAL SECRETARY.

The proceedings ended at 4.30 p.m.

THE ANNUAL DINNER.

THE Annual Dinner of the Association was held at the Assembly Rooms Club, Barras Bridge, on July 21st, when a company of nearly three hundred sat down at the tables under the presidency of Professor DAVID DRUMMOND. Among those who supported the President at the principal table were the Bishop of Newcastle, the Dean of Durham, and the Vicar of Newcastle (Canon Newsom), the Lord Mayor and Sheriff of Newcastle, and the Mayor of Sunderland, Sir Arthur Keith, Sir William Macewen, Sir Theodore Morison, Sir Thomas Oliver, Sir Humphry Rolleston, Sir Jenner Verrall, Sir Dawson Williams, Dr. R. A. Bolam, Dr. T. W. H. Garstang, Dr. G. E. Haslip, Dr. Wallace Henry, Dr. Eustace Hill, Dr. J. A. Macdonald, Dr. R. H. Todd, Dr. Alfred Cox, Mr. W. E. Hempson, and others.

THE MUNICIPALITY OF NEWCASTLE-UPON-TYNE.

Sir JENNER VERRALL proposed the toast of the Municipality. He rose, he said, with the greatest pleasure, although he had hoped that on this occasion he would not have had to make a speech. It happened from time to time that when they accepted an invitation to a certain city their prospective hosts were exercised lest they should not equal the hospitality afforded on previous occasions. In 1905, for example, the Association met at Leicester. Its previous meeting had been at Oxford, and the Leicester friends said that as their city had not the academic charm of Oxford they could hardly hope to rival the success of that meeting. All the same, the Leicester meeting was highly successful. Last year they met at Cambridge, and Newcastle was supposed to have asked how, lacking the colleges and courts and lovely lawns, it could avoid inviting odious comparisons. The record of that week was the answer. The truth was that each place in its turn had its own delights, interests, and modes of hospitality. Each in turn brought out of its treasures things new and old. What had been offered to them in Newcastle would make a long list. He would mention only two things, one outside the city and one inside. Amid the strenuous work—and it was strenuous—of the Representative Meeting they had a quiet Sunday, and the Newcastle friends arranged for the representatives a most delightful trip by motor-car through all the country north of Newcastle, round by Rothbury. They could shut their eyes and dream of that country under the old Roman domination, with towers and camps and tramping legions, and then open them to gaze upon the beautiful hills bathed in sunlight—Northumbria at her best. As for the delights of Newcastle, he would instance only Jesmond Dene, where the Association had been so delightfully entertained on the previous day. Newcastle, therefore, had its own delights to compare with any other city. The Association met in Newcastle in 1870 and again in 1893. The city might well have asked whether it could reach its own standard, but once again this week had been the answer. Northumbria was as beautiful in 1921 as it was thirty or fifty years ago, and Newcastle was as warm in its welcome. He passed now from the city to its chief citizen. The health of the city and of its Lord Mayor were, to those who drank a toast, two versions of the same thing. Personally he knew little of the Lord Mayor, but there were certain attributes which the chief magistrate of such a city must have or he would not occupy the position: he must be courageous, persevering, wise and tactful, and also given to hospitality. He had asked an alderman of the City Council what was the principal characteristic of his lordship, and he had replied, "Tenacity." Think of the incalculable value of that quality in the government of a city! In the cordial welcome which the Lord Mayor had given them at the Guildhall he had shown sympathy with and understanding of their difficulties and their triumphs; he had sketched the medical history of Newcastle in the past and had predicted its future; and he had pointed out—and he was right—that medical men did not pursue their calling only that they might live, but that others might not die.

The LORD MAYOR (Councillor T. W. Rowe) said in response that, like most public bodies, the City Council received more criticism than commendation, but so long as they were able to feel conscientiously that they were doing their best, they need fear no strictures. Newcastle had a history of which any city might be proud, but its history had been enriched during the past week by the Association's

visit. It was gratifying to him to be Lord Mayor on such an occasion, and his share in it would be one of his happiest recollections on the termination of the "twelve months' hard labour" which he was now undergoing. He had too much respect for those present to enter upon any lengthy statement with regard to the northern metropolis. He would only ask them to accept from him on behalf of the City Council his heartiest thanks for all their generous expressions. He thanked them for making Newcastle the venue of so important a gathering, and hoped that they had found it a pleasant place to dwell in even for the brief period of their stay.

The British Medical Association.

The Dean of Durham (the Right Rev. Bishop Welldon) proposed the toast of the British Medical Association. He said that he submitted the toast to them with the greater confidence because a response would be made to it, not only by the Chairman of Council, but by a representative of that ever victorious people, the Australians, who, he believed, would never realize all the strength of feeling the mother country bore to them until they had been beaten on the cricket field.

It is natural (the Dean continued) that in proposing this toast I should dwell a little on the points of contact between your profession and my own. We are both occupied in diagnosing cases, and if the clerical diagnosis is sometimes faulty, I gather, Mr. President, that it does not altogether differ from your own. (Laughter.) We are both engaged in issuing prescriptions. There is at times a suspicion that our prescriptions are made up by other hands. The difference is that your prescriptions are received and taken, though with wry faces, while our prescriptions are received with smiles and are never taken at all. I observe also that the medical profession looks forward with satisfaction to the universal dissection of the dead, but if I may venture to speak for the clerical profession, or, rather, for the critics of that profession, we are supposed to be concerned in an unqualified dissection of the living. (Laughter.) But, Sir, in a more serious sense, the medical and clerical professions are alike occupied with that complex organism, human nature, and although it would ill become me in a meeting like the present to say a word on so controversial a subject as spiritual therapeutics, yet I think you will agree that science has not yet reached the absolute limit in her investigations of the relation between spirit and body, and I feel sure that you will assent to words which were written by a member of your own profession of his patient, "I dressed his wounds and God healed him." (Applause.) Again, your profession, like mine, does not altogether escape criticism. There are some eminent writers in literature who have seemed to cherish ill-will towards the medical profession—Petrarch for one, Molière for another, and Addison for a third—and I can only suppose that these unhappy writers came across someone who made the healing art less agreeable than it ought to be, even as there are certainly some good Christians who make virtue more objectionable than it need seem. But I would rather look at the lofty characteristics of your noble profession. You aim first and last at doing good to humanity. There are some professions—and I would venture to class among them the profession of the politician—in which men appear to me to do bad things at first in order to do good things afterwards. I believe that that aphorism is true of the most distinguished politicians even in the present day. But you aim simply and solely at doing good, and I cannot help thinking that there is something of religious faith—faith that will not accept defeat—in the strenuous and unremitting campaign which you have waged against one disease after another, and which you are waging to-day against that greatest of all scourges—I mean cancer—and will succeed in. I congratulate you, with great respect, on the spirit which actuates and has long actuated your efforts for the removal and mitigation of disease. Whatever discovery you make is the property of the whole world. There is no reservation. The man who would seek to keep back any secret of medical healing which he possesses is no member of the medical profession. There are hangers-on in your profession as there are in mine. We call them humbugs, you call them quacks. I cannot for the life of me see why the Chancellor of the Exchequer does not tax out of existence the advertisers of quack medicines who are doing untold harm to credulous humanity. (Hear, hear.) Not very long ago I happened to be sailing between Tasmania and the mainland of Australia, and on board there was a passenger who told me that he was touring Australia in the interests of a certain remedy known as "bile beans." The sea was rough, and on the second morning of the voyage my friend did not appear. Towards midday he came staggering on deck, looking green in the face. But he denied that he was suffering from sea-sickness: people always do. I ventured to say to him, "Isn't it time to try a bile bean?" but he would not hear of it. (Laughter.) But in your profession you keep back no secrets. The hospitals of which you are the ministers are open to all who are sick, whether rich or poor. It is impossible to gauge the value of the services which those hospitals render to humanity, and I cannot but think it discreditable that such a hospital as the London Hospital should be compelled to close any of its beds. May I add as a further point of contact between our professions that we are both of us the recipients of confidences? Those confidences, in my opinion, should be inviolable. (Applause.) Every sanctity which attaches to the confessional attaches also to the consulting room. I call it a greater thing than the attainment of justice—great as that is—that confidence should be maintained between man and man. (Applause.)

Lastly, Mr. President, in proposing the toast of the British Medical Association I cannot forget—how can I forget?—that members of your profession have again and again been ready to hazard their lives in the promotion of medical science. Let me bid you think of those doctors who have been martyrs to x rays. One of them is well known to you, I doubt not, by name—Dr. Cecil Lyster, in whose memory a Chair of Radiology exists now in Middlesex Hospital. I should like, even on this festive occasion, to read to you two or three sentences describing the sacrifices of a member of your profession—not an Englishman, but a Frenchman, and therefore all the better representative of the international spirit which actuates your profession. He was chief, I believe, of the radiographic laboratory of the Salpêtrière Hospital in Paris. Ten years ago, in the early days of research upon x rays, he became affected with radio-dermatitis, and knew that he was a doomed man. He continued his investigations up to the end. He had to undergo more than twenty operations, which successively took from him all his fingers, then his hands, then his left arm, then his right arm. He died content, having devised an installation which would save his successors from his own fate. Before sacrifice so sublime as that the common language of praise dies away. Human nature can only fall upon its knees. But he was a member of your profession; and it is with the thought of him and others like him, or at any moment ready to be like him, that I offer you, with a heart more full of emotion than I can well describe, the toast which I can fairly say is the toast of the evening—the British Medical Association. (Loud applause.)

The Chairman of Council (Dr. R. A. Bolam) said that there were many circumstances which made it difficult for him at that moment to say all that was in his heart, and the words that had just fallen from the Dean of Durham added greatly to his difficulty. The Dean had given them in his last words a message which ought to stimulate all in the profession, and help them in the difficult years that were to come. The Dean probably knew, as others knew, that there were not wanting in that very room men who had gone through both mental tribulation and physical anguish in the pursuit of their calling. But they pursued it with the true courage which had characterized so many of the profession. He thanked the Dean for the remarks he had made upon a matter which had greatly exercised their minds at that meeting—the maintenance of confidence between doctor and patient. Throughout the ranks of the profession there was a feeling that the time had come when precedent and custom and all that went to make the common law of the land must stand aside if in any way they hindered the doctor from carrying on his work in the full confidence of the community. Ninety years ago (Dr. Bolam continued) the Association was instituted. It was instituted in the provinces. It had now gathered to itself, not only medical opinion in the provinces, but in the metropolis and in the distant Dominions. Dr. Welldon had paid it the greatest compliment an Association of this kind could receive when he addressed it as the profession. Its watchword was the honour and interest of the profession, and he believed that this watchword was obeyed in no narrow, sectarian, or merely Association sense. He would remind all those who looked, perhaps, with a critical eye upon the efforts which were made to raise the material prosperity and increase the amenities of the profession

that, step by step, with every stage of progress, the health of the community had benefited fourfold, and the comfort of the citizens thereby. He had great difficulty in saying what he would like to say about the Association, because during the months since his election to the chair of the Council he had been so greatly immersed in detail that he felt it out of the question for him to take a broad and impartial view. But he did earnestly believe from what he had seen of the inner working of the Association since he had been privileged to serve it that it was animated by a desire for the good of the public, and that the constant association of men of diverse interests within the ranks was fraught with only the most beneficial results. It had often been said by those who were unwilling to join the Association or were hostile to it that it served one particular interest alone: one critic would say that the interest which it served was the consultant interest, another that the Association did nothing save for the general practitioner, a third that the panel doctor was its only concern. These verdicts were uttered and written day after day. The conflict of opinion among these critics was, he thought, the best testimony that the Association was serving every interest. (Applause.) After these sorrow-laden years that had just gone by it was only to be expected that the world would take a good deal of rebuilding. It would be a long time before we reached the standard of health and comfort that ought to have been reached but for the war. But he believed that if the Association would only stand for those interests as firmly as it had done in the past, and if all who had not yet come into the ranks would give up their isolation, much could be done for the country by the Association, and the Association would be more of a power in the land—not a power in the sense of a narrow body exclusively concerned for a partisan or a professional interest, but a power making for the general well-being. He would say to all who felt that the Association methods were not perhaps congenial to themselves that there was no body in the country so democratically constituted. No man could live to himself alone, and if the men who had hitherto stood out would join hands with their colleagues in the Association it would be to the advantage not only of the profession but of the country.

Dr. R. H. TODD (New South Wales Branch) also responded to the toast. He said that he was in the peculiar position that, although a member of the medical profession, he did not practise it, but practised another profession, that of the law. He claimed, therefore, to be able to see and speak of the profession from the outside. On the previous morning it was his privilege to attend the Section of Preventive Medicine, and there he heard Captain Elliot, M.P., declare that in 1920 Great Britain contained 13 million people more than in 1870, while the number of deaths was smaller by 50,000 a year. It struck him what an enormous triumph this was for the medical profession, and his thoughts were turned to a book written over two thousand years ago—Plato's *Banquet*. In the account of the banquet at the house of Agathon at Athens the conversation was directed so as to draw out the wisdom of the great philosopher Socrates, but there were also a number of other distinguished people there. Among them was that very delightful person Alcibiades, and with him was a doctor whose name was Eryximachus, who seemed to have been a typical doctor. In the course of this conversation Eryximachus said, "Shall we then have no conversation or singing over our cups, but drink down stupidly just as if we were thirsty?" whereupon Alcibiades, who had come a little late and a little merry, hailed Eryximachus as the excellent son of an excellent father. "Hail to you also," said Eryximachus, "but what shall we do?" "Whatever you command," was the reply of Alcibiades, "for we ought to submit to your direction, seeing that the physician is worth a hundred common men. Command us as you please." That passage (said Dr. Todd) set him wondering how many common men a physician now was worth; and when he remembered that within the last fifty years the population had increased by 13 million and the number of deaths was smaller by 50,000 a year, he felt that the physician was worth a great many more than a hundred common men. Moreover, under the present arrangements and organization of the British Medical Association the physican would go on increasing in value, and would become as time went on worth more and more. The British Medical Association was diffusing its high influence throughout the profession all over the world, not only in the United Kingdom, but throughout the Empire, in South Africa and Australia and New Zealand, and the Far East and the West Indies. The British Medical Association was on the other side of the globe as it was on this side. Its members in those distant Branches were not so numerous, but the Association was more intensive, and was doing great service.

THE GUESTS.

Dr. T. W. H. GARSTANG proposed the health of the guests. He greatly appreciated the compliment of having been asked to propose this toast on behalf of the Association. On the occasion of the Representatives' dinner held in the same room on the previous Friday, one guest remarked what a blessed function these dinners were. He agreed with him, although a good many years ago he had scorned such entertainments, believing them to be overdone. But he had come to see that it was of enormous benefit to meet one another face to face across the dinner table. He could not mention by name every guest that evening, for the list was a long one. The Church was represented by the Bishop and the Vicar of Newcastle; local government by the Lord Mayor and Sheriff of Newcastle and the Mayor of Sunderland; local benevolence by members of the committee of the Royal Victoria Infirmary; and Armstrong College by its President, whose name he would couple with the toast. Already he had had the pleasure of writing to Sir Theodore Morison to thank him for the hospitality given to the Association in that splendid building. (Applause.)

Sir THEODORE MORISON, in responding, said that it was not only a pleasure but a privilege to be present on that occasion. He spoke as an ignorant layman, who greatly appreciated the opportunity of meeting so many eminent leaders of the profession and hearing them talk of medical progress. In these days of specialization it was extremely difficult for any of them to know what was being done even in the profession next door to his own, and it was occasions of this sort, when one eminent specialist after another tumbled out information from the richness of his knowledge, that the outsider was enabled to get some view of what was going forward. It seemed to him that there was indeed every reason for talking about that horizon of hope to which Professor Drummond had referred in his Presidential Address. The progress to those who were engaged in the profession might seem slow, but to those like himself, who only had the opportunity at intervals of registering the great advance made in this beneficent art, the progress seemed to be very striking indeed. There was one word in praise of the British Medical Association which had not yet been said—namely, that it conferred a very great benefit upon the layman in making these visits to provincial centres. It was brought home to the layman on these occasions what progress was being made. This was a missionary phase of their work which deserved their close attention, because, after all, the profession would not be able to bring all its beneficent plans to maturity unless it had the intelligent co-operation of the community at large. (Hear, hear.) Sir George Newman was always telling them that the art of health could only be acquired by persons reasonably educated and intelligent, and he (the speaker) ventured to suggest that the profession should take laymen into its confidence, tell them what they ought to do, and periodically stir them up to more energetic endeavours. He hoped the profession would go to the laymen of Newcastle, or any other city, and point out the local shortcomings. He was sure that criticism with such an intention would be accepted in good part. He confessed that he was constantly struck by the enormous amount of self-sacrifice and patient study and research represented in those statistics, in which perhaps only a decimal point of difference—in the death rate, say—was recorded from year to year, or, in those facts, graphic enough when spread over half a century, but less sure and striking when studied from year to year, such as Captain Elliot had brought before the Section of Preventive Medicine. All this entailed much devotion on the part of individual members of the profession. The public little realized how much strenuous work was

lay behind the scenes and recorded only in the modification of a statistic. He sometimes wondered whether all these efforts were not laying up some extraordinarily difficult problems for the future. This increase of population, due to the extension of the average period of human life, was going on steadily. The average expectation of life of an Englishman was now twenty years more than the average expectation of life of an Indian, and he believed that that progress had been achieved in less than a hundred years. A great friend of his in India said that the vital statistics of England in the seventeenth and eighteenth centuries closely resembled those of India at the present time. If that was so, one might assume that it was the progress of medical science during the greater part of the nineteenth and the present century which had prolonged human life and thus increased the population. The same thing was going on all over Europe, and with it, of course, went ever more crucial adjustments of the economic position, where an enormous population depended for its sustained existence upon the complex system of exchanges. He thought it probable that, with the extension of this work into the East, the same thing would be done in the course of another century for India. Problems of enormous interest thus made their appearance which the economist would have difficulty in solving, but these, of course, were not the problems which chiefly concerned those whom he was now addressing, and those who were their guests could only accord to them their gratitude for their beneficent labours on behalf of humanity.

THE PRESIDENT.

Sir HUMPHRY ROLLESTON proposed the health of the President. It had often been said, and he believed truly, that any nation or society got the government that it deserved. If they applied that acid test to themselves as an Association they would be driven to the conclusion that they were a very fine and well-deserving set of men indeed, for last year they had in their supreme place of government Sir Clifford Allbutt, next year they would have Sir William Macewen, and this year they had Professor Drummond. (Applause.) The Association had been fortunate in its visit to Newcastle, and it had been twice blessed in its President. It was almost impossible to believe, on looking at his youthful figure, that twenty-eight years ago, when the meeting took place in the same city, he gave the Address in Medicine. Professor Drummond was one who had gained not only the heights of his worthy ambition, but the respect and affection and universal commendation of all his compeers. He asked those present to drink with all honours the health of the President—the skilful teacher, the all-round physician, and extremely good friend.

The toast was given musical honours.

The PRESIDENT, whose rising was greeted with prolonged applause, said that he was very grateful for the kindness and generosity of his friends who had placed him in the chair. These days marked an epoch in one's life. He could look back down a long vista of memories, and forward perhaps into a very brief prospect of future years. He had had a long and very happy professional life, but not the least interesting episode in it had been the preparation for that meeting. Not that he had had much to do with it; on the contrary, the brunt of the task had fallen on others, notably on his friend and colleague, Mr. R. J. Willan, the honorary secretary—(Applause)—whose efforts on behalf of the meeting had been untiring and were highly esteemed. Nor must they forget the work of Dr. George Hall, the honorary treasurer—(Applause)—but to mention other names would be invidious when such good work had been done all round. He did not think there had ever been an annual meeting which had proceeded on smoother machinery. He hoped that everyone would go away with happy memories, and would at least give the Newcastle people credit for the desire to give their visitors of their best. Sir Humphry Rolleston had referred to him in very kind terms, altogether undeserved. The Dean had had to leave early, or he would have suggested to him that his reference to his address was inspired by a somewhat highly coloured report of what he had said which appeared in the daily press. He admitted, however, that he had always been deeply interested in pathology and morbid anatomy. For eighteen years, as physician to the Royal Infirmary, he made all the *post-mortem* examinations. His love of morbid anatomy was not of modern growth. It dated back to his early days under that beloved physician Stokes, who worked out his cases on the lines of morbid anatomy. He had loved his clinical teaching work, and the more enthusiastic the students the better he loved it. Of course sometimes the enthusiasm of the students might involve some little discomfort to the patient, but the disgruntled patient was not altogether a modern difficulty. For an instance in point he could go back as far as the first century, when Marcus Valerius Martialis, a Latin poet, flourished, and wrote as follows:

> Languebam sed tu comitatus protinus adme,
> Venisti centum Symmache discipulis,
> Certum me tetigere manus aquilone gelatae,
> Non habui febrem Symmache nunc habeo.

Most of them would translate this in a very plain and simple way, but his friend Dr. Coley had dished up the quotation from Martial in the following manner:

> It chanced one day that I was ill,
> And under a physician;
> He was a man of wondrous skill,
> A notable clinician;
> With him, alas! there came a class
> Of students very zealous,
> To investigate and cogitate
> My heart and eke my bellows;
> And with a humorous, fiendish hand
> Palpated my abdomen,
> Since when my temperature has risen
> To a point of evil omen.

Professor Drummond maintained that the enthusiasm of classes was all in favour of the patient, and he hoped that his humble efforts in his Presidential Address in venturing to indicate a course of post-graduate training would not fall on deaf ears. He thanked them again most heartily for their reception of him. (Loud applause.)

CONFERENCE OF HONORARY SECRETARIES.

THE Conference of Honorary Secretaries of Divisions and Branches took place at Armstrong College, Newcastle, on July 20th, when Dr. J. STEVENS (Edinburgh) was voted to the chair.

The Difficulties of an Honorary Secretary.

Dr. L. A. PARRY (Brighton) opened a discussion on "The difficulties of a secretary." He said that Brighton was such a united Division that the difficulties were few; still, they did exist. The first was the apathy of many members who did not attend a single meeting in the year; the second was the indifference of non-members, who did not respond even to personal canvassing, which was the best method of approach; the third was the competing claims of other medical organizations; and the fourth—a very small one in Brighton, and one which need not be considerable anywhere if it was tactfully dealt with—negotiations with public bodies. Finance was another difficulty. His own Division was often in debt to its Secretary, and though the amount was not important, yet as a matter of principle a Division should not incur debt. Another grievance was against headquarters; it happened occasionally that local matters were dealt with direct and the Branch or Division was not informed.

Dr. J. HUDSON (Newcastle) said that the financial burdens on a Division were certainly getting heavier, and a per capita grant of 6s. was not too much. Dr. F. C. MARTLEY (Kensington) commented on the large size of certain Divisions, in which the activities were centred in one district and the rest of the area not covered. He wished also, for canvassing purposes, that the Association would set out briefly on a sheet of paper some of the big and definite things which the Association had done for the profession. Dr. C. G. C. SCUDAMORE (Croydon) also referred to the unwieldiness of some divisional areas. Dr. J. MUNRO MOIR (Inverness) said that his area was such that men had to leave home for one night, sometimes for two nights, to attend a Branch meeting. Dr. A. ASHER (Caithness) spoke of the difficulties of the extreme North of Scotland, where several members were about fifty miles from the nearest railway station. Dr. J. D. DAVIES (South-West Wales) suggested, as the secretary of a scattered Division, some attempt at subdivision as far as meetings were concerned, while preserving the central organization. Dr. NOY SCOTT (Plymouth) said that one of his great difficulties was to bring together country and town members at times convenient to both.

He also thought that some scheme of amalgamation with local medical societies would be worth pursuing. Dr. J. HUME (Perth) said that his membership was 60, and his average attendance at a meeting 22. He always sent out notices of a meeting ten days ahead, and sent out the minutes afterwards, as well as extracts from the monthly circular. Dr. W. M. ROBSON (Northamptonshire) said that he carried out the principle of subdivision, holding meetings in different places; he also found Sunday meetings very successful. Dr. J. F. WALKER (South Essex) said that the Association rested on the foundation of its honorary secretaries. The secretary must be the friend of every man in his Division. Much depended upon his personality and manner and information. One good idea was to make the secretary or some other person a kind of local bureau for getting books from the Association library. He also strongly advocated that secretaries should make the personal acquaintance of every newcomer to the district. Dr. WALLACE HENRY dwelt upon the importance of increasing the prestige of the Association locally, not only with the profession but with the general public. On every occasion of a big local function or fresh departure the Association ought to bring itself forward and secure representation on local educational and public health bodies. Mr. A. WEBBER (Nottingham) suggested that at every executive meeting the list of non-members should be gone through and someone asked to approach them. He thought it would be a good plan if a calendar were supplied by headquarters, indicating the Council meetings and the more important fixtures of the Association year. Dr. D. WILSON (Huddersfield) urged, from the results in his own area, that the Medical Secretary should go down to as many Divisions as possible, and if there could be a little organized opposition it would enliven the proceedings and in the result strengthen the Association. Dr. MILBANK SMITH (Chichester) hoped that the by-laws would not be made too inelastic if the secretaries were to continue to do their work with proper freedom. Dr. MUIR SMITH (Eastbourne) said that in his Division it was found to be a good plan to change officers and members of the executive frequently, while always arranging for a due proportion of experienced members to remain in office. Dr. H. C. MACTIER said that in his Division they had arranged that the retiring chairman should be the deputy-chairman.

The MEDICAL SECRETARY (Dr. Cox) agreed with the principle of localizing the circulars of appeal to non-members, and thought that many a secretary might greatly improve on the circulars for local purposes. Answering a remark by Dr. Parry, he said that headquarters very rarely dealt with local affairs without reference to the local secretary. The exceptions were generally cases in which there was a request for secrecy. Indeed, so many matters were referred by the Office to local secretaries that his fear was lest they might be tired of receiving them. With regard to the areas of Divisions, there was something to be said against very small Divisions. It was difficult for such Divisions to secure separate representation. Moreover, a Division which was reasonably large offered more variety of interest. He was against splitting up Divisions too much, although in favour of subdivision under proper control by the Division executive. Country members had no need to talk apologetically about attendance; they often made a better showing than town members. Mr. Webber's suggestion for an official time-table was one that he would place before the Propaganda Subcommittee. He concluded by insisting on the importance of honorary secretaries in the Association. New members would not be forthcoming unless the secretary and other Division officials themselves believed in the Association. The secretary's task was one into which it was worth while to throw all the energy a man could spare.

The DEPUTY MEDICAL SECRETARY (Dr. Anderson) made a statement on the Association lectures, emphasizing the need for all such lectures to be arranged from headquarters. He also asked that two months' or at least six weeks' notice might be given, and that secretaries would state the order of their preference. It was desirable that lecturers should be chosen from an area not too remote, so as to lessen expense, and that a number of Divisions, not necessarily the full Branch, should unite for the purpose of the lecture, so as to secure an audience worthy of the occasion.

The ASSISTANT MEDICAL SECRETARY (Dr. Lord) said that he was arranging a store of information, precise and detailed, regarding the various local arrangements as to fees and other matters, and it would be an advantage to have the gaps filled in, as they could be if honorary secretaries would assist.

The Work and Expenses of Divisions and Branches.

Dr. T. W. H. GARSTANG (Chairman of the Grants Subcommittee) made a statement on the work and expenses of Divisions and Branches. It was the purpose of the subcommittee to be as liberal as possible, but it was necessary also to be just. The giving of money must be coupled with the condition that the Division spent the money wisely and reported on it to headquarters. The Branch was responsible for seeing to the financing of the Divisions, but only in a few cases was it possible to deduce from Branch secretaries' reports the condition of the Divisions. Supplementary grants were made and would continue to be made when it was found how the money previously granted had been expended and that more money was needed for the work. In assessing the grant for the Branch the average annual expenditure over three years was first ascertained, together with the surplus in hand or the debt from the previous year, also the financial position of the constituent Divisions. The grant was supposed to finance the Branch, not only during the year, but during the early months of the succeeding year, and to enable it to keep its Divisions going during that period, for fresh grants could not be sent in January, before there was opportunity for the proper consideration of the reports. If Divisions and Branches were to receive more money and to be worked up into a more efficient condition they must be prepared to lose a little of their absolute independence.

In reply to questions, especially on the last point, Dr. GARSTANG said that a certain tightening up of the machinery by the Council would be necessary if larger grants were to be given. In the existing by-laws there was no provision whatever for the Council to interfere with the affairs of a Branch, or for a Branch to interfere with the affairs of a Division, except by stopping supplies; new powers, therefore, were necessary. The Council must have similar powers to supervise a backward Branch; it was all for the good of the Association. If a Division was comparatively well-to-do, the Branch could apply the remainder of a grant which would otherwise go to that Division to augmenting the grants of other Divisions which had to meet special expediture.

Dr. Garstang was warmly thanked for his address.

The Association's Handbook.

Suggestions were then considered for the improvement of the Association's *Handbook*. Among the suggestions were the following: that the names of Secretaries of Panel Committees should be included (to this there was objection, on the ground that the Association should not be too closely identified with panel work); that a calendar of the Association year should be prepared, perhaps with perforated pages; that the *Handbook* should have advertisements, and that it should be indexed.

The MEDICAL SECRETARY replied that this book was the successor to a former handbook which was dropped because it was overweighted. He was anxious that a similar fate should not befall this new venture, and that it should remain a workers' *vade mecum*. An index, however, would be added, and he would refer to the Propaganda Subcommittee the question of incorporating a calendar.

Dr. GARSTANG said that the inclusion of advertisements, while an attractive proposition, would probably result in a diminution of advertisement revenue to the JOURNAL.

On the proposition of Dr. WALLACE HENRY a very hearty vote of thanks was accorded to the Chairman, and he, with the Medical Secretary, was entrusted with the task of preparing a short abstract of the proceedings for publication.

HONORARY SECRETARIES' DINNER.

THE Honorary Secretaries of Divisions and Branches gathered at dinner, following their annual conference, on July 20th. The dinner, which was held at the College of Medicine in Newcastle, was a very pleasant social function, although, owing to the great variety of engagements on the same evening, the proceedings were necessarily brief. Dr. J. STEVENS, of Edinburgh, was in the chair, and was supported by a company numbering about seventy, including the present and past chairmen of Representative Meetings, Dr. Wallace Henry and Dr. Garstang. The health of the Chairman of the Conference was proposed by Dr. E. A. STARLING, and in responding Dr. STEVENS said that until that afternoon he had had no idea of being chosen, and had hoped to occupy a less conspicuous position. But it was a high honour to serve the Association even in the most transitory capacity. The proceedings

of the last few days had made them more proud than ever of an Association on which the sun never set. It was as wide as the Empire, and he trusted it would last as long. Mr. A. M. WILSON of Nottingham proposed the health of the Medical Secretary and his assistants. All the honorary secretaries, he said, were well aware of their indebtedness to Dr. Cox, and also to Dr. Anderson, Dr. Lord, and Dr. Drever, not forgetting Dr. Macpherson, who was "holding the fort" in London. The work these gentlemen did was so well known and widely appreciated that there was no need to enlarge upon it. The toast, coupled with the name of Dr. Cox, was given musical honours. Dr. Cox, in responding, expressed on behalf of himself and his colleagues their gratification at receiving this compliment from the men who knew them and who knew their work. It was a great pleasure to feel that their labours were appreciated by the men who did locally what they themselves were trying to do centrally. The occasion was a remarkable one in the history of Honorary Secretaries' gatherings because, for the first time, there were ladies, other than lady secretaries, present at the dinner. There were some ladies in that room who were just as good Association workers as any of them. One lady, whom he would not name, to his knowledge had been doing a great deal of the work for which her husband got the credit, and he believed there were many Secretaries who were helped greatly by their wives. After expressing a hope of meeting again as happily at Glasgow next year, the company broke up at a somewhat early hour to take part in other enjoyable functions.

THE REPRESENTATIVE MEETING.

SOME IMPRESSIONS OF A FRESHMAN.

WE have received the following note from a recently elected member of the Representative Body, giving his impressions of the meeting at Newcastle:

The British Medical Association is democratic. We are its parliament—its supreme authority. And here we are, nearly 200 in number, its duly elected representatives, who together decide its policy and control its administration. "This great body"—those are the words Dr. Farquharson, M.P., applies to us, in one of his speeches from his seat at the back of the hall. Do we realize the greatness of our position, as representatives of the largest organization of medical men in the world? Apparently not. A continual buzz of conversation from all parts of the hall often renders our Chairman and other speakers inaudible, and frequent cries of "Can't hear," "Speak up," do not add to our dignity. We have not yet learned as a corporate body to keep silence while a speaker is addressing us. It is not only newcomers or back benchers who fall from grace: some of our chairmen of committees—even members of the Ethical Committee itself—are obvious offenders. It is unfair to our own Chairman, and we are unjust to ourselves, for loss of time and loss of efficiency as a representative meeting are the inevitable consequences. Our Chairman makes brave efforts to obtain silence, but we are in this matter too many for him.

After all, are we not in this following the example of the "Mother of Parliaments"? One of our speakers evidently has the House of Commons in mind, for he inadvertently refers to his audience as "the House"! We wonder if he is aspiring to parliamentary honours. But, be that as it may, this is the first abiding impression made on one newcomer: We are a great body with great functions—but we "function imperfectly." We deliberately handicap ourselves and lessen our corporate efficiency by the continual hum of our general conversation. It may be said of us, therefore—as of the House of Commons—that as a public assembly our manners are capable of improvement.

Still, on the whole our work is well done. For all his seeming mildness our Chairman has control of the meeting, and puts his foot down when need arises. For four strenuous days, for about seven hours a day, we plod our weary way through the agenda. If the temper of the meeting shows a "mere trace" of fatigue as we approach 6.30 it is hardly matter for surprise. It is weary work—but interesting none the less. Interesting, too, to observe the fluctuations of opinion as the able arguments on one side are followed by a more convincing statement on the other. There are enough humorous touches to oil the wheels of business procedure. One dramatic moment there was in the debate on professional secrecy. Our solicitor, in precise and measured speech, has been cautioning us against too sweeping a resolution, and mentioning various possibilities that we, medical men, must consider. As soon as he sits down some one gets up and asks him point blank this question:

"Would the conditions of the extreme case which the Solicitor quoted with regard to the doctor justify a solicitor in communicating to the court the confidences which he has received from a prisoner?"

The Solicitor: "No, Sir." (Loud applause.)

There is no hesitation before this reply—like a shot comes his emphatic "No!" And that answer is more instructive than an hour's arguing over the question.

Taken as a whole our decisions seem fair and well considered. But the agenda paper is long. Time is short; the last day, the last two hours are come, and there is still much business to be got through. There is a risk that votes given in haste may be repented at leisure. The report on infant welfare work by the Medico-Sociological Committee comes up for approval. For some reason the temper of the meeting is hostile. There is a short, one-sided discussion, and the report is "turned down." For better or worse our vote is recorded. But on reflection some of us have misgivings. How many of us had given that report a fair reading? It cost our fellow practitioners, appointed by us to do that bit of work, many hours of painstaking labour. Have we been quite fair to them? Were we not taking a serious responsibility in refusing approval to such a careful piece of work by a committee of our own? Have we unwittingly added one more instance of democratic ingratitude for trustworthy service?

Our labours as the Annual Parliament of the British Medical Association are almost at an end. But there is another dramatic—or farcical—incident to come. Blackpool Division has published an absurd resolution stating that the British Medical Association "*invariably*" lets the profession down. The Blackpool representative is challenged to defend their action. Will he face the music? To be sure. He mounts the platform and gamely attempts to defend an indefensible position. Of course we cheer him—his pluck. But there is an awkward pause. The Chairman of Council is looking grave. He is beginning to talk to us in tones almost of sorrow. Why, he is actually taking Blackpool seriously! Can he possibly have misunderstood our applause? Of course the whole thing is ridiculous. We were only cheering Blackpool for a sporting defence of an absurd resolution! The Nestor of the British Medical Association grasps the position in a moment, and in a few resounding sentences adds the humorous touch which saves the situation!

One more amusing incident follows before the Representative Meeting breaks up. Our Chairman's arduous task of three years is just at an end. One of our veteran speakers is proposing a vote of thanks in carefully chosen words. Upon his flow of oratory breaks the voice of our Chairman himself, raised to its highest pitch: "Gentlemen, you MUST NOT SMOKE." On other days smoking has been allowed after tea. But it is not yet teatime, and to-day there are special reasons for not relaxing our rule. And so, conscientious in his duties to the bitter end, our Chairman insists. A hearty vote of thanks to him—and so say all of us!

IRISH COMMITTEE.

A MEETING of the Irish Committee was held at the Irish Offices, 16, South Frederick Street, Dublin, on June 30th, 1921. There were present: Dr. Denis Walshe (in the chair), Sir James Craig, Dr. J. S. Darling, Dr. P. Grace, Dr. R. C. Peacocke, Dr. H. T. Warnock, and Dr. T. Hennessy (Irish Medical Secretary).

Amalgamation of Irish Medical Bodies.—The position of the amalgamation of Irish medical organizations was considered, and the proposals of the Council of the British Medical Association regarding the question of steps to be taken whereby the Association may become in part a federation. The Committee appointed Drs. Darling, Peacocke, and Warnock to attend the conference to be held in London on July 5th, 1921, to consider the proposals of the Council.

Professional Secrecy. The Committee approved and adopted the resolution passed by the Council of the Royal College of Surgeons protesting against the Hospital Order issued by the Military Authority in Ireland, which directed that certain doctors should report daily particulars of all wounded persons under their treatment.

Public Health Grants.—In connexion with the notice of motion by the Leinster Branch regarding the withdrawal of Irish health grants it was resolved:

> That the Irish Committee is strongly of opinion that, in the interests of efficient health administration, the Government should take immediate steps to have the health grants due to this country applied to the purposes for which they were expended previous to recent legislation attaching them to meet the awards for malicious injuries.

CONVOCATION AT DURHAM UNIVERSITY.

CONFERMENT OF HONORARY DEGREES.

A special Convocation was held in the Castle Hall, Durham, on the afternoon of Thursday, July 21st, for the purpose of conferring honorary degrees. The Vice-Chancellor, Professor DAVID DRUMMOND, presided. A large company was present in the Hall, and afterwards at the garden party in the Fellows' garden of University College given by the President and Council of the Durham Colleges.

The following degrees were conferred *honoris causa*:

D.C.L.—Sir William Macewen, C.B., Professor of Surgery, University of Glasgow; Sir Thomas Oliver, M.D., Professor of the Principles and Practice of Medicine, University of Durham; and Sir Humphry Davy Rolleston, K.C.B., M.D.

D.Hy.—Thomas Eustace Hill, O.B.E., M.D., late Professor of Public Health in the University of Durham, and James Wilkie Smith, M.D.

D.Sc.—Sir Arthur Keith, M.D., F.R.S., Hunterian Professor of Anatomy, Royal College of Surgeons of England.

D.Litt.—Sir Dawson Williams, C.B.E., M.D., Editor of the *British Medical Journal*.

M.A.—Alfred Cox, O.B.E., M.B., Medical Secretary of the British Medical Association.

In presenting Sir William Macewen to the Vice-Chancellor and Proctors Mr. H. BRUNTON ANGUS said:

Amongst living surgeons he occupies a foremost place. He is the pioneer of brain surgery; his book on the infective diseases of the brain and spinal cord is a classic, and was published in 1898. Surgery is a progressive science, as a perusal of its records shows, yet in spite of thirty years of experience, what Sir William taught then we are teaching to-day—a monument to accurate and careful observation. The problem of regeneration of bone that occupied the minds of all surgeons during the great war was greatly assisted by the valuable research work of Sir William Macewen. One of his classic cases belongs to the county of Durham—namely, Sunderland. As a result of disease a man had lost a large part of his humerus, and Sir William set about the task of restoring the bone. With pieces of bone removed from other patients he steadily filled in the gap until he had restored the humerus to its normal proportions and the man went back to his work.

For the cure of the deformity known as genu valgum, the operation in use all over the world is that bearing the name "Macewen's osteotomy." In the surgery of the lung Sir William led the way, and was the first surgeon to excise a diseased lung. These are some of the many achievements that surgery owes to Sir William Macewen. By conferring the degree of D.C.L. upon him Durham is performing a graceful act, and one that is most pleasing to the medical faculty of the university: further, she is recognizing the debt that suffering humanity owes to this distinguished surgeon.

Sir Thomas Oliver was presented by Dr. R. A. BOLAM, who said:

Thomas Oliver, a graduate of Glasgow University, commenced practice in Preston, Lancashire, in the year 1875, where amongst the cotton spinners he came first into touch with the problems of factory life and the health of the workers. In the year 1879 he was appointed physician to the Newcastle-upon-Tyne Royal Infirmary, an appointment which he held for thirty-four years, and where he found, gathered from these counties of Durham and Northumberland, examples of disease in the industrial world not less interesting or important than in the busy towns of Lancashire. Many years the occupant of the chair of physiology in this University of Durham, he took into the laboratory for elucidation the problems encountered in the wards. He sat on various departmental committees of the Home Office, notably the White Lead Commission, the Phosphorus Inquiry, the Health of Workers in the Manufacture of Pottery, and again on the Dangerous Trades Committee, whose arduous labours on the inquiry into the conditions of life in upwards of twenty trades continued over three years. Not only in this country of ours but abroad in Europe his advice and experience have been sought in the framing of legislation for the welfare of the industrial community. Rapid and striking amelioration of health in many dangerous occupations has followed the enactments counselled. To very few in the world of medicine has it been given to see the practical result of laboratory experiment and clinical work so rapidly come to fruition in the welfare of the community as to Sir Thomas Oliver. He has done and dared much in the service of the State, and has had reward, than which none can be greater, in seeing with his own eyes the results in life saved and health gained in many a lowly home.

In presenting Sir Humphry Rolleston Professor THOMAS BEATTIE said:

I have the honour to present to you one of the most distinguished physicians adorning the medical profession. A Master of Arts and a Doctor of Medicine of Cambridge, and lately a Fellow of St. John's College in that University; a Fellow of the Royal College of Physicians of London, he delivered the Goulstonian Lecture in that College in 1895. Amongst many important offices Sir Humphry Rolleston holds those of Emeritus Physician to St. George's Hospital, London, and President of the Royal Society of Medicine. During the years of war from 1914 to 1919 he acted as Consulting Physician and Surgeon Rear-Admiral in His Majesty's Navy. In recognition of his vast academic learning and clinical experience he has been appointed Examiner in Medicine in the Universities of Oxford, Cambridge, Durham, Manchester, London, Sheffield, and Bristol, the Naval Medical Service, the Conjoint Board of London, and in the Natural Science Tripos in the University of Cambridge. The author of many published works, his numerous writings are of such acknowledged merit that they are read and appreciated throughout the whole world of medicine. As a famous physician, a learned bibliophile, a revered teacher, and an accomplished author, I present Sir Humphry Rolleston to receive the degree of Doctor of Civil Law *honoris causa*.

In presenting Dr. T. Eustace Hill Sir THOMAS OLIVER said:

Thomas Eustace Hill is an Honours Graduate in Medicine of the University of Edinburgh, a Bachelor of Science of the same University, and by Vote of Convocation is an M.A. of this University. Public health problems have always had an attraction for him. Commencing his career in Birmingham, he was shortly afterwards appointed Medical Officer of Health for South Shields. After holding this appointment for two years he became County Medical Officer to the County of Durham. For thirty-two years he has been the capable and trusted adviser to the Durham County Council in matters relating to the health of the community generally and of school children, and also in regard to tuberculosis. For nine years he occupied the Chair of Public Health in this University—the duties of which he discharged with great acceptance to the students. So sound have been his views concerning public health problems that on several occasions Governmental departments have called for his assistance by making him a member of Consultative Councils. It is extremely appropriate that this University should recognize the services rendered by Dr. Eustace Hill, not simply in his capacity as County Medical Officer, but those rendered to the cause of Public Health generally by his important literary contributions to the subject.

In presenting Dr. J. W. Smith to the Vice-Chancellor and Proctors Dr. R. A. BOLAM spoke as follows:

James Wilkie Smith came to these parts in the year 1874, and thus for wellnigh fifty years has practised the profession of medicine in the county of Durham. For half that period he has been charged with the duties of medical officer of health in the area of his home. Identified with every medical activity in the north, he has been president of practically every society which has its activities in the counties of Durham and Northumberland, and on the occasion of the long projected amalgamation of the two most important medical societies of these adjoining counties, was unanimously selected as its first president. He has held in time past the premier office in both the Northern Branch of the Society of Medical Officers of Health and the North of England Branch of the British Medical Association. There has just been opened the James Wilkie Smith Medical Institute for the practitioners of the North of England, given by the subject of these remarks for the furtherance of the interests of his profession in this district. Many lustrous names have adorned our profession, but the strength of it is the simple, silent, selfless worker, the general practitioner. No finer example, none more beloved is there than James Wilkie Smith—guide, counsellor and friend to old and young in the North country.

Sir Arthur Keith was presented by Mr. G. GREY TURNER in the following words:

Sir Arthur Keith is Doctor of Medicine and Doctor of Laws in the University of Aberdeen, Fellow of the Royal College of Surgeons of England, and Fellow of the Royal Society. He is an anatomist and physiologist of world-wide repute, and one of the best known of modern anthropologists. In the pursuit of the latter study he has lived in tropical climes, and paid the penalty which is so often exacted from the white man who penetrates the jungle, but the curse of malaria has not diminished his enthusiasm, and he remains one of the most ardent exponents of the science he has worked so long and loves so well. But it is as Conservator of the Museum of the Royal College of Surgeons that Sir Arthur is best known. He found the collection unique among the world's scientific treasures; he has made it known and appreciated the world over. The spirit of the historian is ever present in his work, and teaching is the breath of his nostrils and he has the gift of imparting knowledge in so entertaining a way that his writings are widely sought after. The illumination of his genius has laid bare many of the hidden secrets which the collection holds. He has been as the polisher to the rough-cut gem, and the modern appreciation of the work of the great Founder of the Museum owes much to the setting which Keith has given it in his repeated Hunterian Lectures and Demonstrations. Further, he has assisted in building up the magnificent War Collection of Pathological Specimens, and for this addition to the nation's pathological treasures we owe our especial gratitude. It is universally recognized that the greatest name in the history of scientific surgery is that of John Hunter; in our time his mantle has fallen on Sir Arthur Keith, and it may truly be said that

on his shoulders it has acquired additional brilliance. He is a worthy recipient for the Degree of Doctor of Science *honoris causâ* for which I have the great honour to present him.

In presenting Sir Dawson Williams Sir THOMAS OLIVER said:

The visit of the British Medical Association to these northern counties has supplied the opportunity of recognizing the valuable services to medical journalism by Sir Dawson Williams. For twenty-three years he has acted as Editor of the BRITISH MEDICAL JOURNAL, a position for which he was well qualified, since for five years previously he had acted as Assistant Editor. The high position which the JOURNAL has attained is largely owing to his efforts. It is not only a journal of great literary merit, but, as was stated two nights ago at the opening of the conference in Newcastle—when at your hands, Mr. Vice-Chancellor, he received the Gold Medal, the coveted honour of the Association for services rendered—the BRITISH MEDICAL JOURNAL is the mouthpiece of the largest medical organization in the world. In literary effort Sir Dawson Williams always aimed high, and he has succeeded. The whole of the medical profession is under a debt of gratitude to him. In other walks of life he has been equally successful. He is the author of a well known work on children's diseases.

Dr. Alfred Cox was presented by Mr. H. BRUNTON ANGUS, who said:

Dr. Alfred Cox is a graduate of this university. After a distinguished studentship he went into practice, where he toiled for twenty years, thereby experiencing the trials and troubles of the medical man in a large industrial centre. Medical work did not fill up all his time, for he entered into municipal life enthusiastically. He evinced great interest in the local Branch of the British Medical Association, of which he became president. Joining the staff of the British Medical Association, he became Secretary. His work during the war was of great value, not only in seeing that those medical men went who ought to go to the army, but also that those who should remain at home were allowed to do so.

I know that I am voicing the feeling of the Medical Faculty when I say that in conferring the degree of M.A. on Dr. Cox the University is recognizing his long and devoted services to the British Medical Association.

THE ULSTER CUP GOLF COMPETITION.

ON July 22nd, at the course of the Northumberland Golf Club, Gosforth Park, the annual competition for the Ulster Cup was held. Competitors were given the courtesy of the green, both on the day of the competition and throughout the meeting of the British Medical Association, and the thanks of the Association are due to the Club for their kindness, and also to the Secretary and Miss Armstrong at the Club-house for their kind assistance in carrying out the arrangements. Twenty-two competitors entered, of whom eight returned cards. There was also an unofficial half-crown sweepstake, for which nineteen entered.

The winner was S. T. Irwin (Royal co. Down), and the runner-up John F. O'Malley. The list of returns is printed below:

S. T. Irwin (Royal co. Down) ...	Allowance 8	...	All square.	
John F. O'Malley	" 5	...	2 down.	
A. Sutcliffe (Northumberland)...	" +2	...	3	"
C. N. Gover (Northumberland)...	" 5	...	4	"
Frank Wilson (Northumberland)	" 5	...	4	"
A. Lucas (Harborne)	" 7	...	5	"
G. E. Haslip (Walton Heath ...	" 7	...	6	"
T. F. Hill (Seaton Carew) ...	" 5	...	8	"
J. Macrae (City of Newcastle) ...	" 9	...	9	"

British Medical Association.

CURRENT NOTES.

Sir Henry Craik.

THE following letter has been received from Sir Henry Craik, K.C.B., M.P., in reply to the Medical Secretary's intimation that he had been made an honorary member of the British Medical Association:

House of Commons,
21st July, 1921.

My dear Dr. Cox,

It has given me very great gratification to receive your letter of 20th July conveying the information that the Representative Body of the British Medical Association has done me the high honour of electing me as an honorary member.

Every year during which I have represented a great medical constituency, very many members of which belong to the Association, has taught me more fully to appreciate the vast benefits which the nation owes to the medical profession. It will always be my highest privilege so long as I possess the confidence of that unique constituency, to place my services to the very utmost of my power at the disposal of the profession and of its most worthy Association.

With every expression of personal respect,

Believe me to be very faithfully yours,

(Signed) H. CRAIK.

The Report of the Medico-Sociological Committee on Maternity and Child Welfare Work.

As will be seen from the report on p. 81 of this SUPPLEMENT the motion by the Chairman of the Medico-Sociological Committee that the Committee's report be generally approved was lost. As this may give rise to misapprehension it is desirable that it should be understood that this action did not mean that the report was rejected after the usual consideration, but simply that as the Representative Body was not asked to criticize the report in detail it declined to express any official approval of it. The report therefore rests on its merits as the report of the Medico-Sociological Committee—a mixed body on which were representatives of many societies, including those of the British Medical Association.

Meetings of Branches and Divisions.

KENT BRANCH: BROMLEY DIVISION.

A VERY successful meeting, arranged by the Bromley Division, was held at the Sundridge Park Golf Club, by kind permission of the committee, on Thursday, July 21st. Non-members of the Division were invited to join in the competition. The result was as follows: First prize, Dr. Hawke, 90—12=78; second prize, Dr. Stilwell, 89—10=79.

METROPOLITAN COUNTIES BRANCH: WOOLWICH DIVISION.

THE annual general meeting of the Woolwich Division was held on July 5th, when the officers were re-elected and vacancies filled up.

It was decided that a special effort should be made to get all medical men in the district in touch with one another. For this reason, and also to re-establish the pre-war scientific meetings which brought together members of the Association and non-members, and with a view to the possibility of establishing a club reading-room, it was resolved to hold a dinner at the end of the summer to which every medical man in the district would be invited. A small committee was formed to arrange this matter.

SOUTH-EASTERN (IRELAND) BRANCH.

AT the annual meeting of the South-Eastern (Ireland) Branch, held at Kilkenny, with Dr. JAMES in the chair, on the motion of the CHAIRMAN, seconded by Dr. WALSH, Dr. Barry was installed as President for the year 1921–22. Dr. BARRY suitably returned thanks to the members present for the honour conferred on him.

The following officers were elected:

President: Dr. Barry. *President-elect*: Dr. P. Stephenson. *Honorary Treasurer*: Dr. Jellett (re-elected). *Honorary Secretary*: Dr. P. Grace (re-elected). *Representative in Representative Body*: Dr. A. B. Stephenson. *Deputy Representative*: Dr. P. Whelan. *Representative on Irish Committee*: Dr. A. B. Stephenson.

Dr. D. Walshe was elected to represent the Connaught and South-Eastern (Ireland) Branches on the Central Council.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

THE fifty-first annual meeting of the Branch was held at the Council Chamber, Barry, on June 23rd, when Mr. W. J. GREER was in the chair.

The HONORARY SECRETARY reported that he had received from Dr. D. Arthur Davies of Sketty an old minute book of the Branch which contained the record of the arrangements for the general meeting of the Association held at Cardiff in 1885. The Honorary Secretary was directed to convey to Dr. Davies the thanks and good wishes of the members of the Branch, together with a sheet of paper containing the autographs of the members present. The annual report of the Council and the financial statement for the year 1920 were adopted. The following officers were elected for the session 1921–22:

President-elect: Dr. D. Naunton Morgan. *Treasurer*: Dr Cornelius Biddle. *Honorary Secretaries*: Drs. E. E. Emery and D. R. Price.

The RETIRING PRESIDENT (Mr. W. J. Greer) then installed the new President, Dr. P. J. O'Donnell, remarking upon the splendid service he had rendered to the Association during his many years of membership. The PRESIDENT then gave a short address on "The development of Barry from a public health point of view." On the motion of the PRESIDENT, seconded by Dr. OWEN WILLIAMS, and supported by Dr. T. WALLACE, a hearty vote of thanks was accorded to the retiring President, Mr. W. J. Greer, for the very able way in which he had conducted the business of the Branch during his year of office.

This concluded the business of the meeting, after which the President conducted the members over the various health departments in Barry, including the hospital, the abattoir, and

refuse destructor. The members were conveyed by char-à-banc, and, after a very pleasant drive to Barry Island, were entertained to tea by the President. In the evening the President and twenty-two members dined together at the Park Hotel, Cardiff. The toast of "The President" was proposed by Dr. D. R. PATERSON, and Dr. T. WALLACE, in seconding, thanked the President for the very enjoyable outing which he had combined with the annual meeting. Prior to the annual meeting Dr. O'Donnell entertained the members of the Branch Council and other friends to luncheon.

SOUTH-WESTERN BRANCH.

AT the annual general meeting of the South-Western Branch Dr. Shaw was elected President, Mr. Frank A. Roper Honorary Secretary.

The annual report of the Branch Council for 1920-21 showed that the membership of the Branch at the end of the year was 424. The Devon County Local Medical Committee, which was formed under the auspices of the British Medical Association by postal election from constituencies, including the whole profession of the county area, and which was approved by the Ministry of Health, held two meetings, when rules of constitution had been adopted and methods of procedure discussed. The Committee had done useful work, first, in giving decisions as to whether certain operations performed by insurance practitioners on panel patients were or were not such as should be considered as within the service provided under the Insurance Act; and secondly, in deciding two cases brought by one panel practitioner against another under Article 36 of the Medical Benefit Regulations. A decision of the Ministry was awaited as to the re-election of this Committee under the rules of constitution, its term of office having already been considerably extended.

The question of salaries offered to assistant school medical officers by the Devon County Council was in the summer of 1920 brought into prominence by the occurrence of a vacancy on the staff. The salary offered being below the minimum laid down for such posts by the Association, the *British Medical Journal*, *Lancet*, and *Medical Officer* declined to advertise the post; and in accordance with the ethical rules a postal vote was taken of all members of the Branch on the following resolution recommended by the Council for adoption by the Branch as a binding resolution:

> That in the opinion of the South-Western Branch of the British Medical Association, no medical practitioner should apply for an appointment of whole time assistant school medical officer within the area of the Branch at a lower rate of remuneration than £500 per annum, exclusive of travelling and other expenses.

The result of the vote was an overwhelming majority in favour of the resolution; and shortly after this action was taken the required minimum salary was offered.

The East Cornwall Division, which owing to local circumstances and the war had been in a state of suspended animation, had been resuscitated, and it was hoped that the Division was now again an active force as heretofore.

With regard to the treatment in hospitals of rate- and State-aided patients the Council expressed the opinion that it was most important for the profession generally that the medical staffs of institutions dealing with such patients should see that the fees provided for them by the State or such authorities were actually paid to them. A Subcommittee had been therefore formed which communicated with all the hospitals in Devon and Cornwall, urging this upon them, and at the same time inquiring as to the classes of cases treated in each institution in compliance with the requirements of the civil authorities, the Ministry of Health, the Ministry of Pensions, etc., and also inquiring as to the payments made both to the hospital and to the staff for such work. A considerable mass of information resulted from this inquiry, which disclosed that in nearly every instance the fees were being claimed. No further action was taken, especially in view of the fact that the County Councils appeared to be taking the appropriate steps to standardize many of the fees.

SURREY BRANCH.

THE annual meeting of the Surrey Branch was held in Guildford on July 8th under the presidency of Dr. ARNOLD LYNDON, who delivered an interesting address on the conditions prevailing at St. Bartholomew's Hospital in his student days. In the afternoon the members drove out to Compton, where they were entertained to tea by Mrs. G. F. Watts (widow of the painter), who then herself conducted them over the Watts Gallery. The church at Compton was then visited, and members returned to Guildford to dinner at the Angel Hotel. After an enjoyable day, it is regretted that the attendance was not larger, only about twenty-five of the 440 members of the Branch being present.

SUSSEX BRANCH.

THE eighth annual general meeting of the Sussex Branch was held at the Art Gallery, Worthing, on June 29th, when Dr. FRANK LOUD was in the chair. Dr. FRANK HINDS was inducted to the chair on his election as President of the Branch.

The following were elected officers of the Branch for the year 1921-22:

President: Dr. Frank Hinds. *Vice-Presidents*: Dr. Frank Loud, Dr. Hessey. *Honorary Secretary and Treasurer*: Dr. A. M. Daldy.

The election of a President-elect was deputed to the Branch Council on the nomination of the Brighton Division.

A hearty vote of thanks was accorded to Dr. Frank Loud for his services as President of the Branch.

Prior to the meeting the President-elect (Dr. Hinds) entertained forty members of the Branch to luncheon. After the meeting the members and ladies accompanying them were conveyed by char-à-banc and motor cars to Hepcote; the party walked up the north slope of Cissbury to Cissbury Camp, where Mr. A. HADRIAN ALLCROFT gave a most interesting address on the subject of the early history of the camp. The members and their friends attended a reception and tea given by the Mayor of Worthing and the Committees of the Museum and Art Gallery, at the Art Gallery. During the reception votes of thanks, proposed by the PRESIDENT, were accorded to the Mayor, the Chairmen of the Museum and Art Gallery Committees, and to Mr. Hadrian Allcroft. The Museum was subsequently visited, and exhibits of special interest in connexion with Cissbury Camp were explained by the Librarian, Miss Frost.

A golf match played during the afternoon between members of East and West Sussex was won by the latter.

Correspondence.

The Medical Profession and the Hospitals.

SIR,—If the medical profession is to retain the respect of the intelligent members of the community it must come to some reasonable agreeable on this question. That this is possible is quite evident from the discussion in the Annual Representative Meeting and the paper by Sir George Newman. Cannot the profession agree to the following?

1. It does not desire to retain the stigma of charity in connexion with the hospitals.
2. Admission to hospital shall be governed by the medical needs of the applicant and his rights of citizenship.
3. The hospitals should be financed by State grants, municipal subsidies, and free gifts.
4. The medical work of the hospitals should be controlled by committees composed of members of the medical and surgical staffs, and elected representatives of general practitioners.
5. The remaining business of hospitals should be managed by local committees representative of all local health interests.
6. The hospital staffs should be elected by special elective committees selected from (5), with co-opted representatives of the local profession.
7. The medical staffs should be adequately remunerated for their services.
8. All hospital staffs should consist of senior and assistant medical officers, the latter of whom shall only receive remuneration after two years of service.
9. Hospitals must be graded into teaching, primary, secondary, and cottage hospitals, and be made to work in co-operation.
10. The nursing staffs must be organized, and admission to the nursing profession must be by one portal of examination.
11. All convalescent homes, ambulance organizations, etc., must be linked up with the hospital organization.

After thirty years of consideration of this question I am convinced that on the above lines a hospital organization can be created which will be satisfactory to the community and advantageous to the whole medical profession.

Would not something like the above be better than the present, and the suggested, method of financing hospitals, and would it not be more in sympathy with present-day ideals if the inmates were simply citizens seeking medical relief for their sufferings, and not divided into classes, such as private, paying, trade-union, insurance, and charity patients?—I am, etc.,

July 25th. FERDINAND REES, M.D.

Professional Secrecy.

SIR,—With reference to the question of professional secrecy, which was discussed at the recent British Medical Association meeting in Newcastle-upon-Tyne, I consider that professional secrecy should not be violated where no criminal question is involved, but where the practitioner becomes *particeps criminis* it should be the regular rule of the profession that the police be informed.

Professional secrecy has almost without protest been abolished in the case of notifiable diseases, and therefore

when knowledge of criminal abortion or criminal offences is involved it is the duty of the practitioner immediately to inform the police.—I am, etc.,

Newcastle upon Tyne, July 23rd. R. P. RANKEN LYLE, M.D.

INSURANCE.

COUNTY OF LONDON PANEL COMMITTEE.

THE first meeting of the newly-elected Panel Committee for the County of London was held on July 5th. The Secretary of the Committee (Dr. R. J. Farman) reported at the outset that the number of practitioners appointed to represent the constituences of Greenwich and Westminster was one less than the number required, and that no practitioners had been appointed to represent the constituencies of the City of London, St. Marylebone, and Woolwich. These vacancies were accordingly filled by nominations from the meeting. The following additional members were co-opted: To represent the consulting medical staffs of medical schools, Mr. Charles Gibbs, Dr. T. D. Lister, and Dr. Lauriston Shaw; to represent London non-panel practitioners resident north of the Thames, Dr. John Paxton, Dr. Robert Dunstan, and Dr. A. Welply; to represent London non-panel practitioners resident south of the Thames, Dr. E. Carrigan, Dr. Henry Jackson, and Dr. J. B. Wallace; to represent medical women practitioners on the panel, Dr. Meta Grace Jackson, the nominee of the Association of London Women Panel Practitioners; and three other practitioners, Dr. George Madden, Dr. J. B. Mackenzie, and Dr. R. S. Pearson. Dr. H. J. Cardale was re-elected to the chair of the Committee, Dr. Coode Adams to the vice-chair, and Dr. Lauriston Shaw to the treasurership. The only remaining business was the appointment of members on subcommittees and of representatives of the Committee on outside bodies.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Surgeon Commander W. B. Macleod has been placed on the retired list with the rank of Surgeon Captain.

Surgeon Commanders J. P. H. Greenhalgh to the *President*, additional, for Royal Naval Recruiting Office, Strafford. G. D. Bateman to the *Vindictive* (temporary), T. R. L. Jones to the Plymouth Hospital for course, J. Bomidas to the *Orion*. G. E. Hamilton to the *Cyclops*, J. D. Keir to the *Lucia*, R. Willan to the *Curacoa*, M. W. Haydon to the *Caledon*. Surgeon Lieutenant Commanders R. K. Shaw to the *Valiant*, H. B. Parker, D.S.C., to the *Conqueror* (temporary), S. W. Grimwade, O.B.E., to the *Fraud* for youths' training establishment.

Surgeon Lieutenant Commander G. A. S. Hamilton has been promoted to the rank of Surgeon Commander.

Surgeon Lieutenants to be Surgeon Lieutenant Commanders: J. F. M. Campbell, R. J. Inman, R. Lyon, M. B. Macleod.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Lieutenant Commanders H. L. Murray and J. H. G. Howe have been promoted to the rank of Surgeon Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major W. E. Marshall, M.C., is seconded for service under the Foreign Office.

Captain W. V. Corbett retires, receiving a gratuity, and is granted the rank of Major.

Captains W. McM. Chesney, M.C., and W. W. MacNaught, M.C., retire, receiving a gratuity.

Captain E. J. Mannix is seconded for service under the Foreign Office.

Temporary Captain G. W. Will to be Captain, with seniority April 12th, 1918.

Ivor Rudge Jones, late temporary Captain, to be temporary Captain, with seniority January 16th, 1918.

The following relinquish their commissions: Captain S. P. Snook (on account of ill health), and retains the rank of Captain. Temporary Captains J. J. Clarke, J. B. Morrison, and J. MacRae, and retain the rank of Captain. Temporary Captain B. H. Woodyatt, and is granted the rank of Major.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following Captains relinquish their commissions and retain the rank of Captain: S. A. Withers, A. B. Grant.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captain T. S. Elliot, M.C., vacates the appointment of D.A.D.M.S., North Midland Division.

Captain C. H. Allen, O.B.E., resigns his commission and retains the rank of Captain.

To be Captain: Major James Taylor, O.B.E. (late R.A.M.C.), with precedence as from April 5th, 1918, and relinquishes the rank of Major; Major G. Dalziel, M.C. (late R.A.M.C., S.R.), with precedence as from April 5th, 1918, next below Captain J. Taylor, and relinquishes the rank of Major; Captain F. L. Napier (late R.A.M.C.), with precedence as from April 5th, 1918, next below Captain G. Dalziel, M.C.; Captain R. F. Young, M.C. (late R.A.M.C.), with precedence as from February 28th, 1918; Captain J. K. Rennie, M.C. (late R.A.M.C.), with precedence as from February 2nd, 1919; Captain J. O. Thomas, M.C. (late R.A.M.C.), with precedence from October 6th, 1920.

Captain M. D. Mackenzie (late R.A.M.C.) to be Lieutenant, with precedence as from June 19th, 1917, and relinquishes the rank of Captain.

DEFENCE FORCE.

ARMY MEDICAL SERVICE.

R.A.M.C.—Temporary Captain J. A. Stenhouse relinquishes his commission.

2nd (East Anglian) Field Ambulance (D.F.).—Temporary Captain F. W. Poole to be temporary Major.

1st (East Lancashire) Field Ambulance (D.F.).—Temporary Major R. MacKinnon (Captain R.A.M.C.S.R.) relinquishes his temporary rank.

3rd (South Midland) Field Ambulance (D.F.).—Temporary Lieut.-Colonel T. A. Green, D.S.O., relinquishes his commission. To be temporary Captain: B. Astley-Weston, April 11th, 1921 (substituted for notification in the *London Gazette* of May 11th, 191, appointing this officer as temporary Lieutenant).

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W. Daily, 10 a.m., Visits to Wards; 2 p.m., In- and Out-patient Clinics and Operations. *Demonstrations*:—Tues., 2.30 p.m., Mr. Addison: Surgical; Wed., 11 a.m., Mr. MacDonald: Cystoscopy; Thurs., 11 a.m., Gynaecological; Fri., 12.15 p.m., Dr. Burnford: Applied Pathology; Sat., 10 a.m., Medical. *Lectures:* 4.30 p.m., Tues., Dr. Pritchard: Intravenous Therapy; Wed., Mr. Addison: Carcinoma of the Breast; Thurs., Dr. A. Saunders: Rickets; Fri., Mr. B. Davis: Throat, Nose and Ear.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4757 Dublin.)

APPOINTMENTS.

BELAM, Francis A., M.D., D.P.H., Assistant Medical Officer of Health for the County Borough of Chester.

BELLWOOD, Kenneth, O.B.E., F.R.C.S., Surgeon to the Albert Dock Hospital of the Seamen's Hospital Society.

HAUXWELL, Frank, M.B., Ch.B.Glasg., D.P.H.Camb., Medical Officer of Health and School Medical Officer, County Borough of St. Helens.

HAWTHORNE, E. S., F.R.C.S., L.R.C.P., D.P.H., Medical Officer of Health to the Barnard Castle Rural District Council and the Startforth Rural District Council.

NICHOLSON, Miss Ruth, M.B., B.S.Dunelm., Honorary Assistant Gynaecologist to the Liverpool Stanley Hospital.

SLOT, Gerald M., M.D.Lond., Medical Registrar to Charing Cross Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

CLARKE—BLAKE.—On 23rd July, at St. Marylebone Parish Church, James Kilion Clarke, M.B., Ch.B., D.P.H., Lecturer in Pathology and Bacteriology at the School of Medicine, Cairo, to Evelyn Muriel, daughter of Mr. and Mrs. A. H. Blake, of Brondesbury, N.W.

DEMPSTER—BALFOUR.—At West Newton Parish Church, Sandringham, on July 20th, by the Rev. Roland Grant, B.D., M.V.O., Rector of Sandringham and Domestic Chaplain to the King, assisted by the Rev. S. B. Baron, William Dempster, M.A., M.B., Ch.B., son of the Rev. James Turnbull Dempster, Glasgow, to Annie, daughter of the late Mr. and Mrs. Balfour, Jedburgh.

HALL—HUTSON.—At St. Barnabas Church, Burnmoor, Fence Houses, on 20th inst., by Rev. S. M. Reynolds, M.A., J. Robertson Hall, M.B., Ch.B., Fence Houses, co. Durham, to Elizabeth Hutson, Fence Houses.

DEATHS.

PRICE.—On the 23rd inst., at a nursing home in Manchester, after an operation, Councillor Richard Price, M.D., D.P.H., of Harrington Terrace, Ashton-under-Lyne, aged 49 years. Cremated at Manchester Crematorium, Thursday, July 28th.

REYNOLDS RAY.—On 8th July, at 1, Coventry Horse Chambers, Haymarket, after a long illness, Edward Reynolds Ray, M.R.C.S.Eng., L.S.A., formerly of Dulwich Village, S.E., aged 79.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 6TH, 1921.

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British Medical Association.

CURRENT NOTES.

Presentation to Mr. Warne.

UPON the occasion of his retirement from the office of Financial Secretary and Business Manager of the British Medical Association, Mr. W. E. Warne was entertained by the staff at a complimentary dinner on July 28th, when Sir Dawson Williams, Editor of the JOURNAL, was in the chair. The loyal toast having been duly honoured, the Chairman, in proposing that of "Our Guest," mentioned that Mr. Warne's connexion with the Association commenced in 1881, when the membership was 9,202, as against nearly 23,000 at the present time, and the circulation of the BRITISH MEDICAL JOURNAL was 10,000 copies, as against nearly 27,000 which were now printed. The work of the Association had grown chiefly from two causes—one being the enthusiasm of voluntary workers, and the other the excellent services rendered by the salaried staff. The Association, when it removed to London in 1872, was practically bankrupt, but, through the perseverance of its officers, it soon recovered from its financial difficulties, and was able to purchase the freehold site of 429, Strand, and some adjoining property, upon which it had erected its present building. In concluding his remarks the Chairman asked Mr. Warne to accept on behalf of the subscribers an illuminated address, together with a silver tea service and a tray bearing the following inscription:

> Presented to W. E. Warne, Esq., by the officers, officials, and members of the staff of the British Medical Association, upon his retirement after forty years' service, July 28th, 1921.

Mr. Warne, in acknowledging the presentation, expressed his thanks to the subscribers for the handsome gifts, and referred to the kindness which he had always experienced from the officers of the Association and from his brother officials since he succeeded to the post of Financial Secretary and Business Manager. Among those present were Dr. Alfred Cox, Dr. Courtenay Lord, Dr. Scott Stevenson, Dr. Macpherson, Mr. Ferris-Scott, and Miss A. L. Lawrence. A letter was read from the Treasurer of the Association, Dr. G. E. Haslip, expressing his regret that he was prevented from attending. During the evening there was a fine display of musical talent.

Fee for Notification of Infectious Diseases.

The announcement by the Government that the official end of the war, except in the case of Turkey, will be dated from September 1st next has elicited questions as to when the 2s. 6d. notification fee for infectious diseases may be expected to be reinstated. The Local Government (Emergency Provisions) Act, 1916, reduced the fee to 1s., and Section 24 of the Act stated that this and other sections should have effect only for the duration of the war and during such period or periods (not exceeding one year) as the Local Government Board might fix. On April 25th, 1919, Dr. Addison (then Minister of Health) said that he hoped to revert to the pre-war scale as soon as possible. On December 20th, 1919, the Ministry issued a circular to local authorities stating that the infectious disease provisions of the Emergency Provisions Act, 1916, would "lapse on the date of the termination of the war as fixed by Order of Council, after which date the fee to medical practitioners for notification of cases of infectious disease will revert to 2s. 6d." It will therefore be seen that local authorities have instruction to pay the old fee on and after September 1st, 1921.

Photograph of the Annual Representative Meeting.

The photograph of the members of the Annual Representative Meeting is now ready, and copies may be obtained from Messrs. James Bacon and Sons, 81, Northumberland Street, Newcastle-on-Tyne, for 8s. 6d., inclusive of postage. Members who have not seen the photograph may rest assured that it presents an excellent likeness of almost every individual in the group.

Found at Representative Meeting.

A pair of gold pince-nez was found at the close of the Representative Meeting at Newcastle. It was left with the janitor in case anyone called for it, but was not claimed. It is now in the possession of the Honorary Local General Secretary, Mr. R. J. Willan, M.V.O., O.B.E., F.R.C.S., from whom it can be got by writing to him at 6, Kensington Terrace, Newcastle-upon-Tyne.

THE ANNUAL EXHIBITION OF SURGICAL INSTRUMENTS, DRUGS, AND FOODS.

THE exhibition of surgical instruments, drugs, foods, and other articles of interest to the medical practitioner was again a popular feature of the Annual Meeting. If any medical visitor to Newcastle, amid the distractions of the crowded programme, failed to look in at St. George's Drill Hall, he missed what would have been a profitable and in some ways an inspiring hour. The exhibition is really an annual demonstration of the skill and resource with which workshops, laboratories, and kitchens—not forgetting printing presses—supply the doctor with that which he wants to use, to recommend, or to consult. Over eighty exhibitors displayed their wares, and yet, the hall being large enough to accommodate 10,000 people standing, there was none of that crowding of the aisles which sometimes makes the round of an exhibition so fatiguing. In this brief review an attempt has been made to classify the exhibits; but to pursue this method thoroughly would mean that some firms with compre-

hensive displays would have to be noticed more than once or twice. We have simply selected for mention what seemed to be the outstanding features.

Surgical Instruments and Appliances.

The array of surgical instruments was larger than usual, and some firms, like Mayer and Phelps, had quite a bewildering array of appliances. One feature of this stand was Shipway's apparatus for the administration of warm anaesthetic vapours, and among other anaesthetic appliances were some improved gags. A complete equipment, illustrating many recent refinements in surgical manipulation, especially in ophthalmic surgery, was to be found at the stand of John Weiss and Son, Ltd., while cystoscopes and urethroscopes and other instruments of that order figured at the stand of the Genito-Urinary Manufacturing Company. Forceps in rustless steel, among many other items of obstetrical equipment, were shown by the Edinburgh firm of J. Gardner and Son, while a Newcastle house, Robert McQueen and Son, Ltd., displayed special designs of forceps and clamps by Professor Rutherford Morison, Mr. Grey Turner, and other surgeons of the Royal Victoria Infirmary. Another Newcastle firm, R. Whitelaw, Ltd., included, alongside a large exhibit of surgical instruments, a selection of orthopaedic appliances, with spinal frames and various forms of splints and trusses.

Artificial Limbs.

Half-a-dozen exhibitors showed to what ingenious lengths the designing of artificial limbs has gone. Lightweight limbs of various kinds, in willow, leather, or light metal, for above-knee or below-knee amputations, were shown by Peet, Gilman and Co., Ltd., as well as such things as pelvic bands and waist belts and surgical boots. F. G. Ernst employed a method of close fitting and concealment in his devices for overcoming the disabilities of rheumatoid arthritis and ununited fractures and dislocations. Some excellent exhibits of this order were to be seen at the stand of W. R. Grossmith, including special arm appliances and an improved foot for Syme's amputation. Artificial arms for both dress and working purposes, as well as surgical boots and leg instruments, were exhibited by Anderson and Whitelaw and by M. Masters and Sons, the latter firm specializing in lightweight legs; the mechanical arm with the gripping hand, which can perform marvellous feats for a contrivance minus living muscle, was the attraction of the "P.K." Arm, Ltd. This firm had also, for above-knee amputations, a safety leg, which was fitted with an automatic lock to prevent the knee from giving way when weight was put on the leg.

Hospital Furniture.

The display occupying the largest place in the whole exhibition was that of Down Brothers, Ltd., whose aseptic hospital furniture, including operation tables and hospital beds and trolleys of various kinds, struck the note of instant efficiency and surgical cleanliness. Robert Morison, of Edinburgh showed his bed-frame for the mechanical treatment of fractures, offering the means of suspension, traction, and the attainment of various postures for any of the limbs, while to this could be attached certain pulleys and extension devices. Other designs of beds and cots for hospitals were shown at the stand of Hoskins and Sewell, Ltd., the features being the strength and pliancy of the wire frame and the smoothness of the casters. A new device for sanatorium use was a folding chair, with sunblind, shown by the Institution Requisites Company. Perhaps it is proper to mention here, when dealing with hospital requirements, that the Ronuk sanitary stains and polishes were again in possession of the floor.

Laboratory Equipment and Physiological Instruments.

The laboratory worker found his needs supplied in various directions. Once again Charles Hearson and Co., Ltd., had an interesting display of apparatus, including various new patterns of recording drums, some of them fitted with an extension arm for use as a kymograph to record variations of fluid pressure. A new drying-oven sterilizer, all of metal, and heated by electricity, a respiration pump, and a fine battery of microscopes with every facility for the most exacting bacteriological and biological work were other features of the stand. Another valuable microscope exhibition was to be seen at the stand of Ogilvy and Company, and here also were some small epidiascopes which proved how far projection apparatus of this type has developed in noiselessness and ease of adjustment. The exhibit of the Cambridge and Paul Instrument Co., Ltd., was not so much a trade stall as a research institute in miniature. As usual, the action of the microtomes was a fascination to many visitors. Another interesting thing here was a continuous recording clinical thermometer. A stand not to be taken casually was that of Hawksley and Sons, with many kinds of blood-pressure instruments and instruments for electro-diagnosis and for anthropometry; and sphygmomanometers bearing the names of Martin, Hill, Oliver, and Brunton. More instruments for measuring the tension of arterial blood, especially the small portable "Tycos" sphygmomanometer, were shown by Brady and Martin, Ltd. Ophthalmological testing instruments were the chief feature at the stand of Rayner and Keeler, Ltd., where several of the Edridge Green colour perception tests were demonstrated.

X-ray and Electrical Apparatus.

The exhibits of *x*-ray apparatus were fewer in number than in previous years, but one of them was, perhaps, the most interesting thing in the whole exhibition. This was a portable *x*-ray outfit, with a Coolidge tube. As packed for transit, it consisted of four convenient packages, scarcely more bulky than the luggage one would take away for the week-end, and these included everything necessary for a complete installation. This is, indeed, bringing the mountain to Mahomet. The arrangement, which was brought out by the British Thomson-Houston Co., Ltd., added noiselessness and automatic action to its other advantages; the *x* ray bulb was hardly recognizable as such, its outside diameter being only 2½ in. At a neighbouring stand the radiographer was instructed in the art of getting good negatives. Kodak, Ltd., showed a "duplitized" *x*-ray film, which is a film consisting of a sensitive emulsion on both sides of a thin transparent base, and the transparencies and prints by well-known workers were the evidence as to its value. The Dowsing Radiant Heat Company, Ltd., showed the apparatus used in the company's institutions and in hospitals, including not only the radiant-heat bed or bath, but various arrangements for the application of heat locally. The instrument of W. H. Pettifor for furnishing electrical aid to the deaf by means of a specially constructed telephone was first seen at last year's exhibition and was subsequently reviewed in these columns; it was again on view at Newcastle.

Literature.

"Booksellers' Row" had more attractions than ever. H. K. Lewis and Co., Ltd., brought down many attractive volumes from their shelves, the most elaborate being some dermatological textbooks with many excellently produced coloured plates. Oxford Medical Publications were also conspicuous with many standard works by leading authorities in medicine, surgery, and general science. A representative selection of post-war monographs had been got together by E. A. Brooke-Williams, and yet another library corner was furnished by the Bristol publishing house of John Wright and Sons, Ltd.; the difficulty was to pick and choose amid so many attractive covers. H. R. Ellis brought a selection from his medical library, with up-to-date catalogues and lists; and a local bookseller on the premises, R. Waugh, showed the textbooks supplied to the College of Medicine and Armstrong College. An unusual exhibit was from the Museum Galleries of London, where one came upon mezzotint reproductions of the old Masters and other engravings. These, although they had no particular medical interest, gave an attractive note to their corner of the exhibition, and must have appealed to many medical fine-art collectors.

Chemical and Pharmaceutical Products.

Crossing over to the other side of the exhibition the visitor found himself confronted at Stand No. 1 with the numerous products of Oppenheimer, Son and Co., Ltd. In these days it is not sufficient merely to sugar the pill; the Oppenheimer "pulverettes" are light enough to be crushed between finger and thumb, and when their frail soluble sugar shell has been dissolved the powder enclosed is liberated; there is no excipient. The cachets used in palatinoid medication were exhibited here, also a selection of concentrated liquors to be diluted for tinctures and infusions, and the "Oscol" series of some dozen standardized colloidal preparations. Crookes's Laboratories (British Colloids, Ltd.) also exhibited their "collosols," and the demonstration of the Brownian movement by the ultramicroscope as well as the other objects at this stand always attracted an interested group. The preparation "Yadil" was shown by Clement and Johnson, Ltd., in various forms (liquids, creams, jellies, soaps and surgical lubricants). Another preparation, "Cyllin," an antiseptic for internal or external use, was the principal feature at the stand of Jeyes' Sanitary Compounds Co., Ltd.; this also was shown in many different forms. Howards and

Sons, whose aspirin tablets lent themselves to a graceful display, put in their front line their standard ether, an anaesthetic used in the army throughout the war. The new general anaesthetic, "Ethanesal," was the principal feature of the exhibit of Savory and Moore, Ltd. This is an ether from which impurities have been eradicated without destroying its strong anaesthetic property. The new anaesthetic was the subject of a paper read recently in the Section of Anaesthetics of the Royal Society of Medicine,[1] and the claim is made for it that it is less toxic than chloroform and causes less post-anaesthetic vomiting. Special attention was drawn by Parke, Davis and Co. to a concentrated vitamin preparation known as "Metagen," but there are many other interesting exhibits here, including some new bacterial vaccines, and this firm was one of a group, to be mentioned presently, showing petroleum lubricants.

A very modern chemist's counter was that of W. Martindale. One thing which caught the eye here was sodium morrhuate, the preparation which has been used lately in the treatment of leprosy, but the centre of the stand was occupied with sterules for the inhalation of amyl nitrite, and with a new soluble aspirin named "Magisal." This firm showed many other organic chemicals of its own preparation to illustrate British resource in a field which has been often looked upon as a foreign monopoly. Several fine chemical products of British Drug Houses, Ltd., were shown by Phillips, Spencer, Dakers, and Co., including barium sulphate for the *x*-ray meal, antimony, sodium tartrate, resorcin, and others. Genatosen, Ltd., showed, along with "Sanatogen," various mouth and throat disinfectants and urinary antiseptics; those interested in vaccine therapy found here an interesting demonstration of the detoxication of vaccines. W. A. Wharram, Ltd., drew attention to a number of pepsin preparations, and also, as a side line, demonstrated a system of medical bookkeeping and card-indexing. The Anglo-French Drug Company, Ltd., and Modern Pharmacals, Ltd., combined in a stand to show a large number of French and other pharmaceutical products; a new intestinal disinfectant called "Dimol" also figured here, as well as the arsenobenzol and novarsenobenzol of the Corbiere laboratories. "Glyco-thymoline," an alkaline antiseptic solution of American manufacture, with T. Christy and Co. as its British agents, had a stand to itself. The Newcastle firm of Brady and Martin showed what the north can do in the way of medicinal preparations, especially in work on animal extracts, and another Newcastle firm, Mawson and Proctor, Ltd., had an excellent exhibit, not only of drugs, but of filters and dressings and many things of general interest to the medical man. The chief attraction of Wyleys, Ltd., was a good showing of antiseptic jellies, but the whole stand, like others, was a sort of illustrated page of the Pharmacopoeia.

Paraffin Preparations.

At several stands liquid paraffin in various forms was exhibited. William Browning and Co., Ltd., had "Semprolax," a liquid paraffin of pleasant flavour, making one wonder by what art there could be obtained from crude petroleum something not only pure but agreeable to the taste. Another liquid paraffin exhibit was at the Virol stand, "Virolax," being an emulsion of the chemically pure liquid, which, it is claimed, is a pleasant laxative. The exhibit of the Anglo-American Oil Company, Ltd., was devoted to "Nujol," a liquid paraffin which comes from the laboratories of the Standard Oil Company, and the viscosity of which is said to be undeviating. Paraffin, coloured and flavoured, was also to be seen at the stand of C. J. Hewlett and Son, Ltd., under the trade name of "Deliciol"; the same firm had a variety of antiseptic creams and other preparations.

Toilet Requisites.

Several stands were occupied chiefly with articles for hygienic toilet. At the entrance the attention of visitors was drawn to the claims of "Pepsodent," a dentifrice which is acid and not alkaline in its reaction, and over the way there was another dentifrice by D. and W. Gibbs, a solid cake, as well as various creams, soaps, and powders. Further on were the "Sapon" soaps, for which high cleansing properties were claimed, involving not merely superficial cleanliness, but the thorough ejection of lice and their eggs, without injury to skin or hair.

Food, Drinks, and Spas.

Many of the firms already mentioned for their more strictly medicinal preparations—Virol, Ltd., for example—combined with these an exhibition of food products, and other foods exhibited are so well known as to need no further description. What can be said of the appetizing display of the Cadbury chocolates and cocoas? Or of "Oxo," except that "Hospital Oxo," a form of the fluid beef specially prepared for the sick-room and hospital, also made its appearance? Or of Brand's essences, save that they had a recent addition in the shape of a liquid peptone prepared from beef and barley malt? At the "Glaxo" stand a representative from the dietary and cookery department of the firm was giving demonstrations of "Glaxo" in specialized diets. Other foods exhibited were "San-a-gen," a palatable dried milk protein, and "Numol," described as a lecithin food for malnutrition; the Calders Yeast Company, Ltd., of Newcastle, showed its malt extract and medicinal yeast, and another Newcastle firm, Mawson and Proctor, Ltd., had a food for babies called "Majax Sugar of Milk." The Apollinaris and Apenta waters were again forthcoming, while Gaymer's Norfolk cyder called itself the champagne of England, and claimed virtue in cases of gout and rheumatism. The sparkle of Continental springs was to be seen at the stand of Ingram and Royle, Ltd., about twenty spas in France and further afield contributing. Six of our British spas thrust their charms upon the visitor. Although each spa had a separate stand, the stands were all in one block in amicable rivalry, and the passer-by was introduced in quick succession to the health values and amenities of Bath, Buxton, Droitwich, Harrogate, Leamington, and Woodhall Spa, strictly in their alphabetical order. Probably he felt how happy he could be in any of them if the others would desist from pressing their booklets upon him.

Miscellaneous.

From British fountains to tropical sunshine was only a journey across the exhibition floor, to where the Cellular Clothing Company, Ltd., was showing a specially dyed red fabric to wear under blazing skies, with the idea of filtering out the injurious actinic rays. The domestic gas-fire asserted its claims at a stand where the British Commercial Gas Association was proving with what efficiency and pleasure gas can be used in the home and elsewhere, and how its more extended use will make for the economy of natural resources. Opposite to this stand the virtues of electricity for heating and cooking in the household and institution were canvassed by the British Electric Transformer Company, Ltd., whose "flame effect" fires were certainly very taking.

Two insurance agencies claimed attention, one of which was the Medical Sickness, Annuity, and Life Assurance, Ltd., whose chief business is sickness insurance on a permanent basis, and the other, the Medical Insurance Agency, founded with the object of securing for medical men contracts for insurance on advantageous terms. Thus the visitor was reminded of the uncertainty of human life, even amid a host of things whose purpose is to sustain and prolong it.

[1] British Medical Journal, April 16th, 1921, p. 565.

Association Notices.

CHANGES OF BOUNDARY.

Divisions of Kent Branch.

THE following changes have been made by the Council, and take effect on August 6th, 1921:

That the Ashford and Canterbury and Faversham Divisions be discontinued and their areas reorganized as follows:

1. *Ashford Division.*

(*a*) The municipal borough and rural district of Tenterden to be incorporated in Maidstone Division.

(*b*) The municipal boroughs of Lydd and New Romney, the urban district of Ashford, and the rural districts of East Ashford, Romney Marsh, and West Ashford, to be incorporated in Dover and Folkestone Division.

2. *Canterbury and Faversham Division.*

(*c*) The municipal borough of Queenborough, the urban districts of Sheerness, Milton Regis, and Sittingbourne, and the rural districts of Sheppey and Milton to be incorporated in Rochester, Chatham, and Gillingham Division.

(*d*) The county borough of Canterbury, the municipal borough of Faversham, the urban districts of Whitstable and Herne Bay, and the rural districts of Blean, Bridge, and Faversham to be incorporated in Isle of Thanet Division.

Formation of a Mid-China Division.

THE following change has been made by the Council, and takes effect on August 6th, 1921:

That a Mid China Division of the Hong Kong and China Branch be formed, the area of the Division to be the Yangtze Provinces—namely, An-Hui, Hu-Nan, Hu-Peh, Kiang-Si, Kiang-Su, and Sze-Chuan.

Correspondence.

The Medical Profession and the Hospitals.

SIR,—Is it not a pity that Dr. Ferdinard Rees (SUPPLEMENT, July 30th, p. 91), after considering the question of the medical profession and the hospitals for thirty years, should make use of such loose expressions as the "stigma of charity" and the "rights of citizenship"? If a man is too poor to pay for something that he wants he can only get it at someone else's expense. Has he any inherent right to the possession of what he desires? Only, I imagine, if the rest of the community agree to give it to him. This is done by passing laws compelling the rest of the community to subscribe to his support, as was done in the case of the Poor Laws. If a man who cannot pay desires hospital treatment, he can obtain it either through charity or through some State-supported institution such as the infirmary. A great many people talk about the stigma of the Poor Law; but, although it is possible to remove certain disabilities which at present attach to the use of the Poor Law, the essential fact of receiving treatment at someone else's expense—a stigma of poverty—will remain. The man, therefore, who cannot afford hospital treatment at his own expense must either accept it with the stigma of charity or with the stigma of State provision similar to that offered by the Poor Law infirmary. To me there seems little difference, except that I think I would prefer something given generously by a voluntary donor to something provided grudgingly by harassed taxpayers. However, this is a matter of taste. If I may make a more or less constructive suggestion, it would be that the method of obtaining something one cannot pay for with the least loss of self-respect would be by voluntary association with one's fellows, so that the contributions of potential patients may insure for the needs of actual patients. Similar precautions are taken by most people when they insure against fire. This was also the system of the friendly societies, and I am afraid that I am still unable to see that recent developments are an improvement on that system. And in such an association it is not derogatory to accept gifts from better-placed members of the community, who might well be attracted to a fellowship of this nature.

However, amidst the present notions of the stigma of this and the stigma of that and the ideas as to rights of citizenship for which, as far as I can see, Nature offers no justification, I am afraid my views are about as valuable as would be those of the extinct dodo.—I am, etc.,

London, W., July 29th. C. BUTTAR.

Legal Defence of Members.

SIR,—I think it a pity, in the interests of the Association, that the motion by St. Helens and Warrington on the legal defence of members did not receive a more adequate discussion at the Representative Meeting than is reported in the SUPPLEMENT of July 23rd. The Solicitor's opinion that the Memorandum of the Association drawn up a quarter of a century ago cannot be amended as to include this very obvious function of a professional society will give much point to the assertions of the Medico-Political Union that the British Medical Association is "a scientific Association," well meaning and harmless, and of little value to the individual practitioner.

Dr. Hawthorne, in moving the rejection of the motion, stated that he would not thrust this burden on the Council, and referred to the existing defence associations. But do these societies really meet the case of the doctor in professional trouble? Are they not too ready to shelve and compromise? One hears very little of them. No doubt they have a good membership and income, but what control has a member over their action in any particular case? If he is dissatisfied all he can do is to resign. He cannot get the influence and backing of his colleagues such as he might get from a Division of the British Medical Association or from the members of a Panel Committee.

It greatly redounds to the credit of the Cheshire Panel Committee that they recently prosecuted a successful appeal against the censure of a Medical Service Subcommittee on one of their colleagues. These "mundane matters" touch the individual practitioner acutely, and if the Association is precluded by law from directly undertaking this function of legal defence in professional matters, can it not be done indirectly as it now does in other "mundane matters," such as the insurance against burglars, etc.? One or two good cases would do more to rouse the apathy of individual members and strengthen their solidarity and loyalty to the Association than all the scientific lectures that are likely to be given, and in writing this I have no desire in any way to deprecate the scientific activities of the Association.

Unless the Association moves forward from its position of twenty-five years ago it will not always retain its members at £3 3s. a year unless something more than the JOURNAL and an occasional divisional meeting are its chief privileges to the individual medical man.—I am, etc.,

Warrington, July 25rd. J. S. MANSON.

*** Dr. Manson's letter is printed, although the utility of doing so may be doubted in view of the fact that the question was ventilated at the recent Representative Meeting. Had Dr. Manson been present he would have seen that there was no such general dissatisfaction with the work of existing defence associations as he seems to assume; the debate showed that any attempt by the British Medical Association to take up this work would meet with considerable opposition from a large section of the membership. In his last paragraph Dr. Manson seems to ignore the central work done for members of the Association.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medsecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (3 lines).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. *Demonstrations:* Mon., noon, Dr. S. Pinchin: Diseases of the Heart; Tues., 10 a.m., Surgical Registrar: Surgical Cases; Wed., 10 a.m., Mr. Sinclair: Surgical Diseases of the Abdomen; Thurs., Dr. A. Saunders: Medical Cases; Fri., 12.15 p.m., Dr. Burnford: Applied Pathology; Sat., 10 a.m., Dr. Saunders: Medical Diseases of Children. *Lectures:* 4.30 p.m., Mon., Dr. A. Saunders: Scurvy; Tues., Dr. Pritchard: Acute Pyogenic Infections; Wed., Mr. Page: Anaesthesia; Thurs., Mr. MacDonald: Bladder Growths; Fri., Mr. D. Buxton: Dental Emergencies in General Medical Practice.

APPOINTMENTS.

ABEL, A. Lawrence, M.S.Lond., F.R.C.S.Eng., Honorary Surgeon to the Kensington and Fulham General Hospital.

NICORY, Clement, M.R.C.S., L.R.C.P.Lond., House-Surgeon at the Torbay Hospital, Torquay.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

BERWITZ.—On July 29th, at "Alberta," Albert Road, Levenshulme, Manchester, to Dr. and Mrs. Samuel H. Berwitz, a daughter.

JOHN.—On July 23rd, at 2, Hall Lane, Bradford, Yorks, to Dr. and Mrs. J. R. John, a daughter (Margaret).

MARRIAGE.

HUDSON BASTOW.—On June 19th, at St. Alban's Church, Burnaby, B.C., W. F. A. Hudson, M.A.Cantab., of Fosthall, Nakusp, B.C., to Irene Bastow, M.B., B.S., of 12, Cardiff Road, Luton, Beds.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 13TH, 1921.

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British Medical Association.

CURRENT NOTES.

The Federation Proposals: The Position of the Oversea Branches.

THE Organization Committee on August 4th held a special meeting to consider the resolutions of the Representative Meeting, Newcastle (see SUPPLEMENT of July 23rd, p. 44), in connexion with the question of federation and the position of the Branches of the Association outside Great Britain. The Committee also had before it a report on the subject from the Committee of the Overseas Conference of July 5th. Dr. S. Morton Mackenzie of Dorking was appointed Chairman of the Committee for the year. Special attention was given to the question of the steps to be taken to meet the needs of the Branches outside Great Britain. Satisfactory progress was made in respect of Minute 81 of the Representative Meeting, Newcastle, as to provision in the Articles and By-laws whereby an Oversea Branch wishing to incorporate itself could still retain the character, status, rights, powers and duties of a Branch; also as regards Minute 86 of the Representative Meeting for provision for Federal Councils of the Association overseas. Various questions specially affecting the Association in Australia were also dealt with.

Scholarships and Grants.

On the recommendation of the Science Committee the Council has made awards of science scholarships and grants for the year 1921–22. The Ernest Hart Memorial Scholarship was awarded to Henry Albert Harris, M.B., B.S.Lond., B.Sc.Wales, for (*a*) an inquiry into the causes of congenital deformities, especially those due to disturbance of bone growth, and the relationship, if any, between such affections and antenatal interference with development; (*b*) an experimental inquiry into the factors which determine the modelling of the bones of the skeleton—for example, the alteration of normal stresses by section of certain nerves and the resultant changes in structure. Arthur Compton, M.B., B.Ch.R.U.I., D.Sc.N.U.I., was reappointed a research scholar for the third year, to continue his investigation of cellular enzymes (especially blood and tissue ferments), with special reference to the determination of general laws of action, with a view to ascertaining the part, if any, which those biochemical agents play, and the methods of controlling their activities—in such pathological processes as those met with in the problem of cancer and other diseases. Reginald St. A. Heathcote, M.A., M.D.Oxon., was reappointed a research scholar for a second year, in order that he may complete his research on squills, investigate the action on cryptopine, with special reference to its mydriatic action, and the action of camphor on the circulation. S. W. F. Underhill, M.B., B.Ch., M.A.Oxon., was also reappointed a research scholar for the second year, to investigate the concentration in blood and urine of certain urinary constituents, in order to ascertain if their concentration in the latter is in accordance with the modern theory of the functions of the kidney. Grants were renewed for a further year in two instances, and grants were made to six new applicants; the total amount distributed in grants was £290.

The Ministry of Health on Poor Law Administration.

The Ministry of Health has addressed to Poor Law authorities a circular drawing attention to the necessity for simplification of administrative work in the interests of economy. The following modifications of procedure are outlined for immediate adoption with a view to eliminating unnecessary correspondence between the Ministry and the authorities. In place of reference to the Ministry of each appointment, and each change in the remuneration for such an appointment, an annual statement is to be made on the prescribed form covering the remuneration proposed to be paid during the ensuing year to all officers whose salaries require sanction. The Minister will approve the payment of amounts not exceeding those scheduled, and salaries within these limits will then be payable without further reference to the Minister, notwithstanding any changes amongst the officers. Only in very special circumstances will the Minister be prepared to consider applications for variations, or the award of gratuities, except on this general review. The first of these returns is to be made by February, 1922. Meanwhile the approval of the Minister is to be assumed in the case of vacancies and consequent new appointments to offices. Any authority wishing to modify the general salary scheme now in operation before March, 1922, may make a return on the prescribed form at an earlier date. Whilst appointments may thus be made without the sanction of the Minister, the security of tenure of existing officers will not be affected. For example, it will not be competent for a Poor Law authority to dismiss a principal officer without the consent of the Minister. At the same time an order has been issued dispensing with the necessity for the sanction of the Minister in a number of minor matters. These include:

(*a*) The remuneration by the authority of fit persons appointed to act as temporary substitutes for officers prevented by sickness or accident from the performance of their duties.

(*b*) The payment of reasonable fees for operations performed by medical officers and for the services of anaesthetists.

(c) The appointment of a medical practitioner to be a district medical officer in a district in which he does not reside if no suitable medical practitioner resident in the district is willing to act at a reasonable remuneration.

Other simplifications are in connexion with contracts for purchases, matters in which the approval of the Minister will still be required, and the reference in the first instance to general inspectors of a number of questions of a routine nature. In the matter of contracts for purchases, the order extends the limit of expenditure, without special reference to the Minister, from £50 to £100. As regards cases in which the approval of the Minister is required, it is suggested that a yearly review of the position and a single application to the Ministry for approval of proposals for the coming year will save much correspondence. The circular and order will be fully considered by the Medico-Political Committee of the Association.

The Half-yearly Indexes.

The usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been prepared and printed. They will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W.C.2.

INSURANCE.

INSURANCE ACTS COMMITTEE.

THE constitution of the Insurance Acts Committee for the session 1921–22 is as follows:

5 *Ex officio* members (that is, President, Dr. David Drummond, Chairman of Council, Dr. R. A. Bolam; Chairman of Representative Body, Dr. R. Wallace Henry; Treasurer, Dr. G. E. Haslip; and the Chairman of the Conference, Dr. H. G. Dain, who holds office in that capacity until the termination of the forthcoming conference).
6 Elected by the members of the Representative Body of the Association: 1 for Scotland, Dr. R. W. Craig, Dalkeith; 1 for Ireland, Dr. J. Singleton Darling, Lurgan; and 4 for England and Wales, Dr. H. G. Dain, Birmingham; Dr. C. J. Palmer, Mansfield Woodhouse, Notts; Dr. H. S. Beadles, West Ham; and Dr. Herbert Jones, Hereford.
18 Direct Representatives from Local Medical and Panel Committees (now to be elected), who need not necessarily be members of the British Medical Association.
1 Member of the staff of a voluntary hospital nominated by the Hospitals Committee of the Association.
1 Nominated by the Medical Women's Federation.
1 Nominated by the Society of Medical Officers of Health.
1 Nominated by the Poor Law Medical Officers' Association.

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Power is given to the above to co-opt as additional members such number, if any, of non-panel practitioners as shall be required to secure that four such practitioners shall be members of the Committee.

For the purposes of electing the 18 Direct Representatives England, Scotland, and Wales have been divided into 11 Groups. Nominations must be by Local Medical and Panel Committees as such, and must reach the Medical Secretary not later than first post on October 10th, 1921, and must be on form M.2, 1921–22.

On or about October 15th there will be issued to Honorary Secretaries of Local Medical and Panel Committees and Representatives at the October annual Conference—along with the Conference agenda—a list of candidates nominated for the various groups. Voting in those groups in which there is a contest will be by the individual members of the Local Medical and Panel Committees comprised in the groups. On October 20th (the date of the annual Conference) voting papers will be posted from the head office direct to each member of the Local Medical and Panel Committee in any group in which there is a contest. The voting will be carried out by means of the transferable vote system. All voting papers must be returned to the Medical Secretary by first post Friday, October 28th. Papers which arrive after that time will not be counted. On or about November 1st the successful candidates will be notified. The result of the election will be announced in the SUPPLEMENT of November 5th and by circular letter to secretaries of Local Medical and Panel Committees.

Scotland.

As regards the election of two Direct Representatives for Scotland on the Insurance Acts Committee, and of eight Direct Representatives on the Scottish Subcommittee, Local Medical and Panel Committee Secretaries in Scotland should have regard to the following:

(i) Nominations for the two representatives for the whole of Scotland on the Insurance Acts Committee may be made by any Local Medical or Panel Committee on nomination paper M.2;
(ii) Nominations for four representatives on the Scottish Subcommittee of the Insurance Acts Committee of County Panel Committees may be made by County Panel Committees only on nomination paper M.4;
(iii) Nominations for four representatives on the Scottish Subcommittee of the Insurance Acts Committee of Burgh Panel Committees may be made by Burgh Panel Committees only on nomination paper M.5.

The dates as to return, etc., of nomination and voting papers set out as above as regards England and Wales apply equally to Scotland. Voting papers will be issued from the head office, 429 Strand, if there are contests. The above procedure as regards Scotland has been adopted in order to save time and to get the new subcommittee into office at the same time as the new Insurance Acts Committee. The voting for members of the Insurance Acts Committee will first be conducted, and if any practitioner thus elected on the Committee is also nominated for election on the Subcommittee, his name will be removed from the list of candidates for the Subcommittee, as the Scottish members of the Insurance Acts Committee are *ex-officio* members of the Scottish Subcommittee.

OCTOBER CONFERENCE.

As stated above, the annual Conference of Representatives of Local Medical and Panel Committees has been fixed for Thursday, October 20th; it will be held at the Wesleyan Central Hall, Westminster, London, S.W.

Local Medical and Panel Committees of each insurance area are entitled jointly to appoint one representative for every 400 practitioners (or part of 400 above each completed 400) on the medical list of the area on January 1st, 1921. The necessary figures will be obtained by the Insurance Acts Committee, but in the meantime it is believed that the following are the only areas entitled to appoint more than one representative:

	No. of Representatives.
Essex	2
Kent	2
Lancashire	5
London	4
Surrey	2
Yorks (West Riding)	2
Middlesex...	2

If any other Committee claims to appoint more than one representative the Medical Secretary should be informed at once.

COUNTY OF LONDON PANEL COMMITTEE.

AT the meeting of the London Panel Committee on July 24th five cases of alleged excessive prescribing of drugs and appliances were considered. In two cases the Committee found that there was general though not particular extravagance and recommended a surcharge. In two other cases the amounts ordered were regarded as not excessive, and in one case, although the opinion was that the drugs ordered were probably in excess of what was necessary, it was decided not to recommend surcharge but to communicate with the practitioner and suggest ways in which he might economize. The two sections of the Committee which consider individual prescriptions of high cost reported that they had considered prescriptions issued by over five hundred practitioners during one recent month, and had directed inquiry to be made in 141 cases. In two cases referred to the Committee by the Insurance Committee the practitioners were written to, and their reply was judged to be satisfactory and their prescriptions to have been justified in the exceptional circumstances. The Committee passed a resolution that in the interests of economy practitioners should be informed of the cost of the drugs and appliances ordered by them each quarter as compared with the average cost of the drugs ordered in their area. Under the present procedure, as laid down by the Ministry of Health, the Pricing Bureau is absolved from the necessity of supplying the Committee at the end of each quarter with the minimum statistical data, but must do so in respect of each year.

Post-Graduate Courses.

The recently concluded course of Post-Graduate Lecture Demonstrations in General Medicine at Charing Cross Hospital has proved so successful that the Panel Committee is arranging further courses during the coming autumn. The subject to be dealt with in any further course will depend upon the choice expressed by the majority of those joining, and will be either

General Medicine, General Surgery, or Midwifery and Gynæcology. If sufficient names are obtained, two or more courses may be arranged. The fee for either of the courses will be 3 guineas, payable in advance to the Secretary of the Panel Committee. Practitioners desirous of joining should notify the Secretary as soon as possible.

A course of ten Lecture Demonstrations on Clinical Pathology will be held in the Institute of Pathology, Charing Cross Hospital, during September, October, and November, 1921. A further course of Post-graduate teaching in Venereal Diseases, at St. Thomas Hospital, will be arranged to be held during September, October, and November, 1921. Fee for these courses, 3 guineas each.

The Panel Committee has arranged with the Metropolitan Asylums Board for two courses of Clinical Demonstrations in the Diagnosis of Fevers and Treatment of Diphtheria, to be held (1) at the South-Eastern Fever Hospital, Avonley Road, New Cross; (2) at the North-Eastern Fever Hospital, St. Ann's Road, South Tottenham, N.15. The courses will commence on or about September 29th next, and will consist of six demonstrations with cases. Each class will consist of not more than twelve members. Those desirous of joining should make early application. The fee for each course will be £1 12s., payable in advance to the Secretary of the Panel Committee, Dr. R. J. Farman, Staple House, 51, Chancery Lane, W.C.2.

LONDON INSURANCE COMMITTEE.

At the meeting of the London Insurance Committee, on July 26th, a report was received of an inquiry which had taken place into the conduct of an insurance practitioner against whom certain irregularities were alleged. In the course of a year, out of more than 1,900 prescriptions issued on behalf of this practitioner, only just over 300 were found to have been signed in his name, almost all the remainder being signed by a deputy for whose employment he had not sought the sanction of the Committee. This deputy had practically taken over the practice as a locumtenent, and the practitioner himself, who had not been in good health, came rarely to the surgery, and appeared only to attend to patients if he happened to be present when a call was received and the deputy was not available. On a closer examination, however, it was found that even of the prescriptions which purported to have been signed by him, the very large majority —225 out of 241 issued in five months—were in reality signed by an unqualified person, a lady who acted as his surgery attendant. This lady admitted that she wrote prescriptions for those patients who asked for "repeat" medicines. When a patient asked for medicine to be repeated she inquired whether the patient was feeling better, and if the answer was in the negative, she advised that the same medicine be continued; if the patient stated that he was feeling worse, she advised that the doctor be consulted. She stated that she used her discretion as to ordering "repeats," and that she could usually tell the condition of the patients by what they said or by their appearance. In a few cases, such as colds, she had herself prescribed for them on their first visit. The subcommittee charged with the investigation of the case came to the conclusion that the practitioner had not only failed to comply with the definite obligation imposed upon him to provide treatment personally, but had permitted an unqualified person to act for him in the provision of medical attendance and treatment. On these facts the Insurance Committee unanimously agreed that the continuance of this practitioner on the medical list would be prejudicial to the efficiency of the medical service, and that representations should be made to this effect to the Ministry of Health.

Meetings of Branches and Divisions.

SUFFOLK BRANCH.

A MEETING of the Suffolk Branch, to which the Norfolk members of the Association were invited, was held at Lowestoft on July 7th. Dr. TYSON (Lowestoft) was elected President; Mr. HINNELL (Bury St. Edmunds) President-elect. Mr. SAMPSON HANDLEY, M.S., read a paper on radium and its value and limitations in the treatment of malignant disease; and Sir HUMPHRY ROLLESTON, K.C.B., read a paper on some points in the diagnosis and treatment of gall-bladder disease. Lunch was served at the Royal Hotel by kind invitation of the President, and tea was provided by the hospitality of Dr. and Mrs. Tyson. Ladies were invited.

SUFFOLK BRANCH: WEST SUFFOLK DIVISION.

A MEETING of the West Suffolk Division was held at the West Suffolk General Hospital, Bury St. Edmunds, on June 21st, when Dr. J. S. HINNELL, Vice-Chairman, presided.

The SECRETARY drew attention to the important paragraphs in the annual Report of Council, but as the Division had been unable to arrange for a deputy Representative at the Annual Representative Meeting, and therefore there was no representative to instruct, detailed discussion of the report was not undertaken.

The financial statement showed a deficit, and on the motion of Dr. TROTTER, seconded by Dr. BENNETT, it was decided to ask members, other than those retired from active practice, to make a voluntary contribution of 10s. per head to meet expenses not covered by the grants received.

The question of the inadequacy of fees paid to public vaccinators in some districts was discussed. It was decided to seek the advice of the Medical Secretary with a view to getting the fees raised and put on a uniform basis.

A vote of sympathy was accorded to Dr. Barwell, chairman of the Division, in reference to his recent illness.

MEETINGS TO BE HELD.

SOUTHERN BRANCH.—The forty-eighth annual meeting of the Branch will be held at the Town Hall, Portsmouth, on Thursday, August 18th, at 2.45 p.m., when Dr. A. Mackeith will preside. Agenda: Annual report of Branch Council and financial statement. Election of officers for 1921-22. Presentation of the "Childe" cup to winner of golf competition, 1921. Induction of Dr. A. Bosworth Wright as president, who will deliver an address on "The State, the doctor, and the public." Tea will be provided by the President.

Correspondence.

Professional Secrecy.

SIR,—Dr. Ranken Lyle's suggestion in the SUPPLEMENT of July 30th, p. 91, has two advantages: It is a deterrent to those who meditate the commission of a crime, such as criminal abortion, and it is a safeguard for the medical practitioner called in to treat a case in which a crime has been committed. The drawback to it is the fact that it does away with professional secrecy in such cases as the doctor regards as criminal. In this respect it runs counter to the existing custom of the profession, which since the days of Hippocrates has jealously guarded the secrets of patients. It is true that the patient may be got to agree to the police being informed by the doctor that she has had a criminal operation performed upon her, if the doctor refuses to attend her unless she consents to his so doing. This, however, amounts to forcing, by a threat, the patient to agree to a breach of professional secrecy, and would be distasteful to many practitioners. The difficulty might be got over if the profession as a whole adopted Dr. Ranken Lyle's suggestion and made its decision public.—I am, etc.,

Belfast, Aug. 1st. JOHN CAMPBELL.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:

Surgeon Commanders J. M. Hayes to the *Carysfort*, A. G. Malcolm to the *Heda*. Surgeon Lieutenants W. T. Hayden to the *Castor*, A. C. Esmonde to the *Dwarf*.

Surgeon Lieutenants P. H. S. Reid and A. W. Gunn have been promoted to the rank of Surgeon Lieutenant Commander.

Surgeon Lieutenant A. H. Harkins has been entered as Surgeon Lieutenant for short service, and appointed to the *Victory* additional, for a course at Haslar Hospital. Surgeon Lieutenant (temporary) G. B. Tairing to the *Vivid*, additional, as Supernumerary Medical Officer.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel P. MacKessack, D.S.O., retires on retired pay and is granted the rank of Colonel.

Lieut.-Colonel J. Tobin retires on retired pay.

The undermentioned Captains to be Majors: Brevet Major C. H. Dive, D.S.O., (temporary Major) L. C. Hayes, Brevet Major R. Gale, D.S.O., K. Comyn, Brevet Major F. R. Laing, (temporary Major) A. S. Cane, D.S.O., O.B.E., J. M. Weddell, (acting Major) A. P. O'Connor, M.C., T. H. Dickson, H. G. Robertson, O.B.E., H. V. Stanley, M.B.E., M.C., P. C. Field, R. M. Davies, E. C. Stoney, T. W. Stallybrass.

Captain D. G. Evans, from S.R., to be Captain (March 19th, 1918), but not to reckon for pay or allowances prior to October 1st, 1920, with precedence next below C. Armstrong (substituted for the notification in the *London Gazette* of October 20th, 1920).

Captain H. A. Philpot and G. C. Walker resign their commissions and retain the rank of Captain.

The following officers relinquish their commissions:—Temporary Major F. M. Rodgers, O.B.E., on ceasing to be employed at the Lord Derby War Hospital, and retains the rank of Major; Temporary Captain G. Marshall, and is granted the rank of Major; Temporary Captains and retain the rank of Captain: M. Ashley, P. P. Butler, J. Ash, J. Thompson, H. F. Stephens, J. C. Anderson, John Martin.

Lieutenant A. McD. Simson is seconded for service with the Egyptian Army.

The notification in the *London Gazette* of July 3rd, 1918, regarding Temporary Lieutenant Fertram Suggit is cancelled.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Squadron Leader W. Tyrrell, D.S.O., M.C., is granted a permanent commission in rank stated, with effect from October 1st, 1920, and with seniority August 1st, 1915, and to take precedence immediately above Squadron Leader W. W. Shorten (substituted for notification in the *London Gazette* October 8th, 1920).

H. S. C. Starkey is granted a short service commission as a Flight Lieutenant, with effect from and with seniority of July 18th.

INDIAN MEDICAL SERVICE.

Lieut.-Colonel E. Hasell-Wright, Civil Surgeon, Coorg, has been granted leave for seven months, with effect from April 8th.

Major E. C. C. Maunsell has been appointed to officiate as Civil Surgeon, Coorg.

The services of Major P. S. Mills have been placed temporarily at the disposal of the Government of Bihar and Orissa from April 30th, 1921.

The undermentioned officers have been permitted to retire, with effect from the dates specified: Colonel C. R. M. Green, I.M.S. (March 8th); Lieut.-Colonels H. Smith, C.I.E. (March 18th), P. B. Haig, C.B. (March 16th), E. R. Parry (April 25th).

The services of Lieut.-Colonel C. H. James, C.I.E., have been replaced at the disposal of the Government of the Punjab, with effect from April 8th, 1921.

Lieut.-Colonel G. Tate, M.B., has been confirmed in the appointment of Professor of Midwifery, King Edward Medical College, Lahore, with effect from October 1st, 1920.

Lieut.-Colonel G. Tate, M.B., has been appointed to hold charge temporarily of the duties of Principal of the College, in addition to his own duties.

Captain S. M. Hepworth, M.B., has been appointed to officiate as Civil Surgeon, Simla (West).

The services of Major P. M. Rennie, M.B., D.P.H., have been placed at the disposal of the Government of the Central Provinces.

TERRITORIAL FORCE.

Surgeon Lieut.-Colonel (Honorary Surgeon Colonel) R. J. Reece, C.B. (Royal Horse and Royal Field Artillery), and Surgeon-Major J. F. Taylor (Honourable Artillery Company), having reached the age limit, are retired, and retain their rank with permission to wear the prescribed uniform.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

The following officers, having attained the age limit, are retired: Lieut.-Colonel J. M. Moir, and retains the rank of Lieut.-Colonel, with permission to wear the prescribed uniform; Major W. G. Sutcliffe, O.B.E., T.D., and is granted the rank of Lieut.-Colonel, with permission to wear the prescribed uniform. Majors A. Ehrmann, O.B.E., T.D., H. Dutch, T.D., and C. A. Morris, C.V.O., and retain the rank of Major with permission to wear the prescribed uniform; Major H. Meggitt, and retains the rank of Major; Captain T. S. Allan, and is granted the rank of Lieut.-Colonel, Captain A. G. T. Hanker, and is granted the rank of Major; Captains and retain the rank of Captain: H. G. L. Milford, W. R. Murison, A. Ambrose, A. Macphail, J. F. Hall, J. K. Brownlees, G. Eustace, M.C.

Lieut.-Colonel A. L. Jerman, T.D., relinquishes his commission on account of ill health, and retains the rank of Lieut.-Colonel, with permission to wear the prescribed uniform.

Major H. W. Williams resigns his commission and is granted the rank of Lieut.-Colonel, with permission to wear the prescribed uniform.

Major G. P. Chappel, T.D., resigns his commission and retains the rank of Major, with permission to wear the prescribed uniform.

Captain P. T. Tolputt, late W.S.R., has his [illegible] Major.

Captain T. S. Elliott, M.C., resigns his [illegible] and is granted the rank of Major.

Captain and Brevet Major C. S. P. Hamilton, D.S.O., R.A.M.C., vacates the appointment of Adjutant, R.A.M.C. School of Instruction, Wessex Division, T.F.

Captain A. C. Pearson, M.C., resigns his commission, and is granted the rank of Major.

Captain W. S. Sarpe, R.A.M.C., to be Adjutant of the R.A.M.C. School of Instruction, Wessex Division (T.F.).

Major W. Barclay, M.C., late R.A.M.C.(S.R.), to be Captain, with precedence from April 1st, 1915, and resigns the rank of Major, and is transferred to the [illegible] Unit, University of London O.T.C.

Captain J. Marshall, M.C. (late R.A.M.C.(S.R.)), to be Captain, with precedence as from September 6th, 1918.

Captain G. F. Hardy, M.C. (late R.A.M.C.) to be Captain, with precedence as from April 15th, 1919.

The following Captains resign their commissions and retain the rank of Captain: A. P. Phillips, H. Lightstone, D.S.O., M.C., W. A. Milne, H. A. Philpot, G. C. Walker, Captain W. S. Handley (3rd London General Hospital).

1st Eastern General Hospital. Captain H. S. C. Starkey, O.B.E., resigns his commission and retains the rank of Captain.

2nd Western General Hospital. The following officers, having attained the age limit, are retired: Lieut.-Colonel Sir William Thorburn, K.B.E., C.B., C.M.G., T.D., and is granted the rank of Colonel, with permission to wear the prescribed uniform. Lieut.-Colonel E. S. Reynolds, and retains the rank of Lieutenant-Colonel. Major A. Wilson, and is granted the rank of Lieutenant-Colonel. Major R. P. Wild and retains the rank of Major. Major A. H. Burgess resigns his commission and retains the rank of Major.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

Major W. A. Wetwan, T.D., having attained the age limit, is retired and is granted the rank of Lieut.-Colonel, with permission to wear the prescribed uniform.

DEFENCE FORCE.

ARMY MEDICAL SERVICE.

The following temporary appointments are made: *Assistant Directors of Medical Services:* Temporary Colonel E. P. Connolly, Defence Force, April 15th, 1921. *Deputy Assistant Director of Medical Services.* Temporary Major R. Davidson, Defence Force, April 12th, 1921.

R.A.M.C.—Lieut.-Colonel P. Paget, T.D., to be temporary Lieutenant-Colonel, with pay and allowances as Major.

Temporary Colonels E. V. Gostling, D.S.O., and F. W. Higgs, C.B.E., and Temporary Major P. McK. Ferry, T.D., relinquish their temporary commissions.

The following relinquish their commissions:—Temporary Majors C. A. Balstrode, D.S.O., T.D., J. C. S. Burkett, A. Robertson, O.B.E., R. Attenborough, Temporary Captains H. Wilson, M.C., J. M. Christie, J. G. Morrin, W. Tresawna, T. P. Cole, J. F. Weston, L. C. Moore, A. C. H. McCullagh, D.S.O., and G. H. R. Waylin; Temporary Lieutenant P. Lloyd-Williams.

Temporary Captain R. M. Wilson relinquishes his commission, [illegible] for mention in the *London Gazette*, June 14th, 1921, specifying date as April 19th, 1921).

[illegible] Temporary Lieutenant Garth Eaton.

[illegible] Temporary Major E. Knight, O.B.E., relinquishes his commission.

[illegible] Temporary Lieut.-Colonel H. [illegible] relinquishes his commission. Temporary Captain W. Hassard relinquishes his commission, and retains the rank of Captain.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., 12 noon, Dr. S. Pinchin: Diseases of the Heart; Tues., 2.30 p.m., Mr. Addison: Surgical Wards; Wed., 11.0 a.m., Mr. MacDonald: Cystoscopy; Thurs., 11.30 a.m., Gynaecological; Fri., 2 p.m., Dr. Perret: Skin. *Lectures:* 4.30 p.m., Mon., Dr. Paterson: Enlargements of the Abdomen; Tues., Dr. Burnford: Clinical Medicine; Wed., Mr. Gibb: Ulceration of the Cornea; Thurs., Mr. MacDonald: Enlarged Prostate; Fri., Mr. Simmonds: Surgical Emergencies.

British Medical Association.

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LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

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MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4757 Dublin.)

Diary of the Association.

AUGUST
'8 Thurs. Southern Branch Annual Meeting, Town Hall, Portsmouth, 2.45 p.m.

APPOINTMENTS.

FALCONER, J. I., M.B., C.M., F.R.C.S.Eng., Honorary Surgeon to the Bolton Infirmary.

ODDY, Herbert M., M.A., M.B., B.Ch.Oxon., M.R.C.P., Medical Registrar to the Westminster Hospital.

ST. BARNABAS HOSPITAL. The following house appointments have been made: *Casualty Officers and Resident Anaesthetists:* H. L. Slaughter, M.R.C.S., L.R.C.P., D. McLean, M.R.C.S., L.R.C.P., H. L. Willey, M.A.Cantab., M.R.C.S., L.R.C.P., K. H. Tallerman, M.C., M.A.Cantab., M.R.C.S., L.R.C.P., F. A. Phillipps, B.A., M.B., B.Ch.Cantab., E. M. Burrell, M.A.Cantab., M.R.C.S., L.R.C.P., S. Hartley, M.C., M.R.C.S., L.R.C.P., J. Spira, M.R.C.S., L.R.C.P. *Resident House-Physicians:* C. K. I. Hamilton, M.C., B.A., M.B., B.Ch.Oxon., E. D. Granger, M.B., B.S.Lond., A. D. Whitelaw, B.A.Cantab., G. A. Back, B.A.Cantab., M.R.C.S., L.R.C.P. *Resident House-Physician (for Chardren):* G. M. Kendall, M.B. Cantab., M.R.C.S., L.R.C.P. *Resident House-Surgeons:* G. D. C. Tracy, B.A.Cantab. M.R.C.S., L.R.C.P., P. T. Lang, M.A., B.Ch. Cantab., M.R.C.S., L.R.C.P., D.T.M., S. H. G. Humfrey, B.A. Cantab., M.R.C.S., L.R.C.P., F. V. Squires, B.A., M.B., B.Ch. Cantab. *Obstetric House-Physicians (Senior):* W. A. Low, M.C., M.R.C.S., L.R.C.P.; (*Junior*) L. B. Maxwell, O.B.E., B.A., M.B., B.Ch.Cantab. *Ophthalmic House-Surgeon (Junior):* J. A. P. Shaw, B.A.Cantab., M.R.C.S., L.R.C.P. *Clinical Assistant (Throat):* R. H. O. B. Robinson, B.A., M.B., B.Ch.Cantab.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

CROWE.—At 26 The Tything, Worcester, on August 7th, the wife of H. Neville Crowe, M.D., Ch.B., a daughter.

MACINTYRE.—On July 24th, at 55, Peel Street, Liverpool, the wife of H. R. Macintyre, M.D., D.P.H.—a son.

SINCLAIR.—On August 3rd, at 20, Riverview Gardens, S.W.13, the wife of Neil F. Sinclair, F.R.C.S.—a son.

MARRIAGES.

BULL—SPEDDING.—On the 4th August, at St. Michael's Church, Chester Square, Leslie James Forman Bull, elder son of Mr. and Mrs. James Bull, of Brook Cottage, Stanwell, Middlesex, to Muriel, younger daughter of Captain and Mrs. John Spedding, of 8, Langdale Road, Sefton Park, Liverpool.

CAMPBELL—LYLE.—At the Hotel Dalblair, Ayr, on 5th August, by the Rev. D. J. McLaren, M.A., Trinity Gask, David Campbell, M.C., M.A., B.Sc., M.B., Ch.B., to Margaret, daughter of Mr. and Mrs. Alexander Lyle, Kerse Schoolhouse, Patna, Ayrshire.

STALLYBRASS—DUNN.—On July 30th, at St. John's Church, Chelsea, Captain T. W. Stallybrass, M.B., R.A.M.C., and Eileen Cecilia, only daughter of Mr. and Mrs. Tregarthen Dunn, late of Llandaff.

DEATHS.

ALLEN.—On July 23rd, 1921, at his residence, "Riversdale," Pelper, Richard Grammer Allen, M.R.C.S.Eng., L.R.C.P.Edin., in his 63th year.

CROSS.—On July 31st, at The Wood Hut, Falingdales, Robin Hood's Bay, Euphemia Patricia Mackay, late Sister Accident, Guy's Hospital (1879), beloved wife of T. B. Cross, retired surgeon, of Scarborough and Fylingdales.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 20TH, 1921.

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British Medical Association.

CURRENT NOTES.

Local Voluntary Hospitals Committees.

THE constitution of a Local Voluntary Hospital Committee was described in the issue of the JOURNAL for August 6th, p. 213. The medical representation on a Local Voluntary Hospital Committee consists of two medical practitioners nominated by the local medical committees in the area. It was at first understood that by "local medical committees" was meant medical committees representative of the medical profession in the area—for example, the local Branch or Division of the Association. From inquiry at the Ministry it is now known that the local medical committee referred to is the statutory body recognized under the National Health Insurance Act. In many areas no local medical committee exists, and in such instances the Panel Committee for the area may be recognized by the Ministry as the local medical committee. It is quite possible, therefore, that the nomination of the medical members of a Local Voluntary Hospitals Committee may be entirely in the hands of the Panel Committee for the area. Medical representation on such an important committee as the Local Voluntary Hospitals Committee should be made on the nomination of a committee which is representative of all branches of the profession in the area. The matter will engage the attention of the Hospitals Committee of the Association, which will be meeting shortly.

Coroner's Inquest Riders.

It appears from a report in the *Herts Advertiser* that at an inquest with regard to the death of a child knocked down by a motor cycle the coroner suggested to the jury to add a rider to its verdict, expressing the view that a call to a medical man to attend a motor accident should be attended to at once. It would appear that the coroner had already communicated with the doctor concerned, Dr. J. E. S. Smith of Markyate, who, in reply, sent a statement to the effect that when he was called he was performing an operation on a woman, and that as soon as he had finished with that patient he went to the house of the child's parents only to find that the child had been removed to hospital. Notwithstanding this explanation, which should have been considered satisfactory, the coroner suggested to the jury that it might be wise for them to make observations to the effect that in their opinion it was highly necessary that an accident should receive immediate attention assuming that were possible. The jury followed this advice, and a correspondent, who signs himself "Pro Bono Publico," has been moved to write to us as follows:

Cannot the British Medical Association inform the coroners of the country that the public cannot demand a doctor's service as a right? Doctors may on grounds of humanity attend accidents at great personal inconvenience; but a doctor sets up in practice, not primarily for the good of other people, but for the benefit of himself and his family, and if the public want his services at all hours they must make it worth his while. Accident cases are just the sort that give a doctor any amount of trouble, and his services are often given "free, gratis, and for nothing," but he is liable nevertheless to be held up to public criticism. It is time concerted action were taken to inform the public in general, and coroners in particular, that doctors have rights, and can sell their services as they like.

The Association has for years been urging that there is need for legislation to govern the action of coroners in investigating cases of death following accidents, and to prohibit riders by juries casting reflections on people who were not present to defend themselves. This point was recently urged upon the Home Secretary by a combined deputation from the British Medical Association and the Committee of Medical Members of Parliament.

Insurance Practitioners' Surgery Hours.

Some Insurance Committees are endeavouring to get insurance practitioners to observe certain hours during which they will treat insured persons at their surgeries. While there can be no objection to an understanding between the Committee and the practitioners in this matter, provided individual considerations are not excluded, no definite rule should be allowed. It must be remembered that the convenience of his patients is the doctor's paramount consideration, and the position that he has a right to appoint his own reasonable hours must be preserved.

COLONIAL MEDICAL SERVICES.

IN the SUPPLEMENT of June 4th, 1921, there was published the letter, dated May 3rd, sent by the British Medical Association to the Colonial Office.

The following correspondence, dated June 9th and 27th, July 19th, and August 4th, has since passed between the Colonial Office and the Association:

Downing Street, June 9th, 1921.

Sir,

I am directed by Mr. Secretary Churchill to acknowledge the receipt of your letter of May 3rd, raising various matters in connexion with the report of the Departmental Committee on the Colonial Medical Services; and to enclose a memorandum dealing with the majority of the points mentioned in your letter.

2. It will be seen from the memorandum that the Dominions Committee of the British Medical Association have obviously been misinformed in regard to some of the points raised. Moreover, Mr. Churchill has not attempted in the memorandum to deal with certain of the inquiries in your letter—namely, those relating to the comparative increases of salary granted to the staff of the Colonial Office and the officers of the East African Medical Services, the grant of honours, and the extent to which medical facilities are available to the native population of East Africa, since he does not consider that he is called upon to discuss these questions with the Committee.

3. Much of your letter is concerned with the salaries and other conditions of a financial nature attached to appointments as medical officers in the Colonies. In this connexion I am to observe that the Dominions Committee have perhaps not realized that each of the Colonies not possessing responsible government and each Protectorate, constitutes a separate administrative and financial unit, the expenses of which must be met from its own separate funds. Consequently, the salaries paid to medical officers in any Colony must be conditioned by the financial position of that particular Colony, and must also

be fixed in relation to the salaries paid to officers of other Government departments in that Colony. Moreover, the control which the Secretary of State is in a position to exercise over the finances of the Colonies differs greatly from colony to colony, and the salaries paid must in general meet with the approval of the unofficial members of the local legislature.

4. It must also be borne in mind, in considering the salaries of medical officers in the Colonies, that in many cases these officers have the privilege, not enjoyed by any other class of officers in the Colonies, of engaging in private practice without sacrificing their pension rights.

5. In conclusion, Mr. Churchill desires me to assure the Association that he fully sympathizes with their desire to secure for officers of the Colonial Medical Services adequate remuneration and fair conditions of service, and he and his predecessors have made it their constant endeavour to secure such conditions. It is therefore with surprise and regret that he has read the last paragraph of your letter, which suggests that the Dominions Committee, ignoring the complexity and delicacy of the action necessary to give effect to this intention, believe that they are acting in the interests of the Colonial Medical Services by threatening to employ such influence as they possess in reducing the supply of suitable candidates. A very grave responsibility, in Mr. Churchill's opinion, attaches to a body of medical men who contemplate action which aims at depriving Europeans and natives alike of the only qualified medical attention available to them in isolated and backward communities, and he cannot think that their attitude is in accordance with the traditions of the profession. Mr. Churchill has endeavoured to give the fullest and most careful consideration to the requests of the local medical officers, whether represented to him through the Colonial Governments or by the Dominions Committee, although he has seen reason to infer from the correspondence that has passed that the Dominions Committee do not always possess that knowledge of the Colonies generally, and the Colonial Medical Services in particular, which would qualify them to intervene. It is the Secretary of State's duty, however, to consider and safeguard the interests of the Colonies as a whole and not to favour one branch of the Colonial Service at the expense of others, or of the general community; and, while he is no less anxious than the Dominions Committee to secure every possible improvement in the medical services of the Colonies, he will not be deterred from following the course which in his judgement is right and proper because of any action which the Dominions Committee of the British Medical Association may see fit to take.

I am, Sir, your obedient servant,
(Signed) G. GRINDLE.

June 27th, 1921.

Sir,

The Dominions Committee of this Association has had under consideration your letter of June 9th, 1921, with its enclosed memorandum, and I am instructed to make the following reply.

In the first place it appears to my Committee that the Secretary of State has failed to understand the *locus standi* of the Committee and its reasons for approaching him on the conditions under which the members of the Colonial Medical Services work. Various parts of your letter are apparently intended to convey the impression that Mr. Churchill considers that the Committee is interfering in matters which do not concern it, is acting in ignorance of the facts, and is taking a line not in consonance with the traditions of the medical profession.

The first of these suggestions is fundamental, and the Committee would be glad to have a definite assurance as to whether or not Mr. Churchill seriously considers that *any* matters which affect the method of recruitment and conditions of employment of medical practitioners in either the Colonial or any other medical service are outside the scope of the Association. It is the first time any such suggestion has been made by any Government Department, and this Association cannot for a moment accept it. The British Medical Association is the great voluntary organization of the medical profession, and its duty to its members is to take up in the proper quarter any and every question affecting the medical profession. Moreover, it considers it has a special responsibility to those of its members who are employed in Government services, because experience shows that it is necessary from time to time that representations as to the conditions of service should be made not by individuals but by an organized body. Such representations are necessary not only in the interests of the profession but in the interests of the public.

The matters to which your letter refers as being such as Mr. Churchill considers he is not called upon to discuss with my Committee are the comparative increases of salary granted to the Staff of the Colonial Office and the Officers of the East African Medical Services, the grant of honours, and the extent to which medical facilities are available to the native population of Eastern Africa. The Dominions Committee would respectfully submit that whether the Secretary of State discusses these matters with the Committee or not, they are exercising the minds of members of the Colonial Medical Services, and will influence men in their decision whether or not to join the Services or remain in them when they have an opportunity of leaving. It was because the Committee is aware of this that it raised these questions among others.

As regards the alleged ignorance of the Committee of relevant facts, my Committee wishes to point out that it has got its facts from those who ought to know—namely, the men in the Services—and it has tested the facts, so far as has been possible, through the ordinary machinery of the Association. If the Committee has been misinformed it would ask, Whose fault is it? Other Government departments, realizing the desirability of the Association being in possession of all information relative to medical services under their control, keep us supplied with all official information, and indeed encourage us officially and unofficially to consult the departments. We have not had either this supply of information or this encouragement from the Colonial Office. When we know of the existence of particular documents we ask for them. But it is not uncommon for us to find out, quite accidentally, the existence of documents which are essential if we are to keep ourselves, and those who apply to us for information, accurately and fully informed. Is there any reason why every non-confidential document connected with the Colonial Medical Services should not be sent to us immediately it is available?

To take three examples of the failure to keep us informed promptly from the Memorandum enclosed with your letter of June 9th. In the first paragraph it is mentioned that the leave regulations of officers in the service of British Guiana have recently been amended. This is the first indication we have had of it.

In the paragraph numbered II(f) we are told that a generous revised scale of furniture for Government quarters in Eastern Africa was approved last year. Presumably this was published, or at any rate if not published there seems no reason why persons or organizations interested in the matter should not know of it. We have not previously been informed of it.

A copy of the new West African leave regulations was annexed to the Memorandum. It is marked 1/21—presumably January of this year. We first saw it on June 10th.

If it be thoroughly understood that practitioners are constantly asking our opinion as to joining the various Services—including those of the Colonies—and that we must answer them on the strength of the information available, we venture to suggest that it would be to our advantage, to that of our inquirers, and not least to that of the Colonial Office, if we were supplied with up-to-date information about everything which concerns the Colonial Medical Services.

But the fact that this steady supply of information has not been forthcoming did not prevent the Committee from understanding that the control of the Secretary of State over the finances of the various Colonies differs greatly from colony to colony, and that the salaries paid must in general meet with the approval of the unofficial members of the local legislature. The Committee was quite aware of this, but it is not thereby absolved from the duty of impressing on the Secretary of State, and through him on the Colonies concerned, that if Colonies come on to the market for medical men and desire medical officers of good standing, they must be prepared to pay the market price. At the present time, as both the Dominions Committee and the Colonial Medical Services Committee have pointed out, some of the Colonies are offering salaries which will not secure men of the type said to be required.

Finally, I am to say that the Committee is not less anxious to maintain the best medical traditions than even the Secretary of State. But the Committee considers it would not be in accordance with those traditions if, being aware that members of the Colonial Medical Services in certain parts of the world were becoming discontented and correspondingly less efficient, it did not do everything in its power to place the facts as it has them at first hand before the responsible authorities and try to rouse them to a sense of the danger of the situation. If medical men do not take service in various parts of the world where their services are badly needed, it will not be because of any arbitrary action by the British Medical Association. It will be because they consider that the conditions of service are not sufficiently good to justify them in taking the posts. The Dominions Committee is anxious to increase the personnel of the Colonial Medical Services, not only because this is a national duty, but also because the officers in those areas, at present greatly understaffed, are begging for relief. It will therefore be a great pleasure to the British Medical Association when it can truthfully tell inquirers that posts in the various Colonial Medical Services of which it has complained may properly be accepted by the best type of men. At the present time, in face of a great body of complaints from men who rightly or wrongly consider themselves inadequately paid, it cannot do so.

The Dominions Committee makes no attempt at present to deal with the various points of detail raised in the Memorandum. It is of opinion that before doing so it is essential that a clear understanding shall be arrived at on the questions of principle raised in your letter of June 9th and in this reply. I shall be obliged if I can be favoured with an early answer.

I am, Sir, your obedient servant,
(Signed) ALFRED COX,
Medical Secretary.

The Under-Secretary of State,
Colonial Office, Downing Street, S.W.1.

Downing Street, July 19th, 1921.

Sir,

I am directed by Mr. Secretary Churchill to acknowledge the receipt of your letter of June 27th in regard to the representations made by the Dominions Committee of the British Medical Association on the subject of the Colonial Medical Services.

2. With regard to the questions raised in the third and fifth paragraphs of your letter, Mr. Churchill wishes to make it

plain that he never intended to deny any opportunity to the British Medical Association of making to him such representations as they might think fit on matters affecting their members serving in the Colonies. But he feels compelled to point out that representations made to this Department by the Association are necessarily deprived of much of their weight if they are based solely on complaints addressed to them by individual members of the Colonial Medical Services. It has been more than once suggested to the officers of the Association that they should consult this Department unofficially in order to obtain information on the subject of alleged grievances, but so far very little inclination has been shown to do so. Mr. Churchill does not know whether the personnel of the Dominions Committee includes anyone familiar with the conditions of medical employment under the Government of a tropical colony or dependency, as distinct from the self-governing Dominions and India. But the suggestion made in your letter, that "every non-confidential document connected with the Colonial Medical Service" should be sent to the Association "immediately it is available," shows that the Committee is not acquainted with the conditions of Colonial administration. Every Colonial Government is continually issuing documents of this character, which may or may not require to be referred to the Secretary of State for approval. To supply the Dominions Committee with copies of every such document, which may affect medical officers in common with the rest of the Colonial Service, would simply mean flooding the Committee with matter, most of which would be of little interest to them; and experience in other cases shows that the result of this procedure is that after a time no attention is paid to the material supplied. The Secretary of State is perfectly willing to supply information to the Committee on their request, so far as such information is of a non-confidential character, but he cannot undertake to decide in each case what may or may not be of interest to the Association. There would, on the other hand, be no objection to undertaking to send material likely to be of special interest to the members of the British Medical Association in the Colonies, but the Secretary of State doubts whether much advantage would be gained by this course.

3. Mr. Churchill notes that the Association complains that the recent amendments in the Leave Regulations in force in British Guiana have not previously been notified to them; but the Association will understand that medical officers serving in British Guiana are themselves aware of these amendments, which apply to all Government officers, not merely to medical officers. Mr. Churchill does not doubt that from time to time complaints are made to the Association by medical officers who are not yet acquainted with changes in the regulations made with a view to removing or, at any rate, mitigating those complaints, but who do become aware of these changes before the Dominions Committee receives and acts on complaints. The Secretary of State can only repeat the suggestion that before taking up these complaints the Dominions Committee would do well to inquire, officially or semi-officially at the Colonial Office, whether the cause of complaint has been removed.

4. As regards the other points to which special reference is made in your letter as examples of the failure to keep the British Medical Association promptly informed, I am to say that the revised scale of furniture for Government quarters in East Africa was published last year. A copy is enclosed. The Leave Regulations for West Africa did not come into force until April 1st last. The date printed on them, which your letter quotes, is apparently the printers' mark, which is accounted for by the circumstance that these regulations were put into type some time before they were definitely adopted.

5. Mr. Churchill desires me to say that he does not fully understand whether the British Medical Association withdraw the threat with which they concluded their letter of May 3rd. If so, he will be glad to welcome the co-operation of the Association in removing causes of legitimate grievances on the part of their members. Mr. Churchill has endeavoured to make this plain in the course of this correspondence, and he trusts that the Association will accept in the spirit in which it is made the suggestion that they should place themselves in regular communication with this Department, and endeavour to examine these claims and complaints further before they urge them on the notice of the Colonial Office. At present it appears to Mr. Churchill that even where the majority of medical officers serving under a Colonial Government are contented, the Association often attaches undue importance to individual complaints, such as are bound to emanate from a minority of officers in any service, without making adequate attempt to sift them. In his opinion some of the claims so put forward are not claims which could be conceded with any due regard to the interests of the public service.

I am, Sir, your obedient servant,
(Signed) G. GRINDLE.

August 4th, 1921.

Sir,

In acknowledging the receipt of your letter of July 19th I must explain that the delay in replying to it is due to the interposition of our Annual Meeting, which precluded the Association from giving the letter full consideration earlier.

2. The Association is glad to have the assurance that the Secretary of State does not wish to deny the Association any opportunity of making to him such representations as it may think fit on matters affecting its members serving in the Colonies, and desires to assure Mr. Churchill that these opportunities will be taken in the most serious and responsible manner. The Association specially appreciates the Secretary of State's suggestion that it should place itself in regular communication with the Department, and accepts the suggestion in the spirit in which it is offered.

3. If the concluding paragraph of my letter of May 3rd seemed to convey a threat, I can assure the Secretary of State that it was not so intended. It was intended as a warning that the volume of complaints from our members serving in the Colonies was reaching such dimensions that, unless the Department realized the situation and made it plain that early action would be taken on the lines recommended by the Departmental Committee to remove the causes of dissatisfaction or, at any rate, the more urgent of them, the Association could no longer refrain from doing its duty to its members by advising them that they would not be serving their own interests or those of the profession if they entered the Colonial Services until they are reformed. The Association has not used its influence to dissuade men from joining the Colonial Medical Services, and has no intention of doing so, so long as the Colonial Office shows that it sincerely desires to remove the legitimate grievances which now prevent that flow of candidates to the services which the Association, no less than the Secretary of State, desires to see.

4. The Association gladly accepts the offer of the Secretary of State to furnish non-confidential documents, which will be of service to the Association in keeping it acquainted with the conditions of service in the various Colonies, and would suggest that the second alternative would be most acceptable—namely, the sending of all material likely to be of special interest to our members in the Colonies. I can assure Mr. Churchill that all documents sent will be carefully examined and filed, and he need have no fear of furnishing such a large supply as to lead us to neglect any of it. We shall, of course, continue to ask for any particular documents not so sent of whose existence we are aware, and which would seem to be likely to help us in our efforts to guide inquirers correctly.

5. Referring to an inquiry as to the personnel and methods of our Dominions Committee contained in the second paragraph of your letter of July 19th, I may say that the Dominions Committee contains four members who have had service under the Governments of tropical dependencies, and in addition there is hardly ever a meeting of the Committee without the attendance of practitioners who have recently been members of such services, and who are invited to the meetings in order that the Committee may by personal inquiry elicit information which will enable it to check the representations made to it by our Colonial Branches, and by individual members in the Colonies. I can assure the Secretary of State that it is the earnest desire of the Association to verify its information as far as possible, and not to make representations to any Government Department which are based merely on individual, and therefore possibly prejudiced, complaints.

6. In conclusion, if the Secretary of State considers this explanation of the Association's attitude satisfactory, and still desires that the relations of the Association to his Department shall be placed on a footing which will be helpful to all concerned, I propose, at an early convenient date in September, to call and interview some member of the Staff of the Department, preparatory to the next meeting of the Dominions Committee.

I am, Sir, your obedient servant,
(Signed) ALFRED COX,
Medical Secretary.

The Under Secretary of State,
Colonial Office, Downing Street, S.W.1.

HOSPITAL POLICY.

THE following letter has been addressed by the Medical Secretary to Secretaries and Senior Honorary Medical Officers of all Voluntary Hospitals in England, Scotland, and Wales; and to Members of Council, Hospitals Committee, and Secretaries of Divisions and Branches for their information.

British Medical Association,
Medical Department,
429, Strand, London, W.C.2.

Dear Sir,

By instruction of the Annual Representative Meeting of the Association I beg to bring to your notice certain resolutions appended to this letter which were carried at that Meeting on July 18th last.

The British Medical Association feels that great changes are taking place in hospital finance and management at the present time, and is of opinion that it is essential that the honorary staffs of voluntary hospitals should establish firmly, and once for all, the principle enunciated in the appended resolutions relating to the "Staff Fund" numbered 7 and 8. What the honorary medical staff does with the staff fund is a matter which rests entirely in its own discretion, but the Association believes that the Boards of all voluntary hospitals should insist on the position of their Staffs being recognized in any arrangements which are made for dealing with patients who cannot properly be regarded as the recipients of charity, and should see that some payment is made, if only an acknowledgement, into the Staff Fund.

I enclose reprint of a leading article which appeared in the BRITISH MEDICAL JOURNAL of July 30th last, which it is hoped will make clear the present policy of the Association as regards the hospital system of this country.—Yours faithfully,

ALFRED COX, Medical Secretary.

August 12th, 1921.

RESOLUTIONS OF ANNUAL REPRESENTATIVE MEETING, 1921, AS TO VOLUNTARY HOSPITALS.

Advantages of Voluntary Method of Administration of Voluntary Hospitals.

1. That the Representative Body desires to record its belief that the voluntary method of administration of the voluntary hospitals of the country is to the advantage of the public, medical science, and the medical profession, and that it should be maintained.

Necessitous Persons to be Treated Free.

2. That inability to pay for adequate treatment shall be the consideration for the admission of all patients for hospital treatment.

Subsidizing of Voluntary Hospitals from Rates Undesirable.

3. That it is undesirable that the voluntary hospitals should be subsidized by the local rating authorities, except in so far as payment is made for the examination and the care of patients for whom these authorities are responsible.

Support for Voluntary Hospitals by Employers and Insurance Companies.

4. That greatly extended support for voluntary hospitals should be sought from employers and insurance companies, seeing that they benefit largely both directly and indirectly by the services of the voluntary hospitals.

Contributions by Patients towards Maintenance.

5. That every patient of a voluntary hospital who is able should make a contribution, during treatment, towards the cost of maintenance, unless the contributory method of subscription is adopted as essential in industrial areas. In view, however, of the increased cost of maintenance, etc., the Representative Body considers that the contributory rates paid by workmen should be materially increased.

Payment of Practitioners for Services Rendered to Paying Patients in Hospitals.

6. That where voluntary hospitals provide accommodation for paying patients, no fixed rate of payment for professional services rendered to such patients should be established; the fees so payable to remain, as at present, a matter of arrangement between patient, family physician and consultant.

Formation of Medical Staff Fund.

7. That in the event of decisions being taken which would lead to patients (other than paying patients referred to in No. 6 above) paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which such honorary medical staff may determine.

8. That when the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, insurance company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and a percentage of all such receipts should be passed into a fund which is at the disposal of the honorary medical staff of that hospital.

Association Notices.

A MESOPOTAMIA BRANCH.

THE following change has been made by the Council, and takes effect on August 20th, 1921:

That a Mesopotamia Branch of the Association be formed, of area coterminous with the Mandated Territory of Mesopotamia.

Representation in Representative Body.—Under arrangements made by the Council, the Branch will be entitled to independent representation in the Representative Body, 1921–22, to return one Representative.

Correspondence.

Professional Secrecy.

SIR,—Professor Ranken Lyle's letter in the SUPPLEMENT of July 30th, p. 91, proposing that in all cases of criminal abortion it is the duty of the practitioner to inform the police, is somewhat incomplete without the report of the discussion, which doubtless you will publish later. Professor Lyle showed how by this means the crime had been stamped out of Newcastle, and how the practitioner who kept silence was used by the abortionist to send patients to, so that he practically covered him.

In discussing the matter since with other medical men I do not find unanimity to consent to these proposals, many objecting to act as "detectives." We are already detectives in this sense in other matters where we touch the law—for example, notifiable disease, murders and suicides, and it seems we have to decide whether in future we shall "cover" the abortionist or inform the police.

I therefore hope that Dr. Campbell's suggestion that the profession should adopt this rule will be considered by the Council and by them be referred to the Divisions.—I am, etc.,

St. Ives, Huntingdon, Aug. 14th. W. R. GROVE.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty: Surgeon Commanders: A. C. W. Newport, M.V.O., to the *Renown* on commissioning. A. B. Cox to the *Iron Duke*. R. H. Atkins to the *Diligence*. Surgeon Lieutenant Commander J. L. Priston to R.N. College, Greenwich. Surgeon Lieutenants: H. E. Y. White to the *Renown* on commissioning, D. H. Cameron to the *Diligence*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel H. Hewetson, D.S.O., retires on retired pay and is granted the rank of Colonel.

Major C. R. L. Ronayne retires on retired pay and is granted the rank of Lieutenant-Colonel.

Captain J. L. Ritchie retires, receiving a gratuity.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER

13 Tues. London: Organization Committee, 2 p.m. (provisional).
London: Public Health Committee, 3 p.m.
15 Thurs. London: Insurance Acts Committee, 2.30 p.m.
20 Tues. London: Medico-Political Committee, 2.30 p.m.
26 Mon. London: Dominions Committee, 2.30 p.m.

OCTOBER.

5 Wed. London: **Council.**

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Mon., noon, Dr. S. Pinchin: Diseases of the Heart; 4.30 p.m., Dr. Paterson: Deficiency Diseases; Wed., noon, Mr. Sinclair: Surgical Diseases of the Abdomen; Thurs., 11.30, Gynaecological Demonstration; Fri., 12.15 p.m., Dr. Burnford: Applied Pathology. *Lectures*: 4.30 p.m., Tues., Dr. Burnford: Clinical Medicine; Wed., Mr. Gibb: Ulceration of the Cornea; Thurs., Mr. Simmonds: Surgical Emergencies.

APPOINTMENTS.

MCILROY, J. Hamilton, M.A., M.B., Ch.B.Glasg., D.P.H., Lecturer on Diseases of the Eye, Ear, Nose, and Throat at the Lady Hardinge College, Delhi, with charge of beds.

ROBERTS, C. S. Lane, M.S.Lond., F.R.C.S.Eng., University Tutor in Obstetrics and Resident Medical Officer, the Maternity Hospital, Leeds.

SCOULAR, Stuart, M.D., B.S.N.Z., F.R.C.S.Ed., House-Surgeon, Central London Nose, Throat, and Ear Hospital.

TOPALIA, H. A., L.R.C.P., L.R.C.S.Edin., L.R.F.P.and S.Glasg., Assistant Medical Officer to the Swaffield Road Institution and Intermediate Schools, Wandsworth Union.

WARBURTON, P. D., M.R.C.S., L.R.C.P., D.P.H., Honorary Surgical Registrar, Royal Devon and Exeter Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **9s.**, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTH.

TYRRELL PATTERSON.—At 26, Rubislaw Terrace, Aberdeen, on July 30th, the wife of W. Tyrrell Patterson, M.D., F.R.C.S.Edin., of a son.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 27TH, 1921.

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British Medical Association.

CURRENT NOTES.

Mesopotamia Branch.

On page 104 of the SUPPLEMENT to the JOURNAL of August 20th there appeared a notice by the Council forming a Mesopotamia Branch of the Association. Apart from the fact that the personnel of the new Branch contains at least one member who has already done yeoman service as an honorary officer of the Association, the formation of the Branch has a very special interest, inasmuch as the area of the Branch contains the last resting-place of Sir Victor Horsley. As will be remembered, Sir Victor Horsley was one of the pioneers in the closing years of the last and the opening years of the present century, the result of whose labours was the reorganization of the Association, including the formation of Divisions and the giving to the Association of a constitution, one of the most democratic to be found anywhere, whereby the Divisions throughout the Empire elect, by the direct votes of their members, the Representative Body of the Association. Of that body Sir Victor Horsley was the first Chairman; he never spared himself in working for the Association and profession; little did anyone think, in those pre-war days of strenuous work by the Association, that the distinguished member who first bore the honoured title of "Chairman of Representative Meetings" would find his last resting-place at Amara, on the River Tigris. To the members of the new Branch, as to the Council and the other members of the Association everywhere, the work of Sir Victor Horsley remains an inspiration.

Fiji Branch.

On page 107 of this week's SUPPLEMENT there is a notice by the Council establishing also a Fiji Branch. It is of special interest to note, in connexion with the formation of new Branches overseas, that the Association is all the time doing more and more for its oversea members. Not so many years ago the work of the Dominions Committee was comparatively light. As matters now stand, there is not an area throughout the Association outside the United Kingdom in which the Association through the Committee is not intervening to safeguard the interests of its members.

Taranaki Division.

The New Zealand Branch has formed a Taranaki Division of the Branch in response to an application from the members in that area. The new Division comprises the counties of Clifton, Egmont, Eltham, Hawera, Kaitecke, Ohura, Stratford, Taranaki, Waimote-West, Waimorino, and Whangamomona. Dr. Rex Brewster, M.C., of New Plymouth, is acting as honorary secretary. A meeting of the Division is expected to be held soon.

DANGEROUS DRUGS REGULATIONS.

THE DUTY OF MEDICAL PRACTITIONERS.

THE Dangerous Drugs Regulations,[1] applicable to the United Kingdom, come into force on September 1st, and impose the following duties upon medical practitioners:

A. THE DRUGS CONCERNED.

These are: (1) opium and morphine and any preparations containing them in the proportion of 0.2 per cent. of morphine or more; (2) cocaine and heroin and any preparations containing them in the proportion of 0.1 per cent. or more.

B. POSSESSION AND SUPPLY OF DRUGS.

Any duly qualified medical practitioner is authorized by the Regulations, so far as is necessary for the practice of his profession, to be in possession of and supply the drugs.

C. THE NON-DISPENSING DOCTOR.

All prescriptions containing "the drugs" in the proportions above mentioned must be dated and signed with the full name and address, and must give the name and address of the person for whose use the prescription is given and the total amount of the drug to be supplied on a prescription.

The drugs cannot be supplied more than once on the same prescription except that if the prescription so directs the drugs may be supplied on not more than three occasions as directed in the prescription, at intervals to be specified in the prescription.

The prescription is to be retained by the dispenser.

D. THE DISPENSING DOCTOR.

The Purchase of the Drugs.

1. When purchases of any of the drugs have been made, the fact must be recorded on the day the drugs are received, or at the latest on the day after.

2. Entries must be made in a book kept specially for the purpose, a separate portion being allocated to each of the drugs mentioned, and must be according to the following form:

(*a*) Record of: Morphine, etc.; Diamorphine (Heroin), etc.; Cocaine, etc.; Medicinal Opium Purchased or otherwise obtained.

Date on which supply received.	Name of person, body, or firm from whom obtained.	Address of person, body, or firm from whom obtained.	Amount obtained.	Form in which obtained.

Prescribing the Drug.

All entries concerning the outgoing of the drugs may be made in the practitioner's daybook, giving the pre-

[1] Report of the Committee appointed by the Secretary of State for the Home Department to consider outstanding objections to the Draft Regulations issued under the Dangerous Drugs Act, 1920. H.M. Stationery Office. 1921. (Cmd. 1307. Price 3d. net.

scription, the name and address of the patient, and the date.

In addition an entry must be made in a special book—any suitable notebook will do—giving a dated reference to the record in the daybook of any supply of the drugs.

E. PERSONAL ADMINISTRATION OF THE DRUGS.

Administration by or under the direct personal supervision of a duly qualified medical practitioner is not deemed to be supplying the drug within the meaning of the Regulations. But this does not cover leaving a supply of the drug to be given by a nurse at a hospital or in a private house. In such cases the necessary prescription must be given and the other formalities complied with.

It must be clearly understood that entries need only be made of those prescriptions in which the strength of the drug in solution exceeds one-fifth per cent. of morphine or one-tenth per cent. of cocaine or heroin. This provision rules out so many preparations containing the drugs ordinarily in use that entries will be comparatively infrequent.

The following preparations containing drugs in various forms and strength are not governed by the Regulations, and consequently no entries need be made in respect of them:

Cereoli iodoformi et morphinae, *B.P.C.*
Emp. opii, *B.P.*, 1898.
Lin. opii, *B.P.*
Lin. opii ammon., *B.P.C.*
Pasta arsenicalis, *B.P.C.*
Pil. hydrarg. c. opio, *B.P.C.*
Pil. ipecac. c. scilla, *B.P.*
Pil. plumbi c. opio, *B.P.*
Pil. digitalis et opii, *B.P.C.*
Pil. hydrarg. c. cret. et opii, *B.P.C.*
Pulv. cretae aromat. c. opio, *B.P.*
Pulv. ipecac. co., *B.P.* (Dover's powder).
Pulv. kino co., *B.P.*
Suppos. plumbi co., *B.P.*
Tablettae plumbi c. opio, *B.P.C.*
Ung. gallae c. opio, *B.P.* (gall and opium ointment).
Ung. gallae co., *B.P.C.*

F. PROCEDURE IN HOSPITALS.

In hospitals in which there is a qualified pharmacist prescriptions must be written by the visiting doctor or the house doctor on the patient's bed card or on the out-patient's book or card, and must be initialled by the doctor. In both the wards and the out-patient department a fresh prescription is required each time a preparation is made up for the use of patients. This may take the form of "Rep. mist." initialled by the doctor.

In hospitals where no medical officer is in charge and there is no qualified dispenser, orders for the supply of the drugs must be signed by one of the medical practitioners attached to or attending the hospital, and in the case of medicines ordered for individual patients the prescription will be given by the doctor in accordance with the regulations stated under C, and must be made up by a duly qualified pharmacist.

G. DELIVERY OF DRUGS TO MESSENGERS.

Any duly qualified medical practitioner who sends for a supply of any of the drugs must give the messenger an authorization in writing to receive the drugs on his behalf, and the person supplying the drugs must be satisfied that the authority is genuine. This does not of course apply to medicines dispensed in pursuance of the Regulations.

REGULATIONS AFFECTING THE ISLE OF MAN.

A Provisional Order has been made directing that drugs to which the Act applies shall only be supplied in the Isle of Man to persons licensed by the Lieutenant-Governor of the island.

APPENDIX.

PUBLIC INSTITUTIONS.

It seems desirable to reproduce in full the details of the Orders issued by the Home Secretary with regard to hospitals, Poor Law institutions and sanatoriums, and teaching institutions.

REGULATIONS AFFECTING HOSPITALS, POOR LAW INSTITUTIONS, AND SANATORIUMS.

The Home Secretary has made an Order exempting from the operation of the Regulations any hospital or infirmary, asylum, Poor Law institution or sanatorium supported by any public authority or out of any public funds or by a charity or voluntary subscriptions, in which the drugs are dispensed by a duly qualified medical practitioner or by a fully qualified pharmacist or (in the case of a Poor Law institution) by a dispenser holding the qualifications recognized by the Minister of Health, whose appointment as dispenser has been approved by the Minister, if and so long as the conditions in Schedule 1 of this Order are complied with.

He has also exempted from the operation of the Regulations any hospital or infirmary, asylum, Poor Law institution or sanatorium supported as aforesaid to which the foregoing provision does not apply, to the extent indicated in, and subject to compliance with, the conditions in Schedule 2. Any exempted institution may be inspected in respect of the observance of the said conditions at any time by a person authorized by the Secretary of State.

Schedule 1.

1. All orders for supplies of the drugs to which the regulations apply shall be signed by one of the medical practitioners attached to the hospital or other institution, or, if the dispenser is a fully qualified pharmacist, by the dispenser.

2. All supplies of the drugs to which the regulations apply shall be received by, and kept in the charge of, the person responsible for dispensing medicines. He shall enter in the drug ledger a record of all supplies received containing the particulars specified in Schedule I Part (*a*) of the regulations. A separate record shall be kept in respect of each of the drugs.

3. Any such drug, or any medicine containing any such drug, shall only be dispensed for the use of an individual patient in accordance with the prescription of the medical practitioner in charge of the patient. The prescription (which may be given on the patient's bed-card or case-sheet) shall be in writing, and shall be dated and signed or initialled by the doctor, and shall state either the name of the patient or the number of the case. A fresh prescription must be given on each occasion on which a fresh supply of the drug or medicine is required to be dispensed.

4. The person responsible for dispensing the drugs shall, at the time of dispensing any prescription, stamp or otherwise mark the prescription in such a way as to indicate that the prescription has been dispensed, and he shall keep a record of all cases in which any of the drugs have been dispensed, giving the date, and name of the doctor prescribing, and the name of the patient or the number of the case. A separate record shall be kept in respect of each of the drugs.

5. All prescriptions shall be kept for at least two years.

6. Stock preparations of the drugs required to be kept in the wards or in the out-patient department shall only be supplied by the dispensary on the written requisition of the sister in charge of the ward or out-patient department, and shall be kept by her under lock and key, and shall only be used by her in accordance with the directions of one of the medical practitioners in charge of the patients.

7. A requisition shall be marked in the dispensary to show that it has been complied with, and shall be filed in the dispensary, and a copy or note of the requisition shall be kept by the sister in charge.

8. Adequate precautions shall be taken to prevent any theft of the drugs while being conveyed from the dispensary to the wards or out-patient department.

9. Particular preparations of any of the drugs may be prescribed by reference to any conventional name by which they are known in the hospital.

Schedule 2.

1. All supplies of the drugs to which the regulations apply shall be obtained by, or on the written order of, one of the medical practitioners attached to or attending the hospital, who shall certify that the supply is necessary for the treatment of the patients in the hospital.

2. All supplies will be received by the matron or acting matron of the hospital and shall be kept by her in a locked cupboard of which she alone shall have the key. She shall enter in the drug ledger a record of all supplies received containing the particulars specified in Schedule I Part (*a*) of the regulations. A separate record shall be kept in respect of each of the drugs.

3. The matron or acting matron shall only use or administer the drugs in accordance with the directions of the medical practitioners attached to or attending the hospital.

4. In the application of this schedule to a poor-house hospital or sick ward in Scotland, the matron shall mean the lady superintendent of nurses, if there is one; or, if not, shall mean the matron if a trained nurse, and otherwise the senior nurse or nurse in charge.

5. Except in so far as they are modified by the foregoing provisions, the requirements of the regulations shall be observed.

REGULATIONS AFFECTING TEACHING INSTITUTIONS.

The Home Secretary has approved the institutions named in the Schedule for the purpose of the provisions, which authorizes any person in charge of a laboratory for purposes of research or instruction attached to an institution approved by the Secretary of State to be in possession of the drugs to which the Act applies.

Schedule.

All universities of Great Britain and Ireland;
All university colleges of Great Britain and Ireland;
All medical schools recognized by any of the licensing bodies specified in Schedule A of the Medical Act, 1858, as amended by any subsequent Act;
The National Institute of Medical Research;
The School of Pharmacy of the Pharmaceutical Society of Great Britain;
The Royal College of Science for Ireland, Dublin.

OTHER PERSONS TO WHOM AUTHORIZATIONS HAVE BEEN ISSUED.

1. Occupiers of factories and workshops to which the Factory and Workshop Act applies to possess cocaine eye drops (Factory Act, No. 1).

2. Unregistered dental practitioners to possess cocaine solution not stronger than 1 per cent.) for use as local anaesthetics.

3. Certified midwives to possess and administer preparations of opium.

4. Farmers and stock-owners who obtain a police certificate to possess tr. opii.

5. Skippers of British fishing vessels to purchase tr. chlorof. et morph. co. and tr. opii.

Association Notices.

A FIJI BRANCH.

THE following change has been made by the Council, and takes effect on August 27th, 1921:

That a Fiji Branch of the Association be formed, of area coterminous with the Colony of Fiji.

Representation in Representative Body.—Under arrangements made by the Council, the Branch will be entitled to independent representation in the Representative Body, 1921-22, to return one Representative.

Meetings of Branches and Divisions.

EDINBURGH BRANCH.

THE annual meeting of the Edinburgh Branch was held in the hall of the Royal College of Physicians on June 30th. In the absence of the President, Lieut.-Colonel KEAY was voted to the chair. The Report of the Branch Council and the Treasurer's Annual Financial Statement were presented and approved.

The following office bearers were elected for 1921-22:

President: Dr. William Stewart. *President-elect* Dr. John Stewart Muir. *Vice Presidents:* Dr. George Mackay and Dr. John Playfair. *Honorary Treasurer*, Dr. Robert Thin. *Honorary Secretaries:* Dr. John Stevens and Dr. John Eason.

Dr. WILLIAM STEWART was then installed as President, and after a felicitous speech on taking the chair a cordial vote of thanks was passed to the retiring President, Dr. Graham Brown. It was intimated that Dr. John Stevens had been re-elected Representative for the Edinburgh and Fife Branches on the Council of the Association. Mr. James M. Graham, F.R.C.S.E., was elected to the annual vacancy on the Board of Management of the Queen Mary Nursing Home.

A brief report of the proceedings of the Scottish Committee was given, including action with regard to fees to medical practitioners called in by midwives under the Scottish Midwives Act, the conferences of representatives of staffs of Scottish hospitals held under the auspices of the Scottish Committee, and the interim report of the Scottish Consultative Council on Medical and Allied Services which was referred to the Divisions for consideration, with a questionnaire for reply.

In connexion with the monthly letters of the Medical Secretary some matters of Branch activity and organization were discussed, including scientific and social functions. On the motion of Dr. DREVER, seconded by Dr. KEPPIE PATERSON, it was resolved:

That the Branch Council be asked to consider how the Branch could be made more effective as a co-ordinating body for the Divisions.

One suggestion received with favour by the meeting was that the Secretaries of Divisions be requested to send reports of their meetings to the Secretary of the Branch.

The intended revision of the Rules of Organization of the Branch having been delayed owing to the war, it was remitted to the Branch Council to submit revised rules to the next annual meeting. A vote of thanks was passed to the Royal College of Physicians for the favour of the hospitality of their hall, and also to the President, the Honorary Treasurer, and the Honorary Secretaries.

LANCASHIRE AND CHESHIRE BRANCH.

THE annual meeting of the Lancashire and Cheshire Branch was held at Chester on June 23rd. Prior to the meeting the members lunched together. Dr. ELLIOTT, the incoming President, delivered his presidential address entitled "The hospital: its past, present, and future, especially in regard to the provision of medical services." He gave an interesting review of the origin of Chester Infirmary and its early history, illustrating his points by reference to original documents, photographs of which were shown by lantern slides. Dr. Elliott then proceeded to deal with the present position of the hospital system of this country in general and of Cheshire in particular. He sketched a scheme for a complete medical service for this country, amplifying in many particulars the outline which he had already given in an address to the Chester and North Wales Medical Society, published in the BRITISH MEDICAL JOURNAL SUPPLEMENT of April 2nd, 1921. On the motion by Sir JAMES BARR a cordial vote of thanks was accorded to the new President.

The following officers were elected for the year:

Vice-Presidents: Dr. J. Hill Abram (Liverpool), Dr. F. L. Angior (Wigan). *Auditors:* Dr. Matthews and Dr. Turner.

Following the annual meeting a party of the members and their lady friends were taken for a river trip by the President, who provided tea at Eccleston. Another party was conducted to various parts of the ancient city by Professor Robert Newstead, who demonstrated most of the vestiges of Roman occupancy, including the relics which he had himself found in the Roman graves unearthed in the field of the Chester Infirmary. An altogether delightful day was spent, and members expressed their cordial appreciation of the arrangements which had been made for their comfort and enjoyment by the President (Dr. Elliott) and the Secretary of the Chester Division (Dr. Hamilton).

Correspondence.

Regional Medical Officers and Consultations.

SIR,—I see in the BRITISH MEDICAL JOURNAL of August 13th, under parliamentary news, that in reply to a question the Minister of Health stated that regional medical officers "acted as consultants to insurance practitioners." It is difficult to realize that this can be so, for, whereas a regional medical officer may be a recognized authority as a physician or a surgeon, manifestly it is unreasonable to concede the rôle of omniconsultant in one person, for all and sundry ills to which the flesh is heir, be the patient insured or not. For example, I have had amongst insured patients recently cases in which I regarded it advisable to have a second opinion.

(*a*) A medical case exhibiting symptoms of meningitis where a doubt lay as to the exact diagnosis and the experience of a physician was indicated.

(*b*) A surgical case—an acute abdominal case—where immediate operation was called for.

In what way does the official under the Insurance Act afford help in such circumstances? I fail to see where the Insurance Act provides for the insured under these conditions, either in securing a medical opinion or the services of a surgeon.

Further, the insurance practitioner cannot look to the regional medical officer for specialist opinions in every realm of medicine and surgery, or, if he is intended to, is it possible to obtain in an emergency such service or assistance? In my district the official in question resides at a distance of over fifty miles, and a case occurring in the night may allow of no delay.

It would seem therefore that the reply of the Minister of Health requires qualifying, as it would lead the public to believe that under the Act consulting opinions and consulting surgery are available for the insured. This clearly is not so, and I submit that the following corollary questions might well be put:

In what number and in what nature of cases have the regional medical officers supplied consultations?

And further, to what extent do the insured derive surgical and medical treatment from voluntary hospitals and from consultants other than regional medical officers?—I am, etc.,

Shenington, Banbury, Aug. 14th. A. ALAN FORTY.

*** At present the kind of work outlined in this letter is not yet being undertaken by the regional medical officers under the Insurance Act. In a memorandum (R.M. 1) which was issued to insurance practitioners in England and Wales in October, 1920 (abstract in SUPPLEMENT of November 13th, 1920, p. 134), there appeared the following statements:

20. The Minister . . . . has accordingly determined that the services of the regional medical staff should be available for consultation in cases of undoubted incapacity for work, where a second opinion appears desirable on other medical aspects of the case.

21. This part of the work of the regional medical staff cannot be undertaken at the inception of the scheme during the present year. It has been found necessary to postpone the reference of such cases until a date to be announced later, from which date the arrangements described below will come into operation.

25. The regional medical officers will be empowered to obtain the advice of specialists in dealing with cases of exceptional medical difficulty, but these specialists will be so employed to give advice only—not to carry out any form of treatment—and for the assistance of the medical officer only, in deciding what advice he should give to the approved society or to the practitioner, as the case may be.

No announcement has been made as to the date when the regional medical staff will undertake consultations in connexion with cases such as that referred to by our correspondent, and it is open to question whether the kind of case outlined is one for which the regional medical officer is likely to be available.

The regional medical officers would have to be multiplied many times over if they were to be available on all occasions to consult in cases of doubt, such as meningitis, acute appendicitis, etc.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Staff Commanders A. H. H. Vaux to the *Pembroke* for R.N. Hospital, Chatham (temporary), for duty with Medical Director General; C. V. Gribble, D.S.O., to the *Dee* as senior medical officer and inspecting medical officer; G. O. M. Dickinson to the *Victory*, additional, for R.N. Hospital. Surgeon Lieutenant Commanders H. B. Padwick, D.S.O., to Plymouth Hospital, F. J. D. Twigg to the *Pembroke* for R.N. Hospital, Chatham; M. S. Moore to the *President*, additional, for Cambridge Naval School. Surgeon Lieutenants A. B. Grant to Haslar Hospital for course, A. C. Anderson to the *Delhi*, J. P. Ainley to the *Marcella*, T. Madill to the *Cornflower*, J. F. H. Gaussen to the *Waldegrave* on commissioning.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel C. H. Straton retires on retired pay.

The following officers relinquish their commissions:—Temporary Captains and are granted the rank of Major: A. G. Welsford (September 18th, 1920, substituted for notification in the *London Gazette* of October 25th, 1920), C. Sullivan, M.C. Temporary Captains and retain the rank of Captain: R. Hodson, M.C., D. E. Hearn, H. L. C. Noel. Temporary Captains F. J. R. Cowie, J. T. Hill. Temporary Honorary Captain A. C. Delacroix, and retains the honorary rank of Captain.

Major J. S. Dunne, D.S.O., relinquishes the acting rank of Lieut.-Colonel.

Temporary Major N. H. Oliver relinquishes his commission and retains the rank of Major.

Temporary Captain W. M. M. Jackson to be temporary Major whilst specially employed as D.A.D. of Hygiene.

Captain G. T. Baker, M.C., resigns his commission.

W. L. Cowardin (Surgeon Lieut. Commander R.N.ret.) to be temporary Major.

Temporary Captain E. E. Chipp relinquishes the acting rank of Major.

G. L. K. Finlay, late Temporary Captain, to be Temporary Captain with seniority, July 13th, 1918.

M. H. Carleton to be Temporary Lieutenant.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE. ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel A. R. Wilson, T.D., resigns his commission and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major D. L. Gowlland to be Lieutenant-Colonel, and to command 4th London Field Ambulance.

Major C. H. Lindsay, C.M.G., D.S.O., T.D. (D.A.D.M.S., 55th West Lancashire Division), to be brevet Lieutenant-Colonel.

The following Majors having attained the age limit are retired, and retain the rank of Major, with permission to wear the prescribed uniform: J. Robinson, T.D., C. S. de Segundo, O.B.E., J. F. F. Parr, T.D., F. J. Oxley, O.B.E., T.D.

The following officers having attained the age limit are retired, and retain their rank: Lieut.-Colonel H. G. Smeeth, with permission to wear the prescribed uniform; Major J. E. B. Wells; Captains F. V. Phillips, F. Jeffree, A. Scott-Turner, C. Telfer, J. F. Farrow, M.C., A. G. Wilson.

Captain (Brevet Major) J. L. Joyce resigns his commission and retains his rank.

Captain A. W. Clarke resigns his commission and retains the rank of Captain.

Captains to be Majors: E. Alderson, D.S.O., H. D. Davis.

To be Captains: Captain A. H. D. Smith, M.C. (late R.A.M.C.), with precedence as from October 9th, 1918; Honorary Surgeon Captain C. T. Fox (late East Kent Yeomanry), with precedence as from August 26th, 1911.

Lieutenant C. S. Atkin (late R.A.M.C.) to be Lieutenant, with precedence as from August 11th, 1914.

3rd Southern General Hospital.—Captain W. B. Secretan resigns his commission, and retains the rank of Captain.

DEFENCE FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Temporary Colonel T. A. Barron, D.S.O., to be A.D.M.S., from April 17th to July 10th, 1921.

To be temporary Major: A. Walker, D.S.O., April 11th, 1921 (substituted for notification in the *London Gazette*, April 27th, 1921, appointing this officer as temporary Captain).

The following officers relinquish their commissions:—

Temporary Colonels A. D. Sharp, C.B., C.M.G., T.D., T. A. Barron, D.S.O., C. I. Ellis, C.M.G., J. G. Martin, T.D., H. T. Samuel, D.S.O.

Temporary Lieutenant-Colonel, and retains the rank of Lieutenant-Colonel: M. H. Allen (3rd London Field Ambulance).

Temporary Lieutenant-Colonels: D. L. Fisher, D.S.O. (2nd Northumbrian Field Ambulance), W. A. Thompson (3rd Northumbrian Field Ambulance), C. M. Kennedy, M.B.E. (2nd Wessex Field Ambulance), W. Lister (1st West Riding Field Ambulance), F. Whalley, D.S.O., T.D. (2nd West Riding Field Ambulance), G. B. Gill (2nd North Midland Field Ambulance), H. G. G. Mackenzie, D.S.O. (3rd Home Counties Field Ambulance), H. F. Everett (1st East Anglian Field Ambulance), C. S. Wink (3rd East Anglian Field Ambulance).

Temporary Major, and retains the rank of Major: F. G. Hobson (1st South Midland Field Ambulance).

Temporary Majors: A. Bird, T.D. (3rd Welsh Field Ambulance), W. A. Robertson, M.C. (3rd Highland Field Ambulance), V. H. Wardle, M.C. (2nd Northumbrian Field Ambulance), R. A. Freeman (2nd Home Counties Field Ambulance), R. Ward, M.C. (1st Wessex Field Ambulance), T. M. Jeanneson (2nd Wessex Field Ambulance), F. Ward, C. B. Baxter, O.B.E., T.D., J. A. Clark, H. A. Leebody, T.D.

Temporary Captains, and retain the rank of Captain: H. J. Rae (2nd Highland Field Ambulance), J. H. Sheldon (1st South Midland Field Ambulance), B. A. Astley-Weston and A. D. Symons (1st South Midland Field Ambulance), W. J. Rutter (2nd Wessex Field Ambulance), T. Anderson (2nd East Anglian Field Ambulance), D. Rose (3rd Highland Field Ambulance), L. J. G. Carre (3rd London Field Ambulance), W. J. M. White.

Temporary Captains: R. B. Kelly and W. W. Hallchurch (3rd South Midland Field Ambulance), D. J. D. Jones (2nd Welsh Field Ambulance), D. Cowan (3rd Welsh Field Ambulance), P. W. Kent (3rd Divisional Sanitary Section), G. H. S. Letchworth (2nd Wessex Field Ambulance), W. T. G. Poul (2nd East Anglian Field Ambulance), W. L. S. Buchanan and J. Kinnear (3rd Highland Field Ambulance), A. G. Atkinson (1st East Anglian Field Ambulance), J. Donald (2nd North Midland Field Ambulance), J. H. Dewhurst and A. Lorrain (1st West Riding Field Ambulance), J. Hamilton and J. F. O'Grady (1st East Lancashire Field Ambulance), M. Coghlan (2nd London Field Ambulance), A. L. Pearson (3rd London Field Ambulance), J. A. Mackey, R. Mackenzie, D. C. Graham, T. Scott, D.S.O., H. Drummond, W. G. George, M.C., W. H. Barton, M.C., T. B. Batchelor.

Temporary Lieutenants, and retain the rank of Lieutenant: N. M. D. Fox and V. H. Jacobs (1st London Field Ambulance), H. J. Dawson (2nd Highland Field Ambulance), H. N. C. Atkinson (2nd North Midland Field Ambulance), R. K. S. Linn, E. H. Ponder and O. H. Wild (3rd Lowland Field Ambulance), H. J. Morgan (North Midland Sanitary Section), H. W. Collins (5th London Field Ambulance), D. R. Macdonald (1st Highland Field Ambulance), E. H. Corder, C. S. Atkin.

1st (East Anglian) Field Ambulance (T.F.).—To be Temporary Captain: S. Slade.

5th (London) Field Ambulance (T.F.).—To be temporary Lieutenant-Colonel: E. T. H. Lea, April 9th, 1921 (substituted for *London Gazette* notification, April 28th, 1921, appointing this officer as temporary Major). The name of Temporary Lieutenant John Reginald Keith Fenning is as now described, and not as printed in the *London Gazette* of May 12th, 1921.

2nd Lowland Field Ambulance (T.F.).—Temporary Lieut.-Colonel G. B. Fleming, M.B.E., relinquishes his commission. To be Temporary Captain: J. F. C. Hassam.

1st (North Midland) Field Ambulance (T.F.).—Temporary Captain N. S. Tirard to be Temporary Major. Temporary Major S. T. Beggs (Captain and Brevet Major, R.A.R.O.) relinquishes his temporary rank.

3rd (Wessex) Field Ambulance (T.F.).—To be Temporary Captain: W. Bannerman.

British Medical Association.

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THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

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IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER

13 Tues. London: Organization Committee, 2 p.m.
14 Wed. London: Hospitals Committee, 2.30 p.m.
15 Thurs. London: Insurance Acts Committee, 2.30 p.m.
16 Fri. London: Central Ethical Committee, 2 p.m.
20 Tues. London: Medico-Political Committee, 2.30 p.m.
23 Fri. London: Public Health Committee, 3 p.m.
26 Mon. London: Dominions Committee, 2.30 p.m.

OCTOBER.

5 Wed. London: **Council.**

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations.

APPOINTMENTS.

CUMMING, Miss Grace, M.B., Ch.B., Junior Resident Medical Officer at the Children's Hospital, Sunderland.

TROTTER, G. Clark, M.D., D.P.H., F.R.S.E., Medical Officer of Health, Metropolitan Borough of Islington.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 0s., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

KEATES.—On August 13th, at 111, Crystal Road, Dulwich, the wife of Major H. C. Keates, I.M.S., of a daughter.

TERRY.—On August 20th, at 11, Barton Street, Gloucester, the wife of H. Cann Terry, M.B., Ch.B., of a son.

DEATH.

GRIFFITHS.—On August 19th, at Llantrannog, Cardiganshire, the Rev. William Charles Griffiths, L.R.C.S., L.R.C.P., of Bryn House, Pontardulais, Glamorganshire, died suddenly, aged 61 years.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Mary-le-Strand, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 10TH, 1921.

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British Medical Association.

CURRENT NOTES.

Health Grants.

THE current number of the official organ of the Irish Medical Association contains the following editorial note: "It is a satisfactory sign of professional solidarity that at the recent meeting of the British Medical Association at Newcastle the Association unanimously resolved to use its influence to secure that the Government grants due for Irish health services should neither be withheld nor diverted. The medical profession in Ireland had already exhausted—unavailingly—its direct influence, and the statutory advisers of the Ministry of Health for Ireland had given their advice and seen it slighted. It remains to be seen whether the British Medical Association will prove more effective; but, at any rate, whether its action is successful or not, it is all for the good that its services are rendered so cordially."

Income Tax Allowance on Replacement of Motor Car.

The BRITISH MEDICAL JOURNAL has advised members that they are entitled to a rebate on the difference between the selling price of an old car and the present price of a new car of similar make and horse-power. A case has recently been submitted to the head office by the Brighton Division, in which the local assessor insisted that the allowance must be based on the actual pre-war cost of the car less selling price, a very different matter. The medical man, who sought the assistance of the Association, was advised to press for the allowance as a very important principle was involved. After considerable discussion the contention was admitted and an allowance made based on the difference between the selling price and the cost of the new car. The difference between the allowance he was to have had and that which he has actually obtained is £300, which means that by the aid of the Brighton Division, with the support of headquarters, he has saved £90.

Meetings of Branches and Divisions.

MIDLAND BRANCH.

THE annual meeting of the Midland Branch was held at Chesterfield on July 7th, when Dr. WILLOUGHBY SMITH was in the chair.

Arising out of the minutes of the last annual meeting the Secretary read a letter from the Lincoln Division giving reasons against the subdivision of the Branch. The Secretary reported that the Branch Council considered these arguments outweighed the advantages of subdivision, and had therefore asked permission to withdraw their request to subdivide the Branch.

The annual report of the Hon. Secretary and Treasurer was adopted and the following officers were elected:

President: Dr. Herbert Peck. *President-elect:* Dr. Sevestre. *Vice-Presidents:* Dr. Willoughby Smith and Dr. J. H. COX. *Hon. Secretary and Treasurer:* Dr. R. Wallace Henry.

The MAYOR welcomed the Branch to Chesterfield, and regretted that owing to the shortness of time the members had not the opportunity of thoroughly inspecting the historical town. He was very pleased to observe that the President for the year was a full-time medical officer of health, and that he was on such friendly terms with the general practitioners. A vote of thanks was accorded to the Mayor for the permission to use the Council Chamber. The members coming from a distance had previously been entertained to lunch at the Station Hotel by Dr. PECK, the President-elect, when some twenty-four members sat down to a very enjoyable meal.

After the annual meeting, the President, instead of giving an address, conducted the members, in many cases accompanied by their wives, to Chatsworth House. Through the courtesy of the Marquis of Hartington, who unfortunately was absent and who conveyed his apologies, the party was conducted over the house by the Librarian, and spent a delightful afternoon examining the famous treasures there, and were subsequently taken over the beautiful gardens. The party then proceeded to the Hydro Hotel, Baslow, where an excellent tea awaited them. On the motion of Sir RICHARD LUCE a very hearty vote of thanks was accorded to Dr. Herbert Peck for the admirable arrangements he had made for entertaining the members.

WILTSHIRE BRANCH.

AN open clinical meeting under the auspices of the Wiltshire Branch of the British Medical Association was held on July 6th at Swindon, with the President, Dr. C. E. S. FLEMMING, in the chair, who kindly entertained some twenty-four local members to lunch before the meeting. Dr. J. ODERY SYMES (Bristol University) gave an address on some recent work on the causation, diagnosis, and treatment of gastric and duodenal ulcer. Attention was drawn to the importance of sepsis as an element in the causation of ulcer, and the signs, symptoms, and chemical findings in gastric and duodenal ulcer were contrasted. Skiagrams were shown, and there was a demonstration of the test for occult blood in faeces. The method of fractional stomach analysis with the use of a Rehfus tube was illustrated on a student, and the process of acidity estimation performed. The lecture terminated with a review of the relative values of medical and surgical methods of treatment.

This was the first of a series of clinical and post-graduate lectures that the local Branch of the British Medical Association has arranged with the staff of the University of Bristol during the coming season, and the attendance on this occasion augurs well for the success of the scheme.

Association Notices.

ELECTION OF DIRECT REPRESENTATIVES UPON INSURANCE ACTS COMMITTEE.

NOMINATIONS by Local Medical and Panel Committees for the above should reach the Medical Secretary not later than the first post on October 10th, 1921. Nomination forms (M.2) may be obtained from the Medical Secretary, 429, Strand, W.C.2.

Scottish Subcommittee.

Nominations for the Scottish Subcommittee by Scottish Panel Committees must also be in the hands of the Medical Secretary—from whom nomination papers (M.4 for Counties, and M.5 for Burghs) may be obtained—by the same date.

PANEL CONFERENCE.

Motions by Local Medical and Panel Committees for inclusion in the Provisional Agenda of the Panel Conference (to be held in the Wesleyan Central Hall, Westminster, on Thursday, October 20th) must be received by the Medical Secretary not later than the first post on September 19th.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: T. B. Shaw to the *Fred* for R.N. Barracks (temporary); L. C. Rowan-Robinson to the *Blake*; E. T. Burton to the *Malabar*, additional for H.M. Dockyard, Bermuda; T. W. Myles, C.B.E., to the *New Zealand* (temporary); P. F. Alderson to R.N. Hospital, Plymouth, for general duties and as Medical Transport Officer, Devonport.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

The following Captains to be temporary Majors whilst specially employed as Deputy Assistant Directors of Hygiene: H. S. Milne, M.C., R. W. Galloway, D.S.O.

Captain H. Bedingfield, D.S.O., retires, receiving a gratuity, July 12th, 1921, and is granted the rank of Major (substituted for notification in the *London Gazette* of July 11th, 1921).

Temporary Captains relinquish their commissions and retain the rank of Captain: C. B. Dyson, S. H. Scott, R. B. Jenkins.

REGULAR ARMY RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Major E. McK. Williams, having attained the age limit of liability to recall, ceases to belong to the Reserve of Officers.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains relinquish their commissions and retain the rank of Captain: E. D. D. Dickson, Thomas Patterson.

Captain A. J. Gibson, D.S.O., relinquishes his commission and is granted the rank of Major.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Captain F. A. E. Carew to be Major and command the medical unit of the Edinburgh University O.T.C.

Captain S. S. Greaves, D.S.O., M.C., vacates the appointment of D.A.D.M.S., West Riding Division.

Captains C. G. Meads, M.C., and W. Goldie, M.C., resign their commissions and retain the rank of Captain.

Lieutenant L. R. G. de Glanville to be Captain.

TERRITORIAL FORCE RESERVE.

Surgeon-Major J. W. Lloyd, T.D. (Engineers), having attained the age limit, is retired and retains the rank of Surgeon-Major, with permission to wear the prescribed uniform.

ARMY MEDICAL SERVICE.

Lieut.-Colonel E. B. Dowsett, D.S.O., from General List, R.A.M.C. (T.F.), to be Colonel.

ROYAL ARMY MEDICAL CORPS.

To be Lieutenant-Colonels: Lieut.-Colonels A. G. Hay, T.D. (from 3rd Scottish General Hospital), H. G. L. Haynes (late T.F.Res.), and F.G. Dobson (late T.F. Res.).

To be Majors: Captain W. J. Gray, from General List; Captain D. Smith, from 2nd London Sanitary Company; Captain H. Foxton, M.C., from R.A.M.C.(T.F.), Major C. H. Welch, from R.A.M.C.(T.F.).

Captain C. M. Smith from 1st London (C. of L.) Sanitary Company, to be Captain.

INDIAN MEDICAL SERVICE.

The following officers have been permitted to retire, with effect from the dates specified: Lieut.-Colonel S. E. Prall (March 26th), Lieut.-Colonel (Brevet Colonel) C. M. Goodbody, C.I.E., D.S.O. (April 21st), Colonel C. Milne, O.B.E. (June 30th), Lieut.-Colonel S. Evans (May 10th).

Major J. Anderson, an Agency Surgeon, has been granted combined leave for one year, with effect from April 1st.

The services of Major J. A. S. Phillips and Captain H. S. Anand have been placed at the disposal of the Government of the United Provinces for employment in the Public Health Department.

The services of Major M. J. Holgate, O.B.E., have been placed temporarily at the disposal of the Government of Madras, with effect from May 5th, for employment in the Jail Department.

Major J. H. Horne, of the Bacteriological Department, has been appointed temporarily as a supernumerary officer to the staff of the Bombay Bacteriological Laboratory, with effect from June 2nd.

POST-GRADUATE COURSES AND LECTURES.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.—*Out-patients:* Mon., 11 a.m.; Tues., Wed., and Fri., 9.30 a.m. and 2 p.m.; Thurs., 6.30 p.m. *In-patients:* Mon. and Thurs., 2 p.m.; Tues., 10 a.m.; Sat., 10.30 a.m.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Visit of Post-Graduates to Wards; 2 p.m., In- and Out-patient Clinics and Operations.

APPOINTMENTS.

CALTHROP, Lionel C. E., M.B.Durh., M.R.C.S., L.R.C.P., Honorary Physician to the Royal Bath Hospital, Harrogate.

JENNINGS, H. C., M.B., D.P.H., Assistant Medical Officer of Health, City of Leeds.

MITCHELL, A. Philp, M.D., Ch.M., F.R.C.S.Edin., Surgeon-in-Charge of Orthopædic Department, Ministry of Pensions Hospital, Craigleith, Edinburgh.

SHARPE, Dr. H. (Tuberculosis Officer, Newcastle-under-Lyme), Medical Superintendent of King George's Sanatorium for Sailors, Bramshott, Hants (a branch of the Seamen's Hospital Society).

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made: *House-Physicians:* J. G. Hislop, M.B., Ch.B., R. Williamson, M.B., Ch.B., J. W. Ford, M.B., Ch.B. *Senior House-Surgeon:* A. W. Harley, M.B., Ch.B. *Surgical Registrar:* A. H. Southam, F.R.C.S. *Assistant Surgical Officer:* John Gow, F.R.C.S. *Medical Officer, Central Branch:* Miss Margaret Dobbie, M.B., Ch.B. *Assistant Medical Officer, Central Branch:* Mrs. E. Forbes, M.B., Ch.B.

British Medical Association.

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Diary of the Association.

SEPTEMBER

13 Tues. London: Grants Subcommittee, 11 a.m.
London: Organization Committee, 12 noon.
14 Wed. London: Hospitals Committee, 2.30 p.m.
15 Thurs. London: Insurance Acts Committee, 11.45 a.m.
16 Fri. London: Central Ethical Committee, 2 p.m.
20 Tues. London: Medico-Political Committee, 2.30 p.m.
21 Wed. London: Finance Committee, 2.30 p.m.
22 Thurs. London: Naval and Military Committee, 2.30 p.m.
23 Fri. London: Public Health Committee, 3 p.m.
26 Mon. London: Dominions Committee, 2.30 p.m.

OCTOBER.

5 Wed. London: **Council.**
20 Thurs. London: Annual Conference of Representatives of Local Medical and Panel Committees, 10 a.m.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HEFFERMAN.—By cable. On August 29th, at Namtu, Burma, the wife of L. W. Heffernan, M.R.C.S., L.R.C.P. (Joan Godfrey), of a daughter (Pamela Dorothy).

KERR-MUIR.—On August 26th, at Melbourne Lodge, Stockton Road, West Hartlepool, to Dr. and Mrs. J. Kerr Muir, a son.

LIPSCOMB.—On August 27th, at Haywards Heath, the wife of Captain F. M. Lipscomb, R.A.M.C., of a son.

MONTGOMERY.—On August 24th, at 49, Beaumont Street, W., to Olive, wife of V. C. Montgomery, M.B., Ch.B., Feltham, Middlesex, a son.

WRIGHTSON.—At Scorton, Darlington, on August 19th, 1921, the wife of J. H. Wrightson, M.B. and Ch.B.Edin., of a daughter.

MARRIAGES.

CALDER–STEWART.—At Keith, on August 22nd, H. M. Calder, D.S.O., M.C., M.D.Glasg., to M. A. H. Stewart, M.B., Ch.B.Glasg.

DANDO WILKINSON.—On August 23rd, at St. Peter's Church, Droitwich, by the Rev. E. H. Longland, M.A., Geoffrey Wright Dando, M.R.C.S., L.R.C.P., son of Alfred W. and Mrs. Dando, Edgbaston, to Kathleen Mary, daughter of Dr. John and Mrs. Wilkinson, Ashlea, Droitwich.

FOSTER—M'GEORGE.—At Dock Park House, Dumfries, on the 30th ult., Malcolm Foster, M.B., Ch.B., Cranleigh, Herne Bay, to Julia Davis, eldest daughter of David M'George, Dumfries.

JEFFERSON STOTT.—On August 22nd, at St. Clement's Church, Rochdale, by the Rev. J. H. Mitchell, John Cecil Jefferson, M.B., B.S., F.R.C.S.Eng., second son of the late Dr. Arthur Jefferson and Mrs. Jefferson, of 2, West Street, Rochdale, to Freda Marigold, only child of the late F. W. Stott, Esq., and Mrs. Stott, of Half Acre, Rochdale.

POOLE—MORRISON.—At the Parish Church, Kirkintilloch, September 7th, by the Rev. T. Angus Morrison (father of the bride), assisted by the Rev. J. J. Robinson of Manchester, Arthur Poole, M.B., Ch.B.Glas., of Manchester, son of Mr. and Mrs. J. M. Poole, "Hawthornbank," Kirkintilloch, to Janet Galloway Angus, daughter of the Rev. T. Angus and Mrs. Morrison, "The Manse," Kirkintilloch.

WARRINGTON–SAMUELS.—On July 22nd, at St. Michael's Church, Colombo, Thomas Warrington, B.A., M.R.C.S., son of Rev. T. Warrington, Vicar of Waterbeach, to Dorothy Samuels, daughter of G. Young, Esq., D.L., Culdaff, co. Donegal, and widow of the late Captain A. P. Samuels, 11th Royal Irish Rifles.

ROSS—LOW.—At the Palace Hotel, Aberdeen, on August 24th, by the Rev. Dr. Bruce McEwen, assisted by the Rev. C. M. Glashan, Oldmachar Cathedral, John Alexander Ross, M.B., Ch.B., elder son of Mr. and Mrs. John Ross, Fernlea, Brora, to Elizabeth (Betty), daughter of the late Mr James Low, Foulcassie, and of Mrs. Low, 6, Erskine Street, Aberdeen.

DEATHS.

M'CALLUM.—At a Nursing Home, Aberdeen, on August 23rd, Alexander John M'Callum, M.D., F.R.C.S.E., of Kendal, Westmorland.

MORTON.—On August 26th, at 29, Glen Road, Nether Edge, Thomas Henry Morton, M.D., dearly beloved husband of Ellen Eliza Morton, in his 83rd year. No flowers, by request.

NELSON.—On August 26th, at the Royal Hotel, Carnarvon, William Percival Nelson, beloved husband of Dorothy T. Nelson, of 48, London Road, Coalville, in his 28th year.

RUSSELL.—On July 21st, at Ranchi, William Russell, L.R.C.P.S.I., aged 50, of Laheal, Upper Assam, Medical Officer, Jokai Tea Company, and member Assam Medical Council. Deeply regretted by his sorrowing wife and a large circle of friends.

WRIGHTSON.—At Scorton, Darlington, on August 19th, 1921, Janet Margaret (*nee* Butters), the wife of J. H. Wrightson, M.B. and Ch.B.Edin.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 17TH, 1921.

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British Medical Association.

CURRENT NOTES.

Membership of the Association.

At the last meeting of the Organization Committee it was reported by the Financial Secretary that during the period June 21st to September 6th, 1921, 756 new members had joined the Association. One hundred and ten had paid arrears of subscriptions, and eleven resignations had been withdrawn. During the same period there were 68 resignations and 54 deaths. There was thus an increase in membership of 755. The total membership on September 6th was 23,553, as compared with 23,103 at the corresponding date last year.

Annual Meeting in Glasgow, 1922.

The arrangements for the Annual Meeting of the British Medical Association in Glasgow next year are now being made, the dates fixed being from July 21st to 29th inclusive. The University Court has granted the use of the University buildings. A meeting of the General Committee to appoint officers and subcommittees will be held on September 22nd. The interim joint secretaries of the General Committee are Dr. G. A. Allan and Dr. James Russell, and offers of help from members of the Association in and near Glasgow may be addressed to them at the University of Glasgow.

Registration of London Lying-in Homes.

The only clauses of the London County Council (General Powers) Act, 1921, which directly concern the medical profession are those contained in Part IV relating to lying-in homes. These clauses repeal and replace the provisions of Part IV of the General Powers Act of 1915, which, in the words of the preamble, have been found "insufficient for the purpose of securing adequate control of lying-in homes." The new clauses prohibit any person to carry on a lying-in home unless the name of the person and the premises are registered with the Council, and require applicants for registration to furnish particulars as to name, age, nationality, technical qualifications (if any), private address, name under which and address at which the home is proposed to be carried on, and such further information as the Council may require. Registration may be refused if the person or the premises are considered unsuitable, if the number of patients to be accommodated is considered to be excessive, or if the premises are used for any immoral purpose. The Council reserves to itself the right to prescribe the records to be kept, to require the notification of any death occurring in the home, and to inspect the premises and records at all reasonable times. Penalties are provided for the contravention of the provisions of the Act.

The saving clause (22) in respect of medical practitioners is substantially the same as the corresponding clause of the Act of 1915, and provides that this part of the Act shall not apply in the case of medical practitioners who furnish a certificate to the Council signed by two duly qualified registered medical practitioners (having no connexion with the home) to the effect that the premises to be used are suitable for the purpose and that the medical practitioner is a suitable person to conduct a lying-in home. A further saving clause (23) is inserted in respect of hospitals and kindred institutions, institutions for the training of midwives, and homes where only the relatives of the person carrying on the home are received for the purposes of childbirth.

The Medico-Political Committee of the British Medical Association considered this section of the bill in March last, and was of opinion that the reference to the suitability of the practitioner for carrying on a lying-in home was objectionable. Representations on this point were made to the London County Council. The Council, however, pointed out that this provision had been contained in an Act of Parliament since 1915; that no complaint as to its working had been received; and that the provision had proved useful in preventing undesirable practitioners from applying for recognition, while it had not hampered reputable practitioners. After consideration of the attitude of the London County Council it was decided to withdraw opposition to the clause.

Association of Jewish Friendly Societies

A paragraph in the *Jewish World* of September 3rd is worth attention by members in those areas where Jewish friendly societies are operative. It states that the Association of Jewish Friendly Societies intends to formulate a scheme for medical attendance for the insured members in the movement. The reason given for this is that doctors are said to have increased their fees by threefold during the past ten years, while uninsured members have with difficulty been induced to pay double the former amount to the medical fund. In addition, it is alleged that the relations between doctors and the societies have not been of the best during recent years, and members feel that they have not been fairly dealt with. The various lodges and societies are urged to collaborate with the Association of Jewish Friendly Societies in its endeavours. Forewarned is forearmed. Individual members of the British Medical Association who may be approached are strongly advised to entertain no proposals until they have been considered by their Division, and they should be brought to the attention of the local Secretary as soon as anything definite is known about them.

Insurance Policies: A Warning.

A story recently brought to our notice seems to make it desirable again to warn medical men to be on their guard against making payments to persons calling upon them and representing themselves to be insurance brokers. In

the particular case that leads us to repeat this warning it would appear that the person representing himself as an insurance agent offered the doctor medical examinations for various insurance offices on the understanding that he took out a policy through his agency. The doctor referred to informs us that he agreed to take out three policies—namely, for sickness benefit, for his car, and in respect of fire and repairs—and gave his visitor a cheque for the amount of the first premium, but failed to receive the policies within a reasonable period. Acting on the advice of his solicitors, the doctor instituted proceedings in the county court, when the alleged insurance agent admitted his liability, and offered to pay a sum into court and the remainder by monthly instalments. Up to the time our correspondent wrote to us no payment had been made, and on calling at the address given by the alleged agent he was informed that the man had left there some time previously. Before effecting any insurance a man with any experience of the world will make full inquiries regarding the terms of such insurance, and carefully study the conditions to be imported into the policy itself. Since we have again a case in which yet another doctor has acted with strange want of care and forethought in this respect, it seems desirable to direct notice to the facts in order to protect others from being similarly victimized. The Medical Insurance Agency (429, Strand, W.C.2) is always ready to advise medical practitioners on the choice of an insurance office and as to the conditions of policies best suited to their needs.

COLONIAL MEDICAL SERVICES.

THE following is the reply by the Colonial Office to the letter from the British Medical Association which was printed, together with other correspondence, in the SUPPLEMENT of August 20th, 1921:

Colonial Office, Downing Street,
August 13th, 1921.

Sir,—I am directed by Mr. Secretary Churchill to acknowledge the receipt of your letter of the 4th inst., from which he is glad to learn that the British Medical Association accept his suggestion that they should place themselves in regular unofficial communication with this Department in regard to matters affecting the medical staff of the Colonies and Protectorates.

Mr. Churchill learns with pleasure that the Association disclaim any idea that the concluding paragraph of the letter of the 3rd of May was intended to convey a threat. He is glad to note the assurance that the Association have not used their influence to dissuade men from joining the Colonial Medical Services, and have no intention of doing so under present conditions.

Directions have been given to ensure that anything printed or published by this Department or received by it in that form from Colonial Governments, and concerning medical officers in particular, shall be furnished to the Association.

The Secretary of State notes with satisfaction the statement that the Dominions Committee includes four members who have had service under the Governments of Tropical Dependencies, and that it is the earnest desire of the Association to verify their information before transmitting complaints to this Department.

In conclusion, I am to say that Mr. Churchill reciprocates the friendly terms in which your letter is expressed, and will be glad to instruct a member of his staff to see you when you call early in September.

I am, Sir, your obedient servant,
(Signed) H. J. READ.

The Medical Secretary,
British Medical Association.

Association Notices.

MEETING OF COUNCIL.

THE next meeting of Council will be held on Wednesday, October 5th, in the Council Room, 429, Strand, London, W.C.2, at 10 a.m.

ELECTION OF DIRECT REPRESENTATIVES UPON INSURANCE ACTS COMMITTEE.

NOMINATIONS by Local Medical and Panel Committees for the above should reach the Medical Secretary not later than the first post on October 10th, 1921. Nomination forms (M.2) may be obtained from the Medical Secretary, 429, Strand, W.C.2.

Scottish Subcommittee.

Nominations for the Scottish Subcommittee by Scottish Panel Committees must also be in the hands of the Medical Secretary—from whom nomination papers (M.4 for Counties, and M.5 for Burghs) may be obtained—by the same date.

PANEL CONFERENCE.

Motions by Local Medical and Panel Committees for inclusion in the Provisional Agenda of the Panel Conference (to be held in the Wesleyan Central Hall, Westminster, on Thursday, October 20th) must be received by the Medical Secretary not later than the first post on September 19th.

Meetings of Branches and Divisions.

METROPOLITAN COUNTIES BRANCH.

THE report of the Branch Council for 1920–21 was presented to the annual general meeting. The report states that the matters brought forward for consideration by the council during the year were of the first moment. Most of them concerned the area of the Branch; some established principles to determine action for many future years. A greatly improved attendance of members of council during the debates is recorded. A General Purposes Committee and an Ethical Committee were again appointed; the latter adjudicated upon the one matter brought before it, the former met ten times. The council has directed special attention to those areas of the Branch where individual members are isolated because of the inactivity or non-existence of Division officers and organization. In the meanwhile Division organization has been re-established in the large and important areas of Lewisham and of Ealing, and in these and other Divisions capable officers have revived co-operation in attention to local difficulties and in concern for matters of metropolitan scope. Special mention is made of the City Division, which, by reviving dinners and a dance, customary in pre-war days, has made evident the value of social amenities. Early in the session the council directed the attention of Divisions to the interim report of the Ministry of Health Consultative Council, with its elaboration of the idea of "primary health centres." The report was considered at many local meetings, and expressions of opinion were communicated to the council; but the change in the general political outlook caused the council to defer a more detailed consideration of the matter. In July, 1920, the council called a conference of representatives of the medical and surgical staffs of voluntary hospitals, which was well attended; this approved the principle of a medical staff fund in each hospital into which payment should be made for services rendered to State or municipal patients. Information since received has shown that such a fund has been instituted in most of the hospitals, and has proved to be free from difficulty in the working and satisfactory to the medical staffs. The council also considered the applicability to the metropolitan area of the provident scheme for hospital and additional medical services as carried on in Sussex. Two special meetings of the council decided that the scheme, with certain modifications, was suitable for the metropolitan area, and steps were taken to bring the scheme, together with the emendations of the council, before the lay committees and medical staffs of all the voluntary hospitals, to the committees of the King Edward's and Hospital Saturday Funds, as well as to the Central Council of the Association and other bodies. Other matters referred to in the report are the action taken in regard to municipal hospitals and clinics, school treatment centres, the Dangerous Drugs Regulations, and police fees. Lastly, the council reports that 424 new members were elected, as compared with 360 in the preceding year. The membership of the Branch is now 2,844 compared with 2,686 last year, and the finances are in a satisfactory condition.

MALAYA BRANCH.

A MEETING of the Malaya Branch was held at Singapore on the evening of June 16th. The members previously dined together. The business for the meeting included a discussion as to whether the Branch should become an independent body. Dr. Gray, Senior Medical Officer Penang, was elected Vice-President for Penang. A discussion on influenza was opened by Dr. RATTRAY; notes on surgical cases were reported by Dr. K. BLACK; and Dr. WEBSTER gave a demonstration of *x*-ray photographs. The Honorary Secretary of the Branch is Dr. J. W. Scharff, Port Health Office, Singapore, who was appointed to represent the British Medical Association at the Fourth Congress of the Far Eastern Society of Tropical Medicine.

SOUTHERN BRANCH.

THE forty-eighth annual general meeting of the Southern Branch was held at the Town Hall, Portsmouth, on August 18th, when the President, Dr. A. A. MACKEITH, took the chair. After the usual business had been transacted and the "Childe" Challenge Cup (golf) had been presented to the winner, Dr. J. L. Jackson, Dr. Mackeith vacated the chair in favour of Mr. A. BOSWORTH WRIGHT, who delivered his presidential address on The State, the doctor, and the public, the keynotes of which were the pressing need for consolidating the unity in the

profession by joining the British Medical Association and the demand of the public, which looked to the profession to initiate schemes to improve the national health. Drs. SHEAHAN, H. BURROWS, GURNEY DIXON, SCOTT RIDOUT, C. P. CHILDE, BRUCE YOUNG, W. L. PURVIS, and LOCKHART STEPHENS took part in the discussion which followed.

The President was warmly thanked for his hospitality in entertaining the members of the Branch Council to luncheon, for his lucid and impressive address, and for making arrangements for parties to visit H.M. yacht *Victoria and Albert*, under the guidance of Surgeon Commander A. R. Bankart, M.V.O.; also to H.M.S. *Barham* and the Royal Naval School of Mining.

INSURANCE.

PRESENTATION TO DR. P. V. FRY, LATE OF SOWERBY BRIDGE.

DR. P. V. FRY, who for some five years represented Yorkshire on the Insurance Acts Committee, recently removed from Sowerby Bridge to East Molesey, Surrey. His departure has been much regretted by his colleagues on the West Riding of Yorkshire Local Medical and Panel Committee and by all his Yorkshire colleagues. In order to express in some small degree the esteem in which he was held and the gratitude felt towards him for his long, able, and self-sacrificing services on behalf of his fellow practitioners, a testimonial fund was raised and was supported by nearly all the medical men of the West Riding. At the annual dinner of the West Riding Panel Committee Dr. Fry was the principal guest, and the chairman presented to him, on behalf of a very large number of subscribers, an artistically bound illuminated address, together with a cheque. Ladies were present at the dinner, and a bouquet of flowers was presented to Mrs. Fry by members of the Panel Committee. Expressions of regret at parting were made, and wishes for Dr. and Mrs. Fry's future happiness were expressed by the Chairman, Dr. G. B. Hillman (Wakefield), supported by Dr. Alfred Cox (Medical Secretary, British Medical Association), Dr. Barrs (Leeds), Dr. W. Steven, Alderman Crossley, J.P., and others. Dr. Fry suitably replied.

Correspondence.

Dr. Macdonald's Mission to South Africa.

SIR,—I should be extremely sorry if Dr. Macdonald were to feel that any difference of opinion we may have had with reference to the proceedings at the Durban Congress had tended to cast a cloud over the memory of his visit to South Africa. I can assure him we have a very lively recollection of his kindly and courteous personality, and that any small error he may have fallen into is not in the least likely to dim that recollection. It is a very difficult thing to follow all the steps of a controversy in another country unless one is personally engaged in it step by step, and I am sure Dr. Macdonald will pardon me when I point out that he would seem to have fallen into another error in his last letter in the SUPPLEMENT of June 11th. If I am not mistaken he is confusing two issues. The Durban Congress was not concerned with the South African Medical Association, of which Dr. Macdonald writes so critically. What was before the Congress, and is coming up again before the next Congress in Cape Town, is the question of the formation of a new association—the Medical Association of South Africa, in which it is proposed that both the British Medical Association and the South African Medical Association shall be merged.

That proposition was put forward by the Witwatersrand Branch of the British Medical Association after an exhaustive inquiry by a committee formed of members of the local Branch of the British Medical Association and of the South African Medical Association, elected with the object of finding some means by which the two associations could come together, and when I remind Dr. Macdonald that the representatives of the British Medical Association included Dr. Mackenzie, the superintendent of the Johannesburg Hospital, Mr. Ritchie-Thomson, the professor of surgery at the Transvaal University, and Dr. Porter, the medical officer of health for the Johannesburg municipality, he will recognize that the cause of the British Medical Association was sufficiently championed.

That committee came to the conclusion that it would be advisable that the British Medical Association should change its name to that of the Medical Association of South Africa, provided that it could be federated with the British Medical Association. It also proposed a draft memorandum which was practically the same as that of the British Medical Association without the deterring clause. These two proposals were agreed to by the Witwatersrand Branch, and were the two resolutions which were discussed at the Congress.

It will be seen, therefore, that the question of the South African Medical Association was not under discussion, and it is therefore unnecessary for me to meet all Dr. Macdonald's arguments with reference to the formation of that body.

But there is one point that I should like to argue with him. He states that an association which can force its members to obey its decisions is a trade union *in excelsis*. That appears to me an extraordinary attitude to take up. The Law Society of England is a statutory body which has the power to enforce its decisions, but it is not a trade union, and the Transvaal Society of Advocates is a voluntary body which lays down very definite rules as to the conduct of practice of its members, and it is not a trade union.

There are countless bodies who lay down stringent rules for their members and the members have to conform to them or leave; they do not leave because they find it is to their own interest to agree to those rules. One great difficulty in this country is that, owing to the deterring clause, the British Medical Association cannot enforce such obedience. The new association would be able to do so under its memorandum, and its members will realize that it is to their interest that it should have that power; but it will not be a trade union.—I am, etc.,

P.O. Box 4597, Johannesburg, August 7th. FRANCIS NAPIER.

National Insurance Medical Fees.

SIR,—A leading article in the *Times* of September 6th draws attention to a rumoured reduction in the capitation fee paid to insurance doctors; may we hope it is only a rumour!

We are always being told that the Government must cut its coat according to its cloth. When a tailor has to do this he does not indiscriminately take 20 per cent. off every part of the garment but reduces its size only in those places where cloth can be spared without making it unwearable, and in matters of health it is difficult to see how economy can justify anything that might lead to less efficiency, the risk of which would be considerable if the fees of insurance practitioners should be reduced. As in the practice of medicine so much depends on individual goodwill, a disgruntled profession would not be likely to give the willing service that is needful.

I am not so concerned at the moment as to whether the Government can afford to continue to pay what it does, or medical men might be forced to accept a smaller payment, but as to whether the suggested alteration is worth the while. At the present time the need of healthy producers is paramount, but their continued health must be largely dependent on an efficient medical service.

If the country is not getting the return required for the 11s. now paid it will certainly not get it by reducing the fee; the only way it can get better value is by improving the conditions under which medical men work and by providing for them better means and opportunity.

Many medical men are only now settling down to the work, hardly yet recovered from what they feel to be a grievous interference with their method of practice, and an attempt to cut down their fees would produce a feeling of dissatisfaction and distrust, and would raise a storm of indignation that would be difficult to quell, disastrous in its results, and the evil effects of which would be felt for years.

The insurance medical service, whatever its shortcomings, is beginning to attract new men, many of them men of a position in the profession who had hitherto held aloof; several panel practitioners are now making earnest endeavours to improve the service, and welcome and gladly consider every opportunity of bettering it. What is likely to be the effect on all these of a reduction in their fees?

Part, and part only, of the increase in the fee made two years ago was said to be made because of the decreased value of the sovereign. The amount was certainly not 50 per cent. of the old fee, and the cost of practice and living is still up more than 100 per cent.; moreover, no bonus was claimed or given when others received it. It is said that medical men's fees in private practice are now so good that they can afford to have their insurance fees reduced, but even in the case of those who are only partly dependent on their insurance practice, receipts from private

practice have not increased so as to compensate for the higher cost of living; though fees were advanced 50 per cent., income has not increased in anything like that proportion, as the number of attendances given is necessarily much reduced.

Seeing the ill effects likely to result from the rumoured proposal, one can only assume that the Ministry of Health is forced to it by the Treasury.—I am, etc.,

Bredenton Avon, Wilts, Sept. 9th. CHARLES E. S. FLEMMING.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Surgeon Commanders C. R. Rickart to the *Lowestoft* as Senior Medical Officer and Fleet Medical Officer, J. S. Austin to the *Caroline*, S. F. Dudley, O.B.E., to the *President*, additional for Greenwich College and as Professor of Clinical Pathology, F. H. Hall to the *Renown*, P. M. Rivaz to R.N. Hospital Chatham, G. A. S. Hamilton to the *Varal* for Youths' Training Establishment, W. P. Walker to the *Victory* for R.N. Barracks (temporary), W. H. Edgar to the *Wildfire* for Sheerness Yard and Barracks, R. R. Horley to the *Pembroke*, additional for R.N. Barracks (temporary). Surgeon Lieutenant Commanders W. L. Coulthe to the *Victory* for R.N. Barracks, Portsmouth, R. A. W. Ford to the *Excellent*, P. B. Wallis to the *College*, additional for Haulbowline Hospital and Yard, J. Kirker to the *Wildfire* and for Sheerness Yard, E. MacEwan to the *Titania*, C. H. M. Gimlette to the *Ambrose*, A. Fairley to the *Cordelia*, R. J. G. Parnell, A. G. V. French, M. C. Mason, S. W. Grimwade, O.B.E., A. B. Clark, and M. J. Aitken to the *President*, additional for five months' course of instruction to join R.N. College, Greenwich. Surgeon Lieutenants J. W. Tighe to the *Espiegle*, W. J. M'E. Allan to the *Dolphin* (temporary), N. B. de M. Greenstreet to the *Blake* (temporary).

Surgeon Lieutenant A. C. Anderson has been promoted to the rank of Surgeon Lieutenant Commander.

ARMY MEDICAL SERVICE.

Major-General J. B. Wilson, C.B., C.M.G., retires on retired pay.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel Douglas Lawson is placed on retired pay.

The following Lieutenant-Colonels retire on retired pay: A. W. Hooper, C.M.G., D.S.O., and is granted the rank of Colonel; B. W. Longhurst.

Major W. Byam, O.B.E., retires, receiving a gratuity.

Captain J. E. Brooks is seconded for service under the Colonial Office.

The following temporary Captains relinquish their commissions: J. K. Kerr, and is granted the rank of Lieutenant-Colonel, E. Lawson, and W. S. Angus, all retain the rank of Captain.

INDIAN MEDICAL SERVICE.

The services of Captain S. M. Hepworth have been placed temporarily at the disposal of the Government of Madras, with effect from June 26th.

Major J. Taylor, D.S.O., of the Bacteriological Department, has been granted combined leave for one year, with effect from July 5th.

The services of the following officers have been placed temporarily at the disposal of the Government of Bengal, with effect from the date on which they report for duty: Captains P. F. Gow, D.S.O., M.B., J. C. De, M.B., S. N. Mukerjee, F.R.C.S.

The designation of the Sanitary Commissioner with the Government of India will in future be "Public Health Commissioner with the Government of India."

The following officers have been promoted to the rank of Colonel: Lieut.-Colonels C. H. Bowle-Evans, C.M.G., C.B.E., M.B., F. Wall, C.M.G.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel J. McKee, D.S.O., resigns his commission, and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major R. B. Carslaw resigns his commission, and retains the rank of Major.

Major H. H. B. Cunningham, T.D., to be D.A.D.M.S., 53rd Welsh Division.

To be Majors: Captains H. F. Humphreys, M.C., J. K. Lund, E. F. Skinner, and T. M. Jamieson.

Captain W. Barclay, M.C., to be local Major whilst specially employed.

Captains J. B. Bate and J. A. Cooke, having attained the age limit, are retired, and are granted the rank of Major.

To be Captains: Major A. J. Gibson, D.S.O. (late R.A.M.C., S.R.), with precedence as from April 1st, 1915, and relinquishes the rank of Major. Captain J. L. Lawry (late R.A.M.C.), with precedence from May 10th 1918, Captain A. D. Low (late R.A.M.C.), Captain D. O. Macdonald (late R.A.M.C., S.R.), with precedence as from June 3rd, 1919.

Captain J. W. Anderson resigns his commission and retains the rank of Captain.

To be Lieutenant: Captain R. A. Quinn (late R.A.M.C.), with precedence as from March 1st, 1916, and relinquishes the rank of Captain. Captain C. H. A. Alderton (late R.A.M.C.), with precedence as from October 4th, 1917, and relinquishes the rank of Captain. J. S. Pegum (late Unattached List, T.F., O.T.C.), with precedence as from June 20th, 1920. A. S. Pern.

[illegible] Captain A. L. Whitehead, T.D., having attained the age limit, is retired and is granted the rank of Major [illegible]

[illegible] Captains H. Armstrong and W. Permewan, having attained the age limit, are retired and retain the rank of Captain.

DEFENCE FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

The following officers relinquish their commissions:

Temporary Lieut.-Colonels E. T. H. Lea (5th London Field Ambulance), G. W. Miller, D.S.O. (3rd Highland Field Ambulance), J. Mackinnon, D.S.O. (3rd West Riding Field Ambulance), C. L. Isaac (3rd Welsh Field Ambulance).

Temporary Major, and retains the rank of Major: W. F. T. Haultain (2nd Highland Field Ambulance).

Temporary Majors T. C. Clare (2nd North Midland Field Ambulance), G. F. Haycraft (3rd North Midland Field Ambulance), L. A. Mackenzie, M.C. (1st West Riding Field Ambulance), S. J. C. Holden, A. G. Reid.

Temporary Captains, and retain the rank of Captain: R. I. Rhys (2nd Welsh Field Ambulance), W. J. C. Watt.

Temporary Captains M. Wilson (Lowland Divisional Sanitary Section), R. J. Arundel (1st London Field Ambulance), V. E. Negus (3rd Home Counties Field Ambulance), K. D. C. Macrae (2nd Lowland Field Ambulance), D. F. Dobson (2nd West Riding Field Ambulance), W. T. D. Mart (3rd West Riding Field Ambulance), J. Rowland, M.C. (6th London Field Ambulance), H. G. Ludolf, M.C. (2nd Wessex Field Ambulance), H. K. Ward, M.C., H. L. Garson, O.B.E., M.C., E. H. Mayhew, W. A. Jackman, A. E. H. Reid, H. Mather.

Temporary Lieutenant and retains the rank of Lieutenant: G. W. Almeyda (2nd London Field Ambulance), A. L. Samuels (6th London Field Ambulance).

Temporary Lieutenant A. N. Rushworth.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager) Telegrams Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams Medisecta, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel. 4737 Dublin.)

Diary of the Association.

SEPTEMBER.

20 Tues. London: Medico-Political Committee, 12 noon.
21 Wed. London: Finance Committee, 2.30 p.m.
22 Thurs. London: Naval and Military Committee, 2.30 p.m.
23 Fri. London: Public Health Committee, 3 p.m.
26 Mon. London: Dominions Committee, 2.30 p.m.

OCTOBER.

5 Wed. London: **Council**, 10 a.m.
20 Thurs. London: Annual Conference of Representatives of Local Medical and Panel Committees, 10 a.m.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W. Daily, 10 a.m., Visit of Post-Graduates to Wards; 2 p.m., In- and Out-patient Clinics and Operations.

APPOINTMENTS.

BIRNIE, Jean M., M.B., Ch.B.Aberd., Assistant Medical Officer, Brislington House, near Bristol.

SMITH, N. Ross, M.B., Ch.M.Sydney, House-Surgeon to the Victoria Hospital for Children, Chelsea.

THOMSON, Charles Samson, M.D., D.P.H. (M.O.H. of Hyde, near Manchester), appointed M.O.H. of the Metropolitan Borough of Deptford, London.

WILLAN, R. J., M.V.O., O.B.E., F.R.C.S., Consulting Surgeon to the Hexham and District War Memorial Hospital, Hexham.

WILSON, Wm., B.Sc., M.D., Aurist and Laryngologist to the Manchester Board of Guardians (Crumpsall and Withington Hospitals and Booth Hall Infirmary for Children).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9S., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTH.

MAY.—At Livingstone, Rhodesia, September 1st, 1921, the wife of Dr. Aylmer May—a son.

DEATHS.

BOYES.—Suddenly, at Wee Heigh, Cove, Dunbartonshire (the residence of her brother), on the 5th inst., Jane Boyes, L.R.C.P. and S., of 22, Windsor Street, Dundee.

KING.—On September 6th, Arthur King, M.B., C.M., D.P.H., of Belmont, Station Road, Watford. More than twenty years Medical Officer of Health for Watford and Superintendent Watford Joint District Isolation Hospital.

WILSON.—At 36, Greenfield Road, Colwyn Bay, on the 11th inst., George Wilson, M.D., LL.D., in his 84th year.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 24TH, 1921.

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British Medical Association.

CURRENT NOTES.

MEDICAL REMUNERATION AND THE WORKING OF THE INSURANCE SYSTEM.

The following is an extract from the annual report of the Insurance Acts Committee, dealing with the remuneration of insurance practitioners, and the proposed inquiry into the working of the Act:

The 1920 Annual Conference passed the following resolution:

> 29. Resolved: That it be an instruction to the Insurance Acts Committee to take into consideration the economic conditions prevailing twelve months after the award as compared with those obtaining at the time of the award, and to take such action as may seem desirable.

The Committee considered this matter very carefully, but came to the conclusion that it was inadvisable to take any action at the time indicated.

The Conference should be aware of the possibilities of the situation with regard to remuneration; and it is no doubt within their knowledge that the Minister of Health has stated that he is "considering whether the time had not come for an inquiry into the working of the Act as regards both cash benefits and medical benefits." It is conceivable that the question of the reduction of medical remuneration might be raised in two ways, either (*a*) as part of a movement for the indiscriminate reduction of national expenditure in all departments at all costs, or (*b*) by those who have a notion that the existing central pool should be made to cover the cost of all sorts of additional services. The Committee is unable to believe that either of these points of view could receive any official countenance or support; and therefore it is not necessary to enter here upon any argument to controvert the misconceptions or ignorance of facts on which they are founded. Had it not been for the war an inquiry into the working of the National Health Insurance Acts would no doubt have taken place before now, and the Committee feels that such an inquiry, properly conducted at a suitable time, could only result, as far as medical benefit is concerned, in removing some of these misconceptions and this ignorance of facts, and in reducing to their proper proportion allegations of neglect of duty and of inadequate and perfunctory service which are occasionally made by irresponsible officials of some approved societies. Any inquiry would, of course, also concern itself with other aspects of the insurance service besides medical benefit, and on these the medical profession is in a position to give valuable evidence. On these grounds, among others, the Committee thinks that a proper inquiry should be welcomed.

The Insurance Acts Committee's Recommendations.

It is desirable that, in order to take effective action of any kind, the Committee should be quite clear as to the mind of the Conference, and it therefore makes the following recommendations:

> That the Conference reaffirms the opinion that 13s. 6d. is the lowest capitation fee that should be offered for an effective service; but in view of the arbitrators' award of 11s., and in view of the serious state of the national finances, does not at present press for an increase of the capitation fee to that amount.
>
> That the Conference has no desire to give other than a liberal interpretation to the phrase "such treatment as is of a kind which can, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill."
>
> That the Conference would welcome a wide inquiry into the working of the National Health Insurance Acts, but suggests that the part of any such inquiry concerned with medical benefit should not be entered upon until after April, 1922, when the new Regulations will have been two complete years in operation.
>
> That the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to ensure the continuance and improvement of this system.
>
> That the Insurance Acts Committee be authorized to take steps at an early date to organize the profession so as to take such action as may be found necessary in pursuance of the foregoing resolutions.

The Panel Conference.

As already announced, the Annual Conference of Representatives of Local Medical and Panel Committees will begin on Thursday, October 20th, at 10 a.m., and will be continued on the following day if necessary, at the Wesleyan Central Hall, Westminster, London, S.W. The printed provisional agenda paper, which has now been issued from the Medical Department, 429, Strand, contains all notices of motion received up to September 19th. Committees wishing to place motions on the final agenda, which will be issued on October 13th, are asked to send them to the Medical Secretary without delay. The provisional agenda is accompanied by the Report of the Insurance Acts Committee for 1920–21 (Document M. 7); and a Report of the Trustees of the National Insurance Defence Trust (M. 8). Additional copies of these documents for the use of Panel Committees may be obtained on application to the Head Office. In a circular letter the Medical Secretary urges Panel Committees to draw the serious attention of their constituents to the section of the Insurance Acts Committee's Annual Report (reproduced above) dealing with the question of remuneration, so that their representatives at the Conference may be in a position to express their views. The chairman of the Conference is Dr. H. G. Dain of Birmingham.

A Medical Officer's Salary.

The county borough of Swansea recently advertised in a medical journal for an assistant medical officer at a salary of £500 per annum, rising by £25 to £600. One of the applicants, who happened to be a member of the British Medical Association, was surprised to receive a letter from the school medical officer offering her the post, but stating that since the advertisement had appeared the council had decided to reduce salaries, and that therefore her commencing salary would be £480 per annum. She wrote to the Association for guidance, and was advised that as the salary was below the minimum laid down by the Representative Body she should refuse to accept. This advice was acted upon with commendable loyalty. A letter was sent from the Association to the clerk to the council expressing the hope that the council would reconsider its decision in view of the fact that doctors were no doubt induced to apply for a post carrying a salary that was on the Association's approved scale. The member now informs the Association that she has been offered the post at the salary originally advertised, and that she has accepted. She is to be congratulated on the firm stand she made, and it is hoped that her example will be followed by others.

Signatures to Insurance Certificates.

The Brighton Insurance Committee recently gave a ruling forbidding the use of indelible pencil, and insisting upon ink for the signing of insurance certificates. The Ministry of Health was appealed to on this point, and we are informed by the local secretary that a definite pronouncement has been given that the signing of insurance certificates may be by indelible pencil.

Association Notices.

MEETING OF COUNCIL.

THE next meeting of Council will be held on Wednesday, October 5th, in the Council Room, 429, Strand, London, W.C.2, at 10 a.m.

ELECTION OF DIRECT REPRESENTATIVES UPON INSURANCE ACTS COMMITTEE.

NOMINATIONS by Local Medical and Panel Committees for the above should reach the Medical Secretary not later than the first post on October 10th, 1921. Nomination forms (M.2) may be obtained from the Medical Secretary, 429, Strand, W.C.2.

Scottish Subcommittee.

Nominations for the Scottish Subcommittee by Scottish Panel Committees must also be in the hands of the Medical Secretary from whom nomination papers (M.4 for Counties, and M.5 for Burghs) may be obtained—by the same date.

PANEL CONFERENCE.

Motions by Local Medical and Panel Committees for inclusion in the Final Agenda of the Panel Conference (to be held in the Wesleyan Central Hall, Westminster, on Thursday, October 20th) must be received by the Medical Secretary not later than the first post on October 10th.

BRANCH AND DIVISION MEETINGS TO BE HELD.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION.

A meeting of the Division will be held at the Medical Club, Public Medical Service Buildings, Bond Street, Leicester, on Wednesday, September 28th, at 4 o'clock. Agenda: Brief report of Representative Meeting. Expression of opinion on the desirability or otherwise of the notification of malignant diseases (at the request of the medical officer of health). An address on "Systemic infection from oral lesions" (illustrated by lantern slides) will be given by Mr. A. E. Rowlett, Honorary Dental Surgeon, Royal Infirmary, Leicester. The following programme for 1921–22 has been arranged: November 25th, address on "An ideal medical service," by Mr. C. Hudson, Secretary Midland Federation of Friendly Society Councils; January 25th, 1922, paper on "Labyrinthine vertigo," with illustrative cases, by Mr. J. A. Keen; March 22nd, discussion on "The causes and treatment of asthma"; May 24th, paper on "The place of the Wassermann reaction in general practice"; June 28th, annual business meeting.

POST-GRADUATE COURSES AND LECTURES.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham.—N.15. *Special Course.* Daily, 10.30 a.m. and 11 a.m., Demonstrations of Clinical and Laboratory Methods; 2 p.m., Demonstration of Groups of Cases; 5 p.m., General Hospital Work; 6.30 p.m., Clinical Lectures (free to medical practitioners). Mon., Mr. C. J. Bond, Latent Infections. Tues., Dr. F. G. Crookshank, Colon Bacillus Infections; Wed., Mr. James Berry, Differential Diagnosis of Thyroid Swellings; Thurs., Colonel L. W. Harrison, Routine Treatment of Syphilis and Tests of Cure in Gonorrhœa and Syphilis; Fri., Mr. H. W. Carson, Intussusception. Full syllabus of course printed in *Bulletin* of Fellowship of Medicine.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Visit of Post-Graduates to Wards; 2 p.m., In- and Out-patient Clinics and Operations.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Telegrams Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

SEPTEMBER.

23 Fri. London: Public Health Committee, 3 p.m.
26 Mon. London: Dominions Committee, 2.30 p.m.
28 Wed. Leicester and Rutland Division, Medical Club, Public Medical Service Buildings, Bond Street, Leicester, 4 p.m.

OCTOBER.

5 Wed. London: **Council**, 10 a.m.
20 Thurs. London: Annual Conference of Representatives of Local Medical and Panel Committees, Wesleyan Central Hall, Westminster, London, S.W., 10 a.m.

APPOINTMENTS.

DUNSCOMBE, Nicholas Dunscombe, B.A., B.C. Cantab, L.M.S.S.A. London, appointed Assistant Medical Officer, Royal Earlswood Institution, Redhill, Surrey.

BOOTLE BOROUGH HOSPITAL, NEAR LIVERPOOL.—The following appointments have been made: A. J. W. Cunningham, M.A., M.D., Honorary Visiting Physician; H. C. W. Nuttall, M.R.C.S., D.P.H., Honorary Visiting Surgeon; H. Richard Bickerton, M.A., B.Ch., Honorary Visiting Ophthalmic Surgeon.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **9s.**, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

MARRIAGES.

BAMPTON–PURSLOW.—On the 10th inst. at St. Simon's Church, Southsea, by the Rev. N. E. Ashenden, M.A., Horace Edgar Bampton, L.D.S., R.C.S. Eng., of Four Oaks, to Alice Maud Mary, daughter of Dr. and Mrs. Purslow, of Broad Street, Birmingham, and Southsea.

BREW–ATCHLEY.—At St. Andrews Church, Chew Magna, Somerset, on September 10th, by the Rev. H. N. Atchley, cousin of the bride, assisted by the Rev. T. Tracey, Richard Vere Brew, M.B., B.S., to Catherine Marian Canning Atchley, second daughter of Henry W. Atchley, both of Chew Magna.

VERNEY–SCOTT REID.—At Holy Trinity Church, Karachi, on July 23th, 1921, Major Leonard Morris Verney, D.S.O., F.R.C.V.S., Royal Army Veterinary Corps, only son of Richard John Verney of Oxford, to Sydney Jessie Scott Reid, M.R.C.S., L.R.C.P.Eng., elder daughter of the late Surgeon-General Sir Adam Scott Reid, K.C.B., Indian Medical Service.

DEATHS.

BENJAFIELD.—On September 13th, 1921, at Rocklands, Attleborough, Norfolk, William Barnett Benjafield, M.B., C.M., M.R.C.S., late of Edmonton, in his 65th year. Funeral at Rockland St. Peter, Saturday, 2.30.

EDWARDS.—On July 31st, at Trefeddyg, Port Dinorwic, North Wales, Henry Edwards, M.D., the beloved husband of Catherine A. Edwards, in his 55th year.

FAULDER.—On September 11th, at Glendaruel, Argyllshire, Julia, the beloved wife of Major T. J. Faulder, F.R.C.S., R.A.M.C.(T.A.), and elder daughter of W. Harrison Cripps, Esq., F.R.C.S., of Glendaruel.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 1st, 1921.

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British Medical Association.

CURRENT NOTES.

THE INSURANCE CAPITATION FEE.

As we go to press the following letter from Sir Arthur Robinson, Secretary of the Ministry of Health, has been received by the Secretary of the Insurance Acts Committee:

> Sir,
>
> I am directed by the Minister of Health to state that he has had under consideration the question of the capitation fee to be paid to Insurance practitioners after the 31st of December next, and that he has come to the conclusion that a reduction ought to be made in the present fee of 11s. (eleven shillings). I am to ask you to be good enough to bring this matter to the notice of the Panel Committees in connection with the forthcoming Conference, and to state that a further communication will be addressed to you as soon as possible as to the amount of the reduction which in the view of the Government should be made.
>
> I am, Sir, your obedient servant,
>
> Sept. 27th, 1921. W. A. Robinson.

The Insurance Acts Committee is fully alive to the situation, and is taking steps to meet it. An announcement as to the Committee's action will be made next week.

The Insurance Acts Committee's Report.

The attention of all insurance practitioners is called to the annual report of the Insurance Acts Committee which is printed, substantially in full, in the Supplement this week, p. 121. Certain important matters with which it deals should be considered at once, in order that the representatives of Local Medical and Panel Committees may be instructed before the annual Panel Conference in London on October 20th.

Annual Meeting in Glasgow, 1922.

Preparatory work has been begun in view of next year's Annual Meeting of the British Medical Association in Glasgow, and a large and influential general committee has been formed, representative of the profession in its various branches, the University, the Corporation, the Church, and many other public bodies and interests. This committee met for the first time on September 22nd, under the chairmanship of Professor Sir William Macewen, President-elect of the Association. There was a large and enthusiastic gathering, indicative of the many and varied interests which are united in seeking to secure the success of next year's annual meeting. The chairman at the outset explained the nature of the Annual Meeting of the Association from the business, scientific, and social standpoints. Thereafter officers and subcommittees were elected as follows:

Office-bearers of Committees, constituting the Executive General Committee.—Chairman, Professor Sir William Macewen, M.D., LL.D., F.R.S.; Vice-Chairman, A. Freeland Fergus, M.D., LL.D., P.R.F.P.S.G.; Honorary Local General Secretary, George A. Allan, M.B., Ch.B.; Deputy Secretary, James Russell, M.B., F.R.C.S.Ed.; Honorary Treasurer, Harold Yarrow, C.B.E.

Finance.—Chairman, Professor T. K. Monro, M.A., M.D.; Secretary, James H. Martin, M.D.

Reception.—Chairman, James A. Adams, M.D.; Vice-Chairman, Charles E. Robertson, M.D.; Secretary, J. McGregor Robertson, M.A., M.B., C.M., F.R.S.E.

Publishing, etc.—Chairman, William Snodgrass, M.A., M.B., C.M.; Vice-Chairmen, John Patrick, M.A., M.B., F.R.C.S.E., W. R. Jack, B.Sc., M.D.; Secretary, J. Norman Cruickshank, M.C., M.B., Ch.B.

General Entertainments.—Chairman, Thomas Kay, D.S.O., M.B., C.M.; Vice-Chairman, T. D. Laird, M.B., C.M.; Secretary, F. W. Martin, M.B., Ch.B.

Pathological Museum.—Chairman, Professor Robert Muir, M.A., M.D., D.Sc., F.R.S.; Vice-Chairmen, Professor John Teacher, M.A., M.D., John Anderson, M.B., C.M.; Secretary, G. Haswell Wilson, M.B., Ch.B.

Dinner and Luncheons.—Chairman, Sir Kennedy Dalziel, M.B., C.M.; Vice-Chairman, J. Grant Andrew, M.B., C.M.; Secretary, David Shannon, M.B., Ch.B., L.M.

Hotels and Lodgings.—Chairman, Professor J. M. Munro Kerr,

M.D.; Vice-Chairman, J. Paton Boyd, M.B., C.M.; Secretary, James Hendry, M.A., B.Sc., M.B., Ch.B.

Ladies' General. Convener, Lady Macewen; Secretary (ad interim), Ellen B. Orr, M.B., Ch.B.

All communications relative to the general arrangements for the Annual Meeting should be addressed to the Honorary Local Secretary, British Medical Association Meeting, the University, Glasgow.

Ophthalmic Benefit for Insured Persons.

Among the extra benefits which some of those approved societies having a surplus are contemplating providing for their members is ophthalmic benefit. It is known that several societies are considering the details of a scheme, and the secretary of one of them—the Domestic Workers' Friendly Society (Women)—consulted the Medical Secretary some time ago as to the terms which would be likely to induce thoroughly qualified specialists, though probably mainly the junior among them, to undertake the work for their members. As this was a matter on which the ordinary divisional machinery was not likely to be very helpful, it was decided to put the matter unofficially before the Ophthalmological Section at Newcastle, and this was done by the Medical Secretary on July 21st. There were over twenty present, and they came from all parts of the kingdom. No formal resolution was put, as the matter was not on the agenda of the Section, but the Medical Secretary was given to understand that if the society was prepared to accept the following terms it could count on getting an adequate number of skilled ophthalmic surgeons:

A fee in the provinces of £1 1s. and in London of £1 11s. 6d.; this to cover, besides refractions, any operations on the eye and eyelids, except such as require a general anæsthetic for their performance, and operations upon the muscles of the eye or involving the interior of the eyeball, for all of which special arrangements would have to be made.

The fees mentioned above are special fees to meet the circumstances of the class for which the approved societies cater, and all those present thought that if these fees could be established the arrangement would be well worth while, as it would take away from the out-patient departments of hospitals a number of people who at present go there, and, if many approved societies adopted ophthalmic benefit on these lines, it would ensure that many persons who now go to the optician to have their eyes tested would go to an ophthalmologist instead.

It is hoped that the above information will be useful to members who may be approached by approved societies as to the terms on which they will do this work.

ANNUAL REPRESENTATIVE MEETING, JULY 15TH TO 19TH, 1921.

SYNOPSIS OF PROCEEDINGS.

(NOTE.—*Members are requested to preserve this for reference.*)

One hundred and sixty-seven constituencies made returns of Representatives out of a possible 227. Of the sixty constituencies making no return, twenty were in the United Kingdom and forty overseas. One hundred and sixty-five Representatives attended the meeting.

This Synopsis deals only with outstanding items of action taken, declarations of policy, and important instructions given to the Council.

COMPLIMENTARY.

Election of a Vice-President.

The Rt. Hon. Sir T. Clifford Allbutt, K.C.B., F.R.S., was elected a Vice-President of the Association in recognition of his services as President of the Association from 1916 to 1921. (Min. 211.)

Election of an Honorary Member.

The Rt. Hon. Sir H. Craik, K.C.B., M.P. for the Scottish Universities, was elected an Honorary Member in recognition of his services to the Association and to the medical profession. (Min. 28.)

Votes of Thanks.

The meeting passed a vote of thanks to Sir Philip Magnus, Bt., M.P., and to Dr. Herbert Jones for their arduous and successful work in connexion with the Public Health Officers Bill (Min. 312); to Mr. Russell Coombe (Chairman of the Organization Committee) and Sir Jenner Verrall (Chairman of the Scrutiny Subcommittee) for their careful and strenuous work in the preparation of the Report on the Constitution of the Association (Min. 195); and to Dr. J. W. Bone and the Medical Secretary for their work in connexion with the Dangerous Drugs Regulations (Min. 283).

Votes of Thanks for Local Arrangements.

The meeting passed a hearty vote of thanks to all the persons and committees responsible for the arrangements made in connexion with the comfort and convenience of members of the Representative Body and the ladies accompanying them (Min. 329); also to the Principal and Council of Armstrong College for the granting of the King's Hall and rooms for the use of the Representative Body (Min. 330).

Vote of Thanks to the Retiring Financial Secretary and Business Manager.

A hearty vote of thanks and best wishes for long life in his retirement after forty years' service to the Association was given to Mr. W. E. Warne. (Min. 33.)

FINANCE.

Subscription to the Association.

By-law 11 was altered as follows:

By-law 11.—(1) On and after January 1st, 1922, the annual subscription to the Association shall be as follows:

A. As to Members Resident in any Part of the United Kingdom.

(i) For a member of the Association of not less than ten years' standing as such who has definitely and permanently retired from the active practice of the medical profession, and has signed and transmitted to the Treasurer a declaration to that effect—two guineas.

(ii) For any member of not less than forty years' standing—two guineas.

(iii.) For a member admitted to membership before the expiration of two years from the date of his registration under the Medical Acts—one guinea and a half until December 31st next occurring after the expiration of four years from the date of such registration.

(iv) For two members being a husband and his wife residing together—four guineas and a half.

(v) Except as otherwise herein provided—three guineas.

B. As to Members Resident Outside the United Kingdom.

(i) For any officer of the Royal Navy Medical Service, the Royal Air Force Medical Service, the Army Medical Service, or the Indian Medical Service—two guineas.

(ii) For any other member—one guinea and a half.

Provided that any member, wherever resident, who is admitted on or after July 1st in any year, shall pay only half his current subscription for that year.

(2) For the purposes of this By-law a member shall be deemed to reside in that place in which his ordinary place of abode is situate at the time at which according to the Regulations his subscription is considered due. (Min. 185.)

The Financial Secretary was instructed to look over the list of members annually and notify all members of forty years' standing of that fact and also of the fact that their subscription is reduced to £2 2s. per annum. (Min. 189.)

Subscription of Service Members.

The Council was instructed to consider the advisability of establishing a £2 2s. flat rate of subscription for all active members of the Royal Navy Medical Service, Royal Air Force Medical Service, Army Medical Service, and Indian Medical Service. (Min. 193.)

MEDICAL ETHICS.

Professional Secrecy.

The meeting passed the following amendment to a recommendation of the Council on the subject:

> That the Association use all its power to support a member of the British Medical Association who refuses to divulge, without the patient's consent, information obtained in the exercise of his professional duties, except where it is already provided by Act of Parliament that he must do so. (Min. 45.)

This also became the substantive resolution of the meeting, but as two months' previous notice had not been given it is not technically the policy of the Association, but simply an expression of the opinion of the Representative Body. The Council was (Min. 51) instructed to act on it in the meantime and submit it next year with a view to making it the policy of the Association.

PROPOSED CENTRAL MEDICAL COMMITTEE.

Report of Council approved on the question of a proposed Committee, which should be representative of the profession as a whole, to consult with the Minister of Health on questions of policy affecting the profession, and remitted the matter to the Council. This in effect means that the Council is to watch the progress of the matter (if any) and take such action as it thinks fit. (Mins. 55–6.)

ORGANIZATION.

A large number of proposals affecting the machinery of the Association were discussed. As most of those which were passed must come up next year in the form of definite proposals for alteration of Articles or By-laws, no detailed account is necessary. The following are the outstanding results of the discussion:

Election of Members by Divisions.

Representative Body declined to instruct the Council to amend the By-laws so that members of the Association shall be elected by Divisions and not by Branch Councils. (Min. 62.)

Possession by Branches and Divisions of Organization and Ethical Rules.

Resolutions passed (Mins. 99–100) urging all Divisions and Branches not already in possession of Rules of Organization and Ethical Procedure to adopt them forthwith.

Council instructed to report to the Annual Representative Meeting the names of all Divisions and Branches in the British Isles which were without these Rules (Min. 101); also to take steps to provide that no new group of members within the British Isles shall be finally recognized as a Division or Branch until it shall have adopted Rules of Organization and the current Ethical Procedure Rules, and until such Rules shall have been approved by the Council. (Min. 104.)

Composition of Council.

Representative Body rejected a recommendation by the Council that alterations should be made in the By-laws so as to provide that the 16 members of Council now elected in the Representative Meeting be elected as follows:

1 by the Representatives (acting together) of the constituencies in England;
1 by the Representatives of the Irish constituencies;
2 by the Representatives of the Scottish constituencies;
1 by the Representatives of the Welsh constituencies;

instead of, as at present:

12 by the Representatives acting in 12 geographical groups; and
4 by the Representatives as a whole. (Mins. 130 136.)

Council instructed to consider the desirability of increasing the number of directly elected Representatives by the Representative Body, by adding to the number of the Council for that purpose. (Min. 137.)

Council instructed to consider the desirability of Wales being represented on the Council by at least one member elected in the Representative Meeting solely by the Welsh Divisions in a group. (Min. 139.)

Composition of Welsh Committee.

Council instructed to consider the advisability of so amending the constitution of the Welsh Committee as to provide for the inclusion of the Secretaries of the North Wales and South Wales and Monmouthshire Branches. (Min. 321.)

Participation of Non-Members in Sections at Annual Meetings.

Council instructed to provide that no member of the medical profession who is eligible for membership of the Association, and who is a non-member, shall take part in the Sections at the annual meeting, except in such circumstances as the Arrangements Committee may consider exceptional. (Min. 178.)

Grants to Branches.

By-law 23 amended so as to provide that in future the Council may give 6s. per head as an ordinary grant to a Branch instead of 4s. (Min. 194.)

The power of the Council to grant supplementary grants remains as before.

Federation.

In consequence of consultation between the Council and representatives of the Oversea Branches the proposals for federation published in the BRITISH MEDICAL JOURNAL SUPPLEMENTS of March 5th and April 30th, 1921, were withdrawn, so far as referred to the Oversea Branches, pending further consideration of the matter. (Min. 80.)

The following resolution was carried to meet the wishes of those Branches in Australia which have already incorporated themselves, or other Branches which may desire to do so:

That, if possible, provision be made in the Regulations of the Association to allow the Oversea Branches to retain the character and status, the rights, powers, and duties of Branches, although incorporated: such steps being taken as may be necessary to protect the Association from liability for any act of the incorporated body. (Min. 81.)

Federal Councils for Overseas Dominions and India.

That provision be made in the Regulations of the Association for Federal Councils of the Association in Overseas Dominions and India, consisting in either case of representatives of the Branches concerned, to carry out in these countries, on behalf of the local Branches collectively, the objects of the Association, and generally to have the powers and duties of the existing Federal Committees. (Min. 8[illegible]

Exclusion of Non-Medical Bodies from Federation.

Minute 44 of the Annual Representative Meeting, 1920, rescinded, in so far as that minute contemplated that there might possibly be admitted to affiliation with the Association any body or bodies other than a purely medical body or bodies. (Min. 88.

Question of Affiliation of Ex-Branches.

Minute 44 of the Annual Representative Meeting, 1920, rescinded, in so far as that minute contemplated that there might possibly be admitted to affiliation any body or bodies other than a purely medical body or bodies representing substantially an ex-Branch or group of ex-Branches of the Association outside Great Britain. (Min. 89.)

ASSOCIATION WITH OTHER MEDICAL BODIES.

Federation of Medical and Allied Societies.

A motion proposing "That the Representative Body is of the opinion that the Association should agree to appoint accredited representatives to the Federation of Medical and Allied Societies" was lost, no member of the meeting voting for it. (Min. 294.)

Amalgamation of British Medical Association with other Medico-Political Bodies.

A motion instructing the Council to consider the question of the amalgamation of the Association with other medico-political bodies was lost. (Min. 295.)

SCIENCE.

Remuneration of Whole-time Laboratory and Research Workers.

Minute 65 of the Annual Representative Meeting, 1920, was further defined as follows:

That the minimum commencing salary of a whole-time medically qualified laboratory or research worker, who is permanently and exclusively employed as such, should not be less than £500 per annum. (Min. 206.)

Remuneration of Part-time Laboratory or Research Workers.

That those medically qualified laboratory or research workers holding part-time appointments should receive remuneration, for the time engaged, at the rate of not less than £500 per annum. (Min. 207.)

HOSPITALS.

Voluntary Hospitals.

The meeting passed the following resolutions relating to voluntary hospitals:

Advantages of Voluntary Method of Administration of Voluntary Hospitals.

That the Representative Body desires to record its belief that the voluntary method of administration of the voluntary hospitals of the country is to the advantage of the public, medical science, and the medical profession, and that it should be maintained. (Min. 213.)

Admission of Patients for Hospital Treatment.

That inability to pay for adequate treatment shall be the consideration for the admission of all patients for hospital treatment. (Min. 215.)

Subsidizing of Voluntary Hospitals from Rates Undesirable.

That it is undesirable that the voluntary hospitals should be subsidized by the local rating authorities, except in so far as payment is made for the examination and the care of patients for whom these authorities are responsible. (Min. 217.)

Support for Voluntary Hospitals by Employers and Insurance Companies.

That greatly extended support for voluntary hospitals should be sought from employers and insurance companies, seeing that they benefit largely, both directly and indirectly, by the services of the voluntary hospitals. (Min. 224.)

Contributions by Patients towards Maintenance.

That every patient of a voluntary hospital who is able should make a contribution, during treatment, towards the cost of maintenance, unless the contributory method of subscription is adopted as essential in industrial areas. In view, however, of the increased cost of maintenance, etc., the Representative Body considers that the contributory rates paid by workmen should be materially increased. (Min. 225).

Payment of Practitioners for Services Rendered to Paying Patients in Hospitals.

That where voluntary hospitals provide accommodation for paying patients, no fixed rate of payment for professional services rendered to such patients should be established; the fees so payable to remain, as at present, a matter of arrangement between patient, family physician and consultant. (Min. 229.)

Formation of Medical Staff Fund.

That in the event of decisions being taken which would lead to patients (other than paying patients referred to in foregoing Min. 229) paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which the honorary medical staff may determine. (Min. 236.)

That when the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, insurance company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and a percentage of all such receipts should be passed into a fund which is at the disposal of the honorary medical staff of that hospital. (Min. 237.)

The meeting also resolved that the above policy be brought to the notice of the secretary and senior honorary medical officer of each voluntary hospital with a request that it be considered and adopted by the Board. (Min. 238.) This has been done.

Report of Government Committee re Financial Position of Voluntary Hospitals.

That this meeting disagrees with the following paragraph 50 (pp 31–2) of the Report of the Government Committee on Voluntary Hospitals, and maintains that the essence of the voluntary hospital system is the independent and voluntary management, and that this is in no way related to the conditions of service of the medical staff —

50. In connexion with the grants by public authorities it appears desirable to refer to the practice which obtains in some hospitals of carrying a proportion (from 10 per cent. to 20 per

cent.) of these grants to a staff fund which is placed at the absolute disposal of the honorary staff. In some of these hospitals, as at St. Bartholomew's, at the Royal Infirmary, Manchester, and at the Radcliffe Infirmary, Oxford, the fund has hitherto been applied by the staff to such purposes as the purchase of expensive apparatus or books, and the support of young practitioners taking up special branches of work; but in other cases the fund has been divided among the staff. The practice is supported by the British Medical Association on the ground that patients sent by a public authority are in the position of paying patients, and that in the fees paid for such patients the medical practitioner is entitled to share. On the other hand, the honorary staffs of some hospitals are unwilling to share in such a fund; and two distinguished physicians expressed the view that if the medical staffs came to be subsidized to any substantial extent "the bottom would drop out of the voluntary system." It should be remembered also that, although the services of the staff are honorary, they obtain a valuable return in the form of medical and surgical experience and the enhanced reputation which accrues to a member of the visiting staff of a great hospital. If the system of carrying a percentage to a staff fund is confined to cases where the full cost of maintenance and treatment is paid by or on behalf of the patient, not much objection can (we think) be taken to it; but any extension of the practice beyond those limits appears to us to endanger the future of the voluntary hospitals. (Min. 239.)

Staffing and Management of Poor Law Hospitals.

Report on the future of Poor Law infirmaries considered (vide Supplement, April 30th, 1921, pp. 157–9) and recommendations contained therein adopted as follows:

Admission of Private Patients employing their own Doctor.

Recommendation 1. That in those Poor Law infirmaries where there is spare accommodation and when the needs of the Poor Law patients have been met, it would be desirable that certain beds should be set aside for private patients paying a fee to be settled by the guardians; that where a general practitioner wishes to continue to treat therein patients of his own, he should be allowed to do so under the general administrative supervision of the medical superintendent, and that any of these patients should be allowed to call in a consultant from outside, the patient bearing the cost thereof. (Min. 245.)

Inclusive Charge for Maintenance. Doctor paid by Private Arrangement.

Recommendation 2. That for "paying" patients admitted to infirmaries there should be an inclusive charge to cover the cost of medical supervision, maintenance, nursing, food, and medicines, within the ordinary tariff and pharmacopoeia of the infirmary, the patient paying his medical attendant independently. (Min. 246.)

Extra Comforts to be Available as "Extras."

Recommendation 3.—That any extra nursing and any food or medicine ordered over and above those allowed under the ordinary tariff and pharmacopoeia of the infirmaries should be charged as extras to the patient. (Min. 247.)

Administrative Supervision by Medical Superintendent.

Recommendation 4. That all medical attendance by private practitioners on "paying" patients in infirmaries should be under the administrative supervision of the medical superintendent of the infirmary. (Min. 248.)

Utilization of Infirmaries for Medical Education.

Recommendation 5.—That infirmaries, so far as practicable, should be utilized for medical education. (Min. 249.)

Tendency towards "Primary Health Centre" Type.

Recommendation 6.—That in any hospital maintained by a local authority (including boards of guardians) for general cases, provision should be made for wards for the reception on the lines of the suggested Primary Health Centre, as outlined in the Consultative Council's report of private patients admitted on the recommendation of their own practitioner who should be able to attend these patients in such wards. (Min. 250.)

Representation of Profession on Management Committee.

Recommendation 7 was amended as follows: That municipal hospitals should be controlled by an *ad hoc* committee on which there should be a small but definite representation of the medical profession, nominated by members of the local profession. (Min. 254.)

Hospital Benefits not to be Confined to Particular Parish or Borough.

Recommendation 8.—It is desirable in the interests of the patients that the medical superintendent should have power in special cases (including cases of urgency) to admit or retain patients from other parishes, the guardians being empowed to recover the cost of maintenance thereof from the parish or borough in which the patient resides. (Min. 255.)

Use of Sick Wards in Workhouses for Chronic Cases.

Recommendation 9 was amended as follows: That to meet the need of accommodation for senile and chronic cases a part of the Poor Law institution be separated from it whenever possible, which should be formed into an infirmary dependence under the control of the medical superintendent of the infirmary. (Min. 257.

Exclusion of Certain Classes of Cases.

Recommendation 10.—That certain classes of cases—for example, tuberculosis and certain infectious fevers not already provided for—should not be accommodated in general infirmaries, but in special hospitals arranged for this purpose. (Min. 258.)

Method of Admission to Hospital.

Recommendation 11.—That the normal method of admission to an infirmary should be on the recommendation of a general practitioner. (Min. 259.)

Eligibility of Local Profession for Staff.

Recommendation 12.—That District Medical Officers be selected from the private practitioners of the neighbourhood. (Min. 260.)

Recommendation 13.—That, except for the treatment of private patients, the normal medical staff of an infirmary should be a combination of the whole-time resident staff or a part-time selected staff with part-time specialists, the last being called in by the medical superintendent as and when necessary. (Min. 261.)

Fees for X-Ray Diagnosis and Treatment of Tuberculous Cases Referred to Hospitals by Local Authorities.

That the fee to the practitioner conducting *x*-ray diagnosis and treatment of tuberculous cases referred to hospitals by local authorities should be 21s. per case or £3 3s. per session not exceeding two and a half hours, in which not more than six cases should be dealt with. (Min. 268.)

National Provident Scheme for Hospital and Additional Medical Services.

Motions were before the meeting for the approval of the Marylebone variation of the Sussex scheme, which had been prepared by the Metropolitan Counties Branch Council, and of the Sussex scheme itself, but the meeting declined to express any opinion and proceeded to the next business. (Min. 271.)

Medico-Political.

Salaries of Medical Professors, Teachers, or Laboratory Workers.

That in view of the long period required for the education of a medical practitioner, the salaries of medical professors, teachers, or laboratory workers should be at a higher rate than at present. (Min. 281.)

Salaries for Professorial and Non-Professorial Staffs.

Representative Body declined to express an opinion on the scale of salaries for professorial and non-professorial staffs which had been submitted by the Council, and proceeded to the next business. (Min. 282.)

Fees for Medical Practitioners Called in on the Advice of Midwives.

Representative Body referred to the Council several motions expressing dissatisfaction with certain items in the scale of fees at present allowed by the Ministry of Health for the payment of medical practitioners called in on the advice of midwives. (Min. 292.)

Policy of the Association as to Treatment of School Children.

The meeting reaffirmed the policy of the Association with regard to the treatment of school children, with a view to the more general employment of the general practitioner. (Min. 296.)

Duty of Council with Regard to Fees or Policy Laid Down by the Representative Body.

Representative Body declared it to be the duty of the Council to bring pressure to bear on the Government Departments concerned to sanction any salaries, fees and conditions of service laid down by the Representative Body for work done for local authorities, payment for which work is subject to approval by a Government Department. (Min. 298.)

National Health Insurance.

Constitution of the Insurance Acts Committee.

By-laws altered to allow of the chairman for the time being of the Conference of Panel Committees being a member *ex officio* of the Insurance Acts Committee. (Min. 301.)

Capital Value of Panel Practices.

Council instructed to further the just claims of insurance practitioners for the preservation of the capital value of their panel practices. (Min. 310.)

Public Health and Poor Law.

Vaccination.

General Medical Council to be asked to declare that it be regarded as infamous conduct in a professional respect for any public vaccinator or practitioner to train other than medical students in the operation of vaccination. (Min. 313.)

Medico-Sociological.

A motion to approve the report of the Medico-Sociological Committee on "The value of Maternity and Child Welfare Work in relation to Infant Mortality" was lost, and the report, which had previously been published, stands on its merits as the report of a Joint Committee and not as a report of the Association. (Min. 315.)

Ireland.

Irish Health Grants.

Council instructed to use the influence of the Association in whatever way it may think best to secure:

(1) That the State contributions towards the salaries of Poor Law medical officers in Ireland should not be diverted to other purposes; and

(2) That in the differences which have arisen between the Government and the local authorities in Ireland the services directly concerning health should be regarded as immune, and State funds earmarked for such services should not be diverted to other purposes. (Min. 323.)

Elections.

Dr. R. Wallace Henry (Leicester) was elected chairman of Representative Meetings, 1921–22 (Min. 87); and Dr. H. B. Brackenbury (Hornsey) deputy chairman for the same period. (Min. 149.)

British Medical Association.

REPORT OF INSURANCE ACTS COMMITTEE, 1920-21.

I.—ADMINISTRATIVE MACHINERY.

OCTOBER, 1920, ANNUAL CONFERENCE.

1. Copies of the Minutes of the 1920 Annual Conference were issued on November 3rd, 1920, to Chairmen and Secretaries of Local Medical and Panel Committees and to Representatives.

DIRECT REPRESENTATIVES ON I.A.C.

2. As a result of the voting by members of Local Medical and Panel Committees, the following practitioners were elected as direct Representatives upon the Committee and were appointed members for the Session 1920-21 :—

Drs. M. Dewar (Edinburgh), W. R. Martine (Haddington), A. Smith (Whickham, Durham), H. F. Oldham (Morecambe), Sir W. Hodgson (Crewe), Drs. F. Radcliffe (Oldham), A. Forbes (Sheffield), G. B. Hillman (Wakefield), Hugh Jones (Dolgelly), T. Ridley Bailey (Bilston, Staffs), J. C. S. Burkitt (Whitwick, Leics), T. Cuming Askin (Woodbridge, Suffolk), T. Wood Locket (Melksham, Wilts), J. P. Williams-Freeman (Andover), C. P. Lankester (Guildford), H. B. Brackenbury (Hornsey), and C. H. Panting (Leyton).

Only two Representatives were returned by Group "K.," instead of three. The vacancy has remained unfilled.

The election of 18 Direct Representatives for the Session 1921-22 is now proceeding.

ATTENDANCES AT COMMITTEE AND SUB-COMMITTEES.

3. The following is a list of attendances at Insurance Acts Committee meetings and Sub-Committees during the Session from the 1920 Annual Conference to September 15th, 1921 :—

Name.	Full Committee.		Sub-committees.	
	A.	P.	A.	P.
Drummond, Prof. David, C.B.E.	—	3	—	—
Henry, Dr. R. Wallace	1	1	—	—
Bolam, Dr. R. A.	½	4	—	—
Garstang, Dr. T. W. H.	3	3	—	—
Haslip, Dr. G. E.	1	4	—	—
Beadles, Dr. H. S.	4	4	2	2
Dain, Dr. H. G.	4	4	1	2
Fothergill, Dr. E. R.	2	3	2	2
Hunter, Dr. J.	3	3	1	2
Palmer, Dr. C. J.	4	4	2	2
Darling, Dr. J. Singleton	—	4	—	—
Bailey, Dr. T. Ridley	4	4	2	2
Brackenbury, Dr. H. B. (Chairman)	4	4	3	3
Craig, Dr. R. W.	1	1	—	—
Dewar, Dr. M.	3	4	[illegible]	2
Forbes, Dr. A.	4	4	2	2
Jones, Dr. Hugh	3	4	2	3
Jones, Dr. Herbert	1	1	—	—
Lankester, Dr. C. P.	2	4	—	—
Locket, Dr. T. Wood	4	4	3	3
Oldham, Dr. H. F., M.B.E.	4	4	—	—
Panting, Dr. C. H.	4	4	1	2
Radcliffe, Dr. F.	3	4	—	—
Williams-Freeman, Dr. J. P.	3	4	3	3
Harman, Mr. N. Bishop	2	3	—	—
Ramsay, Dr. Mabel	3	4	—	—
Hill, Dr. A. Bostock	1	4	—	—
Green, Dr. A. Withers	4	4	—	—
Askin, Dr. T. Cuming, M.B.E.	4	4	1	1
Burkitt, Dr. J. C. S.	3	4	1	1
Hillman, Dr. G. B., M.B.E.	4	4	2	2
Hodgson, Sir W.	4	4	—	—
Martine, Dr. W. R.	3	4	2	2
Smith, Dr. A.	3	4	—	—
Souttar, Mr. H. C.	—	1	—	—

A.= actual, P.= Possible attendances.

MEMBERS APPOINTED BY REPRESENTATIVE MEETING, 1921.

4. The six members of the Committee elected by the Annual Representative Meeting, 1921, of the B.M.A. are as follows :—

England: Drs. H. G. Dain (Birmingham), H. S. Beadles (London), Herbert Jones (Hereford), C. J. Palmer (Mansfield Woodhouse).
Scotland: Dr. R. W. Craig (Dalkeith).
Ireland: Dr. J. Singleton Darling (Lurgan).

REPRESENTATIVES OF OUTSIDE BODIES.

5. No change was made in the representatives of outside bodies, the Medical Women's Federation, the Society of Medical Officers of Health and the Poor Law Medical Officers' Association renominating their previous year's representatives, *i.e.*, Dr. Mabel Ramsay (Plymouth), Prof. A. Bostock Hill (Birmingham), and Dr. A. Withers Green (London) respectively. Mr. N. Bishop Harman, F.R.C.S. (London) was reappointed by the Hospitals Committee of the Association as a representative of the staff of a Voluntary Hospital.

CHAIRMAN.

6. Dr. H. B. Brackenbury was reappointed Chairman.

SUB-COMMITTEES.

7. The Committee has continued in office, for the time being, its standing Rural Practitioners', Scottish and Executive Sub-Committees. These will be reappointed and the personnel revised, if necessary, when the full Committee is completed.

SECTIONAL CONFERENCES AND JOINT COMMITTEES.

8. The Insurance Acts Committee's suggestion that Panel Committees in each Group should form a Joint Committee for the purpose of closer co-operation between the Committees in the Group, has been favourably received, and almost every Group now has such a Joint Committee.

CONSTITUTION OF INSURANCE ACTS COMMITTEE.

9. With regard to para. (c) of Minute 9 of the 1920 Annual Conference, the Representative Body of the Association has approved the alteration of the constitution of the Insurance Acts Committee so as to allow of the Chairman being an *ex-officio* member of the Insurance Acts Committee during his year of office.

10. The composition of the Committee is now as follows :—

5 Ex-officio Members (*i.e.*, the President, Chairman of Council, Chairman of Representative Meetings, and Treasurer of the B.M.A., and the Chairman of the Conference of Representatives of Local Medical and Panel Committees);
6 Elected by the members of the Representative Body of the Association;
18 Direct Representatives of Local Medical and Panel Committees;
1 Member of the Staff of a Voluntary Hospital nominated by the Hospitals Committee of the Association;
1 Nominated by the Medical Women's Federation;
1 Nominated by the Society of Medical Officers of Health; and
1 Nominated by the Poor Law Medical Officers' Association.

MEDICAL MEMBERS OF INSURANCE COMMITTEES—1921 INSURANCE ACT.

11. On 10th June, a Bill was introduced in Parliament, providing *inter alia*, for a reduction of the members of Insurance Committees by substituting a minimum of 20 for the existing 40, and 40 for the existing maximum of 80.

12. Subsequently the Ministry approached the Office as to the manner of electing the two *direct representatives* of the profession on Insurance Committees. As a result an amendment was introduced in the Bill in the Committee Stage (with the assistance of Dr. A. C. Farquharson, M.P.) which provides that *direct representatives* shall be appointed by the Committee which is recognised as the Local Medical Committee. The Bill was eventually passed, and becomes operative, in this respect, as from November 1st, 1921.

ELECTION OF PANEL COMMITTEES.

13. The Committee's negotiations with the Ministry on the new schemes for the election of Panel Committees were, on the whole, very satisfactory, nearly every point mentioned in Minute 55 of the last Conference being met.

14. The Committee is not satisfied that insurance practitioners realise the importance of these elections or take sufficient interest in them. It urges on Panel Committees the necessity of encouraging insurance practitioners to consult them about points of difficulty and of keeping practitioners fully informed of their activities and so interesting them in the election and proceedings of the Committees. In this connection the Committee is of opinion that it is worth while to consider whether the continuance of proxy voting is desirable and in order to test the feeling of the Conference, the Committee recommends:

Recommendation A:—That proxy voting at the election of Panel Committees should be abolished.

DISTRIBUTION COMMITTEE.

15. The representatives of insurance practitioners on the Ministry of Health Distribution Committee on Central and Mileage Pools are as follows:—

Drs. H. G. Dain (Birmingham), R. J. Farman (London), E. Lewys-Lloyd (Merioneth), and J. P. Williams-Freeman (Andover). In addition to the above-named, when questions concerning the Mileage Pool are under consideration, Drs. T. Wood Locket (Melksham) and W. Baigent (Northallerton) are invited to attend. All the above were nominated by the Insurance Acts Committee.

16. The Committee, after having a report from such of its representatives as are members of the Committee is satisfied as to the working of the Distribution Committee and decided that it would be sufficient to call the attention of the medical representatives to any matters relating to their work on which the Conference has passed any resolutions. This course was accordingly adopted in connection with Minutes 72 and 73 relating to the Mileage Grant and with regard to certain figures which the Committee had undertaken to ask for in connection with Minute 30 of the last Conference.

POSTAGE ON OFFICIAL COMMUNICATIONS.

17. The Committee regrets to have to report that its efforts to secure that all communications from Insurance Committees, the Ministry of Health and other official bodies connected therewith which require a reply should be in a proper cover enclosed, and be either prepaid or franked "O.H.M.S.," were unsuccessful.

CONSULTATION WITH REGIONAL MEDICAL OFFICERS.

18. The Ministry of Health was approached with a view to provision being made for the payment of travelling expenses of insurance practitioners who are required to attend the examination of patients outside the area in which they practise.

19. The reply of the Ministry is that where the reference to the Regional Medical Officer is made by an Approved Society the practitioner is afforded an opportunity of attending if he so desires, but this is entirely at his own option. With regard to cases which are referred to the R.M.O. by the practitioner himself, it is obviously of advantage to the practitioner to be present at the examination, and the R.M.O. may therefore make it a condition that the practitioner shall be present, failing which the R.M.O. is within his rights in refusing to proceed further in the matter. The Ministry states that it is unable to make provision for the payment of travelling expenses of practitioners attending examinations which are held outside the area in which they practise, but Regional Medical Officers, in order to suit the convenience of the practitioner concerned, will take into consideration the question whether the examination should be held at particular centres or at the patient's home.

II.—REVIEW OF REGULATIONS.

GENERAL.

20. The present Medical Benefit Regulations came into force in the main on April 1st, 1920. They have thus been in operation for about 18 months, and their working may well be placed under preliminary review. These Regulations were the result of a prolonged and thorough consideration of the old Regulations and terms of service at a series of Conferences between members of the Insurance Acts Committee and representatives of the Insurance Commissioners. They were placed before the profession in various ways and were "generally approved" in draft by the Conference of November, 1919, nearly all the amendments suggested by that Conference being ultimately embodied in the Regulations in their final form.

21. The chief changes from the former conditions effected by the new Regulations were broadly as follows:—

(a) They established arrangements by which payments to practitioners were made more prompt and more certain in amount;
(b) They abolished any financial dependence of the Practitioners' Fund on the Drug Fund;
(c) They gave to Panel Committees a more important place in administration;
(d) They defined with greater clearness and exactness the procedure to be adopted in certain contingencies.

22. In these respects the Regulations have proved satisfactory in working. The Committee is of opinion that the principle of placing greater responsibility and power in the hands of Panel Committees might with advantage be carried much further in future. It is probable that if these Committees were made primarily responsible for the efficiency of the medical service, in appropriate association with Insurance Committees (or such Committees as may replace them) and with suitable arrangements for reasonable uniformity of action, the level of professional work would be raised even higher than it is, the interests of insured persons would not suffer, and administration would be simplified, inasmuch as general regulations on many points of detail might be dispensed with. The spirit and traditions of the profession would tend to promote a greater efficiency than meticulous departmental requirements.

23. There were two of the Regulations—those relating to the transfer of practices and to rural dispensing—which the Committee declared from the beginning would be found to work unsatisfactorily or inequitably, and to which therefore its approval could not be given. There were some other Regulations—*e.g.*, those dealing with limitation of lists, emergency calls, anæsthetic charges, and the employment of assistants—the working of which the Committee felt would need careful watching, as so much depended on the spirit in which they were administered. There were two other matters—the character of the records to be kept and the certification rules—which were to depend on further enquiry or conference. There remained also for consideration the unsatisfactory procedure in connection with penalties inflicted on practitioners by the Minister of Health in certain cases.

24. Of the above matters those concerned with rural dispensing, emergency calls, anæsthetics, and certification rules may be regarded as having been settled, at least temporarily. Suggestions and recommendations with regard to the others are made in the appropriate paragraphs of this Report.

TRANSFER OF PRACTICES.

25. Acting under the instructions contained in Minutes 37 and 39 of the 1920 Annual Conference, efforts have been made to secure a modification, failing a return to the old Regulation, of the Regulation governing the transfer of practices on death or retirement.

26. Minute 39 was submitted to the Ministry, who contended that the Regulations dealt only with the arrangements to be made, when a doctor dies or retires from practice in an area, for securing:—

(1) That the insured persons formerly on his list are fully informed of their position and rights.
(2) That they are given an ample opportunity of exercising an unfettered choice.
(3) That those who fail to make a choice are allocated to doctors on lines that take due account of the patients' interests and of the general interests of the medical service of insured persons in the area.

The Ministry's contention is that the old Regulations did not satisfactorily secure these objects. They were therefore revised in order that effect might be given more fully to the requirements of the National Insurance Act, 1911, respecting the free choice of doctor and the assignment of those who make no choice.

27. There has yet been very little experience of the actual working of the altered arrangements prescribed by the Regulations, terms of service, and allocation scheme for dealing with the transfer of patients whose names are on the list of a deceased or retiring practitioner, for in the bulk of cases these new arrangements do not come into force before the end of 1922. The Committee regards it of extreme importance that suitable modifications of these arrangements shall be agreed upon before that date, since, as they stand at present, they are not in the best interest of insured persons, they are administratively unsatisfactory, and they may be so used in some cases as to be inequitable to practitioners. The Committee is not seeking the reinstatement of the old Regulation without any modification, and in communications with the Ministry of Health on this matter the main difficulty seems to have risen from misunderstandings due to the imperfect or injudicious wording of resolutions passed by Panel Committees, by professional associations, or by the Conference itself. It must be agreed that on the decease or retirement of a practitioner, insured persons have an absolute right to make a fresh choice, that this should be made clear to them, and that they should have a real opportunity of exercising it. It must also be agreed that there is a recognised value in an opportunity for legitimate introduction, although the practitioner has no transferable vested interest in the insured persons on his list. The contention is that it is quite consistent with this that those insured persons who have not made a new choice within a reasonable period should be transferred to the list of the successor to the practice as from the date of the decease or retirement, and that this procedure can be so

regulated as to be more advantageous to the insured person and more satisfactory in administration than the newly prescribed arrangements can be.

28. The Committee believes that any difficulties that may be found in this matter could best be met by a slight alteration of the general method by which transference of insured persons' names from one list to another in the same area is effected. It is suggested that the only methods of such transfer should be two: (a) as from the first day of any quarter by not less than one month's previous notice to the Insurance Committee, (b) forthwith, by application to and sanction of the Insurance Committee (acting through the Allocation Sub-committee). What is now known as "transfer by consent" would thus be abolished. This would give the patient and doctor increased freedom, would get rid of one official form and of correspondence arising out of mistakes in filling it up, and would disembarrass the profession of some not very desirable situations which occasionally arise in connection therewith.

29. On the decease or retirement of a practitioner, the insured persons on his list would, as now, be informed that they were free to make a fresh choice and that Dr. A. B. (the successor to the practice) was willing to accept them. A month before the first day of the next quarter but one, those who have not exercised their right would be informed that unless they did so within a month they would be assigned to the successor. This assignment, so far as the practitioner was concerned, would be as from the date of the decease or retirement of his predecessor; and the patient, if for any reason dissatisfied, would thereafter be able to effect a change by either of the methods mentioned above.

30. An alternative method, though the Committee thinks not a preferable one, would be to leave the existing methods of transfer untouched, to give all insured persons concerned a sufficient period (say, two months) in which to exercise their choice, then to assign those who had not made any choice to the successor to the practice, giving to all persons so assigned the right to make a fresh choice once at any time during the following six months. Either of these methods would give to the insured person greater opportunity for choosing his doctor than the method embodied in the present Regulations. They would not entail the administrative confusion which is bound to arise under the present Regulations in the case of large lists by reason of undelivered or unregarded communications; and they would avoid the necessity for a number of laymen and practitioners being engaged from time to time in distributing the patients of one doctor according to their own ideas among the other practitioners of the neighbourhood, a procedure which is obviously objectionable for several reasons.

The Committee therefore recommends:

Recommendation B: That the suggestions of this section be presented to the Ministry of Health and that a strenuous endeavour be made to obtain the withdrawal of the arrangements embodied in the present Regulations and the substitution of others on the lines indicated.

Dispensing in Rural Areas.

31. As explained in M. 32/1920-21, dated June 18th, 1921, a Conference was held of representatives of insurance practitioners, pharmacists, Insurance Committees and the Ministry. The Committee's efforts to secure a return to the old Regulation as regards rural dispensing resulted in the issue of fresh Regulations providing for the setting up of a Dispensing Sub-committee to deal with those insured persons in rural areas who do not choose a method of obtaining their medicines. The Insurance Acts Committee still considers that the only satisfactory method is to use the medical card as the means of showing how the patient intends to secure his medicine, but the representatives of the pharmacists were strongly opposed to this. The Committee regards the method now adopted as a compromise which is clumsy and may turn out to be impracticable in working. If this prove to be so the Committee will approach the Ministry again.

Limitation of Lists.

32. The Regulation which prescribed a maximum limit to the number of insured persons who may be accepted by a practitioner has, on the whole, worked smoothly and advantageously. At the beginning protests had to be made against the action of some Insurance Committees who wished to fix the limit unreasonably low, and of the Ministry who, in some cases, wished to lower a limit agreed upon by both Insurance Committee and Panel Committee. These protests were effective and, speaking generally, the effect of the Regulation has been to prevent some abuses and to encourage a healthy co-operation of practitioners in partnerships and assistantships, without producing any very serious grievance.

Assistants on Panel List.

33. The position of an assistant whose name has been placed on a panel list requires some consideration. The Committee has maintained the position that his name must be entered in such a way as to indicate that he is on the list as an assistant only; but, as a matter of fact very few insured persons ever look at the medical list, and the contract into which an assistant enters with an Insurance Committee is in the ordinary form. This entitles him to accept patients for himself, and entails that when his name is removed from the list those patients may make a fresh choice of doctor or may be assigned to other practitioners by the Allocation Sub-Committee. The Committee has urged that, for the protection of the principal, the form of contract entered into by the assistant with the Insurance Committee should be suitably modified, but the Ministry has hitherto refused to accept this. The Committee has therefore had to advise practitioners to insert a clause in their own contract with their assistant forbidding that assistant to accept insured persons on his own behalf. This protects the principal against the assistant, but it does not in any way affect the procedure of the Insurance Committee. The question presents certain difficulties and is still under consideration.

Emergency Treatment.

34. The 1920 Annual Conference disagreed with the ruling by which "an insured person, requiring emergency treatment outside the area in which his insurance practitioner resides, is regarded as a temporary resident," on the grounds that it was inequitable in its operation and liable to grave abuse. This decision was conveyed to the Ministry by a deputation from the Insurance Acts Committee, the latter maintaining that in all cases in which the emergency happens outside the district in which the patient's own doctor has undertaken to give attendance it should be paid for on an attendance basis out of the areal pool of the patient's home area.

35. Ultimately it was agreed to accept the proposal to amend paragraph 4 of M.C. 3 by inserting the following proviso and amending paragraph 8 by including after the word "anæsthetics" in the second line the words "or under the proviso to Clause 4 of the Scheme":

> "Provided that if an application for treatment is made by an insured person who is outside the radius of practice of the practitioner responsible for his treatment and intends to remain outside the radius for less than twenty-four hours, the practitioner providing treatment will, instead of having the applicant placed on his list, be entitled to be paid as though treatment had been given in an emergency under the last preceding clause and the amount payable to the practitioner will be payable out of the Fund in the same manner and subject to the same conditions as payments made in respect of the administration of anaesthetics."

It is understood that if it is found that in any area the payments made under this head were disproportionately high in comparison with other areas, it would always be open to the Insurance Committee (on the representation of the Panel Committee) to lay the case before the Distribution Committee with a view to a special allowance being made in future in assessing the local pool.

Fees for Anæsthetics.

36. Committees are already aware of the action that has been taken by the Insurance Acts Committee in the matter of fees for the administration of anæsthetics and the circumstances under which they can be claimed. The decisions arrived at in consultation with the Ministry were circulated on June 18th, 1921, and were also published in the Supplement to the *B.M.J.* of April 16th.

37. Several Panel Committees have advised their constituents not to make any charge on the Practitioner's Fund for the administration of anæsthetics. The Insurance Acts Committee sees no objection to this procedure, but would recommend Panel Committees who contemplate similar action to take care that such action does not deprive insured persons of the benefit of anæsthetics.

38. The Committee's nominees on the Mileage Distribution Committee of the Ministry of Health have been asked to raise the question of the provision of a mileage rate in addition to the fee for the administration of the anæsthetic in rural areas, where doctors reside at considerable distances apart.

Records.

39. The present Regulations do not vary the obligation on the insurance practitioner to keep "records of the diseases of his patients and of his treatment of them," which has from

the outset formed part of the conditions of service. On account of war conditions, however, this obligation has been suspended since the beginning of 1917 and, at the request of the Committee, the Ministry had undertaken not to put it again in force until after they had received advice as to the best method of doing so from an Interdepartmental Committee on which insurance practitioners should be represented. This undertaking was fulfilled, and the keeping of records in accordance with the report of the Interdepartmental Committee has now been required for the past eight months. During the first few weeks of this period a considerable number of denunciatory resolutions and expressions of private opinion were published, but, with very few exceptions, these were entirely unhelpful, showing for the most part a very imperfect knowledge of the facts and a complete ignorance of the report of the Interdepartmental Committee. They were evidently provoked largely by a very natural impatience with an unfamiliar procedure and a quite justifiable irritation at the imperfect way in which some Insurance Committees were carrying out their duties in connection therewith. The wisdom of the decision of the last Conference that the new records should be given a trial before any formal opinion was passed on them is shown by the fact that the more recent expressions of opinion have been generally commendatory, that the actual suggestions as to alteration of the form of record and the method of dealing with it have been surprisingly few, and that the points to which the attention of the Conference should be directed have become quite clear.

40. Actual experience in using and in transmitting the records justifies the Conference in making suggestions to the Ministry and in expecting that these suggestions will receive adequate and, if possible, favourable consideration, but it must be recognised as fundamental that medical opinion and medical convenience are not the only matters to be weighed in this connection, and that responsibility for whatever form is imposed and whatever procedure is prescribed rests entirely with the Ministry. Insurance practitioners when they accept service accept this obligation. The Committee understands that, in fact, the records are being kept in a quite satisfactory manner by most practitioners, whatever opinion may be held as to the propriety and utility of the form.

41. All suggestions for improvement which have been brought to the notice of the Committee, either directly through the office as requested, or through the press, have been carefully considered. They may be grouped as regards their reference to (a) the form of record; (b) the requirements with regard to filling up the record form; (c) the transmission of the records.

42. The Committee is of opinion that the actual form of record should not be seriously altered unless real need for this is shown. The chief inconvenience in this connection is always felt in getting used to the new form, and the suggestions received from Panel Committees or from practitioners do not seem to call for any radical change. One suggestion is that the envelopes should be made to open at the side instead of at the top, but the Committee does not recommend this. The words "ceased to be insured" at the right hand bottom of the front of the card are usually ignored by practitioners, and there does not seem to be sufficient reason for making the practitioner responsible for giving this information. On the back of the card the figures in the "date" column, indicating the year, which were introduced in the hope of saving the practitioner's time, have been found to be useless or inconvenient. The question of the "A" and "V" columns is dealt with in the next paragraph, for, whether entries in these columns are compulsory or not, there seems no reason why they should not remain for those who may wish to use them.

43. The only entries on the back of the card obligatory in England and Wales are (a) "Such notes of every case treated as are likely to be of value to the practitioner himself or to any other practitioner treating the same patient in subsequent illnesses"; (b) an indication of the date of each consultation or visit (in some cases summarised); (c) an indication of the issue of First and Final Certificates with the date of such issue. In Scotland (b) is not required, but it is obligatory to summarise certain particulars with regard to illnesses causing incapacity. It appears that there are still a considerable number of practitioners who are under a misapprehension with regard to these obligations and think that more is required of them than is actually the case. The actual terms of obligation (a) should be noted, for they show a reliance on the judgment of the practitioner in which the Committee thinks the Central Authority should be encouraged. It is important that the practitioner's discretion and judgment should be conscientiously exercised, and that attention should be paid to the requirement that in the column headed "diagnosis" nothing should be entered other than "diagnoses of which the practitioner is reasonably certain," anything short of this being entered under "clinical notes." Obligation (c) above appears to the Committee to be, under present circumstances, a reasonable one, but the necessity for obligation (b) is not clear. The entry of the date of every consultation or visit may obviously be of some use, but it is doubtful whether it satisfies the criterion of the Interdepartmental Committee that the requirement "must not make demands upon the practitioner's time disproportionate to the value of the results." Perhaps the chief annoyance connected with the records, so far as the practitioner is concerned is the necessity for placing a mark in columns "A" or "V" every time a long continuing chronic case is seen or when the attendance is for the further treatment of some obviously trivial condition. In the former case it leads to bulky records of negligible value; in the latter case the value, if any, is certainly disproportionately small as compared with the trouble. Looked at from the administrative and statistical side it has not been thought necessary to impose this obligation in Scotland, and if the information is not required there it is difficult to understand why much importance should be attached to it in England and Wales.

44. The suggestion has been made that much inconvenience would be avoided and some of the criticisms of the form of record met if the clinical record were separated from the statistical, the present form, slightly modified, remaining for the former, and an entirely separate card being provided for the latter. This suggestion has in some cases been supplemented by the further suggestion that the keeping of the statistical record should not be compulsory on every practitioner, but that in each area a few practitioners should volunteer to keep it and should be paid an extra fee *out of the practitioners' pool* for doing this. The Committee does not approve these suggestions. It is of opinion that insurance practitioners would strongly object to having to store and mark two sets of record cards; and that in the event of this extra task being undertaken by volunteers who would receive extra payment therefor at the expense of their fellow practitioners, it is not unlikely that the number of volunteers would be so great as to produce a result nearly approximating to the existing state of affairs with the additional disadvantage of the double cards. It seems preferable to suggest that the obligation to enter all consultations and visits should be withdrawn. In that event it is probable that a sufficient number of practitioners would for their own purposes make these entries to allow of the law of averages being applied. If this obligation were withdrawn it might be advisable to require that an entry of the date and an appropriate note (diagnosis if possible) should be made on the occasion of the initial consultation or visit for each illness, and on the occasion of the issue of first and final certificates of incapacity, leaving the general obligation to make such notes as the practitioner considers clinically useful to apply to all other occasions.

45. As to the obligation on Scottish practitioners to make certain periodic returns, it is felt by the Scottish Sub-Committee that it is not yet possible to express any useful opinion on the matter.

46. The somewhat troublesome method prescribed for transmitting the records is due entirely to a desire to preserve professional secrecy. If strictly followed by the doctor the method would be perfectly effective. Practitioners, however, are continually neglecting to follow the prescribed method or failing to follow it with absolute attention to every detail. In this connection, too, it is worth remembering that certificates are given to patients every day in the full knowledge that they are intended to be seen by other persons; and that previously, when open records had to be made of the ailments of discharged disabled men or of temporary residents, travellers and others, in order to secure payment for professional attendance, no serious objection was raised either by practitioners or patients. It is worth while considering whether some alternative method, preferable to the present one, might be found which, though less perfect, would be more really effectual. Three suggestions have been made (a) that the records should be kept by the insured persons themselves, (b) that they should be transmitted direct from doctor to doctor, (c) that they should be handled in the office of Insurance Committees only by specially selected confidential clerks. The first of these suggestions, as applied to the whole number of insured persons, is for many reasons obviously impossible. It is not desirable that every sick person should have direct access to his doctor's notes. The records in large numbers of cases would be lost or soiled or not accessible when required. The records would never be available for collective investigation. The second suggestion, though not open to these objections, is applicable

to cases of transfer only and leaves the other cases unprovided for. Moreover, it would require a procedure more, not less, elaborate than the present; and it would make the doctor an essential part of the *administrative* machine to a degree which would, the Committee thinks, be very undesirable. The third suggestion should be seriously considered by the Conference. It would be quite possible to arrange that only a specially chosen clerk (who might be sworn to secrecy if desired) should handle returned record cards, provided, of course, that they were returned in envelopes of a particular type or specially marked.

47. There is one other point connected with the transmission of the records to which serious attention must be directed. It is essential to the smooth working of the system and for the convenience of practitioners into whose care patients pass that the record cards should be sent by the doctor as soon as they are asked for. A relatively large proportion of practitioners fail to send them promptly; a considerable number have not been sent for a period of six or seven months in spite of repeated applications having been made for them. This seems to point to the necessity for some penalisation of negligent practitioners. The Committee thinks that if such penalty be devised its imposition should be in the hands of the Panel Committees.

48. With regard to the instruction of the 1920 Annual Conference that efforts should be made to secure that no part of the cost of forwarding the new record cards should fall upon the practitioner, it need only be said that the Committee was successful in this connection. A communication has since been received, however, from the Ministry stating (a) that it was believed, according to the result of the first quarter's working of the above arrangement, that the expense involved by Insurance Committees in keeping records of the extra postage incurred by practitioners sending medical records was altogether disproportionate to the results, the average payment being about a shilling per insurance practitioner per quarter; and (b) that it was proposed to make general enquiry of Committees as to the average payment, and if it was found that the average payment of a shilling was at all general, it was hoped that the whole matter would be dropped as it became rather farcical when considered in the light of the resolution (Minute 51 of last Conference) stating that the obligation to transmit records to the proper quarter would not be observed unless this expense was met. The Ministry later intimated that, as a result of its enquiry, it was found that the average payment to each insurance practitioner in respect of postage on record cards was 6d. per quarter.

49. The Committee therefore **recommends:**

Recommendation C: That the form of record should remain as at present, except that the words "ceased to be insured" should be deleted from the front of the card and the figures denoting the year from the back of the card.

Recommendation D: That the obligation to enter the dates of all consultations and visits is irksome and unnecessary, but that, if the Ministry consent to the withdrawal of this obligation, there would be no serious objection to the requirement that the dates of the initial attendance of the patient on the occasion of each illness and of the issuing of first and final certificates of incapacity should be entered, an appropriate clinical note being made on each such occasion.

Recommendation E: That the method of transmission of the records should be so altered as to provide simply that they should be sent in one special type of envelope and should be handled in the offices of Insurance Committees only by specially selected confidential clerks.

Recommendation F: That the Conference desires to draw the serious attention of insurance practitioners to the fact that many practitioners persistently neglect to transmit the records promptly when requested to do so.

Recommendation G: That this Conference agrees to waive, as a separate item, the refunding to medical practitioners of the cost of postage on medical records.

Certification.

50. A Conference of representatives of the Insurance Acts Committee, Approved Societies, and the Ministry of Health, was held on December 22nd, 1920, for the purpose of reviewing the system of certification and considering in what way it could usefully be amended and improved. As a result of this and subsequent discussions the Certification Rules have been revised, and the Committee believes that the alterations which have been made will meet most of the objections which have hitherto been raised. A new feature is the introduction of a special Convalescent Certificate which may be issued after the patient has been under the doctor's care for 28 days in order to allow the patient to leave home. The Committee's representatives pressed for a shorter period than 28 days, *i.e.*, 14 days, but, owing to the strong opposition of the Approved Societies representatives, were unsuccessful.

Procedure on Withholding Grant and Removal from Panel.

51. The new Regulations did not alter the disciplinary powers or procedure of the Ministry of Health with regard to appeals concerning alleged breaches of agreement or with regard to the withholding of Treasury grant and the removal of a practitioner's name from the Medical List; except that they provided for reports of all previous complaints against practitioners being in the hands of the Ministry. Insurance practitioners, however, have never been satisfied with some points in this procedure, and it is desirable to consider whether anything can usefully be done at the present juncture to improve the position. It must be recognised that the Ministry is the administrative department of the State charged by Parliament with the duty of seeing that the medical service under the Insurance Acts is efficient, and that therefore the Ministry must be the authority which actually imposes penalties for inefficient service in any area or even removes from the service in certain cases those who have improperly conducted it. The question is whether there is sufficient check upon any arbitrary or unjust action by the Ministry and, if not, what suitable check can be suggested. The usual check in this country on the action of administrative departments is public opinion, and this, expressed through Parliament or through the Press, is in the long run usually effective. In the case of removal from the panel the Conference has asked that there should be a further check—the right of appeal to the High Court within three months of the decision of the Ministry. In view of the procedure laid down for these enquiries at present, and of the nature of the cases hitherto raised and the character of the decisions hitherto given, the Committee is doubtful whether the proposed right of appeal, if granted, would ever be exercised. The Committee arranged, however, for an amendment in the sense desired by the Conference to be moved to a Parliamentary Bill. This was done on two occasions, on neither of which did it receive any support in the House of Commons, and it seems unlikely that the support would be effectively greater in future. The matter will, however, continue to receive the attention of the Committee.

52. In cases of removal from the panel the enquiry is in practice a public enquiry, though there is no provision that it must be public. In any event a considerable number of representative persons may be entitled to take part in it. There is therefore in these cases opportunity for the safeguard of public opinion to be operative. This is not true, however, in most cases of the infliction of a fine on the practitioner by withholding Treasury grant. Here the enquiry may be by the Minister himself or, usually, by one or more officers of the Ministry acting on his behalf. The enquiry is subject to no prescribed rules of procedure; it is held in private and if the practitioner concerned desires to make oral representations he must do so in person, though in practice he is allowed to be accompanied by a representative of a medical defence society or by a solicitor. The Committee does not for a moment suggest that the Minister or the Civil Servants concerned act otherwise than fairly and judicially according to their honest judgment, but there have been cases in which it has seemed to Panel Committees or to Insurance Committees that the fine inflicted has been disproportionate to the neglect or offence which occasioned it. It appears to the Committee desirable for the sake of everyone concerned that public opinion should in some way have an opportunity of being informed and satisfied in these cases also. To this end the Conference might consider whether it would wish the Committee to enter into negotiations with the Ministry, so that representatives of Panel Committees or other recognised professional bodies might be present at the enquiry or so that the facts of the case as known to the Ministry and the fine proposed to be inflicted shall be submitted to the Panel Committee for its observations before the penalty becomes operative.

Recommendation H: That the Insurance Acts Committee be authorised to negotiate with the Ministry in the direction indicated in this section.

III. REMUNERATION AND PROPOSED ENQUIRY.

53. The 1920 Annual Conference passed the following resolution:—

> 29. Resolved: That it be an instruction to the Insurance Acts Committee to take into consideration the economic conditions prevailing twelve months after the award as compared with those obtaining at the time of the award, and to take such action as may seem desirable.

The Committee considered this matter very carefully but came to the conclusion that it was inadvisable to take any action at the time indicated.

54. The Conference should be aware of the possibilities of the situation with regard to remuneration; and it is no doubt within their knowledge that the Minister of Health has stated that he is "considering whether the time had not come for an enquiry into the working of the Act as regards both cash benefits and medical benefits." It is conceivable that the question of the reduction of medical remuneration might be raised in two ways, either (a) as part of a movement for the indiscriminate reduction of national expenditure in all departments at all costs, or (b) by those who have a notion that the existing central pool should be made to cover the cost of all sorts of additional services. The Committee is unable to believe that either of these points of view could receive any official countenance or support; and therefore it is not necessary to enter here upon any argument to controvert the misconceptions or ignorance of facts on which they are founded. Had it not been for the war, an enquiry into the working of the National Health Insurance Acts would no doubt have taken place before now, and the Committee feels that such an enquiry, properly conducted at a suitable time, could only result, as far as medical benefit is concerned, in removing some of these misconceptions and this ignorance of facts, and in reducing to their proper proportion allegations of neglect of duty and of inadequate and perfunctory service which are occasionally made by irresponsible officials of some Approved Societies. Any enquiry would, of course, also concern itself with other aspects of the insurance service besides medical benefit and on these the medical profession is in a position to give valuable evidence. On these grounds, among others, the Committee thinks that a proper enquiry should be welcomed.

55. It is desirable that, in order to take effective action of any kind, the Committee should be quite clear as to the mind of the Conference and it therefore makes the following recommendations:—

Recommendation I: That the Conference reaffirms the opinion that 13s. 6d. is the lowest capitation fee that should be offered for an effective service; but in view of the Arbitrator's award of 11s. and in view of the serious state of the national finances does not at present press for an increase of the capitation fee to that amount.

Recommendation J: That the Conference has no desire to give other than a liberal interpretation to the phrase "such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary professional competence and skill."

Recommendation K: That the Conference would welcome a wide enquiry into the working of the National Health Insurance Acts, but suggests that the part of any such enquiry concerned with medical benefit should not be entered upon until after April, 1922, when the new Regulations will have been two complete years in operation.

Recommendation L: That the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to ensure the continuance and improvement of this system.

Recommendation M: That the Insurance Acts Committee be authorised to take steps at an early date to organise the profession so as to take such action as may be found necessary in pursuance of the foregoing resolutions.

IV. MISCELLANEOUS.

[Paragraphs 56, 57, and 58 deal respectively with the model form for services outside the agreement, inflation of index registers, and the Central Pool Fund.]

Branch Surgeries.

59. The following Minute 95 of the 1920 Annual Conference was submitted to the Ministry:—

> 95. Resolved: That steps should be taken to require every practitioner on the Panel, who does not reside on the premises where his insurance patients consult him, to notify outside such premises the address of his residence, such notification to be made to the satisfaction of the Insurance Committee after consultation with the Panel Committee.

The Ministry promised to communicate with the Insurance Committees with a request that they should see that such action is taken. The Ministry also stated that, in view of certain complaints which had been received where a practitioner's branch surgery in an urban area was at some distance from his residence, Insurance Committees were being requested to see that in all such circumstances the arrangements made for treatment of insured persons outside the branch surgery hours were satisfactory, and to invite the co-operation of Panel Committees whenever some improvement appears to be necessary in order that the medical service for the insured should be in no way prejudiced.

Medical Aid Institutes as "Approved Institutions."

60. The Middlesbrough Friendly Societies Medical Aid Institute desired to extend the area of its activities beyond the three miles radius prescribed in its "approval" by the then Commissioners in 1913 The Ministry of Health held an enquiry into the matter in January 4th, 1921, which was fullly reported in the *B.M.J.* Supplement of January 15th, 1921, from which it will be seen that there were strong local reasons why the application should be resisted by the medical profession in addition to those objections felt by the profession in general to any extension of a system believed to be unsound. The Medical Secretary, on behalf of the Association, drew attention at the Enquiry to the Conference between representatives of the Friendly Societies and the Association, held in October, 1912, under the Chairmanship of Mr. Lloyd George, at which the Association agreed, on certain conditions, not to press its opposition to the "Harmsworth Amendment" to the National Insurance Bill, under which certain Medical Aid Institutes would be recognised as part of the machinery of the National Insurance system. One of the conditions, as understood by the Association's representatives, was that those institutions would not seek to extend their operations outside the areas in which they operated at the time the Act was passed. The result of the Enquiry was satisfactory, inasmuch as the Minister declined to allow the alteration of the rules asked for by the Institute.

Relationship between Insurance Practitioners and Ministry of Pensions.

61. Repeated representations have been made to the Ministry of Health drawing attention to the unsatisfactory procedure generally in the matter of the relationship of insurance practitioners and medical officers of the Ministry of Pensions, especially in regard to the existing arrangements under which Medical Officers of the Ministry of Pensions hand prescriptions and advisory notes to pensioners, instead of communicating direct with the insurance practitioners concerned.

62. The Ministry of Health states that the whole matter is under consideration by the two Ministries. In the meantime the attention of the Ministry of Health has been drawn to the procedure adopted in Wiltshire whereby the pensioner receives at his first visit to the Tropical Diseases Clinic a sealed envelope containing a card upon which is entered the diagnosis arrived at and the treatment ordered. The pensioner is instructed to present this envelope to his own medical attendant, should he have occasion to consult him between the Clinical sessions, and practitioners have been asked, when receiving one of these cards, to respond by entering on the card the dates on which, and the symptoms for which, the pensioner consulted them. A fresh envelope is provided into which the card is put, and the pensioner is instructed to present it at his next visit to the Clinic. The above procedure has been commended to the Ministry and the opinion expressed that it would be extremely useful if it were adopted in all insurance areas.

Unqualified Practitioners.

63. The Committee's advice has been sought on several occasions on the question (mentioned in the 1920 Annual

Report, para. 61) of the issue of certificates to insured persons who are under the treatment of an unqualified person (*i.e.*, a bonesetter). In each case the practitioner has been advised to act in accordance with the Solicitor's opinion, which was obtained at the outset, *i.e.*, to accept his dismissal from the case and cease attendance, thus relieving himself of the obligation to issue certificates, and to make immediate application for the removal of the insured person's name from his list. The full support of the Association will be given to any practitioner in fighting such a case on behalf of the profession. So far, however, events in each case have failed to afford an opportunity of bringing the matter to a head, the insured person having left the unqualified man and returned to his doctor.

Domiciliary Treatment of Tuberculosis.—Reports to Regional Medical Officers.

64. The Committee has considered the Amended Regulations issued by the Ministry dealing with reports of progress of tuberculous patients receiving domiciliary treatment, and is considering alternative proposals as to the wording of the Report.

Nursing Schemes for Insured Persons.

65. The Committee has had before it proposals for the provision in various parts of the country of a nursing service for insured persons. The original draft of a scheme drawn up by several large Approved Societies contained no regulation compelling the nurse to act under the direction of the practitioner attending the case. The Committee was assured, however, by the Queen Victoria Jubilee Institute for Nurses (which was a party to the scheme) that it had been made quite clear to the Approved Societies concerned that the nursing would be carried on under the ordinary rules for district nursing, which are those approved by the B.M.A. and the Queen's Institute in conference in 1910. The particular rules governing the point referred to above are as follows:—

> 15. In all cases of general sick nursing the attendance of the nurse must be sanctioned by the medical man, it being understood that her attendance on such cases does not interfere with her engagements to lying-in women. The nurse may attend a patient on application or in emergency, but must not continue to visit without informing a medical man and receiving his instructions, if any. Should a nurse advise that a patient should have a doctor and the advice be not accepted, the nurse may not attend this patient except in cases of fresh emergency. She must report the matter to her secretary.
>
> 16. The nurse shall not dispense for her patients any such drugs as should only be prescribed by a medical man.

The Committee has expressed the opinion that all such schemes for the provision of nursing should be considered as being of the nature of medical benefit, and should therefore be administered accordingly, *i.e.*, by Insurance Committees.

Medical Representation in Parliament.

66. Panel Committees are again reminded of the fact that there exists a Medical Representation in Parliament Fund, which is a Trust Fund under the control of the Council of the British Medical Association. The object of the Fund is to endeavour to promote the candidature of suitable persons who, if elected, could be relied upon to represent in the House of Commons the interests of the medical profession as well as the interests of their constituents.

67. The Trustees collectively have no political opinions or connections of any kind, and their ambition is to be able to support at least two candidates of differing political colour. At the present time the income of the Fund does not justify this. The important matter from the point of view of Panel Committees is that the one candidate whom the Trustees have recognised and are supporting is Dr. H. B. Brackenbury, who is believed to have quite a reasonable chance of success. His services to insurance practitioners as well as his activities in support of the interest of the medical profession in every sphere would make him an ideal representative in Parliament if his election can be secured.

The following list shows those Committees which have subscribed to the Fund, and it is sincerely hoped that many others will send a subscription. Annual subscriptions, whether from Committees or from individuals, would be greatly appreciated, as there is a steady annual expenditure once a candidate has been accepted by a constituency:—

Barrow-in-Furness £7 7s., Berkshire £10 10s., Bournemouth £10, Devonshire £42, Dudley £3 3s., Fifeshire £10, Kilmarnock £3 3s., Manchester £200, Middlesbrough £10 10s., Oxfordshire £10 10s., Oxford City £5 5s., Smethwick £2 2s., Suffolk (East) £7 9s. 6d., Surrey £10 10s., Warwickshire £10 10s., Westmorland £5 5s., Wiltshire £10 10s., York £33.

Balance of fund for the complimentary dinner to Dr. Brackenbury and the Insurance Acts Committee (organised by London Panel Committee) £123 12s. 9d.

Medical Department, 429, Strand, London, W.C.2,
September, 1921.

THE SCOTTISH COMMITTEE.

A meeting of the Scottish Committee of the British Medical Association was held at Edinburgh on September 15th, 1921. Dr. W. Snodgrass was appointed Chairman and Dr. J. Stevens Vice-Chairman. The following were co-opted members of the Committee: Dr. R. C. Buist (Dundee), Dr. A. C. Miller (Fort William), and Dr. John Hunter (Edinburgh). The following Subcommittees were appointed: Chairman's Subcommittee, Hospitals Subcommittee, Highlands and Islands Subcommittee.

Conditions of Service of Poor Law Medical Officers in Scotland.

The meeting considered a communication from the Scottish Poor Law Medical Officers' Association calling attention to the fact that Poor Law medical officers in Scotland have no right of appeal to the Board of Health, and that they are excluded from the superannuation scheme established for medical officers in England, and asking the help of the Committee in redress of these grievances. The secretary of the association (Dr. W. L. Muir) attended by invitation. It was resolved, before proceeding further, to inquire as to the membership of the Poor Law Medical Officers' Association, and whether the proposals put forward by the secretary represented the considered policy of that association.

Report of Central Midwives Board (Scotland).

The report of the Central Midwives Board was considered by the Committee. Attention was given to the statement in the report that the practice of midwifery is falling more and more into the hands of midwives, as shown by the percentages of total births attended by midwives (reaching the figure of 96 per cent. in one area), and it was decided to make inquiry as to the number of cases in which a doctor was actually called in although the cases were reported as having been attended by midwives.

Fees for Maternity and Child Welfare Clinics.

The Committee also considered a report that the Board of Health had informed a local authority that they were not prepared to approve fees for medical practitioners in excess of 13s. 6d. per hour, or £1 11s. 6d. for a session of two and a half hours, at a Child Welfare Centre, or of 26s. 3d. per hour to specialists at a Special Treatment Centre. It was resolved by the Committee that the fee for a session not exceeding one hour should be £1 1s.

Association Notices.

MEETING OF COUNCIL.

The next meeting of Council will be held on Wednesday, October 5th, in the Council Room, 429, Strand, London, W.C.2, at 10 a.m.

Election of Direct Representatives upon Insurance Acts Committee.

Nominations by Local Medical and Panel Committees for the above should reach the Medical Secretary not later than the first post on October 10th, 1921. Nomination forms (M.2) may be obtained from the Medical Secretary, 429, Strand, W.C.2.

Scottish Subcommittee.

Nominations for the Scottish Subcommittee by Scottish Panel Committees must also be in the hands of the Medical Secretary—from whom nomination papers (M.4 for Counties, and M.5 for Burghs) may be obtained—by the same date.

Panel Conference.

Motions by Local Medical and Panel Committees for inclusion in the Final Agenda of the Panel Conference (to be held in the Wesleyan Central Hall, Westminster, on Thursday, October 20th) must be received by the Medical Secretary not later than the first post on October 10th.

Meetings of Branches and Divisions.

NORTH WALES BRANCH: NORTH CARNARVON AND ANGLESEY DIVISION.

AN excursion meeting of the North Carnarvon and Anglesey Division was held on September 7th, when some thirty members visited the North Wales Sanatorium, Denbigh. Lunch was provided at the Sanatorium on the invitation of the medical superintendent and the committee of the Memorial Association, and the members of the Division were welcomed by Mr. D. W. Evans, the Director. Dr. J. R. Williams (Penmaenmawr), Dr. J. E. Thomas (Bangor), Dr. Robert Parry (Carnarvon), and Dr. J. H. Morris Jones (Colwyn Bay) responded on behalf of the Division. The party was then conducted over the Sanatorium, and demonstrations of plaster casting and artificial pneumothorax were given, followed by a visit to the model farm of the institution. The impression produced upon the members was very good, and the medical superintendent (Dr. D. A. Powell) and his staff were heartily congratulated on the way in which the institution was being carried on.

NORFOLK BRANCH.

THE annual meeting of the Norfolk Branch took place at Norwich on July 12th, 1921. The HONORARY SECRETARY read the report of the Branch Council and the financial statement for 1920. A vote of thanks to Dr. F. W. Burton-Fanning, F.R.C.P., the retiring President, was unanimously carried, and the chair was then taken by the new President, Dr. R. C. M. COLVIN-SMITH. A hearty vote of thanks was also accorded to Sir Hamilton Ballance, K.B.E., C.B., who was retiring from the post of Honorary Secretary and Treasurer, which post he had held for many years. Mr. A. J. Blaxland, M.S., was elected to fill the vacancy.

An interesting address was then given by Dr. F. J. POYNTON, F.R.C.P., on "The care of the rheumatic child"; it was followed by a good discussion. The PRESIDENT moved a vote of thanks to Dr. Poynton, which was carried by acclamation.

MEETINGS TO BE HELD.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—An ordinary meeting of the Division will be held at the Railway Hotel, Newtown St. Boswells, on Tuesday, October 4th, at 3.30 o'clock (at the conclusion of the Roxburgh Panel Committee meeting). Business: Election of officers; appointment of Vice-Chairman; address by Dr. John Eason on some problems of the goitres.

KENT BRANCH: MAIDSTONE DIVISION.—A meeting of the Maidstone Division will be held at the Kent County Ophthalmic Hospital on Thursday, October 6th, at 3.30 p.m., when Mr. G. Potts, F.R.C.S.Ed., will demonstrate cases of corneal ulcer, iritis, "pink eye" in various stages, and Mr. J. A. Gibb, M.B., cases of otorrhoea, nasal discharges, septic deviation, and other cases.

MALAYA BRANCH.—Meetings of the Malaya Branch are held in Singapore on the third Thursday of each month. Members desiring to contribute papers are requested to communicate with the honorary secretary, Dr. J. W. Scharff, care of Port Health Office, Singapore. Arrangements can be made for the exhibition of specimens or cases of interest brought to the meetings.

THE MEDICAL REGISTER: CHANGE OF ADDRESS.

Names of Practitioners who have not Responded to Inquiries.

AT the request of the General Medical Council we publish the following list of medical practitioners who have not responded to the inquiries of the Registrar of the General Medical Council made under Section 14 of the Medical Act, 1858. That Section imposes on the Registrars the duty to keep their respective registers correct. The following is the concluding portion of that Section:

> . . . and to enable the respective registrars duly to fulfil the duties imposed upon them it shall be lawful for the registrar to write a letter to any registered person, addressed to him according to his address on the *Register*, to inquire whether he has ceased to practise, or has changed his residence, and if no answer shall be returned to such letter within the period of six months from the sending of the letter, it shall be lawful to erase the name of such person from the *Register*, provided always that the same may be restored by direction of the General Council should they think fit to make an order to that effect.

Circulars of inquiry as to the accuracy of their addresses have been sent this year to practitioners on the *Medical Register* from "P" to the end of the Foreign List. In spite of all efforts by the Registrar, no replies up to September 27th have been received from the practitioners whose names (each with one qualification) appear in the following lists. Communications should be sent without delay to the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1. The initials "E," "S," and "I" refer to the part of the United Kingdom in which the practitioner registered.

Packard, Henry C., M.B., Ch.B. 1895 (E)
Paget, Peter, M.R.C.S. 1889 (E)
Palmer, Henry D., M.R.C.S. 1870 (E)
Pamoty, John E., L.R.C.P. 1882 (S)
Parbury, Frederic D., M.R.C.S. 1902 (E)
Parkinson, Charles J., M.R.C.S. 1882 (E)
Parkinson, Kathleen H., M.R.C.S. 1915 (E)
Parry, Robert C., M.R.C.S. 1913 (E)
Parsons, Charles, M.R.C.S. 1858 (E)
Parsons, Irene G., M.R.C.S. 1918 (E)
Patel, Edalji D., L.F.P.S. 1881 (I)
Paterson, Alexander, M.B. 1866 (S)
Paterson, Andrew G., L.R.C.P. 1877 (S)
Paterson, Arthur T., M.B., Ch.B. 1907 (S)
Paton, Kate K., L.R.C.P. 1893 (S)
Pattee, Frank J., L.R.C.P. 1901 (S)
Patterson, George H., L.S.A. 1878 (E)
Pattie, Charles F., M.B. 1907 (S)
Paul, David R., L.R.C.P. 1883 (S)
Paul, George W. F., M.R.C.S. 1885 (E)
Pauling, William T., M.R.C.S. 1892 (E)
Pauw, Jacobus C., M.R.C.S. 1919 (E)
Payne, Florence M., L.S.A. 1902 (E)
Peacock, Edward V., M.B. 1893 (E)
Peake, Sydney J., M.R.C.S. 1900 (E)
Pearse, Robert R., L.S.A. 1888 (E)
Pearse, William H., M.R.C.S. 1897 (E)
Pearson, David C., M.B., B.Ch. 1904 (I)
Pearson, John C., M.B. 1878 (E)
Peirce, James E., L.S.A. 1868 (E)
Peirce, Thomas D., M.R.C.S. 1877 (E)
Pellissier, Wilfred V., M.B., B.Ch. 1917 (I)
Pemberton, Charles A., M.R.C.S. 1907 (E)
Penberthy, Clifford P., M.B., Ch.B. 1916 (S)
Perceval, Arthur P., M.B., C.M. 1894 (S)
Pereira-Marques, Laurence, L.R.C.S. 1877 (I)
Perkins, Matthew J., L.R.C.P. 1905 (S)
Perlman, Archie, M.R.C.S. 1910 (E)
Petty, Michael John, L.R.C.P. 1885 (E)
Peyton, Henry R., L.R.C.S. 1881 (I)
Phillipson, Burton R., L., L.M.R.C.P. 1897 (I)
Pick, Arthur, M.R.C.S. 1903 (E)
Pickett, Jacob, M.R.C.S. 1858 (E)
Piel, Paul A., L.R.C.S. 1884 (I)
Pillay, John J., L.R.C.P. 1891 (E)
Pink, Thomas, L.S.A. 1873 (E)
Plant, Alexander W., L.S.A., 1886 (E)
Platt, Akkey B., M.B., Ch.B. 1917 (E)
Pochin, Courtenay H. G., L.R.C.P. 1913 (E)
Pollock, John Hackett, M.B., B.Ch. 1913 (I)
Potter, Harry, M.R.C.S. 1883 (E)
Potter, Mary E., M.B., Ch.B. 1901 (S)
Powell, Henry A., L.R.C.P. 1880 (E)
Powell, Joseph H., L.R.C.P. 1883 (E)
Power, John E., M.B., Ch.B. 1914 (I)
Power, John Wardell, M.B. 1904 (E)
Power, John W., L.K.Q.C.P. 1886 (I)
Power, Patrick J., L.R.C.S. 1886 (I)
Preston, Arthur B., M.R.C.S. 1914 (E)
Preston, Charles E., L.R.C.P. 1906 (S)
Price, Lloyd T., M.B., Ch.B. 1901 (S)
Price, Maurice D., L.R.C.P. 1907 (E)
Priddle, Alfred E., L.R.C.P. 1899 (E)
Prior, Norman H., M.C., M.B., Ch.B. 1907 (S)
Proctor, Samuel P. P., M.B., Ch.B. 1910 (S)
Propert, Walter A., L.R.C.P. 1894 (E)
Pugh, Robert, M.B., Ch.B. 1898 (S)
Purdy, John S., D.S.O., M.B., C.M. 1898 (S)
Purkis, Kenneth N., M.C., M.R.C.S. 1915 (E)
Pushong, Edwin S., L.S.A. 1899 (E)
Puttana, Dodballapur S., L.R.C.P. 1912 (S)
Quicke, William J., L.S.A. 1876 (E)
Quinlan, Catharine J., M.B., B.Ch. 1914 (I)
Quirk, Francis P., L.R.C.P. 1911 (S)
Raine, Arthur R., L.S.A. 1879 (E)
Raine, George R., M.R.C.S. 1866 (E)
Raitt, Oswald, M.B., C.M. 1895 (S)
Ralston, Frederick G., M.B., Ch.B. 1899 (S)
Ralston, Robert G., M.B., C.M. 1896 (S)
Ranking, George L., L.R.C.P. 1907 (E)
Rao, Koty V. R., M.R.C.S. 1913 (E)
Rao, Srinivas Ram, L.A.H. 1912 (I)
Rasul, Sheikh G., L.R.C.P. 1912 (I)
Raubenheimer, Jan A., M.B., Ch.B. 1902 (S)
Raymond, Cuthbert, L.R.C.P. 1909 (E)
Rayner, Clifford G. J., M.R.C.S. 1918 (E)
Redahan, Thomas, L., L.M.R.C.P. 1893 (I)
Reddie, John O., M.B., C.M. 1884 (S)
Rees, David R., L.R.C.P. 1902 (S)
Rees, Rice, L.S.A. 1902 (E)
Regan, Edward, L.R.C.P. 1898 (S)
Reid, Alexander W., M.B. 1894 (S)
Reid, John, M.B. 1899 (S)
Relton, Charles D., M.B. 1905 (E)
Rendle, George, M.R.C.S. 1865 (E)
Rennie, Dennis C., M.R.C.S. 1918 (E)
Retallack, Cyrus, L.R.C.P. 1896 (S)
Reynolds, Leonard G., M.R.C.S. 1897 (E)
Richards, David H., L.R.C.P. 1905 (E)
Richards, John F. G., D.S.O., M.B., B.S. 1912 (E)
Richardson, Alfred G., M.B., C.M. 1882 (E)
Richardson, Cyril B., L.A.H. 1914 (E)
Richardson, Ernest D., L.M.S.S.A. 1910 (E)
Richardson, Sidney L., M.R.C.S. 1876 (E)
Riches, Reginald G., M.R.C.S. 1909 (E)
Riddle, Hugh H., M.B., B.C. 1901 (E)
Ridpath, David, M.D. 1865 (S)
Ridsdale, Arthur E., M.R.C.S. 1894 (E)
Rigby, Percy A., L.S.A. 1882 (E)
Rimer, Franklin E., L.S.A. 1896 (E)
Robb, Elizabeth M., M.B., B.Ch. 1914 (I)

Roberts, Annie C., M.B., Ch.B. 1918 (S)
Roberts, Edwin, M.R.C.S. 1884 (E)
Roberts, Henry W., L.S.A. 1876 (E)
Roberts, Sidney M. P., M.R.C.S. 1884 (E)
Roberts, Thomas H. F., M.R.C.S. 1904 (E)
Robertson, Edward B., M.B., C.M. 1872 (S)
Robertson, Francis D., L.R.C.P. 1886 (E)
Robertson, George O., M.B., Ch.B. 1902 (S)
Robertson, John William, L.S.A. 1899 (E)
Robertson, Michael W., M.B., Ch.B. 1901 (S)
Robertson, Thomas M., M.B., C.M. 1883 (S)
Robertson, William G., M.R.C.S. 1903 (E)
Robins, Henry, L.R.C.P. 1892 (E)
Robinson, Charles B., L.R.C.P. 1911 (S)
Robinson, Douglas A., L.R.C.P. 1895 (S)
Robinson, George, M.R.C.S. 1861 (E)
Robinson, George C., L., L.M.R.C.P. 1902 (I)
Robinson, Harry W., M.B., C.M. 1886 (S)
Robinson, Haynes S., M.R.C.S. 1861 (E)
Robinson, Henry, L., L.M.K.Q.C.P. 1883 (E)
Robinson, Samuel, L.M.S.S.A. 1918 (E)
Robinson, Willford V., M.R.C.S. 1881 (E)
Roche, Augustine K., M.B., B.Ch. 1914 (I)
Rochfort-Brown, Herbert, L.R.C.P. 1891 (E)
Rodman, George H., M.B. 1883 (E)
Rodrigues, Jose S. Da P., L.R.C.P. 1901 (E)
Rogers, William H., L.F.P.S. 1852 (I)
Rolston, George T., L.R.C.S. 1855 (E)
Roome, Henry A., M.B., C.M. 1878 (S)
Rooney, Patrick J., L., L.M.R.C.P. 1905 (I)
Rosair, Harry B., L.A.H. 1911 (I)
Rosario, Leonard G. de, L.R.C.P. 1902 (I)
Rose, Daniel A., L.R.C.P. 1891 (S)
Ross, Chisholm, M.B., C.M. 1883 (S)
Ross, Donald M., L.R.C.P. 1903 (E)
Ross, William G., M.R.C.S. 1872 (E)
Rosser, John S., M.B. 1887 (S)
Row, Tandalam M., L.R.C.P. 1906 (E)
Rowland, Edward R., L.R.C.P. 1869 (E)
Rowland, Henry A., M.B., C.M. 1892 (S)
Roy, Paresh R., L.R.C.P. 1899 (S)
Roy, Shushil K., M.B. 1901 (S)
Rukhmabai, L.R.C.P. 1894 (E)
Rupp, Karl, L.R.C.P. 1908 (E)
Russell, Robert H., F.R.C.S. 1882 (E)
Russell, Wilfred A., M.R.C.S. 1911 (E)
Russell, William, M.C., M.B., Ch.B. 1915 (I)
Russell William F., L.R.C.P. 1910 (I)
Rutherfoord, Henry T., M.D. 1885 (E)
Ryan, James D., L.K.Q.C.P. 1882 (I)
Ryan, John M., M.B., B.Ch. 1915 (I)
Ryan, John R., M.D. 1891 (I)
Ryan, Michael, L.R.C.P. 1893 (S)
Ryde, Cyril A., L.S.A. 1891 (E)
Rygate, Arthur M., L.R.C.P. 1897 (E)
Saint-Cedd, Reginald G. W., L.S.A. 1899 (E)
Samarasinha, Len P., L.R.C.P. 1917 (S)
Sampson, Arthur T., M.B., C.M. 1896 (S)
Samut, Richard P., L.S.A. 1882 (E)
Sanderson, Arthur F., L.R.C.P. 1909 (E)
Sandison, John F. W., O.B.E., M.C., M.B., Ch.B. 1914 (S)
Sansom, Eric A. L., M.R.C.S. 1914 (E)
Saunders, William H. P., L.R.C.P. 1913 (E)
Savage, John J., L.R.C.P. 1917 (E)
Sawdon, James E. M.R.C.S. 1908 (E)
Sayer, Ettie, M.B., B.S. 1899 (E)
Schuster, Norah H., M.B., Ch.B. 1918 (E)
Schwarz, Emil, M.R.C.S. 1905 (E)
Scott, Alexander, M.B., Ch.B. 1907 (S)
Scott, Charles F. T., M.B., Ch.B. 1907 (S)
Scott, David A. E., M.B., B.Ch. 1918 (I)
Scott, Frank R., L.R.C.P. 1912 (S)
Scully, Albert McC., M.D. 1880 (I)
Seah, Eng S., M.B., Ch.B. 1916 (S)
Sellers, Muriel, M.B., Ch.B. 1919 (S)
Semple, William H., M.D. 1864 (S)
Sessions, Frederick L., L.R.C.P. 1897 (E)
Sexton, Henry W., M.R.C.S. 1902 (E)
Shafeek, Ahmad, M.R.C.S. 1911 (E)
Sharman, Edward W., L.R.C.P. 1891 (S)
Sharpe, George M., L.A.H. 1900 (E)
Shaw, John C., M.R.C.S. 1888 (E)
Shaw, John P., M.C., M.R.C.S. 1914 (E)
Shaw, Robert W., M.R.C.S. 1900 (E)
Shearer, Ella S. (Mrs.), M.B. 1907 (S)
Sheedy, Michael M., L.R.C.P. 1869 (I)
Sheedy, Thomas, L.R.C.S. 1878 (E)
Sheehan, Michael, M.R.C.S. 1900 (I)
Shelmerdine, Joseph C., L.R.C.P. 1902 (S)
Shelton-Jones, Ernest, M.R.C.S. 1901 (E)
Shepherd, Charles D., M.R.C.S. 1862 (E)
Shipsey, William E., L.R.C.P. 1919 (I)
Shirgaokar, Shantaram R., M.B. 1907 (E)
Shirtliff, Edward D., L.S.A. 1888 (E)
Shore, Richard A. A., M.R.C.S. 1901 (E)
Sibree, Alice D., L.R.C.P. and S. 1901 (E)
Sieff, Basja (Miss), L.R.C.P. 1912 (I)
Silbermann, Alexander, L.A.H. 1907 (E)
Silver, Louis M., M.B. 1889 (S)
Simmonds, Ernest G., M.R.C.S. 1896 (E)
Simoens, Joseph A., L.R.C.P. 1884 (E)
Simon, John W., M.R.C.S., 1905 (E)
Simons, Charles N., L.S.A. 1881 (E)
Simpson, George A., L.S.A. 1896 (E)
Simpson, John C., M.B. 1910 (S)
Simpson, William H., M.B. 1903 (S)
Simpson, William S., M.R.C.S. 1909 (E)
Sinclair, Alexander H., M.B. 1911 (S)
Sinclair, Henry, M.D. 1881 (E)
Singer, Kildare L., M.R.C.S. 1917 (E)
Singh, Bakhshi K., M.B. 1912 (E)
Singh, Baldev, L.R.C.P. 1908 (E)
Singh, Sunder, L.S.A. 1907 (E)
Singh, Tebl, M.B. 1911 (E)
Sircar, Jyotiprokas, M.B. 1913 (S)
Sisk, Maurice, M.B. 1894 (I)
Skae, Frederick M. T., M.B. 1890 (S)
Skene, Charlotte G. (Mrs.), M.B. 1915 (E)
Skinner, John D., M.B. 1909 (S)
Skinner, William B., D.S.O., M.B. 1887 (E)
Slack, George F., M.R.C.S. 1871 (E)
Sloman, Arthur E., M.B. 1887 (S)
Smit, Hendrik C. van der Wat, M.B. 1912 (S)
Smith, Alexander C., M.B. 1893 (S)
Smith, Alfred P., M.B. 1914 (E)
Smith, Ernest B., M.B. 1879 (E)
Smith, Frances (Mrs.), A.D.M., M.B. 1899 (I)
Smith, George Pender, L.S.A. 1892 (E)
Smith, Graham, L.R.C.P. and S. 1907 (E)
Smith, Herbert, M.R.C.S. 1881 (E)
Smith, Janet S., M.B. 1918 (S)
Smith, Louise B., L.R.C.P. 1896 (S)
Smith, Philip D., M.B. 1894 (S)
Smith, Robert G., M.B. 1874 (E)
Smith, Sydney H., M.B. 1895 (S)
Smith, Wilburn, M.R.C.S. 1911 (E)
Smithwick, Gerald W., L.R.C.P. 1901 (S)
Smyly, Henry J., M.B. 1911 (I)
Smyth, Andrew, L.R.C.P. 1902 (S)
Smyth, Thomas, M.B. 1912 (I)
Soden, Wilfred S., M.R.C.S. 1913 (E)
Soderstrom, Erik D., M.B. 1916 (S)
Sodhi, Baba M. S., M.B. 1902 (E)
Somerville, John, M.B. 1888 (S)
Souter, John F., M.B. 1889 (E)
South, Frederick W. B., L.S.A. 1886 (E)
Southam, John B., M.R.C.S. 1868 (E)
Spelman, Andrew P., M.B. 1916 (I)
Spencer-Daniell, John, M.B. 1906 (S)
Spring, Douglas M., M.B. 1909 (S)
Sproule, Robert, M.B. 1902 (S)
Stack, Catharine F. M., L.R.C.P. 1901 (S)
Stacpoole, Adam R., L.R.C.P. 1883 (E)
Stainer, Edward, M.B. 1897 (E)
Stals, Albert J., M.D. 1909 (I)
Stead, Dryden, M.R.C.S. 1892 (E)
Steele, Edward E., L.R.C.P. and S. 1913 (E)
Steggall, Septimus L. J., M.R.C.S. 1892 (E)
Stegman, Daniel A., L.R.C.P. 1919 (S)
Steven, Arthur R., M.B. 1916 (S)
Stewart, Andrew, M.B. 1900 (S)
Stewart, Charles H., L.S.A. 1893 (E)
Stewart, Charles J., M.R.C.S. 1914 (E)
Stewart, Charles R., O.B.E., M.B. 1902 (E)
Stewart, Edward E., M.B. 1910 (S)
Stewart, Margaret A. H., M.B. 1916 (S)
Stewart, Roger P., M.B. 1912 (E)
Stewart, William A., M.R.C.S. 1913 (E)
Stewart, William J., M.B. 1913 (I)
Stirling, Robert A., L.R.C.P. 1881 (E)
Stock, William S. V., M.R.C.S. 1898 (E)
Stockwell, George E. St. C., B.C. 1902 (E)
Stodart, David E., M.B. 1910 (E)
Stogdon, Mildred B., M.R.C.S. 1913 (E)
Stone, John William, L.S.A. 1886 (E)
Stones, Thomas, L.R.C.P. 1871 (E)
Stoney, William W., M.B. 1893 (E)
Storey, Thomas C., M.C., M.B. 1912 (E)
Strange, Arthur, M.R.C.S. 1892 (E)
Stringer, Louis B., M.R.C.S. 1912 (E)
Strong, Robert G., L.R.C.P. 1880 (E)
Stubbs, Edward J., L.R.C.P. 1906 (S)
Studdert, John M., L.R.C.P. 1876 (I)
Sturgis-White, Russell, M.B. 1890 (E)
Stutt, Albert E., L.R.C.P. 1881 (S)
Suares, Jerome, L.R.C.P. and S. 1914 (I)
Sutcliff, Joseph H., M.R.C.S. 1854 (E)
Sutcliffe, Edward, M.R.C.S. 1907 (E)
Sutton, William H. R., B.C. 1907 (E)
Swanseger, Percy C. B., L.R.C.P. 1895 (S)
Sykes, Lilian E., L.R.C.P. and S. 1897 (E)
Symons, Herman B. T., L.S.A. 1891 (E)
Syree, Anton H., M.R.C.S. 1883 (E)
Taaffe, John F. H., L.S.A. 1883 (E)
Taaffe, Oliver G., L.R.C.P. 1884 (E)
Tabb, John F., M.R.C.S. 1879 (E)
Tahmisian, Paul B., M.R.C.S. 1896 (E)
Takaki, Kanehiro (Baron), L.R.C.P. 1878 (E)
Takaki, Kenji M.R.C.S. 1904 (E)
Takaki, Yoshihiro, M.R.C.S. 1899 (E)
Tannahill, Thomas F., M.B. 1880 (S)
Tarrant, Hugh S., M.B. 1900 (I)
Tayler, William G., M.R.C.S. 1861 (E)
Taylor, Adrian H., L.R.C.P. 1873 (I)
Taylor, Alexander J. R., M.B. 1915 (S)
Taylor, David S., L.R.C.P. and S. 1916 (E)
Taylor, Edward H., M.B. 1890 (I)
Taylor, Emma (Mrs.), L.R.C.P. 1902 (S)
Taylor, Hugh W. Y., M.B. 1919 (S)
Taylor, Rogers W. G., M.B. 1877 (I)
Taylor, William, L.R.C.P. 1909 (S)
Taylor, William A. O., M.B. 1906 (E)
Teasdall, Walter J., L.S.A. 1886 (E)
Teeger, Bernard, M.B. 1911 (I)
Teichelmann, Ebenezer, L.K.Q.C.P. 1887 (E)
Telfer, Charles, M.B. 1895 (E)
Tellet, Frederick S., L.R.C.S. 1859 (I)
Tempest, James, M.R.C.S. 1897 (E)
Tennekoon, John P. R., M.R.C.S. 1917 (E)
Thacker-Neville, William S., M.B. 1908 (I)
Thayer, Linus O., L.S.A. 1875 (E)
Thistle, William B., L.R.C.P. 1887 (E)
Thom, George, L.R.C.P. 1905 (E)
Thomas, David J., M.R.C.S. 1880 (E)
Thomas, Harold S., M.R.C.S. 1908 (E)
Thomas, Walter R., L.S.A. 1891 (E)
Thompson, Charles E., L.K.Q.C.P. 1885 (I)
Thompson, John, M.R.C.S. 1859 (E)
Thompson, Samuel G., L.R.C.P. 1882 (S)
Thomson, Malcolm E., L.R.C.S. 1884 (E)
Thomson, Thomas, L.S.A. 1880 (E)
Thornton, Philip, L.S.A. 1870 (E)
Tilleke, William G., M.R.C.S. 1919 (E)
Tilling, Harold W., M.R.C.S. 1910 (E)
Tindale, Wentworth R., M.R.C.S. 1866 (E)
Tizard, Henry J., M.R.C.S. 1890 (E)
To, Ying K., M.B. 1917 (S)
Tobit, Perry P., L.S.A. 1902 (E)
Tomlinson, William R., L.R.C.S. 1883 (I)
Toombs, Herbert G., M.R.C.S. 1894 (E)
Tooth, Frederick, M.R.C.S. 1914 (E)
Torrey, John Lawrence, M.B. 1916 (S)
Tothill, Alfred R., M.R.C.S. 1918 (E)
Trail, Alexander F., M.B. 1874 (S)
Traill, Ralph R., M.R.C.S. 1916 (E)
Tren, Herman, M.B. 1915 (S)
Trenow, Nigel A. A., L.S.A. 1890 (E)
Truman, Charles E., M.R.C.S. 1875 (E)
Turner, Charles, M.R.C.S. 1853 (E)
Twidale, Frederick W., M.B. 1896 (E)
Tyndall, John, L.R.C.S. 1866 (I)
Tyrrell, James H., L.R.C.P. 1874 (S)
Usher, Victor F., M.B. 1907 (S)
Uttley, William W., M.R.C.S. 1909 (E)
Vaillant, Mary E., L.R.C.P. 1900 (S)
Van Der Merwe, Cornelius J., M.B. 1917 (S)
Vaughan, James C., M.B. 1918 (S)
Venn, Albert J., M.B. 1873 (E)
Venugopal, Sadanala B., M.R.C.S. 1914 (E)
Vertannes, Carr A., M.R.C.S. 1896 (E)
Vickers, William H. P., M.B. 1890 (I)
Vigne, Alfred, M.B. 1890 (I)
Vijver, Gifford T. van der, M.C., M.B. 1914 (S)
Violette, William B., M.B. 1881 (E)
Visser, Andries G., M.B. 1906 (S)
Voisin, Alexander B., M.R.C.S. 1881 (E)
Von Himpe, Emilie T. V., L.S.A. 1895 (E)
Von Mengershausen, Hubert M., M.B. 1915 (E)
Von Wyss, Walter H., M.R.C.S. 1913 (E)
Wace, Cyril, M.R.C.S. 1893 (E)
Wace, Richard H., M.B. 1894 (E)
Wacher, Geoffrey, M.R.C.S. 1906 (E)
Waddell, Alexander G., M.B. 1911 (S)
Waddell, Laurence A., M.B. 1878 (S)
Waddell, Sydney, M.B. 1900 (I)
Wahby, Behdjet, M.R.C.S. 1907 (E)
Walker, Alexander, M.B. 1876 (S)
Walker, Ernest F. D., M.B. 1896 (S)
Walker, James D., M.B. 1891 (S)
Walker, John, M.R.C.S. 1902 (E)
Walker, Margaret, M.B. 1915 (S)
Walker, Robert W. S., M.R.C.S. 1907 (E)
Walker, Thomas M., M.R.C.S. 1899 (E)
Walker, Walter W., M.B. 1892 (E)
Wall, Arthur P., M.B. 1906 (S)
Wall, Hon. Frank E., M.B. 1907 (S)
Wall, James M., L.M.S.S.A. 1916 (E)
Wall, Kathleen G., L.R.C.P. 1913 (I)
Wallace, Robert F. S., M.R.C.S. 1893 (E)
Wallace, Thomas, M.B. 1918 (I)
Waller, John, M.R.C.S. 1866 (E)
Walsh, Edward, M.B. 1916 (I)
Walsh, John H., L.R.C.P. 1895 (I)
Walsh, John Joseph, L.R.C.S. 1888 (I)
Walsh, Richard F., M.B. 1916 (I)
Ward, Oswald E., M.R.C.S. 1900 (E)
Ward, Sidney H., M.R.C.S. 1909 (E)
Wareham, Harold E., M.B. 1901 (S)
Watermayer, Herbert A., M.R.C.S. 1913 (E)
Watkins, William L., L.R.C.S. 1866 (I)
Watson, Charles H., O.B.E., M.B. 1899 (S)
Watson, Isabella A., L.R.C.P. 1900 (S)
Watson, John, M.B. 1887 (E)
Watson, Samuel E., M.B. 1911 (I)
Watson, Thomas A., M.B. 1884 (S)
Watson, William S., M.B. 1908 (S)
Watt, Alexander, M.B. 1902 (S)
Watt, James, M.B. 1895 (S)
Watt, William W. W., L.R.C.P. 1912 (S)
Watts, Adeline M., L.R.C.P. 1908 (S)
Watts, Rattan C., M.B. 1917 (E)
Waugh, Robert James, M.R.C.S. 1902 (E)
Way, Frederick W., M.R.C.S. 1856 (E)
Webb, Hermann W., M.B. 1911 (S)
Webster, Frederick L., M.R.C.S. 1915 (E)
Webster, George A., M.R.C.S. 1886 (E)
Webster, Joseph H., L.R.C.P. 1872 (E)
Weddick, John, L.R.C.P. 1874 (I)
Weinman, Leonard O., L.R.C.P. 1914 (S)
Weir, Crosbie, L. Med. L.S. 1916 (I)
Welch, Frederick D., M.R.C.S. 1901 (E)
Weld, James C., L.R.C.P. and S. 1872 (I)
Welsby, Claude B., L.M.S.S.A. 1912 (E)
Welsh, William K. B., M.R.C.S. 1872 (E)
Wessels, Cornelius A., M.R.C.S. 1899 (E)
Westcott, William W., M.R.C.S. 1870 (E)
Wheat, Ernest G., M.R.C.S. 1908 (E)
Wheatley, Thomas D., M.R.C.S. 1851 (E)
Wheeler, Percy C. E. D'E., M.R.C.S. 1885 (E)
Wheeler, William A. M.D. 1889 (I)
Whish, George M., M.B. 1912 (S)
Whitaker, Roy H. R., M.R.C.S. 1901 (E)
White, Edmund L., M.B., 1914 (S)
White, Edward B. C., M.R.C.S. 1908 (E)
White, Michael, M.D. 1873 (I)
White, Walter W., L.R.C.P. 1886 (E)
Whitehead, Alfred, M.R.C.S. 1871 (E)
Whitehead, Jerry, M.B. 1909 (E)
Whitelaw, John, M.B. 1919 (S)
Whitley, George W., M.R.C.S. 1859 (E)
Whitford, William, M.D. 1878 (E)
Whitney, Willis N., M.D. 1881 (E)
Wickham, George W., L.R.C.P. 1892 (E)
Wicks, Frederick, M.R.C.S. 1870 (E)
Wigmore, Arthur W., L.R.C.P. 1887 (E)
Wilcock, Arthur G. E., L.M.S.S.A. 1915 (E)
Wilkin, Richard McK., L.R.C.P. 1900 (I)
Wilkins, John C., M.R.C.S. 1865 (E)
Wilkinson, John H., M.R.C.S. 1911 (E)
Williams, Arthur J., L.R.C.P. 1895 (S)

Williams, David E., L.R.C.P. 1892 (I)
Williams, David P., M.R.C.S. 1909 (E)
Williams, Edward J., L.R.C.P. 1886 (I)
Williams, Gomer, M.B. 1913 (S)
Williams, Howell M., M.R.C.S. 1908 (E)
Williams, James A., M.B. 1915 (S)
Williams, James T., M.B. 1897 (S)
Williams, John E., M.R.C.S. 1850 (E)
Williams, Josiah, L.R.C.S. 1878 (E)
Williams, Neville, M.R.C.S. 1875 (E)
Williamson, Gladys R. M. V., M.B. 1916 (S)
Williamson, Wilson T., M.R.C.S. 1906 (E)
Willmore, James G., M.R.C.S. 1906 (E)
Wilson, Colin, M.B. 1914 (E)
Wilson, Frederic E., M.B. 1901 (S)
Wilson, Geoffrey P., M.R.C.S. 1902 (E)
Wilson, Gwendolen J. E., M.B. 1918 (S)
Wilson, Harry M., B.C. 1904 (E)
Wilson, James A. K., L.R.C.P. 1887 (S)
Wilson, John H., L.S.A. 1898 (E)
Wilson, John S., M.R.C.S. 1873 (E)
Wilson, Robert Archibald, M.D. 1873 (S)
Wilson, Thomas, L.S.A. 1882 (E)
Wilson, Thomas, M.B. 1902 (E)
Wilson, William J., M.B. 1898 (I)
Wilson, William T., M.R.C.S. 1873 (E)
Windsor-Aubrey, Henry W., M.R.C.S. 1885 (E)
Wiseman, John G., M.R.C.S. 1867 (E)
Wolfe, Robert L., L.S.A. 1887 (E)
Wollaston, Alexander F. R., M.R.C.S. 1903 (E)
Woo, Arthur W., M.R.C.S. 1913 (E)
Woo, (Ng) Tin P., M.B. 1915 (E)
Wood, Francis H., L.R.C.P. 1876 (S)
Wood, George E. C., M.B. 1885 (S)
Wood, William B. H., M.R.C.S. 1897 (E)
Woods, Eric A., M.R.C.S. 1918 (E)
Woods, Francis H., M.R.C.S. 1859 (E)
Woods, John R. L., M.R.C.S. 1902 (E)
Woods, Leonard H., M.R.C.S. 1917 (E)
Woodward, Ernest A., M.B. 1888 (S)
Woodward, Martin, M.R.C.S. 1858 (E)
Woodward, William, M.R.C.S. 1887 (E)
Woolf, Montague S., M.R.C.S. 1914 (E)
Woollard, Charles, M.R.C.S. 1910 (E)
Woolmer, Shirley L., L.S.A. 1894 (E)
Wordsworth, William J., M.R.C.S. 1886 (E)
Woudberg, Peter C., M.B. 1914 (S)
Wreford, John, M.R.C.S. 1887 (E)
Wright, George, L.R.C.P. 1890 (S)
Wright, John W., L.R.C.P. 1879 (E)
Wright, Martensz J., M.B. 1882 (S)
Wright, Thomas N., L.R.C.P. and S. 1884 (I)
Wright, Walter S., L.S.A. 1891 (E)
Wrigley, Frederick H., L.A.H. 1876 (E)
Wyer, John F. W., M.R.C.S. 1914 (E)
Yates, George D., M.B. 1914 (S)
Young, Andrew, L.R.C.P. 1902 (S)
Young, Ernest W. G., O.B.E., M.C., M.B. 1910 (E)
Young, Francis B., M.B. 1906 (E)
Younger, Isabella H., M.B. 1914 (S)

COLONIAL LIST.

Ainley, William E., M.D. 1904
Allison, Gerald, M.B. 1915
Ardill, Katie, M.B. 1913
Armitage, Charles H., M.B. 1915
Baillie, Samuel A., M.D. 1902
Ball, Stanley S., M.B. 1915
Balsara, Maneckji N., L.M.S. 1906
Banker, Shiavux S., L.R.C.P. 1912
Barton, Oswald, M.B. 1914
Bastedo, Albert F., M.B. 1914
Beaton, John, M.D. 1912
Beaton, Wesley G., M.D. 1919
Bernard, Samuel D., L.M.S.N.Scotia P.M.Bd. 1917
Bhat, Sadashiv, V., L.M.S. 1910
Bhivandivala, Peshotan D., L.M.S. 1910
Birch, John B., M.B. 1915
Birnie, George A., M.C., M.B. 1914
Blair, James H., M.B. 1916
Blakeley, Thomas N., M.D. 1915
Bobart, Albert, M.B. 1889
Boulton, Nigel P., M.B. 1912
Bradley, Clement H. B., M.B. 1907
Brandon, John V., M.D. 1915
Brown, Edmund E., M.B. 1910
Brown, John Ebenezer K., M.B. 1912
Buchanan, James H., M.D. 1914
Burden, Frederick W., L.M.S.Nfd.M.Bd. 1914
Burke, Michael C., M.D. 1915
Burns, Harold S., M.B. 1907
Burrows, Frederick L., M.D. 1914
Cameron, Wyman A., L.M.S.N.Scotia P.M.Bd. 1915
Camilleri, Victor, M.D. 1913
Campbell, Edgar A., M.D. 1916
Canteenvalla, Jehangir P., L.M.S. 1913
Chak, Chin H., M.B. 1914
Champion de Crespigny, Constantine T., M.B. 1903
Chattopadhya Shyama P., L.M.S. 1909
Cohen, Benjamin, M.B. 1918
Cohen, Rachel, M.B. 1897
Colquhoun, Keith G., M.B. 1903
Commissariat, Sherin H. (Miss), F.R.C.S. 1904
Cotton, George R. C., M.B. 1907
Coutts, Eldon D., M.B. 1915
Croom, Stuart P., M.B. 1909
Daniel, Charles J., M.B. 1903
Dark, Eric P., M.C., M.B. 1914
Da Silva, Augustin P., L.M.S. 1919
David, William E., M.B. 1913
De, Benjamin L. J., M.B. 1914
De, Rai B. C., M.L.M.S. 1895
Dew, Harold Robert, M.B. 1914
D'Mello, John F., L.M.S. 1899
Dolman, Henry, M.B. 1916
Donovan, Charles O. G., D.S.O., M.B. 1915
Douglas, Leon A., M.C.P. and S. 1910
Dowd, William R., M.C.P. and S. 1918
Dyas, Alexander D., L.M.S., N. B.Co. P.and S. 1913
Eastwood, Francis H., M.B. 1881
Edwards, William A., M.B. 1914
Elliot, Hugh A., M.C.P.and S. 1916
Ewing, Thomas, M.B. 1909
Fairley, Neil H., M.B. 1915
Farrar, John W., O.B.E., M.B. 1914
Ferguson, Norman H., M.C.P.and S. 1902
Fetherstonhaugh, Trevor G., M.B. 1915
Finlay, Donald F., M.B. 1914
Flecker, Hugo, M.B. 1908
Foster, Bryan, M.B. 1904
Fowler, Cosmo W., M.B. 1913
Gaina, Nariman J., M.B. 1912
Gallagher, Michael J., M.B. 1913
Giblin, William E., M.B. 1908
Gibson, Harold R., M.B. 1916
Ginsburg, Bernard J., M.D. 1917
Godinho, Louis G., L.M.S. 1889
Gower, George W., M.B. 1910
Graham, Malcolm R., M.B. 1903
Grant, William J., L.M.S., M.Co., P.E.I. 1915
Gregg, Norman McA., M.B. 1915
Gupta, Syama P., L.M.S. 1909
Guymer, Arthur H., M.B. 1915
Halloran, Garnet R., M.B. 1912
Hamilton-Browne, Elizabeth I., M.B. 1909
Hardstaff, Roy J., M.B. 1916
Harris, William H., M.B. 1897
Harvey, Francis R., M.B. 1910
Haslett, Selwyn L., M.B. 1915
Herdman, William W., M.D. 1911
Hesterlow, Alfred J., L.M.S. 1885
Hingorani, Gianchand T., M.B. 1913
Hodge, William R., M.B. 1915
Hotop, Francis R., M.B. 1903
Humphreys, Stanley E., M.B. 1914
Hunter, Thomas V., L.M.S.N.B.Co.P.and S. 1906
Hyett, Harold R., M.B. 1916
Illesinghe, Richard De S., L.M.S. 1900
Jagger, Thomas R., M.B. 1915
Jamieson, James I. M., M.B. 1914
Jenkins, James A., M.B. 1917
Jhirad, Jerusha J. (Miss), L.M.S. 1913
Jinadasa, M., L.M.S. 1895
Jones, Edmund Britten, M.B. 1910
Keane, Francis E., M.C., M.B. 1910
Kennedy, Basil C., M.B. 1913
Krolik, Melville, L.M.S.N. Scotia P.M.Bd. 1915
Lal, Kananji, L.M.S. 1898
Lambert, Joseph G., M.D. 1914
Langham, John D., M.D. 1916
Lawrence, Arthur P., M.C., M.B. 1916
Leary, Edgar J., M.B. 1912
Leonard, (Mrs.) Elsie F., M.B. 1908
Lloyd, Charles H., M.C., M.B. 1914
Lobo, John F., L.M.S. 1910
MacCallum, Arthur J., M.B. 1916
McCarthy, Francis J., M.B. 1914
MacDonald, William F., M.D. 1900
McInnes, John S., M.D. 1916
McIntyre, Edward L., M.B. 1911
Mackasey, William P., M.D. 1914
McKay, Daniel A., L.M.S. 1906
MacKinnon, Albert H., M.D. 1913
MacLaren, Peter S., M.C.P.and S. 1896
MacLean, Jean A., M.D. 1914
MacLeod, Donald A., M.D. 1911
McShane, Cletus, M.B. 1909
Magarey, Archibald C., M.B. 1907
Marshall, Thomas E., M.B. 1916
Martin, Colin H., M.B. 1915
Masters, Francis H., M.B. 1897
Mendelsohn, Harris, M.C., M.B. 1916
Menezes, Laetitia L., L.M.S. 1908
Middleton, John J., M.B. 1912
Mitchell, Henry K., M.B. 1915
Mody, Lovji S., L.M.S. 1908
Mollison, Arthur J., M.B. 1912
Moolan Feroze, Gehangir K., M.B. 1914
Morgan, Edward A., M.B. 1909
Morgan, Vincent H., M.D. 1887
Mozoomda, Bidham P., L.M.S. 1911
Naylor, Arthur H., M.B. 1916
Newell, John A., M.B. 1891
Nixon, Albert C., M.C.P.and S. 1915
Nye, Leslie J. J., M.B. 1914
O'Dwyer, Patrick J., M.D. 1916
Old, George G., M.B. 1909
Ormiston, Martha I., M.B. 1907
Orok, William F., M.C.P. and S. 1916
Osborne, John K., M.B. 1903
O'Shea, Joseph P., M.C.P. and S. 1911
Padmanabhan, P., L.M.S. 1890
Pant, Pitambar, L.M.S. 1905
Paquin, Rene P., M.D. 1918
Parker, Thomas E., M.B. 1910
Patel, Khusroo K., L.M.S. 1912
Paterson, Murray H., M.C., M.B. 1914
Pellew, Leonard J., M.B. 1906
Petrie, George A., M.D. 1915
Pilot, Frederick W. H., M.D. 1904
Playford, Thomas G., M.C., M.D. 1917
Pogue, Osman A., M.B. 1908
Postwalla, Rustam M., M.B. 1914
Ray, William, M.B. 1906
Richards, Russell W., M.B. 1915
Roberts, Alan T., M.B. 1914
Robinson, Matthew E., M.B. 1909
Rommel, Ernest, M.C.P.and S. 1913
Roseby, Edmund R., M.B. 1900
Row, Narsing, M.B. 1909
Roy, Raghu N., L.M.S. 1909
Rutherford, Constance M., M.B. 1908
Sa, Ma S., L.M.S. 1912
Salter, Alexander G., M.B. 1895
Sanzgiri, Vasant R., M.B. 1916
Sapsford, Clinton P., M.B. 1905
Saunders, John H., M.B. 1889
Savory, Philip M. H., L.M.S.N. Scotia P.M. Bd. 1919
Scantlebury, Vera (Miss), M.B. 1914
Scott, Malcolm L., M.B. 1904
Scribner, John F., M.D. 1911
Seifert, Frederick W., M.D. 1905
Sherwin, John A. H., M.B. 1908
Sidin, Pandak A. A., L.M.S. 1916
Sinclair, James W., M.B. 1918
Sinha, Kamal K., M.B. 1918
Sloane, John G. M., M.B. 1895
Smith, Gerald K., M.B. 1918
Smith, Harry R., M.B. 1915
Smith, Hilton C. G., M.B. 1908
Smith, William W., M.B. 1912
Soares, Alexander D., M.B. 1918
Stawell, Richard R., M.D. 1887
Stephen, Edgar H. M., M.B. 1912
Stephens, Frederick G. N., M.B. 1903
Stewart, Floyd C., M.D. 1914
Surti, Sorabji B., L.M.S. 1907
Surveyor, Nusservanji F., L.M.S. 1890
Sutherland George R., M.D. 1897
Sutton, George, M.B. 1904
Tait, Henry C., M.B.E., M.B. 1910
Takahashi, Yasuo
Teoh, Cheng T., M.B. 1915
Thakor, Manjulal J., L.M.S. 1907
Thompson, Allen E., D.S.O., M.C., M.D. 1913
Thomson, Jack M., M.B. 1903
Thumboo, Adolphus J., L.M.S. 1910
Tillekeratne, Charles J., L.M.S. 1895
Tucker, Clifton E., M.B. 1912
Uren, Cecil, M.B. 1915
Vakil, Surjor P., M.B. 1919
Verge, Arthur, M.B. 1905
Verge, Cuthbert A., M.B. 1910
Wadia, Sheriar R., M.B. 1916
Waine, Jack G., M.B. 1914
Wallace, Norman C., M.B. 1895
Wark, David R., M.D. 1914
Weld, Elizabeth E., M.B. 1901
Wettenhall, Roland R., M.B. 1906
Whelpley, Ernest H., M.D. 1916
White, Samuel G., M.C.P. and S. 1913
Whyte, John J., M.D. 1889
Wilkin, James T. W., M.B. 1906
Willcocks, George C., M.B. 1913
Williams, Gerald S., M.D. 1913
Williams, William E., L.M.S.M.Co., P.E.I. 1915
Willoughby, John R., M.B. 1916
Wilson, Ivan S., M.C., M.B. 1907
Woodburn, James J., M.B. 1909
Writer, Jamsetji H., L.M.S. 1907
Wylie, Hugh A., M.B. 1915
Young, Hugh M., M.C.P. and S. 1913

FOREIGN LIST.

Abrassart, Maurice A., M.D. 1904
Allo, Gustave, M.D. 1892
Bury, Lucien N. J. J., M.D. 1901
Bussens, Jules, M.D. 1908
Cook, Edward, M.D. 1904
Cools, Henri, M.D. 1899
Crousse, Rene, M.D. 1912
Decaestecker, Jules, M.D. 1913
De Castro, Antonio, M.D. 1909
Deckx, Henry M., M.D. 1899
De Gheldere, Charles, M.D. 1898
De Groodt, Arthur, M.D. 1910
De Lacy, Georges, M.D. 1899
De Nobele, Jules, M.D. 1891
Di Geronimo, Giuseppe, M.D. 1901
Faraci, Giuseppe, M.D. 1889
Gardini, Luigi, M.D. 1900
Garetti, Giulio, M.D. 1896
Hamanaka, Kotaro, M.B. 1904
Harada, Yakuo, M.B. 1909
Houtsaeger, Camille, M.D. 1900
Janssens, Alphonse, M.D. 1909
Javitz, Leon, M.D. 1912
Laenan, Jan M., M.D. 1889
Lagrange, Jules, M.D. 1886
Le Docte, Joseph, M.D. 1909
Masschelein, Fernand, M.D. 1908
Mertens, Jules, M.D. 1901
Morishima, Kanichiro, M.B. 1911
Mostaert, Georges, M.D. 1890
Mourne, Fernand, M.D. 1912
Oiye, Takeo, M.B. 1908
Pollart, Achille, M.D. 1901
Restaldi, Vittorio, M.D. 1899
Rossi, Gaetano, M.D. 1900
Sakurai, Fumio, M.B. 1912
Sala, Robert, M.D. 1914
Saporiti, Giuseppe M., M.D. 1895
Suzuki, Tadashi, M.B. 1908
Takahashi, Yasuo, M.B. 1909
Tombeur, François J., M.D. 1912
Tsukano, Toyojiro, M.B. 1908
Van den Dungen, Eugene G., M.D. 1898
Verese, Edoardo, M.D. 1904
Verheyden, Englebert, M.D. 1905
Vincke, Georges, M.D. 1904
Vogel, Heinrich, M.D. 1910
Vrebos, Amaury, M.D. 1900

INSURANCE.

FRIENDLY SOCIETIES AND THE PROVIDENT HOSPITAL SCHEME.

At the National Conference of Friendly Societies held last week at Bournemouth a motion was submitted that the Conference should approach the Ministry of Health for the purpose of urging the necessity of establishing a national medical service. Mr. Gillingham, of the United Patriots' Benefit Society, spoke of the heavy demands on the friendly societies due to the period of unemployment. During the coming winter, he said, they would be hard hit unless the State took a greater share in rendering medical aid. Mr. Hudson, of the Ancient Order of Foresters, said there were certain members of the medical profession who were not satisfied with the present services, and had expressed this in a report to the Government. He referred, presumably, to the report of the Medical Consultative Council. He urged the Conference to support that report and "to get a real live medical service instead of the 'tinpot' affair they had now."

An amendment to the motion was proposed by Mr. Westcott, of the Hearts of Oak, to refer the question back to the Committee in view of the National Provident Scheme for Hospitals and Additional Medical Services, submitted to the Conference by Dr. J. F. Gordon Dill, who attended by invitation and explained the proposals. The amendment was seconded by Mr. Palmer, of the Hearts of Oak, who said he was not in favour of Government medical officers or their system, and declared that the panel system was bad enough without having it extended. The amendment was adopted by the Conference.

It will be recalled that the National Provident Scheme for hospital and additional medical services is based upon the Sussex scheme, of which an account first appeared in the British Medical Journal of January 22nd, 1921, p. 129. Its aim is to offer to those who come within certain prescribed limits of income, as well as to all those insured under the National Insurance Acts, the higher resources of medicine free of charge beyond payment of their annual subscriptions. As announced in the Journal of July 9th, 1921, p. 53, three of the large metropolitan teaching hospitals—the London Hospital, St. Thomas's Hospital, and the Royal Free Hospital—have offered their services to members of the National Provident Scheme, which will come into operation in London on November 1st next.

The Organizing and Executive Committee of the London scheme consists of Sir Arthur Stanley, Lord Dawson of Penn, Sir Alan Anderson, Mr. McAdam Eccles, and Dr. J. F. Gordon Dill (Honorary Secretary). An explanatory leaflet giving particulars of the scheme in London may be obtained from the Honorary Secretary, 77, Cambridge Terrace, Paddington, W.2. The facilities are intended to include arrangements for consultation, nursing and dental services, laboratory and *x* ray examination, massage, electrical and radium treatment, in-patient hospital treatment, and ambulance transport. The main objects of the scheme are twofold: to afford those in receipt of small but regular incomes a means of providing during health for the expense of illness, and to contribute towards a solution of the financial problem of the London hospitals.

MIDDLESEX PANEL COMMITTEE.

The Middlesex Panel Committee met on September 8th. Dr. H. B. Brackenbury, who has been again unanimously elected chairman, presided. At a previous meeting Drs. R. L. Ridge and J. L. Timmins were respectively appointed vice-chairman and treasurer. Dr. Brackenbury was nominated as a candidate for the representation of Group K on the Insurance Acts Committee. Drs. Brackenbury and C. F. T. Scott were appointed the Committee's representatives to the Conference of Panel Committees. The Committee expressed its general approval of the alterations in the Amended Tuberculosis Regulations which the London Panel Committee has recommended in its report. The Chairman called attention to the great inconvenience arising from delay in the transmission of record cards by practitioners from whose list insured persons have been transferred to that of another practitioner; and it was resolved that the attention of practitioners in the county should be directed to the importance of promptly transmitting record cards.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following notifications are announced by the Admiralty: Surgeon Commanders G. D. Walsh to the *Defiance*, C. H. Dawe to the *President*, additional for four months' hospital course, T. W. Jeffery, O.B.E., to the *Birmingham*, R. Thompson to the *Egmont*, A. R. Fisher to the *Colossus* on commissioning. Surgeon Lieut.-Commanders C. F. O. Sankey to the *Hornebell*, W. F. Beattie to the *Cyrus*, A. E. Malone to the *Kellett* (temporary), A. R. Sharrod to the *Collingwood* on commissioning. Surgeon Lieutenants M. Brown to the *Mutine*, J. F. Haynes to the *Warwick*.

Surgeon Commander W. S. H. Sequeira is placed on the retired list at his own request, with the rank of Surgeon Captain.

Surgeon Lieut.-Commander W. C. Carson has been promoted to the rank of Surgeon Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

To be Colonels Commandant: Lieut.-General Sir Alfred Keogh, G.C.B., G.C.V.O., C.H. (honorary Colonel R.A.M.C., T.F.), ret. pay; Lieut.-General Sir A. T. Sloggett, K.C.B., K.C.M.G., K.C.V.O., ret. pay; Major-General Sir T. J. Gallwey, K.C.M.G., C.B., ret. pay; Surgeon-General (ranking as Major-General) Sir F. W. Trevor, K.C.S.I., C.B., ret. pay.

Temporary Lieut.-Colonel A. Simpson, C.B.E., relinquishes his commission and retains the rank of Lieut.-Colonel.

Major W. R. O'Farrell to be temporary Lieut.-Colonel whilst specially employed as A.D. of P.

Major A. G. Cummins, M.C., retires on retired pay.

Temporary Major J. J. Abraham, D.S.O., relinquishes the acting rank of Lieut.-Colonel, March 7th, 1919 (substituted for notification in the *London Gazette*, May 27th, 1920).

Captain A. R. F. Clarke, M.C., is seconded for service with the Egyptian Army.

Captain W. H. Dye is seconded for service under the Colonial Office.

Captain D. T. M. Large to be temporary Major whilst specially employed as D.A.D. of P.

Captain J. A. W. Ebden, from Reserve of Officers, R.A.M.C., to be Captain, with seniority March 17th, 1918, and precedence next below E. E. Holden.

The following Lieutenants (temporary Captains) to be Captains: W. O. Holst, D. F. Panton, L. C. Goument, C. P. Chambers, G. E. MacAlevey, M.C.

The following temporary Captains relinquish their commissions and retain the rank of Captain: R. T. G. Aickin, N. W. Furey.

J. M. Semple to be temporary Lieutenant.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain J. C. Hall to be Major.

The following Captains relinquish their commissions and retain the rank of Captain: G. R. Hubbard, C. G. J. Rayner, I. H. Zortman.

INDIAN MEDICAL SERVICE.

Lieut.-Colonel R. W. Knox, an Agency Surgeon, has been granted privilege leave for five months and twenty-seven days, with effect from July 8th.

The services of Major J. A. Cruickshank, of the Bacteriological Department, have been placed at the disposal of the Government of Madras for employment as Assistant Director, King Institute, Guindy.

Major D. Heron, C.I.E., has been appointed as Agency Surgeon at Meshed and *ex officio* Assistant to His Britannic Majesty's Consul-General and Agent to the Government of India in Khorasan, with effect from July 16th.

Lieut.-Colonel J. C. H. Leicester, Professor of Midwifery, Medical College, Calcutta, and Obstetric Physician and Surgeon to the College Hospitals, has been granted, with effect from March 15th, combined leave for sixteen months and ten days.

Major F. W. Cragg, M.D., Assistant Director, Central Research Institute, Kasauli, has been appointed to officiate as Director of the Institute, with effect from July 14th, during the absence on deputation of Lieut.-Colonel W. F. Harvey, M.A., M.B., D.P.H.

Captains to be Majors: R. D. MacGregor, M.C. (Brevet Major), P. K. Gilroy, E. W. O. Gorman Kirwan (July 29th), A. M. Dick (Brevet Major), M. J. Holgate, O.B.E., T. L. Bomford, G. R. Lynn, D.S.O., L. H. L. Mackenzie (Brevet Major), W. A. M. Jack, K. S. Thakur, M. A. Rahman (Brevet Major), E. H. V. Hodge, H. R. B. Gibson (Brevet Major), M. A. Nicholson.

Lieutenants to be Captains: C. Burnham, R. C. Phelps, J. J. Rooney, P. H. S. Smith (February 19th).

Lieut.-Colonel N. E. H. Scott, C.I.E., has been permitted to retire from the service, with effect from June 27th.

Major J. B. Lapsley, M.C., has been appointed to be Officer-in-Charge, Medical Store Dépôt, Lahore Cantonment, with effect from June 28th.

Major H. Hallilay has been granted furlough on average salary for the period from May 11th to June 12th, 1921, both days inclusive.

Major T. C. Boyd has been appointed to officiate as Chemical Examiner, Bengal, and Professor of Chemistry, Medical College, Calcutta, with effect from the date on which he assumes charge of his duties.

The services of Major D. H. Rai, M.C., have been placed temporarily at the disposal of the Government of the Punjab, with effect from the date on which he assumes charge of his duties.

The services of Major M. A. Rahman have been placed at the disposal of the Government of the United Provinces.

The Viceroy and Governor-General has appointed Lieut.-Colonel C. H. Bowle-Evans, C.M.G., C.B.E., to be honorary surgeon on His Excellency's Personal Staff, with effect from May 7th.

The King has approved the retirement of Major C. G. Seymour (June 6th) and Major W. S. McGillivray (May 25th).

Major R. H. Lee has been appointed to hold visiting medical charge of the office of the Agency Surgeon, Eastern Rajputana States, in addition to his duties as Agency Surgeon, Kotah and Jhalawar, with effect from July 11th.

The following officiating Agency Surgeons under the Foreign and Political Department have been confirmed as Agency Surgeons: Major H. W. Pierpoint (October 15th, 1918), Major D. Heron, C.I.E. (April 2nd, 1919). Major J. Husband (September 8th, 1919), Major A. N. Dickson, M.C. (November 26th, 1919).

Lieut.-Colonel W. D. H. Stevenson, C.I.E., Assistant Director-General, Indian Medical Service, has been granted leave for eight months, with effect from October 20th.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Majors A. Bird, T.D., and G. R. Livingston, T.D., having attained the age limit, are retired, and retain the rank of Major, with permission to wear the prescribed uniform.

Majors F. Gracie, O.B.E., T.D., and A. B. Sloan resign their commissions and retain the rank of Major, with permission to wear the prescribed uniform.

The following officers resign their commissions and retain their rank: Major W. J. Mackinnon, T.D., Captains E. N. Thomson, W. Cullen, D. Campbell, M.C., E. McM. Dunlop, M.C., and D. Dickie.

Captain S. McNaughton (late R.A.M.C.) to be Lieutenant, with precedence as from February 22nd, 1916, and relinquishes the rank of Captain.

Lieutenant D. C. Graham to be Captain.

Second Lieutenant Alfred Pain (late Tank Corps) to be Lieutenant.

TERRITORIAL FORCE RESERVE.

ARMY MEDICAL SERVICE.

Colonel J. A. Jones, K.H.S., V.D., having attained the age limit, is retired and retains the rank of Colonel, with permission to wear the prescribed uniform.

ROYAL ARMY MEDICAL CORPS.

To be Major: Major N. C. Smith, M.C. (late T.F. Res.).

DEFENCE FORCE.

ARMY MEDICAL SERVICE. ROYAL ARMY MEDICAL CORPS.

To be Temporary Captain: B. C. Haller, from April 18th to July 12th, 1921.

The following officers relinquish their commissions:

Temporary Colonels E. P. Connolly, F. H. Westmacott, C.B.E., T.D., D. Rorie, D.S.O.

Temporary Lieutenant-Colonels, and retain the rank of Lieutenant-Colonel: A. S. K. Anderson, D.S.O., M.C. (1st Highland Field Ambulance), J. W. Tocher (2nd Highland Field Ambulance).

Temporary Lieut.-Colonels T. B. Wolstenholme, O.B.E. (1st East Lancashire Field Ambulance), F. A. E. Crew (3rd Lowland Field Ambulance), J. Miller, D.S.O., M.C. (3rd North Midland Field Ambulance), P. Paget, E. Alderson, D.S.O. (3rd Wessex Field Ambulance), G. C. E. Simpson, O.B.E. (2nd West Lancashire Field Ambulance), E. S. Forde (1st Lowland Field Ambulance), A. Cary, T.D. (1st Wessex Field Ambulance), E. A. Houchin (1st Home Counties Field Ambulance), C. O. Parsons (2nd Welsh Field Ambulance), T. Donovan, T.D. (1st Welsh Field Ambulance).

Temporary Majors and retain the rank of Major: F. W. Poole (2nd East Anglian Field Ambulance), N. S. Tirard (1st North Midland Field Ambulance), F. M. Rorie (1st Highland Field Ambulance), W. W. Newton (2nd South Midland Field Ambulance).

Temporary Majors: F. W. Squair, T.D., L. R. Colledge, E. F. Skinner (3rd West Riding Field Ambulance), D. S. A. O'Keefe (3rd South Midland Field Ambulance), J. M. Cowan, C.B.E., C. H. Welch (4th London Field Ambulance), R. A. Beaver, O.B.E. (1st Welsh Field Ambulance), O. Teichman, D.S.O., M.C., L. A. Avery, D.S.O., T.D., W. S. Forbes (1st East Anglian Field Ambulance), A. J. D. Riddett (3rd West Lancashire Field Ambulance), T. H. Richmond, O.B.E. (3rd Lowland Field Ambulance), T. R. Kenworthy, M.C. (2nd West Riding Field Ambulance), G. B. Robinson, S. S. Greaves, D.S.O., M.C. (on ceasing to be specially employed), A. Walker, D.S.O., J. W. Littlejohn, M.C.

Temporary Captains and retain the rank of Captain: A. C. Barker (3rd Northumbrian Field Ambulance), H. G. Greaves, H. M. Gilmour (1st East Anglian Field Ambulance), A. D. Gardner (1st South Midland Field Ambulance), W. S. Sykes (1st West Riding Field Ambulance), N. C. Cooper (2nd South Midland Field Ambulance).

Temporary Captains: F. C. Pridham, D. R. E. Roberts, and W. M. Wilson (2nd Northumbrian Field Ambulance), F. J. Morris, M.C., E. H. Bingley and J. O. Thomas (6th London Field Ambulance), A. M. Johnson, M.C., H. V. Walsh, and S. Slade (1st East Anglian Field Ambulance), H. C. Sands (1st London Divisional Sanitary Section), C. H. Comerford, D. C. Maclachlan, V. T. W. Eagles, M.C., R. A. Stark, M.C., and R. E. Pleasance (3rd West Riding Field Ambulance), B. E. A. Batt, J. K. Rennie, M.C. (1st Lowland Field Ambulance), J. F. C. Haslam (2nd Lowland Field Ambulance), A. A. Roberts (1st West Riding Field Ambulance), H. Brian-Pearson (2nd London Divisional Sanitary Section), C. G. Lambie, M.C., and J. A. L. Loudon (3rd Lowland Field Ambulance), A. E. Knapp (3rd Wessex Field Ambulance), H. L. Robinson (49th West Riding Divisional Sanitary Section), C. H. Carlton (3rd London Field Ambulance), A. G. Williams, G. F. Hardy, M.C., S. J. Clegg, O.B.E., J. Morham, J. Marshall, K. Pretty, H. G. L. Allford, J. D. G. Stewart, H. H. Back, W. J. Harrison, J. G. B. Coleman, A. Morris.

Temporary Lieutenants and retain the rank of Lieutenant: I. S. Thomson, G. M. Gray and G. Burnett (1st Highland Field Ambulance), J. R. K. Fenning (5th London Field Ambulance), H. Reid (2nd West Lancashire Field Ambulance).

Temporary Lieutenants G. Eager, C. C. Coghlan (4th London Field Ambulance).

2nd (Home Counties) Field Ambulance.—Temporary Lieut.-Colonel G. A. Blake (Captain and Brevet Major R.A.M.C.) relinquishes his temporary rank.

4th (Home Counties) Sanitary Section. The notification regarding S. W. Hoyland in the *Gazette* of May 25th, 1921, is cancelled.

1st (West Lancashire) Field Ambulance. Temporary Major R. R. Thompson, M.C. (Captain R.A.M.C.), relinquishes his temporary rank.

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE. *Section of Surgery, Subsection of Orthopaedics:* Tues., 5 p.m., Cases. *Section of History of Medicine:* Wed., 5 p.m., Statement by the President (Dr. Singer) regarding the Third International Congress of the History of Medicine to be held in London in 1922; approval of invitation extended to the Congress; election of Executive Committee, etc.; all those interested in the matter, whether Fellows of the Society or not, are cordially invited to attend. *Section of Obstetrics and Gynaecology.* Thurs., 8 p.m., Specimens. Short Communications:—Drs. Harris and McCurrich: Case of Haematoma of the Vulva following Labour; Dr. Robert A. Hendry (Liverpool): Case of Prolonged Gestation. Paper, Dr. Frank A. Nyulasy: Polypoid Decidual Endometritis.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.2. Thurs., 6 p.m., Chesterfield Lecture by Dr. W. Griffith: Elementary Lesions of Skin Diseases.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.1. Thurs., 4 p.m., Dr. Thursfield: Types of Meningitis.

MANCHESTER ROYAL INFIRMARY. Tues., 4.30 p.m., Mr. J. W. Smith: Duodenal Atony.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—*Special Course.* Daily, 10.30 a.m. and 11.45 a.m., Demonstrations of Clinical and Laboratory Methods; 2 p.m., Demonstration of Groups of Cases; 3 p.m., General Hospital Work. 4.30 p.m., Clinical Lectures (free to medical practitioners): Mon., Lieut.-Col. W. Byam: The Invalid from the Tropics; Tues., Dr. A. Giles: Sterility; Wed., Mr. H. D. Gillies: Plastic Surgery in Civil Cases; Thurs., Sir William Willcox: Diabetes; Fri., Clinical Consultations on Obscure Cases. Full syllabus of course printed in *Bulletin* of Fellowship of Medicine.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Visit of Post-Graduates to Wards; 2 p.m., In- and Out-patient Clinics and Operations.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).

EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).

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SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

4 Tues. Edinburgh Branch, South-Eastern Counties Division: Railway Hotel, Newtown St. Boswells, 3.30 p.m.

5 Wed. London: **Council**, 10 a.m.

6 Thurs. Maidstone Division, Kent County Ophthalmic Hospital, 3.30 p.m.

20 Thurs. London: Annual Conference of Representatives of Local Medical and Panel Committees, Wesleyan Central Hall, Westminster, London, S.W., 10 a.m.

APPOINTMENTS.

GLASGOW ROYAL MATERNITY AND WOMEN'S HOSPITAL.—*House-Surgeons: Indoor*, Dr. Margaret Bennett and Dr. John Donald; *Outdoor*, Dr. Jessie B. Maclachlan and Dr. Oswald F. Lamb.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is **9s.**, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTH.

CHILLINGWORTH.—At 21, St. Cuthbert's Street, Bedford, on September 20th, 1921, the wife of Andrew J. Chillingworth, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGE.

HERAPATH—BRACEY.—On September 21st, at St. Nicholas Church, Great Yarmouth, Charles Edward Kynaston Herapath, M.C., M.D., of "Ormlie," Clifton Down Road, Bristol, to Phyllis Gertrude, eldest daughter of H. J. Bracey, 29, Marine Parade, Great Yarmouth.

DEATHS.

FELIX JONES.—On September 20th, 1921, at Guy's Hospital, London, following an operation, Ada Louisa, the beloved wife of Dr. Felix-Jones, Llanfyllin.

LOXTON.—On September 20th, at Budleigh Salterton, Devon, Arthur Loxton, M.B., Ch.B., F.R.C.S.Edin., Senior Surgeon to the Birmingham Skin and Urinary Hospital, of Oxford Road, Moseley, and Cornwall Street, Birmingham, the dearly loved husband of Kathleen Loxton. Heart failure while bathing.

STEDMAN.—On 21st September, at Fulwood Road, Sheffield, Thomas Bernard Stedman, M.D.Lond., M.R.C.S., L.R.C.P.Lond., D.P.H. Camb., aged 49 years.

WARD COUSINS.—On September 21st, at Riversdale, Southsea, John Ward Cousins, M.D., F.R.C.S., aged 87.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 8TH, 1921.

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British Medical Association.

CURRENT NOTES.

REMUNERATION OF INSURANCE PRACTITIONERS.

In order that insurance practitioners throughout the country may be able to follow the various stages of the negotiations which have now begun with the Minister of Health in regard to the proposed reduction of the capitation fee, we reprint the first official intimation received from the Ministry in regard to the matter (which appeared in last week's SUPPLEMENT), together with the reply addressed to Sir Arthur Robinson by the Medical Secretary.

Letter from the Ministry of Health.

Ministry of Health, Whitehall,
September 27th, 1921.

SIR,

I am directed by the Minister of Health to state that he has had under consideration the question of the capitation fee to be paid to Insurance practitioners after the 31st of December next, and that he has come to the conclusion that a reduction ought to be made in the present fee of 11s. (eleven shillings). I am to ask you to be good enough to bring this matter to the notice of the Panel Committees in connection with the forthcoming Conference, and to state that a further communication will be addressed to you as soon as possible as to the amount of the reduction which in the view of the Government should be made.

I am, Sir, your obedient servant,

W. A. ROBINSON.

The Secretary,
Insurance Acts Committee.

Reply of Medical Secretary.

British Medical Association,
Medical Department,
29th September, 1921.

SIR,

I am in receipt of your letter of the 27th instant informing me that the Minister of Health has come to the conclusion that a reduction ought to be made in the present capitation fee paid to insurance practitioners. As no indication is given of the reasons which have led the Minister to this decision, the Insurance Acts Committee is at a complete loss to understand why the Minister has decided to set aside the decision of the arbitrators. Some explanation seems to be due to the Committee before it makes up its mind what advice to give the insurance practitioners of the country.

I am, Sir, your obedient servant,

ALFRED COX,
Medical Secretary.

The Secretary,
Ministry of Health.

To this communication the Minister has replied, through his private secretary, in a letter dated October 3rd. Sir Alfred Mond expresses the opinion that the further information desired by the Insurance Acts Committee could most conveniently be given at a conference, and he invites a deputation of the Committee to meet him on Tuesday afternoon next, October 11th.

Announcement by the Scottish Board of Health.

The Scottish Secretary of the British Medical Association has received a letter, dated September 30th, 1921, from the Scottish Board of Health, Edinburgh, stating that "in connexion with the consideration of questions of national and local expenditure which are before them at the present juncture they [the Board] think it right to inform you that they will require to

reconsider the question of remuneration under the existing contracts with Scottish insurance practitioners."

The Press and the Present Campaign about the Capitation Fee.

Members are warned to take information in the public press as to what is going on in connexion with this campaign with the greatest reserve. Many of the statements made are mere guesses, and are so constructed as to suit the political purposes of the journals that make them. As regards one particular section of the press, the Medical Secretary has found it necessary to make a rule only to grant an interview on condition that anything that appears which purports to come from him is seen by him before it is published. The result of this is that on three recent occasions the newspapers in question have declined to publish the corrected statement. The connexion of a large section of the profession with the insurance system makes it so peculiarly liable to be involved in political intrigues that doctors should lose no opportunity of informing the public that the medical profession does not take its policy from the lay press, and that anything reported therein as the alleged views of the profession should be disregarded unless it is thoroughly authenticated.

The Insurance Acts Committee and the Medical Practitioners' Union.

The following quotation is taken from the report of a speech made by the President of the Medical Practitioners' Union, Dr. E. H. Stancomb, at a meeting of the profession held in London on September 20th:

"The officials of the Union, in their anxiety not to take isolated action upon this matter, by unanimous resolution decided that they would approach the British Medical Association and see whether they could not act in collaboration with them so that the profession could have a united front in order to deal with the question of the capitation fee. The invitation of the Union was couched in the most courteous language. They received a reply from the British Medical Association saying that the Insurance Acts Committee was the only body for negotiating for the profession, and they would take the matter into consideration; when they had considered what the policy would be they would be glad to acquaint the Union, but they were not prepared to meet the Union at the present juncture with regard to any co-operation in the policy."

Members of the medical profession can judge as to the accuracy of the statement quoted above by reading the letters for themselves:

Medico-Political Union,
14, Gray's Inn Square, W.C.1,
22nd July, 1921.

Dear Sir,

At the Annual General Meeting of this Union held on the 9th ult., the following resolution was passed, viz:

"*Practitioners' Remuneration.* That it be an instruction to the Council to approach the British Medical Association with a view to the formulation of a common policy, in face of a possibility of a reduction of the capitation fee in the near future."

I have been directed by my Council to submit this resolution to you, and to suggest that it would doubtless be advantageous if a meeting of certain representatives of the British Medical Association and this Union could be arranged with a view to a discussion of the principle involved. The position is well known to you, and without going into details it is confidently represented that a common policy on the question is most desirable, and that the earlier it is formulated the stronger would be the opposition to any encroachments upon the financial aspect of insurance practice.

In these circumstances it would be appreciated if the matter could receive expeditious and favourable consideration, so that the strength of our respective organizations could be brought to bear in the joint interests of the panel profession and the community.

I am, yours truly,
(Signed) A. Welply,
General Secretary.

Dr. Alfred Cox, O.B.E., M.B.,
British Medical Association,
Strand, W.C.

British Medical Association,
429, Strand, W.C.2,
16th September, 1921.

Dear Sir,

As promised, I placed your letter of the 22nd July before the Insurance Acts Committee yesterday and was directed to thank you for it.

In reply to your suggestion of a meeting between representatives of your Union and the British Medical Association with a view to the formulation of a common policy respecting the possibility of a reduction of the insurance capitation fee, the Insurance Acts Committee wishes to point out that it is the recognized executive of the Conference of Local Medical and Panel Committees, and that its policy depends entirely upon the decisions of that body. Therefore, it is not in a position to enter into negotiations with other bodies as to its policy.

The Insurance Acts Committee is next week issuing to the Panel Committees a report of its action during the past year, together with recommendations on various matters, including that of the suggested reduction in the capitation fee. A copy of this report will be sent for the information of your Union. In taking action upon the policy which the Conference will lay down the Insurance Acts Committee is prepared, if so desired, to communicate with the Medical Practitioners' Union in the hope that that body will see its way to use its efforts on behalf of that policy.

Yours faithfully,
Signed) Alfred Cox,
Medical Secretary.

Dr. A. Welply, General Secretary,
Medical Practitioners' Union,
14, Gray's Inn Square, W.C.1.

A Medical Officer's Salary.

It appears from a report in the local press that the Burgh of Stirling lately proposed to appoint a whole-time responsible medical officer at a salary of £600 per annum, subject to the approval of the Scottish Board of Health. The Board of Health, however, wrote approving the appointment at a salary of £500, and the Stirling Town Council, on the recommendation of its Public Health Committee, acquiesced in this piece of official parsimony. An advertisement has accordingly appeared in the *Stirling Observer*, inviting applications "for the appointment of Medical Officer of Health, Tuberculosis, Maternity and Child Welfare, and V.D. Officer, Police Doctor, and Medical Attendant at Combination Infectious Diseases Hospital. Combined salary, £500. No private practice." We need hardly say that this advertisement does not appear in the British Medical Journal, or in the *Medical Officer*, the official organ of the Society of Medical Officers of Health; for the policy of the British Medical Association, acting in concert with the society, has for some time been that the lowest salary for a whole-time principal medical officer should be £700 a year. We gather from a report appearing in the same issue of the *Stirling Observer* that the office of M.O.H. for the Burgh of Stirling has been vacant since the resignation of the last holder; that the office of tuberculosis officer is held on an interim appointment; that the office of medical attendant at the Maternity and Child Welfare Centre is held by the local doctors in turn for a period of three months at a remuneration of 10s. 6d. for each half-hour of attendance; that there is no appointment of police doctor, any local practitioner being called in as required and paid a fee for his services; and lastly, that the appointment of medical attendant at the infectious diseases hospital is also vacant through the resignation of the last holder. The Town Council recommended that a just appointment to these several offices should be made, and that it should be a whole-time post, no private practice being allowed, all duties incidental to any of the offices being performed without additional remuneration, and that the person appointed should hold the D.P.H. The Scottish Board of Health, in its letter approving such an appointment, allocated the princely salary of £500 per annum as follows: "As medical officer of health, £170; tuberculosis officer, £100; maternity and child welfare medical attendant, £60; venereal diseases medical officer, £10; police doctor, £10; medical attendant at combination hospital, £150." It is bad enough that the Stirling Public Health Committee should have suggested a salary £100 less than that recognized as the minimum by the British Medical Association and the Society of Medical Officers of Health, but that the Scottish Board of Health should cut this down by another £100 seems incredibly perverse. We cannot imagine any self-respecting medical man applying for a responsible post of this kind at such a salary, but in view of the reported attitude of the Board of Health, the matter is clearly one of serious importance to all public health medical officials in Scotland.

London Conference on Medical Staff Funds.

In accordance with the request of representatives of several of the London hospitals, the British Medical Association has arranged to hold a conference of medical

representatives of all the large London hospitals, under the chairmanship of Sir James Galloway, K.B.E., C.B., to discuss the action which should be taken with regard to the formation of medical staff funds and other relative matters, in the hope that joint action may be decided upon. The conference will be held on Wednesday, November 16th, at 5 p.m., in the Council Room of the Association, 429, Strand, W.C.2. The basis for representation will be: One representative for a hospital with less than 200 beds; two representatives each for hospitals with from 200 to 400 beds; and three representatives each for hospitals with over 400 beds. A provisional agenda paper will be sent to the secretaries of voluntary hospitals in London on or before October 24th, in order that the medical staffs may be able to discuss the matters which it is proposed to consider at the conference, and to instruct their representatives accordingly.

Openings for Practice in South Africa.

Many inquiries are received by the Medical Secretary upon the subject of openings for practice in South Africa. In reply to questions a prominent member of the Association in South Africa, whose position enables him to take both an impartial and a well-informed view, has informed the Medical Secretary that the outlook as regards openings in general practice is not encouraging. It is true that, generally speaking, conditions of practice are far easier and more pleasant than they are in England. Premiums for purchase are much lower and terms of payment much easier. A given income goes further in South Africa than in England (mainly owing to the comparative lightness of taxation), except on the Witwatersrand, and even there the extra expense is not by any means due to necessary factors but to the extravagant standard of the place. On the other hand, there is now a financial depression. In the years preceding the war the commonest practice was one the gross income of which ran between £1,000 and £1,250. During the last three years a common income has been one in the neighbourhood of £2,000—that is, taking the country as a whole, exclusive of the Rand. In the Rand incomes have, during the last three years or so, for an established practice, whether private or contract, seldom been below £3,000, and frequently much above. At the present time incomes have shrunk very materially in the rural practices and to a tangible extent in the large towns, of which there are very few, South Africa being essentially (outside the Rand) a rural country, a fact which many people at home fail to realize. According to our informant, the prospects of getting into practice are by no means rosy. Actual "openings" there are none, at least worth having, and even if a man is prepared to take locumtenent work for a time (always a wise course for a newcomer) he may have to wait quite a long time before getting work. A general practitioner would therefore be well advised not to go to South Africa at present unless he has sufficient capital either to purchase a practice or to wait, doing nothing, until the right thing turns up. In specialist practice there are apparently no openings whatsoever, all of the specialties being overdone. Already some of the established specialists are said to be reverting to general practice, while others are leaving South Africa.

A Medical Officer of Health and his Council.

A medical officer of health recently sought the assistance of the Association in the following circumstances: He was employed whole time by an urban district council, and an arrangement was made between the district and the county council by which he should do certain extra work for the county council. For some months payments were made direct to him, but he eventually received a notice to refund the money to his local employers. The Association made representations on his behalf to the authorities concerned, with the result that a conference was arranged between them with a view to placing matters on a satisfactory basis. Our correspondent now informs us that an arrangement has been made by which he will receive extra pay for his extra duties; and in thanking the Association for its backing he says: "There is no doubt that the conference was dependent on the intervention of the Association."

DOES THE MEDICAL PROFESSION WISH THE NATIONAL HEALTH INSURANCE SYSTEM TO CONTINUE?

An Address delivered before the Birmingham Branch on September 30th, 1921,

BY

ALFRED COX, O.B.E., HON. M.A., M.B.

I HAVE not chosen this question because of its alarmist nature or merely to arouse curiosity. I should be justified in my choice if it had the effect of disturbing the selfish indifference of that great mass of practitioners who can hardly be aroused by anything short of violence to take an interest in anything relating to the interests of the profession as a whole, or to look one inch beyond the end of their nose. But I have deliberately chosen the question because there is good reason to believe that within a very short time we shall be forced to answer it, and, whether that happens or not, so many people without any authority are professing to say what the profession thinks on the subject, that I think we may as well speak for ourselves. I think the profession should now formulate its opinion, and when I speak of "the medical profession" I mean the whole profession, and not merely that large section which is engaged in National Health Insurance work. The introduction of the National Insurance system has profoundly affected the economics of the whole profession, sometimes in quite unexpected ways, and it will affect them still more. If the system is continued, it is bound in time to provide a greatly extended and improved service, which will involve the participation of all sections of the consultant class. Logic, humanity, and policy will force an extension which will eventually cover all kinds of medical and surgical risks. If the system be discontinued I believe the effect will be an upheaval in the profession greater than that caused by its introduction.

The events which accompanied the introduction of the National Health Insurance system in this country are too fresh in most of our minds to need much recapitulation. It is perhaps enough to say that they were such as to leave a profound feeling of discomfort, resentment, and humiliation in the minds of most of us. No great social change could have had a more unfortunate gestation, delivery, or infancy, and the vastness of the system, its newness, its experimental nature, its many acknowledged imperfections, the social, political, and economic antagonisms and fears aroused on all sides, have continued to prevent it from having anything like a patient and unprejudiced trial. A large section of the medical profession believed that the system was incompatible with the best medical work, and that it would unduly fetter their professional liberty; the approved societies, especially the old friendly societies, accepted it sulkily; the local authorities regarded the new Insurance Committees as an unnecessary intrusion into, and complication of, local government; though the measure was passed with the approval of all parties, politicians soon began to use it as a pawn in the political game; and a large section of the press has always regarded it as a handy thing to attack when things are slack and there are no really important matters to write about, like a good sensational murder or a visit from a great film artist.

However, it became the law of the land, and had to be given a trial. We doctors have now had eight years' experience of it, some at first hand, some from the position of the anxious looker-on, some as merely cynical observers, and we are in a position to consider and answer my question, though it is not an easy thing to do even for persons who know the subject and are directly concerned in it. For, in addition to the constant and numerous changes that have had to be made in the system owing to its experimental character, we have had the great handicap of nearly five years of war. This upset many of the calculations on which the system was based, and prevented those natural developments which, if effected, would have disarmed many of the criticisms to which the system is open. On the top of this we have had the post-war period with its terrible economic difficulties, which have caused some to suggest that a fine stroke of "economy" might be effected by sweeping the system away altogether.

The demands made on the Government for economies—very large economies—in order to lessen the crushing burden of taxation were bound to lead and have led to the question, Should not the whole system be abolished? And the temptation to do so is very great for a Government mortally afraid of the anti-waste "stunters." In the first place, it is a costly piece of machinery. It cost the taxpayers of this country £7,230,000 in 1919, the last year for which I have complete official figures, and it cost the employers (whose influence on this and any other Government is not insignificant) a further £7,091,000. The cost now is still greater, for the contributions both of employer and insured person have had to be increased, like nearly every other charge, and this at a time of great difficulty for the employer and of falling wages for the workman. From the purely business point of view it is indeed an unnecessarily costly piece of machinery. If the whole thing had been centralized, insurance committees cut out, and the administrative rôle of the approved societies and doctors reduced to a minimum, it could have been worked much more cheaply. The cost of administration is high, but the Government in power could never have got its bill through if it had not enlisted the approved societies by giving them a very active part in the administration; and it would never have got its doctors to work the system if it had left the administration of medical as well as sickness benefit in the hands of the approved societies—a course which would have saved many administrative complications and a good deal of money, though I am firmly of opinion that the system would then have been much less satisfactory than it is to both doctors and insured persons.

But from the politician's point of view the great temptation to do away with it is the fact that the system apparently has no friends, or if it has any they have dissembled their friendship with remarkable ability. The approved societies in their annual gatherings spend much of their time grumbling about it—about the insufficient allowances made to them for administrative expenses, and about the disproportionate amounts they say are paid to the doctors, whom they accuse of bad work. For example, the President of the National Conference of Friendly Societies at Bournemouth, on September 22nd, 1921, said: "It was patent that they were not getting value for the enormous sums paid to the medical profession. No one was satisfied unless it was the doctors with the present medical service." I wonder how the worthy president reconciles this with the very satisfactory surpluses declared at the recent valuation. I should have thought that such a bad medical service would have played havoc with the sickness benefit claims expectations. But we must not be too hard on the approved societies, for the medical profession has taken a very similar line. Many of those doctors who have never taken any part in the service are still of opinion that the system is a bad one, under which the doctors cannot do really satisfactory work; many of the doctors who are working the system have never lost a chance of deprecating it. Even the doctors who are satisfied very rarely say so, and can scarcely be roused, even when they are abused, to say a good word for the system. This to me is most surprising and exasperating, for I can imagine no worse accusation against a doctor than that he is willingly taking part in and money from a system which does not allow him to do justice to his patients. What the insured person thinks about it all is really unknown. He is the least vocal of all. But so far as he does voice his opinion it would appear that he, too, is dissatisfied, and indeed it is hardly surprising if he should believe that the system is rotten when many doctors and many of his approved society leaders say so. The *Daily Express*, in a recent whirlwind "stunt" on the system, declared that among its large correspondence on the subject it had no signs of approval from any of the persons most concerned. The *Express*, of course, loudly demanded that the system be "scrapped."

Now, if there is one thing more than another which the politician is good at it is estimating which way the cat is jumping, and the politician who has got so far as Government office is naturally an expert in this line. You will find, even in these degenerate days, politicians who will sacrifice power and place for something they really believe in, but not one who will sacrifice anything for a cause which has no friends. Why should he, when it is his business to find out what the people want and give it to them? It is not his business to persist in forcing on the country a costly scheme for which nobody has a good word to say.

Therefore, it is not surprising to be told that the Government is considering not only making a big cut in the cost of the system—including the doctors' remuneration—but whether, after all, the best thing to do, and one which would gain for them (for a time) the support even of the economy-at-any-price advocates, would not be to "scrap the lot," or, at any rate, medical benefit.

What has the medical profession to say about it? It is stupid and wrong for us to keep silent in such circumstances. If we think it would be a good thing for the country to drop the system, let us say so and get the credit for helping the country to a great economy. If we think it would be a mistake to drop it, then I suggest very earnestly that the sooner the Government and the country generally know our opinion the better.

Before we attempt to answer the question, let us consider what would be the situation if there were no National Health Insurance system. It is tempting to try to reproduce the glowing language of righteous indignation employed by Mr. Lloyd George in 1910–11, in which he—rightly we all thought at the time—spoke of the hard-working millions of this country who got no medical attendance at all, except from the Poor Law or charity, or who got a very imperfect service through the club system—a comparatively small number. But I shall not trouble you with all that. You know it, or at any rate those of you who qualified ten years or more ago know it, as well as I do.

Why was the system introduced? Why did the Government set up such a system? And why did the taxpayers of this country consent to pay a considerable share of the cost of it? Largely because the conscience of the nation had been very effectively awakened by the Reports of the Royal Commission on the Poor Law, which made known the facts of the situation as they existed before 1910. The Reports made scathing remarks about the Poor Law, directed attention to the inadequacy—to put it mildly—of the provision made by the various forms of contract medical attendance, and stated the Commission's unanimous opinion that the State should organize medical provision for a considerable section of the population. They disagreed as to how it ought to be done. The majority preferred a contributory system not unlike the present Health Insurance system in many ways; the minority wanted a non-contributory system, with a whole-time medical service controlled by the public health authorities. Mr. Lloyd George, with his unfailing political flair, induced the Government to utilize the wave of public opinion thus set up and to father his scheme for meeting the need pointed out by the Commission.

What was the problem he set himself to solve? All are agreed that there is in this country a very considerable body of people who cannot or will not provide for themselves adequate medical attendance, even of an ordinary and limited kind, without organization and help. Whatever the standard of wages prevailing, whether in ordinary times or in the artificial period of inflated wages we are passing through, there are many people who cannot be expected to pay, or at any rate never do pay, private fees for an attendance of more than a very short duration. By a convention of civilization it is agreed that these people, however thriftless and undeserving some of them may be, cannot be allowed to die untended. And, apart from questions of humanity, it is wasteful to allow the dissipation of human energy consequent on preventable illness. Therefore the great majority of us agree—and the nation in 1911 practically unanimously agreed—that secure provision should be made so that in time of illness this large section of the people should have a doctor to whom they could turn as a right.

There are six ways, and, so far as I know, six ways only, in which such provision could be made:

(1) By ensuring that every person willing to work shall have regular work and shall be paid such wages that they shall be in a position to provide, and may rightly be expected to provide, their own medical attendance by private arrangement.
(2) By voluntary charity.
(3) By the Poor Law.
(4) By the club system.

(5) By a whole-time State service open to everybody.
(6) By the panel system or something like it—that is, a contributory insurance service.

We can at once eliminate (1), (2) and (3). Not in this world, without an impossible change in human nature, could No. 1 be secured. Even if you can conceive a world in which regular work could be found for all and in which everybody would be provident, you would still have to provide for the weaklings who could not stand regular work, and could therefore never be certain of having a secure and sufficient income. Voluntary charity could not be found in sufficient volume to cover a tithe of the need, apart from the fact that it would be an insult to our working classes to offer such a solution. As for the Poor Law—that venerable institution which has long been lying under a death sentence, but which looks like seeing most of us out—I should like to see the politician who would suggest this as the solution! A whole-time State medical service is tempting to the politician who likes what looks like a short cut, and still more to those whose ideal of efficiency involves a gigantic increase in bureaucracy. I know that some of the approved society leaders play with this idea, but they do not realize what they are talking about—or at any rate their members do not. Mr. Lloyd George rejected this solution in 1911, and, in spite of all the dark hints we have had from medical and other equally inspired newspaper correspondents, I do not believe that any politician has ever seriously contemplated the possibility of such a service. Moreover, we know that both the Consultative Medical Council and Sir George Newman, the Chief Medical Officer of the Ministry of Health, have pronounced emphatically against it as contrary to the genius of the English people and opposed to the development of medical art and science.

The old club system had proved, by almost universal testimony, totally inadequate, and the Government was therefore left in 1911 with the alternative of a contributory insurance scheme, the medical part of which should not be worked by whole-time officers. If, *ex hypothesi*, the system is now abolished and no other Government service is set up, the class whose position we are considering would be left to pay for their medical attendance as private patients, which, also *ex hypothesi*, many of them cannot do, or to resuscitate and develop the old discredited club system. There is no doubt the latter alternative would be taken by a very large number. How would that affect us?

The prospect for one whose difficult, and sometimes almost heartbreaking, task it is to try to get the medical profession to take a little interest in its own affairs, and in its future, would in some respects be a very cheerful one. Nothing braces up the individual or a class like adversity, and there arises in my mind's eye an alluring picture of a great accession of interest in medical organization and politics, such an increase in our membership, and such well-attended and animated meetings that I am almost tempted to wish for evil in order that good might come. But the evil is so certain, and the good on balance so problematical, that I must not let myself be carried away by that temptation. If the insurance system were abolished, the approved societies, now much more numerous, powerful, and well organized than before, would at once establish a voluntary insurance system. If sickness benefit were retained and medical benefit dropped by the Government, the temptation to utilize their staffs (which would have to continue for sickness benefit purposes) for a voluntary medical benefit would be irresistible: and as there would presumably be no employers' contribution to such a voluntary enterprise and no Government subsidy, the payment to the doctor would come from the contributions of their members alone after the administrative expenses of the society had been deducted. The societies would therefore have to get doctors at a remuneration much less than at present; and they would get them, make no doubt about that. I would much rather boast that the medical profession would decline with indignation to touch their club system (new style), but I have been nearly thirty years actively interested in medical organization, and I have no delusions about that, though I gladly acknowledge that we are far better organized now than ever we were in pre-insurance days. But men whose practices now largely consist of insurance work, whose patients are largely of the class we are dealing with, and who have come to depend on the regular income of the panel, would be under a very great temptation to accept the terms of the societies. We should undoubtedly have, in an intensified form, the competition of the "good old days" of the club system. And, having got their doctors, the societies would stand no nonsense. The doctor would have no *right* to the work, as he has now. Those who satisfied the societies would be employed, and no others. There would be none of the red tape about "Medical Service Subcommittees" and none of those appeals to three impartial individuals sent down by a Government department. Complaints would be settled, as in the "good old days," by the club committee. Gone would be all the self-government (and also the hard work) of the Panel Committee. The doctor would, of course, have the satisfaction of knowing that if his pay was lower and he was the servant of a club, liable to be dismissed at three or six months' notice, he had at any rate got rid—at a price—of much of that red-tape of which he now complains so much. But would he, do you think, be any freer than he is now? As for the formerly insured persons, or such of them as cared to continue to insure against doctors' bills, the societies would see that they still had "their own doctor"—the society's own doctor, I mean, for the individual would find that he had to take the doctor elected by the majority, or pay twice over, once through his society and again privately. Some of those who did not join the clubs would pay private bills, and some of them would not.

Of course we should put up a fight against all this, and in the end I believe it would be a winning fight. Already, before the Insurance Act came in, the British Medical Association was fighting the graver abuses of the club system with considerable success, and we are much more capable of doing it now. But we should have to begin all over again with a fight against societies much more numerous and much more powerful than before, and we should be handicapped by the presence of a large number of doctors who have come to depend on a contract system for a considerable part of their income. And note that the fight would be to secure status and privileges under the new system which we now have *as a statutory right*. The prospect, to my mind, of a return to the old club system, or any modification of it, in the hands either of the old friendly societies, the new collecting societies, or organized bodies of workers, is so appalling that I am sure every doctor who respects his profession, whether he has worked the National Insurance system or not, ought to do anything in his power to prevent its happening.

The profession must not overlook the fact that if the present insurance system were scrapped, it would not be many years before the financial condition of the country allowed and the national conscience demanded a re-establishment of some national form of medical service for those unable to provide it for themselves. What form would it take? Not the panel system, for that, the country would be told, had been tried and found a failure. The only thing left would be a whole-time State medical service. What, then, is our real opinion of the present system, taking it by and large, if we are asked, "Would you rather scrap it or retain it?"

One often hears it said, or rather one often heard it a few years ago, "I don't object to a National Insurance system; but not *this* system." I suppose I have heard as much discussion on this subject as most people, and I believe I have heard or read the opinion of as many critics of the system as most people, but I know of no *practical* alternative scheme, apart from a whole-time service, that is not merely a variant of the present system. What are the fundamental principles of the present system? (1) Every doctor has a right to take part in it; (2) every patient has a right to choose any doctor on the list, and every doctor, except in one-man areas, can get rid of any patient he cannot get on with; (3) the remuneration is fixed by central bargaining and is the same all over the country; (4) the doctors collectively have a great deal of control over their part of the system through the Panel Committees.

Let us consider these points in a little detail. None of us, except those who believe in a whole-time service, would like to restrict the choice of the individual patient or individual doctor. We would rather enlarge that

choice. The nearer the freedom of choice approximates that of private practice the better. Most of us detest anything that resembles the "tied" doctor or the "tied" patient. But there is nothing in the principles of the present system to prevent the freest possible choice by the patient of all the doctors willing to accept the terms of service, and in many areas that means practically all the general practitioners. But I am bound to say that I believe that most of the legitimate complaints against the present system are due to the slackness of the insured persons themselves, who could soon bring unsatisfactory doctors to their senses by the simple process of leaving them and going to others who are prepared to do their duty. I have heard no argument against the national rate of remuneration fixed by national bargaining, and I doubt whether the biggest individualist of us all would willingly go back to the "Dutch auction" plan which previously prevailed in each locality. No doctor wants any increase of bureaucratic control over his profession. We all want to lessen it as much as is compatible with a guarantee that the patients shall feel secure of getting the service for which they pay and the doctor is paid. We all know there are some doctors who, like some workmen, are not particular about how they do their work so long as they get the money, but the other doctors, who believe in doing justice to their patients and in a fair day's work for a fair day's pay, have no sympathy with them. Few doctors outside the service, and by no means the majority inside it, realize what a great measure of self-government insurance practitioners exercise through their Panel Committees, and how that measure has been steadily increased with almost every alteration of the Regulations. Great improvements have been made since the early days in the method of payment—a matter of constant irritation then. In many ways, which it would be tedious for me to detail here, the administrative machinery of the system has been made to work more smoothly, and a great many of the improvements suggested by the Association have been incorporated in the Regulations. Another item which must always be put down to the credit of the system is the great improvement it has made in the position of the really rural doctor, who, for the first time in his history, is assured of a reasonable payment, on behalf of his working-class patients, for the mileage he travels and the time occupied therein.

I am well aware of the other side of the picture. The improvements I have mentioned have not been got without fighting for them, and there are still many details in our particular part of the system which can be and ought to be altered. But there is ample opportunity for dealing with them as and when we make up our minds exactly what we want—not always an easy thing, for what is one man's meat is another man's poison in medical affairs as in other spheres. My claim is that the insurance system has given the profession for the first time in connexion with any form of contract practice an assured status, and a better position financially and in every other way than we ever had or ever could get under any system managed by friendly societies or private enterprise. We are an active partner in the concern, with a very considerable voice in how it is managed. We have the means of making known through the statutory Panel Committees and the Insurance Acts Committee—their recognized medium for collective bargaining with the Government—what are the grievances of which we complain, how we think they could be remedied, and how we think the service could be improved. That, of course, does not mean that we have only to ask or "demand" to receive, for no partner in any concern can have it all his own way. We are not sole owners. My own opinion on the eleven years of bargaining that I have gone through is that we have, on the whole, done as well as we could expect in a process which all reasonable people know must be one of give and take. The unreasonable ones find it out by painful experience.

And what about the patients? For the patients under this system, as under any system, contract or otherwise, are the first consideration with any doctor worthy of the name. Are the poor fellows really groaning under the neglect of a horde of overpaid doctors? Are they really bound hand and foot to doctors, most of whom have enormous panels and are therefore incapable of giving the individual decent attention? Do they really spend most of their time standing in a queue outside the doctor's door? Are they always fobbed off with cheap and nasty drugs, and does the panel doctor invariably treat them as a nuisance to be got rid of after the most perfunctory examination, if any? Are the approved societies and the Insurance Committees overwhelmed with complaints from these neglected or insulted citizens, or in the alternative, has the British working man forgotten how to complain and learnt to accept meekly anything the overpaid and overbearing insurance practitioners like to impose on him? I merely reproduce some of the melodramatic bunkum which is the stock-in-trade of nearly every friendly society gathering and of the "yellow press." But it only needs reproducing before a body of people who know, to be dismissed with the ridicule it deserves. There are inefficient and neglectful doctors, we must confess, but they existed before the insurance system, and they will always exist inside and outside contract practice. There is quite a lot of mixed human nature even among the medical profession. How would the approved societies like the process of reasoning applied to them that some of them are so fond of applying to us? There are 1,191 approved societies operating in England. Appendix XII of the *Annual Report of the Ministry of Health, 1920–21*, says that there were 389 cases reported of malversation or misappropriation of State funds by the officers of those 1,191 societies, and the Welsh appendix shows a similar state of things. If I were to use the reasoning of the gentlemen who are so vocal at the friendly society conferences I should say that these figures prove that the men who run the approved societies are dishonest, and that therefore the approved societies should be abolished. But, having some sense of proportion, I commiserate the societies on the fact that they have their "wrong-uns" just as we have, and I refuse to condemn the whole approved society system for the misdeeds of a few rogues among their thousands of officers.

Such claptrap as I have alluded to is a gross libel on the great body of insurance practitioners, and for my part I refuse to believe that the British workman and his wife have so degenerated as to stand the kind of thing we are told they do, under any system and from any body of men. But the men about whom these ridiculous statements have been made have for the most part taken them lying down. At any rate, they have never as a body said: "The National Insurance system has its faults, but it has the fundamentals of a good medical service. There was a time when we did not think so, and we said so. But we have had eight years' experience of it now, we have watched it grow, and have ourselves helped to make many improvements in it, and we believe it can be made into a really good service. Moreover, we are quite sure that it has been a good thing for the great bulk of insured persons, and we believe they will say so if the question is put to them fairly. It has provided for many of them what they never had before—a doctor chosen by the individual himself (if he likes to take the trouble) who is available at any time, without any worry on either side about how he is to be paid. We know it does not provide hospital treatment, the services of specialists, pathologists, etc. It never pretended to do so. Mr. Lloyd George always said it was an experiment and that the fundamental provision—that of a general practitioner—could afterwards be added to as and when it was thought advisable and possible. We believe that to sacrifice this service, with many defects but with great possibilities, would be a retrograde step which we at any rate will do our best to prevent. In short, we believe that if you admit that there must be contract practice for a large section of the community, the present system, with its capacity for improvement, is probably as good a system as you could devise. At any rate, we don't know of any better. And, moreover, we believe that a system which pays the doctor better when the patient is well than when he is ill is bound to be in the interests of the community in the long run. So let it have a chance; it has never had it yet."

That is the answer I ask you to give to my question, "Does the medical profession wish the system to continue?" but with a very important condition attached to your answer. It is quite possible that the wily politician, if he is told that the profession does on the whole think that the experiment is succeeding, and ought to be continued, may think it safe to assume that we should be willing to go on at any price. He would be quite wrong.

At what point in a descending scale of payment the profession as a whole would prefer to see the system abandoned rather than continue to work it I do not know. But I do know that any attempt to placate the "anti-wasters" by making a decided cut in the present remuneration would result in a considerable number of the best men leaving the service, and without them it had far better be dropped. I would much rather see it dropped than continued as a cheap and nasty service which would soon really deserve all the things now alleged against it.

The present rate of remuneration was fixed in March, 1920, by three independent arbitrators, who advised the Government that the fair rate of payment in the circumstances then prevailing was 11s. The two main factors that influenced this decision were (*a*) the cost of living and of conducting a practice, (*b*) the standard of service demanded. The latest cost-of-living figure published at the time the decision was given was 130 above the pre-war standard, but the arguments on this part of the case which were placed before the arbitrators by the Association, and contested by the Ministry of Health, were based on the figure 120, which was the figure ruling a month or so before the arbitration, when the case of the profession was formulated. For some months after the decision the cost-of-living figures continued to mount until in November, 1920, they reached 176.* In September, 1921, they were 120. Since the decision we have, on balance, been at a considerable disadvantage, the number of months in which the figures have been above those of March, 1920, being thirteen, while only in five have they been below. When a decided fall does occur and persists we shall, of course, as reasonable citizens, be quite ready to consider any proposed change in the remuneration *based on that factor*, though we should again put our case for reconsideration of our claim that the proper fee for a first-class service is higher than 11s. It may, however, be contended that the financial condition of the country is such that we must *all* be prepared to make a sacrifice, and that we must accordingly ignore such things as cost-of-living figures. Very well. When everybody over whose remuneration the Government has any control is treated in this way, when the Prime Minister and the Minister of Health, for example, voluntarily agree to a reduction in their salaries, they will not find the medical profession backward in doing their duty.

As for the other factor which influenced the arbitrators, if it is proposed to lower the standard of service required, we can only say that the medical profession can be no party to any such dereliction of duty to the insured person. Any proposed cut in the 11s. not based on (*a*) a decided fall in the cost of living and conducting a practice, or (*b*) on the principle that *all* sections of the community (including Ministers) must make a sacrifice for the sake of the country, must mean that the doctors are offered a lower remuneration for a lowered standard of service. I wonder what the author of the system will say when he hears that after all his eloquence and fine ideals the Government, in its fear of the "anti-wasters," is going to the public with the cry of "Anything is good enough for the working man"? And what a handle for the press opponents of the Ministry of Health! What an anti-climax after all the high hopes based on the establishment of the Ministry, and all the glowing predictions made by the very same newspapers and persons who are now doing their best to emasculate the Ministry, because to succeed in doing so would damage the Government. What a miserable farce it all is, this government by press stunts, and how degenerate we must be to stand it or tolerate the alleged statesmen who have not the pluck to treat it with contempt as the dishonest bluster most of it is!

At any rate the medical profession in general (and the British Medical Association in particular) believes in a Ministry of Health and fought hard to get one. It wants the Ministry to have fair play, and will do its part to help the Ministry if it will help itself. I believe that to take away from the Ministry the domiciliary medical service under the Insurance Acts, or to allow its standard to be deliberately lowered, would throw the Ministry back by a generation in its work of co-ordinating and improving the medical services of this country. If the Minister is not prepared to fight to make his own Ministry the useful institution we all believed it was going to be, then he will soon find that he and his Ministry have no friends, and they will not deserve to have any.

If you are of opinion that the medical profession does want the National Insurance system to continue, I am sure you will also say that we would rather not have it at all, whatever anxiety its loss may cause the medical profession, unless the terms of service are such as to make it possible to give a good service. What is a good service? The axiom which is drilled into every one of us during our medical education, and remains with us as the main item of the doctor's creed, is that the welfare of the patient comes before everything else. Whether a service is a good one or not depends on whether its conditions make it easy or the reverse to put this principle into practice. A service the members of which are always "under notice," so to speak, cannot create the atmosphere in which good work can be done. The powers that be must make up their minds whether the system is fundamentally sound or not; and, if they think it is, let them stop pulling it about and harrying us, and allow the doctors to get on with their work, which is not politics or bargaining, but trying to prevent and cure disease.

* The official figures are as follows:

1920.		1921.	
March...	170	January	165
April	132	February	151
May	141	March	141
June	150	April	133
July	152	May	128
August	155	June	119
September	161	July	119
October	161	August	122
November	176	September	120
December	169		

Meetings of Branches and Divisions.

Metropolitan Counties Branch: City Division.

A general meeting of the City Division was held at the Metropolitan Hospital on September 23rd to discuss the attitude of the Division towards possible change in the capitation fee. Dr. C. E. Evans presided. After an opening speech outlining the reason for the meeting, the Chairman introduced Dr. G. C. Anderson, Deputy Medical Secretary of the Association.

Dr. Anderson lucidly and fully outlined the present position of affairs as then known, and drew attention to the possibilities that might arise in the near future in connexion with the proposed reduction of the insurance capitation fee.

A discussion followed, and a considerable number of the members expressed their views. For instance, it was suggested that the capital value of panel practices would soon, according to present arrangements, be abolished; that, as no pension of any sort was attached to the working of the Act, provision for the future had to be made out of income; that in many cases the practices had been purchased and a considerable amount of capital invested in them, and that therefore no parallel could be drawn between the doctors and civil servants.

The following resolution was carried unanimously:

That this meeting of practitioners resident in the City Division affirms that the 11s. capitation fee (recently fixed by arbitration) is inadequate to cover the services rendered, and that in the interests of the patients as well as of the doctors any reduction would be most ill advised and will be vigorously opposed.

On the motion of Dr. Evans, seconded by Dr. Hands, a vote of thanks was unanimously accorded to Dr. Anderson for attending the meeting and so ably explaining the position of affairs.

A vote of thanks to the Chairman terminated the meeting at a late hour.

Metropolitan Counties Branch: Greenwich and Deptford Division.

A general meeting of all local practitioners, called by the Greenwich and Deptford Division, was held on September 27th. The meeting was addressed by Dr. Cox, and the following resolutions were passed:

That this meeting of general practitioners of Greenwich and Deptford desires to protest against the method adopted by the Deptford Borough Council in staffing their Maternity Home, and directs the secretary of the local Division of the British Medical Association to write to the Council accordingly, and to ask them to receive a deputation on the matter.

Drs. W. H. Payne, Frost, and Ethel Allman were appointed to form the deputation.

That this meeting of general practitioners of Greenwich and Deptford wishes to support the principle of the Medical Insurance Act, and will do everything possible to promote its efficient working. At the same time it regards the present capitation fee of 11s. as inadequate for the services required, and will do all in its power to resist any proposal for its reduction.

The Secretary was requested to forward this resolution to the Medical Secretary of the British Medical Association.

Association Notices.

ELECTION OF MEMBERS OF COUNCIL, 1922-23, BY BRANCHES OUTSIDE THE UNITED KINGDOM.

NOTICE is hereby given that, in accordance with By-law 49, ***nominations*** of Candidates for election as Members of Council by certain of the grouped Branches outside the United Kingdom (please see below) for a period not exceeding three years, as prescribed by By-law 52 (2), ***must be forwarded*** in writing so as to reach the Medical Secretary ***on or before February 11th, 1922.***

Nominations must be signed by not less than three Members of any Branch in the group, and must be in the form prescribed below or in one to the like effect.

The elections, where contests occur, will be by voting papers, containing the names of all duly nominated Candidates, issued from the Head Office, 429, Strand, London, W.C.2, to each member of each Branch in the group.

NOMINATION FORM.

By not less than Three Members of the Grouped Branches.

We, the undersigned, hereby nominate .....

of..... *Full name and address to be given*] for election by the [*Please state the names of the Branches in the group*] Branches as a Member of the Council of the Association for the period.....

Signatures and addresses of Nominators.....

Branch (es).....

Date..... 19.....

In or about the second week in June, 1922, a notice of the result of the elections will be published in the JOURNAL.

In the case of the New Zealand and Fiji Branches no nomination is required, the present Representative for that group having been appointed for the three years 1919–22.

GROUPING (ABOVE REFERRED TO) OF BRANCHES NOT IN THE UNITED KINGDOM FOR REPRESENTATION ON THE COUNCIL OF THE ASSOCIATION, 1922-23.

	Members of Council.
South Australian, Tasmanian, Victorian, Western Australian	1
New South Wales, Queensland	1
New Zealand, Fiji (*no vacancy*)	1
Barbados, Bermuda, British Guiana, Grenada, Halifax (Nova Scotia), Jamaica, Leeward Islands, Montreal, St. John (New Brunswick), Saskatchewan, Toronto, Trinidad and Tobago	1
Assam, Baluchistan, Bombay, Burma, Ceylon, Hyderabad and Central Provinces, Mesopotamia, Punjab, South Indian and Madras	1
Hong Kong and China, Malaya	1
Border (South Africa), Cape of Good Hope (Eastern), Cape of Good Hope (Western), East Africa, Egyptian, Gibraltar, Griqualand West, Malta, Natal Coastal, Natal Inland, Nyasaland, Orange Free State and Basutoland, Rhodesia, Sierra Leone, Uganda, Witwatersrand, Zanzibar	1

ELECTION OF DIRECT REPRESENTATIVES UPON INSURANCE ACTS COMMITTEE.

NOMINATIONS by Local Medical and Panel Committees for the above should reach the Medical Secretary not later than the first post on October 10th, 1921. Nomination forms (M.2) may be obtained from the Medical Secretary, 429, Strand, W.C.2.

Scottish Subcommittee.

Nominations for the Scottish Subcommittee by Scottish Panel Committees must also be in the hands of the Medical Secretary—from whom nomination papers (M.4 for Counties, and M.5 for Burghs) may be obtained—by the same date.

PANEL CONFERENCE.

Motions by Local Medical and Panel Committees for inclusion in the Final Agenda of the Panel Conference (to be held in the Wesleyan Central Hall, Westminster, on Thursday, October 20th) must be received by the Medical Secretary not later than the first post on October 10th.

MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH. The autumn meeting of the Branch will be held at the Hotel Metropole, Bournemouth, on Thursday, October 13th, when the President, Dr. F. C. Bottomley, O.B.E., will take the chair. 1.30 p.m., The practitioners in the Bournemouth district invite members to luncheon at the Hotel Metropole. 3 p.m., Agenda: To fix date and place of annual meeting. Election of officers, 1921–22. Papers:—Dr. T. C. Meggison, Vice-President (Dorchester): "Headache"; Dr. T. H. Sanderson-Wells (Weymouth): "Decapsulization of the kidneys in Bright's disease"; Dr. A. G. S. Mahomed (Bournemouth): "Thoughts on the official ideal of improving the panel service." Dr. Bottomley invites members to tea after the meeting. Members proposing to attend are requested to notify the honorary secretaries by October 10th.

METROPOLITAN COUNTIES BRANCH: SOUTH MIDDLESEX DIVISION. The following programme has been arranged for 1921-22, meetings to take place on Wednesdays at St. John's Hospital, Twickenham:—October 26th, 8 p.m., general business; 8.45, Paper by Mr. R. C. Elmslie, "Minor disabilities of the feet." November 2nd, annual dinner. November 23rd, 8 p.m., general business; 8.45, paper by Dr. A. M. H. Grey, "Skin diseases commonly met with in general practice." December 7th, 8 p.m., clinical meeting, cases to be shown by members; business (if any) afterwards. January 18th, 1922, 8 p.m., general business; 8.45, paper by Dr. Herbert French, "A few small clinical and therapeutic points." February 1st, 8 p.m., general business; 8.45, paper by Dr. H. Batty Shaw, "Early diagnosis of tuberculosis." March 1st, 8 p.m., clinical meeting. May 17th, 8.30 p.m., annual meeting of Division.

NORTH OF ENGLAND BRANCH: NORTH NORTHUMBERLAND DIVISION.—A meeting of the Division will be held in the Infirmary, Alnwick, at 2.30 p.m., on Tuesday, October 11th. Agenda: To arrange the date for annual Divisional dinner; to elect a representative of the Division to act on the Contract Practice Committee; Correspondence to date, (*a*) Fees and travelling allowance to medical practitioners attending coroners' inquests, (*b*) membership of the Division, (*c*) voluntary hospitals. After the meeting Dr. R. A. Bolam will give an address on "The modern treatment of common skin diseases." Tea will be provided.

SUSSEX BRANCH: CHICHESTER AND WORTHING AND HORSHAM DIVISIONS.—The annual general meeting of the Chichester and Worthing Division will be held at Warne's Hotel, Worthing, on Wednesday, October 12th, at 6 p.m. Agenda: Correspondence, election of officers, and other business. A combined meeting of the Chichester and Worthing and Horsham Divisions will be held at the same place at 6.30 p.m. on the same day, when Dr. H. W. Barber will give an address on "The etiology and treatment of some of the common diseases of the skin." Members proposing to stay for dinner (price 7s., morning dress) are requested to notify Dr. H. Milbank-Smith, Honorary Secretary, Worthing Lodge, Worthing, by October 10th.

YORKSHIRE BRANCH: HALIFAX DIVISION.—The first monthly meeting of the winter session of the Clinical and Scientific Section will be held at the Royal Halifax Infirmary on Wednesday, October 12th: 8.15 p.m., Exhibition of cases and specimens. 8.30 p.m., Lecture by Dr. W. O. Greenwood (Harrogate) on "Correct technique and effects of twilight sleep." Members are asked to show cases or specimens. Non-members are cordially invited.

TRANSFER OF POWERS TO MINISTRY OF HEALTH.

A CIRCULAR[1] has been issued to local authorities by the Minister of Health with reference to points which arise through the transfer, under the Ministry of Health Act, of certain powers and duties of the Home Secretary to the Minister of Health. It is pointed out that the occupier of a factory or workshop (including laundries) must not knowingly allow a woman or girl to be employed therein within four weeks after she has given birth to a child; and it is hoped that local authorities administering maternity and child welfare schemes will assist employers in observing these provisions. In addition to their duties in relation to retail bakehouses, local authorities are now also charged with the certification of underground bakehouses, and have powers, along with the factory inspector, to undertake a prosecution in the case of a bakehouse which is unsuitable on sanitary grounds. It is suggested by the Minister of Health that this power of prosecution should in future be exercised wholly by the local authority, and it is observed that the enforcement of provisions relating to bakehouses can better be undertaken locally than centrally. The attention of local authorities is also called to the regulations regarding the making of wearing apparel where there is scarlet fever or small-pox, and to the prohibition of home work where there is infectious disease.

[1] Circular 235. London: His Majesty's Stationery Office. 1d. net.

Insurance.

MEETINGS OF THE PROFESSION.

Dr. Cox's Address at Birmingham.

A LARGE and representative meeting of medical practitioners in Birmingham was held at the Midland Institute, under the auspices of the Birmingham Branch of the British Medical Association, on September 30th, when an address on the National Health Insurance System was given by the Medical Secretary, Dr. ALFRED COX. The chair was taken by Dr. THOMAS WILSON, ex-President of the Branch, and some 250 members and non-members attended. At the conclusion of Dr. Cox's address, which is printed in full at page 135, the following resolution was proposed by Dr. H. G. DAIN:

> That when it is necessary to organize or provide a general practitioner service for any section of the community unable to pay the ordinary fees, such service is best given on the lines of the present panel system; and this meeting does wish medical benefit, under the National Health Insurance Acts, to continue, so long as the conditions are such as will allow of a good service being given.

Dr. H. TIBBITS, chairman of the Warwickshire Panel Committee, seconded, and the following took part in the subsequent discussion: Drs. TRUMPER, WILKES, GARBUTT, MCQUEEN, BRADSHAW and J. A. BROWN. The resolution was passed unanimously, and a very successful meeting terminated with a hearty vote of thanks to Dr. Cox for his valuable address.

PROPOSED INQUIRY INTO WORKING OF INSURANCE ACTS.

THE Executive Council of the Federation of Medical and Allied Societies sent the following memorandum to the Minister of Health on October 4th.

SIR,—We, the undersigned, duly appointed representatives of organisations co-operating in the Federation of Medical and Allied Societies (inc.), being influenced solely by a desire to promote the health and contentment of the people with whose physical wellbeing we are intimately concerned, request the Minister of Health to consider the advisability of setting up an independent committee to take evidence in public, inquire into and report concerning the working of the National Health Insurance Acts. The following reasons appear to justify this request:

1. The Acts were introduced as an experiment in public health administration, and have been in force for over nine years. Yet no sufficient data are available by which to judge of their efficiency or inefficiency. Neither is it possible to estimate to what degree, if any, they have tended to raise the standard of national health.

2. Criticisms, often ill informed, but none the less damaging to the smooth working of the Acts, are made of the Health Ministry's methods, of the administration of the approved societies, and of the services the insurance medical practitioner provides.

3. The Acts authorize certain medical services only, and these, with the advance of knowledge in preventive and curative medicine, fall short of providing the insured with all that modern medicine has to give.

4. A reduction of the present capitation fee of panel medical practitioners is reported to be imminent. But any such reduction made *before full inquiry* has been held into past results and future requirements, would tend to prejudice future negotiations, and alienate the goodwill of those practitioners whose co-operation is essential to the success of the service.

Representing, as we do, many distinct branches of medical practice and of professions ancillary to medicine, we have considered this matter from widely different angles, ever keeping before us the needs of the community, to which our individual aspirations are willingly subordinated.—We have the honour to be, Sir, your obedient Servants,

(Signed) BERKELEY MOYNIHAN, President
MALCOLM MORRIS, Vice-President and Representative of the National Council for Combating Venereal Diseases.
THOMAS HORDER, Honorary Treasurer.
J. F. GORDON DILL, Honorary Treasurer.
CHARLES BUTTAR, Honorary Secretary.
JANE WALKER, Honorary Secretary.
JOHN ROSE BRADFORD, London and Counties Medical Protection Society.
H. W. BRUCE, Infirmary Medical Superintendents' Society.
H. J. CARDALE, Association of Panel Committees.
F. HERNAMAN-JOHNSON, British Association of Radiology and Physiotherapy.
C. F. RILOT, British Dental Association.
RONALD ROSS, British Science Guild.
E. H. STANCOMB, Southampton Medical Parliamentary Committee.
E. H. WORTH, National Medical Union.

MEDICAL CERTIFICATION.

IN a circular letter, dated September 28th, 1921, the Ministry of Health states that the medical certification rules and forms of certificate contained in Part IV of the First Schedule to the Medical Benefit Regulations, 1920, have been under review, in the light of experience, in consultation with the representatives of approved societies and of insurance practitioners.

The principal difficulties (the circular proceeds) with which it has been found possible to deal by amendment of the rules, are those arising from (*a*) the pressure which is sometimes brought to bear on doctors to issue final certificates after insured persons have resumed work, (*b*) the absence of a suitable form of certificate in convalescent cases where the insured person is ordered away from home, and (*c*) the practice on the part of some doctors of issuing more than one certificate without making a fresh examination of the patient. The amended rules relating to certification should be uniform for the whole country owing to the wide distribution of members of approved societies, and local variations are not, therefore, possible.

The new rules will come into force on January 1st, 1922, but the new books of certificate will be available for issue to practitioners as from November 1st, 1921. During the period from November 1st to December 31st insurance practitioners will have the opportunity of using up their existing stocks of certificates. It is added that no further issues of the existing books should be made after October 31st, by which date existing stocks in the hands of Insurance Committees will be substantially used up.

Article 4 of the Regulations regularizes the use by practitioners of either the old or the new forms of certificates during this period of two months. It will be necessary for committees to issue individual notices to all insurance practitioners of the alteration in the terms of service involved by the new rules, and a model form of notice with an explanatory memorandum attached will be issued to committees with this object during October.

New Certification Rules.

Article 2 of the Draft Regulations — Medical Benefit Amendment Regulations (No. 5) 1921—is as follows:

2. The Medical Certification Rules set out in Part IV of the First Schedule to the principal Regulations shall be read and have effect as if the following paragraphs were substituted for paragraphs 6, 7, 8, 9 and 11 thereof:

Final Certificates.

"6. If at any time the practitioner finds, upon examination of the insured person, that he, having been up to the date of such examination incapable of work, is fit to resume work immediately thereafter, he shall forthwith give the insured person a Final Certificate. A certificate in this form shall not be issued after an insured person has resumed work.

"If, upon examining an insured person, the practitioner is of opinion that the insured person although not fit to resume work immediately after the date of such examination will be fit to resume work on the second day (or if the insured person resides in a rural area at a distance of more than two miles from the practitioner's residence, on a day not later than the third day) after the date of the examination, the practitioner may give him a Special Final Certificate."

Particulars to be Inserted in Certificates.

"7. (1) Every practitioner who gives a certificate under these rules shall insert in the appropriate spaces in the form the date of his examination of the insured person, the name of the insured person, and a concise statement of the specific disease or bodily or mental disablement by which, in his opinion, the insured person is at the time rendered incapable of work.

"(2) The practitioner shall sign the certificate with his own hand and append the date on which he signs it.

"(3) The writing on a certificate shall be in ink or other indelible substance."

Time at which Certificates are to be Given.

"8. The practitioner shall, wherever practicable, give the certificate to the insured person at the time of the examination to which the certificate relates; where he is prevented from so doing he shall give or send the certificate within twenty-four hours thereafter."

Not More than One Certificate to be Given without a Further Examination.

"9. A practitioner having issued a certificate under these Rules shall not issue a further certificate without again examining the insured person except that, if the original certificate is lost or mislaid, he may issue a duplicate, but in that case the form shall be clearly marked 'duplicate.'"

"11. If the practitioner, upon examination of an insured person who has been attended by him continuously during the preceding twenty-eight days and has been certified by him as incapable of work during that period, is of opinion that the

patient will not be fit to resume work until after a period of absence from his home during convalescence, he may issue an Intermediate Convalescent Certificate to cover a period of not more than fourteen days."

The new forms of certificate are set out in a Schedule to the Regulations.

FRIENDLY SOCIETIES AND THE INSURANCE SYSTEM.

IN this column last week a note appeared on the National Conference of Friendly Societies recently held at Bournemouth. A motion had been proposed that the Conference should approach the Ministry of Health for the purpose of urging the necessity of establishing a national medical service, but after discussion it was decided to refer the question back to the Committee in view of the National Provident Scheme for hospital and additional medical services submitted to the Conference by Dr. Gordon Dill. Our report briefly quoted from the opinions expressed by officials of various friendly societies; for the most part these were unfavourable to the insurance system. An opposite view was put forward a few days later by Mr. Frank Bailey, Manager of the National Union of Railwaymen Approved Society, in the course of a speech at Ipswich.

According to a report in the *Railway Review*, Mr. Bailey stated that the attack on National Insurance, which was being insidiously waged by the "anti-squander-mania" press, had gathered full momentum, and, incredible as it might seem, there was a deliberate plot to repeal the 1911 Act. The Conservatives, he declared, had never liked the Insurance Act, and now saw a favourable opportunity of destroying it under the plea of economy. The "yellow press" was endeavouring to prove that the panel system had been a failure and had served no useful purpose. Whilst there were inherent defects in the panel system, he continued, it was a gross libel upon the medical profession as a whole to aver openly that they had failed to fulfil satisfactorily their contract with insured persons. He recalled the splendid efforts of insurance practitioners to cope with the influenza epidemics during 1918 and 1919, when they saved thousands of insured persons' lives. Prior to the Insurance Act the average worker dreaded consulting a doctor on account of expense, with sad results; now he took the fullest advantage of the facilities the panel system afforded him. To whittle down and impair this great service would be the worst possible form of economy. The panel system should not be ended, but mended.

One proposal was to discontinue the Treasury grants to approved societies, but this, Mr. Bailey held, would have the effect of wrecking the whole scheme and cutting it adrift from the State. The Act was only in its infancy, and could be extended to meet all requirements during sickness. Every trade unionist should make it perfectly clear to his Member of Parliament that any tampering with the Act could not be tolerated. Mr. Bailey also said that the trade union approved societies were strongly advocating a State medical service under the Act, which would give the same highly efficient service as that rendered during the war to the troops. Here the medical profession parts company from him.

LOCAL MEDICAL AND PANEL COMMITTEES.

LONDON.

AT the meeting of the London Panel Committee on September 27th, Dr. H. J. CARDALE presiding, the Finance and General Purposes Subcommittee reported that steps had been taken to collect evidence to rebut the suggestion that a reduction of the capitation fee was justifiable. It recommended:

"(a) That, while still of opinion that the ideal to be aimed at is the establishment of an independent executive of the Conference of Panel Committees to undertake negotiations on behalf of the practitioners on the panel, the Panel Committee for the County of London decide to nominate representatives to attend the forthcoming conference.

"(b) That in view of the existing crisis, the committee decide to accept the offer of the Insurance Acts Committee to nominate a member upon it."

The CHAIRMAN said he must rule the second recommendation out of order, as the committee had passed a resolution to the effect that until an independent negotiating body was brought into being, they would not be represented on the Insurance Acts Committee. Dr. L. NUNDY moved an amendment to the effect that, pending the establishment of an independent executive of the Conference of Panel Committees, the London Panel Committee should reserve to itself the right to make representations [illegible]

Dr. [illegible] seconded the amendment, said there was [illegible] that the Insurance Acts Committee [illegible] the British Medical Association of doing; complete unity was needed.

Dr. W. COLDE ADAMS said he could not support the amendment. Their chief aim was to secure a firm and effective negotiating body. If they took this responsibility upon themselves they would only be weaker even than the Insurance Acts Committee.

Dr. E. A. GREGG said he had given notice of motion to appoint the Medical Practitioners' Union as the London Panel Committee's negotiating body with the Government. The CHAIRMAN said he must rule that out of order because of the recorded decision of the Committee. They could not have two policies, diametrically opposed. Dr. Gregg said he would move suspension of standing orders in order that the motion to which the Chairman referred might be rescinded. The Chairman replied that they might pass any resolution they liked, saying they would be represented by themselves, or by the Medical Practitioners' Union, or would take part in the present negotiating body. What they said, however, did not matter so much as what the Ministry said, and the latter had declared it was not going to listen to a multitude of professional organizations. He thought that was a reasonable attitude. The Conference of Local Medical and Panel Committees, instead of electing an independent body, had always elected the Insurance Acts Committee as its mouthpiece. However much they objected to the position, they could not get away from that hard fact.

Dr. H. J. COWIE said they were faced with an attack on the capitation fee, and the profession should be as united as possible. The fact had to be faced that the overwhelming majority of the Panel Committees—about 200, he thought, out of the whole number—had adopted a certain line of policy in regard to negotiations with the Government. At present it seemed that instead of taking a different line the London Panel Committee ought to fit in as far as possible with the majority. Some day the Medical Practitioners' Union might be the negotiating body, but it was quite absurd at the moment to think it could be. The only effective machine they had was the Conference and the Insurance Acts Committee. Whether it was a proper machine or not it was the only one likely to be effective, and the more thoroughly they backed it up the more likely they would be to get what they wanted.

The CHAIRMAN said he agreed that they must come down from the clouds and touch solid earth in this matter. The profession was faced with one of the greatest crises it had ever had to meet. It would be absurd for them to ignore the fact that the bulk of their brethren had decided what the negotiating body was to be. No one had fought harder than he for an independent body, but they must look at things from a plain, common-sense, every-day point of view. Whether they liked it or not, their brethren had said that the Insurance Acts Committee was to be the negotiating body, and as the result of the October conference he expected they would stand in exactly the same position. In reply to questions, the Chairman added that members of the Conference were not necessarily members of the British Medical Association. The panel had a perfectly free hand in electing representatives, so long as the latter were qualified practitioners.

Dr. NUNDY'S amendment was lost. The recommendation (*a*) of the Finance and General Purposes Committee was then adopted by a large majority. Dr. GREGG'S motion was withdrawn. The Committee elected as its representatives to the October Conference the Chairman, the Treasurer (Dr. Lauriston E. Shaw), the Secretary (Dr. R. J. Farman), and Dr. E. A. Gregg. Resolutions to be forwarded for inclusion in the agenda of the Conference were agreed to.

At the meeting of the Local Medical Committee for the County of London which followed, Drs. W. B. Caley and Gregg were appointed to represent the Committee upon the London Insurance Committee. The Panel Service Subcommittee recommended:

"That the preparation of an autogenous vaccine, the bacteriological examination of mouth, gums, and of a stool; and cultures from micro-organisms so isolated, are services which do not fall into the category of 'services which are of a kind which can, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill.'"

Also:

"That the operation of tonsillectomy does not fall into the category of 'services which are of a kind which can, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill.'"

These recommendations were adopted.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 6.30 p.m. (on Saturdays 10 a.m. till 2 p.m.).

Correspondence.

Reduction of Capitation Fee.

SIR, It is time we began to make up our minds how our representatives to the Panel Conference are to be instructed to vote. It is serious when our Government (for, I suppose, 90 per cent. of the profession are its strongest supporters) begins to economize at the expense of the medical profession.

Have we forgotten the story of the notification fees? As each year goes by the field of private practice is being narrowed for the general practitioner by the creation of whole-time services. Consequently his panel fee must be adequate, if he is to make both ends meet.

Now clubs are to be started in connexion with the voluntary hospitals, and the honorary staffs will be lucky if they get anything more than the most miserable payment for their work, whilst the general practitioner is certain to lose income. It means that soon, especially when the dependants of insured persons are taken in, the panel practitioners will have little income but their insurance money.

We must make a most strenuous fight against reduction. The Regional Officers are a luxury as at present. Previously this work was done by practitioners appointed and paid by the approved societies. The Ministry of Health has made a present of this money to the approved societies, and the efficiency of the service is no greater. I believe that the efficiency of the service could be safely entrusted to the Panel Committees. Without adequately equipped clinics the Regional Officers are converted into inspectors, who will be simply pinpricks to the insurance practitioners.

The Ministry of Health must hope to get the organization of clinics and specialists on the cheap by hospital clubs. I want the profession to realize the trend of events. —I am, etc.,

Helston, Oct. 3rd. FERDINAND REES, M.D.

SIR,—May I, for one, counsel "peace" in this matter of the reduction of our panel fees? If, under the existing financial conditions, the 9s. 6d. proposal were increased to 10s., and security given for the continuance of this for some years to come, until the State's finances improve, then I think the majority of panel doctors would willingly accept the terms under the conditions that now exist. Our difficulty now lies in the utter uncertainty as to the state of things from one day to the next. One dare make no improvements involving financial expenditure—no new developments—but must just "hang on" wondering what is going to turn up next. Give us security for some years ahead, and then progress becomes possible, and the immediate fee per head of secondary importance, if at all reasonable.—I am, etc.,

Bristol, Sept. 27th. E. J. BALL.

SIR,—At last the bomb has fallen and the panel practitioner is faced with a demand for a reduction in the capitation fee. It is only eighteen months since he received his first increase of payment under the arbitrators' award, and now the Government, with its usual policy of meddle and muddle, must put in its oar again.

I ask you, Sir, could any system of medical treatment be carried on successfully if subject to the constant interference of official and officious meddlers?

The medical profession during the war carefully refrained from asking for any increase of payment under the Insurance Act in case they might embarrass the Government, and this is their reward! The profession support no "ca' canny" policy, and they are out to give of their best for decent treatment.

Other workers were not so patriotic, with the result that they received increase upon increase, while our increase of about 50 per cent. only came about nearly eighteen months after the war was over. Perhaps I should be more correct in saying eighteen months after the Armistice. Let me ask the Ministry of Health (collectively or individually) a conundrum. Is the war over? and when I ask this question I ask it with reference to the restoration of the amount of the notification fee from 1s. to its pre-war figure, 2s. 6d. A state of war was officially declared to cease on September 1st, 1921, but I understand we are still technically at war with Turkey. Will this latter fact stop this increase until such time as we ratify a treaty of peace with Turkey? Oh, for a business Government!

Let me strongly reiterate the fact that we did not receive anything in the shape of a war bonus, but simply an addition to our fee. Have all war bonuses yet ceased in Government offices? If not, why not?

These constant pinpricks to the insurance practitioner will certainly not procure a reasonably paid and consequently a contented service, and this the Ministry of Health will some day find out. If a reduction is forced upon us the country will have a disgruntled and discontented service.

In the Insurance Act itself there are many corners to be filled up, and it is not the fault of the insurance doctor if his domiciliary treatment is not properly supplemented by specialist advice, hospital treatment, etc., as a matter of right to the insured person. These are some of the places of the Act where it fails to make good, and it is not the profession but the Government which is at fault.—I am, etc.,

PHILIP LAMBERT BENSON, M.A., M.D., D.P.H.Camb.

Steeple Claydon, Bucks, Oct. 2nd.

*** Dr. Benson has no doubt overlooked a Current Note, published in the SUPPLEMENT of August 6th, in which we informed the profession that the Government would revert to the 2s. 6d. notification fee at the beginning of September.

Superannuation and Insurance for Panel Practitioners.

SIR,—The formal notice from the Ministry of Health as to a reconsideration of the capitation fee brings again an opportunity for the establishment of a Superannuation and Insurance Fund for all doctors working under the National Insurance Act. This fund should be an integral part of any agreement between the Ministry and the Panel Committees.

With an elastic scheme of benefits all possible contingencies could be met. Existing insurances, the problems of varying size of lists, and the varying ages of the doctors, could, with actuarial assistance, be fairly and adequately met. Surrender values for doctors leaving the service, changing their type of practice, or going abroad, etc., could easily be arranged. Most important of all, the disaster of unexpected broken health could be generously dealt with by the Committee of Management of such a fund.

In 1913 such a scheme was suggested, and the late Sir George Hardy very kindly helped to draw up certain tables. In 1919–1920 the London Panel Committee passed resolutions in favour of a Pension Fund, and Dr. Addison expressed himself in favour of the principle.

Now again an opportunity presents itself, and it is to be hoped that Panel Committees throughout the country will support the principle and leave the details to be formulated by the Insurance Acts Committee and the Ministry. Surely the medical profession cannot be so blind as to fail to realize the immense advantages to be gained under such a scheme.—I am, etc.,

London, W., Oct. 2nd. H. H. MILLS.

Medical Statesmanship.

SIR,—It looks as if we are approaching once more some battles of medical statesmanship, and the leader who knows and we can trust is priceless. Sir Victor Horsley, alas! is no longer with us. What can we think of the British Medical Association and the Practitioners' Union, which permit a layman, however admirable Sir Alfred Mond, to be the head of the Ministry of Health? Is not the keystone of the arch of any import? Even Mr. McAdam Eccles's committee for the new scheme of hospital contribution is an eclectic one. Harley Street and the general practitioner are under mutual obligations, but it is to be hoped, however, that Harley Street does not contemplate, next time, opposition to the majority.—I am, etc.,

RICHARD GILLBARD.

Willesden Green, N.W., Sept. 11th.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notification is announced by the Admiralty: Surgeon Lieutenant Commander A. R. Sharrod withdraws with gratuity.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel E. E. Powell, D.S.O., relinquishes the acting rank of Colonel.

Major A. G. Cummins, M.C., retires on retired pay, September 27th, 1921 (substituted for the notification in the *London Gazette* of September 22nd, 1921).

The following Captains retire, receiving a gratuity: W. W. MacNaught, M.C., July 22nd, and is granted the rank of Major (substituted for the notification in the *London Gazette* of July 21st, 1921); K. A. Maclean.

REGULAR ARMY RESERVE OF OFFICERS.

G. T. Baker M.C., late Captain R.A.M.C., to be Captain with seniority, July 12th, 1920.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Flying Officer F. T. Allen to be Flight Lieutenant.

INDIAN MEDICAL SERVICE.

Major H. W. Acton has been posted to the School of Tropical Medicine and Hygiene, Calcutta (February 7th).

Major H. H. King, M.B., has been granted combined leave for one year (April 8th).

Majors promoted to the rank of Lieutenant-Colonel (July 29th): A. E. J. Lister, V.H.S., T. S. B. Williams (Brevet Lieutenant-Colonel), S. H. L. Abbott, D.S.O. (Acting Lieutenant-Colonel), J. E. Clements, H. B. Steen, E. Bisset, A. W. Overbeck-Wright, J. W. McCoy, R. M. Carter, C.B. (Brevet Lieutenant-Colonel), T. G. F. Paterson, D.S.O. (Brevet Lieutenant-Colonel), D. G. R. S. Baker, J. R. J. Tyrrell, D. G. Rai, R. M. Barron, D.S.O. (Brevet Lieutenant-Colonel), W. R. J. Scroggie, C.I.E., T. H. Gloster, H. H. G. Knapp.

Lieut.-Colonel G. Bidie has been permitted to retire February 5th).

Lieut.-Colonel D. P. Warliker (retired) has been permitted to revert to the retired list (May 29th, 1921).

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Major C. H. S. Redmond to be Lieutenant-Colonel and to command 1st East Lancashire Field Ambulance.

Major T. W. Banks, T.D., having attained the age limit is retired and retains the rank of Major, with permission to wear the prescribed uniform.

Major H. H. B. Cunningham, T.D., to be D.A.D.M.S. 53rd (Welsh) Division, August 2nd, 1921 (substituted for notification in the *London Gazette*, September 6th, 1921).

Captains resign their commissions and are granted the rank of Major: F. W. C. Brown, T. P. Cole.

The following Captains resign their commissions and retain the rank of Captain: D. H. MacPhail, A. D. Downes, A. M. Stewart, L. Beesley, J. M. Stalker.

Captain J. Kinnear (late R.A.M.C. S.R.) to be Captain, with precedence as from August 2nd, 1918.

2nd London Sanitary Company.—Captain C. N. Atlee resigns his commission and retains the rank of Captain.

5th General Hospital.—Captain H. B. T. Morgan, having attained the age limit, is retired, and retains the rank of Captain.

Supernumerary for service with O.T.C.,—Captain W. Barclay to be local Major, July 5th, 1921 (substituted for notification in the *London Gazette*, August 26th, 1921).

DEFENCE FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Temporary Colonel G. H. Edington, T.D., and Temporary Major R. Davidson have relinquished their temporary commissions.

1st London Field Ambulance.—Temporary Lieut.-Colonel O. W. McSheehy, D.S.O., O.B.E. (Major, R.A.M.C.) relinquishes his temporary rank.

6th London Field Ambulance.—Temporary Major J. H. Barry, D.S.O., M.C. (Captain R.A.M.C.), relinquishes his temporary rank.

The following officers relinquish their commissions:

Temporary Lieut.-Colonels: S. J. Fielding (2nd East Anglian Field Ambulance), W. Stobie, O.B.E. (1st South Midland Field Ambulance).

Temporary Majors: C. H. Lindsay, C.M.G., D.S.O., W. Haig, D.S.O.

Temporary Captains: W. Bannerman (3rd Wessex Field Ambulance), C. H. Vernon, E. Coplans.

Temporary Lieutenants and retain the rank of Lieutenant: J. I. Moir (1st Highland Field Ambulance), G. J. Scale.

Temporary Lieutenant: G. A. Fisher, M.C.

DIARY OF SOCIETIES AND LECTURES.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Mon., 8 p.m., Annual general meeting. 8.30 p.m., Presidential Address by Mr. James Berry, F.R.C.S.: Some Medical Experiences in South-Eastern Europe (illustrated by lantern slides).

ROYAL SOCIETY OF MEDICINE. *War Section:* Mon., 5.30 p.m., Presidential Address by Lieut.-General Sir John Goodwin, D.G.A.M.S.: The Aftermath of the War, with reference to the Medical Service of the Army. *Section of Neurology:* Thurs., 8.30 p.m., Presidential Address by Mr. Percy Sargent, C.M.G., D.S.O.: Some Observations on Epilepsy. *Clinical Section:* Fri., 5 p.m., Cases. *Section of Ophthalmology:* Fri., 8 p.m., Cases; 8.30 p.m., Mr. J. H. Parsons: The Fourth Cranial Nerve; Mr. Ernest Clarke: Milestones in Refraction Work.

SOCIETY FOR THE STUDY OF INEBRIETY, 1, Wimpole Street, W.—Tues., 5.30 p.m., Norman Kerr Memorial Lecture by Sir Arthur Newsholme, K.C.B.: Some International Aspects of Alcoholism, with special reference to Prohibition in America.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.1. Thurs., 4 p.m., Mr. O. L. Addison: Acute Infections of Bone.

MANCHESTER ROYAL INFIRMARY. Tues., 4.30 p.m., Dr. W. Dyson: Skin Diseases in Children.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W. Daily, In- and Out-patient attendances. Lecture, Mon. 5.30 p.m., Dr. Parkinson: Aortic Disease.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.2.—Thurs., 6 p.m., Chevalier Lecture by Dr. W. K. Sibley: General Principles of Treatment.

WEST LONDON POST GRADUATE COLLEGE, Hammersmith, W. Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. *Lectures:* 5 p.m., Mon., Dr. A. Saunders: Digestive Troubles of Infancy. Tues., Dr. Pernet: Ringworm. Wed. and Thurs., Mr. I. Gray: Surgery of the Mesentery. Fri., Dr. Burnford: Infective Endocarditis.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

11 Tues. North Northumberland Division, Infirmary, Alnwick, Address by Dr. R. A. Bolam, on the Modern Treatment of Common Skin Diseases, 2.30 p.m.

12 Wed. Chichester, Worthing and Horsham Divisions, Warne's Hotel, Worthing, 6 p.m. Address by Dr. H. W. Barber, 6.30 p.m.

Halifax Division, Royal Halifax Infirmary, Exhibition of Cases, 8.15 p.m. Lecture on Correct Technique and Effects of Twilight Sleep, by Dr. W. O. Greenwood, 8.30 p.m.

13 Thurs. Dorset and West Hants Branch, Hotel Metropole, Bournemouth; Luncheon, 1.30 p.m.: Meeting, 3 p.m.

20 Thurs. London: Annual Conference of Representatives of Local Medical and Panel Committees, Wesleyan Central Hall, Westminster, London, S.W., 10 a.m.

25 Tues. London: Propaganda Subcommittee, 2.15 p.m.

26 Wed. South Middlesex Division, St. John's Hospital, Twickenham. General business, 8 p.m. Paper by Mr. R. C. Elmslie, 8.45 p.m.

APPOINTMENTS.

CANDLISH, Eric Elsmore, M.B., Ch.B.Edin., Resident House-Surgeon, General Hospital, Nottingham.

SIMMONDS, B. Sangster, M.S.Lond., F.R.C.S., Assistant Surgeon to the West London Hospital.

EDINBURGH ROYAL INFIRMARY.—*Resident House Physicians:* C. S. Nimmo, M.B., Ch.B., to Professor Gulland; S. G. H. Gasson, M.B., Ch.B., to Dr. Rainy; E. Arnold Carmichael, M.B., Ch.B., to Dr. Bramwell; H. B. Thomson, M.B., Ch.B., to Professor Meakins; J. H. Fairweather, M.B., Ch.B., to Dr. Edwin Matthew. *Resident House-Surgeons:* C. E. Scott, M.B., Ch.B., to Sir James Hodsdon; C. Stewart, M.B., Ch.B., to Mr. Miles; J. S. Fulton, M.B., Ch.B., to Mr. Dowden; J. S. Bow, M.B., Ch.B., to Professor Sir Harold Stiles; J. W. A. Hunter, M.B., Ch.B., to Dr. Haig Ferguson; G. J. Alexander, M.B., Ch.B., to Dr. William Fordyce; D. I. Q. Macaulay, M.B., Ch.B., to Mr. Pirie Watson; R. J. O. Taylor, M.B., Ch.B., to Mr. Pirie Watson. *Non-resident House-Surgeon:* G. King, M.B., C.M.Edin., D.P.H., to Dr. J. D. Lithgow. *Clinical Assistant:* Mrs. Margaret T. Rutherford, M.B., Ch.B., to Dr. Gardiner.

EDINBURGH ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL.—*Interim Physician:* H. Oliphant Nicholson, M.D.Aberd., F.R.C.P.Edin. *Assistant Physician:* Hugh S. Davidson, M.B., Ch.B.Edin. *Senior Resident Physician:* J. F. Van Iddekinge, M.B., Ch.B. *Junior Resident Physician:* James Milne, M.B., Ch.B.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

MARRIAGES.

KELLY—POMEROY.—On September 13th, at the Pro Cathedral, Marlborough Street, Dublin, by the Rev. J. Charles O'Reilly, Dan Kelly, M.C., M.Sc., L.R.C.P. and S.I., of Tudor House, Heath Town, Wolverhampton, to Eileen Pomeroy, M.B., Ch.B., Willowbrook, Millstreet, co. Cork.

LLOYD SWINNEY.—On September 27th, at St. Martin-in-the-Fields, W.C., Edmund Eyre Lloyd, M.R.C.S., L.R.C.P., elder son of the late Deputy Surgeon-General Edmund Eyre Lloyd, I.M.S., to Margaret Mary (Marjorie), *née* Cotter, widow of John Swinney.

DEATHS.

CHAPMAN.—At "Fernecliffe," St. Catherine's, Lincoln, on September 25th, Caroline Ada Wallis Chapman, L.M.S.S.A., wife of Osmond H. Chapman, M.D.

GIBSON.—On October 1st, at 5, Beech Grove, Harrogate, Charles Gibson, M.D., J.P., Consulting Physician to the Royal Bath Hospital and Rawson Convalescent Home, and to the Northern Police Orphanage and Convalescent Home.

KERSHAW.—On September 23rd, in a nursing home at Margate, Dr. Herbert Warren Kershaw, of Stanhope Road, Darlington, and late of Dinsdale Park, Darlington.

VIRET.—On September 16th, 1921, at Bradford, Yorkshire, Benjamin Pope Viret, M.B.Lond., M.R.C.S., L.R.C.P., in his 55th year.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 15TH, 1921.

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British Medical Association.

CURRENT NOTES.

Remuneration of Insurance Practitioners.

A FULL report of the conference between the Minister of Health and a deputation of the Insurance Acts Committee, held at the Ministry on Tuesday afternoon, October 11th, at Sir Alfred Mond's invitation, is printed at p. 147 in this week's SUPPLEMENT. The Minister announced his intention to reduce the capitation fee paid to insurance practitioners from 11s. per annum to 9s. 6d., the mileage fee remaining as at present. The Insurance Acts Committee has sent a report of its deliberations on the subject to each Panel Committee and will report further to the annual conference of Local Medical and Panel Committees to be held at the Central Hall, Westminster, on Thursday next, October 20th.

Annual Meeting in Glasgow, 1922.

In a Current Note on October 1st we printed a list of the officers and subcommittees elected by the General Committee which met at Glasgow on September 22nd under the Chairmanship of Professor Sir William Macewen, President-elect of the Association. The following names have now been added to the Executive Committee for the Annual Meeting in Glasgow next July:

Sir John Reid, K.B.E., as Vice Chairman of Finance Committee.
Dr. A. K. Chalmers (Glasgow).
Dr. Joseph A. Clarke (Argyllshire).
Dr. G. D. McRae (Ayrshire).
Dr. W. B. Armstrong (Dumbartonshire).
Dr. James Laurie (Renfrewshire and Buteshire).

Sir Donald MacAlister, K.C.B., M.D., Principal and Vice-Chancellor of the University of Glasgow, has been appointed Honorary Chairman of the Reception Committee.

Annual Meeting, 1923.

The Annual Meeting of the British Medical Association will be held in 1923 at Portsmouth. The last time the Association met there was in 1899, when the late Dr. J. Ward Cousins was President. It will be seen from the report of a recent meeting of the Portsmouth Division, printed elsewhere in the SUPPLEMENT this week, that the Division has nominated Mr. Charles P. Childe, F.R.C.S., Senior Surgeon to the Royal Portsmouth Hospital, for election as President of the Association for the year 1923–24.

Work of the Medico-Political Committee.

The Medico-Political Committee, at its meeting on September 20th, gave further consideration to the question of the refusal of the Inland Revenue authorities to allow the army rate of income tax to women doctors who had whole time contracts with the Navy, Army, and Air Force, but were employed in attending female auxiliary units at home. The intention of the Committee was to appeal to the High Court against the decision of the Commissioners, but it was reluctantly obliged to let the matter drop, as no one could be found who had given notice of appeal against the decision within the statutory period.

A report was received that applicants for pensions for blind persons were apparently still being sent by local pensions officers to honorary officers of ophthalmic departments of voluntary hospitals for certificates of blindness, no fee being offered. The Medical Secretary was instructed to call the attention of the Board of Customs and Excise to all cases reported to him.

The Committee was informed that, in conjunction with the Association of Certifying Factory Surgeons, representations had been made by deputation to the Chief Inspector of Factories that the basic visiting fee for certifying factory surgeons should be raised, and that he had been informed of all the increases in visiting fees made by other Government authorities during the last two years. No decision has yet been made.

The Director of Migration and Settlement for the Commonwealth of Australia wrote asking that the Association should modify the fee of 10s. 6d. per adult and 2s. 6d. per child, which it had decided should be the fee for the examination of ex-soldier emigrants to Australia. The Director is being informed that no further reduction in the fee could be made as so much depended on the thoroughness of the examination.

A report was received that the Postmaster-General had expressed a wish that representatives of the British Medical Association should meet members of his Secretariat in order to satisfy him that, if official recognition were granted, the Association was in a position to represent thoroughly the interests of Postal medical officers; a small deputation was appointed to carry out negotiations and has since met representatives of the Post Office, with very satisfactory results.

It was reported that the Glasgow Corporation and the St. Pancras Borough Council had given notice to terminate the appointments of their married women doctors because their husbands are earning incomes. The Committee decided to inform these authorities that in the opinion of the Association it is undesirable to discontinue to employ married medical women in maternity and child welfare work seeing that they are peculiarly suited for such work.

Medical Representation on Public Health Bodies.

At the risk of wearying our readers, we wish to point out once again the desirability of medical practitioners serving on all public health bodies. With the yearly increasing scope of the Public Health Service it is important, and even essential, that the Health Committees of

these bodies, which deal with maternity and child welfare, treatment of school children, mental defectives, and so on, should have the assistance which medical men and women in practice are so well qualified to render. Now that the shears of economy are ruthlessly pruning every department without discrimination as to which parts can afford it without serious damage to the community, it is still more necessary to have medical representation on these committees. The annual elections in connexion with town, county and borough councils, urban district councils, and the like, take place in less than a month's time, and it is to be hoped that wherever possible candidates from amongst the medical profession will, in the public interest, offer themselves for election.

Correction.

In the Current Note headed "A Medical Officer's Salary," in last week's SUPPLEMENT (p. 134), the *Medical Officer* was inadvertently described as the official organ of the Society of Medical Officers of Health. The official journal of the society is *Public Health*, now in its thirty-third year of publication. It may be well to correct also a small misprint in the same article. In the sentence beginning "The Town Council recommended that a just appointment" the word "just" was an obvious slip for "joint," as the context showed.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held at 429, Strand, London, on Wednesday, October 5th, 1921, with Dr. R. A. BOLAM in the chair. There were present:

Professor David Drummond (President), Sir Clifford Allbutt (Past-President), Dr. R. Wallace Henry (Chairman of Representative Meetings), Dr. G. E. Haslip (Treasurer), Dr. T. Ridley Bailey (Bilston), Colonel T. D. Barry, R.A.F. (London), Dr. H. S. Beadles (London), Dr. J. W. Bone (Luton), Dr. H. B. Brackenbury (London), Dr. H. C. Bristowe (Wrington), Colonel Sir W. J. Buchanan, I.M.S.(ret.) (Dublin), Dr. C. Buttar (London), Mr. Russell Coombe (Exeter), Dr. H. G. Dain (Birmingham), Dr. J. S. Darling (Lurgan), Dr. James Don (Newcastle-upon-Tyne), Dr. C. E. Douglas (Cupar), Dr. T. P. Dunhill (London), Mr. W. McAdam Eccles (London), Lieut.-Col. R. H. Elliot, I.M.S.(ret.) (London), Dr. A. C. Farquharson, M.P. (London), Dr. A. Forbes (Sheffield), Dr. E. R. Fothergill (Hove), Dr. T. W. H. Garstang (London), Dr. T. Duncan Greenlees (Fordingbridge), Mr. F. Strong Heaney (Liverpool), Dr. A. O. Holbeche (Great Malvern), Mr. R. J. Johnstone (Belfast), Dr. R. Langdon-Down (Hampton Wick), Dr. D. Lawson (Banchory), Major-General Sir Richard Luce (Derby), Dr. J. A. Macdonald (Taunton), Dr. S. Morton Mackenzie (Dorking), Major-General Sir William Macpherson, A.M.S.(ret.) (London), Dr. Hugh Miller Hamilton, Mr. A. W. Nuthall (Birmingham), Dr. R. C. Peacocke (Blackrock, co. Dublin), Dr. Frank Radcliffe (Oldham), Dr. C. E. Robertson (Glasgow), Dr. D. A. Sheahan (Portsmouth), Dr. W. Snodgrass (Glasgow), Dr. John Stevens (Edinburgh), Mr. E. B. Turner (London), Dr. E. O. Turner (Great Missenden).

The Chairman announced with regret that Dr. W. B. Crawford Treasure, soon after his arrival in London for the Council meeting, was taken ill and admitted to hospital for operation. The Council sent a message of sympathy to Dr. Treasure, and to Mr. Bishop Harman, who has lately undergone an operation.

The Chairman was authorized to send letters of condolence to the families of the late Dr. J. Ward Cousins, formerly President of the Association, and Dr. T. Arthur Helme, formerly a member of Council.

The regulations governing the award of the Association's Medals for Distinguished Merit, which had become out of date, were amended in accordance with proposals submitted by the Chairman.

Annual Meetings.

The Council requested its Chairman to convey to all those who contributed to the success of the Newcastle Meeting the cordial thanks of the Association for their services. It was resolved that the Annual Representative Meeting next year at Glasgow should begin on Friday, July 21st, and that the Annual General Meeting be held there on Tuesday, July 25th, 1922.

As already announced, the Annual Meeting in 1923 will be held at Portsmouth. In regard to the place of the Annual Meeting in 1924, invitations from Bath, Bradford, Nottingham and Buxton were considered, and a ballot having been taken, the Council resolved to recommend to the Representative Body that the Annual Meeting be held at Bradford in 1924. The Medical Secretary was instructed to inform the other Divisions of this decision, and to express the hope that, as the Council considered it inadvisable to bind itself in this matter more than three years ahead, they would be able to renew their invitations at a later date.

The Council noted resolutions passed at Newcastle by the Sections of Venereal Diseases and of Orthopaedics and Diseases of Children, with a view to taking appropriate action at the proper time. A resolution by the Obstetrical Section asking the Council to vote a grant towards the expenses of a scientific investigation into the results of Caesarean section was referred to the Science Committee.

The Council decided that the Arrangements Committee for the Annual Meeting in 1922 should consist of the officers of the Association, together with six members elected by the Council, and six members elected by the Local Committee of Management of the Annual Meeting. The Medical Secretary and the Financial Secretary were appointed joint Secretaries of the Arrangements Committee. The functions of the Committee are to consider and advise the Council upon the appointment of officers of Sections and readers of addresses, and such other matters affecting the arrangements for the Annual Meeting as are referred to it. The six members elected by the Council are Mr. R. J. Willan, O.B.E., M.V.O. (Newcastle-on-Tyne), Professor C. J. Martin, F.R.S., Sir Humphry Rolleston, K.C.B., Mr. C. P. Childe (Portsmouth), Mr. Percy Sargent, C.M.G., and Professor A. J. Hall (Sheffield).

Medical Consultative Council.

A communication was considered from the Ministry of Health in regard to the reconstitution of the membership of the Medical Consultative Council. Seven members had been selected by lot to retire, and the Minister desired to be informed of the names of not more than six persons who in the opinion of the British Medical Association would be specially suitable, if appointed by him, to serve upon the Council in lieu of any of the retiring members. The Council resolved to submit the names of Dr. R. A. Bolam, Dr. G. E. Haslip, and Dr. J. A. Macdonald, who are the retiring members nominated by the Association, together with those of Dr. H. B. Brackenbury, Dr. T. W. Shore, and Sir Jenner Verrall.

The Council resolved to ask the Welsh Committee to consider the recently published report of the Welsh Medical Consultative Council.

Finance.

In response to an application for financial assistance from the Australian Branches in connexion with extra expenditure incurred in dealing with the federation question, the Council, having taken into careful consideration all the circumstances, resolved to grant the sum of £700 to the Australian Federal Committee for this purpose.

The accounts for the period June 1st to August 31st, 1921, were received and approved, and the Treasurer was empowered to discharge those remaining unpaid.

On the recommendation of the Science Committee the award of a new scientific grant of £60 was approved to Louis Gross, M.D., C.M., Douglas Fellow in Pathology, 1916, at McGill University, for a research into the normal and pathological anatomy of the great bowel in relation to the condition known as intestinal stasis.

A number of ordinary and additional grants to Branches were approved, and various proposals in regard to representation of Divisions on the Representative Body were adopted.

Organization.

On the advice of the Organization Committee the Council resolved to recommend to the Representative Body that the number of members of Council to be elected by the Representative Body under By-law 46 (*d*) be increased from four to eight. A special subcommittee was empowered to convene a conference of persons in touch with medical students at the teaching centres in Great Britain for the consideration of matters affecting the organization of medical students.

The Council considered the position of the British Medical Association in Canada. The solicitor, Mr. W. E. Hempson, attended and gave a brief account of his conferences with representatives of the medical profession in Canada whilst on a recent visit to that country. It was resolved that a letter should be sent from the Council to the Canadian Medical Association in regard to the possibilities of closer connexion—whether by federation of the two bodies or otherwise—between the profession in Canada, on the one hand, and the British Medical Association in this country and the rest of the Empire on the other.

On the recommendation of the Dominions Committee the Council resolved that if the Indian railway medical officers approved the scheme submitted to them for the formation of a British Medical Association Committee of Railway Medical Officers in India, such a Committee should be formed; that this should be technically a subcommittee of the Dominions Committee, and should act as its medium, when so required, between the Indian Railway Medical Officers Committee and the authorities in this country.

Insurance Acts Committee.

The Council debated at some length the following recommendation moved by the Chairman of the Insurance Acts Committee:

> That the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to ensure the continuance and improvement of this system.

Dr. Haslip raised the question whether this motion was in order in view of previous decisions of the Association; the Chairman ruled that it was in order as a recommendation to the Council, and that it was for the Council to take such action in connexion therewith as it thought fit. A communication was read from the Oldham Division, urging the Council to give a definite lead to members at the present juncture, and to initiate a considered policy with a view to its adoption by the whole profession. Dr. Buttar moved as an amendment that, pending the results of the inquiry asked for in Recommendation K of the Report of the Insurance Acts Committee to the Panel Conference (SUPPLEMENT, October 1st, p. 126), the Council considers it unwise to express an opinion upon the measure of success which has attended the provision of medical benefit under the National Health Insurance Acts. This was lost by 25 votes to 5, and the original motion was carried by 33 votes to 3. During the discussion of an amendment by Dr. Fothergill (subsequently withdrawn by the mover) the Chairman of the Insurance Acts Committee stated that any decisions of the Panel Conference on questions of policy affecting the whole profession would naturally be placed before the Council of the Association before action was taken.

Professional Classes Aid Council.

The Council resumed consideration of a communication from the Professional Classes Aid Council inviting the British Medical Association to nominate a representative thereon, and stating that the purposes of that council were fully discussed at the three conferences held in 1920, at which the Association was represented by the Treasurer, and set out in the by-laws of the new body. The Treasurer stated that, pursuant to the instruction of the Council, the Medical Secretary and himself had an interview with a representative of the Professional Classes Aid Council, and were satisfied that there was no likelihood of overlapping between the work of such a body and that of the medical benevolent organizations. It was resolved to nominate Dr. Haslip as the representative of the Association upon the Professional Classes Aid Council.

Miscellaneous.

Dr. E. R. Fothergill was appointed the Council's representative on the Executive Committee of the National Association for the Prevention of Infant Mortality.

The Council approved a resolution by the Scottish Committee that the fee for attendance at a welfare centre should be not less than £1 1s. where the session does not exceed one hour.

Meetings of Branches and Divisions.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A MEETING of the Portsmouth Division was held at the Royal Portsmouth Hospital on October 6th, to which non-members in Portsmouth were invited.

The action of the Executive Committee with reference to preliminaries for the annual meeting at Portsmouth in 1923 was endorsed, and the nomination of Mr. C. P. Childe, F.R.C.S., senior surgeon to the Royal Portsmouth Hospital, for the presidency of the Association for 1923-4 was confirmed.

The following resolution with reference to the capitation fee for panel medical service, after considerable discussion, was finally passed by a large majority:

> "The Portsmouth Division of the British Medical Association and medical practitioners of Portsmouth and district protest against any reduction of the capitation fee as settled by arbitration in 1920."

It was agreed to hold a medical supper on October 20th at 8.45.

MEETINGS TO BE HELD.

BIRMINGHAM BRANCH.—The sixty-seventh annual meeting of the Birmingham Branch will be held at the Medical Institute, Edmund Street, on Thursday, October 20th, at 3.30 p.m. Dr. T. Sydney Short, President for the ensuing year, will give the inaugural address on "Memory psychologically considered."

METROPOLITAN COUNTIES BRANCH: WILLESDEN DIVISION.—A meeting of members and non-members will be held at St. Andrew's Parish Hall (Institute, behind Church), High Road, Willesden Green, N.W., at 8.30 p.m., on Tuesday, October 18th. Agenda: Dr. C. E. Goddard, O.B.E., Vice-Chairman of Harrow Division and M.O.H. Wembley and Harrow, will read a paper on "Lister and his times." Members and others are requested to report clinical cases of general interest at each meeting. If fourteen days' notice be given to the Honorary Secretary papers will be put on the agenda. Meetings third Tuesday of each month. On November 15th delegates from the Willesden Ratepayers' Association will attend to take part in consideration of the forty-fifth annual health report. Copies may be obtained at Dyne Road.

METROPOLITAN COUNTIES BRANCH: SOUTH MIDDLESEX DIVISION.—The following programme has been arranged for 1921-22, meetings to take place on Wednesdays at St. John's Hospital, Twickenham:—October 26th, 8 p.m., general business; 8.45, Paper by Mr. R. C. Elmslie, "Minor disabilities of the feet." November 2nd, annual dinner. November 23rd, 8 p.m., general business; 8.45, paper by Dr. A. M. H. Grey, "Skin diseases commonly met with in general practice." December 7th, 8 p.m., clinical meeting, cases to be shown by members; business (if any) afterwards. January 18th, 1922, 8 p.m., general business; 8.45, paper by Dr. Herbert French, "A few small clinical and therapeutic points." February 1st, 8 p.m., general business; 8.45, paper by Dr. H. Batty Shaw, "Early diagnosis of tuberculosis." March 1st, 8 p.m., clinical meeting. May 17th, 8.30 p.m., annual meeting of Division.

REMUNERATION OF INSURANCE PRACTITIONERS.

THE MINISTER OF HEALTH'S DECISION.

A DEPUTATION of the Insurance Acts Committee of the British Medical Association waited upon Sir Alfred Mond, the Minister of Health, on Tuesday afternoon, October 11th, to discuss the reduction in the capitation fee which the Minister proposes.

The members of the deputation were: Dr. H. B. Brackenbury, Dr. R. Wallace Henry, Dr. F. Radcliffe, Dr. J. P. Williams-Freeman, Dr. R. A. Bolam, Dr. Herbert Jones, Dr. Ridley Bailey, Mr. H. S. Souttar, Dr. H. F. Oldham, Sir William Hodgson, Dr. W. R. Martine, Dr. R. W. Craig, Dr. Cuming Askin, Dr. T. Wood Locket, Dr. Withers Green, Dr. H. S. Beadles, Dr. Michael Dewar, Dr. Andrew Smith, Dr. C. J. Palmer, Dr. Alex Forbes, Dr. H. G. Dain, Dr. G. B. Hillman, Dr. C. H. Panting, Dr. E. A. Gregg, Dr. J. C. S. Burkitt, Dr. W. J. Howarth, Dr. Mabel Ramsay, together with Sir Dawson Williams (Editor), Dr. Alfred Cox (Medical Secretary), Dr. N. G. Horner (Assistant Editor), Dr. G. C. Anderson (Deputy Medical Secretary), Dr. J. R. Drever (Scottish Medical Secretary), and Dr. C. Courtenay Lord (Assistant Medical Secretary).

Those accompanying the Minister were the Secretary for Scotland (the Right Hon. R. Munro, K.C., M.P.), Sir Arthur Robinson, Sir George Newman, Sir Kingsley Wood, M.P., Sir Walter Kinnear, Sir James Leishman, Mr. Strohmenger, Dr. Smith Whitaker, and Mr. Harris.

Sir ALFRED MOND said: I am very much obliged to you for coming here in order to discuss a very difficult subject and one that has given me a considerable amount of anxiety. As you are well aware, the Government has to undertake a very severe revision of its possible expenditure throughout all its services, and my department is not in any way immune from the considerations of economy which national finance is forcing upon us. It is obviously not an enviable position for a Minister of Health to be placed in if his department is to continue the beneficent operations of the various health work of the country to which you—as we—attach so great importance.

The National Health Insurance Act can, I think, claim on the whole to have been a great success. It has, as you are aware, its critics, its opponents, and those, perhaps, who are eager to use this opportunity to destroy it. One of the aspects of it which has been the subject of bitter attacks in the press and elsewhere has been the medical services rendered under what we know as the panel system. I would like to take this opportunity of saying that, having gone into the matter to some considerable extent, I believe that the panel system, although like all human institutions imperfect, and having, indeed, fairly obvious imperfections, has worked successfully, especially if a comparison is instituted with what existed before it came into operation. Medical men are, as we should expect, performing their difficult and arduous task with zeal and conscientiousness, and although here and there you get criticisms of the way in which one man or another is dealing with his patients, I think no one would

say that on the whole the medical profession has not done its best to make the panel system a success. If, therefore, I have called you into conference it is because I am placed in the position of being compelled to ask you to make some reduction in the scale of remuneration. As far as the Ministry is concerned—as far as the Government is concerned—no reflection whatsoever is intended upon the services rendered under the panel system. The appeal I make to you is the appeal of citizenship. We are all compelled to make some sacrifice for the common good in a great financial crisis. I have no desire or intention to enter into long haggling negotiations with the medical profession. That would be very undignified on both sides. It would have been preferable if we could have avoided reopening the subject so soon after the last decision, and I can well understand a certain feeling of impatience that the subject should be reopened. The necessities are the national financial situation, which renders it impossible to deal with this matter as we should have liked to do at a later stage.

When the panel system was first adopted the average remuneration per patient was 7s. 3d., and as the result of the last negotiations this sum was fixed at 11s. I know that the Ministry thought it too high; the medical profession thought it too low; and I have no doubt that both sides could make out a very fine argumentative case. But, at any rate, the fact remains that an independent body arrived at 11s. at that time (March of last year). Taking that as a basic figure, and having regard to the trend of events since then, we find that the cost of living has fallen since that figure was fixed. (I have no doubt that the arbitrators had regard to the general trend of matters at the time they gave their decision.) But we are now, as everybody will agree, on a declining basis. Fortunately for the country, and very fortunately for all those connected with the learned professions, there has been a continuous downward curve in the cost of living, and I have no doubt that the figures will continue to decline at a fairly steep rate. That, of course, is one of the factors which has to be taken into consideration. I do not want—nor do I think it advisable—to put forward a mathematical formula.

Well, I am endeavouring, with the help of my advisers, to look at this question from both sides and to see what result I can arrive at and propose to you as a fair and equitable proposal. The conclusion which has forced itself on my mind, having regard to the economy which is enjoined upon us, and which is being carried right through the remuneration of Government servants and Government expenditure generally, is that the sum of 11s. should be reduced to 9s. 6d., and that the arrangements in force now regarding mileage and things of that kind should remain in force as in the past. I have no doubt that a great many arguments can be brought forward—I have heard some of them in advance—against this reduction or this scale of reduction. The saving which I shall be able to effect on a 9s. 6d. rate will still leave us with a heavy burden for medical benefit on the National Exchequer, and the relief, although substantial, will not be very great.

I have got to consider what is the possible alternative to this if the proposal is not accepted, and you do not come to the assistance of the State by agreeing to a figure of this character. I am sure that there is no one here who is in the least degree anxious to see a revival of the old conditions with regard to the medical profession and the friendly societies. You will remember, as I do, that at the time when the Insurance Bill was before the House of Commons, considerable pressure was brought to bear by the approved societies that there should be no interference with their practice of raising their own medical benefit and negotiating directly with the medical profession on that subject. I do not think that at the time the medical profession was very enamoured of being put in the hands of the friendly societies—and for many excellent reasons. But the pressure from that source has always existed and still exists. It would be quite foolish of me to deny it. Therefore I am sure you do not wish to escape from the Scylla of the Ministry of Health to the Charybdis of the friendly societies. The other alternative would be, frankly, to abolish medical benefit, giving insured persons the amount of money they are entitled to, and letting them go to the doctor or chemist for a bottle of medicine as they feel inclined, or having no medical treatment at all and trusting to the powers of nature to remedy their condition. That would be a very unsatisfactory state of things. It would relieve the State of responsibility, but it would not be satisfactory, either in the interests of health or of the medical profession. But those are the alternatives which may be forced on us if we cannot come to an agreement by which I can show to my colleagues in the Government, and to the country, a reduction of the big burden at a time of great national crisis. It was these considerations which have led me to this figure which I have mentioned. I think it is a not ungenerous figure. It is a great deal more than we began with when the Act was originally started, and is rather more than some people think I ought to propose, and one which cuts down the saving I had hoped to make. But it is a sum which I hope will enable you to continue, with cheerfulness and loyalty, to devote yourselves to the interests of the health of the community, as I know you would do under any circumstances in the interests of the patient. Therefore I think I can look forward to an acquiescence in what I propose.

Sir Alfred Mond agreed to the suggestion of the Chairman of the Insurance Acts Committee that the Committee should consider in private what he had said before giving him an answer. Before this took place Dr. Brackenbury desired to say a few words in order to make the situation clear. He explained that the Committee was in fact the executive committee of a representative Conference, and it was not in a position now to give any final answer; he would have to put the proposition before the Conference. The Minister agreed, and Dr. Brackenbury continued: No doubt what we put forward will have great weight with the Conference, but all we can do is to put the situation fairly before them. We cannot say what the action of the Conference will be. We can only put the case before them and leave it there. I have not been quite clear how far you, Sir, appealed to us purely and simply on patriotic grounds, on the grounds of an exceedingly difficult financial situation. Your main appeal was made obviously on patriotic grounds, but you introduced certain considerations which left doubt in my mind as to how far this appeal merely on patriotic grounds is to be considered. Of course, I must say the appeal to patriotism comes home to us as one of the most patriotic sections of the whole nation.

Sir A. Mond: Hear, hear.

Dr. Brackenbury: It is not quite clear, Sir, whether there were not other considerations which you wished us to deal with. You put before us certain alternatives, which we recognize as alternatives, though I myself would have merged them into one instead of putting them as two, for they appear to me to be practically the same. You mentioned alternatives from which you said the Ministry would shrink, and I can imagine that any Minister of Health would shrink from them just as much as we should. But after putting forward these alternatives you used the phrase, "if we cannot come to an agreement." I should be very glad to know whether those words meant that the statement you made was a final statement, or whether it is possible for us to place some considerations before you which might have some hope of bringing about some qualification.

Sir A. Mond: Regarding the first part of what Dr. Brackenbury said, I would say this: At the outset of my remarks I made it clear that if we were not in a serious financial position, if we had not these serious financial difficulties, I should not feel at all disposed to disturb the arrangement come to a short time ago. My appeal was mainly based upon the general sacrifices we all have to undergo at such a time. What I did point out was—and this was the object of my further remarks—that the conditions, the cost of living, and so on, are now much more favourable. Though, as I said, I do not want to enter into any argument, because the whole thing never was based on what you might call the sliding scale idea, I want to point out that the reduction in the cost of living would obviously soften the sacrifice which you are asked to make, making it a less hard and difficult thing for the medical profession to agree to than otherwise might have been the case. If the cost of living had not gone down I should have made the same appeal with a more difficult conscience than I do now. I am glad that to that extent circumstances support the appeal I am making. As regards Dr. Brackenbury's second question, I think it is a rather difficult question to ask me

at this moment. I think the figure of 9s. 6d. ought to be regarded as the final figure. I prefer not to start with a very low figure and then go up the scale in the way of bargaining, and "splitting the difference," and so on. I prefer to put my cards on the table and put down what I consider to be a really fair and reasonable figure under all the circumstances. Perhaps this figure would not be acceptable to those who find the money for these things, and who have to consider the finance of the country and the achievement of economy, but I am rather going beyond them in putting down the 9s. 6d. in preference to a lower figure. I have put it forward not as a bargaining figure, but as a conclusive figure, and I hope it will be treated in that sense. I have carefully avoided the mixing up of other subjects with it, not touching on the question of mileage and other problems. I prefer to leave the latter as they are and to let this figure stand by itself, at any rate for the present. As you are aware, the inquiry into the whole question of the work of the National Health Insurance Acts is not yet set on foot, and it will take a long time to carry it out. Therefore I cannot afford to wait to take any steps while that inquiry is under way. My proposal is this figure, a figure for a temporary period. No doubt when that inquiry is held we shall arrive—I should like to, very much—at more settled data. It is not really satisfactory to either party to have to make frequent and continuous bargains. (Hear, hear.) It is unsettling to both sides. I should like to arrive at some settlement for a longer period. If there is any strong feeling regarding the length of the period on your side I can assure you I should be very glad indeed to give the subject my very best consideration.

The Minister and his advisers having retired, the deputation considered the proposal in private.

After the adjournment, on Sir Alfred Mond and his colleagues returning to the room,

Dr. Brackenbury said: Sir, we have considered the statement you have made to us, and there are just one or two things we want to say. You have made the appeal on patriotic grounds, and we have approached the matter with a desire to do whatever we can to meet the position as you have put it before us. We do not want to cavil or haggle at all, and we should like to go to the Conference and to the profession and say, "We are asked to give up a certain sum on the grounds of pure patriotism, although the justice of the case does not necessarily demand that we should give it up." But then, we are faced with an alternative—not the one, Sir, that you have mentioned. The alternative is this: We none of us feel called upon by pure patriotism to take part in a service which is not a good and effective service. We are ready to take part in a good service, even though it involves a sacrifice for patriotic reasons, but if we had any suspicion that the conditions under which the service was being run made it likely that the service would become inefficient, and that it would not be dignified and proper for us to take part in it, we should have to give it up and face whatever alternatives there might be.

It is true that there has been no inquiry and that no exact data are available as to the amount of labour involved in panel work, but we who have been working the service ourselves know our own experience very well indeed, and we also know the minds of our fellows, and we do feel that there is a serious danger of the service becoming an unsatisfactory one. I do not like to make that statement, but I am afraid that the naming of a figure, whatever it might be, would have this effect—a considerable number of doctors who at present are in the service for the sake of making it a good service, would feel that it was no longer worth while for them to remain, and their absence would lower the service as a service, and it would become less attractive and satisfactory. Then another layer of men would presently leave the service, and you would only arrive at stability when sheer economic pressure compelled certain men to cling on to the service. We dread any approach to a vicious circle of that kind. Quite honestly we feel that even at a fee of 11s. we are on the very edge of that situation. It might be possible to lower the fee so as to bring us over the edge, and yet at the same time, by an appeal to our patriotism, to keep us all together in the service, resolved to make it a thoroughly good one. But there comes a point at which the other situation begins to materialize, and we feel that that point has been reached by the figure you have just named. We shall, of course, put that figure to the Conference, and give the representatives a proper and fair report of this afternoon's proceedings. If, however, it is possible for you to reconsider that figure, it is clear that the less sacrifice we have to demand from our colleagues the more effectively we shall be able to back the appeal; and honestly, we should like to back the appeal and say to them that, purely as a matter of patriotism, they were asked to forego a portion of their remuneration. But if we have to go to the profession and say at this stage that what is proposed involves the danger of the service becoming less and less satisfactory, we should not feel so confident in the result of the appeal. We should like to go to the Conference with such a degree of goodwill as will enable us thoroughly to back up the proposal, but I am not sure that at present we feel we can do that. We hope there is still some possibility of an arrangement whereby we could accept a certain sacrifice without endangering the value and efficiency of the service.

I have one other remark to make. It has been stated that an inquiry into the operation of the Insurance Act is to take place. If, in obedience to the appeal to our patriotism, what is now proposed should be accepted, we hope that if times improve our position would in no way be prejudiced by having done so. Finally, Sir, we hope you have appreciated the point I have made about the possible reconsideration of the proposal.

Sir A. Mond: I am very much obliged to you for the kind way in which you have received my proposals and for what you have just said. I should like to say a few words on the last aspect. It is obvious that the inquiry that is going to be held must cover all the ground. It must be without prejudice. In regard to the very important point—I quite realize that you emphasized it—as to what one might call a certain top layer in the service coming to the conclusion that the sum named was not satisfactory, and therefore leaving the panel system, and thus diminishing the status of the whole service, I can only say this: It is obvious that that process must and can take place at all times regarding any figure except one which there is no possible chance of putting to you. Just as there are now a certain number of medical practitioners who are not in the panel service, so there will always be a certain number of people coming out, and there will always be a certain number available—good young men, I imagine—coming in. I cannot imagine this question being so greatly affected by a little more or a little less. I told you I was not going to haggle about this thing, and I am not. I have stated my figure. We generally recognize it as a reasonable and under the circumstances a generous figure, and I must say I sincerely trust you will put it before your Conference with a little more support, perhaps, than you have thought right to give it here this afternoon. On reflection perhaps you will do so. I think it is only right, for I have gone to considerable lengths. What I have done I have done very unwillingly, but deliberately with the idea of not going up or going down from the figure stated. I think, on the whole, it will be seen that it is reasonable. I am asking you to make sacrifices undoubtedly. You are always making sacrifices, I know, but I am asking you to come to my assistance now by accepting in a big and generous spirit the figure I have put forward. I shall await, of course, the result of your Conference, and I shall do so with a considerable amount of confidence. I am reminded by one of my colleagues of what I myself was going to say, that it is hardly possible for me to imagine that men who are high up on the border line of the panel service, men presumably well situated economically, should go out for the sake of the somewhat small amount we have mentioned here. I cannot bring myself to believe that really could be the case. I can only say I am very confident, and I hope the Conference will take the same view. I trust you will use the influence you possess—and I know it is very considerable—in inducing the Conference to accept this figure and not to throw the whole thing back into the melting-pot. In that case, I may add, the final result might possibly not be better than the first, but even worse. I must make it quite clear that if this figure is not accepted we shall reserve to ourselves full liberty to consider any other proposal that may be made. But I

want to avoid all that. I think in the interest of the medical profession and as business men you, too, will agree that it should be avoided.

The deputation then withdrew.

Insurance.

LONDON PANEL COMMITTEE.

AT a special meeting of the Panel Committee for the County of London on October 6th, Dr. H. J. Cardale presiding, the report of the Finance and General Purposes Subcommittee, which had further considered the question of the representation of the Committee on the Insurance Acts Committee, was received. The Subcommittee recommended that a previous resolution—that no representative to the Insurance Acts Committee should be nominated—should be rescinded, and that Dr. E. A. Gregg should be nominated as a representative of Group K during the remainder of the year 1921 and for the years 1921–22. The Subcommittee expressed the opinion that London should constitute a group for the purpose of the election of representatives upon the Insurance Acts Committee. The Chairman said this simply meant that they reaffirmed their opinion that an independent body should be formed, but in view of the grave crisis that had arisen they all agreed that there should not be even a semblance of disunity in the profession. Therefore, those who had objected to representation on the Insurance Acts Committee would sink their views in order that all should be united in presenting the best possible case to the Ministry. The recommendations were agreed to without discussion. It was further agreed that among resolutions to be brought forward at the forthcoming Conference there should be one instructing the Insurance Acts Committee to take such steps as might be necessary to ensure co-operation with the Medical Practitioners' Union; and another expressing the opinion that provision for the superannuation of practitioners working under the National Insurance Acts should be included in the terms of service, such provision being taken into account in any negotiation as to remuneration. There being no debate, the meeting only occupied a few minutes.

JOINT CONFERENCE OF THE WARWICKSHIRE AND COVENTRY PANEL COMMITTEES.

A CONFERENCE of the two Panel and Local Medical Committees of Warwickshire and Coventry was held in Coventry on September 29th for the purpose of considering the nomination of two members to the local Voluntary Hospital Committee for the area and other matters of joint interest. Dr. Lowman, Chairman of the Coventry Committee, was voted to the chair, and the names of Dr. E. N. Nason of Nuneaton and Dr. A. Hawley of Coventry were unanimously agreed to be forwarded to the clerk of the county council as medical representatives on the local Voluntary Hospital Committee from the two areas. It was also decided to ask the Commission to consider the name of Dr. Hoskyn of Rugby as a suitable member when making the five nominations reserved to them.

The Conference also had before it a draft *Formulary* which the Group F, Standing Joint Committee, had circulated with a view to getting an agreed formulary for use in all the areas covered by the Joint Committee. It was unanimously agreed to adopt the principle of a standard formulary, and Dr. Stormont, representing the Warwickshire Panel Committee on the Subcommittee of Group F, Joint Committee, which is dealing with the matter, was asked to propose certain variations and additions. Consideration was also given to the question of the representation of Group F on the Insurance Acts Committee, and the Conference unanimously agreed to nominate and support Drs. Ridley Bailey and G. A. Wilkes for membership.

Warwickshire Panel and Local Medical Committee.

The Warwickshire Panel and Local Medical Committee met at Coventry after the conclusion of the Joint Conference of the Panel Committees reported above, the chair being taken by Dr. H. Tibbits. It was reported that the Minister had approved the new scheme of constitution, which provided for a two years' term of office and also for a postal vote by constituencies on voting papers containing the names of all insurance practitioners in the respective constituencies, thus dispensing with the necessity for nominations prior to future elections. The Minister had also recognized the Panel Committee as Local Medical Committee for the area. Appointments to the new Insurance Committee and standing subcommittees were made, and it was arranged that the committee should be represented at the forthcoming conference of the Insurance Acts Committee by Dr. H. Malins (Warwick).

The provisional agenda of the October conference was considered, together with the Report of the Insurance Acts Committee. The committee decided to adopt and forward as their own resolution the motion by the Insurance Acts Committee, to the effect that the profession is justified in uniting to ensure the continuance and improvement of the medical benefit system, the meeting being unanimous in attaching high importance to the affirmation of this principle. It was agreed there should be no pressure at the present time for an increased capitation fee, but that any reduction ought to be resolutely resisted, and a motion to this effect was forwarded for the agenda.

Correspondence.

Remuneration of Insurance Practitioners.

SIR,—In the crisis impending we must avoid those blunders which were our undoing in 1912.

First, the vote by show of hands, the folly of which was demonstrated by its sequel. Whenever concerted action is contemplated, not only should secret ballot be universal but ample notice that this will be the rule should be sent, with copy of the agenda, to every member before the meeting.

Secondly, neglect of lay opinion and assistance—an absolutely fatal error. Now we must decide whether or no we wish health insurance to continue. If we do not, we must offer an efficient substitute; if we do, we must somehow reduce the inordinate expense of the present measure. It is futile to suppose that we can do either the one or the other without the very best lay co-operation and advice. No time should therefore be lost in inviting to confer with us experienced practical laymen of the right sort.

The third mistake which I would mention was a lack of common sense and foresight shown in our calculations. Even the Council of our Association[1] expected but 1s. 5d. per attendance from that capitation of 8s. 6d. for which we went on strike, whilst other prognostications far more grotesque were vented at the Representative Meeting and published in pamphlet form. The ludicrous prophesy that panel practices would be unsaleable was actually believed, and other equally mischievous warnings received ready credence. In vain I, at that time, repudiated such nonsense.

That there may be no similar ignorance again I here tabulate the financial position under various capitations, calculated on *three years'* actual working of the Insurance Act *over the whole of Scotland*.[2] Wide local variations occurred, which demonstrate the worthlessness of any merely local figures, but the average number of attendances were 3.15 per insured person. Let us, for safety sake, allow an error of 10 per cent. unrecorded attendances, and we have 3.5 for our basic figure. Now a hypothetical panel doctor, spending on an average forty-eight hours a week exclusively on panel professional work of all kinds in an urban or suburban area, could readily undertake a panel of 3,000. We need not consider a part-time man at all, because his panel receipts per hour and per attendance will be just the same, and what he does and earns in his private time has nothing to do with panel pay. Likewise we need not include in the calculation the rural doctor. His special disadvantages must be met by special measures, and except in circumstances quite exceptional, are now adjusted fairly by the mileage grant. Finally, in order to compare panel with private income, let us accept the estimation of our Council and allow a deduction of 10 per cent. from the second, on account of bad debts, to which I would add expenses of collection. In the figures below a panel of 3,000 is presumed, with forty-eight hours per week devoted exclusively to panel work. Attendances will average 202 a week—say, 33 on weekdays and 4 on Sundays and perhaps one-third will be visits at the patient's home:

Capitation.	Gross panel income.	Equivalent private income.	Payment per attendance on panel.	Equivalent in private practice.	Payment per hour on panel.	Equivalent in private practice.
s. d.	£	£	s. d.	s. d.	s. d.	s. d.
7 0	1050	1161	2 0	2 2½	8 9½	9 8
9 6	1420	1562	2 8½	2 11¾	11 5	12 6½
11 0	1650	1815	3 1½	3 5¼	13 2½	14 6
13 6	2025	2227	3 6½	3 10¾	16 2½	17 10¾

Payments for drugs and mileage are not included, nor is any allowance made for that credit for unallotted persons, numbering nearly 10 per cent. of the total, which correspondingly increases the income from all but the maximum panels.

Panel doctors should calculate very carefully the income which they may expect from their present panel patients, whether privately or under any other species of contract, including the National Deposit System, and compare the results with those given. They must bear in mind that nearly all are members of some powerful society, so that the membership of these in England and Wales alone reaches 12,450,000, whereas in 1912 the whole total was

[1] Report of the Council, BRITISH MEDICAL JOURNAL SUPPLEMENT July 6th, 1912.
[2] Report on National Health Insurance, 1914–1917, p. 295.

250,000. These societies must now prove a far more formidable factor in any decision affecting their members. Finally, the doctors must decide what system would be best in the public interest. Have we now wisdom and statecraft to join with the best elements of the laity, not omitting to include among them some representatives of those societies which I have mentioned, in a sane and timely effort to help our country in its need? Or shall we pursue a petty personal policy, and plough our lonely furrow to its inevitable end?

The spirit of conference for the settlement of all differences is abroad to-day, and, as I ventured to say at a meeting in 1912, "There is nothing beyond amicable settlement by reasonable laymen meeting reasonable medical men in a reasonable frame of mind."—I am, etc.,

Chichester, Oct. 8th. G. C. GARRATT.

SIR,—May I draw attention to an additional hardship of the panel practitioner which, so far as I am aware, has not previously been mentioned? At present the capitation fee payable to panel practitioners is 11s. per insured person, but it would be interesting to know how many doctors actually receive that amount.

Apparently the Ministry of Health sends a sum to each county, and each panel doctor gets his "proportion" of this amount. (The amount available for Cornwall for the quarter ending September 29th was inadequate to pay 11s. per insured person.) But before this money is shared out certain extras are deducted, such as anaesthetist's fees, so that instead of a capitation fee of 11s. being paid to the panel doctor, he actually receives something nearer 10s. 6d. A voluntary levy of ½d. per insured person is also deducted to pay the expenses of the Panel Committee. This in one quarter for county of Cornwall amounts to £171 3s. 4d.

It seems to me that the practitioners should not be made responsible for working expenses incurred by the Panel Committee on behalf of the Ministry of Health; and, although this levy is "voluntary," if no panel doctor subscribed to it there would be no one to look after his interests as well as those of the Ministry of Health. The Ministry itself should be responsible for a body to look after its own interests as well as those of its servants.

It is unreasonable, also, to penalize financially those practitioners who have not had occasion to administer anaesthetics, by deducting a proportion of the fees from their capitation grant. Any extras that are payable to a few should not be paid for by the whole, but by a separate fund allocated for that purpose by the Ministry of Health. These total deductions in my own practice amount to almost £40 per year, and yet the Ministry is threatening further to impoverish us by yet another reduction.—I am, etc.,

E. S. TOOGOOD, M.A.Oxon., M.R.C.S., L.R.C.P.

Liskeard, Cornwall, Oct. 10th.

SIR,—With reference to the proposal to cut down the payment to panel practitioners. There is no room for doubt as to the urgent need for economy in all State expenditure.

I would suggest, therefore, that as good citizens we should accept a reduction, provided that the salaries of the medical officers attached to the Ministry of Health are subject to a proportionate reduction, and that the regional medical officers are abolished. These latter do not, and, in my opinion, never will be of sufficient use to justify their existence. A considerable economy might also be effected by reducing the number of tuberculosis officers, and allocating some of their really useful work to the general practitioner. But we should strongly oppose any attempt at reduction while the over-staffed Ministry keeps its officials on full pay.—I am, etc.,

Watford, Oct. 5th. J. C. BARKER.

SIR,—With regard to the proposed reduction of the capitation fee, I would like to state that, if any reduction be made, it should take the form of a percentage reduction of all salaries, beginning with that of the Minister of Health, and affecting all departments, administrative and medical, and ending with the office boy. That, in my opinion, is the only fair method, and one which, at any rate, would have the stamp of sincerity.—I am, etc.,

H. VAN DER BEKEN, M.R.C.S.

Whipps Cross, Leyton, E., Oct. 9th.

A Panel Referendum.

SIR,—The question of the remuneration of panel practitioners is acute. And I, for one, have my doubts as to the present method of defence meeting the circumstances of to-day with sufficient force and unanimity. Every insurance practitioner should, I suggest, be included in a still more sharply defined movement against the unreasonable decision of the Government to cut down doctors' fees. And this I consider to be fully as necessary because we are, in fact, the restorers and builders of the health of millions of our countrymen and women, as from the point of view of insisting on our receiving fair remuneration for work done.

Unfortunately it cannot be disputed that there are many doctors who are virtually outside the orbit of the painstaking committees that are acting for them. And some of these doctors — whether it is that they have regard to certain insurance troubles in the past, or are fearful as to the possibilities of the future—distrust and may at some critical moment fail to support the present acting committees.

It does not help things to say that it is easy for everyone to learn what is being effected by the local and general organizations. Many panel practitioners either cannot or will not do so. And some of those I am acquainted with take exception to what they term the wide powers and complicated clauses of Insurance Committee constitutions. What we require, and urgently require, at the present moment is a referendum. Let the Insurance Acts Committee of the British Medical Association formulate forthwith a referendum framed to bring out three concrete determinations: (1) That each and every doctor working the Act refuses to accept any terms not approved of for him by a representative authoritative committee; (2) that in return for this each doctor undertakes to give a satisfactory service; (3) that the doctors will accept nothing less than the terms detailed by the committee.

I am most thoroughly of opinion that this course would result in giving our representatives an authority and power quite unprecedented. Armed with the statistics of this referendum, let our representatives approach the Ministry of Health and effect an acceptable and workable agreement, which, it is important to add, should be made binding for three or five years.—I am, etc.,

C. M. MITCHELL,
Stafford, Oct. 10th. Member B.M.A.

Insurance Certificates.

SIR,—Article 2, 9, of the new certification rules says:

"A practitioner having issued a certificate under these rules shall not issue a further certificate without again examining the insured person."

This reminds me of a panel patient of mine—a fat, gross creature, whose complaint is chiefly adiposity, who lives over the hills and far away, and yet I am her nearest doctor. Must I neglect other patients in order to visit this far-off creature once a week merely to give her a certificate: is it fair to my other patients that I should absent myself from my practice on this quest? And may I disobey, or what will the punishment be; or may I refuse to take her on my list? Oh! those societies ignorant of medicine, suspicious to the last degree; they send their representative to her every fortnight only for payment—an agent's time is so much more important than that of a doctor.

But why cannot these over-stringent regulations, before they are adopted, be submitted for the approval or dissent of those who have to keep them?

If we are to be browbeaten in this regulation, may we have easier facility to issue monthly certificates? That would make the regulation tolerable.

She is not my only patient. There is another; she lives with her father far away. Her lungs sounded a little suspicious. I told her to play about the hills in the fresh air, to drink milk, and eat butter and eggs. Must she come through the mist and driving rain every week to get her certificate? And if she does not come, must I go and see her? It will take me most of all the Fridays to visit these two; and if a confinement is impending, or if a serious case holds me by the hand, still I must go; those two must have their certificates—regulations demand it.

Regulations that are suitable to towns and industrial areas are often fatal in the country. Why should not we country doctors have a sectional representation within the Association? We have never been fairly treated. We could then be ever on the alert to reject regulations that may not be suited to country practice. We need a special representative who shall watch over and correct such errors; he could also watch over our interests in regard to mileage and the wicked taxation of our tumbledown Fords (tax £24; value of car £60; use of car—to administer to public distress). Cars used as hackney carriages, often enough for pleasure, pay half the tax. But law goes by might as well as by right. Therefore, British Medical Association, appoint us a Samson.—I am, etc.,

Pensilva, nr. Liskeard, Cornwall, Oct. 9th. J. C. JONES.

*** The Rural Practitioners' Subcommittee of the Insurance Acts Committee was appointed to watch the interests of insurance practitioners in rural areas.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following appointments are announced by the Admiralty:—Surgeon Commanders: J. L. Farford to the *Pembroke*, additional temporary; S. Lowell to the *Orion*, R. W. Stanistreet to H.M. Dockyard, Chatham; H. Huskisson to R.N. College and Hospital School, Greenwich; T. Connor, D. L. Warren, O.B.E., to Haulbowline Hospital and Yard; J. Wareham to the *Colossus*; A. L. Fisher to the *Collingwood*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Captain F. F. W. Mackenzie, O.B.E., M.C., to be temporary Major whilst employed as D.A.D. of P.

Temporary Captain T. K. Kerr, M.C., relinquishes the acting rank of Lieutenant-Colonel.

The following Captains are seconded: D. W. Pailthorpe, M.C., for service with the Egyptian Army, March 25rd, 1921 (substituted for notification in the *London Gazette* of May 17th, 1921), H. G. Monteith, D.S.O., O.B.E., for service under the Colonial Office.

Temporary Lieutenants to be temporary Captains: R. M. Walker, C. W. Bennett, W. H. Scott.

The following officers relinquish their commissions: Temporary Majors and retain the rank of Major: A. T. Todd, O.B.E., A. S. G. Bell. Temporary Captain T. Walcot, and is granted the rank of Major. Temporary Captains and retain the rank of Captain: J. B. T. Kerwick, I. J. Wallinger, H. N. K. Kevin.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Group Captain N. J. Roche, O.B.E. (Surgeon Commander, R.N.), is granted a permanent commission in the rank stated, with effect from, and with seniority of, January 1st, 1921.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain C. G. H. Morse resigns his commission and is granted the rank of Major.

TERRITORIAL ARMY.

ROYAL ARMY MEDICAL CORPS.

Major J. W. Slaughter, having attained the age limit, is retired, and retains the rank of Major.

Captain J. H. Chauncy resigns his commission and retains the rank of Captain.

Captain J. L. Hamilton, M.C., to be Major.

Captain D. C. Maclachlan (late R.A.M.C.) to be Captain, with precedence as from May 15th, 1921.

Lieutenant R. Ward, M.C., to be Captain.

Surgeon Lieutenant W. J. C. Watt (late R.N.) to be Lieutenant.

DIARY OF SOCIETIES AND LECTURES.

MEDICO-LEGAL SOCIETY, 11, Chandos Street, W.1.—Tues., 8.30 p.m., Mr. W. Valentine Ball: Incapacity for Work within the meaning of the National Insurance Act, 1911.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Tues., 4 p.m., Harveian Oration by Dr. Herbert Spencer.

ROYAL SOCIETY OF MEDICINE. General Meeting of Fellows, Tues., 5 p.m. *Section of Pathology*, Tues., 8.30 p.m., Dr. J. C. Mottram: Action of Radium and X Rays upon the Mononuclear Leucocytes of the blood; Dr. W. Cramer and Dr. J. C. Mottram: Changes in Lymphoid Tissue after Exposure to X Rays and in Vitamin-starved Animals; Dr. J. A. Murray: Dissemination along Nerve Trunks in Tar Cancer; Professor S. G. Shattock: Dissemination along Nerve in Carcinoma of the Tongue; Dr. A. Leitch: Casts of Tar Tumours in Rabbits; Dr. C. C. Okell: The Sachs-Georgi Reaction in Syphilis (Dreyer's Technique and Bordet's Antigen). *Section of History of Medicine*, Wed., 5 p.m., Dr. Charles Singer (President): The Historical Work of the Past Year; Dr. F. G. Chandler: History of the Diagnosis and Treatment of Empyema Thoracis. *Section of Dermatology*, Thurs., 4.30 p.m., Cases. *Section of Otology*, Fri., 4.45 p.m., Cases; 5 p.m., Presidential Address by Dr. Logan Turner: The Structural Type of the Mastoid Process, based upon the skiagraphic examination of 1,000 crania of various races of mankind (with epidiascope); Dr. Watson-Williams and Mr. E. Watson-Williams: A Method of Diagnostic Exploration of the Posterior Ethmoidal Cells. *Section of Electro-Therapeutics*, Fri., 8.30 p.m., Presidential Address by Dr. E. P. Cumberbatch: Progress in Electrology and Radiology; the importance of Physics, Physiology, and Anatomy.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W.1.—Thurs., 8.45 p.m., Presidential Address by Sir James Cantlie, K.B.E., F.R.C.S.: Life Insurance in the Tropics.

WEST KENT MEDICO-CHIRURGICAL SOCIETY, Miller General Hospital, Greenwich. Fri., 8.45 p.m., Annual General Meeting; Clinical Cases.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Mr. T. T. Higgins: Fractures.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. Wm. Brown: Psychology and Psychotherapy. Wed., 4.30 p.m., Dr. C. Da Fano: Histology of the Nervous System.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Dr. J. G. Clegg: Inflammation of the Cornea.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W. Daily, In and Out patients. Mon., 5.30 p.m., Lecture by Sir Bansell-Wells: Mitral Disease.

ST. JOHN'S HOSPITAL, 39, Leicester Square, W.C.2. Thurs., 6 p.m., Cheadle Lecture by Dr. W. Griffith: The Diagnosis of Skin Diseases.

SALFORD ROYAL HOSPITAL. Thurs., 4.0 p.m., Mr. Garnett Wright: Irregularities of Function of Lactation: Treatment of Breast.

SHEFFIELD UNIVERSITY. At Royal Infirmary, Thurs., 3.30 p.m., Mr. Percy Cowell: Diseases of the Eye; Mr. Lucas, 4.15 p.m.: Intestinal Obstruction. At Royal Hospital, Fri., 3.30 p.m., Dr. Newell: Cardiac Cases; Dr. Hay, 4.15 p.m.: Inflammation of the Eye.

UNIVERSITY COLLEGE, Gower Street, W.C. Fri., 4.30 p.m., Dr. J. C. Dreyer: Blood Transfusion.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. *Lectures*, 5 p.m.:—Mon., Dr. A. Saunders: Digestive Troubles of Childhood; Tues., Dr. Pernet: Some Secondary Syphilides; Wed., Mr. T. Gray: Surgery of the Mesentery; Thurs., Dr. Snowden: The Psychoneuroses; Fri., Dr. Harold Pritchard: Pleural Effusions.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medsecta, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
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IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

18 Tues. Willesden Division, St. Andrew's Parish Hall, High Road, Willesden Green, N.W., 8.30 p.m.
20 Thurs. Birmingham Branch, Annual Meeting, Medical Institute, Edmund Street, 3.30 p.m.
London: Annual Conference of Representatives of Local Medical and Panel Committees, Wesleyan Central Hall, Westminster, London, S.W., 10 a.m.
25 Tues. London: Central Ethical Committee, 2 p.m.
London: Propaganda Subcommittee, 2.15 p.m.
26 Wed. South Middlesex Division, St. John's Hospital, Twickenham. General business, 8 p.m. Paper by Mr. R. C. Elmslie, 8.45 p.m.
27 Thurs. London Maternity and Child Welfare Subcommittee, 2.30 p.m.
28 Fri. Sheffield Division. The University Lecture by Dr. H. H. Dale, F.R.S.: Specific Sensitiveness and Idiosyncrasies. 8.45 p.m.

NOVEMBER.

17 Thurs. Birmingham Division. Lecture by Sir William Thorburn.

DECEMBER.

14 Wed. Bradford Division. Lecture by Colonel L. W. Harrison, D.S.O.

MARCH (1922).

15 Wed. Nottingham Division. Lecture by Mr. Frank Kidd: The Value of Pyelography in the Diagnosis of Urinary Diseases.

APPOINTMENTS.

STURRIDGE, F. R., M.C., M.R.C.S.Eng., L.R.C.P.Lond., Honorary Anæsthetist to the Willesden Hospital.

WARD, Bernard J., F.R.C.S.Eng., Honorary Surgeon, Queen's Hospital, Birmingham.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

PARKINSON.—On October 2nd, at 1, Devonshire Place, W.C.1, the wife of John Parkinson, M.D., M.R.C.P.—of a daughter.

WILLIAMS.—On September 25th, to Dr. and Mrs. T. Pearse Williams, of 5, Grafton Mansions, Duke's Road, W.C.1—a son.

MARRIAGES.

BULMAN—COOK.—At Christ Church, Toronto, on October 5th, John Roderick Bulman, M.B., Ch.B.Edin., 15, Baggallay Street, Hereford, son of the late Andrew Bulman and of Mrs. Bulman, M.B.E., Pringle Bank, Kelso, Scotland, to Felicia Hannah, daughter of Mr. and Mrs. I. I. Cook of Hurstrood, 76, Lonsdale Road, Toronto, Canada. (By cable.)

DAVIES—COX.—On October 8th, at Holy Trinity Church, Barnstaple, by the Rev. C. W. G. Moore, M.A., D.S.O., Fred T. Hollway Davies, M.B., Ch.B., late of Handsworth, near Guildford, to E. May Cox of Bracondale, Norwich.

HOLLAND—ARDERNE WILSON.—On October 11th at St. Peter's, Cranleigh Gardens, S.W., by the Rev. C. S. Woodward, Vicar, Arthur Holland, of 59, Onslow Gardens, Kensington, son of the late Arthur Holland, to Constance, elder daughter of Dr. R. Arderne Wilson of Guernsey (late of Capetown). South African papers please copy.

DEATH.

STONE.—On Saturday, October 1st, at 31, Maida Vale Mansions, W.9, William Dorrett Stone, M.D., F.R.C.S., etc., younger son of the late Thomas Madden and Honor Stone, aged 81.

Printed and published by the Publishers to the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 22ND, 1921.

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British Medical Association.

CURRENT NOTES.

Remuneration of Insurance Practitioners.

As recorded fully in our last issue, the Insurance Acts Committee met the Minister of Health on October 11th and Sir Alfred Mond announced his intention to reduce the capitation fee from 11s. to 9s. 6d., the position as regards mileage remaining as before. The Committee recognized that an appeal to the profession to make some financial sacrifice upon patriotic grounds was not unreasonable, but thought the proposed reduction of 1s. 6d. was too much, and so informed the Minister. The Committee met after the deputation was over and addressed the following letter to the Minister:

October 11th, 1921.

Sir,

After consideration of what took place at our interview this afternoon, the Insurance Acts Committee has decided to place before the Conference of Representatives of Local Medical and Panel Committees the statement made by you. While recognizing the force of the appeal to insurance practitioners to make some sacrifice on patriotic grounds, the Committee is not prepared to ask the Conference to accept, even on those grounds, a reduction of the capitation fee to 9s. 6d. In view of this expression of opinion the Committee would earnestly ask that you should reconsider the position. If on doing so you can see your way to modify your offer to one of 10s. the Committee on its part is prepared to urge the Conference to accept it.—I am, Sir, your obedient servant,

ALFRED COX,
Medical Secretary.

Recognizing that the Panel Conference, which is being held in London as we go to press, should have the fullest information possible as to the attitude of individual insurance practitioners, the Insurance Acts Committee issued a circular to the chairmen and honorary secretaries of Local Medical and Panel Committees, asking these committees to meet and discuss the position immediately, and to take a referendum of every insurance practitioner on the two questions: (*a*) Are you willing to accept a capitation fee of 10s.? (*b*) Are you prepared to refuse service at a capitation fee of 9s. 6d.?

The Minister's reply to the above letter from the Insurance Acts Committee is as follows:

Ministry of Health, Whitehall,
October 14th, 1921.

SIR,

I am directed by the Minister of Health to acknowledge the receipt of your letter of October 11th intimating the decision of the Insurance Acts Committee on the proposed reduction of the capitation fee to 9s. 6d.

The Minister desires me to express his keen disappointment and regret that the Committee find themselves unable to recommend a reduction to 9s. 6d. to the Conference of Representatives of Local Medical and Panel Committees. He notes that the Committee would be prepared to urge the Conference to accept a reduction to 10s.

The substantial ground for reduction brought forward by the Minister at the recent deputation was the serious financial position of the country which makes curtailment of the public expenditure imperative. The Minister, after most careful consideration, came to the conclusion that the figure of 9s. 6d. ought to be regarded as fair and reasonable in all the circumstances. He was careful to explain that he did not desire to enter into a process of bargaining with the profession on the subject of their remuneration, and had therefore fixed upon a figure which, in his opinion, it was reasonable to ask them to accept.

He can only express regret that apparently he failed to convey his meaning clearly to those present at the deputation, and he earnestly hopes that, on further consideration, the Committee will feel able to recommend the proposal to the Conference for acceptance. If they cannot do so, he can only trust that the Conference, taking a wide view of their responsibilities not only to their own profession but to the community at large, will appreciate the reasonableness of the proposal put before your Committee.

I am, Sir, your obedient servant,
W. A. ROBINSON.

The Medical Secretary,
British Medical Association,
429, Strand, W.C.2.

London Conference on Medical Staff Funds.

As already announced in this column, a conference of medical representatives of London hospitals will be held in the Council Room of the British Medical Association, 429, Strand, on Wednesday, November 16th, at 5 p.m. Notice of motions or of relevant matter which it is desired to discuss should be forwarded to the Medical Secretary not later than October 31st for incorporation in the final agenda. The chair will be taken by Sir James Galloway, K.B.E., C.B., senior physician to Charing Cross Hospital. The first matters put down for consideration are the following resolutions passed by the Annual Representative Meeting of the British Medical Association in July, 1921:

Payment of Practitioners for Services Rendered to Paying Patients in Hospitals.

1. That where voluntary hospitals provide accommodation for paying patients no fixed rate of payment for professional services rendered to such patients should be established; the fees so payable to remain, as at present, a matter of arrangement between patient, family physician, and consultant.

Formation of Medical Staff Fund.

2. That in the event of decisions being taken which would lead to patients (other than paying patients referred to above) paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition

of rates aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which the honorary medical staff may determine.

3. That when the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, insurance company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and a percentage of all such receipts should be passed into a fund which is at the disposal of the honorary medical staff of that hospital.

The following ways in which the money received by Medical Staff Funds could be utilized were suggested by the Hospitals Committee of the Association, and incorporated in a letter issued in June, 1920, to voluntary hospitals in the United Kingdom: (*a*) Assistance of research work in connexion with the hospital; (*b*) purchase of instruments or books; (*c*) initiation or development of post-graduate teaching; (*d*) the purposes of a local medical benevolent fund, or grants to any recognized medical benevolent institution; (*e*) Samaritan fund of hospital; (*f*) distribution among members of staff.

Life Insurance Examinations Abroad.

An interesting point has arisen as an outcome of the agreement between the British Medical Association and the Life Offices Association concerning the fees payable to medical practitioners for life insurance examinations. A correspondent, resident abroad, wrote to say that the fee payable where he was in practice had always been £2 1s. per case. He further stated that one of the British offices had offered him a fee of a guinea, and that it tried to justify the offer by stating that a new scale had been agreed upon between the British Medical Association and the Life Offices Association, by which for ordinary offices the fee payable was a flat rate of one guinea whatever the amount of the policy. The secretary of the Life Offices Association is in entire accordance with this Association that the agreement was never intended to apply outside the United Kingdom. In fairness to the company concerned it should be stated that the proposal form distinctly named a fee of a guinea, and the difficulty only arose after the doctor had sent in his report and asked for a fee of £2 1s. In order to obviate any further misunderstanding of this kind doctors resident abroad are requested to note that the agreement between the British Medical Association and the Life Offices Association does not apply outside the United Kingdom, that any attempt to use it as a means for the reduction of existing fees should be reported to this office, but that the refusal to accept any fee offered by an insurance company should precede and not follow the filling up of the report.

Meetings of Branches and Divisions.

BORDER COUNTIES BRANCH.

THE fiftieth annual general meeting of the Branch was held at the County Hotel, Carlisle, on September 23rd. Dr. G. R. LIVINGSTON, the retiring President, was in the chair. The Council's annual report and financial statement were adopted. The election of officers for the ensuing year was confirmed, and the following were elected members of the Branch Council: Drs. J. P. Bowser, G. B. Muriel, J. W. Crerar, G. R. Livingston, C. C. Easterbrook, and D. C. Welsh. Dr. LIVINGSTON, having vacated the chair, introduced Dr. EDINGTON, who gave his presidential address on "Steptococcal infection by the nasal and buccal paths." A discussion followed, and skiagrams bearing on the subject were shown by Mr. N. MACLAREN, F.R.C.S., and Dr. CONNELL. The meeting accorded a hearty vote of thanks to Dr. Edington for his most interesting address. It was resolved to record in the minutes the very great loss the Branch had sustained in the death of Dr. Henry Barnes (Carlisle). It was further resolved that, as it was the fiftieth annual meeting, a congratulatory letter be written to Dr. Knight of Bolton-le Sands, who was present at the first meeting.

NORTHERN COUNTIES OF SCOTLAND BRANCH: BANFF, ELGIN, AND NAIRN DIVISION.

A MEETING of the Division was held in Grays Hospital, Elgin, on October 5th, when Dr. GEORGE WILSON, in the unavoidable absence of Dr. Hendry, took the chair.

With reference to visits from members of the Central Staff, it was the opinion of the meeting that a visit would be desirable and that arrangements might be made so that the visit would coincide with the date of the annual meeting.

A discussion took place on the question of capitation fees under the Insurance Act, and it was agreed to support the Insurance Acts Committee in maintaining the capitation fee at 11s. It was further recommended that if there was to be a reduction it should only be on panels of over 1,000.

Association Notices.

MEETINGS TO BE HELD.

LANCASHIRE AND CHESHIRE BRANCH: BURY DIVISION. A clinical meeting of the Bury Division will be held at the Bury Infirmary on Wednesday, October 26th, at 4.30 p.m. Any member wishing to bring forward a case, or any clinical material, is asked to communicate with the House-Surgeon three days previous to the meeting. Agenda: Correspondence from Drs. Troup and Young (Whitehead) with regard to the demand of the Revenue authorities for a return of book debts and the probable taxation of same.

METROPOLITAN COUNTIES BRANCH: LEWISHAM DIVISION.—A meeting of members and non-members will be held at The Priory, 410, High Street, Lewisham, S.E.13, at 8.45 p.m., on Tuesday, October 25th. Agenda: Discussion of proposed reduction in capitation fee. Papers:—Dr. J. E. Forster: Treatment of gonorrhoea; Dr. H. B. Gladstone: Dennett's simplified infant feeding.

METROPOLITAN COUNTIES BRANCH: NORTH MIDDLESEX DIVISION.—A meeting of members and non-members will be held at the Wortley Hall, Finsbury Park, on Wednesday, October 26th, at 5 p.m., when an address will be given by Dr. Alfred Cox, O.B.E. Further meetings of the Division will be held as follows: December 14th, clinical meeting; February 22nd, 1922, medico-political meeting; April 26th, clinical meeting; May 31st, annual divisional meeting; June 28th, medico-political meeting. Place and time of meetings will be notified to members in due course.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.—A meeting of the Branch will be held in the Public Library, Kendal, on Wednesday, October 26th, at 3 p.m. Business: Discussion on abdominal pain, introduced by the President (Mr. A. S. Barling); notes on a case of meningocele, successfully operated on, by Dr. Livingston; tests for sugar (Dr. Livingston). Members are invited to show interesting cases and specimens. Non-members will be welcome. A meeting of the Branch Council will be held at 3 p.m. to elect new members.

YORKSHIRE BRANCH: HUDDERSFIELD DIVISION.—The Huddersfield Division has arranged for a Golf Handicap, commencing October 24th; entrance fee 5s., including all expenses except caddie. A Medical Dance under the auspices of the Division is being held on December 7th at the Royal Infirmary; tickets, including light refreshments, 5s. Members are invited to bring guests. All inquiries in connexion with these fixtures should be addressed to Dr. David Wilson, 30, New North Road, Huddersfield, the Honorary Secretary of the Division.

Insurance.

MEDICAL BENEFIT.

THE following correspondence has passed between the Medical Secretary of the British Medical Association and Sir Kingsley Wood, M.P., Parliamentary Private Secretary to the Minister of Health:

October 14th, 1921.

Dear Sir Kingsley Wood,

Every day since you made your speech to the Faculty of Insurance at Portsmouth on the 7th inst., press cuttings have been coming into my hands which well illustrate the mischief that can be done by careless statements made by one whose position ensures that he will be widely reported and quoted.

Everyone knowing of your position in the Ministry of Health naturally assumes that statements made by you about National Health Insurance must be correct, and yet some of those attributed to you betray such an ignorance of the elements of insurance that I am loath to believe that you have been correctly reported. I have therefore waited for a few days before writing to you in the hope that you would issue some correction, but up to now I have seen none.

I take one of the most detailed reports I have seen, that in the *Birmingham Post* of October 8th. In it you are reported to have said: "Not more than 60 per cent. of the persons on the panel list received medical treatment. It had been authoritatively stated that a doctor with quite a large panel had only to attend 37 patients a day, 27 of whom called at his house. In 1920 there were possibly over half a million persons who were not on any panel list and the panel doctors received the benefit of this."

The impressions conveyed by this report (which is very similar to what I have seen in a dozen other newspapers), whether intentionally conveyed or not, are these, as is proved by the comments made in many newspapers. First, that the

money paid to the doctors for the 40 per cent. of the insured persons who in any given year never require a doctor at all "found money" money to which they are not really entitled. Secondly, that because a doctor might have "only" 57 panel patients to attend on an average day he gets his panel money very easily. Thirdly, that the money received by the doctors on behalf of those insured persons who have not chosen a doctor is money which does not really belong to them, but which a generous Government allows them to pocket.

Surely, to use language which can convey such impressions is to show carelessness or a lack of knowledge of insurance principles which is alarming when it comes from one in a position of authority. If it were not for the 40 per cent. who are not ill in any given year it is obvious to you and to me, though not to the average newspaper reader, that the insurance premium, the doctor's capitation fee, would have to be higher, just as the premiums for life insurance would go up if the mortality rate were higher.

As to the people who don't choose a doctor, nobody knows better than yourself that the doctors of an area collectively take the risk for *all* insured persons in the area. That some of the latter do not put their names on a doctor's list is evidence of indifference or carelessness on their part, but is no proof that if taken ill they will fail to call for the services of one of the doctors on whom they have a claim.

Then do you really think that to attend to 57 patients on an average day is an easy thing, and that the man who does it, together with the clerical and other extraneous work attached to it, gets his money too easily?

It is because some of the remarks made by you in your speech were so useful and interesting, and because it is so necessary that one in your position should not add to the misconceptions that are so rife about the National Health Insurance system, that I venture to ask you to do something to remove the very erroneous impression caused by that part of your speech to which I have referred. I reserve the right to publish this letter, together with your reply.

I am, yours faithfully,
ALFRED COX,
Medical Secretary.

15, Walbrook, London, E.C.4.
October 17th, 1921.

Dear Dr. Cox,

I am in receipt of your letter of the 14th inst., but I think, having regard to the offer that has now been made by the Minister of Health, it will not facilitate matters for me to enter into correspondence with you at this stage.

I appreciate the last paragraph of your letter, and I know you will understand the reason why I write as above.

Yours faithfully,
KINGSLEY WOOD.

INSURANCE ACTS COMMITTEE.

THE following candidates have been nominated by Local Medical and Panel Committees in the different groups for election as Direct Representatives upon the Insurance Acts Committee of the Association for 1921-22. The voting papers in those areas where there is a contest (that is, all except Groups H and K) were posted from 429, Strand, on October 20th:

Group A: Scotland (2 required).—Dr. Michael Dewar, Edinburgh; Dr. James Dunlop, Glasgow; Dr. W. R. Martine, Haddington; Dr. G. W. Mailer, D.S.O., Dundee; Dr. John S. Muir, Selkirk; Dr. G. Peterkin, Forfar; Dr. D. Lyon Stevenson, Larkhall.

Group B: Northumberland, Durham, Yorkshire (N. Riding), and County Boroughs therein (1 required).—Dr. Andrew Smith, Whickham, Durham; Dr. David F. Told, Sunderland.

Group C: Lancashire, Cumberland, Westmorland, Cheshire, and County Boroughs therein (3 required).—Sir Thomas E. Fletcroft, Bolton; Sir William Hodgson, Crewe; Dr. R. G. Mellowan, Manchester; Dr. H. Falconer Oldham, M.B.E., Morecambe; Dr. Frank Radcliffe, Oldham.

Group D: Yorkshire (E. and W. Riding), Lincolnshire (Holland, Kesteven and Lindsey, Nottinghamshire, and County Boroughs therein (2 required).—Dr. A. Forbes Sheffield; Dr. G. B. Hillman, M.B.E., Wakefield; Dr. Herbert Shackleton, Bradford; Dr. Edmund Welch, Stanningley, Leeds.

Group E: Wales (1 required).—Dr. Stuart C. Cresswell, Dowlais; Dr. W. E. Thomas, Ystrad Rhondda.

Group F: Staffordshire, Warwickshire, Worcestershire, Herefordshire, Shropshire, Derbyshire, Leicestershire, and County Boroughs therein (2 required).—Dr. T. Ridley Barley, Buxton, Staffs; Dr. E. Lewis Lilley, Leicester; Dr. John Steel, Staunton-on-Wye, Hereford.

Group G: Oxfordshire, Buckinghamshire, Bedfordshire, Suffolk (E. and W.), Norfolk, Cambridgeshire, Hunts, Isle of Ely, Soke of Peterboro', Rutland, Northants, and County Boroughs therein (1 required).—Dr. T. Cumin Askin, M.B.E., Woodbridge, Suffolk; Dr. R. E. A. Batt, Bury St. Edmunds; Dr. John W. Bone, Luton; Dr. E. O. Turner, Great Missenden.

Group H: Cornwall, Devonshire, Somerset, Dorset, Isles of Scilly, Wiltshire, Gloucestershire, and County Boroughs therein (1 required).—Dr. T. Wood Lockett, Melksham, Wilts.

Group I: Hampshire, Berkshire, Sussex (E. and W.), Isle of Wight, and County Boroughs therein (1 required).—Dr. J. P. Williams-Freeman, Andover; Dr. E. Rowland Fothergill, Hove.

Group J: Kent, Surrey, and County Boroughs therein (1 required).—Dr. Percy V. Fry, East Molesey; Dr. Gordon R. Ward, Sevenoaks.

Group K: London, Middlesex, Hertfordshire, Essex, and County Boroughs therein (3 required).—Dr. H. B. Brackenbury, Hornsey; Dr. E. A. Gregg, London; Dr. C. H. Panting, Leyton.

(The figures in brackets indicate the number of members to be elected in each group.)

Insurance Acts Subcommittee (Scotland).

The following practitioners have been nominated by Scottish Local Medical and Panel Committees for the four seats upon the above Subcommittee allotted to direct representatives of County and Burgh Committees respectively:

County Nominations (4 required).—Dr. W. F. Brown, Ayr; Dr. W. Blair, Jedburgh; Dr. C. E. Douglas, Cupar, Fife; Dr. John Hume, Perth; Dr. Robert Inch, Gorebridge; Dr. J. W. Little, Newmains, Lanarkshire; Dr. John S. Muir, Selkirk; Dr. W. R. Martine, Weston, Haddington; Dr. J. Frazer Orr, Winchburgh, West Lothian; Dr. G. Peterkin, Forfar.

Burgh Nominations (4 required).—Dr. James Andrew, Coatbridge; Dr. H. J. Fern, Paisley; Dr. C. Kerr, O.B.E., Dundee; Dr. W. Lawson, Pollokshields, Glasgow; Dr. J. G. MacKenna, Paisley; Dr. G. W. Miller, D.S.O., Dundee; Dr. C. Nairn, Greenock; Dr. D. Rorie, D.S.O., Cults, Aberdeenshire; Dr. Thos. Russell, Parkhead, Glasgow.

DERBYSHIRE PANEL COMMITTEE.

THE Derbyshire Panel Committee, at a meeting held on October 13th, passed the following resolution:

That this meeting of the Derbyshire Panel Committee protests against the suggested unfair reduction of the present inadequate remuneration for medical services. In doing so the Panel Committee recognizes that all salaries and wages must be reduced if the nation is to prosper, but it is unjust to reduce the panel remuneration *first*, because it was the *last* to be increased, and the amount of the increase was the *least*. Contrast the Civil Service bonus and public bodies' bonus with the panel increase: 1914 panel fee, 7s.; 1921, 11s.; increase, 57 per cent. Suggested fee, 9s. 6d., which is an increase on the original amount of roughly 33 per cent., whilst many public bodies and Government offices are paying a bonus of 100 per cent. and sometimes more.

AT a meeting of the Small Heath ward of the Birmingham General Practitioners' Union the following resolution was passed:

That in the opinion of this ward, the panel system has been a proven success, and has greatly contributed to the better health of the community; and that with further development directed towards the linking up of hospital and specialist treatment, the panel system gives the best prospect of an ideal system of communal medical service.

Correspondence.

NATIONAL PROVIDENT HOSPITAL ORGANIZATION.

SIR,—Having regard to the refusal of the Representative Body, at its last annual meeting, to give its approval to the draft of a "National Provident Scheme for Hospital and Allied Medical Services, as conforming to the policy of the Association on Voluntary Hospitals," solicited by Marylebone and Brighton Divisions, respectively in Motions 213 and 214 of the agenda, the precipitate action of the Organizing and Executive Committee, in determining to bring this Provident Scheme into operation in London on November 1st, is much to be deprecated.

From the short discussion which took place on this matter, at the Annual Representative Meeting, it was evident that although the Representatives, or the majority of them, were not unsympathetically disposed towards the project, yet, in the absence of any reference to this matter in the Council's annual report for the guidance of the Branches and Divisions in making up their minds how to instruct their representatives, and in view of what this departure from the policy of the Association on voluntary hospitals and *contract capitation practice*, if granted, might portend to the complexity of interests involved, combined with the knowledge of a strong undercurrent of opposition to the scheme, in its present form, in the meeting, rather than commit the Representative Body to a hasty or ill-considered decision, it was resolved, by an overwhelming majority, "to pass on to the next business." This diplomatic course was adopted in order to save the scheme from being rejected outright and for the purpose of giving the sponsors another opportunity of bringing the matter up at the next A.R.M. Further, as both of these motions alike presented the subject matter as a "Draft Scheme," which expression, in ordinary language and literally, when read with the context, naturally and consequently implied to the minds of the representatives that the scheme would remain in abeyance unless and until it received the approval of the R.B. But evidently this interpretation was not the construed intention of the organizers; for, within half an hour after the R.B. had turned these two motions down, I was informed on unimpeachable authority, that 300 subscribing members to the Sussex Scheme were

already enrolled. The Organizing and Executive Committee will doubtless be prepared to plead, in mitigation of their contempt for the R.B., that the exigencies of their objective justify the urgency of their action. But no amount of impeccable protestation will exonerate that body from the consequences of their rashness in venturing to hazard the success of their scheme without first receiving the approval of at least 70 per cent. of the general body of the profession.

The articles which have appeared in the lay press describing this scheme, particularly the two from influential pens published in the *Times* of August 29th last, deal with only the hospital aspect of the organization—the financial assistance likely to accrue to voluntary hospitals from the scheme in operation, and entirely overlook the other side of the question—namely, the attitude of the general body of the profession towards this project, which factor, being pertinent to the exploitation of any public provident medical organization, surely cannot be ignored here. Why this information, officially recorded in Minute 271 of the proceedings transacted by the R.B. on July 19th last, has been so long withheld from the general public only the executive of our Association can explain. And why, concurrent with, or since, the publication of the manifesto of the Organizing and Executive Committee of the National Provident Scheme in the correspondence columns of the British Medical Journal, September 17th, no allusion to this important point has as yet appeared in the Journal, I cannot understand. Such reticence—almost amounting to a conspiracy of silence—is neither just to the members of the Association nor fair to the public interests concerned. Probably this apathetic indifference may be due to the fact that the operation of this National Provident Scheme is at present confined to a metropolitan area and to the county of Sussex, and to the assumption that the scheme is more or less experimental. But where a decision of the R.B. on a matter of public importance is concerned, this "wait and see" policy is inimical to the welfare of the Association; and, as what is being perpetrated in these two areas to-day may be the fate of other areas to-morrow, it is high time that the members should be apprised of the problematic issues involved in the process of the operation of this National Provident Hospital Scheme. For this purpose, and for the lack of a more capable expositor being forthcoming, I venture, with some reluctance, as a matter of duty to my constituents, to traverse the incidence of the Sussex Scheme—the progenitor model of the National Provident Hospital Scheme—as the circumstances of its inception, organization, and promulgation are better known to me.

"The Sussex Provident Scheme for Hospital and Specialized Medical Services" (its full designation) was framed by a few Brighton consultants towards the end of last year, was organized with the approval of the Brighton Division, the Brighton Panel Committee, the honorary medical and surgical staffs of the local hospitals and dental profession in Brighton, Hove, and Preston, and thereafter was published throughout the length and breadth of the land in the lay and medical press, and hailed in both alike as the prospective salvationer of impecunious voluntary hospitals.

Although Motion 214, submitted by Brighton at the A.R.M., averred "That the Draft Scheme *prepared by Sussex* of an organization," etc. (the italics are mine), yet inasmuch as the organisers took no steps either to consult the whole of the Divisions comprised in the Sussex Branch, or to ascertain the opinion of the general body of the profession in the county thereon, before deciding to put the scheme into operation, nor, as far as I have been able to ascertain, does that body contain a single representative—lay or professional—from any other district in the county, outside of Brighton, Hove, or Preston, to proclaim the handiwork as "prepared by Sussex," in the sense of topographical concurrence and approval of the profession, which undoubtedly the phraseology was intended to convey, is a grossly misleading assertion on the part of the drafters of the motion. It is true that the honorary secretary to the Organizing Committee sent out a somewhat belated circular letter (the one I saw was dated June 14th last) to the management committees and medical staffs of the voluntary hospitals in the outlying districts, inviting their co-operation in working the scheme (a few institutions being omitted from the list of those invited), but without alluding to the question of their entitlement to representation on the Organizing Committee. This omission, on the part of the organizers, to consult and seek the support and co-operation of the whole of the profession beforehand, is an initial blunder of the first magnitude, imperilling the attainment of their objective. It is therefore not surprising that the organizers have failed to enlist the co-operation of the two most important hospitals in East Sussex.

For other reasons the scheme is unacceptable to the local profession, chiefly on the grounds that (*a*) it is controlled by a small section of class practitioners—a Brighton caucus—which is in no way representative of the profession in the county; (*b*) is comprised of nine co-operating hospitals, all situated in Brighton, Hove, and Preston, whereby the centre of gravity for such services will always be Brighton; (*c*) contains no provision for utilizing the resources of any other district hospital hereafter willing to co-operate; (*d*) being avowedly designed "for the benefit of those who, being bona-fide residents in Sussex, irrespective of class or occupation, are in a financial position which makes them eligible for election as members," ostentatiously seeks to attract and annex to its membership two classes of persons who, with incomes of £400 and £500 as respectively described under grades "II" and "III" of the prospectus, have hitherto been able to afford the private fees usually charged for such services, and whose claims to semi-charitable consideration have neither been demanded, urged, nor established; (*e*) in thus creating a new and superior type of hospital beneficiary there is a grave danger that the treatment of these members, demanded under a definite contract, will, sooner or later, only be effected to the exclusion of those impecunious cases for whose benefit voluntary hospitals were originally founded; (*f*) will jeopardize the maintenance of voluntary hospitals on a charitable basis; and (*g*) the inducement, printed at the bottom of the prospectus, that "The first ten thousand members will receive an 'original member's' card, and that their subscriptions will not be raised while they continue members," very much savours of astute commercial enterprise, which form of advertising is foreign to the best traditions of the profession and inconsistent with the ethical canons of professional conduct.

That these apprehensions are not without some reasonable foundation may be illustrated by the position of the profession in the Eastbourne district in relation to this scheme. The resources of the Princess Alice Memorial Hospital—the local general hospital—comprised of seventy-six beds, and equipped with an excellent bacteriological and pathological laboratory and an up-to-date *x*-ray installation, etc., are fully taxed in providing for the needs of impecunious patients drawn from a district with a combined urban and rural population of over 90,000 inhabitants. For this reason alone, but not the only one, the Management Committee were obliged to decline the invitation of the organizers to co-operate in the scheme. Incidentally, I may say that neither the Eastbourne Ear, Nose, and Throat Hospital nor the Eastbourne Eye Hospital, both well equipped institutions catering for the needs of this district, received an invitation from the organizers to co-operate in the work of the scheme. All the specialists attached to these institutions and a few other consultants derive the whole, or greater part, of their professional incomes from private practice in Eastbourne, *and from this very class of person whom the scheme is designed to attach to its membership.* It is therefore conceivable that if this scheme is permitted to pursue the even tenor of its devious course, many persons residing in this district will be induced to become members in order to obtain these benefits in return for the payment of an annual speculative premium, to them, of an inconsequential amount, thereby commensurately depriving the local consultants and specialists of their fees, and whereby, as time goes on, the professional incomes of these practitioners may become so reduced as to compel them to leave this district and go to some other place where the blessings of this scheme are unknown. Here we have a concrete illustration of a district in which the hospital, even if it were willing, is unable to co-operate. This may be an extreme view of the possible results, but it is the only logical deduction from the premises under review. Is it therefore consistent with the letter and

spirit of the Golden Rule—the ethical criterion of professional conduct—that, under such circumstances, these practitioners should be penalized to the extent of confiscating and deflecting a portion of their incomes to the maintenance of a charitable object by reason of the arbitrary operation of a scheme over which they have no control?

It is no part of the duty of the profession to devise ways and means to rehabilitate the finances of voluntary hospitals, least of all at the expense of its own members. The communal duty of the profession extends to the services freely and ungrudgingly rendered to the inmates of these institutions, and no farther. The impecunious condition of voluntary hospitals is a secondary consideration to the principle underlying the evolution of this National Provident organization, which is identical with that of contract capitation practice. Stripped of its sentimental embellishments, this scheme is nothing more nor less than a glorified form of club practice, masquerading in the guise of hospital philanthropy, and is potential of perpetuating and intensifying all the abuses inherent in every form of contract capitation practice. This aspect of the question, which apparently has been overlooked, I desire to emphasize on behalf of my constituents.

I therefore put it to my fellow members: Is it consonant with the policy of the Association on contract practice that the units of the Sussex Branch should be expected complacently to acquiesce in and suffer the operation of a provident scheme which exhibits the objectionable features and portends such injustices to the vested interests of the local profession as those I have indicated in the foregoing indictment without raising a protesting voice and appealing for protection against the operation of this scheme? Further, is it consistent with the democratic constitution of the British Medical Association—a form of government in which the sovereign will of the Association is vested in the hands of its members collectively—that a small minority of a class section of the profession, no matter however influential, reputable, or highly positioned its members may be, should be permitted to arrogate to itself the right to impose its will upon the majority in a matter intimately affecting the welfare of the whole body of the profession within the circumscribed area without so much as asking, by your leave, may we trespass on the domain of your preserves? Would a provident scheme organized and promoted by a small minority of general practitioners, after the manner and fashion of the Sussex Scheme, be tolerated with impunity?—I am, etc.,

Wm. Muir Smith,
Hon. Sec. and Representative A.R.M.,
Eastbourne Division.

Eastbourne, Oct. 8th.

*** There has been no reticence on the part of the Journal in this matter. A report of the debate in the Representative Body on July 19th, on the National Provident Scheme for Hospital and Additional Medical Services, was published in the Supplement to the Journal of July 30th, 1920, p. 74. The original resolution and the amendment were there set out, together with the result of the debate, which was that the meeting resolved to proceed to the next business. The Sussex Scheme was first described in the Journal of January 22nd last. Subsequent developments of the scheme were reported in the Journals of July 9th and September 10th. The letter, to which we understand Dr. Muir Smith refers as a manifesto, followed in the Journal of September 17th.

NATIONAL INSURANCE.

The Profession and the Insurance System.

Sir,—I am delighted with Dr. Cox's straightforward address, delivered at Birmingham, and agree with every word of it.

To me it is disgusting to find so many panel practitioners taking their quarterly cheque from the Insurance Committee whilst condemning the Act, and refusing to see its good points. They talk about the loss of dignity of the present-day medical practitioner, as though we were of a lower standard than our predecessors of the Victorian era. Is it because we do not wear the regulation dress of silk hat and frock coat? If so, we must look facts squarely in the face, and remember that these gentlemen competed—bitterly and secretly—for the medical officership of clubs and friendly societies for the noble sum of 2s. 6d. a year, inclusive of medicines and dressings. Can we be surprised that on their decease their only legacy very often was the goodwill of their practices? The Insurance Act, I have always maintained, is a godsend to us, especially so in a national trade slump.

The only objection to the present record cards is in cases of venereal disease; patients strongly object to having this recorded. Several panel practitioners agree with me that it has practically banished such cases from the surgery. Where they go I do not know.

What we want is a uniform scheme; the present administration is too expensive. Under direct Government control, with a central office for every 10,000 members, where stamps could be sold, information given, and clerking managed by an expert on the Insurance Act, with a collector for every 2,500 members, would be cheaper and better, and we should have none of the present-day competition amongst approved societies who pay higher sickness benefits than their opponents, accuse every patient of malingering, every panel doctor of "putting them on Lloyd George" in order to curry favour, and harass patients to go to medical referees with results invariably in favour of the approved society.

If we close our ranks and endeavour to improve the Insurance Act for the insured as well as for ourselves, I feel certain that every satisfaction would be given to all the parties concerned. This continual bickering is not conducive to good work and should cease.

It is high time for the Association to take the initiative. Who should know more of the intimate working of the Act than the panel practitioners after working it for nine years? We should work for the best interests of the State and have as our watchword "Each for all and all for each."—I am, etc.,

T. Macmaster Glen.

Farnoldswick, Oct. 11th.

Sir,—Dr. Cox states, in his instructive address to the Birmingham Branch on September 30th, 1921, that doctors who are satisfied with the working of the National Insurance Act are seldom induced to express a favourable opinion. The reason for their reluctance to admit satisfaction with the Act is, perhaps, to be found in the desire to avoid unpleasant and often personal discussions.

Since the question has gained fresh interest in view of the proposed reduction of the capitation fee, may I be permitted to say that I am satisfied with the existing conditions as well as fully agreeable to the lowering of the fees? Indeed, the outcry against the proposed reduction is almost incomprehensible. The medical profession, like every other section of the community, appreciates the general fall in the cost of living; why, then, should doctors claim exemption from a reduction of charges? The same unreasonable voice of protest against the sharing of a common financial burden made itself heard when the recently revised automobile tax was introduced, although medical men enjoy the same advantages from road repairs and road construction as other motorists who use their cars for work and pleasure.

Though there is still room for improvement, yet the National Health Insurance Act as it stands affords the conscientious practitioner every opportunity of doing justice to his patients within the limits of his skill and ability, and at the same time offers him a very fair remuneration. The question whether the remuneration is adequate or not is of little concern, for the services of the doctor resemble the gifts of the artist and the poet: they yield as true recompense the love and gratitude of those on whom they have been bestowed.—I am, etc.,

Noel Alder.

Hove, Oct. 11th.

Sir,—Dr. Cox complains that the moderate members of the profession, who approve of the Insurance Act, are silent; but extremists are always vocal, and the moderates are quite content to leave their interests in the hands of Dr. Cox and his colleagues.

I remember, many years ago, a well known consultant who had experience of country practice, saying that only doctors with private means could live in the country. That statement was substantially correct until the Insurance Act gave us a living wage.

Much of the present trouble is, I believe, due to the fact that, in the past eight years, a new generation of doctors has arisen who knew not club practice. If that generation succeeds in destroying, as it apparently wishes, the Insurance Act, it will find the little finger of the club thicker than the Government's loins; and whereas (it thinks) the latter has chastised it with whips, it will find the club committee chastising with scorpions. The cost of petrol, tyres, and living has fallen, while wages in this district are also rapidly falling, and I cannot see why the panel doctor should alone be immune. I think we should

accept any payment which our representatives consider reasonable, not grudgingly but cheerfully and willingly.—I am, etc.,

Bramhall, Oct. 15th. ARTHUR A. PIM, F.R.C.S.Edin.

SIR,—The following is an extract from your advertisement column. It has adorned this column for several weeks:

LONDON, E. —Panel Practice £1,370 per annum, in main thoroughfare. Panel 2,440. No midwifery or midnight work. Premium ½ year's purchase. Could be worked as a "Lock up."

At a time like this, when we are supposed to be sticking up for proper remuneration, an advertisement appears in the leading medical journal showing only too plainly how some two and a half thousand panel patients are being treated. Imagine, "no night work"! I wonder what they do when they are ill after surgery hours. I suppose they have to go to the London Hospital! I am well aware, Sir, that this is no concern of yours or mine; but the point I want to bring to your notice is a consideration of what use some of the friendly societies may make of such a confession.—I am, etc.,

A. INGRAM COOK, M.D.Cantab.

Chobham, Surrey, Oct. 17th.

Insurance Remuneration.

SIR,—Although I am unacquainted with panel work, I am perhaps entitled, as a member of Council of the British Medical Association, to submit my thoughts on insurance remuneration, since the question is one which affects deeply the honour and dignity of the Association. I am not able to express an opinion on the value of a doctor's services, whether he is on the panel or not; to me it seems that the value is variable, depending upon the class of patient, the popularity and knowledge possessed by the doctor, the environment of both patient and doctor, and the purchasing power of money at any particular moment. The immediate question between Sir Alfred Mond and insurance practitioners is whether, in view of the economic position of the country, a standard average remuneration per head of potential patients, payable to all panel doctors, whatever their value may be, shall be maintained at 11s., reduced to 9s. 6d., or reduced to 10s. I gather that Sir Alfred Mond has announced a reduction of 1s. 6d., upon which he is not prepared to haggle; and that the Insurance Acts Committee is prepared to recommend to the Panel Conference a reduction of 1s., but wishes to find out whether panel doctors are prepared to strike against the additional reduction of 6d. Sir A. Mond asks for acceptance of his proposal for patriotic reasons; and it may be well to estimate in cash the cost of patriotism in the two cases. Three thousand panel patients at 11s. would bring in £1,650 a year. At 9s. 6d. the amount will be £1,425. The Insurance Acts Committee will recommend acceptance of a reduction of £150 to £1,500 in such cases, but wishes to know if practitioners with a 3,000 panel will refuse service for an additional £75 a year less. With 500 panel patients the amount in dispute per annum is £12 10s. Recently a mixed practice of £2,400 per annum with 1,300 panel patients was advertised for sale. If Sir Alfred Mond has his way the reduction in an income of £2,400 beyond that in which the Insurance Acts Committee seems willing to acquiesce will be £32 10s. a year.

Further, it must be remembered that in the case of the 3,000 panel the doctor under the proposed reduction of 1s. 6d. will still be receiving £337 10s. more than he did before the war; the 500 panel men £56 5s. more; and the £2,400 practice £146 5s. If it is urged that the panel doctor has more work to do for his money, it may also be suggested that he has been relieved of pre-insurance dispensing. And it may be doubted whether the non-panel doctor is now receiving 30 per cent. more than his pre-war income, as will be the case with the panel doctor under Sir A. Mond's reduction.

Now it may be that proper treatment of panel patients can only be conducted at twice the present rates. We do not know; nor shall we know until a satisfactory inquiry has been made into the working of the Insurance Acts. To haggle over the 6d. seems to me undignified; the more so when assent to the reduction has been asked for on patriotic grounds. Against the plea that so small a sum is better borne by the Government than by panel doctors, it may be urged that it is by means of enormous numbers of these small sums that the Government departments are keeping up the huge expenditure of the country: that dignified acceptance may set a good example to other civil servants if any still retain an undue bonus: and that it is possible that the Ministry of Health is possessed of more complete knowledge than we are of the real value under present economic conditions of the panel doctor's work.

In any case, assuredly the right thing for the medical profession to do at the present moment is to press for an independent inquiry into the working of the Insurance Acts; and this will be better done after dignified acceptance of the Minister's proposal.—I am, etc.,

C. BUTTAR.

The Present Situation.

SIR,—I venture to offer a few remarks on the present situation. As divisional secretary before, during, and after the introduction of the Insurance Act and as a member of Insurance, Panel, and Joint Panel Committees, I have been in a position to see things from different angles and through the eyes of my professional brethren.

Once more our profession is being stirred up with a long pole. Why? The main reason is pressure by the friendly societies on the Minister of Health, with the present economy campaign as a lever. They are pressing because they dislike the fact that we have escaped bondage, and are now trying to enslave us once more by aiming at getting the medical benefit into their own hands. Should they succeed they hope to achieve two objects:

1. To economize on the doctor's fee, and put the balance towards their own office expenses.

2. By having control of the doctor they expect to lessen the period of invalidity of their members and thus add to their already inflated reserves.

This latter object can only be attained by bringing pressure to bear on the doctor to certify that the patient is fit before he is so.

Dr. Cox's address at Birmingham ought to be carefully read and digested by us all. I think there is no single statement in it from which anyone conversant with the matter will differ. The fiasco of 1913 made us appear as rabbits, but I believe the societies will not be wise if they build on our acting in such a fashion a second time.

Regarding the interview with the Minister of Health (SUPPLEMENT, October 15th), and putting aside the usual patriotic flapdoodle to which we alone seem to be treated when economy talk is about (for example, reduction of notification fees as a war economy when everyone, from munitioner to highly paid permanent official, had his remuneration nearly doubled) the only point that strikes one is the threat to abolish medical benefit. How can this be done without abolishing sickness benefit as well?

Concerning proposed alteration in capitation fee. It is necessary to realize that there must be fixed sooner or later a different fee for the urban and the rural patient. The time spent and the expense involved in treating the average rural patient are both very much greater than in the case of the urban patient. This is so evident that I need not labour the point. I will merely add that I believe that a 3,000 urban panel entails about the same amount of work and less travelling expenses than a 1,500 panel in a purely rural district. I am not forgetting the mileage allowance, which is a help, nor the dispensing fee, which is such a little help that a number of doctors prefer to be without it and write prescriptions for the chemist to dispense. To the questions: (*a*) Are you willing to accept a fee of 10s., and (*b*) are you prepared to refuse service at a fee of 9s. 6d. I would answer: (*a*) "Yes, but not for rural patients," (*b*) "Yes, unless rural patients are paid for at a much higher rate."

Our position is a very strong one indeed and that of the Minister a very weak one, if we are united and stick to our guns. The object of the Minister is to frighten us, but close inspection, I think, shows it to be an affair of a stick, sheet, candle, and hollow turnip.—I am, etc.,

Sherborne, Dorset, Oct. 16th. T. MACCARTHY.

Remuneration and Certificates.

SIR,—As I was one of the few to welcome the panel system and have lived to prove that many of the fears expressed by my fellow practitioners were groundless, I may be permitted to express my views upon the suggested reduction of the capitation fees.

Like most people, I object naturally to a reduction of fees, but as a member of society I realize that if I advocate the reduction of wages and the price of commodities for other members of society, I cannot reasonably object to lowering my own charges. The cost of living must come down before the national wellbeing is restored, and it behoves those of us who appreciate the difficulties underlying the present unnatural inflation of prices to show others a good example. But one must make certain reservations.

It is a fact that we are better paid for the work done for private patients than for insurance patients, and there seems no reason why we should be expected to do

insurance work at a cheaper rate than private work. Therefore we must reduce in some way the work done under the insurance system, work which is absolutely unnecessary, and it is with the intention of suggesting how this can be done that I now trouble you.

The only means of reducing work is through the medium of certification. Most men are presumably irritated by the necessity of granting certificates every week when there is no real necessity for it. I have consistently advocated the Post Office system of certification. To those ignorant of the P.O. form I quote its terms:

"I certify that I have this day seen the above . . . who is suffering from . . . and is unfit for duty. Sick leave is recommended up to the . . . on which date duty should be resumed in the absence of a fresh certificate. The officer has been informed accordingly," etc.

What objection could there be to such a certificate for insurance purposes? None, unless on the part of approved societies, who use our certificates as receipts and make all sorts of excuses for demanding them at unreasonable times.

What are the advantages? They are:

1. One certificate might suffice for one illness if approved societies could be persuaded of our honesty.
2. It would create a clearer understanding at once between doctor and insured, and eliminate any suggestion of the insured sponging upon insurance funds until "making-up day," or until such time as they can claim "accident pay," a manœuvre not unknown on the part of approved society officials and insured persons.
3. It would mean saving of time on the part of the doctor and expense on the part of approved societies and insurance committees in printing, etc.
4. It would require more precision in diagnosis on the part of the doctor. It would put him on his mettle as to the probable duration of the illness.

If a *quid pro quo* is necessary for the reduction of pay—and I think it is—I suggest that the whole profession should unite in a demand for reduction of work along those lines. Now is the time for the profession to procure more reasonable terms of service and work from the Government. If they refuse, let us fight unanimously now, for unless we do we may never have such an opportunity. Do not let us have the spectacle of 1912 repeated, where 90 per cent. of us swore to have nothing to do with panel work and eventually accepted the proposed terms. While personally a State Medical Service has no terrors for me, I recognize the majority are against such a solution, and as a democrat I will bow to the will of the majority.—I am, etc.,

Heywood, Oct. 16th. GEORGE GEDDES.

Reduction of Capitation Fee.

SIR,—I am sure we must all feel the deepest gratitude to Dr. Brackenbury and the deputation who work so zealously and so generously on our behalf, but one must deplore the fact that they received the recent ultimatum so meekly. Shorn of its flowery periods, what Sir A. Mond really said was: "I have the greatest love and respect for you as a profession, but—speaking as man to man—you must either accept my terms or be damned!" I hope we have too much self-respect to let ourselves be dictated to in this fashion or to allow such a precedent to be established.

If we do so allow it, what guarantee have we against a further reduction next year on the same grounds of patriotism and expediency? And so on *ad infinitum*. I hope we shall all oppose this reduction and fight to the bitter end. May one also add that it is childish to say pretty things about our profession one moment and to threaten us the next? By all means let Sir A. Mond tell us what reduction of his own salary is proposed, and when it is to come into operation.—I am, etc.,

Tulse Hill, S.W., Oct. 16th. ALBERT SHEPPERD.

SIR,—It seems to me that we, members of a liberal profession, have a great opportunity. Let us instruct our representatives to go to the Minister of Health and say:

"Sir,—We will accept your terms. We do this from patriotic motives. We realize fully that the finances of the country are in a horrible mess, and we will take our part in trying to unravel them. But we ask that all others receiving public money shall take a similar share in the good work. There are several ex-Lord Chancellors, ex-judges, and so on drawing large pensions. There are others drawing pensions, not for services rendered by themselves, but on account of services rendered by their grandfathers. Will they sacrifice a similar percentage? There are Cabinet Ministers: will they come in and join us in our patriotic venture? There are M.P.'s: will they do their bit? If *all* will help a lot may be done."

To sacrifice income is unpleasant and inconvenient, but in times of stress it has to be put up with. We are told that there is actual danger that, in certain circumstances, medical benefit may be suspended. For us that would be uncomfortable; for thousands of poor people it would be absolutely disastrous. Let us regard the matter from the social-ethical angle, and let us ask all others who draw Government or municipal pay to come in with us.—I am, etc.,

Walsall, Oct. 16th. FRANK G. LAYTON.

SIR,—The Minister of Health is asking the medical profession "as a matter of patriotism" to agree to a reduction of 1s. 6d. in the capitation fee. Before doing so I would like to know who will benefit by this saving. If it comes purely from the Treasury grant I personally have nothing more to say, and am prepared, having answered "Yes" to the two questions put forward by the Insurance Acts Committee, to leave it to that Committee to fight out with the Ministry and make the best bargain possible.

But if this saving is to be treated as part of the finance of the Insurance Acts, and the Exchequer is only to benefit to the extent of two-ninths of the sum rescued from the ravenous and rapacious jaws of the medical profession (say £230,000) I must enter a protest. Why? Because the other £810,000 will not come off the burden of the income-tax payer, but go to swell the surplus of the approved societies. If you can give a guarantee that the former is the true interpretation of the suggestion you will materially add to my mental comfort.—I am, etc.,

Chorley, Oct. 16th. WM. J. LEIGHTON, M.D.

*** We are informed officially that the whole of the proposed reduction is intended to relieve the Treasury grant. No advantage will accrue to the approved societies, insured persons, or employers.

SIR,—On p. 148 of the SUPPLEMENT of October 15th Sir A. Mond is reported to have said, concerning the proposed capitation fee of 9s. 6d.: "It is a great deal more than we began with when the Act was originally started."

No time should be lost in nailing this statement to the counter. Sir A. Mond says, on the same page: "When the panel system was first adopted the average remuneration per patient was 7s. 3d." At that time income tax was from 9d. to 1s. 2d. in the £. Subtracting 4½d. for income tax, that left the doctor with 6s. 10½d.; now, with income tax at 6s. in the £, his 9s. 6d. is reduced to 6s. 8d. net. So much for Sir A. Mond's "great deal more."

But nothing matters. Sir A. Mond has told us he is not going to haggle about it; he is simply going to dictate and threaten, depending on the approaching great influx of "good young men" to help him through, to force a reluctant profession to accept his *soi-disant* "not ungenerous figure," and to "devote themselves with cheerfulness and loyalty" to the carrying out of his high commands.

One thing we should insist on in any case—the abolition of the records.—I am, etc.,

Harston, Cambridge, Oct. 15th. W. J. YOUNG.

Dr. A. R. EATES (Thayer Street, London, W.1) writes to question the authority of the Insurance Acts Committee to traffic with the Minister of Health for a capitation fee of 10s.: "It is not," Dr. Eates says, "a question of 10s. or 9s. 6d.; the only question is 11s. or cease work. . . . The Minister of Health ought never to have been allowed to assert, without immediate correction, that we are at present being paid 11s. I have proved to him that I, at least, am being robbed of many capitation fees, which process of robbery reduces my capitation fee very considerably. And I believe that the same is true of all doctors on the panel in London."

Dr. E. B. HASTINGS (Mile End Road, E.) writes: "Why should the concession be all on our side? Let us offer to accept the capitation fee of 9s. 6d. on condition that the Ministry of Health rescinds the regulation which makes the goodwill of an insurance practice unsaleable. This would be a reasonable demand, and, if granted, would not injure the insured patients and would cost the Government nothing."

*** We have received a few other letters on the reduction of the capitation fee for which we cannot find space. The views of all correspondents are, we believe, fully represented in those printed.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commander W. Bradbury, D.S.O., to the *Durban*, on commissioning. Surgeon Lieutenant Commanders: E. St. G. S. Goodwin to the *Dunedin*; J. G. Boal to the *Ganges* for R.N. Sick Quarters, Shotley.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major Gerald H. Stevenson, D.S.O., retires, receiving a gratuity, and is granted the rank of Lieutenant-Colonel.

Temporary Captain E. L. Davey relinquishes his commission and retains the rank of Captain.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Flight Lieutenant M. J. Cahalane, from No. 1 Flying Training School (Inland Area), to Aeroplane Experimental Establishment (Inland Area).

INDIAN MEDICAL SERVICE.

Lieut.-Colonel D. H. M. Graves, M.B., has been permitted to retire, with effect from August 1st.

TERRITORIAL ARMY.

ARMY MEDICAL SERVICE.

Lieut.-Colonel J. G. Martin, T.D., from R.A.M.C.(T.A.), to be Colonel and A.D.M.S., West Lancashire Division, December 10th, 1920 (substituted for notification in the *London Gazette*, January 17th, 1921).

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel (Brevet Colonel) C. T. Green, T.D., having attained the age limit, is retired, and is granted the rank of Colonel, with permission to wear the prescribed uniform.

Major J. Orton, having attained the age limit, is retired, and retains the rank of Major with permission to wear the prescribed uniform.

Major M. A. Archdale, having attained the age limit, is retired, and retains the rank of Major.

Captain H. W. Read to be Major.

Captains resign their commissions and retain the rank of Captain: A. E. Delgado, W. H. Kiep.

Captain George E. Lloyd, M.C. (late R.A.M.C.), to be Lieutenant, with precedence as from September 13th, 1915, and relinquishes the rank of Captain.

1st London (C. of L.) Sanitary Company.—Captain F. W. Gregory, having attained the age limit, is retired, and retains the rank of Captain.

2nd Western General Hospital.—Lieut.-Colonel (Brevet Colonel) J. W. Smith, T.D., having attained the age limit, is retired, and retains his rank, with permission to wear the prescribed uniform. Captain P. R. Wrigley, having attained the age limit, is retired, and retains the rank of Captain.

DIARY OF SOCIETIES AND LECTURES.

HUNTERIAN SOCIETY, Sion College, Embankment, E.C.—Wed., 9.30 p.m., Hunterian Society Lecture by Professor E. H. Starling, C.M.G., F.R.S.: Some Heart Problems.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Mon., 8.30 p.m., Discussion: The Modern Treatment of Diabetes. To be introduced by Sir Archibald Garrod, followed by Sir William Willcox, Dr. O. Leyton, Dr. W. Langdon Brown, Dr. Edmund Spriggs, Dr. E. P. Poulton, Dr. George Graham, and Dr. P. J. Cammidge.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Demonstrations, 5 p.m.—Mon., Professor Shattock: Papilloma, Adenoma; Fri., Sir Arthur Keith: Effects following Disordered Action of Thyroid—illustrated by lantern slides.

ROYAL SOCIETY OF MEDICINE.—*Section of Odontology*: Mon., 8 p.m., Presidential Address by Mr. Montagu Hopson. Mr. J. B. Parfitt: Treatment of Pulpless Teeth. *Section of Medicine*: Tues., 5.30 p.m., Dr. W. W. Payne and Dr. E. P. Poulton; Epigastric Pain. *Section of Urology*: Thurs., 2.30 p.m., St. Bartholomew's Hospital, Operations by Mr. Girling Ball; 5 p.m., Demonstration of Cases by Sir Thomas Horder; 8.3 p.m., 1, Wimpole Street, Presidential Address by Sir Thomas Horder: The Medical Aspects of some Urinary Diseases. *Section of Study of Disease in Children*: Fri., 4.30 p.m., Cases; 5 p.m., Dr. Donald Paterson: Duodenal Ulcer in Infancy. *Section of Epidemiology and State Medicine*: Fri., 8 p.m., Presentation of Jenner Medal to Sir Shirley Murphy. Dr. L. G. Haydon: Plague in Wild Rodents in South Africa.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Dr. T. Thompson: Functional Disorders of Childhood.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. Wm. Brown: Psychology and Psychotherapy; Wed., 4.30 p.m., Dr. C. Da Fano: Histology of the Nervous System.

MANCHESTER: ANCOATS HOSPITAL.—Thurs., 4.30 p.m., Mr. W. R. Douglas: Chronic Appendicitis.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Dr. D. E. Core: Differential Diagnosis of Disseminated Sclerosis.

MANCHESTER: ST. MARY'S HOSPITALS, Whitworth Street West Branch.—Fri., 4.30 p.m., Dr. Donald: Lacerations of the Genital Tract.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Daily, In- and Out-patients; Mon., 5.30 p.m., Lecture by Dr. Hamill: Diseases of the Myocardium.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.2.—Thurs., 6 p.m., Chesterfield Lecture by Dr. W. K. Sibley: Electrical Treatments, X Rays.

ST. PETER'S HOSPITAL FOR URINARY DISEASES, Covent Garden.—Sat., 2 p.m., Mr. Clifford Morson: Cystoscopy and Demonstration of Cases.

SHEFFIELD UNIVERSITY.—At Royal Infirmary, Tues., 3.30 p.m., Mr. Cuff: Acute Abdomen; 4.15 p.m., Dr. Yates: Intracranial Syphilis. At Royal Hospital, Fri., 3.30 p.m., Dr. Skinner: Dermatological Cases; 4.15 p.m., Mr. G. Simpson: Cases.

UNIVERSITY COLLEGE, Gower Street, W.C.—Fri., 4.30 p.m., Dr. J. C. Drummond: Nutrition.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Lectures:—5 p.m., Mon., Dr. A. Saunders: Gastric and Duodenal Ulcer; Tues., Dr. Cole: Treatment of Early Mental Disorder; Wed., Dr. Burnford: *B. coli* Infections; Thurs., Dr. Snowden: Simple Methods of Psychological Treatment; Fri., Dr. Cole: Insanity and Heredity.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand London).
MEDICAL SECRETARY (Telegrams: Mediscera, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Atiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin (Telegrams: Pacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

25 Tues. Lewisham Division. The Priory 410, High Street, Lewisham, S.E.13, 8.45 p.m.
London: Central Ethical Committee, 2 p.m.
London: Propaganda Subcommittee, 2.15 p.m.
26 Wed. Bury Division, Bury Infirmary, 4.30 p.m.
North Lancashire and South Westmorland Branch, Public Library, Kendal, 3 p.m.
North Middlesex Division, Wortley Hall, Finsbury Park. Address by Dr. Alfred Cox, 5 p.m.
South Middlesex Division, St. John's Hospital, Twickenham. General business, 8 p.m. Paper by Mr. R. C. Elmslie, 8.45 p.m.
27 Thurs. London Maternity and Child Welfare Subcommittee 2.30 p.m.
28 Fri. Sheffield Division. The University Lecture by Dr. H. H. Dale, F.R.S.: Specific Sensitiveness and Idiosyncrasies 8.45 p.m.

NOVEMBER.

4 Fri. London: Post-Graduate Courses Committee, 2.30 p.m.
15 Tues. Croydon Division. Croydon General Hospital, 8.15 p.m.
17 Thurs. Birmingham Division. Lecture by Sir William Thorburn.

APPOINTMENTS.

BORTHWICK, G. A., D.P.H., D.T.M. and H., appointed Assistant Medical Officer of Health and Assistant School Medical Officer to the County Borough of Barnsley.

PATRICK, John, M.A., M.B. Glas., F.R.C.S.Ed., F.R.F.P.S., Visiting Surgeon, Glasgow Royal Infirmary, appointed a Lecturer in Clinical Surgery at the Royal Infirmary by the Court of the University of Glasgow.

EDINBURGH ROYAL INFIRMARY.—Assistant Physician, H. L. Wemyss-Watson, M.D., F.R.C.P.Edin.; Resident House-Physician, Richard Howarth, M.B., Ch.B., to Professor Boyd; Resident House-Surgeon, Evan Moir Byros, M.B., Ch.B., to Surgical Out-patient Department, per Mr. Pirie Watson; Non-resident House-Surgeons: G. M. Shaw Smith, M.B., Ch.B., D.P.H., to Mr. Lees; D. C. L. Vey, M.B., B.A.Cantab., M.R.C.S., L.R.C.P.Lond., to Dr. Paterson. Clinical Assistants: Miss Dorothy Mitchell, M.B., Ch.B., to Dr. Sinclair; Miss Sybil Russell, M.B., Ch.B., to Dr. Paterson; W. S. V. Brausgrove, M.B., Ch.B.Otago, to Dr. J. S. Fraser; Stephen Young, M.B., Ch.B., to Dr. J. S. Fraser.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

CALLENDER.—On October 18th, at Highden, Sidcup, Kent, the wife of Duncan M. Callender, M.D., F.R.C.S.E., of a daughter.

EVANS.—At Ranikhet, United Provinces, India, on the 7th September, to Marjorie, wife of Captain R. R. Evans, R.A.M.C., a daughter.

MARRIAGES.

OBERLIN-HARRIS—CLARK.—On September 2nd, at Adelaide, the Rev. Osric Oberlin-Harris, M.A., to Mildred Clark, M.B., Ch.B.

VERNON—HARDON.—On October 12th, at the Cathedral, Manchester, John J. Vernon, M.B., of Shaw Heath, Stockport, to Marion, daughter of Mrs. Hardon and the late James Hardon, of Bayldon, Wellington Road, Heaton Chapel.

DEATHS.

NORRIS.—On October 10th, at Langley Lodge, Surbiton, Frank Baker Norris, M.A., M.D., B.C.Cantab., M.R.C.S.Eng., L.R.C.P.Lond., aged 55 years.

PARKER.—Suddenly, at Clovelly, Kilmacolm, on the 16th inst., James Parker, M.B., C.M., in his 58th year. This is the only intimation.

The Journal is published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, OCTOBER 29TH, 1921.

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ANNUAL PANEL CONFERENCE.

London, Thursday, October 20th, 1921.

THE annual Conference of representatives of Local Medical and Panel Committees took place at the Central Hall, Westminster, on October 20th.

Dr. H. G. DAIN (Birmingham) was in the chair, and with him on the platform were Dr. H. B. Brackenbury (Chairman of the Insurance Acts Committee), Dr. Alfred Cox (Medical Secretary), Dr. G. C. Anderson (Deputy Medical Secretary), and Mr. W. E. Hempson (Solicitor). The representatives present numbered 165, and there were also present 22 members of the Insurance Acts Committee other than those who were representatives.

The CHAIRMAN at the outset expressed the hope that the proceedings of the Conference might not occupy more than one day.

The returns of representatives and substitutes, and apologies for absence were received.

THE MACHINERY OF THE CONFERENCE.

The standing orders, as approved by the previous Conference, were adopted, together with an additional standing order:

> In the event of the Chairman being unable to act at the following annual or at any intervening Conference, the Conference shall appoint its own chairman for that Conference.

Dr. A. LYNDON moved that it be a standing order:

> That all representatives elected by Panel Committees shall at the time of their election be members of the Panel Committee by whom they are elected.

He believed that the only regulation at present was that the representative must not be a layman. There were certain committees which appointed their paid secretaries, who, of course, were not members of the Panel Committees; he would be willing to include such paid secretaries, only the position should be clearly defined. It was agreed, on the Chairman's suggestion, to refer the matter to the Insurance Acts Committee with a view to making a recommendation to the next Conference.

Dr. P. MACDONALD (York) raised the question of the admission of press representatives to the Conference. The CHAIRMAN said that there were no members of the lay press present, and, in accordance with a previous procedure when the question of remuneration was discussed, the representatives of the medical press present had agreed to submit to him, as chairman of the meeting, the report which they proposed to publish. This course was agreed to after it had been embodied in a formal motion by Dr. D. F. TODD.

Mr. P. L. GIUSEPPI (East Suffolk) moved a resolution disapproving of members of the Insurance Acts Committee acting also as representatives at the Conference. It was an anomaly, he said, that members of the Insurance Acts Committee, which acted as the executive of the Conference and carried out its instructions, should sit as judges of the actions of the Committee. They would be welcome as visitors to the Conference, and should be permitted to defend their actions by speech and to criticize resolutions of the Conference, but he thought they should not be allowed to vote.

Dr. CUMING ASKIN, while he did not think the point was one of vital importance, agreed that it would be better if members of the Committee were not representatives.

Dr. BRACKENBURY said that he represented a group of Panel Committees at the Conference, and was proud of the fact. The members of the Insurance Acts Committee were not required to sit in judgement upon themselves in the Conference; they had plenty of other people to sit upon them. It was not a defect in the constitution that members of the Cabinet should also be members of Parliament. He did not see why members of the executive should not be to some extent, if not wholly, members of the body which ruled the executive. He wanted the matter to be judged also from the point of view of the constituencies. The best policy was to allow any Panel Committee to elect whomsoever it pleased, subject only to the restriction that each person so elected should be a member of the medical profession.

Dr. M. DEWAR supported Dr. Brackenbury, and put forward the special case of the Scottish constituencies, which had a more restricted choice of representatives owing to the distance of Scotland from London.

On the motion of East Suffolk being put to the meeting, only two hands were held up in its favour.

POSITION OF THE INSURANCE ACTS COMMITTEE.

Dr. GORDON WARD (Kent) moved:

> That the views of Panel Committees should be focussed by a central statutory committee elected solely by Panel Committees.

He said that neither in theory nor practice did the Insurance Acts Committee even approximate to a representative body of the panel practitioners of the country. A theoretically perfect body would be one which was elected by panel practitioners in stages up from the individual practitioner to the final representative body of perhaps thirty or forty persons. There should be a regular sequence of election, one body electing the next, and so on. At the top there would be an executive immediately responsible to the body electing it. He would like, by the

way, to know the constitution of the executive of the Insurance Acts Committee.

The CHAIRMAN said that the Insurance Acts Committee acted as the executive of the Conference; it had subcommittees which performed only subcommittee functions.

Dr. GORDON WARD, continuing, said at the periphery of the ideal body there should be representatives, evenly spaced out, of all the panel areas. In the present Committee eighteen representatives were elected in this manner, and these were, so far as he knew, evenly spaced, but eighteen was not a sufficient number. There was no member for Kent, for example, which was included in a group with Surrey. On the other hand, the Representative Body of the British Medical Association accounted for six members, and other bodies (such as the Society of Medical Officers of Health) were represented. The periphery elected two bodies—the Insurance Acts Committee and the Conference. The Committee, therefore, had to serve two masters, which meant great difficulty unless it could contrive to speak with a single voice. A negotiating body should be a purely panel body as it had to represent panel interests. The views of the profession at large were not without some moment to those on the panel; they wished those views to be put forward by separate bodies, elected, if desired, by the Local Medical Committees; but those for whom he spoke objected to representatives of the profession at large having a considerable voice in such matters as insurance remuneration. If the Insurance Acts Committee were theoretically ideal, they at the periphery would hear more from headquarters than they did. If the Association could not afford to send round travelling secretaries, that was a still more cogent argument for having a statutory body with statutory funds which could afford to organize the profession properly. He was not a member of the Association, and did not desire that the Association should pay to have his interests looked after; he was quite prepared to have that done through his Panel Committee, and to pay for it. Not only did the Insurance Acts Committee fail to represent the profession in theory but also in fact, and his motion was really one of no confidence in the Committee. He did not bring it forward as such, but if it was understood as such, he did not think that any harm would be done. [The speaker was prevented by the time limit from developing his subject further.

Dr. H. ROSE (Buckinghamshire) said that his own committee had stated very definitely that it considered the Insurance Acts Committee the best representative of the panel practitioner. He was astonished that any body could make such remarks as the previous speaker had done and be left to sit down in peace. There were eighteen members on the Insurance Acts Committee directly elected by Panel Committees; these represented the majority of the Committee, and this fact ought to be enough to silence objections. He thought it imperative that there should be other members on the Committee than those representing only panel interests.

Dr. A. LYNDON (Surrey) moved as an amendment:

> That this Conference reiterates its opinion that the Insurance Acts Committee should be the central negotiating body of the Local Medical and Panel Committees of the country, and deprecates the formation of any new negotiating body elected directly and solely by Panel Committees as being contrary to the interests of panel practitioners and of the profession as a whole.

He said that Dr. Gordon Ward had suggested that it was a grievance for Kent that it was outvoted by Surrey. But the electorate for this particular J group consisted not only of Kent and Surrey but also of Croydon and Canterbury. Kent had made a proposition that that county should elect a representative one year and Surrey the next, but it was not possible to agree to this arrangement because there were other bodies involved. With regard to the whole subject, he would like to carry the memory of the Conference back to what happened last year, when only 14 voted in favour of a motion to abolish the Insurance Acts Committee. On a motion by London for the substitution of an independent directly elected body instead of the Insurance Acts Committee, only 16 voted in favour and 124 against. On both resolutions there was shown to be an overwhelming majority against any change in the central negotiating body. His own committee had always felt, and felt still, that in the Insurance Acts Committee it had a most valuable negotiating body. It would be a bad day for insurance practitioners all over the country if the negotiating body was composed entirely of insurance practitioners. This was a question which affected not only insurance practitioners, but the profession as a whole. It was a retrograde step to try to [illegible] practitioners from the rest of the [illegible] whole body of the profession, and they declined to be labelled as a separate—it might be suggested an inferior—body.

Dr. H. J. CARDALE said that London had put a motion on the agenda calling for an independent and directly elected negotiating body, but in view of the negotiations which were proceeding at the moment with the Minister he withdrew it, and called for all support for the Insurance Acts Committee at the present juncture.

Dr. W. M. RENTON (Kent) said that he could not support the motion of his colleague (Dr. Gordon Ward). He thought it very important that they should have the sympathetic co-operation on the Insurance Acts Committee of members of the profession other than insurance practitioners.

The Surrey motion, which was taken as an amendment to Dr. Ward's proposal, was then put to the Conference and carried by a very large majority, the dissentients numbering 17. It was also carried as the substantive motion.

GROUPING OF COMMITTEES FOR ELECTION OF DIRECT REPRESENTIVES ON INSURANCE ACTS COMMITTEE.

Dr. CARDALE moved:

> That this Conference is of opinion that London should constitute a group for the purpose of election of representatives upon the Insurance Acts Committee.

Dr. BRACKENBURY, speaking on behalf of the Insurance Acts Committee, and still more on behalf of the other constituencies in Group K, of which London was a member, supported the contention of London, and said that he could not conceive the Conference objecting to the division of Group K into two parts, so that London could constitute a group of its own, and Middlesex, Hertfordshire, Essex, Southend, and West Ham another group. This meant that London with one representative—Group K had three—would be under-represented, and the other constituencies in the group over-represented. The division of the group in this manner could become operative at once, but if the Conference was of opinion that London should have two representatives—it was strictly entitled to one and a half—that would require an alteration of constitutional machinery which could not become operative for a year.

The motion was agreed to, and

Dr. CARDALE then moved further that London should elect two representatives on the Committee. His committee understood that the matter was not one which could be settled there and then; but London actually, with 1,560 practitioners on the panel, was entitled to rather more than one and a half members, and he thought that the representation should be two rather than one.

Dr. BRACKENBURY said that for London to have two representatives would mean taking away one representative from some other group. The Conference had no power to alter the number of representatives—namely, 18. He suggested that the matter be referred to the Insurance Acts Committee for consideration. London was clearly entitled to more than one representative, though less than two, and it was a matter for accommodation. He looked forward to developments within the next year which would no longer make it necessary to have any representative from Ireland on the Insurance Acts Committee, and this would leave a vacancy for London. But it was for the Conference to say whether it desired to give London two members.

Dr. D. F. TODD protested against political subjects (the reference to Ireland) being introduced into the Conference. A better course than the one suggested would be to press for a larger number than eighteen direct representatives, and some elected directly by the Conference. Dr. T. L. BUNTING supported the demand for an increase in the number of direct representatives, even though this might mean a corresponding reduction in the number of representatives of outside bodies. Dr. W. E. THOMAS thought it important that if there was over-representation at all it should be the smaller constituencies which were over-represented, not the big ones like London. Dr. A. CALLAM said that there was a feeling in the Panel Committees of the North that the number of direct representatives was not high enough. That also was the reason for the relative non-success of the Defence Fund.

It was agreed to refer to the Insurance Acts Committee the whole question of the constitution of that committee, with a view to an increase of the direct representation from Panel Committees or from the Conference.

Dr. GORDON WARD wanted the Conference to express the view that the direct representatives should not be less than 75 per cent. of the whole Committee, but on the CHAIRMAN'S suggestion the hands of the Committee were [illegible]

Representation on Insurance Committees.

Dr. G. G. Genge (Croydon) moved a resolution that a protest should be made against the reduction of direct representation on Insurance Committees under the new Regulations.

Dr. Brackenbury said that a bill was introduced into Parliament halving the members constituting Insurance Committees, and this meant a similar division of each constituent section. The medical representation, therefore, was divided by two, but the undertaking still held good that one-tenth of the Committee should be medical men. These were elected in different ways, but whereas under the previous condition of affairs one or two, as the case might be, were directly elected to the committees by the votes of all the medical practitioners (not the insurance practitioners alone) living in the area, thus entailing a sort of General Election procedure, it was suggested under the new arrangement that, instead of this direct election, the direct representatives of the medical profession might be nominated by the Local Medical Committee of the area. That was the only material change which had been accepted, though the arrangement as to numbers might work out oddly in the case of Croydon and in other areas.

Dr. P. Macdonald (York) hoped the Croydon amendment would be withdrawn. This was not a very important matter, but the position was more favourable to the profession than Dr. Brackenbury had indicated. They must bear in mind the fact that there were other representatives than direct representatives. In fact, the medical representation in his own area had practically been increased.

Dr. T. Cuming Askin thought the Panel Committees or Local Medical Committees ought to be allowed to appoint two of the three representatives. It was often difficult for one representative to attend meetings. Dr. H. F. Oldham (Lancashire) suggested that no more time should be spent over this matter. The real crux of it was a matter of local management. Dr. A. Foster (Worcester City) said that in some areas the appointment made by the borough council was not satisfactory to them. They considered that the representative should be a general practitioner, and not the medical officer of health. Dr. A. Callam (Burnley) said Insurance Committee work now was practically only the administration of medical benefit. Therefore the Insurance Acts Committee ought to press the Ministry of Health to give the Panel Committee as high a representation as could possibly be got.

Dr. F. J. Greeves, J.P. (Blackburn), said there was a certain element which might be predominant in town councils, and which might be hostile to insurance practice. They could not combat the control of the representative elected by the Ministry of Health, but they should press that the second representative, say, from the borough council, should be nominated by the Panel Committee of the area. In view of the changing conditions in regard to the representation on borough councils, particularly in the North of England, he thought they ought to hesitate before they threw out the Croydon resolution.

The Croydon amendment was then agreed to by an overwhelming majority. An amendment by St. Helens on similar lines was withdrawn.

Election of Panel Committees.

Dr. Brackenbury moved on behalf of the Insurance Acts Committee: "That proxy voting at elections of Panel Committees should be abolished." They would remember, he said, that the methods of the election of Panel Committees could be either by postal vote or by a meeting of constituents. There was a provision that in election by a meeting of constituents there could be proxy voting. Anyone could go to these meetings carrying in his pocket the votes of those who did not choose to attend. It was desirable that this should be done away with, and that the election should be by persons who attended the meetings and heard the various arguments brought forward.

The motion was agreed to, with about half a dozen dissentients.

THE REMUNERATION OF INSURANCE PRACTITIONERS.

The Conference then turned to the question of remuneration, which occupied about five hours' discussion.

The Chairman at the outset announced that arrangements had been made to convey to the Minister of Health the resolutions of the Conference at the earliest possible moment, and Sir Alfred Mond had promised to receive a deputation on the subject later in the day. In reply to a representative, who asked whether the Minister was proposing any reduction in the remuneration of other bodies working the Act, the Chairman said that it was common knowledge that the approved societies were getting a smaller grant for administrative expenses, and that the salaries of civil servants had been considerably reduced.

Dr. Brackenbury asked the indulgence of the Conference while he summarized the present position at greater length than was allowed by the rules of procedure. When the resolutions which appeared on the printed agenda were formulated the situation was different from what it was now. At that time they did not know positively that any reduction in the capitation fee was going to be proposed, and as a matter of tactics they thought it wise to assume that no such proposal would be made. The proposals of the Insurance Acts Committee, as modified by the new situation, had been circulated. Since the beginning of 1920 insurance practitioners had been working under an agreement which provided for a capitation fee of 11s.; this was confirmed by an arbitration award in March, 1920. The Minister now stated that he proposed that that arbitration award should be reopened, and that insurance practitioners should be asked to accept a fee materially less than the arbitrators had given them. Sir Alfred Mond did not propose to consult the arbitrators as to whether there were any circumstances which justified a reopening of the case. To this proposal of a smaller capitation fee the Insurance Acts Committee had said that it could not agree, nor could it go to the Conference and ask the Conference to agree, and the Minister thereupon had appealed from the Committee to the Conference, so that it was now for the Conference to decide what it wished to be done. The Minister must receive his answer from the Conference, and the answer might or might not be the same as the answer given to him by the Insurance Acts Committee.

There were only three lines of policy, any one of which it was possible for the Conference to adopt, although each might, no doubt, be varied as to its details. The Minister had said in effect, "I do not reopen the question as to whether 11s. is a proper payment for the work you do in existing circumstances; I do not put it to you like that, but I appeal to you to make a sacrifice in view of the dangerous position of the country." In reply, insurance practitioners could say one of three things. They could say, first, that they could not accept the appeal to patriotism, that they could not consider the matter along those lines, but purely as a matter of business. From this point of view they could maintain their stand upon 11s., not because they thought it a right fee, but because it was the arbitrators' award, and they could say that they were not prepared to accept anything less than 11s. save as the result of a business piece of bargaining, as, for example, "If you will reduce our duties in this or that respect, then we can accept a reduction in the capitation fee." This was to deal with the matter as a business proposition.

The second line of policy was to affirm that the 11s. stood—to nail it to the mast, as it were—and to accept the Minister's suggestion that there was no need to reopen the question on its merits at all. Their position was all the time that 13s. 6d. was the proper fee; the arbitration award had given them 11s.; and they accepted the Minister's statement that there was no question involved as to the merits of the service to justify any departure from that fee in any respect whatsoever. At the same time, they recognized that in the present desperate financial position of the country—they all had their opinions as to how that position had come about and who was to blame for it—there was some force in the appeal to make a sacrifice, and they were prepared to heed the appeal on those lines, and to make the sacrifice to any extent which did not interfere with the efficiency of the service from the point of view of public health. Then they could ask the Minister and his advisers to confer with them as to the best methods whereby that sacrifice might be made.

The third line of policy was to recognize the patriotic appeal, to consider among themselves what the profession as a whole was willing to do, not immediately, but in the last resort, and to say to the Minister that in view of the facts of the situation they accepted his proposed reduction of 1s. 6d., and would make the best of it. There were no other lines of policy practicable, and the Conference must make up its mind which it was going to adopt. The recommendations of the Insurance Acts Committee embodied the second line of policy, but it was open to the Conference to take either of the others, and in that event the Insurance Acts Committee would do its best to carry it out.

The series of resolutions in which the second line of policy was put forward began with an emphatic reassertion of their opinion that on the merits of the case 13s. 6d. was the lowest capitation fee that should be offered for an effective service. It was thought well to record the fact that they had not been asked to depart from that position and had no intention of departing from it. But the resolutions went on to make a response to the Minister's appeal on patriotic grounds, and to authorize the Insurance Acts Committee to put before the Government certain considerations as to method and duration. A further resolution affirmed the entire willingness on the part of the insurance medical service to have a wide inquiry into the working of the Acts, in the confidence that the practitioners had given good service, and that the system was worth continuing and improving.

Much could be said about the appeal to their patriotism. It should not be accepted without certain observations. It was not the first time they had been appealed to to act patriotically—(Hear, hear)—and during the war, and even since, they had responded to such appeals in a way at least equal to that of any other section of the community. (Hear, hear.) Again, they were not merely making a sacrifice in the matter of their remuneration for insurance service. They were not in a position parallel to that of civil servants with their bonus; the situation was quite different. The present financial difficulty, the unemployment and distress, diminished the incomes of doctors, apart entirely from that portion of their income which came from insurance service. The emoluments of club practice, again, were very largely governed by the rate of capitation fee under the Insurance Acts, and if a sacrifice was made in the case of the latter it might involve a like sacrifice in the case of the former and in the case of contract practice of all kinds. Patriotic sacrifice had its reactions in many directions, and was a very much bigger thing than at first appeared. Then, too, although large sections of the population in this crisis had to face reduced incomes, there were others whose incomes were not reduced, and to whom no appeal for patriotic sacrifice had been made. As long as that was the case insurance practitioners might feel that they, along with certain others, had been singled out. Among the sections who did not face diminished emoluments were the members of the Government—(Hear, hear)—and if the Government of the country came to practitioners and asked them on patriotic grounds to make a distinct sacrifice it seemed not unreasonable to ask them what sacrifice they had made. Had there been any suggestion that Cabinet Ministers in receipt of £5,000 a year should make a patriotic sacrifice commensurate with that which they asked of others? All these considerations were germane. If the position of the country was desperate and he (the speaker) were asked to make a patriotic sacrifice in his remuneration he was prepared to make it, even though the one who asked him to make it was not making an equivalent sacrifice himself. At the same time, he was not prepared, even on patriotic grounds, to make such a sacrifice as would involve the service in which he was engaged becoming an unsatisfactory service and unworthy of the country. (Applause.) And, quite candidly, he held that a capitation fee of 9s. 6d. did come very definitely to the point of danger—the danger, he meant, that the resulting service would be one of which the country could not be proud, and one which it would not wish to maintain. In this fight, if fight it should become, it was important to have public opinion with them, and therefore it must be made clear that they were making a stand, not on account of sixpence—the medical profession was not going to haggle about a sixpence, although a sixpence on or off the capitation fee was an important thing financially to large numbers of the profession—but because too radical a reduction would endanger the satisfactory character of the service. It must be made clear to the responsible Minister that if he persisted in his full demand the responsibility for the character of the service in the future was upon him and not upon the profession.

The character of the service as a whole depended not only upon the men engaged in it but also upon the conditions imposed upon them by the Government which established and ran that service. On public grounds, therefore, he declared that if in the opinion of the profession the Government was proposing such a reduction of remuneration as endangered the satisfactoriness of the service, the profession had a right, not on the ground of what was due to it, but on public grounds, to say that the Government must not go beyond the point at which the profession considered it possible to carry on a service satisfactory to the public. It was for the Conference to say whether that point was reached with a capitation fee of 9s. 6d. Personally he thought it was. The Government could get a service at any figure it liked; a service of a kind would doubtless be forthcoming at 4s. a head, but the Government would have to take the responsibility for the bad kind of service it would be. If the Government established a service at a capitation fee as low as 9s. 6d. there was a danger, whatever eventuated, of that service becoming, from the public point of view, a less satisfactory service. The profession wanted to have a good service, and declared on general grounds that such a service could not be assured at any capitation fee of less than 11s., and that it should be 13s. 6d., but it was possible by adding patriotic motives to the question of remuneration and terms of service to maintain a good service for the time being at a voluntary sacrifice involving a capitation fee of something under 11s. The profession asked to be taken into consultation. It was willing to do the best it could in response to the appeal. And if it accepted that line of policy it must not confuse the issue by bringing in bargaining on other points. Certain features of the regulations were unsatisfactory, and an attempt was going to be made to alter them, with very good hopes of success. But nothing in the nature of bargaining was wanted in responding to an appeal for patriotic sacrifice. The two things must be kept quite distinct. Dr. Brackenbury ended by moving, on behalf of the Insurance Acts Committee, the first of six motions:

> That the Conference reaffirms the opinion that 13s. 6d. is the lowest capitation fee that should be offered for an effective service; and asserts that there is no justification whatever for a *demand* that the arbitration award should be lowered.

Dr. FRANK CHALLANS (West Ham) asked if there was any information in possession of the Insurance Acts Committee as to whether the committee presided over by Sir Eric Geddes made any representations to the Ministry with regard to a "cut" in the fee. Dr. BRACKENBURY said that so far as their information went, the Geddes Committee did make representations to the Ministry of Health on this point, and that the "cut" which the Ministry was proposing was less than that suggested by the Geddes Committee. Dr. F. J. GREEVES asked if the Minister had not stated that the sum of 9s. 6d. was a basic fee which would not be departed from. Dr. BRACKENBURY said that the representatives must give to the Minister's statement on that point whatever weight they thought it ought to have.

Dr. J. H. MORRIS JONES (Denbighshire) said that his committee wished to protest in the strongest manner against the veiled threat uttered by the Minister in reply to the able and conciliatory speech made by Dr. Brackenbury on the occasion of the deputation on October 11th.

The resolution having been adopted without dissent, Dr. BRACKENBURY moved the second resolution:

> That the Conference recognizes the force of the "appeal to citizenship" made by the Minister of Health to insurance practitioners "to make some sacrifice for the common good in a great financial crisis"; is willing to urge practitioners to respond to this patriotic appeal to any reasonable extent consistent with the interest of the public health, and asks the Government to discuss with representatives of the profession the best means of carrying this into effect.

The CHAIRMAN, desiring to secure a direct vote on two alternatives, decided to take as an amendment a motion by London.

Dr. E. A. GREGG (London) moved:

> That this Conference asserts that the 11s. capitation fee is not adequate to cover the services required, and instructs the Insurance Acts Committee to resist any reduction whatever.

He said that the Conference was wasting time discussing high patriotism. It was not their duty to assist the Government in these patriotic ways of obtaining money. If the Government required money—and money was undoubtedly required—there was a perfectly straightforward way of getting it—namely, taxation—which no citizen could avoid. They could be patriotic by paying their taxes with a good grace. This patriotic talk was all nonsense. It was an attempt to get them to submit to a lower figure, hoping they would be "good little boys" and help the country. He disapproved of the questions which were

set out in the referendum. He desired, for his own part, to support the negotiating body to the very utmost, and he would not in any way interfere with or weaken their efforts. But they had to be honest, and in his belief the profession had been stampeded. Who would believe the politician when he said that he was not going to budge from 9s. 6d.? He paid no attention to a Ministerial assertion that all the cards had been put on the table.

Dr. J. A. MACDONALD (Taunton), who was received with much applause, opposed the resolution by London and supported in the main the action of the Insurance Acts Committee. The last speaker had said he had no use for a patriotic appeal. He was sorry to hear that from any Englishman. (Hear, hear.) It was another question whether this was a just patriotic appeal or not. There was a little difficulty about the arbitration award of 11s. They did not know how much of that was recognized as the legitimate increase in the capitation fee and how much was given as a war bonus. That was one of the difficulties in estimating a fair reduction on the ground of patriotic appeal. Suppose the Conference refused, in accordance with this amendment by London, to accept any reduction, what would happen afterwards? What would the profession do if it maintained its 11s. and the Minister his 9s. 6d.? Were members prepared to resign from the service unless they got 11s.? ("No.") Another question was whether they were prepared to accept 10s. In his district 90 per cent. of those voting in a plebiscite were in favour of that course.

The London amendment was then put to the meeting and lost by a very large majority.

Dr. B. E. A. BATT (West Suffolk) then moved:

> That the Conference decides to advise its constituents to accept the proposed fee of 9s. 6d. on purely patriotic grounds, and without prejudice to any further revision that may take place when the inquiry into the working of the National Health Insurance Act is completed.

He urged this as the most dignified course under the circumstances. By accepting the 9s. 6d. straight away they would be more likely to get in return concessions with regard to record cards and transfer of practices.

Dr. H. J. CARDALE (London) opposed the amendment, very largely on the basis of the arguments already placed before the meeting by the Chairman of the Insurance Acts Committee. A capitation fee as low as 9s. 6d. would seriously endanger the efficiency of the service. The Ministry might think it possible to fix a low fee and dragoon the men into doing good work by means of regulations, but that was impossible; efficient service could not be obtained by regulations. He pointed out certain present disabilities affecting the service. A large proportion of the work was done in industrial areas. These areas were not attractive, and it was not only the doctor who was under a disability in such neighbourhoods, but also his wife and family. If, in addition to the unattractiveness of the neighbourhood, financial worries were caused by the poorness of the fee, it would be impossible to attract those good brains into the service which the service must have if it was going to be a success. Further, he considered that a fee of 9s. 6d. would produce such a feeling of unrest in the service as would make it almost impossible to carry out the work efficiently. In a stevedore's office he had lately read a notice which might, with a few variations, be adopted by the profession. It ran: "We have been in business since 1870. We have been pleasing and displeasing the people ever since. We have been cussed and discussed, sought after and boycotted, had kicks and ha'pence. The only reason we are staying in business is to see what the hell will happen next." (Laughter.)

Dr. GODFREY LOWE (Lincoln) said that in his area the practitioners were prepared to accept 9s. 6d., but they must get 9s. 6d., not some indefinite lower sum; at the present moment they were not receiving anything like the 11s. for every card they held for an insured person.

Dr. D. F. TODD (Durham), after criticizing the diplomacy of the Insurance Acts Committee, said that to accept the 9s. 6d. would constitute a dangerous precedent, because on the next occasion it would be 7s. 6d., and the same methods would be followed on the part of the Ministry. This matter should be dealt with on business lines and sentiment should be dropped. If the Minister of Health was not prepared to treat with insurance practitioners, there was a higher authority—the Prime Minister.

Dr. H. ROSE (Buckinghamshire) thought it would be wiser to omit from the resolution any reference to the amount of the new capitation fee, and merely to say that a reduction was consented to.

Dr. M. W. RENTON (Kent), Dr. A. CALLAM (Burnley), Dr. J. O. SUMMERHAYES (Oxfordshire), Dr. SIDNEY H. CLARKE (Hertfordshire), Dr. W. STEVEN (West Riding), Dr. C. F. T. SCOTT (Middlesex), Dr. H. E. COUNSELL (Oxford), and various other representatives—from the Isle of Wight, Oldham, Croydon and other areas—described the position in their own constituencies, and stated what their instructions were as to voting.

Dr. BRACKENBURY, in reply to a point raised by his colleague in the representation of Middlesex, said that there need be no question of "letting down" the Insurance Acts Committee; the Committee would not interpret in that way an expression of opinion from the Conference in regard to the acceptance of one figure or the other; the Conference was absolutely free to decide. All that the Committee had said was that it would not urge 9s. 6d. on the Conference. With regard to the returns of what had been called a "referendum," which various representatives had quoted as relating to their constituencies, too much must not be based upon those figures. It was never intended to be a referendum nor to involve a pledge, although it had been taken as such; the results must only be taken as some indication of the opinions of the men in the area. He asked that the amendment might be rejected, and that the proposal of the Insurance Acts Committee might find general support in the Conference. The Committee should go to the Minister and try to reopen the question; the Minister might or might not agree to reopen the question, but, at all events, if he would not reopen it he was placed in the position of refusing to hear a reasonable body of men on a reasonable point.

The West Suffolk amendment was then put and lost by a large majority, and the second recommendation of the Insurance Acts Committee was agreed to.

Dr. BRACKENBURY moved the third recommendation:

> That the Conference authorizes the Insurance Acts Committee to consider with the Government (*a*) a rebate of one shilling from the present capitation fee; (*b*) any other relevant financial questions except that of mileage; (*c*) the date at which the new arrangements should come into effect; (*d*) the duration of such arrangement; and agrees to support any arrangement that may be arrived at.

He said that if this was passed it would authorize the Committee in its discussion with the Minister to put to him the question of a rebate on the present capitation fee. It could be explained to him that the Conference preferred the method of a rebate to the fixing of a new figure.

In reply to a question as to the meaning of (*b*) in the recommendation, Dr. BRACKENBURY said that it referred to certain other emoluments which came to insurance practitioners apart from the capitation fee—as, for example, for drugs used in emergencies, or the return of postage in connexion with the transmission of record cards. Another question put was as to the amount which the Treasury hoped to save by each shilling reduction in the capitation fee. Dr. Brackenbury said that this amount was roughly £750,000.

Dr. D. F. TODD wished to see no conditions attached, and moved what the Chairman said was a relevant amendment in the following terms:

> That the Conference is prepared to accept a capitation fee of 10s. owing to the critical financial position of the country.

He believed that the 9s. 6d. was not the last word of the Ministry. In negotiation neither party stated its ultimate terms at the beginning. If they went to the Minister, saying simply that they were prepared to accept 10s., he believed they would succeed in getting it.

Dr. E. BURCHELL pointed out that if this amendment was passed the Committee would not feel authorized to accept less than 10s. in negotiation with the Minister; and Dr. GREENFIELD (Northampton) was also of opinion that the hands of the delegates should not be tied.

Dr. TODD said that his object was to get a definite opinion from the Conference on the subject of the ten shillings; the door to further negotiation was not closed at all.

The CHAIRMAN said that if Dr. Todd's amendment were passed it would be as an expression of opinion from the Conference, and then Dr. Brackenbury's resolution could be proceeded with and modified in any way desired.

Dr. T. Wood Lockie (Wiltshire) asked whether by passing Dr. Todd's amendment the Conference would rule out the possibility of approaching the Government with regard to any method of arranging the reduction other than by the simple fixing of the lower fee. Eleven shillings was only a fair standard rate of wage for the services given, and it was desirable to impress this on the Government. The principle of 11s. as a fair fee ought to be retained, for it carried with it the standard capitation fee for all club practice; at the same time some of the money could be given back by means of a rebate.

After some further discussion the CHAIRMAN ruled that Dr. Todd's was a separate motion and not an amendment, and it was forthwith put to the meeting and carried *nemine contradicente*.

Dr. J. P. WILLIAMS-FREEMAN moved that in Dr. Brackenbury's resolution the words "in the neighbourhood of 10 per cent." should be substituted for "of one shilling," but this was lost.

Dr. GORDON WARD said that as they were discussing the general instructions to the deputation it would be well to have a definite proposition that the Conference was of opinion that any reduction of the capitation fee must tend to impair the value of the services rendered. Dr. BRACKENBURY said that that had already been put forward as one of the principal arguments. The CHAIRMAN held that no special point would be made by the passing of such a resolution by the Conference; it was well understood by the negotiators.

Dr. GREGG asked whether, after the resolution just passed, the Conference was at liberty to discuss any other figure than 10s. The CHAIRMAN decided that, the Conference having agreed on 10s., no more resolutions dealing with other figures could be accepted. (Applause.)

Dr. BRACKENBURY remarked that it was quite clear that the Conference had chosen the method of basing its negotiations on patriotic grounds only and did not want to mix that up with any bargaining.

In reply to several questions,

The CHAIRMAN said that if the Minister reiterated his decision to accept nothing but 9s. 6d. a new situation would have arisen and they would be perfectly free to deal afresh with the whole matter.

Dr. GORDON WARD wanted the words "the deputation" to be substituted for "the Insurance Acts Committee." Dr. BRACKENBURY could not accept that. In the event of prolonged negotiations these ought to be carried on by the Insurance Acts Committee and by no other deputation. Dr. F. CHALLANS urged that it followed from the vote of confidence in the Insurance Acts Committee, which had been passed year by year by the Conference, that they must not alter the name of the negotiating body at this critical juncture. The recommendation authorizing the Committee to consider with the Government the various matters already laid down was then put and carried, with one dissentient.

Dr. BRACKENBURY moved on behalf of the Insurance Acts Committee:

> That the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to ensure the continuance and improvement of this system.

This was passed unanimously and without discussion.

An Inquiry into the Working of the Acts.

Dr. BRACKENBURY went on to move further:

> That the Conference, though of opinion that the Insurance Acts should be allowed to work during a number of normal years with such incidental improvements only as experience proves necessary before any reliable conclusions can be drawn as to their effect on public health, would willingly take part in any wide inquiry into the working of these Acts that may be thought desirable, but suggests that any inquiry concerned with medical benefit should not be entered upon until April, 1922, at the earliest, that being the date at which the new regulations will have been two complete years in operation.

He said that the Minister had made up his mind that an inquiry would have to be held. This would very likely take the form of a leisurely Royal Commission; it would not be hurried, and would report in due course. The speaker thought it desirable that the Conference should state its attitude towards such an inquiry. Until the insurance service had been running for a number of normal years it would be difficult to draw elaborate statistical conclusions as to the effect of the working of the Acts upon public health generally. There were some who thought that an inquiry ought to be held, and others who were dreadfully afraid of an inquiry. The medical profession was not afraid of any inquiry into medical benefit; such an inquiry would at least have the advantage that it would place the uninformed criticisms which were levelled at the medical service nowadays in their proper perspective. It would discount a good deal of the adverse criticism.

Dr. J. A. MACDONALD suggested a stronger wording, emphasizing the right and not merely the willingness of the Insurance Acts Committee to take part in such an inquiry. Dr. BRACKENBURY thought that this would not harmonize with the view expressed in the proviso in the early part of the recommendation.

Dr. GORDON WARD moved the reference back of the recommendation. Dr. Brackenbury contemplated a wide inquiry in which judgement should be passed, not only upon the working, but upon the results of the Acts. The results, however, had been so greatly interfered with by the war that no purpose could be served by this branch of the inquiry. Dr. Ward's proposition, however, found no seconder. Dr. CARDALE pointed out that the Minister had made the definite statement that an inquiry would be held.

The recommendation was then put and carried, with one dissentient.

The final recommendation moved by Dr. BRACKENBURY on behalf of the Insurance Acts Committee was a general one in the following terms:

> That the Insurance Acts Committee be authorized to take immediate steps to see that the profession is so organized as to take any such united action as may be found necessary.

Dr. FRANK CHALLANS said that one great drawback in any possible fight against proposals of the Government was that the profession had nothing to put in the place of the Insurance Act. National insurance was now a great national institution, too big to be pulled up by the roots. He appealed to the British Medical Association to get its best brains to work before the next fight came, so that some scheme might be formulated whereby the medical profession could run a national service itself. Then they could parody the Duke of Wellington and say, "'Suspend' be damned; we can work a scheme ourselves."

The recommendation was carried.

Co-operation with the Medical Practitioners' Union.

Dr. H. J. CARDALE moved as a rider an instruction to the Insurance Acts Committee to take such steps as might be necessary to ensure co-operation with the Medical Practitioners' Union. He said that the London Panel Committee was not disputing place with the Insurance Acts Committee; its only object was to ensure as much unity as could be obtained among all branches of the profession at this serious time. The Union was a strong body, and one whose existence must be recognized. Any co-operation between the Insurance Acts Committee and the Union would add to the strength of the insurance practitioners' case.

Dr. F. J. GREEVES (Blackburn) said that in his own district a recommendation calling for united action of this kind had been carried unanimously. It had received very strong support from men entirely opposed to the Medical Practitioners' Union; everyone present on the occasion was a member of the British Medical Association, and very few were members of the Union. The two bodies ought to coalesce when engaged in a common fight.

Dr. E. BURCHELL (Brighton) said that steps were taken two or three years ago by the British Medical Association to obtain the support and co-operation of other medical bodies, of which the Medico-Political Union, as it was then called, was one. But the Union made it a condition of common action that all communications with the Ministry should take place through its own body. ("No.")

Dr. CARDALE explained that the Union proposed that if negotiations reached such a point that refusal of service became necessary, the negotiations should be carried on through the Union, since that body was a trade union.

Dr. BURCHELL accepted the correction, and added that the suggestion now was that the Medical Practitioners' Union should work, not with the Conference, but with the Insurance Acts Committee, which was a committee of the British Medical Association. Therefore he would like

to know what the position of this newly formed body might be.

Dr. J. A. MACDONALD hoped that the Conference would not accept the London proposal. The Conference had just passed a resolution giving power to the Insurance Acts Committee to organize the profession and to bring in any medical body that might agree to be brought in; and to tie the hands of the Committee by a resolution calling upon it to act in co-ordination with the Medical Practitioners' Union would be defying the spirit of the motion already passed. The Insurance Acts Committee had again and again tried to enter into working relations with this body. The Union had been given every facility to put its case forward and come into line so that the Committee could work with it, but this had never been found possible. He would only ask general practitioners to read the Union's paper and see how affairs were treated. He hated to seem to go against anything like unity, but the Conference would make a mistake by accepting what was proposed by London.

Dr. E. A. GREGG hoped that at this stage, when the particular organization referred to had given definite indications of its desire to close up the ranks of the profession, and evident signs of good faith, the Conference would not rake up old sores and refuse to allow bygones to be bygones. The Medical Practitioners' Union was a new organization, which was probably, like all such organizations, steadily altering in character with the influx of new members, and it asked to be not a rival to the British Medical Association, but, if properly handled and judiciously met, a valuable ally. The Association, without giving away anything, could obtain from the Union a great deal of assistance in the work that might lie before them, supposing these particular negotiations reached a critical phase. He hoped that the unhappy episodes of the past would not be allowed to intrude themselves at all. A united profession was wanted, and these disuniting thoughts accordingly must be put out of mind.

Dr. P. MACDONALD endorsed the eloquent plea of the last speaker. The Medical Practitioners' Union had recently made a genuine attempt to get rid of those difficulties and troubles existing between the two bodies which professed to organize the profession. The opportunity for reconciliation might not recur, and should not be allowed to pass by. Quite likely there had been faults on both sides. The resolution did not tie down the Association or its Committee, it only urged that an attempt be made to secure co-operation.

Dr. R. A. BOLAM (Chairman of Council) said that this was a mandate to the Insurance Acts Committee to ensure co-operation. If this co-operation had to be *ensured* it tied the hands of the Committee and left the key of the situation in the hands of the co-operating body. His Council had tried to co-operate with any other medical body on reasonable terms. No one was more ready than he to welcome the changed attitude of certain bodies in the profession at the present juncture, but if the Insurance Acts Committee was given merely a mandate to take steps which might be necessary to secure co-operation, the whole of the proceedings might be stultified. It must be left to the Committee to decide whether co-operation was possible.

After further discussion, the CHAIRMAN asked whether, the Conference having heard the various expressions of opinion and being conscious of the advantage that would accrue from proper co-operation, the matter could not be left to the discretion and good sense of the Insurance Acts Committee to endeavour to obtain united action by the profession. Dr. CARDALE said that he was quite willing to agree to this course. (Applause.) On this understanding the rider was withdrawn.

DISCIPLINARY POWERS.

Dr. SIDNEY CLARKE (Hertfordshire) moved a resolution calling for greater disciplinary power over insurance practitioners to be exercised by the representative and negotiating body. It was impossible to organize the profession, he said, unless some such disciplinary power were possible over those who did not comply with the wishes of the whole. Asked how the powers could be exercised, Dr. Clarke thought they might be carried out on the lines of the Incorporated Law Society, but, in reply to further questions, he admitted that he had only a vague idea as to how that body went to work. He agreed, on the CHAIRMAN'S suggestion, to withdraw his motion.

APPOINTMENT OF DEPUTATION.

This concluded the business relating to remuneration, and there remained the appointment of the deputation which should interview the Minister of Health.

Dr. LEWIS LILLEY (Leicester) proposed and Dr. A. CALLAM (Burnley) seconded that the deputation should consist of the Insurance Acts Committee.

This was agreed to unanimously, and, on Dr. BRACKENBURY'S suggestion, three members of the Conference were appointed in addition to the Committee. These were: Dr. J. A. Macdonald, Dr. H. J. Cardale, and Dr. D. F. Todd.

SECOND DEPUTATION TO THE MINISTER OF HEALTH.

At the close of the discussion at the Panel Conference on the remuneration of insurance practitioners, a deputation waited upon Sir Alfred Mond at the Ministry of Health to lay before him the reply of the Conference to the proposals he had made on the occasion of the visit of the deputation on October 11th. The deputation, which was headed by Dr. Dain and Dr. Brackenbury, consisted of the members of the Insurance Acts Committee and three members specially appointed by the Conference—Dr. J. A. Macdonald, Dr. H. J. Cardale, and Dr. D. F. Todd.

The deputation was received at 7 p.m. The Minister was accompanied by Sir Arthur Robinson, Sir George Newman, Mr. Strohmenger, Dr. Smith Whitaker, and Mr. Harris. Sir Alfred Mond was given a copy of the resolutions passed by the Conference, namely:

Resolved: That the Conference reaffirms the opinion that 13s. 6d. is the lowest capitation fee that should be offered for an effective service, and asserts that there is no justification whatever for a *demand* that the arbitration award of 11s. should be lowered.

Resolved: That the Conference recognizes the force of the "appeal to citizenship" made by the Minister of Health to insurance practitioners "to make some sacrifice for the common good in a great financial crisis"; is willing to urge practitioners to respond to this patriotic appeal to any reasonable extent consistent with the interest of the public health; and asks the Government to discuss with representatives of the profession the best means of carrying this into effect.

Resolved (nem. con.): That this Conference is prepared to accept a capitation fee of 10s. owing to the critical financial position of the country.

Resolved: That the Conference authorize the Insurance Acts Committee to consider with the Government (*a*) a rebate of 1s. from the present capitation fee; (*b*) any other relevant financial questions except that of mileage; (*c*) the date at which the new arrangements should come into effect; (*d*) the duration of such arrangements; and agrees to support any arrangement that may be arrived at.

Resolved: That the measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to ensure the continuance and improvement of this system.

Resolved: That the Conference, though of opinion that the Insurance Acts should be allowed to work during a number of normal years (with such incidental improvements only as experience proves necessary) before any reliable conclusions can be drawn as to their effect on public health, would willingly take part in any wide inquiry into the working of these Acts that may be thought desirable, but suggests that any inquiry concerned with medical benefit should not be entered upon until April, 1922, at the earliest, that being the date at which the new Regulations will have been two complete years in operation.

Resolved: That the Insurance Acts Committee be authorized to take immediate steps to see that the profession is so organized as to take any such united action as may be found necessary.

Resolved: That the Insurance Acts Committee, with the addition of Drs. J. A. Macdonald, D. F. Todd, and H. J. Cardale, represent the Conference at that afternoon's deputation to the Minister of Health.

Dr. BRACKENBURY said: We have come to present to you the opinions of the Conference, which, of course, are more authoritative and considered and mature than our own. We have spent a considerable number of hours discussing the situation very carefully, and I am sure you will believe that we put the matter before the Conference in as

fair a way as we could, and we did not take it upon ourselves to urge upon the Conference any particular line of action; we outlined the various alternatives, and left it to the Conference to determine the policy to be followed. It is quite evident that the Conference appreciates very fully the remarks you made on the former occasion with regard to the services rendered by the insurance practitioners throughout the country. We were glad to know that the value of those services was recognized by you. That being so, and as there was no question of discussing whether 11s. or any other sum was a right capitation figure, the Conference felt that it would like to respond to the appeal to citizenship which you made to us on the last occasion. It accepted that situation quite readily. The matter being put on that plane, the Conference wanted to respond to the appeal you made to undertake some sacrifice for the common good in a great financial crisis like the present. The Conference felt, however, that there were certain matters you would wish to be fully seized of before you made a final decision. We want to place the whole situation before you. With regard to the nature and extent of the sacrifice we are asked to make on these patriotic grounds, we want to say two things. In the first place, we feel that perhaps the full extent of the sacrifice involved is not quite appreciated. In these times of unemployment and distress our incomes from private sources, quite apart from what we receive on account of our insured patients, are diminished, and are likely to be diminished further. The situation of the country—apart from the income which we receive as insurance practitioners—involves us in a less satisfactory financial position. In addition to that, we should like you to be aware that there is a good deal of other contract practice in many areas, the remuneration for which is dependent very largely upon the capitation fee under the Insurance Act, and if a reduction is made in that capitation fee it involves almost inevitably a corresponding reduction in the fee for other contract practice.

Sir A. Mond: What is the kind of work you are speaking of?

Dr. Brackenbury: Work such as contract practice in the case of miners' families, and so on. The basis of the remuneration for this tends to rise and fall with insurance remuneration. We wanted you to be aware of that point of view. Then, again, the Conference felt that great care must be taken that the limit beyond which the service would not be satisfactory must not be overstepped. You would not wish to do anything that might be detrimental to public health, or that would affect in an unsatisfactory way the character of the work that has been done. You would desire—as we who are trying to get the profession to work heartily in this matter also desire—that there should be a satisfied service rather than a service working under a sense of irritation or injustice. The satisfaction of the service is an important matter, and we do feel that it would be advantageous to the Ministry—it would enable you from your side and us from ours to rely in confidence upon the character of the work that was being done instead of having all the time to keep our eyes and ears open to be sure that the work was satisfactory—if at the outset we could ensure that the profession went to work without any sense of injustice. We ask you to weigh that before making your final decision in this matter. We ask you and the Government to consider with us as representatives of the profession what is the exact extent of the sacrifice we are called upon to make and what are the best means of carrying it into effect. It is clear that as to the extent—which I suppose is the most important point—we shall have no difficulty in carrying the profession with us so far as the figure of 10s. is concerned, which is the figure mentioned in one of our letters to you, and in the resolution of the Conference which is before you. Without any strong urging on our part, it is quite clear that the profession would be prepared, purely as a patriotic sacrifice, to agree to a modification in their remuneration to that extent. We believe that with this as the figure for our remuneration, *plus* the patriotic motive, we can continue to get good work from the doctors and the able service they have hitherto given; whereas if you go below that, even though patriotism be called upon as a powerful motive, there will be a great danger of the service as a whole being less satisfactory; and this you on your side and we on ours would deplore.

One of the points we desire to put to you is that there is a great deal in the form in which this modification is made; in the way in which it is asked from us; in the appearance which is given to it of, really, a sacrifice on our part to the nation's needs, rather than something imposed upon us from without. Therefore we think that nominally the capitation fee might remain as it is at present, and that some means might be devised by your department, and accepted by us, of making a rebate—of giving up a certain proportion of our remuneration, or of having it withheld. We have an idea in our minds of what the proportion ought to be, because the Conference has said that it will accept a capitation fee of ten shillings. By means of a rebate the present fee might be considered still the normal one, the one to be taken on the merits of the case. This would be an advantageous proposal and would be much more acceptable to us. We should desire also to discuss with you what you offered to discuss last time—the date from which this arrangement should be accepted, the length of time it should endure, and so forth. If we can get into discussion on these lines, with the sincere desire on our side to do what you have asked of us to any extent that can be shown to be reasonable, we believe that we shall have power to carry the profession with us.

Sir A. Mond: I wish you would develop that rebate idea; I do not follow it.

Dr. Brackenbury: I do not know that I could develop it at the moment; I thought that financial arrangements might be devised to bring it into effect.

Sir A. Mond: I do not know whether it is at all possible.

Dr. Brackenbury: If it is shown to be financially and administratively impossible we have no more to say. All we wish is to have the matter considered and discussed in a friendly way between us. We have in our whole consideration of this subject desired to treat it in that way. We have appended to our resolutions certain other matters which seem to have to do with remuneration; they refer, among other things, to the inquiry which you said it was proposed to hold. We assure you that so far as any such inquiry is concerned we shall be very willing to take part and do our best to facilitate it. That is, Sir, the way in which the Conference has dealt with the matter. We come to you reinforced with its authority. If on these lines—the lines of pure patriotism, without any desire to bargain over this, that, or the other—we consent to make the sacrifice, we ask you to consider fully the professional side of the case before you make up your mind as to what must be the full extent of that sacrifice. We should hope that the result may be a solution which, though naturally not very acceptable to us, would be one which on patriotic grounds we could commend to the profession, urging the profession in the future as in the past, to carry out all its duties to the fullest possible extent for the public welfare.

Sir A. Mond: What is the meaning of the clause in one of your resolutions which runs: "The Conference authorizes the Insurance Acts Committee to consider with the Government . . . (*d*) the duration of such arrangement"?

Dr. Brackenbury: It was put in because it was thought that that might be one of the subjects discussed between us. The Conference has not expressed any opinion as to the duration, but I think that it would be content to leave that question to us as its representatives, and if we went into such discussion I feel sure that any arrangement we arrived at would be accepted by the Conference. But before saying very much we should like to hear the administrative side. One of the things we do not like is the feeling of uncertainty—that we never know when anything further is going to happen in the way of our remuneration. If we could be certain—I speak just offhand and without authority—that the matter would be stable until the proposed inquiry is held and the inquiring body has fully reported and its recommendations are carried into effect; or, alternatively, for two or three years, whichever happened to be the more convenient; it would be advantageous. That is purely a suggestion of mine, made on the spur of the moment, without any authority behind it.

Sir A. Mond: With regard to holding an inquiry, I am not sure that any immediate inquiry is very desirable, though I have the question of an inquiry under consideration. There is a feeling among the approved societies that any inquiry should be postponed for a time until there is

a longer period of normal working to go upon. With regard to the whole subject of our discussion, I do not know whether you expect me to give you any final decision this evening. I have only just had this document (the Conference resolutions) placed before me. I have had no time to consult with my experts on this subject, and it is quite impossible for me to give you any kind of offhand opinion at the moment. I must, however, say that I am not prepared to recede from my original figure. Candidly, I do not understand the proposal to have a rebate, nor do I see how it is a practical possibility from the administrative standpoint at all. You say, "Call it 11s., and then withhold a certain proportion"; that seems like camouflaging it; I do not see how it would be at all possible. I was in hopes, I must say, after our last meeting that I should have met with a ready acceptance of the terms I offered then. I stated then that I had gone beyond the figure which I was strongly urged to propose by the financial side of the department. My action in fixing a figure myself beyond that which was urged upon me was, candidly, with a view to making unnecessary any counter-proposition, and I hoped that the figure would be accepted at the Conference to-day. I do not know whether you are authorized to come to a conclusion this evening or not.

Dr. BRACKENBURY: Of course we should not ask you to give us a final answer to-night. Our great anxiety is that you should be placed in possession of the case of the profession. We have asked the Conference to meet again at eight o'clock, and we shall report to it what happens at this interview. We certainly do not ask you to give us your final decision.

Sir Alfred Mond then retired with his advisers. On returning to the room,

Sir A. MOND said: As far as I understand the situation there are some other matters of detail which would be the subject of discussion between you and my experts; these would be the date of commencement of the new arrangement, and its duration, and so on. I cannot alter my basic figure of 9s. 6d.—I told you that last time. I said that that was the utmost limit. I was not bargaining, but was laying down a final figure, and that I must maintain. As regards the other questions, I think they might form the subject of discussion at a later date, and some representatives from your side might be authorized to settle the matter. That seems to me to be about as far as I can carry the matter this evening. I cannot possibly give any answer on the question of rebate. The question of date has to be looked into, and, when negotiating, the duration of the new arrangement can also be discussed. I cannot alter the basic figure from which I started. As your Conference is still sitting I do not want to detain you. The best way is to leave the matter, but I would press on you very very strongly the need for coming to a decision. There is a question on the paper of the House of Commons to-morrow, asking whether, in view of general dissatisfaction, I should not be well advised to scrap the whole thing. It is of no use shutting one's eyes to two important facts. One is the great desire of the taxpayer to be relieved of expenditure at almost any cost and in almost any manner. The other is the outcry of a not uninfluential section, both lay and medical, attacking the panel system. I emphasized that before and must emphasize it again. The very fact which Dr. Brackenbury mentioned about the difficulties due to unemployment and distress which makes industrial practice more precarious tells on the other side, for such a circumstance enhances *pro tanto* the value of this fixed amount which the practitioner receives, regardless altogether of these troubles. Far from being an argument in favour of a larger fixed remuneration, it emphasizes to any business mind the value of such fixed remuneration as there is; for here you have the assurance of a fixed income, without any trouble in collection, any uncertainty as to time of payment, any bad debts. Under present circumstances that is a very great asset; it ought to be taken into consideration by anyone who has an interest in this matter. The necessities of the State demand a reduction in public expenditure in the next financial year of something like 140 millions. That is a most terrible burden. A great many people are saying that the nation cannot afford certain things. That is why I asked you before to make it easier for me to maintain this service at a figure which—although lower than you would like, and lower than some of us would like to give—still leaves a very substantial increase on the amount that was originally settled when the scheme was started. We have got to take the pre-1914 standard in everything all round and find good reason for every increase on it. One has got to bear all these considerations in mind. I cannot alter that basic figure of 9s. 6d.; the other points we have mentioned are such as can be discussed at a later stage between your representatives and the representatives of the department. I do not think I can carry the matter further.

Dr. BRACKENBURY: We have to tell the Conference that you have given us the final answer on what is the most important of the matters before us. Our discussion, we hoped, would be not only as to the means by which this new arrangement came about and its duration, but also the amount. As you have given us what appears to be a final answer on that last point, would it be possible for you to tell us here and now that if this were accepted we can look forward to a three years' duration?

Sir A. MOND: I do not think I could go to that—I could go to eighteen months.

Dr. BRACKENBURY: It would help the situation very much if you could give us the three years.

Sir A. MOND: I want to meet you, undoubtedly, as much as I can, but I must not go further than I ought to go even for the sake of helping towards a solution. I think I could go as far as two years—I could not go as far as three. I do not think I would advise you to go as far as three years. And I think we should begin our new arrangement on the first of January—that is a more doubtful point.

Dr. BRACKENBURY: It would make for convenience if it could begin on the first of April.

Sir A. MOND: That is a matter for later discussion. But as to the duration, I could give you two years.

Dr. J. P. WILLIAMS-FREEMAN: Will you tell us, Sir, what economies are being made in other directions? Some people think that insurance practitioners have been treated rather less considerately than other classes of the community. We hear a good deal of chaff about Ministers' salaries and the salaries of members of Parliament. One real point of economy does arise. Some of us feel that large sums of money are expended on tuberculosis schemes, with very doubtful results, and economies might be made in other directions. Is this appeal to patriotism only made to us?

Sir A. MOND: So far as the tuberculosis service is concerned, we have commitments there, very largely connected with insurance schemes, and these, of course, we cannot get rid of. With regard to other matters, I have got to cut down in every branch of our department. I have had to economize on housing, on public health, and on salaries. I do not know whether my own salary is coming down, but I should not be at all surprised. There has been a considerable reduction in the salaries of civil servants. There has been a very serious cutting down; for example, I am advised that a principal assistant secretary, under the recent reduction in the war bonus, loses £350 per annum. That is a large proportion of his income. I assure you that we are proceeding on a plan. I have had to cut my estimates in every direction, and this (yours) is really a much smaller cut than was originally estimated. I was pressed to offer 8s. The Scotsmen look on me as an extraordinarily extravagant person, who gives away public money.

The deputation then withdrew and returned to the Conference at the Central Hall.

THE REPORT ON THE MINISTER'S REPLY.

The deputation went to meet the Minister at 7 o'clock. On the resumption of the Conference at 8 o'clock,

Dr. BRACKENBURY made a statement with regard to the reply of the Minister. He said that the deputation put before the Minister the resolutions passed by the Conference. After a retirement with his advisers, the Minister told the deputation what the position was. He had not been pressed to give a final decision, because the deputation wanted him fully to appreciate the profession's case, and the extent of the sacrifice it was asked to make. However, the Minister told them that he could not alter the figure of 9s. 6d. He told them, moreover, that the figure which had been proposed by the financial authorities of the Government was not 8s. 6d., but 8s., and that he had had serious difficulty in making up his mind to 9s. 6d. Sir

Alfred Mond said he still feared that if there was very much discussion about it he might have difficulty in holding his position with regard to this sum. The deputation asked for some assurance as to the duration of any arrangement. The Minister at first suggested eighteen months, but on being pressed he stretched it to two years. They thus had a guarantee that the fee would not be disturbed for two years, and an undertaking that the way in which the reduction was to be effected could be discussed with the officers of the Ministry. The idea of a rebate appeared to be quite a novel one to the financial advisers of the Ministry, and obviously there were difficulties in carrying out such a suggestion. The Ministry, however, was prepared to discuss the possibility of such an adjustment, and also the exact date at which the arrangement should begin. The Conference now had to make up its mind whether it would accept or definitely refuse 9s. 6d. for two years.

Dr. D. F. TODD said that every member of the deputation could see that the Minister was impressed with the resolution of the Conference in favour of 10s. The speaker was still of opinion that an interview should be sought with the Prime Minister. Dr. GORDON WARD supported this suggestion. Dr. H. ROSE pointed out that if the matter went back again they might very likely be asked if they were prepared to arbitrate, and in that case they might not get 9s. 6d.; all the Prime Minister could say if approached was that he would consult his advisers.

Other representatives thought that the proposal to interview the Prime Minister was a very doubtful policy. Asked whether the Committee had any alternative scheme to put forward in case of a refusal to accept this offer,

The CHAIRMAN said that the British Medical Association had a model scheme of a Public Medical Service to put into effect, though it would probably require rubbing up in details, having been prepared some time ago. But members would all know from the circumstances of their areas whether an alternative scheme was possible. It was quite a feasible thing to put up a scheme for a public medical service, and in many areas the organization was quite good enough to hold men together to formulate their own service.

In reply to Dr. RENTON (Kent), who asked what notice insurance practitioners were entitled to before there was any alteration in their remuneration, the CHAIRMAN said that it appeared to him that every practitioner was entitled to three months' notice from his own Insurance Committee.

The CHAIRMAN reminded the meeting that the Insurance Acts Committee had not met since the deputation was received, and therefore was not prepared with any recommendation at the moment.

Dr. J. D'EWART (Manchester) said that to go to the Prime Minister simply to tell him that they objected to a further reduction in remuneration was not sufficient. He was instructed to urge upon the Conference the advisability of offering another scheme as an alternative. Manchester asked the Conference to consider very carefully whether in a very large number of areas they could not themselves offer a much more satisfactory and fuller service than was already given. The question of an alternative service should certainly be considered before taking a decision.

The CHAIRMAN asked Dr. D'Ewart what would be the cost of the administration of such a service, and where the money was coming from for extra services like those of specialists. Dr. D'EWART replied that the general view was that it would require about 14s. or 15s. a head to run an absolutely complete service, including a dental service.

Dr. BRACKENBURY said that Dr. D'Ewart's suggestion did not carry them any further; it presupposed a very considerable contribution from the Government. To elaborate such a scheme must necessarily take a considerable time, and the Government could not wait till then to make this reduction. It might be of use hereafter, but it did not help the present situation. With regard to the policy of going to the Prime Minister, he did not think that that suggestion was going to held them either. Could a Prime Minister on a point like this go behind his Minister of Health? The Prime Minister would simply tell them that the alternative of 9s. 6d. or 10s. was a departmental concern, which must be dealt with by Sir Alfred Mond's department, and by doing this would they have bettered their position with the Ministry of Health?

Dr. H. F. OLDHAM (Lancashire) said it would not be on a matter of sixpence that they would approach the Prime Minister, but because they had said to the Minister of Health that if the capitation fee fell below 10s. there would be such dissatisfaction among the profession that the service would no longer be a good one.

Dr. LEWIS LILLEY said that in the light of a very considerable experience in Leicester he believed an alternative medical service was possible, but it could not be organized in the short space of three months. Moreover, in an alternative service they would have against them the full force of the friendly societies. He gave some calculations with regard to an alternative scheme in his own area, and urged that the matter should be kept clearly before the whole profession during the next year, so that every possibility might be explored.

Mr. P. L. GIUSEPPI (East Suffolk) moved:

> That this Conference instructs the Insurance Acts Committee to accept the Ministry of Health's offer on the grounds of citizenship.

He criticized the alternative schemes proposed. Could they imagine that the Government would give them 9s. 6d. on the understanding that they should get another four or five shillings from their patients? If they did not accept the present offer the Government might "scrap" the service. Whatever wonderful schemes they might propound they would not be able to run them; even if it were possible to run them in Leicester or Manchester it would be out of the question in a rural area. On the general question he thought it ridiculous to suppose that Sir Alfred Mond did not mean what he said, or that the Prime Minister would go back on one of his own Cabinet

Dr. J. O. SUMMERHAYES (Oxfordshire) seconded Mr. Giuseppi's motion, and several representatives reported their instructions with regard to the acceptance of ten shillings or nine and sixpence.

Dr. MILLER WILSON (Liverpool) opposed Mr. Giuseppi's motion on the ground that this fresh offer of the Government ought to go to the Panel Committees; in the meantime they should express their disapproval of the uncompromising attitude of the Minister of Health. Dr. R. J. ROBERTS (Isle of Wight) declared that if a thing was worth having it was worth fighting for; he was against the acceptance of 9s. 6d. Dr. COLVIN-SMITH (Norfolk) wanted to know what steps the Insurance Acts Committee would take to support those who went off the panel. Dr. H. E. COUNSELL (Oxford) thought 9s. 6d. might be accepted, with the special proviso that this was received in full—namely, for every card which the practitioner held for an insured person. Dr. B. J. MAYNE (Cornwall) pointed out the difficulties of an alternative service in his area, a rural one.

Dr. CARDALE said that the serious impression left on his mind after the recent interview with the Minister was that insurance work was in a very precarious state at the present time. There was a settled opinion in the mind of the Ministry that 9s. 6d. was a generous amount, and that the services of insurance practitioners were not worth more. There was a very strong body also among Sir Alfred Mond's advisers which would take the first opportunity of lowering the 9s. 6d. Were this offer refused the whole insurance system would be thrown into the melting-pot. The most satisfactory issue of the interview was the promise of the Minister that this figure of 9s. 6d. should be stabilized for two years. That was of more advantage, in view of the influences that were at work, than an agreement of 10s. with no such stipulation.

The CHAIRMAN, in reply to Dr. OLDHAM, who asked as to the binding effect on the Minister of the two years' stipulation, said he believed that this could be made a definite legal contract which could not be broken by a change of Ministry. He knew the Conference felt that the mere promise of a Minister was not necessarily very valuable, but if it were put in the notice that the remuneration should be at such a rate for two years it would secure the position.

The SOLICITOR (Mr. W. E. Hempson) said that a promise given by the existing Government would have a questionable value so far as any future Government was concerned; therefore he agreed with the Chairman that in each individual case it should be made a separate matter of contract between the insurance practitioner and the Insurance Committee. If it was laid down in that way it would hold good notwithstanding a change of Government. This point must be elaborated and made absolutely clear.

Sir Thomas Fletcroft (Bolton) advised the Conference not to appeal to the Prime Minister, whose engaging personality might endanger the situation. He thought it also important that in negotiation over terms insurance practitioners should not lose the support of the people.

Dr. Michael Dewar and another Scottish representative expressed the belief that Scotland was prepared to accept 9s. 6d. Dr. Gregg said that the lesson needed to be pointed out that if practitioners were forced to accept this figure at this juncture it was because they were not sufficiently organized to insist on their own more just remuneration.

The Chairman having accepted a motion that the question be now put, the resolution—

> That this Conference instructs the Insurance Acts Committee to accept the Minister of Health's offer on the grounds of citizenship

was put to the meeting and carried by a very large majority. The dissentients numbered thirteen. The resolution was also carried as a substantive motion, as it had been in the first place moved as an amendment to Dr. Todd's proposal to seek an interview with the Prime Minister.

This concluded the discussion on remuneration.

NATIONAL INSURANCE DEFENCE TRUST.

The Medical Secretary gave a report on the latest position of the National Insurance Defence Trust. Since the letter of September 22nd eight Panel Committees had made their first payments to the Fund, and another (Cardiff) had given instructions for its first payment to be made, but the matter had been delayed owing to the illness of its treasurer. Thirteen committees had made further payments (in three cases of over £100), and another committee (Surrey) had resolved to make a special contribution of £200 as an expression of confidence in the Insurance Acts Committee and to strengthen its hands in the critical negotiations now taking place. The position, therefore, was that whereas at the time of last year's Conference only 64 committees had subscribed to the Fund, 101 had now subscribed and 37 had made their first payment since the last Conference. There were still 33 committees which had agreed to support the Fund but had so far paid nothing, 9 had declined to support the Fund, and 54 had given no indication of their intentions. The total amount in the Fund when all promises had matured would be, roughly, £24,000. He added that he had had handed to him on the previous day a second contribution of £25 from a non-panel practitioner interested in the organization of the profession. (Applause.)

Dr. Brackenbury said that, although the report was not as satisfactory as it might be, the majority of the committees were now subscribers, and there was a substantial fund of £24,000, which required supplementing gradually year by year.

Dr. P. Macdonald (York) said that it was implied in the report of the Trust that the majority of the Conference on a previous occasion had pledged them all, including the minority, to support the Fund, and that there was bad faith on the part of certain members. That left him entirely unmoved. His own committee was one of the principal instruments in calling into being the Association of Panel Committees: for the failure of that association Dr. Brackenbury was chiefly responsible. [Dr. Brackenbury remarked, amidst laughter, that he did not accept the compliment.] Dr. Macdonald went on to say that he should now go home and advise his Panel Committee to support the Fund. (Applause.) He did so because of the prospect of greater co-operation and unity in the future.

Dr. C. M. Stevenson (Cambridgeshire) said it was very satisfactory to find the Fund rapidly increasing, and he hoped that eventually every Panel Committee would support it.

Dr. T. L. Bunting (Newcastle) said that it was often urged that it was of no use raising a fund because the profession would never fight. Perhaps their proceedings that day would help to support that idea. The profession, however, might fight if it had funds to fall back upon. Their attitude at the present moment might have been different if they had had a defence fund of £100,000, and this they would have had if all the Panel Committees had done their duty. There was a suggestion that there should be local funds which could be accumulated and sent up later to the Central Committee. The Committee, however, could not count on funds which it had not got in its own hands. Some committees would not trust the British Medical Association, and said so straight out. Sometimes when there was a Panel Committee with a majority ready to support the Fund, a number of members would take the opposite view and threaten to withdraw their individual subscriptions. He had a motion, put forward for the purpose of discussion, that it be a condition of representation at the Conference that all committees represented should subscribe to a central defence fund in a definite proportion to the number of insured persons in their area. On the request of the Chairman, however, Dr. Bunting consented to withdraw his motion.

Dr. B. E. A. Batt (West Suffolk) moved:

> That it be an instruction to the trustees of the National Defence Trust to inform again all Panel Committees of the annual subscription required from them to put the Trust on a sound footing.

His Committee, he said, wanted to stir up those committees which had subscribed nothing at all, and also wished the trustees to give to every committee an exact guide as to the amount which it should be subscribing if it was to do its share. In West Suffolk they did not feel disposed to continue their subscriptions until the majority of committees were subscribing, and were subscribing on a proportional basis. Dr. Brackenbury accepted the motion on behalf of the trustees, and it was agreed to.

Dr. Burkitt (Leicestershire) referred to the great diversity in the amount of subscriptions which had been received, and hoped the trustees would inform each Panel Committee as to the amount which it should subscribe.

Dr. Greenfield (Northampton) said that his Committee was withholding a subscription of £150 until it was seen whether a sufficient number of other committees were prepared to support the Fund.

Dr. H. F. Devis (Bristol) said that his Committee, which had taken a very definite line on the matter of representation, had so far not felt itself able to subscribe to the Fund, because the trustees themselves and the Insurance Acts Committee had not been thoroughly representative of panel practitioners. The atmosphere of the Conference that day, however, seemed to justify him in going back to Bristol and saying that, in his opinion, the Conference being really desirous of reform in the matter of representation, it was very desirable that they should work hand-in-hand with the Insurance Acts Committee. (Applause.)

Dr. H. D. Johns (East Riding) welcomed the opportunity of removing the disgrace which attached to the East Riding in not up to now having supported the Defence Fund. His Committee had now rescinded its previous resolution, and was issuing a levy, so that the amount would be forthcoming in a very short time. (Applause.)

The representative for Norfolk and other representatives said that their committees had decided to support the Fund.

Dr. Gordon Ward (Kent) said that Kent had not supported the Fund because, first, Kent was in no way represented in its administration; secondly, his Committee was not satisfied with the legal position of the Fund; and thirdly, there had not been, up to date, any statement of the amount required. ("Oh" and "Question.") He might be wrong about this last, but the first and second objections were principally in the minds of his Committee. He did not think it impossible for the executive body of the Fund to be so remodelled as to include a representative at least for every £500 subscribed.

Dr. W. I. T. Baker (Lindsey) said that he had brought the matter before his Committee the previous week, and after much discussion it was left to him to see how the other committees were going to work, and whether the Fund could obtain a general support. He would make recommendations on his return, and in all probability Lindsey would do its duty in the matter.

Dr. Brackenbury said that a procession of repentant sinners was always a delightful spectacle. There were 197 committees which might subscribe to the Fund. The report presented to the Conference stated that 101 had subscribed, and he believed that nine or ten others now proposed to associate themselves with the 101. Whether 110 out of 197 could be described as a substantial majority he did not know. This was not a fund of the British Medical Association, but a fund administered by a body of trustees entirely independent of the Association, although in personnel the same as the Insurance Acts Committee. The method which the trustees proposed was a levy equal to a halfpenny for each insured person in every area. In some areas this could not be done. It was specially difficult in the large constituencies where the administration had to be financed out of a statutory levy; to superimpose upon this a voluntary levy which should in any way be adequate was attended by special disadvantages. With regard to the remarks of Dr. Gordon Ward, did Kent really mean that it could not subscribe because it was not in a group

of its own? This objection would mean, if carried out logically, a board of trustees of nearly two hundred persons, one for every Panel Committee, and such a position, of course, would be ridiculous. The plea with regard to possible legal difficulties did not come home to him. The highest possible legal advice had been taken; questions of the most searching character had been put to counsel of great eminence, and the trustees were satisfied that the Fund was quite proper and effective for its purpose.

Dr. Wallace Henry asked whether the Treasurer thought it advisable to state that the Fund had been of practical service already.

Dr. Brackenbury said that the Conference might care to know that quite recently assistance had been afforded out of the Fund to certain practitioners who had been penalized because they had stood by the resolutions of the Conference. The resolution with regard to postage on the transmission of record cards had been unacceptable to the Scottish Board of Health, but a number of Scottish practitioners had adhered to the resolution and in consequence had been fined. The amount of these fines in cases where there had been contributions to the Fund—not in others—was to be recouped from the Fund. In reply to Dr. J. A. Macdonald, he agreed that the trustees might well consider whether some of the funds at their disposal, now on deposit at the bank, could be so invested as to yield a larger rate of interest

The report of the trustees was then approved.

Election of Chairman of Conference.

The Medical Secretary announced that the ballot for the election of Chairman of the Conference had resulted in the re-election of Dr. H. G. Dain. (Applause.) The other candidates receiving votes—the figures were not announced—were Dr. Cardale and Dr. Todd.

Dr. Dain said that he esteemed it a very great honour, more especially because he was in the first place chosen as Chairman in an emergency. To have continued to receive their confidence was very gratifying.

Transfer of Practices.

Dr. Brackenbury moved that the suggestions with regard to transfer of practices, made in the annual report of the Insurance Acts Committee, be presented to the Ministry of Health, and that a strenuous endeavour be made to obtain the withdrawal of the arrangements embodied in the present Regulations, and the substitution of others on the lines indicated. He believed that there was a good chance of achieving what was desired in this direction if the lines of the report of his Committee were followed. The fundamental point was that at some specified time there should be machinery for an automatic transfer. They could not go back purely and simply to the old regulations. The paragraphs in the report had been worded very carefully with a view to soothing certain official susceptibilities, and he hoped that they would be endorsed by the Conference without essential modification.

Dr. Bunting (Newcastle) wanted to instruct the Committee to secure the continuance of the old method of transfer of practices without making any alternative suggestion. Having given way to the Minister to some extent on the matter of remuneration, a firm stand on this point would, he believed, enlist general support.

The Chairman asked Dr. Bunting to tell the Conference whether in his area the practitioners were prepared to refuse to serve if this demand was not conceded. Dr. Bunting replied that he did not know whether they would strike or not, but there was much irritation because of the shelving of this matter for two years, and a strong feeling that it should not be shelved again.

Dr. P. Macdonald thought that the Conference should decisively back up the Insurance Acts Committee, and the amendment, into which Dr. Bunting had crystallized his proposal, was lost by an overwhelming majority.

Dr. D. O. Twining (Devon), who said that he felt that the old method of transfer by consent was not a bad one, moved that the Insurance Acts Committee's suggestions (other than one suggestion which involved transfer forthwith, by application to and sanction of the Insurance Committee) should be presented to the Ministry, and that a strenuous endeavour should be made to obtain the withdrawal of the arrangements embodied in the present Regulations and the substitution of others on the lines indicated.

Dr. Brackenbury said that this was only an amendment in procedure, and was a matter for the Conference to determine. Transfer by consent had no doubt worked quite well in many areas, but there had been areas in which it had given rise to many difficulties. It might be supposed that it would rarely happen that a doctor refused to allow an insured person to transfer when he wished to do so, but there had been cases in which doctors had consistently refused to sign any forms of transfer by consent. Other doctors were thereupon provoked to like measures, and the situation arising did not redound to the credit of the profession in the eyes of the public.

Dr. C. F. T. Scott thought they must beware of any system which would encourage the insured person to find a reason for complaint in order to make a change. Such complaints being once made, the Medical Services Subcommittee could hardly do other than investigate them. Dr. Holbeche foresaw many cases in which discontented persons would be constantly changing their doctor unless some special provision were made. Dr. Gregg urged that as doctors were obliged to submit to the decision of private patients who desired to change their medical man, it was unreasonable to refuse that right to insured persons.

Dr. Twining's amendment, which virtually provided for the continuance of transfer by consent, was carried.

Dispensing in Rural Areas.

Dr. C. M. Stevenson (Cambridge) moved that the only satisfactory method for dispensing in rural areas was to use the medical card as the means of showing how the patient intended to obtain his medicine, the present method having proved impracticable.

Dr. Williams-Freeman contested this last statement on the part of Dr. Stevenson, and described the latest arrangements which had been put into practice to meet the position.

Various representatives from rural areas described the situation in their own localities. Dr. E. K. Le Fleming (Dorset) and others said that for some time they had reverted to the original procedure. Dr. Candler-Hope (North Riding) said that in his area the difficulty with regard to the chemists had been met by passing a resolution that all patients outside the one-mile radius should be allocated for dispensing to the doctor on whose list they were, provided that a notice to this effect was given to the patient and a form supplied to him which he could fill up if he desired to obtain his medicine from a chemist.

Dr. Stevenson agreeing to delete from his amendment the words "the present method having proved impracticable," Dr. Brackenbury pointed out that the remainder of the amendment was exactly in accord with the Committee's report.

Limitation of Lists.

Dr. Cardale moved, and it was agreed to, that before requiring a practitioner to reduce his list below the limit fixed for the area the Insurance Committee should take such steps as might be necessary to clear his list of all doubtful cases. Dr. Cardale gave one instance in London of a practitioner who had reduced his list from 3,800 to 3,000, after which it was found that 700 more doubtful cases must be cleared, so that the result was to lower his list to 2,300, a matter of great hardship.

Records.

Dr. Brackenbury moved, on behalf of the Insurance Acts Committee:

> That the form of record should remain as at present, except that the words "ceased to be insured" should be deleted from the front of the card and the figures denoting the year from the back of the card.

Dr. Radcliffe (Oldham) moved to instruct the Insurance Acts Committee to strive for the total abolition of record cards; but Dr. Brackenbury hoped that the Conference would not accept such a resolution. A considerable number of doctors found record cards of great value.

The Oldham amendment was rejected, only four voting in its favour, and the motion of the Insurance Acts Committee was carried. It was agreed to refer to the Insurance Acts Committee a Devonshire rider that provision should also be made on the front for a note recording "mileage" and "dispensing" as regards rural patients.

The next motion of the Insurance Acts Committee was as follows:

> That the obligation to enter the dates of all consultations and visits is irksome and unnecessary, but that, if the Ministry consents to the withdrawal of this obligation, there would be no serious objection to the requirement that the dates of the initial attendance of the patient on the occasion of each illness (and the issuing of first and final certificates of incapacity) should be entered, an appropriate clinical note being made on each such occasion.

Dr. Brackenbury said that in effect this meant going to the Ministry and asking for the abolition of the keeping of the compulsory "A" and "V" columns. There was no objection to doctors who wished to do so keeping these

columns, but they saw no use in the compulsion to place a mark in those columns every time the patient was seen. It was not required in Scotland.

An amendment was on the paper from the West Riding which Dr. Brackenbury accepted as a rider to be used in the event of the Minister declining to accept the suggestions in the Committee's motion. It laid down that the present envelopes should be used for clinical purposes only, and any requisite statistical returns should be obtained by the use of a daily record card; that the clinical envelope should be entered up in every case where a patient declared on the funds of his approved society; and that the daily record card should contain the total number of visits and attendances, and its front portion should bear the name and cypher of the practitioner and certain other particulars.

Dr. BRACKENBURY said that he thought the Ministry had a complete case for requiring them to enter the first and final certificate, but whether it was desired to have an appropriate clinical note on each occasion was another matter.

Dr. GORDON WARD said that he would be extremely sorry to take back to his Committee the resolution accepted by Dr. Brackenbury. It meant another card, and apparently it meant a duplication of records. This Conference should give no countenance whatever to the theory that the doctor's work was to be measured in terms of attendances.

Dr. MICHAEL DEWAR (Edinburgh and Leith) said that there was no difficulty whatever in Scotland regarding the records.

Dr. W. STEVEN (West Riding) thought that his proposal meant the simplifying of the system. There would be only two entries instead of the present cumbersome procedure.

In reply to a question, the CHAIRMAN said they had passed a resolution already against the abolition of cards, so the question of a grant did not arise. His own Committee (Birmingham) desired that no steps should be taken which would make it appear to the Ministry that they were anxious at this moment to diminish the amount of their work, but they did think they could approach the Ministry with a reasonable hope of getting rid of compulsory "A's" and "V's." His Committee was entirely opposed to the setting up of another form of record card. It was fair to assume that the Minister's advisers would have sufficient intelligence to see the value of these cards if they were established. He then put it to the Conference whether the Insurance Acts Committee should deal with the West Riding suggestion if compelled to do so as an equivalent to making the "A's" and "V's" non-compulsory, and this was agreed to by a large majority.

The recommendation of the Insurance Acts Committee was adopted, after an amendment by Dr. GORDON WARD deleting the words "the issuing of the first and final certificates of incapacity," had been rejected.

Dr. BRACKENBURY then moved a further recommendation:

> That the method of transmission of the records should be so altered as to provide simply that they should be sent in one special type of envelope and should be handled in the offices of Insurance Committees only by specially selected confidential clerks.

He hoped this would not raise a big discussion on professional secrecy. The matter was quite familiar to them all. The proposal would do away with a rather cumbersome method. It would mean a saving in administration and would give nothing away.

Dr. GREGG did not think it was wise at the present moment to press this resolution. The public took a serious view of the matter, and was in favour of professional secrecy being conserved in every possible way.

Dr. J. A. MACDONALD thought the suggestion of Dr. Brackenbury would be in the direction of greater secrecy. At the present time these cards could be seen by any clerk in the office of the Insurance Committee. ("No.")

Dr. BRACKENBURY said he had made inquiries and found a large proportion of the doctors never put the cards into the window envelopes at all. They sent them in with all sorts of other communications, and they were, in fact, seen by a great many people. He believed if he were a member of the public who was keen about secrecy he would prefer the alternative method to the one which was in vogue.

The motion was carried.

Dr. BRACKENBURY moved:

> That the Conference desires to draw the serious attention of insurance practitioners to the fact that many practitioners persistently neglect to transmit the records promptly when requested to do so.

This, he said, was a very mild motion, which Brighton proposed to carry further. There were doctors who would not facilitate the work of their fellow practitioners by sending in the record cards. They did not spite the Insurance Committee at all, but they did spite their brother practitioners. Something must be done to get the men who were negligent to do their duty more promptly. A patient was transferred to him in the middle of January, and he had not got her record card yet, though the previous doctor had been applied to no fewer than nine times. What were they to do with a man like that? ("Fine him!") Brighton suggested there should be a penalty.

Dr. R. J. FARMAN (London) said that he had been in communication with some thirty doctors who had been accused of retaining "F.M.R.S." cards, and in each case in which a reply was forthcoming he was informed the doctors had not had the cards for at least 66 per cent. of the names applied for.

It was agreed that the recommendation of the Insurance Acts Committee was far enough to go at present, and the Brighton motion was withdrawn.

PROCEDURE ON WITHHOLDING GRANT AND REMOVAL FROM PANEL.

Dr. BRACKENBURY moved that the Insurance Acts Committee be authorized to negotiate with the Ministry in the direction indicated in the Committee's report concerning this subject. The Committee had tried to secure what it had been directed to secure by the Conference during the last two years. It had failed through lack of sympathy in Parliament. In the appeals to the Ministry against fines there was no guarantee of any publicity whatever or of any possible influence of public opinion upon the decisions made by two civil servants sitting in private, and the Committee believed that the method suggested in the report was the right one—namely, that representatives of Panel Committees or other recognized professional bodies should be present at the inquiry, or that the facts of the case as known to the Ministry and the fine proposed should be submitted to the Panel Committee for observations before the penalty became operative.

The motion was agreed to.

INFLATION OF INDEX REGISTERS.

Dr. LILLEY (Leicester) brought forward the question of the lax and dilatory manner in which some approved societies carried out the requirements of the Ministry in respect of such of their members as had ceased to be insured, and an instruction to the Committee to bring the matter to the notice of the Ministry of Health was agreed to.

Dr. J. L. SPEIRS (Gateshead) drew attention to the necessity on the part of all concerned to rectify to the fullest extent errors in the register, so that a name might as promptly as possible be restored to the list from which it was improperly removed.

UNQUALIFIED PRACTITIONERS.

Dr. J. STEED (Herefordshire) drew attention to the necessity of relieving insurance practitioners of their present obligation to supply certificates and treatment in cases in which insured persons had been treated by "bonesetters" or other unqualified persons.

The CHAIRMAN said that the Solicitor's opinion had been taken on this question more than once, and three cases had now been dealt with; in every case the insured person, on being informed of the position, had withdrawn from the unqualified practitioner.

Dr. BRACKENBURY said that the British Medical Association had passed a resolution that it would lend the whole weight of its power and machinery to support any man who refused to sign a certificate under these circumstances. Practitioners were under no legal liability if they refused to give a certificate, and if they did give such a certificate they might get themselves into serious trouble with the General Medical Council for covering an unqualified practitioner.

TUBERCULOSIS PATIENTS.

Dr. H. R. CRAN (Surrey) moved:

> That the treatment of persons suffering from tuberculosis should remain in the hands of general practitioners, unless the practitioner concerned considers the treatment can be more advantageously carried out at a sanatorium or dispensary. The tuberculosis officer should, as a rule, only act in the capacity of a consultant.

He said that his Committee had been very much perturbed by the inroads made on practice not only by tuberculosis officers but by school medical officers and others. A large number of patients had been taken out of the hands of the

general practitioner, and in particular he did not like the idea of these patients treated by tuberculosis officers being considered outside the scope of their own treatment and beyond their skill.

The resolution was carried unanimously except for the last sentence, which, on Dr. Brackenbury's suggestion, was withdrawn.

Dr. Lewis Lilley (Leicester) pressed for an amendment of the Regulations to provide, among other things, that when a tuberculous patient was considered by his own doctor to be no longer in need of treatment the doctor might notify the tuberculosis officer to this effect, so that no further reports should be required.

Owing to the lateness of the hour, this amendment and another, which had to do with the reports of a practitioner to the medical officer, were not discussed, but were referred to the Insurance Acts Committee for consideration.

The Chairman remarked that his own Panel Committee had instructed him to oppose most vigorously the first of the amendments mentioned above; they did not want to turn off their patients as quickly as possible, which was what the proposal suggested.

Other matters referred to the Insurance Acts Committee were proposals for the revision of the allowance for drugs to rural practitioners dispensing their own medicines (one proposal being that the doctor's fee should be 3s. per head per annum).

Range of Services.

A discussion arose over a proposal by Kent that the Panel Committee, and not the Local Medical Committee, should be the body to decide as to the scope of medical benefit.

The Chairman pointed out that there was a definite reason why the Local Medical Committee was chosen. In fixing the character of the service it was considered better that it should be defined by a committee representing the whole of the profession rather than by a committee representing insurance practitioners only.

The motion was withdrawn, but a further motion was insisted upon by Dr. Gordon Ward, declining to accept the inference to be drawn from a circular letter from the Ministry of Health that services rendered in hospitals and similar institutions could be held to be within the terms of service and remunerated out of insurance funds. He regretted that the Insurance Acts Committee had not seen its way to consider this subject.

Dr. Candler-Hope said that they had a decision from the Ministry of Health that in Yorkshire at least the patients in the voluntary hospitals might be treated by the honorary physicians and surgeons as temporary residents.

Dr. Brackenbury said that this matter was under discussion at the present time, and the results of the consideration might have far-reaching importance. He would be glad to have particulars of cases of this kind. The Committee was securing legal advice on the points at issue. The question was most complicated.

Dr. Gordon Ward's resolution was put to the vote and lost.

Seamen's National Approved Society.

Dr. Henry Adams (Tynemouth) brought forward the question of the inadequacy of the scale of fees paid by the Seamen's National Approved Society for the medical treatment and attendance of its members. In his area several doctors were refusing to attend these men, except as private patients, and thereby members of the society were to some extent deprived of medical benefit.

The Chairman said that the fees of this society had been raised this year by 50 per cent., and it did not seem wise in a falling market to try for higher fees when such an increase had just been made. This particular society had special arrangements of its own under the Act, and it had not free choice of doctor; it had a list of doctors and it had a scale of fees.

The motion which Dr. Adams brought forward requesting the Insurance Acts Committee to enter into negotiations with a view to the raising of the fees was lost.

Another rejected motion was one by Cambridgeshire declaring that the power to compel the attendance of witnesses ought to be extended to Medical Services Subcommittees in the investigation of complaints. It was pointed out that this would also necessarily compel the attendance of the doctor in all sorts of trivial cases.

Dr. Cardale had a motion on the subject of the superannuation of insurance practitioners, but it was agreed to leave the matter to be brought up in the Insurance Acts Committee by the London representative.

The Conference finished its labours at 10.30 p.m. with a very hearty vote of thanks to the Chairman (Dr. Dain), Dr. Brackenbury, and the officials of the Association.

Meetings of Branches and Divisions.

South Wales and Monmouthshire Branch.

The autumn meeting of the Branch was held at the Council Chamber, Barry, on October 13th, when Dr. P. J. O'Donnell, President, was in the chair.

Dr. Eccles Smith showed some interesting cases and specimens, which were discussed by the President, Drs. Llewellyn Jones, Clarke, Begg, Arnallt Jones, and Morgan Rees. Dr. Eccles Smith was congratulated on his successes and thanked for showing the cases. Dr. J. M. Morris gave a short address on the four hourly feeding of infants, and appealed to the general practitioner to give the system a trial. Drs. Llewelyn Jones and D. R. Price took part in the discussion.

Dr. Eccles Smith read a paper on congenital hypertrophic stenosis of the pylorus. Drs. Llewelyn Jones and Begg took part in the discussion, and Dr. Eccles Smith replied.

This ended the business of the meeting, and the President then entertained the members to tea, after which a vote of thanks to the President, proposed by Dr. C. Biddie, was carried with acclamation.

South-Western Branch: Plymouth Division.

A very successful clinical meeting of the Plymouth Division was held at the South Devon and East Cornwall Hospital, Plymouth, on October 19th, when thirty-eight members were present and some non-members. Dr. Cheyne Wilson and Mr. M. M. Melrose gave demonstrations of (1) surgical diathermy, (2) screening of chest, including T.B. fibrosis and aneurysm, and (3) uses of CO_2 snow. In the venereal diseases department Drs. Kettlewell and Hynes demonstrated spirochaetes and clinical methods, including urethroscopy; and Dr. C. D. Lindsey gave a demonstration on induction of artificial pneumothorax. In the pathological laboratory demonstrations were given by Dr. W. L. Pethybridge on (1) blood typing, (2) diastase contents of urine, (3) blood films, (4) agglutination methods, etc. Mr. Robinson and Mr. Preston showed an operation for gall stones and the treatment of fractured femur. Mr. Pinker showed cases in the wards. Dr. A. B. Soltau showed a case of poliomyelitis and a method of estimation of alveolar CO_2, and Dr. Fox showed cases of skin diseases and of functional nerve disorder. At the conclusion of the meeting a unanimous wish was expressed that a similar meeting would be held at an early date.

Surrey Branch: Croydon Division.

The first monthly meeting of the session of the Croydon Division was held at the Croydon General Hospital on October 18th, when Mr. G. E. Newby, O.B.E., was in the chair. Sir Cuthbert Wallace, K.C.M.G., C.B., gave an address on recent advances in surgery, especially in relation to the alimentary system. In the discussion which followed, the Chairman, Drs. Cowell, Neve, Hamond, Genge, Hugo, Richards, and H. L. James took part.

The next meeting will be held at the Croydon General Hospital on Tuesday, November 15th, when Dr. Geoffrey Marshall will discuss the subject of pulmonary tuberculosis and modern medicine.

MEETINGS TO BE HELD.

Birmingham Branch: Coventry Division.—A meeting of the Coventry Division will be held on Tuesday, November 1st, at 8.30 p.m., in the board room at the Coventry and Warwickshire Hospital. Agenda: Paper by the Chairman, Mr. Ballantyne, entitled, "A ramble round the abdomen"; report of Representative; any other business.

Essex Branch.—The annual meeting of the Essex Branch will be held on Friday, November 11th, at 3.30 p.m., at the Red Lion Hotel, Colchester, preceded at 3 p.m. by a meeting of the Council.

Malaya Branch.—Meetings of the Malaya Branch are held in Singapore on the third Thursday of each month. Members desiring to contribute papers are requested to communicate with the honorary secretary, Dr. J. W. Scharff, care of Port Health Office, Singapore. Arrangements can be made for the exhibition of specimens or cases of interest brought to the meetings.

Surrey Branch: Croydon Division.—Monthly meetings will be held this winter on the third Tuesday in each month, at 8.15 p.m., at the Croydon General Hospital. The following syllabus has been arranged, and, in order to make the session a success, it is hoped that members will attend as many of the meetings as possible and bring their friends; non-members are cordially invited as guests. November 15th, Dr. Geoffrey Marshall, O.B.E.: Pulmonary Tuberculosis and Modern Medicine. December 20th, Dr. J. Bright Banister: Obstetrics and Gynaecology. 1922. January 17th, Dr. R. D. Passey, M.C.: Clinical Pathology and Vaccine Therapy. February 21st, Dr. A. M. H. Gray: Treatment of Skin Affections. March 21st, Mr. F. J. Cleminson: Diseases of Nose and Throat (with special reference to children). Wednesday, April 19th, 3.30 p.m.,

annual general meeting, followed by clinical meeting. The annual dinner will be held at the end of the session; due notice of the date will be given later.

Surrey Branch: Kingston Division.—A general meeting of the Division will be held at Surbiton Hospital, at 8.30 p.m. on Tuesday, November 1st. Dr. J. P. Hedley will give an address on "Tumours of the soft parts complicating pregnancy and labour."

Sussex Branch: Hastings Division.—A meeting of the members and non-members will be held at the Eversfield Hotel, St. Leonards, on Tuesday, November 1st, at 8.30 p.m., when Dr. Hessey will preside. Agenda: Paper by Dr. Hackle: "Medical Stunts." Discussion by Dr. Larking on Haemorrhage in Connexion with Operations on the Tonsil (vide British Medical Journal Supplement, September 17th). Discussion on treatment given at school clinics.

Insurance.

NATIONAL HEALTH INSURANCE, 1920–21.

The second annual report of the Ministry of Health (1920–1921) covers all the activities of the Ministry, including public health, housing, town planning, local government, local finance, Poor Law, old age pensions, and national health insurance. Leaving the rest of the report to be discussed elsewhere, a few facts and figures from Section 5, dealing with national health insurance, may be of interest.

A summary of approximate receipts and payments under the national insurance system in England for 1920 shows that at the end of the year the accumulated funds amounted to £69,637,000, of which £41,618,000 was invested with the National Debt Commissioners, and £25,073,000 was invested by or on behalf of approved societies. The total receipts were £29,330,000, of which the principal were £18,815,000 contributions of employers and employed, and £7,728,000 from the Exchequer, the rest being interest and sundry receipts. The payments were as follows: Medical and sanatorium benefits (including £7,159,000 remuneration of medical practitioners) £9,217,000, sickness, disablement, and maternity benefits £8,353,000, administration expenses £3,745,000. The total payments were £21,313,000. Thus over £8,000,000 was added in the year to accumulated funds. One cannot help wondering how much of the enormous accumulated funds has been unjustifiably accumulated at the expense of the medical practitioners.

The total number of persons entitled to medical benefit was 12,300,000. The cost of medicines for the year was about £1,250,000. On the average the chemists received 5½d. for each prescription, apart from the price of the ingredients. Dealing with the size of the doctors' lists, it is stated that 34 per cent. of the doctors had under 600 on their lists, 30 per cent. between 600 and 1,200, 22 per cent. from 1,200 to 2,000, and only 14 per cent. over 2,000, and in many of the last group the doctors had assistants. Thus extremely few doctors can be affected by the new rule fixing 3,000 as the maximum number for one doctor's list.

The difficulty as to how long a person remains entitled to medical benefit after ceasing to be insurable has now been cleared up by an arrangement that a person is entitled to medical benefit to June 30th or December 31st, whichever first occurs next after the expiration of six months from the date on which he ceases to be insured.

The valuation reports of approved societies, so far as they are completed, show such an extremely satisfactory position that many of the societies would be able to increase sickness benefit by 5s.; disablement benefit by 2s. 6d., and maternity benefit by 10s. But there has been such a widespread demand for additional benefits, such as hospital treatment and nursing, that the societies were asked to consider whether it would not be better to grant additional benefits rather than to increase the amounts of existing benefits. The following have been added to the list of additional benefits which societies may grant out of funds accruing to them under the insurance: (1) payment of whole or part cost of treatment and maintenance in convalescent homes or hospitals; (2) whole or part cost of appliances not already provided for; (3) whole or part cost of optical treatment and appliances; (4) whole or part cost of nursing. The Ministry draws special attention to the financial needs of the voluntary hospitals, and expresses a hope that the societies will bear this in mind when deciding what additional benefits to adopt. It is satisfactory to find that not a few societies have taken the suggestion and are entering into agreements with voluntary hospitals for hospital treatment for their members.

The report sets out at length the new scales of contributions and benefits, and refers to the various new arrangements introduced under the Insurance Act of 1920 with which the insurance practitioners are now familiar. It is noted that national health insurance came into operation in the Isle of Man in July, 1920.

Correspondence.

Insurance Remuneration.

Sir,—The Hackney Panel Practitioners' Association at their annual meeting on October 18th passed the following resolution:

> We are of opinion that the question of reduction of the capitation fee (which, we consider, is unwarranted) should, if unavoidable, be balanced to some extent by stabilizing tenure and giving relief in those Regulations which fall so heavily on the insurance practitioner, as suggested by the Secretary of the London Panel Committee.
>
> 1. The agreed capitation fee should be guaranteed for five years.
> 2. The A.V.C. columns on the records should be abolished.
> 3. The Article 16 relating to transfer of practices should be rescinded.
> 4. But no scheme of pensions, etc., should be entered into *with the Government*.
>
> Further, we reluctantly point out that we have saved the country some quarter of a million by the reduction of notification fees, and still more by accepting during the war and since increases much lower than they should have been in comparison with the decreased value of money or even the increases given to other workers. And, finally, we very much regret to observe a new tone in the speech of a British statesman, in that he proposes a policy and refuses to listen to the arguments of the other side.

—I am, etc.,

C. E. Evans,
Honorary Secretary.

8, Fountayne Road, N.16,
October 18th.

The Insurance Medical Service.

Sir,—Now that the remuneration of doctors working under the National Insurance Acts has been settled and we are promised two years' immunity from similar interference, it will be well, I think, if the profession, working through its existing machinery, sets itself to devise means by which the national health insurance experiment may be carried a stage further so as to provide for insured persons something more than the present general practitioner service.

The additional services which are needed are facilities for

(*a*) Consultative expert opinion.
(*b*) More exact diagnosis in obscure cases by means of *x* rays, biochemical methods, etc.
(*c*) Operative treatment when necessary without having to call on the gratuitous services of surgeons who are officers of institutions maintained by voluntary contributions of the charitable.

I am aware, of course, that the Dawson Report foreshadowed all these things, but owing to its grandiose character in general, the heavy capital outlay which its adoption would involve and the upheaval it would produce in a profession only just settling down after five years' war its recommendations are, like protection in the seventies, not only dead, but damned.

Still, that should not prevent our setting our hands to improvements in the insurance medical services which can be effected without large capital outlay, and it is, I hold, important that such improvements should be initiated by the doctors themselves, and that the scaffolding should be erected by the Insurance Acts Committee in friendly conference with the Ministry of Health.

The rough outline that appeals to me is to have an adequate central pool for remuneration based, if desired, as at present, on a capitation figure, out of which all the services should be paid for as the medical profession itself should determine. It would then be up to us to organize the necessary specialist and laboratory services, which would be paid for by intraprofessional arrangement. The cost of these services should be a first charge on the ave-

pools, the general practitioner services getting the remainder. Probably the number of special investigations will be proportional to the numbers of insured persons per area, so that the area pools might be made up as at present from the enlarged central pool. Some form of official supervision by the Ministry would be necessary to see that the goods were being delivered in return for the public money, but this need be neither irksome nor difficult to arrange.

I am quite satisfied in my own mind that on a capitation fee of 10s. 6d. the profession could afford to supply the extra services outlined, and on patriotic grounds I should have preferred that the profession had an improved service as I have suggested, on the 11s. basis, rather than accept the reduction to 9s. 6d. now asked for and granted on the same grounds.—I am, etc.,

A. E. HODDER,
Late Chairman, Mid-Staffs Division.

Stafford, Oct. 21st.

Medical Records.

Dr. W. F. BENSTED-SMITH (Newton Ferrers, S. Devon) writes: The following improvement to the national health insurance record envelope would obviate the most exasperating feature of this most annoying invention—namely, the extraction of the continuation card. A small (1/8 in.) metal eyelet riveted through both thicknesses of the envelope—close to the foot and alongside the vertical seam—would provide a finger grip, which would not pinch the contained card.

DIARY OF SOCIETIES AND LECTURES.

ROENTGEN SOCIETY, Institution of Electrical Engineers, Savoy Place, W.C. Thurs., 8.15 p.m., Presidential Address.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Tues., 5 p.m., Mitchell Lectures by Dr. F. Parkes Weber. The Relation of Tuberculosis to General Conditions of the Body and Diseases other than Tuberculosis; Thurs., 5 p.m., Bradshaw Lecture by Dr. Michael Grabham. Subtropical Esculents.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Museum Demonstrations, 5 p.m., Mon., Professor Shattock: Degenerations. Necrosis; Fri., Sir Arthur Keith: Specimens and Slides illustrating various kinds of disordered growth at the epiphyseal line.

ROYAL SOCIETY OF MEDICINE. Mon., 8.30 p.m., Social Evening. Reception by President and Lady Bland-Sutton; 9 p.m., Short Address by the President on Choroid Plexuses and Psammomas. *Section of Surgery, Subsection of Orthopaedics:* Tues., 5 p.m., Cases. *Section of Pathology:* Tues., 8.30 p.m., at Laboratories of Imperial Cancer Research Fund, 8–11, Queen Square, W.C.1. Dr. W. Cramer: Vitamins and Cancer Growth; Dr. A. H. Drew: *In vitro* Culture of Tissues in Artificial Media; Dr. B. R. G. Russell: Carbohydrate Metabolism of Tumours; Dr. J. A. Murray: Experimental Tar-Cancer. *Section of Surgery:* Wed., 5.30 p.m., Mr. Raymond Johnson (President): Carcinoma of the Small Intestine. *Section of Balneology and Climatology:* Thurs., 5.30 p.m., Dr. Hill Joseph: Presidential Address—A Retrospect of a Quarter of a Century of Seaside Practice. Members of the Section, with guests, will dine at the Welbeck Palace Hotel, at 6.30 p.m. Those intending to be present should notify Dr. C. F. Sonntag, 80A, Belsize Park Gardens, N.W.3, by November 2nd. *Section of Obstetrics and Gynaecology:* Thurs., 8 p.m., Specimens. Dr. G. Cranstoun: Cystic Adenoma of the Uterus; Dr. R. L. MacKenzie Wallis: Glycosuria in Pregnancy. *Section of Laryngology:* Fri., 4 p.m., Cases. *Section of Anaesthetics:* Friday, 8.30 p.m., Mr. H. E. G. Boyle: Report on his visit as representative of the Section to meetings of Canadian Society of Anaesthetists and of American Society of Anaesthetists.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Mr. P. G. Doyne: Squint.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. W. Brown: Psychology and Psychotherapy; Wed., 4.30 p.m., Dr. C. Da Fano: Histology of the Nervous System.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Mr. W. H. Hey: Recent Advances in Surgery.

MANCHESTER: ST. MARY'S HOSPITALS, Whitworth Street West Branch.—Fri., 4.30 p.m., Dr. Clifford: Conditions Simulating Prolapse.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1. Daily, In- and Out-patients; Mon., 5.30 p.m., Lecture by Dr. Price: Angina Pectoris.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.2.—Thurs., 6 p.m., Chesterfield Lecture by Dr. W. Griffith: Pathology of Skin Diseases.

SALFORD ROYAL HOSPITAL.—Thurs., 4.30 p.m., Mr. J. B. McAlpine: The Importance of the Use of the Cystoscope.

SHEFFIELD UNIVERSITY. At Royal Infirmary, Tues., 3.30 p.m., Dr. Hallam: Skin Diseases in Infants; 4.15 p.m., Mr. Mouat: Nerve Injuries. At Royal Hospital, Fri., 3.30 p.m., Dr. Naish: Demonstration of Children's Diseases; 4.15 p.m., Mr. F. Wilson: Surgical Aspects of the Hip-joint in Children.

UNIVERSITY COLLEGE, Gower Street, W.C.—Fri., 4.30 p.m., Dr. J. C. Drummond: Nutrition.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Lectures:—5 p.m., Mon. and Thurs., Mr. D. Armour: Practical Surgery; Tues., Mr. B. Davis: Nasal Catarrh; Wed., Dr. Burnford: Diagnosis of Infective Diseases; Fri., Mr. MacDonald: Haematuria.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Mediscera, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (6 lines).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4391 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

OCTOBER.

28 Fri. Sheffield Division. The University Lecture by Dr. H. H. Dale, F.R.S.: Specific Sensitiveness and Idiosyncrasies. 8.45 p.m.

NOVEMBER.

1 Tues. Coventry Division, Coventry and Warwickshire Hospital, 8.30 p.m.
Hastings Division, Eversfield Hotel, 8.30 p.m. Papers and discussions.
Kingston Division. Surbiton Hospital, 8.30 p.m.
4 Fri. London Post-Graduate Courses Committee, 2.30 p.m.
11 Fri. Essex Branch, Annual Meeting, Red Lion Hotel, Colchester. 3.30 p.m., Council Meeting, 5 p.m.
15 Tues. Croydon Division, Croydon General Hospital, 8.15 p.m., Dr. Geoffrey Marshall: Pulmonary Tuberculosis and Modern Medicine.
17 Thurs. Birmingham Division. Lecture by Sir William Thorburn.
23 Wed. South Midulesex Division, St. John's Hospital, Twickenham, 8 p.m. Paper by Dr. A. M. H. Gray: Skin Diseases commonly met with in General Practice.

DECEMBER.

14 Wed. Bradford Division. Lecture by Colonel L. W. Harrison, D.S.O.

APPOINTMENTS.

KIRK, John, M.A., B.Sc., M.B., Ch.B.Glasg., D.O.Oxon., Honorary Assistant Ophthalmic Surgeon to the Royal Eye and Ear Hospital, Bradford.

MOORE, G. J., M.B., B.Ch.Dubl., House-Surgeon, Sunderland Royal Infirmary.

O'BRIEN, Josephine, M.B., B.Ch., B.A.O., N.U.I., House-Surgeon to the Wrexham Infirmary.

THOMAS, F. Watkyn, M.A., B.Ch.Cantab., F.R.C.S.Eng., Assistant Surgeon to the Central London Throat and Ear Hospital, Gray's Inn Road, W.C.

TURTON, J. R. H., M.B., B.S.Lond., F.R.C.S., Assistant Surgeon to the Royal Sussex County Hospital, Brighton.

WALKER, Josiah, M.C., M.B., B.Ch.Camb., Honorary Physician to the Peterborough Infirmary.

EDINBURGH HOSPITAL FOR DISEASES OF WOMEN. *Senior Gynaecologists:* Dr. J. Lamond Lackie and Dr. Hugh S. Davidson. *Assistant Gynaecologists:* Dr. Douglas A. Miller and Dr. W. F. Theodore Haultain. *Anaesthetist:* Dr. T. G. Gibbs. *Bacteriologist:* D. A. Nimmo Smith.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

BODY.—On October 22nd, at Dowlais House, Middlesbrough, wife of T. M. Body, a daughter.

HALL.—On October 21st, at 1, Eslington Road, Newcastle-on-Tyne, Margaret, wife of George Hall, C.M.G., M.D., M.R.C.P., a son.

SAVY.—On October 23rd, at The Grange, Kingussie, Inverness-shire, the wife of Felix Savy, M.B., Ch.B., of a son.

MARRIAGES.

ALLAN—CASKIE.—At Meigle Parish Church, on the 19th inst., by the Rev. Hugh Climie, Lindsay Gordon Allan, M.B., Ch.B., youngest son of Mr. and Mrs. George Allan, Perth, Australia, to Margaret Steele Caskie, M.B., Ch.B., elder daughter of James Caskie, M.B., C.M., D.P.H., and Mrs. Caskie, The Cannons, Methil.

BUCHAN—COTTERILL.—At St. John's Church, Edinburgh, on October 19th, by the Rev. Lennox Abercrombie, Thomas Kirkland Buchan, M.B., Ch.B., Laurencekirk, son of the late John Buchan, Strathmiglo and Edinburgh, to Hannah Elizabeth, daughter of the late Samuel Cotterill, Congleton, Cheshire.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 5TH, 1921.

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British Medical Association.

CURRENT NOTES.

Membership of the Association.

At the meeting of the Propaganda Subcommittee on October 25th the Financial Secretary presented figures of membership for the period June 21st to October 6th, 1921. During that period 856 new members joined the Association; 123 members paid arrears of subscriptions; and 15 resignations were withdrawn. Resignations numbered 88, and there were 70 deaths. There was thus a net increase of 836 in the membership of the Association. The total membership on October 6th, 1921, was 23,634, as compared with 22,798 on June 20th, 1921. Such figures speak for themselves.

Election of Oversea Members of Council and Representatives.

Acting under authority delegated to it by the Representative Body, the Council has grouped the Branches outside the United Kingdom for election of seven members of Council, 1922–3, as shown in the Notice printed in the SUPPLEMENT of October 8th (page 140). No special form is needed for the nominations, but each must be signed by not less than three members. Candidates may be nominated to serve for one, two, or three years. Eligibility for office is defined in By-law 52 (2). Nominations must be received at the Head Office, 429, Strand, not later than February 11th, 1922.

The Council has decided that each Oversea Division and Division-Branch shall be an independent constituency in the Representative Body, 1922–3, each such constituency to elect one Representative. The Representatives for 1922–3 come into office for the Annual Representative Meeting at Glasgow on July 21st, 1922, and should, if convenient, be elected at once, in order that they may have ample time to make their arrangements for attending at Glasgow. Honorary secretaries are asked to send the names and addresses in this country of the Representatives and Deputy-Representatives so as to be received not later than June 30th. The Council hopes that Representatives from all the Oversea constituencies will take part in the Annual Representative Meeting at Glasgow. The first-class travelling expenses (within the United Kingdom) of Representatives and members of Council attending the Annual Representative Meeting, and of members of Council attending meetings of the latter, are defrayed from the central funds of the Association. The special attention of new honorary secretaries overseas is drawn to the fact that the Council is the executive and the Representative Body the controlling body of the Association.

Fees for Admiralty Surgeons and Agents.

On May 7th we were able to state in this column that after very long delay a decision had been reached concerning the increase of visiting fees and mileage payable to Admiralty surgeons and agents. At the same time it was announced that the fees for examinations were still under consideration, and that a further announcement would be made. A decision has now been made. The fee for every man or boy examined for entry into the Royal Navy or Royal Marines will be 4s., whether the individual is finally rejected or not. A similar fee is to be payable for every man examined for enrolment or re-enrolment in the Royal Naval Reserve, or Royal Fleet Reserve or examined for retirement, superannuation, pension, discharge, or compassionate allowances and the like. The allowance for mileage, when the Admiralty surgeon and agent is directed to survey an applicant at the latter's residence when the distance is over a mile, has been increased from 1s. to 1s. 6d. one way. For visiting and reporting on men sick on leave from the Navy, the revised charge is 4s. per man visited instead of 2s. 6d., and similar increases are to be allowed for examining men in the service as to their fitness for special duty and for examining men of the Royal Navy, Royal Naval Reserve, or Royal Fleet Reserve as to their fitness for further service. From this it will be seen that the anomaly of paying a certain fee for the examination of a candidate and doubling it if he were finally accepted, the work in both instances being precisely the same, has been abolished. The British Medical Association long ago pointed out to the Admiralty that it could see no justification for the old method of payment, and it is satisfactory to note that its protest has been effective.

Work of the Naval and Military Committee.

The Naval and Military Committee at its last meeting had under consideration the reply of the War Office to its letter suggesting that Majors R.A.M.C. should have an increase of pay between the completion of fifteen years' service and the date of promotion to lieutenant-colonel. The reply was to the effect that very little hope could be held out that the rates of pay would be amended. The Committee is of opinion that such a concession is equitable and that those majors have a legitimate grievance whose promotion has been delayed by the decision to retain a certain number of colonels on the active list after four years' service in that rank, thus retarding the promotion of majors. The Association is pressing the War Office to reconsider the matter.

A small deputation from the Committee is meeting the Finance Committee to put before it the arguments in favour of the suggested flat rate of subscription to the Association, for all active members of the Royal Naval Medical Service, Royal Air Force Medical Service, Army Medical Service, and Indian Medical Service.

The Committee is still pressing on the India Office the necessity for an increase in the pay of the Director-General and the Surgeons-General I.M.S., and is now awaiting the opinion of the Government of India which has been asked for by the India Office. The Secretary of State for India is being urged to come to a decision on the question of free passages and travelling and detention allowances for I.M.S. officers.

It was reported to the Committee that the Financial Secretary to the Admiralty had interviewed Surgeon Captain Meaden, C.M.G., R.N., the naval representative on the Naval and Military Committee of the Association, and two senior surgeon commanders, on the question of compulsory retirement at the age of 50 under the new regulations for retirement. The Committee is awaiting the result of the interview.

Successful action was reported to the Committee in obtaining a sum of money from the War Office for a temporary R.A.M.C. officer whose individual efforts had met with no success.

The Committee, recalling its efforts on behalf of the I.M.S., noted with great satisfaction that 116 officers had during the current year joined or applied to join the Association. In spite of all that has been done by the Association for the Service, some 200 officers still remain outside the Association. As all these have benefited or will benefit materially from the terms recently obtained from the Secretary of State by the British Medical Association, the Committee ventures to express the hope that every one of them will come into the Association.

Post Office Medical Officers.

The British Medical Association has for many years been endeavouring to improve the pay and conditions of service of those members who are Post Office medical officers. It has, however, always been confronted with the difficulty that there was an organization known as the Association of British Postal Medical Officers, which purported to represent the views of postal medical officers. Repeated efforts were made to co-operate with this body in making representations to the Postmaster-General, but without success, and on the last occasion the Association of British Postal Medical Officers made it very clear that it considered itself quite capable of doing all that was necessary for Post Office medical officers without the assistance of the British Medical Association. This view was not shared by a large number of Post Office medical officers who are members of the British Medical Association; they continued to press that it should be unnecessary for them to belong to another organization in order to have their interests protected.

On March 4th, 1921, a circular letter was sent out to all members of the British Medical Association known to be Post Office medical officers, inquiring if they wished the Postmaster-General to be asked to recognize the Association as their mouthpiece. Upwards of 1,000 answered in the affirmative, and on the strength of this a letter was sent to the Postmaster-General asking him to grant recognition. He stated in reply that the Association of British Postal Medical Officers was the recognized mouthpiece of postal medical officers, and that he could hardly recognize another body for the same purpose. However, on being further pressed he invited the British Medical Association to send representatives to discuss the question with members of his Secretariat. On September 28th a small deputation was received at the General Post Office by Mr. Raven, the second secretary, and several of his colleagues. The organization of the Association was explained, and it was pointed out how the opinion of postal medical officers could be obtained. It was also explained that there was now in existence a special subcommittee, consisting mainly of postal medical officers, for the purpose of dealing with all matters concerning those officers. Mr. Raven expressed his full satisfaction and agreed to recommend the Postmaster-General to grant recognition. The following letter has now been received from the Secretary to the Post Office:

> "I am directed by the Postmaster-General to acknowledge the receipt of your letter of the 12th instant confirming the arrangements for assuring that representations made by the British Medical Association on behalf of Post Office medical officers will in fact represent the views and desires of the medical officers concerned, and in reply I am to confirm the Postmaster General's decision to extend official recognition to the Association as representative of Post Office medical officers."

This is a great step forward, and it is hoped that members who are Post Office medical officers will do all they can to support the action of the Association on their behalf.

Meetings of Branches and Divisions.

Edinburgh Branch: South-Eastern Counties Division.—An ordinary meeting of the South-Eastern Counties Division was held at Newtown St. Boswells on October 4th, when Dr. P. Henderson, Chairman of the Division, presided.

Dr. Cullen, who was unable to be present owing to illness, wrote with reference to the annual meeting of the Association at Newcastle. He stated that he was particularly impressed by the capability and business methods of the whole meeting, and in particular of the Insurance Acts Committee. The honorary secretary was instructed to thank Dr. Cullen on behalf of the members, and express their hope for his early recovery.

Drs. Henderson, Somerville, McLay, Doig, and Tyrrell were deputed to make the necessary local arrangements for the annual dinner at Galashiels on or about November 15th.

Dr. John Eason of Edinburgh gave an address on "Some problems of the goitres." After discussion and study of the tables produced by him in support of his opinion the Chairman proposed a vote of thanks to Dr. Eason for his interesting address, which was unanimously accorded by the meeting.

Suffolk Branch.

The autumnal meeting of the Suffolk Branch was held at the Town Hall, Sudbury, on Oct. 17th. Dr. Tyson (Lowestoft) read a paper on eclampsia, and Dr. Legge-Currie (London) read a paper on an introduction to psycho-therapeutics.

MEETINGS TO BE HELD.

Essex Branch.—The annual meeting of the Essex Branch will be held on Friday, November 11th, at 3.30 p.m., at the Red Lion Hotel, Colchester, preceded at 3 p.m. by a meeting of the Council.

Metropolitan Counties Branch: Hampstead Division.—A special meeting of the Division will be held at the Hampstead General Hospital, Haverstock Hill, on Thursday, November 10th, at 8.30 p.m., to consider the adoption of the Model Rules of Organization issued by the Central Council of the Association. Copies may be obtained on application to the Honorary Secretary, Dr. Sidney Boyd, 33, Belsize Park Gardens, N.W.3. This meeting will be followed by an ordinary meeting of the Division to receive the report of the Representatives at the Annual Representative Meeting.

Yorkshire Branch: Sheffield Division.—A special general meeting of the Division will be held at the Church House, St. James Street, Sheffield, on Tuesday, November 8th, 1921, at 8.30 p.m. Agenda: Report of Representatives (Dr. Forbes and Dr. Caiger.) Election of representatives for Retford and Worksop to the Executive Committee. Proposed new Organization Rules.

Insurance.

INSURANCE ACTS COMMITTEE AND SCOTTISH SUBCOMMITTEE.

Election of Direct Representatives.

The following have been elected as direct representatives of Local Medical and Panel Committees on the Insurance Acts Committee and its Scottish Subcommittee for the session 1921-22:

Insurance Acts Committee.

Group "A."—Dr. M. Dewar (Edinburgh) and Dr. D. Lyon Stevenson (Larkhall, Lanarkshire).
Group "B."—Dr. A. Smith (Whickham, Durham).
Group "C."—Sir William Hodgson (Crewe), Dr. H. F. Oldham, M.B.E. (Morecambe), and Dr. Frank Radcliffe (Oldham).
Group "D."—Dr. A. Forbes (Sheffield) and Dr. G. B. Hillman, M.B.E. (Wakefield).
Group "E."—Dr. W. E. Thomas (Ystrad Rhondda).
Group "F."—Dr. T. Ridley Bailey (Bilston, Staffs) and Dr. E. Lewis Lilley (Leicester).
Group "G."—Dr. T. Cuming Askin, M.B.E. (Woodbridge, Suffolk).
Group "H."—Dr. T. Wood Locket (Melksham, Wilts).
Group "I."—Dr. J. P. Williams-Freeman (Andover, Hants).
Group "J."—Dr. P. V. Fry (East Molesey, Surrey).
Group "K."—Dr. H. B. Brackenbury (Hornsey), Dr. E. A. Gregg (Hampstead), and Dr. C. H. Panting (Leyton).

Scottish Subcommittee.

County Panel Committees.—Dr. C. E. Douglas (Cupar, Fife); Dr. T. W. Little (Newmains, Lanarkshire); Dr. J. S. Muir (Selkirk); Dr. W. R. Martine (Haddington).

Burgh Panel Committees.—Dr. Jas. Andrew (Coatbridge); Dr. Wm. Lawson (Glasgow); Dr. G. W. Miller (Dundee); Dr. D. Rorie (Cults, Aberdeenshire).

The counting of the votes has been verified by the Proportional Representation Society, except in the case of Groups "H" and "K," the candidates in these groups being returned unopposed.

A letter dated October 22nd was received from the medical secretary of the Kent Panel Committee stating that that Committee at its meeting on October 18th had decided that Dr. Gordon Ward's name should be withdrawn from Group "J." The voting papers had, however, been posted on October 20th.

EMERGENCY TREATMENT.

THE following letter, upon a point in connexion with emergency treatment by insurance practitioners, has been addressed recently by the Ministry of Health to the secretary of a Panel Committee in England. The names of the committee and the practitioner concerned are omitted.

Ministry of Health,
Whitehall, S.W.1.

Sir,

I am directed by the Minister of Health to refer to your letter of the 4th July and previous correspondence on the subject of payments claimed by Dr. —— for rendering emergency treatment.

The Terms of Service of Insurance Practitioners in ..... do not provide for an appeal to the Minister against the decision of the Panel Committee, as it had not been thought necessary to suggest to Insurance Committees generally that provision for an appeal should be made in the Schemes under Article 15 of the Medical Benefit Regulations in relation to a matter which should ordinarily be one between the two practitioners concerned, and therefore capable of an equitable settlement without difficulty by the Panel Committee.

Although, however, there is no provision for an appeal, Dr. —— was referred by you to this Department, and as the case has thus come under notice, it appears to the Minister desirable to point out that there is a danger of the grounds of the Panel Committee's decision being misunderstood, as the communications to Dr. —— do not make it clear that the Panel Committee had satisfied themselves in the cases in question that the patient's own doctor was "available for giving to the insured person any treatment immediately required." The Minister has little doubt that the Panel Committee did apply their minds to this question, and not merely to the question whether the patient's own doctor was at home at the time when the emergency arose.

As the Panel Committee are aware, there is a definite duty laid upon every Insurance Practitioner by the terms of Para. 5 of the Scheme made under Article 15 of the Regulations—viz., that if he is summoned and is available he is required to give any insured person, in an accident or other sudden emergency, any necessary treatment. It is true that there is a condition precedent—viz., that neither the insured person's own doctor nor his deputy is available for giving any treatment immediately required. But it is clearly of the first importance that such treatment should be given, and the doctor to whom application is made will doubtless frequently have to decide whether the emergency is so great that the mere fact that the insured person's own doctor's surgery was some distance away would make it clear that he would not be sufficiently available to give that immediate treatment which the case required.

These cases are by no means free from difficulty, but if there is any doubt in the matter the Panel Committee would doubtless be prepared in all cases to give the doctor to whom application is made the benefit of the doubt, having regard to the collective responsibility on the insurance practitioners in the area to give treatment in an emergency. It is not only, as stated above, of the first importance that the insured person should be promptly treated, but there should ordinarily be no question of any charge being made to the insured person for such treatment. If, however, a complaint were made by an insured person that he had been charged a fee for treatment in an emergency, and the case came before the Minister on appeal, it would be necessary for him to have regard to the considerations set forth in this letter.

I am, Sir, your obedient servant,
R. W. HARRIS.

Correspondence.

Organization and Remuneration.

SIR,—Peace has been declared, the battle is lost and won: it now only remains for the combatants—victor and vanquished—to survey the stricken field, and garner the lessons that must be to hand for use in the future, as assuredly this will not be the end of the strife. The victors, standing amazed at the modesty of their demand, can congratulate themselves on the bloodless victory and laugh immoderately at the mimic fight put up by the Insurance Acts Committee, strengthened by three members of the Conference, and no doubt solemnly accompanied by Dr. Cox and his henchmen three.

The vanquished, congratulating themselves that more was not asked for, should examine carefully the joints of their armour, and adopt as their motto: "The chain is only as strong as its weakest link." This will entail some introspection with honesty of purpose, but unless there be accuracy of diagnosis what hope is there of remedy?

The Medical Secretary said at Birmingham that "the organization of the profession is greatly improved," but the improvement is only on paper, as evidence the position of the National Defence Trust, so that idea must be scrapped, as some of the Divisions are as dead as Queen Anne.

The talk of 13s. 6d. and patriotism deceives nobody, as the "man in the street" is no fool and can easily calculate the difference between 13s. 6d. and 9s. 6d. There is a marked difference between urban and rural areas over fee, as the rural men are more concerned about mileage than capitation; there is also considerable difference of view between the men with large panels and extensive mileage and their less favoured brethren, and I find a feeling in favour of national service amongst the less favoured and the younger men. The approved societies are even less our friends than they were in 1912. All the difficulties of the profession are autogenetic. It will take time and energy to make the British Medical Association into a fighting machine fully equipped; but if everyone gets busy, doing his bit, if it be only by replying to communications sent, then the profession, united and true to itself, need fear no foe.—I am, etc.,

Auchencairn, Oct 29th. JOHN CROMIE.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: A. B. Marsh to the *Victory*, additional for Haslar Hospital; J. S. Orwin to the *Cairo*; W. C. Carson to Portsmouth Dockyard; E. L. Atkinson to the *Eymont*, for service with British Naval Mission to Greece; T. W. W. Myles, C.B.E., to the *Lion*, on becoming flagship; J. E. Johnston to the *Colossus*; H. Burns, O.B.E., to the *Triad*; G. D. Bateman to the *Pegasus*. Surgeon Lieutenant Commanders: J. A. Maxwell to the *Southampton*; J. G. Danson to the *Lion*, on becoming flagship; H. B. Parker, D.S.C., to the *Wallace* (to be accommodated in Vancouver) temporary; J. A. Watson to the *Laburnum* on commissioning; W. V. Vicary to the *Pembroke*, for R.M. Infirmary, Deal; G. W. Woodhouse to the *Mackay*, on expiration of foreign service leave, to be accommodated in Whitshed. Surgeon Lieutenants: H. C. C. Veitch to the *Columbine*, additional (temporary); A. H. Harkins to the *Conqueror* (temporary); C. N. Carter to the *Orion* (temporary).

Surgeon Lieutenants (retired) T. J. Kilbride and J. R. Haldane have been promoted to the rank of Surgeon Lieutenant Commander (retired). Surgeon Lieutenant (temporary) A. Craig has been promoted to the rank of Surgeon Lieutenant Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major A. C. H. Gray, O.B.E., relinquishes the temporary rank of Lieutenant-Colonel.

The following officers relinquish their commissions: Temporary Major C. J. Marsh, and retains the rank of Major. Temporary Captains and retain the rank of Captain: C. L. Herklots, W. St. A. Hubbard, H. E. M. Baylis, G. L. Lawlor, H. H. R. Bayley, I. A. Davidson, H. Gibson.

Captain L. Buckley retires, receiving a gratuity.

Captain J. E. Brooks is seconded for service under the Colonial Office, August 4th, 1921 (substituted for the notification in the *London Gazette* of September 1st, 1921).

Captain W. McM. Chesney, M.C., retires receiving a gratuity, July 16th, 1921, and is granted the rank of Major (substituted for notification in the *London Gazette*, July 15th, 1921).

Temporary Captain J. A. Marsden to be temporary Major whilst employed as Deputy Assistant Director of Hygiene.

Captain T. Young relinquishes the acting rank of Major.

Temporary Captains relinquish their commissions and retain the rank of Captain: R. E. Smith, J. M. Browne.

REGULAR ARMY RESERVE OF OFFICERS.

ARMY MEDICAL SERVICE.

The undermentioned, having attained the age limit of liability to recall, cease to belong to the Reserve of Officers: Major-Generals Sir W. W. Pike, K.C.M.G., D.S.O., Sir H. N. Thompson, K.C.M.G., C.B., L. E. Anderson, C.B., S. Macdonald, C.B., C.M.G., K.H.P., W. T. Swan, C.B.; Colonels A. J. Luther, C.B., C. W. R. Healy, C.M.G., F. W. Begbie, C.B.E., S. F. Clark, W. L. Gray, H. N. Dunn, C.M.G., D.S.O.

ROYAL ARMY MEDICAL CORPS.

The undermentioned, having attained the age limit of liability to recall, cease to belong to the Reserve of Officers: Lieut.-Colonels N. Tyacke, C. A. Stone, H. W. H. O'Reilly, D. Lawson; Majors A. Pearse, Brevet Lieut.-Colonel F. J. Brown, R. F. E. Austin, T. J. Lenehan.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Flight Lieutenant A. Parker relinquishes his temporary commission on ceasing to be employed, and is permitted to retain the rank of Captain.

Flight Lieutenant (honorary Squadron Leader) J. Keenan relinquishes his temporary commission on ceasing to be employed, and is granted the rank of Major.

ROYAL MALTA ARTILLERY.

Surgeon-Major Robert Randon is placed on half pay.

TERRITORIAL ARMY.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel E. G. Peck, D.S.O., T.D., having attained the age limit is retired, and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major (Brevet Lieut.-Colonel) J. Wilson, T.D., having attained the age limit is retired, and is granted the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major (Brevet Lieut.-Colonel) E. S. Forde resigns his commission and retains his rank, with permission to wear the prescribed uniform.

Major W. A. Taylor, T.D., having attained the age limit, is retired, and retains the rank of Major, with permission to wear the prescribed uniform.

Major J. D. C. Swan resigns his commission and retains the rank of Major.

Major W. H. Rowell, O.B.E., resigns his commission and retains the rank of Major.

The following Majors, having attained the age limit, are retired and retain the rank of Major, with permission to wear the prescribed uniform: J. Hobbs, D. J. Penney, T.D., J. Lithgow, T. D. P. Best, W. H. Galloway, T.D.

The following officers, having attained the age limit, are retired and retain their rank: Major P. T. Tolputt; Captains T. E. Saunt, J. Wotherspoon, A. A. Bearne, I. W. Mackinnon, J. Wilson, G. A. Child, O.B.E.

Major J. D. Hart, M.C. (late R.A.M.C.), to be Captain, with precedence as from December 22nd, 1918, and relinquishes the rank of Major.

Captains F. Rowland and J. Anderson, having attained the age limit, are retired and retain the rank of Captain.

Captain W. C. Gunn to be Major, and to command 5th (Scottish) Sanitary Company.

Captain H. N. Goode, M.C., to be Major, and to command 6th (Northern) Sanitary Company.

Captain G. F. Shepherd (late R.A.M.C.) to be Lieutenant, with precedence as from May 25th, 1917, and relinquishes the rank of Captain.

Captain H. G. Langdale-Smith resigns his commission and retains the rank of Captain.

Supernumerary for Service with O.T.C.—Captain E. W. A. Walker, having attained the age limit, is retired, and retains the rank of Captain.

TERRITORIAL ARMY RESERVE.

ARMY MEDICAL SERVICE.

Colonel H. Burrows, C.B.E. (T.A.Res.), to be Colonel.

Colonel R. Jackson, T.D., having attained the age limit, is retired, and retains the rank of Colonel, with permission to wear the prescribed uniform.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel C. W. Eames, D.S.O., T.D., T.A.Res., to be Lieutenant-Colonel.

Lieut.-Colonel E. H. Cox, D.S.O., from 3rd East Lancashire Field Ambulance, to be Lieutenant-Colonel.

Major (Brevet Lieut.-Colonel) J. E. H. Sawyer, from 1st Southern General Hospital, to be Lieutenant-Colonel.

Major C. N. Smith, M.C. (T.A.Res.), to be Major, September 1st, 1921 (substituted for notification in the *London Gazette* of August 31st, 1921).

Major S. F. St. J. Steadman, from General List, to be Major.

Major H. W. Pritchard, having attained the age limit, is retired and retains the rank of Major, with permission to wear the prescribed uniform.

Captain A. J. Williamson, D.S.O., from General List, to be Lieutenant-Colonel.

Captain S. S. Greaves, D.S.O., M.C., from General List, to be Major.

Captain G. G. Johnstone, M.C., from 2nd London Sanitary Company, to be Captain.

Captain S. G. Reed, from 2nd London Sanitary Company, to be Captain.

Captain J. McGlashan, having attained the age limit, is retired, and retains the rank of Captain.

DIARY OF SOCIETIES AND LECTURES.

HARVEIAN SOCIETY OF LONDON, Town Hall, Paddington Green, W.—Thurs., 8.30 p.m., Dr. G. A. H. Barton:—Ether: Some Simple Methods and Musings.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Tues. and Thurs., 5 p.m., FitzPatrick Lectures by Dr. R. O. Moon: Hippocrates in Relation to the Philosophy of his Time.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Museum Demonstrations, 5 p.m.:—Mon., Professor Shattock: Cysts; Fri., Sir Arthur Keith: Recently added specimens of clinical and anatomical interest.

ROYAL SOCIETY OF MEDICINE. *Section of Therapeutics and Pharmacology*: Tues., 4.30 p.m., Presidential Address:—Dr. W. Langdon Brown: The Threshold of the Kidney. *Section of Psychiatry*: Tues., 8.30 p.m., Sir Frederick Mott: Further Researches upon the Reproductive Organs in Dementia Praecox. *Section of Surgery: Subsection of Proctology*: Wed., 5.30 p.m., the President will raise for informal discussion some topics of interest to the Subsection. Cases also will be shown. *Section of Neurology*: Thurs., 8.30 p.m., Discussion: The Treatment of Persistent Pain due to Lesions of the Central and Peripheral Nervous System; introduced by Sir William Thorburn and Dr. Wilfred Harris. *Clinical Section*: Fri., 5 p.m., Cases. *Section of Ophthalmology*: Fri., 8.30 p.m., Dr. W. S. Inman: The Relationship of Squint, Lefthandedness, and Stammering. Dr. Charles F. Harford: The New Psychology and its Relation to Problems of Vision.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Mr. L. E. Barrington-Ward: Management of Acute Abdominal Conditions.

KING'S COLLEGE, Strand, W.C.—Mon., 5.30 p.m., Dr. William Brown: Psychology and Psychotherapy. Wed., 4.30 p.m., Dr. C. A. Da Fano: Histology of the Nervous System.

LONDON HOSPITAL MEDICAL COLLEGE.—Diseases of Children: Mon., 9.15 a.m., Dr. T. Thompson: Organic and Functional Nervous Diseases and Mental Deficiency. Wed., 10.15 a.m., Dr. C. H. Miller: Clinical Demonstrations. Sat., 10.15 a.m., Dr. R. Hutchison: General Diseases.

MANCHESTER ROYAL INFIRMARY. Thurs., 4.30 p.m., Dr. G. Langley: Significance and Treatment of Irregular Pulse.

MANCHESTER ROYAL INFIRMARY. Tues., 4.30 p.m., Dr. W. F. Shaw: Urinary Symptoms in Gynaecology.

MANCHESTER: ST. MARY'S HOSPITALS (Whitworth Street West Branch).—Fri., 4.30 p.m., Dr. Fothergill: Pelvic Varicocele.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W. Daily: In- and out-patient attendances. Mon., 5.30 p.m., Lecture by Dr. Goodall: Extra-Systoles and their Significance.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.—Thurs., 6 p.m., Chesterfield Lecture, Dr. J. L. Bunch: Pruritus and Itching Diseases of the Skin.

SHEFFIELD UNIVERSITY: AT JESSOP HOSPITAL.—Tues., 3.30 p.m., Fri., 4.15 p.m., Mr. King: Gynaecological Cases.

UNIVERSITY COLLEGE, Gower Street, W.C.1.—Fri., 4.30 p.m., Dr. J. C. Drummond: Nutrition.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Lectures:—Mon. and Thurs., 5 p.m., Mr. D. Armour: Practical Surgery; Tues., 12 noon, Mr. Sinclair: Subphrenic and Liver Abscess; 5 p.m., Mr. B. Davis: Nasal Deafness; Wed., 5 p.m., Mr. Simmonds; Surgical Emergencies; Fri., 5 p.m., Mr. MacDonald: Cystitis.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westraud, London).
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SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

NOVEMBER.

4 Fri. London: Post-Graduate Courses Committee, 2.30 p.m.
8 Tues. Sheffield Division, Church House, St. James Street, Sheffield, 8.30 p.m.
10 Thurs. Hampstead Division. Hampstead General Hospital, Haverstock Hill, 8.30 p.m.
London: Central Ethical Standing Subcommittee, 2.15 p.m.
11 Fri. Essex Branch, Annual Meeting, Red Lion Hotel, Colchester. 3.30 p.m., Council Meeting, 3 p.m.
15 Tues. Croydon Division, Croydon General Hospital, 8.15 p.m., Dr. Geoffrey Marshall: Pulmonary Tuberculosis and Modern Medicine.
London: Grants Subcommittee, 2.30 p.m.
Northampton Division: Lecture by Dr. Robert Hutchison.
17 Thurs. London: Journal Committee, 2.30 p.m.
Birmingham Branch. Lecture by Sir William Thorburn.
22 Tues. London: Organization Committee, 12 noon.
23 Wed. South Middlesex Division, St. John's Hospital, Twickenham, 8 p.m. Paper by Dr. A. M. H. Gray: Skin Diseases commonly met with in General Practice.
30 Wed. Leicester and Rutland Division: Lecture by Dr. C. O. Hawthorne, 3 p.m.

DECEMBER.

14 Wed. North Middlesex Division. Lecture by Colonel L. W. Harrison: Treatment of Gonorrhoea in General Practice.

APPOINTMENTS.

CRESSWELL, Thomas H., D.O.Oxon., M.R.C.S., L.R.C.P.Lond., Ophthalmic Surgeon to the Lincoln County Hospital.

DIGGLE, F. Holt, F.R.C.S.Eng., Assistant Honorary Surgeon to the Manchester Ear Hospital (All Saints').

GEMMILL, William, M.A., M.B., Ch.B.Edin., F.R.C.S.Eng., Honorary Surgeon to Out-patients, Queen's Hospital, Birmingham, vice Bernard J. Ward, F.R.C.S.

JUDD, W. Rossell, M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer of Health, Audenshaw (Manchester) District.

MARTIN, William, M.A., B.Sc., M.B., C.M.Glas., Honorary Surgeon to the King Edward VII Hospital, Cardiff.

EDINBURGH ROYAL INFIRMARY.—The following appointments have been made:—Clinical Assistants: C. G. Lambie, M.B., Ch.B., to Professor Meakins; Miss Jessie Craig, M.B., Ch.B., to Professor Meakins; C. E. Meryon, M.B., Ch.B., L.R.C.P., to Dr. Norman Walker; W. R. Clayton Hesslop, M.D., F.R.C.S., D.P.H., to Mr. Lees; Wm. Barclay, M.B., Ch.B., F.R.C.S.Ed., to Dr. J. D. Lithgow.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTH.

FENTON.—On October 24th, at Farfield House, Kidderminster, the wife of V. N. Fenton, M.B., B.Ch.Cantab., of a son.

Printed and published by the Editor of the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 12TH, 1921.

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British Medical Association.

CURRENT NOTES.

Annual Meeting, Glasgow, 1922.

THE Arrangements Committee for the Annual Meeting in Glasgow next year has held its first meeting and laid down the general lines upon which the meeting will be conducted. The Committee will meet again early in December to consider further the provisional programme for the work of the Sections, and this will be put before the Council of the Association for confirmation at its meeting on December 14th. The Arrangements Committee consists of the officers of the Association—namely, the President, Dr. David Drummond (Newcastle), the Chairman of Representative Meetings, Dr. R. Wallace Henry (Leicester), the Chairman of Council, Dr. R. A. Bolam (Newcastle), and the Treasurer, Dr. G. E. Huslip (London); six local representatives of the Executive Committee in Glasgow—namely, the President-elect, Sir William Macewen, Dr. Freeland Fergus, Dr. William Snodgrass, Mr. R. H. Parry, Dr. John Patrick, and Dr. G. A. Allen, Honorary Local Secretary; and six members elected by the Council—Mr. R. J. Willan (Newcastle), Professor C. J. Martin and Sir Humphry Rolleston (London), Mr. C. P. Childe (Portsmouth), Mr. Percy Sargent (London), and Professor Arthur J. Hall (Sheffield). It is hoped to follow next summer the plan found so successful in recent years of arranging afternoon demonstrations in connexion with the work of each Section. The Annual Representative Meeting at Glasgow will begin on Friday, July 21st. The statutory Annual General Meeting of the Association will be held on Tuesday, July 25th; on the same evening Sir William Macewen will give his Presidential Address; and the Sections will meet as usual on the three following days. In a forthcoming issue of the JOURNAL we shall begin the publication of a series of descriptive and historical articles on the city and port of Glasgow, its University and medical school, the hospitals and other institutions, and the places of interest in Glasgow and the neighbouring West Highlands.

Colonial Medical Services.

In the SUPPLEMENT of August 20th and September 17th there appeared correspondence, dated June 9th to August 13th, 1921, between the British Medical Association and the Colonial Office in connexion with the status, pay, and prospects of officers of the Colonial Medical Services. As a result of long negotiations relations have now been established between the Association and the Colonial Office whereby, it is confidently anticipated by the Dominions Committee, the Association will be in a much better position to safeguard the interests of its members in the colonial services and the medical interests of the colonies and protectorates generally. The letter from the Colonial Office of August 13th stated that directions have been given by the Secretary of State whereby printed documents prepared by the Colonial Office or received by it from the Colonial Governments, specially affecting medical officers, will be furnished to the Association. Further, the Association, on October 6th, received from the Secretary of State a copy of a letter sent by him on August 30th to the governors of the colonies and protectorates, dealing especially with the proposals of the late Departmental Committee, and the question of the policy to be adopted by the Secretary of State in respect of those proposals. It is hoped to publish a further note on the subject at an early date.

Canadian Immigration Regulations.

Reference has been made more than once recently in this column (SUPPLEMENT, December 4th, 1920, p. 149, and April 30th, 1921, p. 159) to the regulations of the Canadian Government affecting immigration, which have considerable importance to medical practitioners in this country because of the medical examination and detailed certificate which is required by all persons intending to emigrate to Canada. *The Immigration Act and Regulations* is the title of a volume of some 70 pages which has recently been issued by the Canadian Minister of Immigration and Colonization, but as this naturally contains much that is not immediately germane to the medical point of view, that aspect may be summarized as follows:

Idiots, imbeciles, feeble-minded persons, epileptics, insane persons, and also persons who have been insane at any time previously, having been either in an asylum, private nursing home, or at home for treatment, are absolutely prohibited from entering into Canada (Section 3, Subsection *d*). Any persons afflicted with tuberculosis in any form—which naturally includes tuberculous glands—or with any loathsome disease, or any disease which is contagious or infectious, are also prohibited not only from emigrating to Canada, but also from passing through Canada (Section 3, *b*). Any emigrant who is physically defective in any way whatever is always liable to be certified to the civil examiners on this account—that is, from the Department of Health point of view—although the Board of Inquiry of the Canadian Department of Immigration has it in its power to admit such persons under a bond that they will never become public charges (Section 3, *c*). Included also among those emigrants whose entry is prohibited are persons of constitutional psychopathic inferiority (Section 3, *h*), persons suffering from chronic alcoholism (Section 3, *h*) and persons who are mentally or physically defective (Section 3, *m*), including persons who are below normal mentality, but not sufficiently so to be placed in Section 3, *a* as feeble-minded, imbeciles, or idiots.

The report and medical certificate which has to be filled up by the medical examiner of intending emigrants is very comprehensive, and it is evident that the Canadian authorities are not inclined to give those persons who are intending to make their future homes in the Dominion the benefit of any doubt regarding their physical or mental condition. Recently, for instance, it was brought to our notice that a case of epilepsy, and another of arthritis, had been refused entry into Canada, and in both of these cases it was extremely probable that the medical examiner could detect nothing at the time of examination. The conditions, however, could both have been brought to light if the medical examiner had emphasized the strictness with which the Canadian authorities have been carrying out

their regulations, and the troubles that lie in wait for the emigrant if he does not disclose to the medical examiner any condition from which he has suffered. The acceptance, from the medical standpoint, by the Canadian authorities on this side of a prospective emigrant for Canada is based entirely on this certificate, as it is not possible to examine every emigrant individually. When, however, the authorities here have recommended an emigrant to proceed to Canada on this certificate, and that person is found by the Canadian medical authorities on the other side to be suffering from some defect, he is deported, unless he has special civil qualifications which may be taken into consideration, or has a family in Canada who are willing and able to give a bond that he will never become a public charge.

It is obviously a very serious matter for a man who has sold up his home in this country, bought a ticket, and left hopefully for Canada, to find when he arrives at his port of entry that, owing to some mental or physical defect in himself or his family, he is liable to be deported and to lose practically all he possesses. This possibility can be prevented if the medical certificate is filled in comprehensively by the medical examiner, and if the full details of any disability, however slight, that the prospective emigrant has, are noted.

Meetings of Branches and Divisions.

Birmingham Branch: Dudley Division.

The annual meeting of the Dudley Division was held on October 27th, when the following officers were elected:

Chairman: Dr. G. K. Gifford. *Vice-chairman*: Dr. F. M. Tibbetts. *Honorary Secretary and Treasurer*: Dr. L. A. Taylor. *Representatives on Council of Birmingham Branch*: Drs. F. M. Tibbetts and L. A. Taylor. *Representative on Representative Body* (conjointly with Bromsgrove): Dr. T. M. Tibbetts.

A very successful dinner—the first to be held by the Division—took place at the Saracen's Hotel, Dudley, prior to the meeting, and was attended by seventeen members.

Metropolitan Counties Branch: Willesden Division.

A meeting of the Willesden Division was held at St. Andrew's Parish Hall, Willesden Green, N.W., on October 18th, when Dr. C. T. G. Scott was in the chair.

Correspondence was read from (*a*) the Willesden Ratepayers' Associations, stating that representatives would attend the meeting of the Division on November 15th for the purpose of ascertaining the views of the local profession upon the medical services of the Willesden District Council; (*b*) from the Medical Secretary regarding the arrangements made in Manchester between the local profession and guardians as to the treatment of patients in the Poor Law hospital, and also upon a question raised by a local practitioner as to the fee for life insurance examination.

Dr. W. Paterson presented his report on the proceedings of the Annual Representative Meeting in Newcastle-upon-Tyne.

Dr. C. E. Goddard, O.B.E., vice-chairman of the Harrow Division, in a paper on Lister and his times, gave a description of the evolution of the system which Lister inaugurated and a sketch of his family history. A most enjoyable address was the more eagerly listened to because of the fact that the speaker had served under Lord Lister, and had been acquainted with his family, which enabled him to give many personal reminiscences.

The Chairman and others present warmly congratulated Dr. Goddard upon one of the most attractive addresses which it had been their good fortune to listen to. It was suggested that other Branches might well invite Dr. Goddard to read a similar paper to them. The interest of Dr. Goddard's address was increased by the exhibition of a collection of portraits of Lord Lister, and pictures of persons and places associated with his name. He was accorded a hearty vote of thanks.

The Honorary Secretary and the Chairman (who was one of the representatives of Middlesex Panel Committee at the Conference on the following Thursday) explained the situation fully regarding the insurance capitation fee. After an exhaustive discussion it was agreed that the Chairman, having heard the views of those present, should use his discretion in voting at the Conference.

The Chairman explained the action which had been taken by the Executive Committee in inviting representatives of the local Ratepayers' Associations to be present at the next meeting. This was approved.

Metropolitan Counties Branch: Lewisham Division.

A meeting of the Lewisham Division was held at the Priory, High Street, Lewisham, on October 25th, when Dr. G. W. Charsley occupied the chair. Dr. J. E. Forster gave his experiences in the treatment of gonorrhoea. He was of opinion that anterior lavage early in the disease was a cure, even if sterile water was used without antiseptics. He believed gonorrhoea to be incurable once it reached the posterior part of the urethra in the male and the cervix in the female.

North of England Branch: Hartlepool Division.

The Hartlepool Division of the British Medical Association held its first annual dinner on October 22nd in the Grand Hotel, West Hartlepool, when the chairman of the Division Dr. Arnold Biggart, presided. Invitations had been issued to non-members as well as members, and it was most gratifying to note that almost every medical man in the district was present. After the Royal toasts had been honoured, Dr. Gibb (Hartlepool) proposed the toast of the Association, and the Chairman responded in a few well-chosen words. He expressed his great pleasure on presiding at the first Association dinner in the district, and hoped that the dinner would have many annual successors. He urged the claims of the Association, and pointed out how it had fought to improve medical conditions locally within the last fifteen years with unquestionable success. He asked those still outside the Association to consider the question of coming in, and of helping by giving their valued criticism from the inside.

It had been proposed to hold a golf competition in the afternoon, but the inclement weather caused the postponement of the match. A silver challenge cup, presented by Dr. Biggart, will be competed for.

Meetings to be Held.

Birmingham Branch.—A meeting of the Branch will be held at the Medical Institute, Edmund Street, on Thursday, November 17th. The chair will be taken by Dr. T. Sydney Short, President, at 3.30 p.m. A British Medical Association Lecture will be given by Sir William Thorburn, K.B.E., C.B., C.M.G., on "The Diagnosis and Treatment of Tumours of the Spinal Cord." The lecture will be followed by a discussion.

Dorset and West Hants Branch: West Dorset Division.—A meeting of the West Dorset Division, to which non-members are invited, will be held on Thursday, November 24th, when an address will be given by the Deputy Medical Secretary, Dr. G. C. Anderson.

Essex Branch: South Essex Division.—Further meetings of the South Essex Division will be held on Thursday, December 8th, at the Palace Hotel, Southend-on-Sea, at 8.15 p.m., when Sir Berkeley Moynihan, K.C.M.G., C.B., will read a paper on the Diagnosis and Treatment of Gastric Ulcer (illustrated by original lantern slides). On January 13th, 1922, there will be a supper at the Hotel Victoria, at 8.15 p.m., and on February 10th, at the same place, at 8.15 p.m., Dr. F. W. Price will read a paper, illustrated by original lantern slides, on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease. At the meeting on March 10th, at the Hotel Victoria, at 8.15 p.m., Dr. Hector C. Cameron will discuss the subject of The Child in General Practice; and on April 14th, at 8.15 p.m., there will be a supper at the Hotel Victoria.

Kent Branch: Rochester, Chatham, and Gillingham Division.—A meeting of the Division will be held at St. Bartholomew's Hospital, Rochester, on Tuesday, November 15th, at 4 p.m. Dr. Parsons will read a paper entitled "Some Reminiscences of General Practice."

Metropolitan Counties Branch: Willesden Division.—A meeting of members and non-members will be held at St. Andrew's Parish Hall (Institute behind church), High Road, Willesden Green, at 8.30 p.m., on Tuesday, November 15th. Agenda: (1) Minutes, correspondence, etc. (2) Consider medical services of Willesden District Council, scale of charges, etc. (3) Formulate resolutions thereon to place before various bodies concerned. (4) Approve or otherwise proposed meeting with delegates of Willesden Ratepayers' Associations on December 20th. (5 Determine procedure at December meeting. (6) Consider steps, if any, to be taken in connexion with Willesden municipal election in March next.

North of England Branch: North Northumberland Division.—The second annual dinner of the North Northumberland Division will be held in the Plough Hotel, Alnwick, on Tuesday, November 15th.

South Midland Branch: Northamptonshire Division.—A meeting of the Division will be held at the Peacock Hotel, Northampton, on Thursday, November 17th, at 2.30 p.m. Dr. Robert Hutchison will give an address on Some Common Ailments of Childhood and their Treatment. A luncheon will be provided at 1.30 p.m., price 3s. 6d., and it is hoped that members will make a special effort to be present.

Surrey Branch: Croydon Division.—Monthly meetings will be held this winter on the third Tuesday in each month, at 8.15 p.m., at the Croydon General Hospital. The following syllabus has been arranged, and, in order to make the session a success, it is hoped that members will attend as many of the meetings as possible and bring their friends; non-members are cordially invited as guests. November 15th, Dr. Geoffrey Marshall, O.B.E.: Pulmonary Tuberculosis and Modern Medicine. December 20th, Dr. J. Bright Banister: Obstetrics and Gynaecology. January 17th, 1922, Dr. R. D. Passey, M.C.: Clinical Pathology and Vaccine Therapy. February 21st, Dr. A. M. H. Gray: Treatment of Skin Affections. March 21st, Mr. F. J. Cleminson: Diseases of Nose and Throat (with special reference to children). Wednesday, April 19th, 3.30 p.m., annual general meeting, followed by clinical meeting.

YORKSHIRE BRANCH: WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION.—A joint meeting of the Wakefield Division and the Doncaster Medical Society, to which all members of the profession in the Yorkshire Branch area are invited, will be held at the Danum Hotel, Doncaster, on Tuesday evening, November 15th, at 9 p.m. Prior to the meeting the assembly will dine together at the Danum Hotel at 8 p.m. (morning dress). The guest of the evening will be Dr. Alfred Cox, Medical Secretary, who will give an address on "A Perfect Medical Organization." Those intending to be present are requested to notify Dr. Callander, 22, Balby Road, Doncaster, not later than November 12th. (Price of dinner tickets, 10s., exclusive of wine.)

Insurance.

NATIONAL INSURANCE IN IRELAND.

THE National Health Insurance Joint Committee has appointed a committee to consider the steps necessary to carry out the provisions of the Government of Ireland Act in respect of national health insurance. The membership of the committee is as follows:

Sir Alfred W. Watson, K.C.B., Government Actuary (Chairman).
Mr. J. A. Dale, Permanent Secretary of the Ministry of Labour (Northern Ireland).
Sir Joseph Glynn, Chairman of the National Health Insurance Commission (Ireland).
Mr. N. L. Gwyer, C.B., Solicitor to the Ministry of Health.
Sir Walter S. Kinnear, K.B.E., Deputy Chairman of the National Health Insurance Joint Committee.
Mr. E. J. Strohmenger, C.B., Financial Adviser to the National Health Insurance Joint Committee.

Communications should be addressed to the Secretary of the Committee, Mr. G. S. W. Epps, Government Actuary's Department, Buckingham Gate, London, S.W.1.

LONDON LOCAL MEDICAL AND PANEL COMMITTEE.

Range of Medical Service. At the meeting of the London Local Medical Committee on October 25th it was agreed that Wassermann tests and tests of sterility did not fall within the category of "services which are of a kind which can, consistently with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill." A practitioner was desired by an insured person on his list to carry out tests of this description. He was able, owing to his special experience in this class of work, to make the tests, but he did not consider that the services were such as came within the competence of an ordinary practitioner, nor such as the insured person was entitled to as part of medical benefit. The Insurance Committee, to which the matter was referred, requested the opinion of the Local Medical Committee, with the above result.

Alleged Excessive Prescribing. The Committee investigated a case of alleged excessive prescribing in which 21 oz. of rhubarb root had been prescribed, at a cost of £1 1s. 7d., over a period of eight months. It was elicited that the patient was a diabetic, suffering from constipation, and the Committee took the view that the explanation given by the practitioner was satisfactory, and that there had not been over-prescribing.

Anomaly in Allocation Scheme.—A practitioner on the London Panel who had more than 3,000 insured persons on his list sent in a list of names to be removed at the end of the year. After he had submitted the list one of the insured persons named therein became ill and was treated by the practitioner. After the end of the year the practitioner informed him that he was unable to treat him further, and in consequence the practitioner was found guilty of a technical offence, in view of the fact that an insured person cannot be removed from a practitioner's list until fourteen days after the date on which he is declared fit to resume work. On the case being brought before the Panel Committee it was agreed to send a deputation to the Minister of Health with reference to the apparent miscarriage of justice, and with a view to the removal of the anomaly by which a practitioner, in the circumstances mentioned, must fail to comply with one or other of the terms of the Allocation Scheme.

Correspondence.

Insurance Certificates.

SIR,—Dr. J. C. Jones[1] protests somewhat late against a grievance which, though mitigated by the introduction of the pink certificate, should be removed. Under old club rules the sick and disabled were visited regularly by a club officer who knew them, and this was easy, as a member who left the district had to join another lodge. When the Act came in, members were multiplied immensely, and whatever their migration, remained attached to their original lodge. In a single Scottish county 11,000 out of about 70,000 members migrated in fifteen months; of 260 societies having members in the area, 125 had less than 50, and 59 only one.[2] Clearly the task of visiting assumed unprecedented difficulty. Under these circumstances the society officials appear to have hit upon an ingenious device for making the doctors into unpaid visitors of the societies, and at the same time regaining that control over them which Parliament had decreed they should not have. Presumably at the instigation of these officials, the Commissioners first juggled with the certificates so as to make it necessary for the doctor to see, which in rural practice means generally to visit, the patient on each occasion, then imposed an entirely new rule rendering such certificates essential every week. To complete the scheme, they made the society officer sole arbiter of the necessity of such certificate, even where the party was permanently disabled and needed no medical attention at all. Now it is obvious that, apart from the satisfaction afforded to society officials, there is no more obligation upon a doctor to visit such person weekly in order to save a journey to the club visitor, than to call in order to collect his washing; but such considerations had no weight with the Commissioners, and the iniquity was duly perpetrated, involving not only gross hardship to rural doctors, especially in certain districts of Wales and Scotland, but grave risk to those insured persons therein who really need attention. Plainly the regular visitation of disabled persons who need no medical attention is the duty of club visitors alone, and should be relegated to them. Again, the repetition on each intermediate certificate of the patient's complaint is not only superfluous, involving in the aggregate much waste of doctor's time, but is in certain cases likely to depress the patient. I would suggest that the diagnosis, having been once put upon the first certificate, should not be repeated until the final certificate is given, unless it is altered in the interval. A symbol—for example, "U.T." (ut ante)—should suffice upon intermediate certificates.—I am, etc.,

Chichester, Oct. 30th. G. C. GARRATT.

Capitation Fee and Income Tax.

SIR,—When a man starts in to nail a statement to the counter he ought to be very careful to see that the props of that counter are secure, since otherwise it may act as a spring board and hit him back.

If Dr. Young of Harston had done this before he wrote his letter of October 22nd in the SUPPLEMENT he would not have used the following as a main prop: "Now with income tax at 6s. in the £." If all the Cambridgeshire doctors are paying at that rate, it is obvious that our profession are doing far better in East Anglia than we are in the West Country.

On the other hand, it is just possible that the sands of the East Coast watering places have so successfully advertised the net sales of one of our valued daily papers that everybody reads it; and having for so long seen so many reasons why this is so, that at last they really believe that "Your income tax is 6s. in the £."—I am, etc.,

Barnstaple, Oct. 23rd. HERBERT C. JONAS.

[1] BRITISH MEDICAL JOURNAL SUPPLEMENT, p. 151.

[2] Medical Benefit in Scotland. By W. M. Marshall, p. 9.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:—Surgeon Commanders: G. D. Bateman to the *Yarmouth* and to the *Pegasus* on arrival; E. S. Rowson to the *Yarmouth* for voyage home; W. H. Hastings to the *Ocean* temporary; W. K. D'Breton to the *Conqueror*. Surgeon Lieutenants: C. N. Carter to the *Magdala*, A. H. Harkins to the *Forager*, A. B. Grant to the *Hazybank*, N. H. Davison to the *Cluebird*, J. F. M. Campbell to the *Excellent*.

The following Surgeon Lieutenant-Commanders have been promoted to the rank of Surgeon Commander: R. J. G. Parnell, J. H. B. Martin, F. L. Smith, T. C. Patterson, A. Fairley, A. G. V. French, C. Sprague, A. C. Rusack.

The following Surgeon Lieutenants have been promoted to the rank of Surgeon Lieutenant Commander: A. Craig (temporary), A. G. McKee.

F. M. Rorie has entered as Surgeon Lieutenant for short service and appointed to Haslar Hospital.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel E. E. Powell, D.S.O., is retired on retired pay and is granted the rank of Colonel.

Major and Brevet Lieut.-Colonel G. F. Sheehan, D.S.O., is placed on the half-pay list on account of ill health.

Major J. M. Culbert retires on retired pay.

Temporary Lieutenant J. W. H. Steil to be Temporary Captain, September 29th (substituted for the notification in the *London Gazette* of October 7th, 1921).

The following Temporary Captains relinquish their commissions and retain the rank of Captain: D. F. Playson, G. D. K. Waldron, A. A. Watson.

Lieutenant (Temporary Captain) M. C. Paterson, M.C., to be Captain.

J. D. Leahy to be Temporary Lieutenant.

REGULAR ARMY RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS

Captain H. W. Vaughan-Williams, D.S.O., having attained the age limit of liability to recall, ceases to belong to the Reserve of Officers.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS

Captain K. N. G. Bailey relinquishes his commission and retains the rank of Captain.

Captain J. M. Darling, D.S.O., to be Major.

DEFENCE FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Temporary Colonel F. G. Proudfoot relinquishes his temporary appointment as A.D.M.S., and also his temporary commission.

Temporary Major C. J. Martin, O.B.E., relinquishes his temporary appointment of D.A.D.M.S. and also his temporary commission.

Temporary Major C. H. Lindsay, C.M.G., D.S.O., relinquishes his temporary commission, July 10th, 1921 (substituted for notification in the *London Gazette*, September 27th, 1921).

J. Grant-Johnston to be temporary Major from July 1st to July 19th, 1921, and appointed D.A.D.M.S. for the same period.

1st East Anglian Field Ambulance. Temporary Captain C. S. Staddon, M.C., relinquishes his commission.

1st East Anglian Sanitary Section. Temporary Captain G. T. Stewart-Taylor relinquishes his commission and retains the rank of Captain.

2nd North Midland Field Ambulance. Temporary Lieut.-Colonel A. T. Milner (late O.C. 2nd R.A.M.C.) relinquishes his temporary rank.

South Midland Sanitary Section. Temporary Captain W. H. S. Dunn relinquishes his commission.

The following officers relinquish their commissions: Temporary Major C. E. Walker; Temporary Captains A. H. Fullerton, E. E. Elliott (on being retained the rank of Captain), F. W. Wesley, D. Craig; Temporary Lieutenants O. G. Misquith, G. L. Lyon-Smith.

DIARY OF SOCIETIES AND LECTURES.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester Square, W.C.—Tues., 4.30 p.m. Pathological Specimens and Cases.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1. Mon., 8 p.m., Clinical Evening. Cases will be exhibited from 8 to 9 p.m., followed by a discussion.

ROYAL SOCIETY OF MEDICINE.—*General Meeting of Fellows*, Tues., 5 p.m. *War Section*: Mon., 5.30 p.m. Dr. W. Wallace: Ophthalmoscopic Demonstration of War Injuries of the Fundus of the Eye. *Section of Pathology*: Tues., 8.30 p.m., Dr. W. E. Gye and Dr. W. J. Purdey: Poisonous Properties of Colloidal Silica. Mr. A. T. Glenny and Miss Allen: A Staining Epicuticle associated with Dietary "Deficiency." Professor F. Hobday: Cleft Palate in Animals. Mr. J. B. Buxton and Mr. A. T. Glenny: Active Immunization against Tetanus in Horses with Toxin-antitoxin Mixtures. Dr. H. J. Sudmersen and Dr. Eagleton: Standardization of Dysentery Serum, Protective and Neutralizing Antibodies. *Section of History of Medicine*, Historical Medical Museum, 54A, Wigmore Street, W.1: Wed., 5 p.m., Dr. Charles Singer (President): Museum Specimens illustrating Ancient Greek Medicine. Dr. M. B. Ray: Egyptian Deities associated with Healing. *Section of Tropical Diseases and Parasitology*: Wed., 8.30 p.m., Drs. W. Broughton Alcock and J. Gordon Thomson: (1) Description of Oocysts of *Eimeria oxuspora* Dobell, 1919, with notes of a new case; (2) *Undulatomonas intestinalis* (Wenyon and O'Connor), 1917; Description of Cysts and Free Forms with notes of a new case. Professor R. T. Leiper, Dr. M. Khalil, and Mrs. Philpots M.Sc.: Demonstration and Notes on Helminth. *Section of Dermatology*: Thurs., 4.30 p.m., Cases. *Section of Otology*: Fri., 4.45 p.m. Cases: 5 p.m. Mr. Sydney Scott and Mr. I. D. D. Davis. Short Papers: Dr. V. A. Gray and Mr. A. R. Tweedie. *Section of Electro-therapeutics*: Fri., 8.30 p.m., Dr. Frans Daels (Ghent): (1) Histological Pictures of Curing of Uterine Baso-cellular Epithelioma; (2) Irradiation of True Pelvis with the help of Drainage Tubes. Dr. G. Fildes: The Potter-Bucky Diaphragm.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—Laboratory Meeting at the London School of Tropical Medicine, Endsleigh Gardens, N.W., Thurs., 8.15 p.m., Demonstrations.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST GRADUATE MEDICAL ASSOCIATION, Royal Hospital for Sick Children, Wed., 4.15 p.m., Dr. L. Findlay: Medical Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Dr. F. J. Poynton: Medical Calamities in Childhood.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. William Brown: Psychology and Psychotherapy. Wed., 4.30 p.m., Dr. C. Da Fano: Histology of the Nervous System.

LONDON HOSPITAL MEDICAL COLLEGE.—Diseases of Children: Mon., 9.15 a.m., Dr. F. Thompson: Organic and Functional Nervous Diseases and Mental Deficiency. Wed., 10.15 a.m., Dr. C. H. Miller: Clinical Demonstrations. Sat., 10.15 a.m., Dr. R. Hutchison: General Diseases.

MANCHESTER ROYAL INFIRMARY, Tues., 4.30 p.m., Dr. C. H. Melland: Prognosis and Treatment of Pernicious Anaemia.

MANCHESTER: ST. MARY'S HOSPITALS (Whitworth Street West Branch), Fri., 4.30 p.m., Mr. Morley: Abdominal Tuberculosis.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.: Daily, In- and Out-patient Attendances, Mon., 2 p.m., Lecture by Dr. Price: Depressed Conductivity: Heart-block.

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., In- and Out-patient Clinics. Operations. Mon., 4.30 p.m., Mr. J. Bright Banister: Toxaemias of Pregnancy; Fri., 4.30 p.m., Mr. E. Gillespie: Treatment of Paralysis by Orthopædic Methods.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell Square, W.C.—Wed., 4 p.m., Professor S. Lyle Cummins, C.B., C.M.G.: Tuberculosis in Relation to Industry.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.—Thurs., 6 p.m., Clinical Lecture by Dr. W. K. Sibley: Electrical Treatments, Localized Gas.

SAMARITAN FREE HOSPITAL, Tues., 4.30 p.m., Mr. R. Ollerenshaw: Deformities Dealt with Orthopædically. Cases.

SHEFFIELD UNIVERSITY.—At Royal Infirmary, Tues., 3.30 p.m., Professor Connell: Fractures. 4.15 p.m., Dr. Yates: Asthma. At Royal Infirmary, Fri., 3.30 p.m., Dr. Barnes: Demonstration of Cases; 4.15 p.m., Dr. Kerr: Demonstration of Cases.

UNIVERSITY COLLEGE, Gower Street, W.C.—Fri., 4.30 p.m., Dr. J. C. Drummond: Nutrition.

WEST LONDON POST GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Lectures: Mon. and Wed., 5 p.m., Mr. D. Armour: Practical Surgery; Tues., 5 p.m., Mr. B. Davis: Nasal Catarrh; Thurs., 12 noon, Dr. S. Pinch: Diseases of the Heart; 5 p.m., Dr. Simson: Modern Development in the Management of Labour; Fri., 5 p.m., Dr. Burrell: Sanatorium Treatment.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Telegrams: Articulate, Westrand, London).

MEDICAL SECRETARY, Telegrams: Medisecta, Westrand, London.

EDITOR, *British Medical Journal* (Telegrams: Articology, Westrand, London).

Telephone number for all Departments: Gerrard 2630 (3 lines).

SCOTTISH MEDICAL SECRETARY, 7, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel. 4361 Central.)

IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel. 3737 Dublin.)

Diary of the Association.

NOVEMBER.

11 Fri. London: Contract Practice Sub-committee, 2.30 p.m.

15 Tues. Croydon Division, Croydon General Hospital, 8.15 p.m., Dr. Geoffrey Marshall: Pulmonary Tuberculosis and Modern Medicine.
London: Grants Sub-committee, 2.30 p.m.
North-Northumberland Division: Second Annual Dinner, Punch Hotel, Alnwick.
Rochester, Chatham, and Gillingham Division, St. Bartholomew's Hospital, Rochester, 4 p.m.
West Somerset (Branch), Taunton and Somerset Hospital: B.M.A. Lecture by Dr. William Hunter, C.B., on The Anaemias, 4.30 p.m.
Wakefield, Pontefract, and Castleford Division, Danum Hotel, Doncaster, 9 p.m.: Address by Dr. Alfred Coxon on a Perfect Medical Organization. Dinner, 8 p.m.
Willesden Division, St. Andrew's Parish Hall, High Road, Willesden Green, 8.30 p.m.

17 Thurs. London: Insurance Acts Committee, 2.30 p.m.
London: Journal Committee, 2.30 p.m.
Birmingham Branch, Medical Institute, Edmund Street, 3.30 p.m. B.M.A. Lecture by Sir William Thorburn, K.B.E., C.B., C.M.G., on the Diagnosis and Treatment of Tumours of the Spinal Cord.
Northamptonshire Division, Peacock Hotel, Northampton, 2.30 p.m.: B.M.A. Lecture on some Common Ailments of Childhood and their Treatment, by Dr. Robert Hutchison. Luncheon 1.30 p.m.

22 Tues. London: Organization Committee, 12 noon.

23 Wed. South Middlesex Division, St. John's Hospital, Twickenham, 8 p.m. Paper by Dr. A. M. H. Gray: Skin Diseases commonly met with in General Practice.

24 Thurs. West Dorset Division: Address by the Deputy Medical Secretary.

29 Tues. London: Medico-Sociological Committee, 2.45 p.m.

30 Wed. Leicester and Rutland Division. B.M.A. Lecture by Dr. C. O. Hawthorne, 4 p.m.

APPOINTMENTS.

BILCLIFFE, Edward J., M.R.C.S., L.R.C.P., Senior House-Surgeon to the County Hospital, Lincoln.

FERGUS, John, M.A., M.D. Glasg., F.R.F.P.S.G., Assistant Physician to the Glasgow Royal Infirmary.

GUERIE, N., M.D., D.P.H., Medical Officer of Health for the Borough of Hyde, Cheshire.

ROBERTSON, Robert Cecil, M.D., Pathologist to the Bellahouston Hospital (Ministry of Pensions), Glasgow.

TAYLOR, Charles, G., M.A., M.D., B.Ch., Oxon., Honorary Surgeon to the Nuneaton and District General Hospital.

WHITEHOUSE, Beckwith, M.S. Lond., F.R.C.S., Assistant to the Chair of Midwifery and Diseases of Women, University of Birmingham, vice John T. Hewetson, F.R.C.S.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTHS.

MCCOMBIE.—On November 3rd, at Northcote, East Kirkby, Notts, the wife of William McCombie, M.B., Ch.B., of a son.

MACKINNON.—On October 31st, at 85, Union Street, West, Oldham, to Dr. and Mrs. Ronald Mackinnon, a son.

MARRIAGE.

GALE—MILLARD.—At Doncaster, on September 28th, James Newlyn Gale, M.B., Ch.B., of Crott House, Tutbury, Burton-on-Trent, to Isobel Helen, second daughter of the late F. W. Millard.

Published by the British Medical Association, Office, No. 429, Strand, in the Parish of St. Mary-le-Strand, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 19TH, 1921.

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British Medical Association.

CURRENT NOTES.

Income Tax Assessment: Cash Basis or Book Debt System.

OWING to the number of letters of inquiry received from medical practitioners stating that they had been asked to give an account of their book debts for assessment of income tax instead of submitting their cash receipts, it was decided to approach the Commissioners of Inland Revenue in order to find out what was really considered the correct method of assessment. A letter was therefore addressed to the Commissioners asking for an opportunity to discuss the question with them, and, as a result, a Principal Inspector met two officials of the Association on November 1st at Somerset House.

He began by making it clear that no authoritative statement on the respective merits of the cash or book debt systems could be made—that is to say, the Commissioners would not commit themselves one way or the other. Asked if both these systems were legal, he expressed the opinion that according to the reading of the Income Tax Act, 1918, the book debt system was the correct one, but he agreed that the cash basis system had been found by experience to be generally well adapted to the assessment in normal circumstances of medical practitioners, and that it had become the usual custom. Several examples of complaints received by the Editor were cited, and the Principal Inspector expressed the opinion that in a number of these cases there must have been special reasons for the request for a statement of book debts. He agreed that the cash basis system works quite well and is fair to both sides in normal cases, but that frequently special circumstances must arise which would justify including book debts. These opinions confirm those expressed on various occasions in the BRITISH MEDICAL JOURNAL.

Asked if any general instruction had been issued by Somerset House to inspectors of taxes to substitute the book debt system for the cash basis system, he replied emphatically in the negative. He explained that the powers of local Commissioners are very wide, and that it is impossible for the Board of Inland Revenue to issue any general order for the guidance of local Commissioners as to the line of action to be adopted by them, and further, that a policy deliberately adopted by local Commissioners could not be interfered with unless it involved fundamental error. He agreed that the advice given to correspondents through the columns of the JOURNAL was sound and should be continued—namely, that the cash basis system has been recognized by the Commissioners as suitable for the assessment for income tax of the incomes of medical men in established practice, and that it has been almost universally adopted in such cases. He expressed a decided preference for a system by which the balance of the cash accounts is adjusted by reference to the increase or diminution in the value of good debts at the end of each year compared with that at the beginning. He stated that special consideration would be given to any individual who could substantiate a grievance and who put his case up direct to the Board of Inland Revenue at Somerset House.

It was pointed out to him that complaints of the introduction of the book debt system were coming in so frequently and from so many parts of the country that the Association felt that, if no protest were made, the system might become general. He did not appear to fear that any such thing would happen, but said that he did not doubt that the general tightening up of the mechanism for collecting income tax had been responsible for a number of the cases which had occurred.

National Provident Scheme for Hospitals and Additional Medical Services.

The Hospitals Committee of the British Medical Association will shortly be considering the National Provident Scheme for the provision of hospital and additional medical services as originated in Sussex, and since modified to meet the needs of London. The Committee hopes to be in a position to report the result of its deliberations to the meeting of the Council in February next, in order that the Divisions and Branches throughout the country may have an opportunity of fully considering the report with a view to a discussion at the Annual Representative Meeting in Glasgow.

Pensions of Officers Retired from the Colonial Medical Services.

At its last meeting the Dominions Committee had before it correspondence, dated May and June, with the Secretary of State as to the pensions of retired members of the Colonial Medical Services, and especially as to the case of those officers who retired before revised scales of salaries were brought into operation in the various colonies and protectorates. The letter of the Colonial Office dated June 28th was to the effect that it was not possible to give more favourable treatment as regards pensions to medical officers than to any other class of officers in the Colonial Services, but that, in the majority of colonies and protectorates, increases of pensions had been granted generally to officers who retired before salaries were revised, without regard to the limit imposed by Parliament on similar grants to retired officers of the Home Service; that the colonies in which such increases had been granted were Kenya, Zanzibar, Nigeria, Gold Coast, Sierra Leone, Gambia, Windward Islands, Leeward Islands (St. Kitts, Nevis, Antigua), British Guiana, Falkland Islands, British Honduras, Mauritius, Ceylon, Straits Settlements and Federated Malay States, Hong Kong, Bechuanaland Protectorate, Swaziland, Basutoland, Gibralter, Malta, and Cyprus; that medical officers who had retired since the introduction of revised salary schemes, or who were still in the service or might hereafter enter it, would of course obtain the benefit of increased pensions consequent upon the increased salaries; that as regards those East African dependencies which are subject to the financial control of the Treasury (Nyasaland, Somaliland, Tanganyika, and Uganda) the decision as to temporary addition to pensions rested with the Treasury; that the increases approved for officers retired from the Nyasaland, Somaliland, and Uganda services had been calculated in accordance with the instructions given by the Treasury, which only enabled the Secretary of State to grant a temporary addition to pensions based on the additional emoluments which an officer received in the form of war bonus at the date of his retirement; and that the differentiation in the treatment of officers retired from Kenya and Zanzibar on the one hand, and the dependencies subject to the financial control of the Treasury on the other, was due to the fact that under the Act of Parliament the Treasury were unable to agree to the application, to dependencies in receipt of grants voted by Parliament, of the treatment which the late Secretary of State sanctioned in the case of Kenya and Zanzibar, which are not in receipt of aid from imperial funds. The Association had also explicitly raised the case of certain retired officers who had given permission for their names to be cited, and the Secretary of State on June 28th referred to this matter. Copies of the complete reply of the Secretary of State are being sent to those officers, and copies will also be sent to any other members of the Association who apply for them to the Medical Secretary. The Dominions Committee will be glad to have the comments of members, especially retired medical officers, on the foregoing statements by the Colonial Office.

Clinical Work of the Fife Branch.

An interesting experiment has been successfully inaugurated by the Fife Branch. The intention is to hold a number of clinical meetings at regular intervals throughout the winter, and already two have taken place. At the first Professor Meakins, of the Chair of Therapeutics in Edinburgh University, gave an address on the treatment of diabetes. By the courtesy of members a number of cases were shown of varying ages and in different stages of the disease, and their treatment by modern methods was discussed. The second meeting took the form of a skin clinic, which was conducted by Dr. Norman Walker. Both meetings were very well attended. Arrangements for further meetings are being made by the Scottish Medical Secretary, in co-operation with the Branch Council.

Lending Library.

The Librarian will be glad to assist members of the Association in the selection of works to be sent them by post, in accordance with the arrangements for borrowing books that are notified each week on the last page of the Supplement.

Association Notices.

ELECTION OF REPRESENTATIVE BODY.

(a) HOME CONSTITUENCIES.

The Council has provisionally grouped the Home Divisions as shown below. As will be seen, the Council proposes to repeat the 1921–2 grouping, except that the Coventry and Nuneaton and Tamworth Divisions of the Birmingham Branch, and the North and South Suffolk Divisions of the Suffolk Branch, will be separate Constituencies. Any Division objecting, as regards itself, to the proposed arrangements should send to the Medical Secretary, not later than January 9th, a statement of its objection, and of the reason therefor, and of what change the Division would suggest the Council should make.

Election of Representatives: General Meeting or Postal Vote?

The Council urges that the Representative(s) and Deputy-Representative(s) be elected *at once*. Each Constituency of not less than 150 members (according to the Annual List in force at the time of the election) is entitled to elect *an additional Representative* for each complete number of 100 members in excess of 50.

It is a matter for each Constituency to decide for itself whether to elect its Representative(s) and Deputy-Representative(s) by general meeting or postal vote. If by postal vote, a general meeting of the Constituency requires to be held, not later than June 30th, to instruct the Representative(s) (By-law 35(3)).

Special Notice.

Special attention is drawn to the fact that, under By-laws 36 and 37, the Representatives and Deputy-Representatives require to be elected *not later than June 23rd*, and their names to be sent to the Medical Secretary by *June 30th*. The Annual Representative Meeting at Glasgow begins on Friday, July 21st.

(b) OVERSEA CONSTITUENCIES.

As already intimated (Supplement, November 5th, 1921), the Council has decided that each Oversea Division and Division-Branch shall be an independent Constituency in the Representative Body 1922–3, each such Constituency to be entitled to elect one Representative (and Deputy-Representative(s) if the Constituency thinks fit).

PROVISIONAL HOME CONSTITUENCIES FOR ELECTION OF REPRESENTATIVE BODY, 1922–23.

(Divisions bracketed together form one Constituency.)

ABERDEEN
- Aberdeen
- Orkney
- Shetland

BATH AND BRISTOL—
- Bath
- Bristol

BIRMINGHAM—
- Bromsgrove
- Dudley
- Central
- Coventry
- Nuneaton and Tamworth
- Walsall
- West Bromwich
- Warwick and Leamington

BORDER COUNTIES—
- English
- Dumfries and Galloway

CAMBRIDGE AND HUNTINGDON—
- Cambridge and Huntingdon
- Isle of Ely

CONNAUGHT—
- Mid Connaught
- North Connaught
- South Connaught

DORSET AND WEST HANTS—
- Bournemouth
- West Dorset

DURHAM

EAST YORK AND NORTH LINCOLN
- East York
- North Lincoln

EDINBURGH
- Edinburgh and Leith
- South-Eastern Counties
- The Lothians

ESSEX
- Mid Essex
- North-West Essex
- North-East Essex
- South Essex

FIFE

GLASGOW AND WEST OF SCOTLAND—
- Argyllshire
- Dumbartonshire
- Ayrshire
- Glasgow Central
- Glasgow Eastern
- Glasgow North Western
- Glasgow Southern
- Lanarkshire
- Renfrewshire and Buteshire

GLOUCESTERSHIRE

KENT—
- Dover and Folkestone
- Bromley
- Isle of Thanet
- Dartford
- Rochester, Chatham and Gillingham
- Maidstone
- Tunbridge Wells

LANCASHIRE AND CHESHIRE—
- Ashton-under-Lyne
- Glossop
- Birkenhead

LANCASHIRE AND CHESHIRE (*continued*)
Blackburn
Cockroft
Isle of Man
Bolton
Burnley
Bury
Chester
Crewe
Hyde
Stockport, Macclesfield, and East Cheshire
Leigh
Wigan
Liverpool
Manchester
Mid-Cheshire
Oldham
Preston
Rochdale
St. Helens
Warrington
Salford
Southport

LEINSTER
Dublin
East Leinster
Mid Leinster
North Leinster
North-West Leinster
South-East Leinster

METROPOLITAN COUNTIES—
Camberwell
Chelsea
City
Ealing
East Hertfordshire
Enfield and Hendon
Greenwich and Deptford
Hampstead
Harrow
Kensington
Lambeth
Lewisham
Marylebone
North Middlesex
South Middlesex
South-West Essex
Stratford
Tower Hamlets
Wandsworth
West Hertfordshire
Westminster
Willesden
Woolwich

MIDLAND
Chesterfield
Derby
Holland
Kesteven
Leicester and Rutland
Lincoln
Nottingham

MUNSTER
North Munster
South Munster
West Munster

NORFOLK
East Norfolk
Gt. Yarmouth
Norwich
West Norfolk

NORTHERN COUNTIES OF SCOTLAND
Banff, Elgin and Nairn
Caithness and Sutherland
Islands
Inverness and Cromarty
Inverness

NORTH LANCASHIRE AND SOUTH WESTMORLAND
Furness
Kendal
Lancaster

NORTH OF ENGLAND
Bishop Auckland
Durham
Blyth
Morpeth
Cleveland
Consett
Gateshead
Darlington
Hartlepool
Stockton
Hexham
Newcastle-on Tyne
North Northumberland
South Shields
Tyneside
Sunderland

NORTH WALES
Denbigh, Flint, and
N. Carnarvon and Anglesey
S. Carnarvon and Merioneth

OXFORD AND READING
Oxford
Reading

PERTH

SHROPSHIRE AND MID WALES

SOUTH EASTERN IRELAND—
Carlow and Kilkenny
Waterford

SOUTHERN
Channel Islands
Isle of Wight
Southampton
Portsmouth
Winchester

SOUTH MIDLAND
Bedford
Buckinghamshire
Northamptonshire

SOUTH WALES AND MONMOUTHSHIRE
Cardiff
Monmouthshire
North Glamorgan and Brecknock
South-West Wales
Swansea

SOUTH WESTERN
Barnstaple
East Cornwall
Exeter
Plymouth
Torquay
West Cornwall

STAFFORDSHIRE
Mid-Staffordshire
North Staffordshire
South Staffordshire

STIRLING

SUFFOLK—
North Suffolk
South Suffolk
West Suffolk

SURREY—
Croydon
Guildford
Kingston and
Reigate
Richmond
Wimbledon

SUSSEX
Brighton
Chichester and Worthing
Horsham
Eastbourne
Hastings
Lewes and East Grinstead

ULSTER—
Ballymoney, North Antrim, and South Derry
Derry
Belfast
Enniskillen
Monaghan and
Omagh
Portadown and

WEST SOMERSET

WILTSHIRE—
Salisbury
Swindon
Trowbridge

WORCESTERSHIRE AND HEREFORDSHIRE
Hereford
Worcester

YORKSHIRE—
Barnsley
Bradford
Dewsbury
Leeds
Halifax
Harrogate
Huddersfield
Rotherham
Sheffield
Scarborough
Wakefield, Pontefract and Castleford
York

Meetings of Branches and Divisions.

BIRMINGHAM BRANCH: WALSALL DIVISION.

Visit of Dr. Cox.

ON Tuesday, November 8th, the Medical Secretary, Dr. Alfred Cox, visited Walsall as the guest of the Walsall Division in particular and the medical practitioners of the district in general. The spirited account that follows is from the pen of Dr. F. G. Layton, the honorary secretary of the Division.

The Walsall men are not very articulate, but they know their job. More, they know their Cox. They began by feeding him; they finished by hearing him and asking him questions. He left it to the local secretary to answer the questions! The question askers seemed more or less satisfied. Dr. Cox made an impassioned speech, in which he pleaded that the British Medical Association has done quite a lot of good work in the past; that it is going to do more good work in the future. He called for unity of effort, and thereby gained much hearty applause. In fact, the men in the room (and there were a great many) were very much impressed by Dr. Cox, and the few who do not belong to the British Medical Association are going to join. Dr. Hawley presided, and in a speech of some eloquence suggested that the Walsall Division had not been as energetic as it might have been. The Honorary Secretary of the Division pleaded "more or less guilty"; but he pointed out that he was always in touch with headquarters, in spite of the heavy cost of postage, but he invariably read—and occasionally sighed over Dr. Cox's "Monthly Letter," a literary effort which he likened, with reason, to the worst variety of "Vicar's Letter" in a parish magazine. (Dr. Cox seemed rather puffed up by this: never before had he been classed with vicars.) There were several distinguished guests—notably, Dr. Short, President of the Birmingham Branch; Dr. Dain, Dr. Hardy (both from Birmingham), Dr. Ridley Bailey from Bilston, and Dr. Mactier from Wolverhampton. It was apparent that this particular section of the Midlands is sound, loyal to the British Medical Association, keen to pull its weight in the boat. They regard Cox as a cox who can curse his crew when necessary, and that is why he remains in the boat. They have no use for an oily-tongued cox. If Dr. Cox will sup with every Division, the Divisions will be strengthened; but Heaven only knows what will happen to his digestion. Yet—does *that* matter?

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.

A MOST enjoyable and successful dinner was held on November 3rd at the Great Eastern Hotel, Liverpool Street. The guests of the evening were Dr. Alfred Cox (Medical Secretary) and Dr. Farman (Secretary of the London Panel Committee). Over 80 members and friends were present. Dr. Cox, replying to the toast of the Association, was enthusiastically received with musical honours, and the same compliment was paid to the Chairman, Dr. C. E. Evans, to whose energy and tact the Division owes a great deal. After the dinner an excellent musical programme was enjoyed by the company.

NORTH OF ENGLAND BRANCH: DARLINGTON DIVISION.

THE annual general meeting of the Darlington Division was held at Greenbank Hospital on October 26th. The retiring honorary secretary, Dr. Hern, was accorded a warm vote of thanks for his labours during the last eight years. Dr. H. C. Pearson, the retiring chairman, then vacated the chair, and Dr. Hern was unanimously elected chairman for the ensuing year. The executive committee, the representative on the Representative Body, and the new secretary were then elected. On the motion of Dr. PEARSON, the honorary secretary and the executive committee were requested to draw up a programme for the session to be circulated to the members as early as possible. It was decided to accept the offer of the honorary secretary of the North of England Branch to provide lecturers for occasional demonstrations. A long and keen discussion took place regarding the Government proposal to reduce the capitation fee under the National Health Insurance scheme. It was decided to leave the matter on the table until further information was forthcoming from the Insurance Acts Committee. Dr. Alfred Cox was unanimously elected an Associate member of the Division.

SINGAPORE BRANCH.

AT a meeting of the Singapore Branch of the British Medical Association held in the Garden Club, Singapore, on September 15th, before proceeding with the scientific objects of the meeting Dr. D. J. GALLOWAY paid an eloquent tribute to Dr. Lim Boon Keng, one of the oldest members of the Branch, on his removal to a new sphere of activity. A brilliant student of Edinburgh and of Cambridge, Dr. Keng was the pioneer Straits-born exponent of western scientific medicine in Singapore, where

he had wielded great influence, especially in the work of education among the Chinese.

Dr. W. DAWSON read a short paper on cerebro-spinal fever, with notes on fifty consecutive cases admitted to Middleton Hospital, Singapore, from November, 1920, to July, 1921. He described the wide distribution of the disease in the municipal area, in the rural districts, and in the surrounding islands, and the absence of any evidence of direct infection. In his series of 50 cases 47 were males and 3 females, and practically all were of the coolie class. In regard to the age-incidence, one patient was a child under 10 years, seven were between 10 and 20 years, twenty-two between 20 and 30 years, sixteen between 30 and 40 years, and four over 40 years. Twenty-two cases, or 44 per cent., recovered, and twenty-eight, or 56 per cent., died. Dr. Dawson attributed the high mortality to the late stage at which many of the cases were admitted to hospital. Fifteen out of twenty-eight fatal cases died within forty-eight hours of admission to hospital, and in several of the thirteen remaining fatal cases concurrent diseases, such as ankylostomiasis and malaria, played an important part in causing a fatal issue. Dr. CHILL, Dr. KAY MOUAT, Dr. FORSYTH, and Dr. GALLOWAY took part in the subsequent discussion.

Dr. FORSYTH then gave an account of a condition known locally as "Singapore ear." Cultures of the pathogenic organisms and microscopic specimens were shown. The speaker discussed the possibility of *Bacillus pyocyaneus* being the primary infective agent in certain of the typical cases that he had treated.

SOUTH-WESTERN BRANCH: WEST CORNWALL DIVISION.

A MEETING of the West Cornwall Division was held at the Royal Cornwall Infirmary, Truro, on October 25th. It was resolved that efforts should be made to arrange for a course of post-graduate lectures in Truro, and to approach the Bristol University authorities on the subject.

The report of the Representative at the Annual Representative Meeting was received, and it was resolved to adopt the resolutions of the Representative Body. Various interesting specimens and cases were shown by the honorary staff of the infirmary.

The opinion was expressed that it was desirable to develop further the social side of such meetings.

SUSSEX BRANCH: HASTINGS DIVISION.

A GENERAL meeting of the Hastings Division, to which also thirty-five invitations were sent to local non-members, was held at the Eversfield Hotel, St. Leonards, on November 1st, when Dr. Hessey, Chairman of the Division, presided. The CHAIRMAN, in opening the meeting, said that the Division was now out to retrieve its bad name as a "defunct Division." In January, 1921, its membership was 46, but at the present time it numbered 55; this increase, he said, was encouraging, but more activity was necessary, since there still remained 24 men practising in the Division who were ex-members and 6 men who had never joined. He hoped that these 30 gentlemen would see their way to become members of the Division and so strengthen the hands of the Association.

Dr. HEADLEY HUCKLE read a paper on "Medical stunts or frenzied therapeutics." He described many forms of treatment with remedies employed—some good and many bad—which had been adopted in the last 200 years. The paper was clever and humorous and raised considerable discussion.

Dr. LARKIN opened a discussion on haemorrhage in connexion with operations on the tonsil (vide BRITISH MEDICAL JOURNAL, September 17th). He remarked that he thought the dangers were exaggerated, and suggested that throat specialists wanted to frighten off the general practitioner from taking on such cases. Messrs. REDMAYNE, LIGAT, DAUNT, CUTLER, and H. MANSELL gave their experiences and advice on such operations.

The last item on the agenda was a lively discussion on the treatment given to children at school clinics. Drs. LARKIN, HOWE, and H. MANSELL thought it was overdone. Dr. POLHILL TURNER, the school medical officer for the borough, replied, and his remarks were well received by the meeting. Dr. HESSEY read to the meeting the policy of the Association on this subject from the British Medical Association Handbook.

It was agreed to hold meetings on the first Tuesday of each month through the winter, one meeting to be at Bexhill.

On the motion of the CHAIRMAN a very hearty vote of thanks was unanimously accorded to Dr. Headley Huckle for his interesting paper.

YORKSHIRE BRANCH: BRADFORD DIVISION.

THE opening meeting of the session of the Bradford Division was held at Bradford on November 2nd.

The CHAIRMAN referred to the sudden death of Dr. R. P. Woodroffe, who had been treasurer to the Division for three years, and proposed that a vote of condolence be passed in the usual way, and that the Secretary be instructed to convey to the widow and family of the late Dr. Woodroffe the expressions of sympathy from the meeting.

Dr. T. JASON WOOD, on being inducted as Chairman for the year 1921-22, expressed his thanks for the honour which the Division had done him in electing him to the office; he then proceeded to read his inaugural address upon "A consideration of some of the indications for operation in abdominal cases." The paper was very instructive and clearly expressed. Dr. Wood frequently illustrated his points from cases which he had come across in his practice as a consulting surgeon, and the amount of ground covered by the paper was remarkable.

On the motion of Mr. J. PHILLIPS, seconded by Dr. H. SHACKLETON, a very hearty vote of thanks was accorded to Dr. Wood for his excellent paper.

Dr. CARROLL then reported upon the holiday scheme which had been tried in one quarter of the city during the past summer. He stated that the plan had worked very successfully, and that the practitioners who had carried it out were highly satisfied, and intended to carry on the scheme.

The SECRETARY then outlined the winter programme, which included a clinical meeting at the Royal Infirmary, a visit from a member of the Central Staff, two lectures, and the annual dinner.

MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of the West Dorset Division, to which non-members are invited, will be held on Thursday, December 15th, when an address will be given by the Deputy Medical Secretary, Dr. G. C. Anderson.

ESSEX BRANCH: SOUTH ESSEX DIVISION. Further meetings of the South Essex Division will be held on Thursday, December 8th, at the Palace Hotel, Southend-on-Sea, at 8.15 p.m., when Sir Berkeley Moynihan, K.C.M.G., C.B., will read a paper on the Diagnosis and Treatment of Gastric Ulcer (illustrated by original lantern slides). On January 13th, 1922, there will be a supper at the Hotel Victoria, at 8.15 p.m., and on February 10th, at the same place, at 8.15 p.m., Dr. F. W. Price will read a paper, illustrated by original lantern slides, on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease. At the meeting on March 10th, at the Hotel Victoria, at 8.15 p.m., Dr. Hector C. Cameron will discuss the subject of The Child in General Practice; and on April 14th, at 8.15 p.m., there will be a supper at the Hotel Victoria.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION. A meeting of the Lambeth Division will be held on Friday, November 25th, at 4.30 p.m., at Lambeth Carlton Club, when a paper will be read by Mr. W. H. C. Romanis, F.R.C.S., entitled "The surgical treatment of exophthalmic goitre."

METROPOLITAN COUNTIES BRANCH: LEWISHAM DIVISION.—A meeting of the Lewisham Division will be held at 106, Manor Park, Lee, Lewisham, S.E.13, on Tuesday, November 22nd, at 8.45 p.m. Agenda: Dr. A. Wellesley Harris, M.O.H. Lewisham, will open a discussion on Public Health in Relation to the General Practitioner.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION. A meeting of the Leicester and Rutland Divison will be held on Wednesday, November 30th, at 4 p.m., when Dr. C. O. Hawthorne will deliver a lecture on Sphygmometer Readings and Sphygmograms.

STAFFORDSHIRE BRANCH.—The first general meeting of the session will be held at the North Stafford Hotel, Stoke-on-Trent, on Thursday, November 24th. The President (Dr. Frederick Edge) will take the chair at 4 p.m. Exhibition of living cases. Papers: (*a*) "On the prevention of deafness," Mr. Carter; (*b*) "Vagotonia," Dr. J. H. Sheldon; (*c*) "On some uses of benzyl benzoate," Dr. C. M. Allen. Exhibition of pathological specimens, etc. Dinner will be at 6.30 p.m., and members wishing to attend are asked to notify the Hon. Secretary, Dr. W. Webster, Newcastle, Staffs, not later than Monday, November 21st.

Correspondence.

National Health Insurance, 1920-21.

SIR, The notice of the second annual report of the Ministry of Health, which appears in the SUPPLEMENT for October 29th, ought to set some of us thinking furiously. It is remarkable that this report should not apparently have been published until just after the question of the relief to be given to the National Exchequer by a reduction of the capitation fee had been settled. I presume that the contents of the report were not known to members of the Insurance Acts Committee at the time of the Panel Conference?

I believe medical men, as a rule, are not supposed to have an intimate knowledge of accountancy and matters actuarial. I do not claim to have any such myself. That is why I write to ask for some enlightenment on what is revealed in this report. The facts which seem to strike me in the face are: That the Ministry of Health is making a profit of say £8,000,000 per annum out of the Insurance Act; that the total contribution to the expenses of the Act made by the Exchequer (afterwards taken back as "profit") is £7,728,000; and the total remuneration paid to the medical profession £7,159,000. In face of such figures I am now anxious to know what reason there was for the Minister to reduce the capitation fee, even under the present acknowledged necessity for national economy.

The "patriotic" contribution which the profession have agreed to make to the National Exchequer is not one-sixth of the "profit" which the Department is making out of the Act. And I submit that profits especially unnecessary profits should be cut down before wages and salaries.

What was there to prevent the Government saving the whole amount at present contributed by them? The remaining "income" of the Act would be sufficient to provide for medical remuneration at the old, or existing, rate of 11s. per caput. If my reading of the figures in the report are correct, then I consider that the Minister was guilty of sheer dishonesty in not placing all these facts before the profession when he asked us to take a lessened rate of remuneration on the score of inability to pay. I am sure that had the report now issued been in the hands of representatives at the Conference the action taken might have been very different from what it actually was. But the governmental, or commercial, code of morality is by no means identical with the methods of common honesty which I am glad to think prevail in our honourable profession. I fear we shall have to acquire a little more of the wisdom of the serpent before we are fitted to contend with the tactics of State officials accustomed to the methods of commercial immorality.—I am, etc.,

Hull, Nov. 9th. JOS. NELSON.

*** The second annual report of the Ministry of Health was issued in August, and an account of the public health section was published in the JOURNAL of August 27th under the heading, "Public Health in England in 1920."

Medical Benefit.

SIR,—The Medical Benefit Subcommittee of the Monmouthshire Insurance Committee at its quarterly meeting held on October 12th, 1921, passed unanimously the following resolution:

> That this subcommittee, at its final meeting, expresses its satisfaction with the manner in which the panel doctors have performed their work in this county since the introduction of medical benefit.

This was confirmed by the Insurance Committee at its meeting held on October 26th, 1921.

So many unfounded allegations have been recently made by some of the leaders of the Friendly Societies as to the quality of the medical treatment given to insured persons by panel doctors that I feel justified in asking you to publish this letter. There are in the Monmouthshire insurance area approximately 140,000 insured persons, and they are attended by 136 panel practitioners.—I am, etc.,

E. RYAN,
Honorary Secretary, Monmouthshire Panel Committee.

Cramlin, Mon., Nov. 1st.

"Excessive Prescribing."

SIR,—Among the medical journals which reached me the other day at Las Palmas was your issue for September 10th, in which I found a letter from Dr. Mackenzie of Tain complaining of the surcharging of panel practitioners who had been found guilty of excessive prescribing. As one who has borne the burden and heat of the day of panel practice for a number of years before the war, I cannot help sympathizing to some extent with Dr. Mackenzie, but in his enthusiasm for absolute freedom in the prescribing of drugs for insured persons he appears to have overlooked the fact that there are always two sides to every question and that it is well to hear what both sides have to say before coming to a definite decision on the matter.

The whole tone of Dr. Mackenzie's letter would indicate that he considers every member of the profession takes as high an ideal of his professional duties as he does himself, and therefore considers that it is very wrong for any Panel Committee or Insurance Committee even to query the amount of money which he has spent in any given year on drugs, but were that attitude adopted by Panel Committees generally I am afraid that the amount spent on drugs by some panel practitioners would soon be excessive. As long as human nature is as it is, and as long as doctors are only made of flesh and blood, like other people, I am afraid there will always be the necessity for some sort of supervision of the amount of money spent quarterly or yearly by men engaged in panel practice.

It is curious how careful and economical a medical man can be in dispensing drugs and using dressings when these have been bought from a wholesale drug firm and paid for by himself! Unfortunately a number of doctors seem to be unable to carry this same economy into practice when prescribing drugs and using dressings the cost of which does not come out of their own pockets. It is a blessing that the number of such men is few, but their presence in the profession renders it absolutely necessary that their prescriptions should be controlled, and that they should be surcharged when found guilty of extravagant prescribing. If this were not done, and the guilty ones detected and exposed, the majority of the medical profession who honourably and honestly try to keep within the limits of expenditure allowed by the Insurance Act would be unjustly blamed for a state of affairs of which they were entirely innocent. It is only the fact that he knows that sooner or later he will be found out that prevents an unscrupulous practitioner from indulging in unnecessary prescribing or from prescribing materials which do not come, or at least are not supposed to come, under the scope of the Insurance Act.

When this Act first came in force, and before it was known that unscrupulous practitioners would be held liable for excessive prescribing, a practitioner in a Tyneside town went around gaily prescribing scented soap, tooth soaps and powders, and expensive proprietary drugs, and even when this irregular course of action was pointed out to him the prescribing of these things did not entirely cease. I know of another practitioner, a close-fisted individual, who prescribed 1 lb. of boracic lint for a patient suffering from a trivial injury of the hand, and who was indignant when the excessive amount of lint was mentioned; nevertheless, I am convinced that the same man would have been shocked had any one hinted that the same amount of dressing was required by a private patient. In my opinion it is to spur the moral sense of such men; to make them see clearly the difference between what is their own and what belongs to the State; to make them give the same close attention to the economical dispensing of the State medicine as they would give to their own, that the stimulus of the supervision of the Panel Committee is required.

As one who for several years carried on a fairly large panel practice, I can truly say that I never once had any trouble in getting all the drugs that I required for the treatment of my panel patients from the panel chemist, and that I was never surcharged, though on one occasion, the first year of the panel, a few pounds more would have placed me in that category. It is sad reading to learn from Dr. Mackenzie that both at Glasgow and in the North of England many medical men are haled before the Panel Committees and surcharged for excessive prescribing. From my own experience in a Tyneside town I cannot help thinking there must be a lot of careless prescribing going on, or else there would not be such a wide field for the activities of the Panel Committees, and I am afraid that I can hardly agree with Dr. Mackenzie when he states: "In the large majority of cases gross injustice is done to men who prescribe conscientiously in the best interests of their patients." There may be a few men who are unjustly treated by the panel tribunals, but I am certain that a close scrutiny of the prescriptions of the surcharged men has not failed in putting its finger on the weak point of their prescribing.

Dr. Mackenzie seems to have a suspicion that the art of prescribing elegantly will shortly disappear among panel practitioners unless they are allowed the utmost elasticity in the number of drugs they are allowed to employ and do not require to give a moment's consideration to the question of expense. In answer to that insinuation, I beg leave to state that as a panel doctor I never gave my patients filthy-tasting medicine, and that I never made the slightest difference in the prescriptions of private and panel patients. Who would dream of giving anyone white mixture without flavouring it with aqua menth. pip.? Are tinct. card. co., ol. cassia, or spt. chloroformi so dreadfully expensive that a little of them cannot be used to flavour a mixture?

Dr. Cox may or may not have been guilty of a diplomatic error when he stated that the panel method of prescribing does not favour elegant pharmacy or luxury in prescribing, but as a practitioner who has had some little experience of panel work, I can say with all truth that I agree with the statement that "Dr. Cox does not believe that the procedure has deprived a single insured patient of any drugs really necessary for his treatment."—I am, etc.,

JOHN BAIN, M.B.,
London, E.C., Oct. 30th. Medical Officer, s.s. *Goalpara*.

LONDON INSURANCE COMMITTEE.

Anæsthetists' Fees. The London Insurance Committee, at its last meeting, expressed agreement with an opinion given by the Panel Committee that the fee for administration of nitrous oxide should be half a guinea and for the administration of any other general anæsthetic one guinea. This necessitates (subject to the approval of the Minister of Health) an

amendment in the Distribution Scheme, which in Clause 2 provides that where the services of a second practitioner are required for the purpose of administering a general anaesthetic a fee of one guinea is payable to the practitioner responsible for providing the services of the anaesthetist.

Investigation of Complaints. The Committee rejected a proposal from the Panel Committee to appoint two Medical Service Subcommittees instead of one as at present. It was stated that the number of questions arising between insured persons and practitioners which it was necessary for the subcommittee to investigate had lately decreased, and there was now very little delay in hearing cases.

Excessive Prescribing. Two cases of alleged excessive prescribing were reported to the Committee. Whereas the average ingredient cost for the whole area was 4.6d. and the average cost per prescription 9.6d., the figures in the case of one of the practitioners were respectively 7.3d. and 12.5d., and in the case of the other 6.8d. and 11.9d. Small monetary penalties were inflicted in each case.

FACTORY HYGIENE IN 1920.

THE feature of the Annual Report of the Chief Inspector of Factories and Workshops for the year 1920[1] which will first strike the habitual reader is that it has shrunk from the unwieldy foolscap size to the more handy octavo. The contents have again been assembled on the lines followed by Sir Arthur Whitelegge in his report for 1914, being arranged in twelve chapters, each written by a member of the inspectorial staff with special knowledge and experience of the subject dealt with. The report may be welcomed as a well ordered and altogether very readable volume of reasonable length.

We are told that the number of factories increased by 4,600 during the year, and that workers of both sexes were also rapidly becoming more numerous before the trade slump brought unemployment. Two Acts of Parliament were passed in 1920 to give effect to international conventions—namely, the Employment of Women, Young Persons, and Children Act, which fixes the minimum age for commencing work at 14, and regulates overtime for women and young persons; and the Women and Young Persons (Employment in Lead Processes) Act, which prohibits employment in some lead processes and regulates it in others.

With regard to measures for protection against anthrax, it is stated that the anthrax disinfecting station at Liverpool is nearing completion. On commencing operation the station will at first deal with selected East Indian goat hair and Egyptian wool and hair, entry being restricted to this port. The figures for anthrax during 1920 were the lowest recorded since 1908, the reduction being noticeable in the case of wool workers.

There is to be an important change in the organization of the inspectorate. The male and female branches, which hitherto have been organized and worked as separate units, are to be amalgamated, the women inspectors to be eligible for all posts. The separate organization will disappear at once, but it has been wisely decided that complete fusion shall be a matter of gradual development. The number of divisions and districts is to be increased, and the scientific technical staff is to be considerably strengthened by appointing more special engineering inspectors. Two additional medical inspectors, one being a lady, and four additional electrical inspectors are to be appointed. During the year under review the inspectorial staff was considerably below strength, and it will occur to some to question whether, if four additional electrical experts are required, a medical staff of five will be sufficient to deal with the many important problems affecting the health of workers. The number of accidents due to electricity reported during the year was 394, and 25 of these were fatal. These figures are very similar to those for the previous year.

The chapters on safety, dangerous trades, and welfare show that strong efforts are being made to get into touch with trade boards and to gain the willing co-operation of both employers and employed by first convincing them that the adoption of certain rules and regulations will prove of good value to both. The dangerous trades inspector, in dealing with the silicious dust problem, indicates that the tendency to substitute made-up ebrasive wheels containing practically no free silica for the ordinary sandstones used in the grinding of metals is likely to go far towards ameliorating present conditions. General sanitation is dealt with by a woman inspector, and the pulling up of this to a proper level would still seem to be one of the most uphill tasks the department has to undertake. In the matter of lighting, it would appear that, whilst great improvement in the provision of daylight is effected in new single-story factories by providing half-glass roofs facing north, there is still great ignorance displayed in the matter of economical and efficient artificial lighting. The chapter on first aid and ambulance is short, and gives the impression that the department has not taken up this subject very seriously.

Dr. Legge, in his chapter on industrial diseases, devotes some space to certifying surgeons, and emphasizes their usefulness in investigating cases of industrial poisoning. He explains Dr. Henry's new function of co-operating with certifying factory surgeons with a view to standardizing their work, and makes some interesting comparisons between the American and Belgian systems of medical examination and care of the adolescent in occupation. In America, where there is no national insurance, the tendency is apparently towards the introduction into the factory of the industrial physician, who not only studies and deals with occupational health problems from the preventive side, but examines all hands and quite commonly undertakes treatment. In a number of States young persons are medically examined before commencing work, but there is no "following up" or attempting to place the defectives. On the other hand, he tells us that in Belgium the examinations take place after engagement, that "following up" is a special feature, and that the system aims at adapting each young person to work according to strength and special aptitude, the actual examinations being carried out by some 150 part-time medical practitioners under the supervision of six provincial medical inspectors.

Dr. Legge gives some interesting particulars respecting the satisfactory progress made with the control of pitch warts among the patent fuel workers of South Wales, the estimation of lead content of dust in accumulator manufacturing processes, and the significance of the amounts found, the useful information brought to light by notification and certifying surgeons' investigations of cases of chrome ulceration, the occurrence of certain rare forms of occupational dermatitis, and the injurious effects of electric welding. He adds, as an appendix, the report of the Glass Workers' Cataract Committee of the Royal Society, which finds strongly in favour of heat being the active causative agent.

VENEREAL LEGISLATION AND ADMINISTRATION IN AUSTRALIA.

In August, 1920, Dr. Everitt Atkinson, Commissioner of Public Health, Western Australia, read a paper before the Australian Medical Congress at Brisbane on legislation and administration in regard to venereal disease. The Government of Western Australia has printed this paper, which is worthy of study for the information it gives in regard to experiments in the notification of these diseases. The experiments began in Queensland in 1913, when the Governor made regulations providing for notification in certain areas and gave power to the Commissioner of Public Health to require a suspected person to submit himself or herself for examination.

In 1915 in Western Australia a bill was passed which embodied, it is said, more comprehensive legislation in regard to control of venereal disease than had been attempted previously in any country, with the possible exception of Denmark. Every person becoming aware or suspecting that he is suffering from venereal disease must consult a medical practitioner within three days. Attendance for treatment must be continued at definite prescribed intervals until, in the words of Dr. Atkinson, cure is proclaimed. Change of medical attendant must be notified to the new doctor, who must in turn notify the former attendant. Medical practitioners must notify anonymously each case of venereal disease attended to the Commissioner of Public Health on a prescribed form. If a patient absents himself from treatment for a longer period than is prescribed—at present at least once a fortnight in the case of syphilis and at least once a week in the case of gonorrhœa during the acute stages—and

[1] Cmd. 1165. H.M. Stationery Office. (Pp. 174. 1s. 6d. net.)

the medical attendant has not received notice of a change of doctor, the patient's name and address must be notified to the Commissioner. In the event of cure the medical practitioner issues a certificate in a prescribed form. Procedure on the receipt of a named notification is laid down, and if a certificate of cure is not produced within a specified time, the Commissioner may authorize examination of the suspected patient. A signed statement may be given by any informant, but if examination fails to prove that the person informed against was suffering from venereal disease, the latter is entitled to inspect the written statement received by the Commissioner. This provision is perhaps double-edged in its effect; it seems possible that it may deter justifiable as well as unjustifiable information. Dr. Atkinson, indeed, remarks that "signed statements were very rarely received at all." Nowadays, the Commissioner need not wait for a signed statement; he can order an examination whenever he has reason to believe that any person is suffering from venereal disease. Legislation similar to that in Western Australia has now been adopted by all the Australian States; and a less stringent Act was passed in New Zealand in 1917. In Victoria it has been made a penal offence for a patient to give an incorrect name and address to the medical practitioner under whose care he places himself. It is also an offence for a practitioner to give a certificate of cure which is false in any particular.

Dr. Atkinson gives some very judicious advice with regard to the administration of these Acts. It is essential, he says, that the powers given should never be exceeded, lest public confidence be lost through anticipation of a "reign of terror." The powers should be regarded only as maximum powers to be used as a last resort after sympathetic and persuasive measures have failed. The application of the powers must be impartial; there must be no singling out of special classes, such, for example, as prostitutes. Care is necessary in official correspondence; and the police should have no hand in administration of the Act.

From a study of a system so complete, we turn with interest to Dr. Atkinson's experience of the working of the Act in Western Australia. Unfortunately he appears only to have been able, in the time at his disposal, to touch upon the degree of compliance the various sections have met with. So far as primary anonymous notification is concerned, the medical profession is stated to have co-operated loyally. But when notification of name and address is required, Dr. Atkinson suspects that some diffidence exists; named notifications are more numerous from clinics than from private practice, but it may be that private patients are less likely to cease treatment than those in clinics. It was found to be very difficult to control treatment by unqualified persons, but recent amendments of the Act have improved matters. Persons who cease treatment are very numerous; but the fact that 600 out of 857 individuals have been induced to return to treatment as the result of notification is regarded as the greatest argument for some form of compulsion. Dr. Atkinson admits a few unfortunate incidents, such as the opening of communications relating to the disease by husband, wife, or parent. Insufficient or wrong address on letters addressed to persons with a similar name to the patient have led to stormy interviews with irate innocents.

Dr. Atkinson, though he professes to give the results achieved in Western Australia, is, so far as we have observed, able only to record facts with regard to expenditure and the number of cases reported, together with a few indefinite statements of opinion. Thus 4,110 cases were reported in three and a half years, and it is said that approximately 1,000 new cases of venereal disease are reported annually in Western Australia. It may be asked why there has not been progressive diminution of the diseases under so complete a scheme? Why, too, has there been a progressive increase in gonorrhoea to be balanced with a decline in syphilis? It is supposed that the return of 600 cases to treatment under the notification by name has removed a considerable number of potential foci of infection. How long do the patients require treatment, how many of them are kept continent during treatment, and are there many carriers in existence without visible sign of the disease? Dr. Atkinson suggests that he has established the conclusions that legislation in regard to venereal disease is justified and that compulsion in some form is required. Unfortunately we have been unable from his paper to discover the facts, so far as results in controlling the diseases are concerned. Nevertheless, the experiments now being made in Australia, and also in Canada and the U.S.A., are extremely interesting, and should be carefully watched. If they can gradually be moulded into a successful system to which the community readily consents, the time may arrive when similar efforts may be possible in this country, "with its crowded cities, its almost unapproachable slum areas, its wide range of class distinction, and its multiplicity of governing authorities," as described by Dr. Atkinson. But until much more definite results are produced than are to be found in Dr. Atkinson's paper, we think that an attitude of benevolent interest is the wisest.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

Surgeon Lieut.-Commander G. F. B. Page to the *Fiend*.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

The following to be acting Lieutenant-Colonels: Major T. C. C. Leslie, O.B.E., from May 27th to Aug. 30th, 1919; Captain A. A. B. Scott, from Aug. 9th to Sept. 3rd, 1919; Captain B. C. O. Sheridan, M.C., from Oct. 30th to Nov. 18th, 1919; temporary Captain R. W. Miller, from May 24th to Oct. 1st, 1919; temporary Captain R. V. Powell, from Aug. 8th to Sept. 17th, 1919.

Major A. E. Atkinson, late temporary Captain, to be temporary Major and to relinquish the rank of Major.

Temporary Major W. C. Bosanquet to be temporary Lieutenant-Colonel, from Sept. 1st to Oct. 6th, 1919.

Lieutenant (temporary Captain) E. H. W. Elkington to be Captain.

ROYAL AIR FORCE.

Medical Branch.

J. R. Crolius is granted a short service commission as a Flight Lieutenant, with effect from and seniority of October 19th.

Flight Lieutenant A. F. Wright relinquishes his temporary commission on ceasing to be employed.

H. L. Burton is granted a short service commission as a Flight Lieutenant, with effect from and with seniority of October 24th, 1921.

INDIAN MEDICAL SERVICE.

The services of Lieut.-Colonel F. O'Kinealy, C.I.E., have been placed temporarily at the disposal of the Foreign and Political Department, with effect from October 1st.

The undermentioned officers have been permitted to retire from the service, with effect from the dates specified: Lieut.-Colonel H. J. W. Walton (Sept. 1st), Major C. G. Seymour (June 6th), Major Manng Bucket (Sept. 27th), Captain P. Vieyra, M.B. (Aug. 14th).

Lieut.-Colonel Kanta Prasad (ret.), who was re-employed, has been permitted to revert to the retired list from September 9th.

Major F. W. Cragg, of the Bacteriological Department, has been granted combined leave for twelve months from the date on which he avails himself of the leave.

The services of Major A. D. White have been placed permanently at the disposal of the Government of Bengal, with effect from January 29th.

Major R. N. Chopra has been appointed as Professor of Pharmacology at the School of Tropical Medicine and Hygiene, Calcutta, with effect from the date on which he assumed charge of his duties and until further orders.

The King has approved the retirement of the following officers: Bt. Colonel W. W. White, C.B., C.M.G. (August 2nd), Colonel A. J. Macnab, C.B., C.M.G. (August 15th), Major W. S. Patton (August 2nd), Captain L. Rumbell from the temporary non-effective list (September 17th).

ARTILLERY.

Surgeon-Major G. McKie, T.D., having attained the age limit, is retired, and retains the rank of Surgeon-Major.

TERRITORIAL ARMY.

Army Medical Service. Royal Army Medical Corps.

Lieut.-Colonel F. W. Gibbon, V.D., T.D., having attained the age limit, is retired, and retains the rank of Lieutenant-Colonel with permission to wear the prescribed uniform.

Major J. O. Summerhayes, D.S.O., T.D., resigns his commission and is granted the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major F. Philip resigns his commission and retains the rank of Major, with permission to wear the prescribed uniform.

Captain (now Major) H. W. Read is restored to the establishment (March 31st, 1921).

Captain J. J. E. Biggs, O.B.E., to be Major.

Captains A. S. Hopper and E. S. Johnson, having attained the age limit, are retired, and retain the rank of Captain.

The following officers, having attained the age limit, are retired and retain their rank, with permission to wear the prescribed uniform: Lieut.-Colonels T. Philip, R. Stirling, V.D., J. H. G. Whiteford, A. C. Miller, T.D., D. Durran, T.D., A. Butler, T.D.; Majors G. S. Ward, J. N. Macmullan, T.D., W. Dyson, O.B.E., J. F. Christie, T.D., T. A. Sellar, T.D., E. E. Dyer, T.D., D. M. Greig, T.D., E. L. Paton, W. G. Mitchell, J. Taylor, T.D., R. Rannie, T.D.

Captain W. A. Jackman (late R.A.M.C., S.R.), to be Captain, with precedence as from May 20th, 1919.

Captains B. T. J. Glover, J. M. Johnstone, and J. S. Ranson resign their commissions and retain the rank of Captain.

Lieutenant J. W. Wayte, M.C., to be Captain.

4th London General Hospital.—Captain H. S. Pendlebury, having attained the age limit, is retired, and retains the rank of Captain.

1st Northern General Hospital.—Major D. W. Patterson, O.B.E., having attained the age limit, is retired, and is granted the rank of Lieutenant-Colonel.

1st Southern General Hospital.—Lieut.-Colonel (Brevet-Colonel) F. Marsh, C.B.E., having attained the age limit, is retired and retains his rank.

TERRITORIAL ARMY RESERVE

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel J. E. Jamieson, T.D., from General List, to be Lieutenant-Colonel.

Majors T. D. Lauder and J. B. Simpson, O.B.E., T.D., having attained the age limit, are retired and retain the rank of Major, with permission to wear the prescribed uniform.

DIARY OF SOCIETIES AND LECTURES.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.—Mon., 8.30 p.m., discussion on the Arsenobenzol Treatment of Syphilis to be introduced by Lieut.-Colonel L. W. Harrison, D.S.O., R.A.M.C., followed by Professor H. Maclean, M.D., Dr. J. W. McNee, D.S.O., Dr. R. L. Mackenzie Wallis, Dr. Henry MacCormac, C.B.E., and Mr. C. H. Mills.

ROYAL SOCIETY OF MEDICINE.—Wed., 5 p.m., Occasional Lecture: Dr. Gustave Monod: Syphilis of the Stomach. Dr. A. F. Hurst, Dr. McNee, Mr. Herbert Paterson and Mr. A. J. Walton will take part in the discussion. Specimens will be shown. *Section of Medicine*.—Tues., St. Thomas's Hospital, S.E., 4.15 p.m., Ten; 4.45 p.m., Clinical Cases. Demonstrations of (1) Estimation of Basal Metabolism; (2) Methods of Estimating Liver Insufficiency and of Estimation of Blood Sugar. *Section of Clinical Oncology*.—Thurs., Cancer Hospital, Fulham Road, S.W., 2.30 p.m., Operations by Sir Charles Ryall and Mr. Jocelyn Swan. At 1, Wimpole Street, 8.30 p.m., Discussion on Renal Function Test. Opening papers by Mr. John J. Eyre-Lee, Mr. J. Swift Joly, Mr. J. B. Macalpine, Dr. Maclean and Mr. Cyril Nitch. Dr. Mackenzie Wallis and Mr. Girling Ball. Speakers in the discussion will include Sir Cuthbert Wallace, Dr. Langston Brown, Mr. Frank Kidd, Dr. Marrack, Mr. G. E. Norgate, Mr. A. E. Webb-Johnson and Mr. A. Clifford Morson. *Section of Study of Disease in Children*.—Fri., 4.30 p.m., Cases; 5 p.m., Miss Eva Morton: Report on a Fatal Case of Bullous Eruption. *Section of Epidemiology and State Medicine*.—Fri., 8 p.m., Dr. J. P. Kinloch: Metabolism in Fevers.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Maternity and Women's Hospital.—Wed., 4.15 p.m., Dr. A. N. McLellan: Obstetrical Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Mr. H. Tyrrell Gray: Congenital Hypertrophic Stenosis of Pylorus.

HUNTERIAN SOCIETY, Slade College, Embankment, E.C.1.—Wed., 9 p.m., Mr. H. D. Gillies: Plastic Surgery of the Face.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. Wm. Brown: Psychology and Psychotherapy. Wed., 4.30 p.m., Dr. C. A. Da Fano: Histology of the Nervous System.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Diseases of Children: Mon., 9.15 a.m., Dr. T. Thompson: Organic and Functional Nervous Diseases and Mental Deficiency. Wed., 10.15 a.m., Dr. Mailer: Clinical Demonstrations; Sat., 10.15 a.m., Dr. R. Hutchison: General Diseases.

MANCHESTER: ANCOATS HOSPITAL.—Thurs., 4.30 p.m., Dr. A. H. Holmes: "D.V.H. (Pachycardia), its Etiology, Treatment and Prognosis."

MANCHESTER: ROYAL INFIRMARY.—Tues., 4.30 p.m., Mr. F. H. Westmacott: Epidemic Neuroses.

MANCHESTER: ST. MARY'S HOSPITALS (Whitworth Street West Branch).—Fri., 4.30 p.m., Dr. Dougal: Ectopic Pregnancy.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Tues., 3 p.m., Out-patient attendances. Mon., 2.30 p.m., Lecture by Dr. Goodall: Auricular Fibrillation and Auriculo-ventricular Dissociation.

NORTH EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., In- and Out-patient Clinics, Operations, etc. Mon., 4.30 p.m., Mr. J. Bright Banister: Relation of Heart Disease to Pregnancy, Labour and the Puerperium. Tues., 3.30 p.m., Dr. F. G. Crookshank: Physical Examination of the Chest: (1) Palpation and Percussion. Wed., 4 p.m., Localisation of Paralytic Deformities by Orthopaedic Methods.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell Square, W.C.—Wed., 4 p.m., Dr. R. P. White: Do We Neglect the Industrial Skin Sufferer?

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.—Thurs., 6 p.m., Dr. W. Griffith.: Common Forms of Dermatitis.

SHEFFIELD UNIVERSITY.—At Royal Infirmary, Tues., 3.30 p.m., Mr. Finch: Cases; 4.15 p.m., Dr. Hallam: X-rays in the Diagnosis of Diseases of the Chest. At Royal Hospital, Fri., 3.30 p.m., Dr. Wilkinson: Ear Emergencies; 4.15 p.m., Professor Douglas: Serums and Vaccines.

UNIVERSITY COLLEGE, Gower Street, W.C.—Fri., 4.30 p.m., Dr. J. C. Drummond: Nutrition.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Lectures:—5 p.m., Mon., Dr. A. Saunders: Functional Dyspepsia. Tues., Dr. S. Pinchin: Differential Diagnosis of Pulmonary Tuberculosis. Wed., Dr. Owen: Renal Disease. Thurs., Dr. Simson: Modern Developments in Management of Labour. Fri., Mr. Steadman: Etiology and Pathology of Dental Sepsis.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager: Telegrams: Articulate Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Attiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*Three lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

NOVEMBER.

22 Tues. London: Organization Committee, 12 noon.
Lewisham Division, 106, Manor Park, Lee, Lewisham, S.E.13, 8.45 p.m.
23 Wed. South Middlesex Division, St. John's Hospital, Twickenham, 8 p.m. Paper by Dr. A. M. H. Gray: Skin Diseases commonly met with in General Practice.
24 Thurs. Staffordshire Branch, North Stafford Hotel, Stoke-on-Trent, 4 p.m. Dinner 6.30 p.m.
25 Fri. London: Science Committee, 2.30 p.m.
Lambeth Division, Lambeth Carlton Club, 4.30 p.m.
29 Tues. London: Medico-Sociological Committee, 2.45 p.m.
30 Wed. Leicester and Rutland Division: B.M.A. Lecture by Dr. C. O. Hawthorne on Sphygmometer Readings and Sphygmograms, 4 p.m.
London: Arrangements Committee (other than the Glasgow Representative), 3 p.m.

DECEMBER.

7 Wed. Plymouth Division: B.M.A. Lecture by Dr. W. Langdon Brown.
South Middlesex Division, St. John's Hospital, Twickenham, 8 p.m., Clinical Meeting.
8 Thurs. South Essex Division, Palace Hotel, Southend on Sea. Paper by Sir Berkeley Moynihan: Diagnosis and Treatment of Gastric Ulcer.
14 Wed. North Middlesex Division, Prince of Wales's General Hospital, Tottenham: B.M.A. Lecture by Colonel L. W. Harrison: Treatment of Gonorrhoea in General Practice.
15 Thurs. West Dorset Division: Address by the Deputy Medical Secretary.

APPOINTMENTS.

BARRON, H. Thompson, M.D. Lond., Clinical Assistant to the Skin Department of the Westminster Hospital.

KING, W. W., M.B., Ch.B.; F.R.C.S.Ed., Lecturer in Gynaecology in the University of Sheffield.

MANCHESTER ROYAL INFIRMARY.—House Physicians: H. Stafford, M.B., Ch.B. Vict., E. Philbin, M.B., Ch.B.Vict. House-Surgeons: T. N. Fisher, M.B., Ch.B.Vict., J. E. Coope, M.B., Ch.B.Vict., G. V. Ashcroft, M.B., Ch.B.Vict. House-Surgeons, Special Departments: W. E. Powell, M.B., Ch.B.Vict., R. Williamson, M.B., Ch.B.Vict. Assistant Pathologist (unpaid): B. J. Ryrie, M.B., Ch. Edin.

ST. THOMAS'S HOSPITAL.—Resident House-Surgeon for Ear, Nose and Throat: J. C. Churcher, M.R.C.S. Obstetric House Physicians: L. B. Maxwell, O.B.E., M.B., B.Ch. (Senior); J. D. M. Cardell, M.R.C.S. (Junior). Ophthalmic House Surgeon: W. A. Low, M.C., M.R.C.S. (Senior). Clinical Assistants: B. W. Williams, M.R.C.S. (Throat); B. W. Williams, M.R.C.S. (Ear); J. F. Hackwood, M.R.C.S., B. W. Williams, M.R.C.S. (Children's Medical); C. E. Whitting, M.R.C.S. (Tuberculosis Department); J. F. Hackwood, M.R.C.S. (Orthopaedic).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

MORSON.—On November 13th, the wife of Clifford Morson, O.B.E., F.R.C.S., 22, Welbeck Street, W.1—a son.

UPCOTT.—On November 3rd, at Cheriton House, Hull, the wife of Harold Upcott, F.R.C.S., of a son.

MARRIAGE.

RAWSON—RICHARDS.—On November 10th, 1921, at St. Paul's Church, Whitley Bay, by the Vicar, Noel Ravenehil Rawson, M.B., B.S.Lond., of Rydal House, Whitley Bay, to Laura Louise Richards, daughter of the late Abel Richards of Wolverhampton.

DEATHS.

COOKE.—At Hampden House, Town Walls, Shrewsbury, on November 9th, Ernest Wilfrid Cooke, from pneumonia, aged 51.

DELÉPINE.—On November 13th, at 41, Palatine Road, Withington, Manchester, Professor Sheridan Delépine, Director of the Public Health Laboratory, Manchester, aged 66.

HORSLEY.—On November 8th, at 1, Poplar Walk, Croydon, Henry Horsley, M.R.C.S., aged 83.

VENIS.—At Karachi, India, on October 18th, after a long illness, Sadie Geneviève, the dearly loved wife of H. Cares Venis, B.A., L.R.C.P., L.R.C.S., D.P.H., Medical Officer of Health, Port of Karachi.

WHEATLEY.—On November 14th, Rupert Wheatley, M.R.C.S., L.R.C.P., L.D.S.Eng., the much loved husband of Rose Wheatley of "Anlaby," Livermead, Torquay, aged 51.

[illegible] Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 26TH, 1921.

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British Medical Association.

CURRENT NOTES.

Post-Graduate Education.

The Council of the British Medical Association appointed a Post-Graduate Courses Committee to inquire into and report upon the recommendations of the Earl of Athlone's Committee, which was set up by the Minister of Health "to investigate the needs of medical practitioners and other graduates for further education in medicine in London." This committee at its first meeting felt that it would be desirable, before considering the recommendations of the Athlone Committee, to have a conference with the Fellowship of Medicine and Post-Graduate Medical Association in order to ascertain (*a*) what difficulties existed as to the organization of post-graduate instruction in London, and (*b*) how far it might be possible for the British Medical Association to take part in the removal of these difficulties.

On November 18th a conference was held at the Royal Society of Medicine when these and other relative matters were discussed. The following were present:

Sir George Makins, G.C.M.G., Chairman, Executive Committee of the Fellowship of Medicine and Post-Graduate Medical Association, in the chair.

The following members of the executive of the Fellowship of Medicine and Post-Graduate Medical Association: Dr. G. F. Blacker, Miss L. B. Aldrich-Blake, M.S., Professor Francis Fraser, Dr. C. B. Heald, Professor R. T. Leiper, Mr. Herbert J. Paterson, Sir J. Y. W. MacAlister, Sir Humphry Rolleston, Sir Squire Sprigge, Sir William Hale-White.

The following members of the Post-Graduate Courses Committee of the British Medical Association: Sir Richard Luce (Chairman), Drs. H. B. Brackenbury, C. Buttar, H. G. Dain, C. O. Hawthorne, Professor C. J. Martin, Drs. E. Arthur Saunders, J. F. Walker, Sir Dawson Williams (Editor, British Medical Journal), and the Medical and Deputy Medical Secretaries.

The Post-Graduate Courses Committee will meet in due course in order that it may complete its reference and report to the Council.

Insurance Capitation Fee: Notice of Reduction.

Questions have arisen as to the amount of notice which should be given to insurance practitioners with regard to the reduction of the capitation fee. The Insurance Acts Committee is still of opinion that three months' notice should have been given to each practitioner of the exact amount of the capitation fee on the basis of which the Central Pool is constituted, after such fee had been determined by central negotiations. The contention that such notice was not necessary has been supported only by the statement that the Central Pool is each year constituted by an Order of the Minister. The Committee regards this as a straining of the interpretation of the proviso to paragraph 2 of the Terms of Service. This interpretation has never been in the mind of any member of the Insurance Acts Committee, nor has it been previously pointed out to the Committee or to any member of that Committee, by any officer of the Ministry of Health, even when the paragraph in question has been under discussion with, or in the presence of, such officers.

Journal Committee.

At the meeting of the Journal Committee held on November 17th Dr. J. A. Macdonald was reappointed chairman. The Editor reported that the number of pages in the editorial columns of the Journal, including the Supplement, had increased during the present year. This is in part accounted for by the publication of full reports of the proceedings of the Sections at the Annual Meeting at Newcastle. In accordance with the standing instruction of the Council the number of pages in the text of the Journal has been increased for that purpose. The reports of the scientific sections are concluded in the present issue of the Journal, with the exception of certain papers the publication of which has been postponed in order to arrange for reproduction of the photographs and drawings by which they are illustrated. The usual tabulated report of advertisements refused since its last meeting was presented to the Committee and approved. The list contained details of forty advertisements, a large number being those of posts at a lower salary than that fixed as a minimum by the Representative Body of the Association. The total value of advertisements refused during the period under review was approximately £300. A number of other matters in connexion with advertisements and with the production of the Journal were considered.

New Handbook of the Association.

The annual *Handbook of the Association* for 1921-22 has just been issued. As is explained in the prefatory note, it is primarily intended for Honorary Secretaries and other

workers for the Association, both central and local. A limited number of copies is available for members who apply for them. To members no charge is made; to non-members the cost is 5s. In order to secure a copy early application is necessary. Among the new features of the book are a medico-political history of the Association by Mr. Russell Coombe and a list of the Chairmen and Presidents of the Divisions and Branches. The new volume also contains a frontispiece—a view of the Association building, 429, Strand.

Medical Representation in Parliament.

The Medical Representation in Parliament Fund, which is a trust fund established for the purpose of promoting the candidature of suitable medical men for Parliament, has just received a welcome donation from the Association of Panel Committees. The late secretary of that association, Dr. R. J. Farman, announces that the association, on October 19th, 1921, decided to disband and to send a donation of £40 from its surplus funds to the Medical Representation in Parliament Fund. The donation has been gratefully received, and it is hoped that this example may be the means of stimulating many practitioners and Panel Committees, who at present do not subscribe to this fund, to do so. It is the ambition of the trustees to promote the candidature of at least two members of the profession, but at the present time their funds have only allowed them to support the candidature of one—namely, Dr. H. B. Brackenbury.

Openings for Practice in South Africa.

With reference to the Current Note on this subject in the SUPPLEMENT of October 8th last (page 135), the Association is now in possession of further authoritative information from South Africa. As already intimated, the outlook as regards openings in medical practice there is not encouraging. The complete new information now in possession of the Association will be communicated to members who apply for it to the Medical Secretary.

PAYING PATIENTS IN HOSPITALS AND MEDICAL STAFF FUNDS.

CONFERENCE OF REPRESENTATIVES OF MEDICAL STAFFS OF VOLUNTARY HOSPITALS.

In accordance with the request of members of the staffs of several London hospitals, the British Medical Association summoned a Conference, to which representatives of all the large London hospitals were invited, to discuss the action which should be taken with regard to the formation of medical staff funds and other relative matters. The Conference took place in the Council Room of the Association, at 429, Strand, W.C., on November 16th, and was presided over by Sir JAMES GALLOWAY, Senior Physician to Charing Cross Hospital, with whom were Dr. R. A. Bolam (Chairman of Council) and Mr. Bishop Harman (Chairman of the Hospitals Committee). More than sixty representatives attended.

Sir JAMES GALLOWAY, on behalf of the Association, thanked those present for their attendance and outlined the reasons for summoning the Conference. A Conference of the Medical Staffs of Voluntary Hospitals was called by the Association on December 21st of last year, when various matters touching hospital administration, especially as affecting the medical staffs, were discussed. That Conference was attended by physicians and surgeons from all parts of the country, and certain general resolutions were adopted which had proved to be of service in the guidance of medical staffs during the present year. Those resolutions in a general way came before the Annual Representative Meeting in July and were approved. The Hospitals Committee of the Association, naturally enough, had had many matters under discussion during a year so full of hospital interest, but especially had they been concerned with what was known as the "staff fund." The general feeling of the previous Conference—which was not a meeting of the Association, although convened under its auspices—was that staff funds should be established, and the Representative Meeting later endorsed that view. But difficulties arose in connexion with the establishment of such funds, and the Hospitals Committee was approached by various hospital staffs with requests for guidance. Matters were brought to a focus by difficulties arising in connexion with one of the large London hospitals (St. George's), where the medical staff, on approaching the committee of management on the subject of the establishment of such a staff fund, was met with a refusal, and the reason given for the refusal was based upon certain paragraphs of the Cave report. The Hospitals Committee had been aware of these difficulties through having been in communication with the hospital in question, but it was felt undesirable to move in the matter until the feeling of the Annual Representative Meeting had been taken. After that meeting had come to its decisions the committee knew what to do, and it was then proposed—the actual suggestion came from outside, though it accorded with the Hospitals Committee's idea—to re-convene a meeting of staffs. The present Conference was the outcome of an invitation which had been sent to the staffs of the London hospitals, and a very large number, including the great teaching hospitals, had sent representatives. The resolutions on the agenda had been drafted on the lines of those carried at the former conference and agreed to by the Representative Meeting. The first was a resolution which he believed to be non-controversial.

Payment of Practitioners for Services rendered to Paying Patients in Hospitals.

Mr. MCADAM ECCLES (St. Bartholomew's) moved, and Dr. JAMES METCALFE (Prince of Wales's Hospital, Tottenham) seconded, that the Conference approve the following resolution of the Annual Representative Meeting:

> That where voluntary hospitals provide accommodation for paying patients, no fixed rate of payment for professional services rendered to such patients should be established; the fees so payable, to remain, as at present, a matter of arrangement between patient, family physician, and consultant.

Mr. ECCLES said that this applied to the cases of those patients who paid more than was necessary for their maintenance in hospital.

Dr. C. O. HAWTHORNE (Hampstead and North-West London Hospital) said that the wording of this resolution was not free from ambiguity, for the practice of requesting certain payment from patients or of accepting paying patients was now widely established. He understood that the resolution was meant to apply to patients who were admitted to hospital under the care of their own private practitioners and who made arrangements with such practitioners to attend them as though they had entered a nursing home. He thought that this should be specifically set out in the resolution.

Dr. R. A. BOLAM said that the meaning of the resolution was made clearer by stressing the words "provide accommodation." The cases contemplated were those in which special provision was made for paying patients, such as the establishment of paying wards. Patients might conceivably be sent in by outside practitioners to members of the staff to be attended in such special wards, and in such cases the patient would become in a sense the private patient of a member of the staff. What this resolution visualized was the paying ward, not the ordinary bed in the hospital where occasionally there might be some contract with regard to maintenance.

Mr. BISHOP HARMAN said that voluntary hospitals in various parts of the country, like King's College Hospital in London, had annexes for paying patients. In a few cases the board of management had tried to arrange a scale of fees for private practitioners, which was not a proper thing, and it was to make sure that the necessary arrangements should be on a proper basis that this resolution was put forward.

Mr. ECCLES expressed his willingness to insert the word "private" before "paying patients" in the resolution, and this modification was agreed to. Dr. HAWTHORNE wanted the phrase "under the care of their own practitioners" to be inserted after "paying patients." The practitioners, he said, would be those who were called in by patients or their friends, and who had therefore a personal and professional relationship to the patients. Mr. HARMAN thought that this addition of words was unnecessary, as the resolution went on to speak of the matter being one of arrangement between patient, family physician, and consultant. Dr. JOHNSON SMYTH pointed out that a man attacked by sudden illness might be received into a paying annex of a hospital without having had any private practitioner at all; he would be a paying patient without a private practitioner. Eventually Dr. HAWTHORNE withdrew his objection, and the resolution as originally proposed, with the insertion of the word "private" before "paying patients," was put and carried unanimously.

Formation of Medical Staff Funds.

Mr. R. R. JAMES, at the invitation of the Chairman, made a statement with regard to the position at St. George's Hospital, where the whole matter first came up in connexion with pensioners. In the first place, the medical staff was adverse from the principle of staff funds, but towards the end of last year a letter was received from the British Medical Association giving the resolutions of the conference of hospital staffs held at Cambridge and advocating the establishment of such staff funds. A few weeks later his medical staff committee informed the house committee that it wished to reconsider its decision. The house committee deferred giving an opinion until the issue of Lord Cave's report, and in July, 1921, in consequence of what was said in that report, the house committee turned down the proposal. Thereupon the medical staff committee decided to circularize the other teaching hospitals of London. Three of these hospitals, it appeared, had started staff funds—namely, St. Bartholomew's, King's College, and St. Thomas's—and four hospitals, he thought, did not take pensioners; these were Guy's, London, Westminster, and, he believed, Middlesex. The point in the Cave report which mainly was the cause of the attitude of his own hospital committee was paragraph 50 of the Final Report, in which it was stated that, "on the other hand, the honorary staffs of some hospitals are unwilling to share in such a staff fund" the words ought to have been added, "and have refused to see pensioners"—"and two distinguished physicians expressed the view that if the medical staffs came to be subsidized to any substantial extent 'the bottom would drop out of the voluntary system.'" His own view was that the bottom had dropped out of the voluntary system already. In the future, if not at the moment, large sums of money would be coming into the funds of hospitals from public and semi-public sources, and he did not see why the medical staff alone should go on working on charity. This matter concerned the junior members of the staff more than the senior. The change in type of patient now being admitted to the hospital, and paying for such admission, had to be reckoned with.

Mr. ECCLES said that during the war Lord Sandhurst and he formed part of a deputation to the then Minister of Pensions in regard to the amount that should be paid to the hospitals for disabled sailors and soldiers while undergoing treatment in the voluntary hospitals of London. The deputation was the outcome of a very largely attended meeting of the representatives of the lay and medical staffs of these hospitals. By that deputation it was urged upon the Minister that there should be some recognition of the services of the voluntary medical staff, and it was agreed that from the sum paid by the Ministry the lay authorities could, with the consent of the medical staff, pay over a percentage—10 per cent. was suggested—to a medical staff fund, which was to be administered solely by the medical staff. Such a fund was in no way to be taken as an adequate return for services rendered, nor was it to be considered as payment to any one member of the staff. The matter of the institution of such a staff fund arose chiefly because the Ministry had decided that the disabled men should not be considered as objects of charity, and whereas a voluntary hospital, in part supported by voluntary contributions, was to receive monetary recognition for its expenditure on behalf of these men, the treatment must also in part be outside the pale of purely voluntary—that is, unpaid—work. Several hospitals, with the acquiescence of the visiting staff, had paid over a percentage of the money derived from the Ministry, and also derived from municipal authorities, to a medical staff fund, which fund was being administered solely by the visiting medical staff. The Representative Meeting had made the inauguration of such a fund a policy of the Association.

Dr. WILFRID FOX (St. George's) moved, and Dr. F. J. POYNTON (Hospital for Sick Children) seconded, that the Conference should approve the following resolution of the Annual Representative Meeting:

> That in the event of decisions being taken which would lead to patients (other than private paying patients referred to in the previous resolution) paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which can be allocated in any manner which the honorary medical staff may determine.

Dr. METCALFE said that he was instructed by the medical staff of the Prince of Wales's Hospital, Tottenham, to oppose this resolution. They thought that where a payment only covered maintenance it would not be wise, either in their own interests or the hospital's interests, to ask for a proportion of that maintenance payment. Where a contribution was made by individual patients—poor people—it would be rather mean and despicable to insist on a share of the savings of such people being allocated to the medical staff, though he would draw a clear line of distinction between contributions made by individual patients and contributions received from the State or from municipalities or boards of guardians or other public bodies. He strongly opposed any payment to a staff fund from the payments made by individual persons in hospitals.

Mr. H. S. SOUTTAR said that what he advanced was his own opinion, which was shared by some of his colleagues at the London Hospital and not by others. It was an extremely grave step to change the whole basis of the relationship between medical staff and hospital. But a far graver step had already been taken in the alteration of the relationship between patient and hospital, and from this the alteration of relationship between medical staff and hospital followed of necessity. There was no question whatever in the minds of any of them but that patients who were poor and paid nothing but were entirely objects of charity should be treated for nothing. That was the tradition of the profession, and he did not think any member wished to go back upon it. On the other hand, in the case of patients well able to pay and paying for their full maintenance, he thought the medical staff should receive some remuneration. After all, they were in the profession in order to make a living, and once the hospitals started taking in these patients upon whom the members of the profession depended for their livelihood, if medical men still refused to take money for them, it was difficult to see how they could continue to subsist. A large proportion of the income, particularly of the younger members of the consulting staffs, came from individuals whose income was under £500 a year. He believed that in ten years' time no person whose income was under £500 a year would undergo an operation anywhere except inside a hospital. The difficulty came in with the patients who could afford to pay a little. Where was the line to be drawn? At first it seemed an exceedingly perplexing problem. In so far as a patient paid towards the cost of maintenance he was a paying patient, and ought so to be considered by the medical staff; and in so far as the hospital had to make up the deficit he was a recipient of charity, and in exactly so far he ought to be treated for nothing. Take a man whose hospital charge was £4 per week and who paid £1. This man was the recipient of charity to the extent of £3 a week, and to that extent they should treat him for nothing, but in so far as he paid anything at all he was as much a paying patient and should be so regarded from the staff point of view as the man who paid £20. It was true that the amount which went to the staff in such a case was very small, but the principle should be maintained. It was also undoubtedly true that in the case of most of them, with hospitals in their present straits, the money would be returned intact to the hospital funds. But it would have been made evident to the hospital committee that the medical staff had earned the money for the hospital.

Dr. H. J. COUZENS (Queen Mary's Hospital, Stratford) asked whether as members of an honorary staff they were prepared to accept money for their services. If the position was adopted that all who went into hospital as paying patients must make some contribution to the medical staff, the medical staff should resign and seek re-election on a fresh—a non-honorary—basis. He thought it would be a serious matter to go to the hospital committee and demand a percentage of what had been paid to the hospital by the patient. It was another story if they demanded a percentage of a State or municipal contribution. But were they, in the case of out-patient departments, run on sixpenny and threepenny lines, to ask for a percentage of all contributions? If the hospital committee declined to yield on this point what were the members of the medical staff to do? Were they to refuse to act?

Dr. WILFRID FOX pointed out that the whole matter came up at St. George's in connexion with pensioners. In the pensioners' own hospitals the staff was paid, and the staff at St. George's did not see why it should not be paid for doing the same work. The mind must be accommodated to a certain alteration of the whole hospital basis. In years gone by no one would have dreamed of this position. The basis of hospital service was shifting, and they must shift with it. Their object at St. George's was simply to discover what other staffs were doing and to act together.

Dr. COUZENS added that so far as State or rate contributions were concerned he foresaw no trouble; his own hospital acceded to this point without a murmur. Dr. Fox said that that was precisely the trouble at St. George's.

Dr. T. P. LEGG said that he had been instructed by the medical staff at King's College Hospital to oppose this resolution. The only medical fund at King's College represented a proportion of the sum paid by the State for the treatment of pensioners. No difficulties had arisen between the committee of management and the medical staff in arranging this proportion. So far as ordinary hospital patients were concerned the staff did not receive one penny and had no intention of accepting remuneration. His medical committee thought it inadvisable that any proportion of the voluntary contribution made by individual patients who might not be able to pay for more than their maintenance in hospital should be devoted to a medical fund. To take any such proportion would be to do away with the last shred of voluntary treatment.

Dr. HAWTHORNE said that the problem had been put before them very forcibly and attractively by Mr. Souttar, who had pleaded at the beginning of his speech for the young consultant, but had left him in the lurch at the close by suggesting that the members of the medical staff should not individually appropriate the moneys available. The idea seemed to be that a fee ought to be paid to Harley Street which no individual consultant in Harley Street must touch. The individual member of the staff of the hospital would derive no benefit whatever from this arrangement, and the only effect would be to make the medical staff appear, both to the lay government of the hospital and the public outside, as persons who took one-tenth or whatever the proportion might be of any sums paid by the individual patient or his friends. He could think of nothing more undignified or more contrary to the best interests of the profession than that an eye should be kept upon every contribution of a shilling or five shillings or half a sovereign in order to be sure that in some indirect way the medical staff would have a benefit. Accordingly he moved:

> That any sum paid by a patient or by the friends of a patient towards his or her maintenance, partial or complete, while resident in the hospital, shall be devoted to the purposes announced, and shall not be subject to any deduction for any other purpose.

He claimed that this made the position perfectly clear. It gave the Conference the opportunity of saying whether it did or did not think the deduction should be made in the interests of the medical staff from contributions which were presented formally and definitely as contributions for the maintenance of a patient. By no jugglery of words would it be possible to say that maintenance meant medical and surgical treatment.

Mr. SOUTTAR asked Dr. Hawthorne to define exactly what he meant by maintenance. Sometimes "maintenance," as in Poor Law infirmaries, was intended to cover everything, including the whole cost of treatment. Mr. ECCLES asked whether Dr. Hawthorne thought that the bed on which a patient was lying was part of treatment. Mr. HARMAN wanted to know whether, supposing the "friends" of a patient were an insurance company, Dr. Hawthorne would maintain the same position.

Dr. HAWTHORNE said that if his amendment was passed it would have to be interpreted in accordance with the genius of the English language. The matter was being pushed near to the *reductio ad absurdum* when the question was raised whether the bed was part of treatment. In answer to Mr. Harman's point, he did not think that hypothetical circumstances ought to be put forward. His amendment was perfectly precise and definite, and its interpretation would be with the authorities of the various hospitals, who would no doubt be fully prepared to deal with its plain English.

Dr. MILLARD seconded Dr. Hawthorne's amendment.

Dr. BOLAM urged that, instead of his amendment, Dr. Hawthorne should move the deletion of the words, "either individually or" from the original resolution, as this would leave the questions arising from other parts of the resolution still open to discussion. Dr. HAWTHORNE, however, found himself unable to fall in with this suggestion, and preferred his own structure. He agreed that if the State or municipalities, or insurance companies or labour organizations, made a contribution to the hospital on behalf of patients, a proportion of that money should be paid to the medical staff. But his purpose was to protect the sum paid for maintenance by the patient or his friends from being used for some other purpose.

Dr. ASHLEY CLARKE (Hospitals Committee), speaking with regard to Dr. Hawthorne's description of the case of payment by the insurance company as "hypothetical," said that if this was hypothetical in London it was not so in the provinces; in the provinces the medical staffs regarded it as essential that any contract made by the lay body controlling the voluntary hospital with any patient should be on a fixed financial basis. The medical profession desired to be as philanthropic as any other branch of the community, but it could not be philanthropic if it had not the wherewithal to live. One speaker had asked what action it was proposed to take if hospital committees refused to fall in with the arrangement. It would then become a matter for propaganda: the committees must be educated. Someone had urged that the medical staff should accept nothing unless the sum paid by the patient was more than enough to cover maintenance. But he thought that if doctors took this pedestal certain organized bodies would see to it that patients as a rule never did pay more than maintenance.

Dr. BOLAM said that circumstances differed in various parts of the country, but there were areas where the great bulk of the work done in the hospital was very rapidly approaching the same position as pensions work, either fully paid at some agreed rate or paid to such an extent that the staff, strictly speaking, could not be regarded as voluntary. The economic condition of the country and the consequent action of lay bodies had radically altered the basis of the contract of honorary members of the medical staff with the lay committee. When a payment was imposed on every patient the old charitable basis, whereby the doors of the hospital were flung open to everybody and nothing was asked in return, disappeared altogether. It was now known to be contemplated that the National Health Insurance system should be rounded off with hospital treatment. Was it conceivable that the medical staff would continue to attend these insured State-paid patients in hospital for nothing? If the step were taken now of refusing some token or peppercorn payment it would be extremely difficult to retrace such a step in future. Every hospital staff could meet the situation without any despicable action. A small token payment should be deducted on account of every paying patient, which, if the medical staff chose, could be returned as a donation. He begged those on whom this matter did not press hardly to consider the position of staffs differently situated. In the north of England there were large hospitals where the arrangements were such that the contributions made by working men practically financed the hospital, and these contributors insisted that patients from their ranks be taken in and treated at a very inadequate fee. He could tell Dr. Hawthorne exactly how insurance companies and friendly societies could get over the difficulty of the private patient. The friendly society's secretary would give to the private patient the amount of maintenance or whatever smaller amount the hospital authorities agreed to take, and the patient himself would hand it over to the hospital, though it would not come out of his pocket. All that was asked in the resolution was that some token payment be made, such as would safeguard the position in the future. By an over-emphasis of the sentimental aspect the matter might be made very difficult for some of their brethren.

Mr. BISHOP HARMAN said that Dr. Hawthorne presumed that the patient would himself afford the money, or that his friends would provide it; but this might become the exception, not the rule, among paying patients. Dr. Hawthorne could not avoid the dilemma. By his amendment he was inviting people to do that which he would describe as not exactly honest when it was done. At present it was a case only of the thin end of the wedge. But unless it was recognized now that paying patients, however small their payments, were nevertheless paying patients and not charitable patients, that wedge would be driven in more deeply. He quoted Sir Alan Anderson, honorary secretary of the King's Fund, as stating that "users of hospitals must contribute according to their means even more widely than they do at present." It was certain that hospitals, while still remaining voluntary because their management was on a voluntary basis, would become increasingly paying hospitals. He begged those present not to lose sight of the difficult position of the younger members of the profession. If the difficulties increased, there might be nothing for them but State service. The payments made should be marked in such a fashion that when these cases came in like a flood the staff would not be unprovided for.

Dr. Hawthorne's amendment was rejected by a large majority, nine voting in its favour.

Mr. H. J. PATERSON (London Temperance Hospital) proposed a further amendment:

> That this Conference declines to come to a decision with regard to hypothetical eventualities which would appear to be inconsistent with the position of the honorary medical staffs.

He opposed the resolution, which he thought was putting the cart before the horse. If the fund were distributed among the medical staff and returned by them to the

hospital as suggested, its temporary recipients would be liable to income tax on the amount.

Dr. James Donelan (Italian Hospital) seconded the amendment. His staff was very much divided on the matter of the main resolution. Nobody desired to take anything from patients or their friends, though they did feel justified in taking a proportion of the payment made by the Government or local authorities. Medical staffs generally were on the horns of a dilemma.

On the amendment being put to the Conference, only its mover and seconder voted in its favour.

The main resolution, declaring that a percentage of the payments made by patients for hospital maintenance should be passed into a staff fund, was then put and there voted:

In favour	23
Against	21

The representatives of St. Thomas's, the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Moorfields Hospital, the Heart Hospital, the Royal Free Hospital, and several others said that their instructions were not to vote; in some cases the reason given was that the staff was unable to arrive at any agreement; in others the matter had not been formally before them.

Mr. Harman moved:

> That when the board of management of a voluntary hospital enters into a financial arrangement with a public authority, an employer of labour, approved society, insurance company, or under a contributory scheme, for the reception of patients, such arrangement should be taken to cover the cost of maintenance and treatment, and a percentage of all such receipts should be passed into a fund which is at the disposal of the honorary medical staff of that hospital.

Mr. McAdam Eccles, in seconding, said that the cost of treatment here included payment to medical officers of hospitals—at all events it did in the large hospitals where there were resident medical officers—and also the expenses of the nursing staff. Directly a contract was made between the hospital and any such bodies as these it must be accepted as covering maintenance and treatment, although what the staff received from the hospital might be the merest minimum.

Dr. A. M. H. Gray (University College Hospital) said that the resolution appeared to make obligatory a payment to the staff fund. In most cases where the hospital made an arrangement with the London County Council to deal with venereal cases the money was not passed into the staff fund, but the actual people who took part in the work were paid individually for their services. Under the scheme now propounded, however, other members of the staff who had had nothing to do with the treatment would receive benefit.

Dr. Bolam said that in the hospital with which he was associated the money on being received by the hospital for these services was paid out to members of the staff who did the work. Mr. Eccles said that at St. Bartholomew's a certain sum was received for carrying on the venereal department, and a proportion, not the whole, was paid over to the medical staff. Mr. Harman said that at his hospital the money went straight to the men who performed the services.

Dr. Gray desired to move an amendment to clear up the position, but Dr. Bolam pointed out that it was necessary only that a resolution be passed by the medical staff saying that in regard to certain particular matters the money should be paid to the members of the staff who actually did the work.

The resolution was then put to the Conference and carried, with two or three dissentients.

In reply to a question as to what would happen to the resolutions, Mr. Harman said that the usual procedure was to send them back to the constituents, asking that they be noted, and that the Hospitals Committee of the Association be informed of any action taken. Replying further, he said that his committee always communicated both with the medical committees and the committees of hospital management, as it was sometimes difficult to get action taken on communicating only with the one body.

Dr. Couzens urged that these resolutions should not be sent to the secretaries of hospital committees as the policy of the Conference, and Dr. Metcalfe said that in view of the close division on the main resolution there could be no moral force behind it. Dr. Bolam pointed out that these resolutions had already gone to the governing bodies as the policy of the Representative Meeting. Asked by what majority they had been passed by the Representative Meeting, he said that it was more than three-fourths.

Mr. Harman added that at the Conference of representatives of staffs last December a similar resolution was passed by a great majority.

Dr. Couzens: We have seen the error of our ways since then.

On the motion of Dr. Hawthorne, a vote of thanks was accorded by acclamation to the Chairman for the dignity and success with which he had presided over the gathering.

Sir James Galloway acknowledged the compliment, and said that the greatest good was likely to accrue from these frank discussions under the auspices of the British Medical Association.

NATIONAL PROVIDENT SCHEME FOR HOSPITAL AND ADDITIONAL MEDICAL SERVICES.

A meeting of the Marylebone Division of the British Medical Association was held on November 16th, with Dr. A. Blackhall-Morison in the chair, to discuss the National Provident Scheme for hospital and additional medical services, which is the Sussex scheme as modified for London. There was a very large attendance, including visitors from outside the Division.

Mr. McAdam Eccles moved a resolution giving general approval to the scheme. He first pointed out the serious position of the 112 voluntary hospitals in London. Last year the deficit was about half a million, and this year it was not likely to be less, while grants from King Edward's Hospital Fund and the National Relief Fund would not again be available. Lord Cave's Committee reported the possibility of new money by way of mass contributions from wage-earners, or by the Oxford scheme, or the Sussex scheme as modified for London. It was this third source which the meeting was called to consider. The scheme provided for in-patient hospital treatment, out-patient treatment, consultations at home or at hospital, visiting and possibly resident nursing, dental consultations and treatment, *x*-ray and electrical examination and treatment, and massage, also laboratory investigation and ambulance service. It did not provide for general practitioner treatment, treatment of tuberculosis or venereal diseases, or any other treatment provided by the State or local authorities. The advantages of the scheme to the prospective patient were that for a small annual subscription provision was made during health for hospital treatment, that no payment for hospital treatment or maintenance was exacted during sickness, that consultations were available at his home or separate consultations at hospital, that he escaped the almoner's investigation, and had the benefit of nursing and ambulance transport. The advantages to the hospital were that the voluntary system was maintained, an adequate income secured, and the need for appeals no longer existed. To the general practitioner, through whom all the facilities of the scheme were obtained, it ensured the opportunity of consultations whenever needed, also the maintenance of more direct contact with the patient and the prompt use of facilities hitherto difficult or costly to procure. The consultant members of the medical staffs of voluntary hospitals were assured a general staff fund of 25 per cent. of the money received by the hospital, also a fund out of which consultations in the patient's home would be paid, and they had the advantage of more direct relationship with general practitioners. To the nation the advantages of the scheme were the preservation of the voluntary system, the speedier treatment of cases needing in-patient accommodation, and the maintenance of the supply of clinical material for medical and nursing education. The scheme was safeguarded from abuse by the income limit (£250 for a single person, £400 for married man and wife, and £500 for man and wife with children). It would not increase the incidence of sickness requiring in-patient treatment, and if it were so successful that the beds in voluntary hospitals were insufficient there would be enough money forthcoming to provide additional accommodation, in Poor-Law infirmaries or elsewhere. At present the voluntary hospitals were actually dealing with the persons who should become members of this scheme.

Dr. C. O. Hawthorne opposed the motion. The scheme had passed through the mill of many councils and committees; surely its supporters were now prepared to stand or fall with its details and not ask merely for "general support." He recognized that the scheme was a sincere effort to get rid of hospital embarrassments, but he believed that it was economically unsound, while if it should prove a success it would destroy the voluntary hospitals and turn their honorary staffs into the paid officials of an insurance organization. Was it likely, to

begin with, that domestic servants, artisans, and others would pay £1 on the chance that during the twelve months following the date of payment they would require hospital treatment? The scheme, moreover, demanded a whole series of annual payments. The majority of the people it would approach were already taxed, not very willingly, for national insurance. Was the doubling of the tax likely to be welcome? Most of those who contributed would receive no benefit even in a whole series of years, and those who did receive benefit would find in neighbouring beds others who had neglected or declined to pay £1 per annum. It was not absolutely certain that the maximum benefit would be forthcoming for the subscriber, because urgent non-insured cases would have precedence. On the other hand, any person on payment of a single premium might almost immediately claim the full benefits of the contract, and when chronic sufferers on whose behalf their friends had collected 20s. presented themselves at the hospital he imagined that there would be many complaints and not a little grumbling. He also objected to the public and the politicians being told that in the opinion of a medical body an insured person ought to have free medical treatment in hospital, with free consultations, nursing, and ambulance for £1 per annum. The scheme was economically unsound.

But suppose, continued Dr. Hawthorne, that, under the influence of dramatic headlines and other propaganda, sufficient money was collected to make the scheme financially a success, what would be the effect on the medical profession? Hospitals had been built and equipped, and in great part supported by voluntary contributions in the belief that they were for philanthropic purposes. It was now proposed to take these capital values and utilize them for a purpose innocent of all philanthropy. Dead men withdrew no legacies, but he fancied that appeals for legacies and donations in future would fall on many deaf ears. It was stated that when the organizing committee had received a certain number of names in the case of one of the co-operating hospitals the list of subscribers would be closed. He believed this to be impracticable. There would be pressure from new subscribers, and it would be impossible to maintain the rigid line betwen insured and uninsured beds. The latter would diminish, and in the end disappear, and the sick poor for whom the hospitals were intended would either be transferred to the Poor Law hospitals or left uncared for in their own homes. Medical officers of hospitals would be placed upon a panel under this system, and their activities would necessarily be a matter of review by the managers of the enterprise. They would be the paid officials of a provident organization. For the general practitioner there was reserved the less conspicuous function of providing free wall space on which the organization committee might hang its advertisements, arranging interviews with inquirers, compiling records, and ringing up the ambulance! There was no provision for the payment of general practitioners, for whom virtue was its sole reward. The hospitals themselves, manipulated in this direction, would lose their voluntary character. A voluntary hospital rested upon voluntary contributions, voluntary administration, and honorary medical service. The scheme would undermine all three.

Mr. H. S. SOUTTAR paid a tribute to Dr. Hawthorne's forensic skill, but he believed his premisses to be unjustified. It was absolutely necessary that new money should come to the hospitals. It was not likely to come by way of the Exchequer, while the charitable had now enough to do to pay their income tax. Another alternative was to demand fees from patients on admission, but that was repulsive. There was nothing left but the principle of insurance during health for hospital benefit. Far from legacies being withheld, he believed that prospective givers would be more inclined to help the hospitals when they saw that the hospitals—as also the people whom the hospitals benefited—were engaging in self-help. At the London Hospital it was agreed that these insured patients should have precedence, though not over more acute cases.

Dr. R. A. BOLAM did not think that the scheme fulfilled the conditions which every insurance scheme should lay down. All such schemes should state clearly that the hospital accommodation in their area was only able to bear a certain amount of the burden that ought normally to be put upon it, and that it was only a partial benefit which could result from any insurance which was undertaken. It ought to be made clear also that all the accumulated wealth of the past in the shape of buildings and endowments was being put into the scale in order to make the insurance premium much less than it should be on a strictly economic basis. The services of medical men were on the same footing as fabric and endowments. The state of the community had so changed that there was no longer the same need for a large measure of purely charitable medical service as in the past, and with this there came a change in the attitude of the medical profession. The profession must decide whether it was prepared to throw its services into the balance along with endowment and fabric, or whether the conditions of this scheme were such as to bring forward the same kind of work as was being done already for the State or municipal bodies for definite payment. His own advocacy of the principle of payment for all members of medical staffs arose out of his feeling that unless independence was preserved there was likely to be a tyranny exercised over the consulting profession in the hospitals in the future similar to the tyranny experienced by the general practitioner in club practice in the past. The scheme now laid down was not truly an insurance scheme because it gave only a qualified right to the insured person. It was an excellent method of getting a definite contribution to hospital expenses, but the position of the medical man in regard to it should be carefully considered and his future rights preserved.

Dr. GORDON DILL urged the necessity of some action on behalf of the London hospitals. Unless some definite policy were adopted, such as would show the public that the hospitals were making sensible and organized provision for the future, he thought that a general appeal would fall on deaf ears. The promoters of this provident scheme had desired to exalt the influence and standing of the medical profession, both consultants and general practitioners. He begged the destructive critics to suggest an alternative which would ensure a stable income for the hospitals.

Sir JAMES GALLOWAY said that he was aware of the feeling with which some business people interested in hospital finance regarded this scheme. They thought it likely to interfere with the large numbers of subscribers who, up to the present time, had helped the hospitals so faithfully. Some men of great experience in business and philanthropic matters said that while the gratuitous booming of the scheme in the newspapers had directed considerable interest towards it, with happy results up to a point, such an insurance scheme, in order to be a success, required constant booming, not for one year but every year. How would the medical staffs of hospitals like the process of being boomed by people who looked on the scheme purely as an insurance proposition which must be made to succeed? He himself believed that the scheme was not sound, and if it went through and failed it was likely to do more harm than good.

Dr. W. JOHNSON SMYTH asked whether any actuary of first-class standing had been consulted; also whether there was any provision, as in certain insurance schemes, for a progressive reduction in the annual liability if advantage were not taken of the benefits. At Bournemouth they fought shy of the scheme.

Mr. BISHOP HARMAN agreed that the scheme had faults. He saw one serious fault which must be rectified. All patients would be allocated to members of hospital staffs. What, then, would happen to the consultants and to men not on hospital staffs? Nevertheless, he thought the scheme a good one. The poor were disappearing, and the mass of the population should be able to make provision either by direct payment when sickness came or by previous arrangement so as to be properly treated when ill. The State itself made sure that those who went into Poor Law infirmaries should pay when ill up to the full extent of their means. His own withers were unwrung by Dr. Hawthorne's prophecy of the disappearance of the voluntary system. He himself went to a great public school which was originally founded for ten poor boys. Some in that audience enjoyed scholarships originally intended for those who washed the cups and platters. Times changed, and with them many applications and uses of things changed also.

Dr. ALFRED COX regarded the experiment as an interesting one, and impressed though he was by Dr. Hawthorne's arguments, he was not as frightened as he thought Dr. Hawthorne would have liked most of them to be. He was more impressed by Mr. Souttar's question: What was the alternative? New money had to be obtained, and there appeared to be no source except the pockets of the working classes, which meant either an insurance scheme or a levy upon patients as they went into hospital. The latter course meant taking money at the time the patient was most likely to need it to keep the home going; it was not sound, not humane, and was repugnant to the traditions of the hospital. Why not frankly try the insurance system and see how it would work? He was glad that the scheme should have emanated from the profession, because of the profession's traditional interest in the voluntary hospitals of this country. The hospitals were in difficulties, they were

worth saving; the other possibility was a State scheme of hospitals.

Dr. F. J. POYNTON pleaded for the retention of the voluntary system at all costs. If the voluntary system was to go down he would prefer to go down with it. The State in that event might properly intervene, but for the medical profession to take little bits left over from what the hospitals took was not at all right to his thinking. Arising out of the remarks of this speaker, Mr. ERNEST CLARKE asked why it was so very repulsive to accept payment from patients.

Dr. GORDON-LANE thought that the benefits proposed were too expensive for the premium, and that the scheme was financially unsound and likely to cost the hospitals more than they would receive in return. Colonel KYNASTON thought that the necessity for the scheme to be boomed in the newspapers was a defect, although this would not apply to a general appeal to the public to support the hospitals. Another objection at the moment was that so far the scheme had only been taken up by three hospitals in London, and its tendency therefore at present seemed to be to divide the general hospitals into two categories.

Several other members wished to speak or to put questions, and the Chairman asked the meeting whether it desired to adjourn the discussion, but the feeling was against doing so.

Mr. MCADAM ECCLES, in a brief reply, said that it might be well for him to add that there was a definite consultation pool already fixed, and the fee for consultations would not be less than a good many young consultants were now receiving. A fortnight ago 5,000 prospectuses were sent out to the general practitioners of Greater London, and so far not a single letter of protest against the scheme had been received. This was not a case of one hospital asking for itself, but of a general hospital pool. He could match Sir James Galloway's names of business men by others who attested the soundness of the scheme. Men in the insurance world had described it as actuarially sound. He did not agree that, if successful, it would destroy the voluntary system; it would simply spread the voluntary system over a larger area, covering great numbers of small units. If it was a failure no hospital would lose; if a success every co-operating hospital would gain. There were sufficient beds in London to accommodate patients even if ordinary sickness incidence were increased by one-third. He was willing to strike out the word "general" from the resolution and to ask for definite approval.

The resolution:

> That this meeting of medical practitioners in the Marylebone Division of the British Medical Association approves of the National Provident Scheme for Hospital and Additional Medical Services

was then put to the meeting and lost by a large majority. The number voting in its favour was seven. Visitors from outside the Marylebone Division did not vote.

THE HEALTH POLICY OF WILLESDEN.

A MEETING of the Willesden Division of the British Medical Association was held on November 15th, with Dr. C. T. G. SCOTT in the chair. The minutes of the last meeting, reported in the SUPPLEMENT of November 12th, were confirmed. Letters were read from:

1. The Medical Secretary of the Association, stating that it was the duty of the Division strenuously to oppose the policy outlined in the recently issued handbill of the local Council, which was in entire opposition to the policy of the Association, and which practically amounted to a municipal medical service at 2s. 6d. per annum, but pointing out that it was also the duty of the Division to afford proper professional treatment to the medical officer of health and to give him every opportunity for stating his case.

2. From the Medical Secretary, stating that the question of the handbill of the local Council had been referred by the Metropolitan Counties Branch to the Council of the Association, and would probably be considered at a conference of representatives of the Association and the Society of Medical Officers of Health.

3. From the Honorary Secretary of the Hampstead Division intimating that the situation at Willesden had been discussed at a recent meeting of his Division and asking for full information thereon.

4. From the medical officer of health (Dr. Buchan) who as a member had been invited to that meeting, intimating that after consultation with the Society of Medical Officers of Health regarding his attendance at that meeting he had been advised by the Society to refrain from attending until the principle involved in the discussion of the work of an official medical colleague with ratepayers and other non-professional associations had been settled, and that he was quite willing to give any information not contained in his annual report to the local Council which it was possible for him to give.

5. From the Society of Medical Officers of Health (received through the Medical Secretary) deprecating the proposed discussion of the work of a medical colleague by the Division with representatives of non-professional bodies.

6. Letter sent to the local ratepayers' associations intimating that owing to unforeseen difficulties it had been found necessary to put off the conference which had been arranged to take place that night between the Division and representatives of those bodies.

Medical Services of Willesden District Council.

The CHAIRMAN reported that as a result of consultation with the head office it had been decided by the Executive Committee not to hold that evening the previously arranged conference with representatives of the local ratepayers' associations upon the medical services of the Willesden Council, but that a Memorandum and a series of motions dealing with the question of the local health services had been prepared by the Executive Committee for consideration. He felt that the time had come for the local profession to decide whether it considered that the evident tendency of the local Council towards the setting up of a municipal medical service staffed by whole-time salaried officers and the consequent change in the position of the local private practitioners was in the best interests of the public health; or, if not to decide what action should be taken so as to bring before the public of Willesden the views of the medical profession of Willesden as regards the medical activities of the local Council. After discussion as to the best method of approaching the subject the Chairman read the Memorandum upon the Annual Report of the Medical Officer of Health which had been prepared by the Executive Committee.

A discussion then took place upon the health activities of the local Council based upon the information contained in the Annual Report of the M.O.H., and the following resolution was carried:

1. This meeting of the Willesden Division of the British Medical Association condemns the action of the Willesden Urban District Council in establishing health services for women and children without first obtaining the views and securing the active co-operation of the local medical profession, and is definitely of opinion that such co-operation is urgently called for in view of the admissions contained in the forty-fifth annual health report issued by the Health Committee of the Council.

A proposal that the Division should receive at its next meeting a delegation from the local ratepayers' associations was negatived, and it was decided that copies of the foregoing resolution, the memorandum (if approved), and any resolutions which the meeting might decide upon as arising thereout, be forwarded to (i) the Council of the Association, (ii) the Willesden Urban District Council, (iii) the local press, and (iv) the local ratepayers' associations. The memorandum printed below was then approved.

The draft motions prepared by the Executive Committee with a view to focussing the opinions of the Division upon the subject under discussion were then discussed and approved as follows:

2. Treatment at maternity and child welfare centres should be confined to necessitous cases and, in the case of school children, to those cases where the parent fails to provide treatment recommended by the school medical officer or private practitioner.
3. The Dunfermline Scheme should be adopted in Willesden so as to ensure that each child requiring treatment will in the first instance be sent to the family doctor, and that the family doctor should have the right to refer cases to the clinics.
4. It is undesirable that wards in infectious diseases hospitals should be used for the treatment of non-infectious diseases and for maternity cases.
5. The Division endorses the opinion of the Ministry of Health that the Willesden Hospital should not be used for non-infectious cases until the needs of infectious cases are dealt with. Further, that the hospital should not be used for non-infectious cases as there is no accommodation for mixed or doubtful cases even in normal times. (See Report, 1920.)
6. The Division protests against the leaflet issued by the Willesden Urban District Council entitled "Medical Services—Scale of Charges," and dated September 7th, 1921, because it is practically a municipal service and directly opposed to the policy of the British Medical Association.
8. The Willesden Division of the British Medical Association calls the attention of the Willesden ratepayers to the health policy of the Willesden Urban District Council, which threatens to destroy the freedom not only of the medical profession but of every individual in the community, and urges the ratepayers to strenuously oppose at the next municipal election those who are responsible for a policy which the medical profession of Willesden considers to be a serious and increasing menace to the public health.

It was decided that the following resolution should be forwarded only to the Council of the Association:

7. Part-time medical practitioners should be employed at the clinics as far as may be practicable.

Memorandum by the Willesden Division upon the Health Policy of the Willesden Urban District Council.

Generally speaking, the principle underlying municipal health policy in Willesden appears to be to concentrate in the hands of the whole-time permanent officers of the municipality the care (including treatment) of the child from before birth and up to school-leaving age, the services of these officers being placed at the disposal of all comers, and not only for the necessitous poor. The policy is opposed to the public interest, immediately because it involves unnecessary expenditure; ultimately because it must result in the formation of a class of practitioners wholly concerned in the treatment of disease in expectant mothers and in children, and the withdrawal of practice among such patients from the general practitioner. Such a development may, in the view of the British Medical Association, be seriously detrimental to the public and the profession alike. (Annual Representative Meeting, Special Report, 1915). Examination of the development of the system at the present time shows that the municipal service in Willesden is undertaking a work which, to a very large extent, might be adequately provided for through other agencies. It is thus overburdened and fails to carry out its peculiar functions adequately. In other words, the present arrangements tend to neglect the preventive aspect of health work for the curative.

This is extravagant, because failure in prevention means an increase in avoidable sickness and disablement; the curative work can under present conditions be better undertaken by private practitioners; persons able to pay for medical treatment are encouraged to obtain such treatment at the public expense through the public service; and, owing to the excessive burden laid on the staff of the health service, the work actually done cannot be adequately performed.

The following notes illustrate the application of these general criticisms to the work of several departments.

Municipal Hospital.

The Municipal Hospital was primarily provided for the accommodation of infectious disease, and for this purpose it is essential, if adequate arrangements are to be maintained for the public health of the district. At present the accommodation available for infectious disease is quite inadequate. As stated in the preface to the current report, "the concurrent prevalence of epidemics of diphtheria and scarlet fever in 1920 have greatly taxed the accommodation of the hospital for these diseases which was already insufficient and for which no provision has been made since 1902." On page 28 of the report it is stated that "It has been impossible to admit to hospital all cases of scarlet fever desiring removal. The hospital removal for scarlet fever had to be curtailed in October, 1920, after which time only urgent cases were removed. . . . These were not all removed as soon as notified, but as and when beds were available." It is clear that if only the most urgent cases are removed, and those cannot be removed when notified, a very great danger to the individual as well as to the public is involved. The overcrowding of the hospital (page 87) is an additional source of danger.

The staff also is quite inadequate for the work. This is shown by the statements in the current report on pages 85 and 86. Not only, therefore, is the welfare of the patients endangered by overcrowding, but also by the strain placed on both the medical and the nursing staff by inadequacy of accommodation (page 123). This overcrowding and overburdening of the staff is directly due to the increasing acceptance of cases other than those for which the hospital was primarily intended. This is shown by the fact that during the past year admissions to the hospital have included 1,113 infectious cases and 1,495 non-infectious cases.

Here there are two points to be considered. First, the urgency for the reception of these non-infectious cases where the infectious accommodation is admittedly inadequate, and, secondly, the danger involved in receiving maternity cases in a fever hospital, especially one with an admittedly overworked and badly accommodated staff. In the report the reception of these non-infectious cases is justified on the grounds of urgency. Inspection of the tables showing the nature of 81 gynaecological cases received during 1920 (as against 41 in 1919) and of the abnormalities occurring among the 470 maternity cases in 1920 (as against 239 in 1919) does not seem to bear out this contention. A large number of the cases could be treated adequately at home, in fact only a small proportion of the maternity cases could not have been dealt with equally well at home.

Far from restricting the activities of the hospital in this direction, it appears that an increasing number of maternity cases is being booked. It is stated on page 114 that during the first eight weeks of this year more than double the number of cases have been booked for confinement than can be accommodated in the hospital. These cases are very largely referred to the hospital by health visitors and the maternity and child welfare clinic staff, and apparently without reference to such conditions in the mother as make admission urgent.

It is now proposed to limit admission to the hospital to certain districts. This action may operate to exclude urgent cases which the practitioner attending would be glad to refer to a hospital whilst normal cases which could be adequately treated at home may gain admission. In the event of serious concurrent outbreaks of epidemics the conditions would, of course, be aggravated. It is stated on page 13 of the report that the municipal hospital and clinics established by the urban district council are "much on the lines indicated in the Dawson report." In one important respect this statement is incomplete and misleading. One of the essential features of the organization recommended in that report was the relations to be set up between private practitioners and the public health service. To the Willesden Hospital (and clinics) the private practitioner has no access.

Maternity and Child Welfare Centres.

It is noted throughout the current report that the staff of the council's clinics are overburdened by the very great increase of attendances at the clinics. It is recommended that this condition be met (*a*) by exclusion of cases from certain areas; (*b*) by the addition of additional centres in the excluded areas and of additional staff. The work undertaken at these centres is not confined to advice, but extends to treatment, and the treatment is free. The method of dealing with the present situation outlined above would again appear to exclude for the moment urgent cases, whilst allowing less urgent cases to obtain assistance on the territorial basis. This would appear to be a wasteful method of procedure.

If the treatment given were curtailed, the staff would presumably find more time for their purely advisory functions. Economy might also be effected if the health visitors and the clinic staff referred the patients able to meet private fees to their private practitioner. The tendency at present is for a case to be sent to the clinic by the health visitor and from the clinic to the municipal hospital.

School Children.

Here again the initial and essential function of the public health service is obscured by the additional activities which are undertaken. On page 9 of the report it is stated that the work of medical inspection of children in the schools (a statutory obligation) has been in abeyance since 1915. The reason for this is that the activities of the staff have been directed to curative and remedial measures. The significance of routine inspection lies in the provision thus afforded for the detection of every defect at the earliest possible date. Omission of this inspection allows the development of conditions which might be more economically and more advantageously checked at the very outset. Of the 16,417 medical defects which came under notice during 1920 treatment was secured for 97.1 per cent.; of the total treated 88.7 per cent. were dealt with through the clinics, the municipal hospital or home visitation. The remainder of 11.3 per cent. were dealt with by private practitioners, voluntary hospitals, other charitable institutions, or by the Poor Law.

A sum of £56 was recovered from the parents of children by the Education Authority in respect of treatment given. Consideration of this figure suggests that in many cases free treatment was obtained where payment might well have been made according to the means of the parent. It also suggests that treatment was given at the public expense by the public service in many cases which might have been referred in the first instance to the private practitioner attending the family concerned. In connexion with the work for school children, it should be noted that not only the medical staff, but also the auxiliary staff, is engaged in treatment, to the detriment of the preventive work of inspection; for it is stated on page 9 that, "if required, routine cleanliness inspections can be maintained, a considerable reduction of this percentage" (nitty and verminous conditions) "will be effected. It is, however, very difficult for the health visitor to find time for this work owing to the pressure of other duties."

The treatment given, as evidenced by the analysis on page 46, is not confined to treatment of defects, skin diseases, verminous conditions, etc., but appears to be given freely for any illness where the child is not confined to the home. Children are referred to the clinics by teachers where the parents would prefer their own doctor, and there is no attempt to confine free treatment to the necessitous.

Meetings of Branches and Divisions.

Edinburgh Branch: South-Eastern Counties Division.

The annual dinner of the South-Eastern Counties Division was held in the Douglas Hotel, Galashiels, on November 16th. Dr. Percy J. Henderson of Galashiels, Chairman of Division, presided, and, considering the wide area of the Division, there was a most satisfactory attendance, twenty-four being present. The arrangements were in the hands of a committee consisting of the practitioners in Galashiels, who are to be congratulated on the excellence of the entertainment, which was greatly enjoyed by all present. The usual toasts were duly honoured, including that of the "British Medical Association," proposed by the Rev. Dr. Donald, who gave a most interesting account of American experiences in connexion with the war and medical matters. In his reply Dr. J. S. Muir, the senior member present, gave much useful information as to the origin and history of the Association, and referred to the early difficulties and changes that had occurred in the South-Eastern Counties Division. He was happily able to show that the

Division was now in a most prosperous condition. Mr. Sanderson, Dr. Muir, Mr. James Barrie, and others contributed songs and humorous recitations. The evening, which was much enjoyed, concluded with the singing of "Auld Lang Syne."

MEETINGS TO BE HELD.

Dorset and West Hants Branch: West Dorset Division.—A meeting of the West Dorset Division, to which non-members are invited, will be held on Thursday, December 15th, when an address will be given by the Deputy Medical Secretary, Dr. G. C. Anderson, on The Advantages of Medical Organization under the B.M.A.

Essex Branch: South Essex Division.—Further meetings of the South Essex Division will be held on Thursday, December 8th, at the Palace Hotel, Southend-on-Sea, at 8.15 p.m., when Sir Berkeley Moynihan, K.C.M.G., C.B., will read a paper on the Diagnosis and Treatment of Gastric Ulcer (illustrated by original lantern slides). On January 13th, 1922, there will be a supper at the Hotel Victoria, at 8.15 p.m., and on February 10th, at the same place, at 8.15 p.m., Dr. F. W. Price will read a paper, illustrated by original lantern slides, on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease. At the meeting on March 10th, at the Hotel Victoria, at 8.15 p.m., Dr. Hector C. Cameron will discuss the subject of The Child in General Practice; and on April 14th, at 8.15 p.m., there will be a supper at the Hotel Victoria.

Kent Branch.—A meeting of the Kent Branch will be held on Thursday, December 8th, at 3.15 p.m., at the Royal Bull Hotel, Bromley. A paper will be read on Some Principles of After-treatment in Acute Abdominal Cases, by Mr. H. W. L. Molesworth, F.R.C.S., of Folkestone, late Surgical Registrar, London Hospital. The Honorary Secretary of the Bromley Division will kindly provide tea afterwards.

Kent Branch: Isle of Thanet Division.—A dinner, to which all medical men in the area of the Division are cordially invited, will be held at the Albion Hotel, Broadstairs, on Thursday, December 15th, at 7.30 p.m. The chair will be taken by Mr. W. G. Sutcliffe, F.R.C.S. It is hoped that as many as possible will endeavour to attend.

Malaya Branch.—Meetings of the Malaya Branch are held in Singapore on the third Thursday of each month. Members desiring to contribute papers are requested to communicate with the honorary secretary, Dr. J. W. Scharff, care of Port Health Office, Singapore. Arrangements can be made for the exhibition of specimens or cases of interest brought to the meetings.

Metropolitan Counties Branch: City Division.—A general meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road, on December 2nd, at 9.15 for 9.30 p.m. sharp, when Mr. N. Bishop Harman, F.R.C.S., Senior Ophthalmic Surgeon, West London Hospital, will lecture on "Squint: Cause and Treatment." Tea and coffee. A dinner-dance (Cinderella) will be held at the Abercorn Rooms, Great Eastern Hotel, on December 8th, at 7.15 p.m. Music during dinner. Bridge for non-dancers. Ladies and guests are invited. The Division will welcome any British Medical Association members. Tickets 15s.

Midland Branch: Leicester and Rutland Division.—A meeting of the Leicester and Rutland Divison will be held on Wednesday, November 30th, at 4 p.m., when Dr. C. O. Hawthorne will deliver a lecture on Sphygmometer Readings and Sphygmograms.

South Wales and Monmouthshire Branch: Swansea Division.—A meeting of the Swansea Division will be held on Thursday, December 15th, when Dr. Robert Knox (London) will give a British Medical Association lecture.

South-Western Branch.—The autumn intermediate meeting of the Branch will be held at the Royal Hotel, Plymouth, on Wednesday, December 7th, at 4.30 p.m., when Dr. W. Langdon Brown will deliver a British Medical Association lecture entitled "The Practical Importance of Endocrinology." By the kindness of Dr. C. L. Lander, D.S.O., M.C., the Chairman of the Plymouth Division, all those intending to be present are invited to tea at the hotel at 4 p.m., before the meeting.

Southern Branch: Portsmouth Division.—A clinical meeting will be held at the Royal Portsmouth Hospital on Tuesday, November 29th, at 3.45 p.m. *Cases:* Fractured Pelvis, Mr. H. Burrows; Hodgkin's Disease with Pruritus, Dr. A. Cambell; Prolapse of Rectum, Mummery's Operation, Mr. C. P. Childe; Hodgkin's Disease, Dr. H. A. Eaton; Polycythaemia, Dr. J. A. D. Radcliffe. *Specimens:* Resection of Large Intestine, Dr. T. A. M. Forde; Multiple Diverticula of Small Intestine, Dr. M. Aston Key; Acute Haemorrhagic Pancreatitis, Mr. W. Martin; Intrinsic Carcinoma of Larynx, Laryngectomy, with Note, Mr. C. A. Scott Ridout.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION.

Tuesday, November 22nd, 1921.

Sir Donald MacAlister, K.C.B., President, in the Chair.

The one hundred and fourteenth session of the General Council of Medical Education and Registration was opened at the offices of the Council in Hallam Street, London, W., on Tuesday, November 22nd, at 2 p.m.

President's Address.

Sir Donald MacAlister said: Once more I am able to record that no change has occurred in the ordinary membership of the Council during the recess. The representative of the University of London, however, has by His Majesty's favour been advanced to the dignity of knighthood and assumes a new designation. We therefore greet him now as Sir Sydney Russell Wells, and congratulate him on the honour he has received.

The Dental Board.

Under the Dentists Act, 1921, which received the Royal Assent on July 28th, the Privy Council is empowered to appoint three graduates or licentiates in Dental Surgery, to be additional members of the Council, for purposes relating to the exercise of its dental functions. The additional members must be members of the new Dental Board. The Lords of the Council have accordingly appointed Mr. W. H. Dolamore, M.R.C.S., L.D.S., Mr. W. H. Gilmour, M.D.S., L.D.S., and Mr. W. Guy, F.R.C.S., L.D.S., to the newly-created positions. Knowing them and their work for the profession, we assure them of our welcome, and promise ourselves much help and profit from their expert knowledge of dental administration and practice.

The members of the Dental Board of the United Kingdom, other than the three members to be chosen by this Council to-day, have now been duly appointed by the respective authorities named in the Act. With special satisfaction I announce that the Privy Council have appointed, as the first chairman, the Right Hon. Francis Dyke Acland, M.P., already well known to the Council for his distinguished public services, and in particular for his fruitful labours as Chairman of the Departmental Committee on Dental Practice. It is vouchsafed to few such committees to see their recommendations so promptly and effectively embodied in actual legislation. The Council has loyally co-operated with the Government and with the dental profession in shaping the amended law; and it cannot but rejoice that Mr. Acland has been induced to accept the responsibility of guiding the professional body, which this law has established, through its first stages of organization and operation. For over forty years the Council has had the duty of regulating dental education and registration, under the imperfect Act of 1878. The *Dentists Register* for 1922, now nearly complete, will be the last to appear under its authority. The much larger volume bearing that name will henceforth be the work of the Dental Board. The long experience of the Council and its officers will be placed unreservedly at the service of the members of the Board, when they take up their laborious and delicate task under Mr. Acland's direction. The new Act leaves to the Council certain important duties relating to dental education, examination, and discipline. These necessarily imply much mutual consultation and co-operation between the Council and the Dental Board. For this reason alone it would appear to be highly desirable that the office buildings of the Council and of the Board should be adjacent, and permit of ready intercommunication. The site to the north of this building is at the disposal of the Board, should it take the view I have mentioned concerning the convenience and economy of erecting its offices there.

The law gives power to the Council to act in dental matters by an Executive Committee, including at least one of the additional members. It will be expedient to set up this committee at once. Probably you will think it proper to follow the analogy of the Act; and, as the Council for dental purposes consists of ordinary and

additional members, to constitute the Dental Executive of the ordinary members of the Executive with an additional dental member. Various orders, rules, regulations, etc., must without delay be framed by the Board, and these have in general to be approved by the Council before they become operative. In order to avoid the expense and inconvenience of frequent short meetings of the Council for the purpose of considering and expressing such approval, it would be advisable that this power should, at least in the first instance, be delegated to the Dental Executive Committee. It is regarded as certain that one or more meetings for the purpose will have to take place during December in order that the Board may get to work at the beginning of the new year. It will also be necessary that the Council's own standing orders should be thoroughly revised, if only for the purpose of eliminating the parts made obsolete by the Dentists Act, 1921, and of adapting the remainder to altered conditions. I shall propose that the revision be remitted to the Executive Committee for report to the Council in May.

Medical Reciprocity.

The Executive Committee has learned, through the Lord President of the Privy Council, that though suggestions have been made for re-establishing the relation of medical reciprocity with Belgium which held during the war, no progress has been made towards that end. Belgian practitioners registered here retain their right to practise in Britain, but it is understood that no corresponding privilege remains to British practitioners registered in Belgium, unless they have independently acquired a local qualification there.

The inquiries regarding Spain, to which I referred in my last address from the chair, have resulted in the discovery by the Spanish Government that the former statute, under which foreign medical graduates might individually obtain special permission to practise in Spain, is still valid. Certain recent decrees, which appeared to abrogate the statute, are found to be of no effect. The whole question is therefore being reconsidered by the Spanish authorities, and it is possible that the fresh legislation, which seems to be necessary, may be such as to admit of reciprocal recognition of professional qualifications.

His Majesty in Council has, at the instance of the Executive Committee, issued an Order applying Part II of the Medical Act, 1886, to South Africa. Applications having been received from certain of the new universities now legally constituted within the Union, the Committee has, after consideration of their respective courses of professional study and examinations, agreed to recognize their medical degrees as qualifications registrable in the appropriate list of the *Medical Register*.

Midwifery Training in Indian Medical Schools.

On the subject of the guarantee of "the knowledge and skill required for the efficient practice of midwifery" furnished by the degrees and diplomas of Indian universities, which at present admit to the British *Medical Register*, several important communications have been received from these bodies, from the Indian Government, and from the Secretary of State for India. A Memorandum in which these are set forth has been prepared for the Executive Committee, and carefully considered by it. In some cases it is reported that amendments in the university regulations concerning instruction in midwifery have been or will be made; in others that any improvement of the existing conditions will require time and involve expense. The Government of India explains, through the Secretary of State, that the question of extending the facilities for midwifery training in Indian university medical schools has for some time been under examination; but urges that, in view of certain present conditions, further time should be granted for improvement before the Executive Committee decides on the question of withdrawing its recognition from Indian qualifications. The Secretary of State, "while deeply impressed by the considerations urged by the Government of India, fully appreciates the importance which the General Medical Council rightly attach to the fulfilment, by individual candidates for a licence to practise, of the midwifery practice enjoined in the [Council's] resolutions." He deems it eminently desirable that the Indian medical schools shall equip themselves with the clinical and other facilities necessary to enable Indian graduates desirous of registration in England to comply with the Council's requirements; but he asks the Council to allow to the several universities a suitable extension of time within which to reform their midwifery and gynaecological curricula, if willing and able to do so. He further offers to request the Government of India immediately to depute an experienced medical officer, fully conversant with the practice of gynaecology and obstetrics, to visit in turn the Indian medical schools, and to explain the nature of the requirements which are considered essential if their respective degrees are to continue to be recognized in this country. This officer would transmit for communication to the Council a report on each university medical school, setting forth under proper heads such information as would assist the Council in coming to a decision regarding the recognition of its degrees. The Indian Legislative Assembly has, moreover, passed a resolution recommending to the Governor-General of India in Council that the various local governments be advised to make more satisfactory arrangements for giving practical training in midwifery to students undergoing instruction for medical degrees and diplomas, and to bring the training up to the standard of the universities of the United Kingdom where it is not already so. The Legislative Assembly also asks that further time may be given by the Council before a final decision regarding recognition is taken.

In view of the replies of the majority of the universities, which indicate their purpose to improve the standard of their requirements in midwifery, and of the representations of the Indian Government and the Secretary of State, the Executive Committee have resolved to postpone the consideration of the question of recognition from February, 1922, to a later date, and in the meantime to accept the suggestion made by the Secretary of State that a report on the matters detailed in his official letter should be obtained and communicated to the Council. The Committee have intimated to the Secretary of State that it is prepared to nominate to the Government of India a member of the Council, who should accompany the medical officer appointed to visit the Indian universities and be associated with him in framing the report in question.

The Council has no statutory power to visit or inspect qualifying examinations held outside the United Kingdom. It has to accept such evidence of "sufficiency" as it can obtain by other means before granting or continuing to grant recognition to diplomas conferred abroad. It was on the evidence supplied by the Indian universities themselves that the Executive Committee became dissatisfied regarding the conditions on which these universities confer qualifications that are registrable here, and entitle their holders to practise midwifery in this country. The Committee will therefore be greatly assisted in their further consideration of the question by the evidence contained in an independent report, such as that proposed by the Secretary of State for India; and they will readily continue recognition to any recognized degree or diploma which is satisfactorily shown to offer the statutory guarantee of proficiency.

Inspection of Examinations.

The cycle of inspection and visitation by which the Council ascertains the standard of the qualifying examinations held in this country is now practically complete, and the reports are in the hands of members of the Council. It is the duty of the Examination Committee to report to you, not only on the particular bearing of the reports dealing with the individual examining bodies, but on any general conclusions regarding professional examinations, their method, scope, and standard, which emerge from the whole series. In view of the time and pains spent upon the work by our admirable inspectors, Dr. Tooth, Sir Hector Cameron, and Sir William Smyly, for whose lucid and judicial reports the Council has abundant reason to be grateful, it will be our part to profit by the manifold matters for consideration they supply. It may well be that the experience gained since the last inspection, both by the Council and by the licensing bodies themselves, may lead you to alter or make fuller and clearer the Council's resolutions and recommendations on professional education and examination, and perhaps also its Standing Orders relating to inspection and visitation. Apart, however, from the Examination Committee's Report, which I am not in

a position to anticipate, you will, I think, join with me in expressing satisfaction that, though they may differ in method, and to some extent also in standard, all the licensing bodies manifest their earnest endeavour to co-operate with the Council in ensuring that all who are admitted to the *Medical Register* have been properly taught and tested, and approved themselves qualified to enter on the practice of their profession.

The Registers.

During the current year (1921), up to the present date, the number of practitioners registered in the *Medical Register* is about 1,600, as compared with 1,457 for the whole year 1920. The number of medical students registered in 1920 was 2,531; at the present date the registrations for 1921 approach 1,500, a much more manageable number than before. The number of registered dental students shows a proportionate reduction from 560 to 320, which is about the average number before the war.

Diplomas and Degrees in Public Health.

The inspection of the numerous examinations for diplomas and degrees in public health has now been carried out. For this "post-graduate" qualification the Council has a direct and special responsibility. The diploma purports to guarantee that the holder possesses an expert knowledge of State Medicine, that he is highly proficient in all the branches of knowledge, scientific and practical, that concern the public health, and that he is fit to hold the administrative position and exercise the statutory functions of a medical officer of health. The rapid growth in the number and importance of these functions makes it necessary that the Council should from time to time revise the conditions it prescribes for the training and examination of such medical officers. It may find that certain subjects have become less necessary than of old, while other subjects, not heretofore greatly regarded, have become important for full efficiency. The weighty and well-considered general report of our inspector, Dr. Bruce Low, in which he sums up the lessons of his observations, deserves the Council's careful attention from this point of view. It would appear that for the modern public health service the qualification to be required before admission to office should be more than an academic certificate, attainable after nine months or so of additional study, by a licentiate or graduate who has just obtained his first licence to practise. It should imply a greater maturity of outlook, a deeper knowledge of principles, and a fuller practical acquaintance with actual administrative methods than an inexperienced practitioner can fairly be expected to compass in a year. Something equivalent to a short apprenticeship in a working public health department is, in fact, needed to supplement the lectures and demonstrations of the class-room and laboratory. The Public Health Committee of the Council, impressed by these considerations, has after full discussion prepared a series of recommendations in this general sense. These, if they should meet with your approval, will have the effect of rendering the Council's rules simpler in expression and more uniform in operation, and of ensuring a greater maturity and a higher level of practical efficiency in those who propose to devote themselves as administrative specialists to the public health service.

Revision of the Curriculum.

The revision of the medical curriculum has received much attention from the Education Committee and its numerous subcommittees since our last session. Many meetings and conferences have been held in the three divisions of the kingdom for the discussion of the various branches of the subject, and conclusions of importance are emerging which will in due course be submitted to the Council. During the present session the Committee may be in a position to offer an interim report, indicating the lines on which they propose to proceed.

The Pharmacopœia.

On behalf of the Pharmacopœia Committee I have to record that Sir Nestor Tirard and Professor Greenish attended, at my request, a conference called by the chairman of the National Physical Laboratory for the purpose of considering the official testing and marking of glass vessels used for the measurement of liquids. I understand that a standing advisory committee is to be set up, on which the Council, as the body by law responsible for defining the "true weights and measures" of the *British Pharmacopœia*, will be duly represented. The Revision Committee of the Pharmacopœia of the United States of America, 1920–1930, has, "in harmony with the spirit of international unity," made us a very courteous offer of their co-operation in the solution of pharmacopœial problems of common interest. They say truly that such problems as the standardization of drugs, chemicals, and preparations, the unifying of standards for serums and the like, the choice of menstrua, and the limits of dosage, are of universal concern; and they deem it desirable that, in these days of world-travel, our respective nations should aim at establishing greater uniformity in respect of their medicines. The invitation is one which the Council will gladly receive and accept, not only in the interest of the *Pharmacopœia*, but also as a fresh token of goodwill and fraternal feeling on the part of a great and kindred nation.

Dangerous Drugs Regulations.

The Regulations made by the Home Office under the Dangerous Drugs Act, to which I referred in my last address, were issued soon afterwards. They give effect to the representations made on behalf of the Council by the Pharmacopœia Committee, and by other bodies concerned, and appear to have met with general approval from medical practitioners and pharmacists. They are the outcome of an international movement for restricting the perilous traffic in drugs of addiction, and our profession is properly called upon, at the cost it may be of some inconvenience, to assist the authorities in checking the grave dangers to health and life that arise from the abuse of narcotics.

Disciplinary Cases.

Four cases of discipline fall to be dealt with at this session. The particulars of each will be brought before you to-day and to-morrow. Some of them suggest that the Warning Notice of the Council regarding the issue of certificates has not yet sufficiently impressed itself on the minds of all members of the profession. The privilege conferred by law on the registered practitioner in respect of the validity of his medical certificates carries with it a corresponding duty. It concerns the honour of his profession no less than his personal credit and self-respect that the duty should be scrupulously and faithfully fulfilled.

The many and various matters of importance placed on the programme of business for this session cannot be quickly disposed of, and I therefore expect that the Council will have to sit throughout the week, if, indeed, the week will suffice. The Chairmen of Committees, however, by the aid of additional meetings and of correspondence, have, I learn, made such progress with the preparation of their reports that these may be looked for soon after the beginning of the session.

VOTE OF THANKS.

Sir NORMAN MOORE moved and Mr. H. J. WARING seconded a vote of thanks to the President, which was carried by acclamation.

APPOINTMENTS UNDER DENTISTS ACT, 1921.

Additional members of the Council, appointed by the Privy Council under the provisions of the Dentists Act, 1921, were introduced. These were Mr. W. H. Dolamore, Mr. William Henry Gilmour (Liverpool), and Mr. William Guy. On the motion of the Chairman of the Dental Education and Examination Committee (Sir James Hodsdon) these three gentlemen were appointed additional members of that committee until the next election.

Three members were appointed to be members of the Dental Board, one from the English, one from the Scottish, and one from the Irish Branch—namely, Mr. H. J. Waring, Sir James Hodgson, and Sir Arthur Chance.

A Dental Executive Committee had also to be appointed under the Act, and it was agreed that the ordinary members of the Executive Committee, with the addition of Mr. Dolamore, should act in this capacity until the next session.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Surgeon Commanders: J. S. Austin to the *Colombo*, A. I. Shelton to the *Carolune*. Surgeon Lieutenants: F. G. Hunt to the *Carolune*, W. F. Colborne to the *Colombo*.

Surgeon Lieutenant A. G. Taylor has been promoted to the rank of Surgeon Lieutenant Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major A. Irvine-Fortescue, D.S.O., to be temporary Lieutenant-Colonel whilst specially employed, from December 9th, 1919, to May 29th, 1921.

Captain C. H. Stringer, D.S.O., to be temporary Major whilst specially employed as D.A.D. of H.

The following to be temporary Majors: Captains R. V. Atkinson (from February 20th, 1919, to September 19th, 1920), D. J. M. Large (from March 13th to May 24th, 1919), R. B. Myles, O.B.E. (from May 7th to May 15th, 1919), temporary Captain E. G. D. Milsom (from April 6th, 1918, to January 10th, 1920).

The notification in the *London Gazette* of November 29th, 1921, regarding temporary Captain James T. Rearden, is cancelled.

Temporary Captain L. L. Clapp relinquishes his commission and is granted the rank of Major.

The following temporary Captains relinquish their commissions and retain the rank of Captain: J. H. Rodgers, James T. Rearden (December 20th, 1920, substituted for the notification in the *London Gazette* of November 3rd, 1920), Thomas E. Dobbs.

The following temporary Lieutenants relinquish their commissions and retain the rank of Lieutenant: G. A. Clarkson, J. H. Howitt.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following Captains to be acting Lieutenant-Colonels: I. Braun, from September 13th to October 14th, 1919; J. Allison, from May 8th to October 15th, 1919.

DEFENCE FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

2nd (South Midland) Field Ambulance. Temporary Lieut.-Colonel A. E. P. McConnell, M.C., relinquishes his commission.

3rd (S. Midland) Field Ambulance. The notification regarding T. C. Brasher in the *London Gazette* of May 11th, 1921, is cancelled.

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE.—*Occasional Lecture*, Mon., 5 p.m., Dr. Guelpa (Paris): Treatment of Diabetes and Gout by Disintoxication. *Social Evening*, Wed., 8 p.m., Reception by the President and Lady Bland-Sutton; 9 p.m., short address by Sir Berkeley Moynihan on Medicine in Art (illustrated). The Library will be open and various objects of interest will be exhibited. Music, light refreshments, and smoking. All Fellows and their friends are cordially invited; no tickets are required. *Section of Odontology:* Mon., 8 p.m., Mr. S. Mummery: Case of Maxillary Sarcoma in an Infant. Mr W. F. Broderick: The Endocrine Factor in the Production of Immunity or Susceptibility of the Teeth to Caries. The following will take part in the discussion after the paper: Sir Arthur Keith, Dr. Leonard Williams, Sir John Bland-Sutton, and Professor Halliburton. *Section of Obstetrics and Gynaecology:* Thurs., 8 p.m., Specimens. Paper: Mr. R. H. Paramore: Eclampsia and its Incidence. *Section of Laryngology:* Thurs., 4 p.m., Cases. *Section of Anaesthetics*, Thurs., 8.30 p.m., Informal meeting.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Infirmary, Wed., 4.15 p.m., Professor J. M. Munro Kerr and Dr. J. Hendry: Gynaecological cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Dr. B. Shires: *X*-ray Appearances of Diseases of Bone.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. W. Brown: Psychology and Psychotherapy. Wed., 4.30 p.m., Dr. C. Da Fano: Histology of the Nervous System.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Diseases of Children: Mon., 9.15 a.m., Dr. T. Thompson: Organic and Functional Nervous Diseases and Mental Deficiency. Wed., 10.15 a.m., Dr. C. H. Miller: Clinical Demonstrations. Sat., 10.15 a.m., Dr. R. Hutchison: General Diseases.

MANCHESTER ROYAL INFIRMARY, Tues., 4.30 p.m., Mr. H. H. Rayner: Cancer of the Breast.

MANCHESTER: ST. MARY'S HOSPITALS (Whitworth Street West Branch).—Fri., 4.30 p.m., Dr. Lacey: Backache.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Daily, In- and Out-patient Attendances. Lecture, Mon., 5.30 p.m., by Dr. Moon: Functional Disease of the Heart.

NORTH EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., In- and Out-patient Clinics, Operations, etc. Mon., 4.30 p.m., Mr. J. Bright Banister: The Haemorrhage of Late Pregnancy. Tues., 3.30 p.m., Dr. F. G. Crookshank: Physical Examination of the Chest: (II) The Stethoscope. Fri., 4.30 p.m., Mr. E. Gillespie: Treatment of Paralytic Deformities by Orthopaedic Methods.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell Square, W.C.—Wed., 4 p.m., Professor E. L. Collis: Health and Welfare in the Coal Mining Industry.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.—Thurs., 5 p.m., Dr. W. Knowsley Sibley: Syphilis.

SALFORD ROYAL HOSPITAL.—Thurs., 1 p.m., Dr. H. A. T. Aveling: Indigestion in Infants.

SHEFFIELD UNIVERSITY.—At Royal Infirmary: Demonstration of Cases; Tues., 3.30 p.m., Mr. Cuff; 4.15 p.m., Dr. Pooley; Fri., 3.30 p.m., Dr. Barnes; 4.15 p.m., Mr. Kerr.

UNIVERSITY COLLEGE, Gower Street, W.C.—Fri., 4.30 p.m., Dr. J. C. Drummond: Nutrition.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Lectures, 5 p.m.: Mon., Dr. Saunders: Carcinoma of the Stomach; Tues. and Fri., Mr. Addison: Hernia; Wed., Dr. Owen: Renal Disease; Thurs., Dr. Graham Stewart: Sciatica.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Ernest Jones, Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecret, Westrand, London).
EDITOR *Journal of Medical Science* (Telegrams: Aetiology, Westrand, London).
Telephone number for all Departments: Gerrard 8630.

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 1561 Central.)
IRISH MEDICAL SECRETARY: 10 South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4757 Dublin.)

Diary of the Association.

NOVEMBER

25 Fri. London: Science Committee, 2.30 p.m.
Lambeth Division, Lambeth Carlton Club, 4.30 p.m.
28 Mon. London: Medico-Sociological Committee, 2.45 p.m.
Portsmouth Division: Clinical Meeting, Royal Portsmouth Hospital, 5.45 p.m.
30 Wed. Leicester and Rutland Division: B.M.A. Lecture by Dr. C. O. Hawthorne on Sphygmometer Readings and Sphygmograms, 4 p.m.
London Arrangements Committee (other than the Glasgow Representatives), 5 p.m.

DECEMBER

2 Fri. City Division: Metropolitan Hospital, Kingsland Road, 9.15 for 9.30 p.m.
London: Whitley Council Subcommittee, 2 p.m.
7 Wed. South Western Branch: Royal Hotel, Plymouth, 4.30 p.m., B.M.A. Lecture by Dr. W. Langdon Brown: The Practical Importance of Endocrinology.
South Middlesex Division, St. John's Hospital, Twickenham, 8 p.m., Clinical Meeting.
8 Thurs. City Division: Dinner-Dance, Abercorn Rooms, Great Eastern Hotel, 7.15 p.m.
Kent Branch: Royal Bull Hotel, Bromley, 5.15 p.m.
South Essex Division, Palace Hotel, Southend-on-Sea: Paper by Sir Berkeley Moynihan: Diagnosis and Treatment of Gastric Ulcer.
9 Fri. London: Dons Committee, 2.30 p.m.
14 Wed. North Middlesex Division, Prince of Wales's General Hospital, Tottenham: B.M.A. Lecture by Colonel L. W. Harrison: Treatment of Gonorrhoea in General Practice.
15 Thurs. Isle of Thanet Division: Dinner, Albion Hotel, Broadstairs, 7.30 p.m.
Swansea Division: B.M.A. Lecture by Dr. Robert Knox.
West Dorset Division: Address by Dr. G. C. Anderson, Deputy Medical Secretary, "The Advantages of Medical Organization under the B.M.A."
16 Fri. London: General Purposes Subcommittee of the Insurance Acts Committee, 2.30 p.m.
20 Tues. Croydon Division, Croydon General Hospital, Dr. J. Bright Banister: Obstetrics and Gynaecology.

APPOINTMENTS.

ALCOCK, WILLIAM, R., M.C., M.B., Ch.B.Edin., Honorary Assistant Gynaecologist to the Salford Royal Hospital.

SEMPLE, Robert, O.B.E., M.D.Aberd., Obstetric Physician to the Aberdeen Maternity Hospital, vice W. F. T. Haultain.

ALBERT DOCK HOSPITAL OF THE SEAMEN'S HOSPITAL SOCIETY.—Surgeons: H. Ernest Griffiths, M.S., F.R.C.S., and T. Pomfret Kilner, F.R.C.S.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Senior Resident Medical Officer, Miss A. Muriel Griffiths, M.B., B.S.Lond. Assistant Resident Medical Officer, Miss Edith M. Hall, M.B., B.S.Lond., M.R.C.S., L.R.C.P. District Resident Medical Officer, Miss M. Olive Ramsey, M.B., B.S.Lond., M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 6s., *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

MISSAT.—On September 7th, at Villa Papacian, Glymenopoulo, Ramleh, Alexandria, Egypt, the wife of A. N. Missat, M.D., F.R.C.S.Edin., of a son.

RUSSELL.—On November 12th, at Cairnlea, Hamilton, Scotland, the wife of A. Watson Russell, M.C., M.B., Ch.B., of 191, Iffley Road, Oxford, a son.

SIMPSON.—At the Superintendent's residence, East Riding Mental Hospital, Beverley, on November 21st, the wife of E. S. Simpson, M.C., M.D., a daughter.

SKINNER.—On November 14th, at Hanlow, Chirk, to Dr. and Mrs. A. H. Skinner, *nee* Beney, a son.

MARRIAGE.

WISE—DIXON.—On November 11th, C. E. Wise, M.D., M.R.C.S., and L.R.C.P., to Phyllis D. Dixon, M.B., B.S.Lond.

Published [illegible] by the British Medical Association Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

The British Medical Association.

FOUNDED 1832.

PATRON: HIS MAJESTY THE KING.

The close of another year affords an opportunity to draw the attention of members of the medical profession to the chief aims and objects of the Association, and to give some information regarding its work and organization.

AIMS AND OBJECTS.

THE BRITISH MEDICAL ASSOCIATION was established to promote the medical and allied sciences, to maintain the honour and interests of the profession, and foster a feeling of friendship among its members. To attain the above objects it holds periodical meetings for the discussion of medical and scientific subjects; it publishes the *British Medical Journal;* it maintains a Reference and Lending Library; it has instituted scholarships and grants for research work; and does a very large amount of medico-political and other work in the interests of the profession.

CONSTITUTION AND ADMINISTRATION.

The British Medical Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies, and Dependencies. The Divisions are arranged territorially, and number, in all, 234. For certain purposes of administration or of scientific and clinical work, the Divisions are combined into Branches, which number 93. Members of Divisions elect Representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical Services elected by the Representative Body.

The Representative Body and Council elect Standing Committees to take charge of different subjects. Among these may be mentioned the Science, Medico Political, Ethical, Hospitals, Public Health, and Naval and Military Committees. There are also Committees for the Dominions, Scotland, Ireland, and Wales, and for the working machinery of the Association, such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by Insurance practitioners, is financed by the Association.

PRIVILEGES OF MEMBERS.

A member of the British Medical Association has the right—

1. To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
2. To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body, and also in the election of members of the Council.
3. To receive the *British Medical Journal*, published weekly, which gives a complete conspectus of progress in clinical scientific medicine and of medico-political affairs throughout the British Empire.
4. To receive the help and advice of the Central Office in any professional difficulty.
5. To use the Library as a reading room and to borrow modern medical or scientific books (not exceeding four at a time) on payment of postage. In addition to modern works and periodical medical literature—foreign as well as English—the Library contains many valuable works of historic interest.

The British Medical Association is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. It owns a large freehold building, centrally situated in London, and has large funds and resources.

The full benefits of the Association can only be provided by the co-operation of large numbers of the medical profession, who in this way, by means of their annual subscriptions, provide the necessary funds. The larger the membership and the larger the funds, the more efficient and influential does the Association become. Its membership is now over 23,600, but there is scope for large increase. The Association may claim

without fear of contradiction that during its existence it has been the direct means of benefiting every class of medical men and medical women, and that it has looked after their honour and interest in every way to the utmost of its power. To record the Association's activities for one year would take more room than can be afforded in this article. Its recent intervention in the matter of the Dangerous Drugs Regulations was a striking example of its influence.

In asking for new members, we appeal not only to the older members of the profession, but especially to those recently qualified. To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the services of the Association in improving the conditions under which they may hold appointments in the Imperial Services or in civil life. The only way to recognize the services of the Association is to become a Member of the Association and to take an active part in its work.

The necessity for organization and co-operation is more urgent than ever, and this appeal is issued with every confidence that it will meet with a large response. The form of application for Membership, printed at p. 215, should be signed and forwarded with a cheque for the necessary amount to the address given.

DAVID DRUMMOND,
President.

R. WALLACE HENRY,
Chairman of Representative Meetings.

R. A. BOLAM,
Chairman of Council.

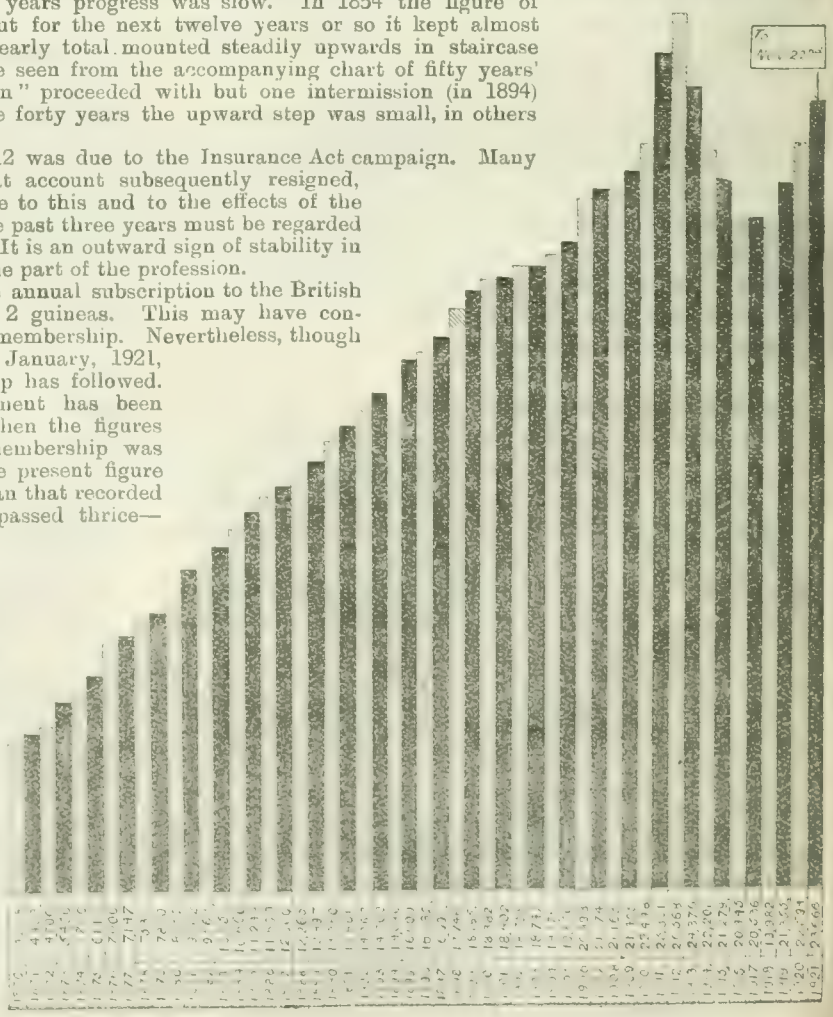
FIFTY YEARS OF MEMBERSHIP.

THE chart on this page is reproduced from a part of the curve showing the annual membership figures of the British Medical Association from its foundation ninety years ago up to the present year.

From 1832 to 1857 the membership had slowly mounted from 50 to 600; in the following year it rose to the modest total of 940. During the next fifteen years progress was slow. In 1854 the figure of 2,000 was passed for the first time, but for the next twelve years or so it kept almost stationary. From 1867 to 1870 the yearly total mounted steadily upwards in staircase fashion from 3,082 to 4,258. As will be seen from the accompanying chart of fifty years' membership this "staircase phenomenon" proceeded with but one intermission (in 1894) from 1870 until 1910. In some of those forty years the upward step was small, in others large, but the ascent continued.

The very big rise in 1911 and 1912 was due to the Insurance Act campaign. Many practitioners who joined solely on that account subsequently resigned, and the fall from 1913 to 1918 was due to this and to the effects of the war. The upward movement during the past three years must be regarded as satisfactory in the highest degree. It is an outward sign of stability in the organization, and of confidence on the part of the profession.

It is to be noted that in 1914 the annual subscription to the British Medical Association was increased to 2 guineas. This may have contributed in some degree to the fall in membership. Nevertheless, though the subscription was again raised in January, 1921, to 3 guineas no decrease of membership has followed. On the contrary, the upward movement has been maintained, so that on October 6th (when the figures were last officially announced) the membership was 23,634; it is now slightly larger. The present figure of 23,666 is more than 1,000 greater than that recorded last year, and it has only been surpassed thrice—namely, during the three exceptional years of the Insurance Acts campaign.



The complete chart showing the annual figures of membership from 1832 to 1920 is reproduced in the current *Handbook of the Association*, the issue of which was announced in a Current Note last week. The *Handbook* contains a great deal of information in regard to the work, constitution, and history of the Association. It is primarily intended as a reference book for honorary secretaries of Divisions and Branches and other workers of the Association, but there is much in it of interest to all members. A limited number of copies is available free of charge for those members who apply to the Medical Secretary, 429, Strand, W.C.2. The price to non-members is 5s. Early application is necessary.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 31st, 1921.

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British Medical Association.

CURRENT NOTES.

Joint Action.

REQUESTS for the co-operation of the British Medical Association are constantly being received at headquarters, and it is evident that the backing and help of the Association is valued very highly by those applying. The Science Committee at its last meeting considered three applications for co-operation: (1) From the National Physical Laboratory, in which a proposal was made that the Association should be represented on a Standing Committee which it was proposed should be appointed to deal with the standardization of scientific glassware and kindred problems; (2) from the British Lampblown Scientific Glassware Manufacturers' Association, asking for the co-operation of the Association in an attempt which is being made to promote legislation in order to make the testing of clinical thermometers compulsory; (3) from the National Union of Scientific Workers, asking the Association to join in a deputation to the Minister of Education, drawing attention to the disabilities which will result to scientific workers, research and teaching institutions, from the Safeguarding of Industries Act, 1921.

Inquiry into Administrative Arrangements of Insurance Committees.

The Minister of Health has appointed a committee to inquire into certain questions of machinery relating to the administrative arrangements of Insurance Committees. The committee consists of Messrs. H. A. Leggett (Chairman), J. Chown, T. Lindsay, and C. M. Watts of the Ministry of Health, Mr. Williams of the Welsh Board of Health, Dr. H. G. Dain (Chairman of the Birmingham Insurance Committee), Mr. C. W. Followes (Clerk to the Bournemouth Insurance Committee), Mr. W. Gill Hodgson (Clerk to the Liverpool Insurance Committee), Mr. E. Potts (Clerk to the Durham Insurance Committee). It is gratifying to note the appointment of Dr. H. G. Dain of Birmingham, as his extensive knowledge of National Health Insurance matters, both from the administrative and medical point of view, should prove of great value to the committee. Dr. Dain is at the present moment Chairman of the Conference of Local Medical and Panel Committees, a member of the Insurance Acts Committee, and a member of the Distribution Committee of the Ministry of Health, as well as a member of the Council of the British Medical Association.

Notification Fee for Infectious Diseases.

There is possibly no subject which has given rise to more irritation and misunderstanding in the profession than the reduction of the fee for notification of infectious diseases. The efforts of the Association to prevent this reduction and to secure the restoration of the full fee at the earliest possible moment were imperfectly appreciated by many, so that the long-expected Order in Council declaring that the war was officially ended was very welcome. It would appear, however, that some public officials who have to do with the payment of these fees are not yet aware of the effect of the Order in Council. Possibly some have grown weary of waiting for this important announcement and have not noticed its advent, or they may have forgotten that it was preceded in bygone days by a Ministry of Health Order that on the publication of the Order in Council the fee would automatically revert to its pre-war amount. One correspondent wrote in October that he was only being paid 1s. for the cases notified in September. Another correspondent had evidently not been paid the correct fee in October. A third correspondent, on raising the question locally as to the correctness of the fee, was told as late as October 10th that "the fees for the notification of infectious diseases have not been raised." One authority, which reduced the fee for the notification of tuberculosis when the reductions were originally made, now pleads that as that particular disease has nothing to do with the Notification of Infectious Diseases Act, it cannot be restored to its pre-war value. The attention of the official has been called to the old adage which runs, "You cannot have it both ways," and if the authority was good enough for reducing a fee it may fairly be expected to operate equally in restoring it. Medical practitioners are advised to take particular notice what fees they are receiving for this service at the present time, and for their information it is again stated that the Order in Council declared that the war terminated officially on August 31st, 1921, and that a Ministry of Health circular dated December 20th, 1919, laid down that the Infectious Disease Provisions of the Emergency Provisions Act, 1916, would lapse on the date of the termination of the war as fixed by Order in Council, after which date the fee to medical practitioners for notification of infectious diseases would revert to 2s. 6d.

The Association in Lancashire and Cheshire.

The Medical Secretary last week took the opportunity of visiting some of the Lancashire and Cheshire Divisions which were not visited on his tour earlier in the year. Meetings were held at Chester and Birkenhead on Wednesday

afternoon and evening, November 25th; at Preston and Blackburn on Thursday afternoon and evening, and at Burnley on Friday afternoon. The meetings were held in pursuance of the policy of the Council that all Divisions should, if possible, be visited by a member of the staff once in two years, and it is believed that they will have the effect, in two of the places visited, of encouraging Divisions which used to be very active, but which during the war fell into a somewhat languid condition, to recover their old position of influence and usefulness in their areas. At such meetings a special point is always made of encouraging questions on the work of the Association, and full advantage was taken of the opportunity at each of the places visited. The meetings at Blackburn and Burnley were particularly well attended, vigorous, and interesting, and the Medical Secretary left Lancashire with the conviction that though its head is hard and its tongue often very sharp, its heart is in the right place.

Meetings of Branches and Divisions.

NORTHERN COUNTIES OF SCOTLAND BRANCH: INVERNESS DIVISION.

A MEETING of the Inverness Division was held in the Town Hall, Inverness, on November 16th, when Dr. JOHN MACDONALD presided.

A new proposed scheme of Inverness County Education Authority for medical inspection of school children in the Badenoch, Lochaber, Island of Skye, and Outer Hebrides areas of the county was discussed and approved. According to this scheme the medical officers residing in these areas would be asked to carry out the work, visiting and inspecting one-third of each school twice yearly, in his own time, and rendering the necessary reports thereon.

The following scale of remuneration was decided on, which the County Education Authority has been asked to authorize:

For visiting and inspecting school children and rendering the necessary reports thereon, the doctor carrying this out twice yearly, in his own time, for a fee of 2s. per annum per pupil on each school roll.

For a special visit to a school, on the order of the Education Authority, Headquarters, Inverness, mileage to be paid at the rate of 1s. 3d. per running mile.

When the Education Authority at Headquarters, Inverness, notifies the doctor of the necessity of visiting and treating any necessitous school children in a district, the doctor's remuneration will be 5s. for the first visit and 1s. each for each succeeding visit, with mileage at Highlands and Islands Medical Service rates.

It was suggested that, if these terms were agreed to, the Education Authority should approach the Scottish Board of Health for permission for the doctors to include the mileage return under the third paragraph above in their own monthly return of mileage rendered to the Scottish Board of Health in the Highlands and Islands Medical Schedules, under the heading "Other Public Bodies." It was considered that this would be fair for all parties concerned.

It was agreed to ask the County Public Health Local Authority to sanction the remuneration, for treating domiciliary cases of tuberculosis, on whom attendance has been authorized by these bodies, of £1 per month per patient, with mileage calculated on the Highlands and Islands Medical Service basis.

YORKSHIRE BRANCH: WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION.

A JOINT meeting of the Wakefield, Pontefract, and Castleford Division of the British Medical Association and the Doncaster Medical Society, to which all members of the profession in the Yorkshire Branch area were invited, took place at the Danum Hotel, Doncaster, on November 15th. The meeting was preceded by a dinner, and the guest of the evening was Dr. Alfred Cox, Medical Secretary of the British Medical Association. Both dinner and meeting were well attended; some thirty doctors were present.

The chair was occupied by Dr. ROBERT MITCHELL (Pickburn, near Doncaster), Chairman of the Doncaster Medical Society.

After dinner the Chairman introduced Dr. COX, who was cordially received, and gave an address entitled, "A perfect medical organization." This was followed by discussion, in which a number of doctors joined, including Drs. CALLANDER (Doncaster), DIBB (Bramley), EARDLEY (Goole), T. A. GLOVER (Doncaster), HILLMAN (Wakefield), MARRON (Doncaster), and TAMPLIN (Doncaster); and Dr. COX replied.

On the motion of Dr. H. J. CLARKE (Doncaster), Vice-Chairman of the Wakefield Division, seconded by Dr. GOODE (Doncaster), and ably supported by Dr. G. H. SEDGWICK (Thrybergh, near Rotherham), a hearty vote of thanks was accorded to Dr. Cox, and the meeting came to a close just before midnight.

MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—A meeting will be held on Tuesday, December 6th, at 8.30 p.m., at the Coventry and Warwickshire Hospital, when Mr. William Billington, F.R.C.S., will read a paper entitled "Plastic Surgery of the Face and Jaws, with Special Reference to War Injuries" (illustrated by lantern slides).

CAMBRIDGE AND HUNTINGDON BRANCH.—A meeting of the Branch will be held in the Medical Schools, Downing Street, Cambridge, at 2.15 p.m., on Friday, December 9th. Agenda: Notes on Cases, Dr. Aldren Wright; Notes on Two Cases, Mr. Bowen; Examples of Radium Treatment, Dr. Roderick; The Reconstruction of a Female, illustrated by lantern slides, Mr. Cooke and Dr. Shillington Scales; Exhibition of Lantern Slides, Dr. Shillington Scales. Tea will be provided.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of the West Dorset Division, to which non-members are invited, will be held on Thursday, December 15th, when an address will be given by the Deputy Medical Secretary, Dr. G. C. Anderson, on The Advantages of Medical Organization under the B.M.A.

ESSEX BRANCH: SOUTH ESSEX DIVISION.—Further meetings of the South Essex Division will be held on Thursday, December 8th, at the Palace Hotel, Southend-on-Sea, at 8.15 p.m., when Sir Berkeley Moynihan, K.C.M.G., C.B., will read a paper on the Diagnosis and Treatment of Gastric Ulcer (illustrated by original lantern slides). On January 13th, 1922, there will be a supper at the Hotel Victoria, at 8.15 p.m., and on February 10th, at the same place, at 8.15 p.m., Dr. F. W. Price will read a paper, illustrated by original lantern slides, on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease. At the meeting on March 10th, at the Hotel Victoria, at 8.15 p.m., Dr. Hector C. Cameron will discuss the subject of The Child in General Practice; and on April 14th, at 8.15 p.m., there will be a supper at the Hotel Victoria.

KENT BRANCH.—A meeting of the Kent Branch will be held on Thursday, December 8th, at 3.15 p.m., at the Royal Bull Hotel, Bromley. A paper will be read on Some Principles of After-treatment in Acute Abdominal Cases, by Mr. H. W. L. Molesworth, F.R.C.S., of Folkestone, late Surgical Registrar, London Hospital. The Honorary Secretary of the Bromley Division will kindly provide tea afterwards.

KENT BRANCH: ISLE OF THANET DIVISION.—A dinner, to which all medical men in the area of the Division are cordially invited, will be held at the Albion Hotel, Broadstairs, on Thursday, December 15th, at 7.30 p.m. The chair will be taken by Mr. W. G. Sutcliffe, F.R.C.S. It is hoped that as many as possible will endeavour to attend.

KENT BRANCH: MAIDSTONE DIVISION.—A meeting of the Maidstone Division will be held at the West Kent Hospital on Wednesday, December 7th, at 3.30 p.m., when a British Medical Association Lecture will be delivered by Dr. Arthur Saunders, Physician to the West London Hospital, on Nephritis in Children.

MALAYA BRANCH.—Meetings of the Malaya Branch are held in Singapore on the third Thursday of each month. Members desiring to contribute papers are requested to communicate with the honorary secretary, Dr. J. W. Scharff, care of Port Health Office, Singapore. Arrangements can be made for the exhibition of specimens or cases of interest brought to the meetings.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A general meeting of the City Division will be held at the Metropolitan Hospital, Kingsland Road, on December 2nd, at 9.15 for 9.30 p.m. sharp, when Mr. N. Bishop Harman, F.R.C.S., Senior Ophthalmic Surgeon, West London Hospital, will lecture on "Squint: Cause and Treatment." Tea and coffee. A dinner-dance (Cinderella) will be held at the Abercorn Rooms, Great Eastern Hotel, on December 8th, at 7.15 p.m. Music during dinner. Bridge for non-dancers. Ladies and guests are invited. The Division will welcome any British Medical Association members. Tickets 15s.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: SWANSEA DIVISION.—A meeting of the Swansea Division will be held on Thursday, December 15th, when Dr. Robert Knox (London) will give a British Medical Association lecture.

SOUTH-WESTERN BRANCH.—The autumn intermediate meeting of the Branch will be held at the Royal Hotel, Plymouth, on Wednesday, December 7th, at 4.30 p.m., when Dr. W. Langdon Brown will deliver a British Medical Association lecture entitled "The Practical Importance of Endocrinology." By the kindness of Dr. C. L. Lander, D.S.O., M.C., the Chairman of the Plymouth Division, all those intending to be present are invited to tea at the hotel at 4 p.m., before the meeting.

SUSSEX BRANCH: HASTINGS DIVISION.—A meeting of the Hastings Division will be held at the East Sussex Hospital on Tuesday, December 6th, at 8.30 p.m. Agenda: Demonstration of Clinical Cases; Dr. Locke will deliver his Report on the 1921 Meeting of Representatives at Newcastle; Adoption of (*a*) Model Organization Rules, (*b*) Revised Ethical Rules; Dr. Hessey will read a Paper on "The Uses of Colour in Treatment of Disease." Members willing to show clinical cases are asked to notify the Honorary Secretary, Dr. Charnock Smith, Glin House, Hastings, not later than Monday, December 5th.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1921.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

FINAL EXAMINATIONS IN MEDICINE, SURGERY, AND MIDWIFERY.

THE Council devoted the morning of November 26th to the consideration of a report by the Examination Committee on the series of inspections of qualifying examinations which have been carried out since April, 1920, and the recommendations for raising the standard of such examinations.

Dr. NORMAN WALKER, the Chairman of the Committee, epitomized the report. He said that the last report on inspection occupied a period of some years, but the inspectors this time had worked with greater expedition, with the result that during the last twenty months the final examinations of all the examining bodies had been inspected, with the exception of the midwifery examination of Cambridge, the surgery examination of St. Andrews, and the examination of the National University of Ireland held in Cork and Galway. The committee for its part had endeavoured to follow the example set by the inspectors, and had devoted a very busy week to drafting the report now presented, which summarized the inspectors' conclusions. The inspectors in medicine and surgery were satisfied as to the "sufficiency" (within the meaning of the Act) of all the examinations, although they made suggestions for improvement. The inspector in midwifery (Sir William Smyly) reported the examinations of twelve of the examining bodies to be sufficient, but with regard to those of eight others he reported that, in the absence of a clinical examination, he could not consider them sufficient. Without a clinical examination it was possible that students would be passed like the one of whom it was said that he could describe all the symptoms of a disease, but was quite unable to recognize them in a patient. His committee recommended that the attention of the examining bodies should be drawn to former remarks of the Council on the importance of a clinical examination. With regard to the examination in midwifery at London University, the inspector was unfavourably impressed by it; the written part was excellent, but the proportion of marks allotted to it was so great as to make the oral and practical of little account, and insufficient time was allowed for the latter. Since the date of inspection London University had adopted certain resolutions which went a good way to meet the case, and it was hoped to have a reinspection of this examination shortly. With regard to the examination in pathology, which in some universities was made a part of the final, the inspector (Dr. Tooth) had reported very favourably.

Passing to more controversial matters, the speaker said that the Council in the past had attached a good deal of importance to the presence of two examiners at the oral examination instead of one. The presence of an additional examiner was a great protection to the student, and on this matter his committee thought it well to put forward a recommendation reiterating that view. He himself had followed the course of a particular student who was examined in medicine and surgery by two examiners and did exceedingly well. She then passed before a single examiner in hygiene, and could not answer a single question, but later, in medical jurisprudence, again with two examiners, she repeated her earlier success. If in the unfortunate examination there had been a second examiner to put in a question he was sure that she would have done much better. Another point which the committee had to meet was the variation in time allotted to the candidates for dealing with their principal case in the examination in clinical medicine. In some cases this extended to three hours, in others to less than an hour. The committee would recommend that at least an hour and a half should be devoted to this part of the examination. The next point related to the evidence of further study after rejection. Here he mentioned the case of a student who had been rejected fourteen times in midwifery. A recommendation of the Council which had not been very closely observed by the licensing bodies was that a candidate who had been remitted in any subject should, before being admitted to re-examination, be required to produce satisfactory evidence that he had pursued the study of the subject during the interval. On comparing the reports of the inspectors, it was found that the names of several examiners recurred in connexion with the examinations of different bodies. The interchange of experienced examiners was an advantage, and the gentlemen who examined in two or three universities for a certain period were rendering a public service; in addition to securing better uniformity among the examining bodies, this plan was likely to prevent the individual examiner from adopting too narrow a view. With regard to marking, it would be a great advantage if the universities adopted a uniform system. Though he was not sanguine that they would take the hint. A further recommendation concerned the unity of the Final Examination. The committee was not unanimous on this point; in fact, there were great differences of opinion; and purely as a compromise, in the belief that half a loaf was better than no bread, it had been decided to recommend to the Council that in the Final Examination students should be required either to pass all three subjects—medicine, surgery, and midwifery—at one sitting or to complete the whole of the Final Examination within a period of eighteen months. Another reference in the report, though it did not form the subject of a specific recommendation, was to the value of clinical examinations in mental diseases. These examinations at present were held only at Durham, Dublin, and Birmingham, though other universities had questions or papers on the subject. From his own experience of the Durham examination he could testify to its value, and the inspector also was convinced of the usefulness of such an examination. Finally, he reminded the Council that in all these matters it could only proceed by way of persuasion of and recommendation to the licensing bodies; the Council was a sort of ambassadors' conference, whose members did their best to carry out its decisions in their own spheres of influence.

In reply to a question from Professor LITTLEJOHN, Dr. WALKER said that his committee had it very definitely in mind throughout that medicine was one thing, and that clinical and systematic medicine should be passed at the same time.

A general discussion then took place upon the reception of the report.

Sir ARTHUR CHANCE, in reference to a remark by the inspector that at the examination of the Irish Conjoint Board no questions on mental diseases were put, said that the subject of mental diseases was by no means overlooked by the Conjoint Board, but in his view the final examinations would be considerably weakened by including papers in various special subjects. It was desirable that the Final Examination should be as far as possible on the main subjects (medicine, surgery, and midwifery). With regard to the question of two examiners or one for the oral examination, the difficulty of having two examiners together at the same time was one of time and expense. The object of the suggestion was to safeguard the candidate. The practice had been followed of letting the candidate be examined first by one examiner and then by the other, and in the event of one of the examiners passing him and the other rejecting him, arranging for his re-examination by both together. He thought that this was, on the whole, a fairer system than one which involved the attendance of both examiners at the same time.

Sir FRANCIS CHAMPNEYS said that they were all aware of the enthusiasm of the inspector in midwifery (Sir William Smyly) for a high standard of examination, and the country generally was recognizing more than ever before the importance of this subject and of gynaecology. But he thought it should be acknowledged that the inspection of the examinations in midwifery had not been carried out under quite normal circumstances. The schools had not then recovered from the disturbance brought about by the war. During the war candidates came before the examiners not so well equipped as they should have been, and the examiners were asked not to be too hard upon them. He did not think that the normal standard had yet been quite recovered. The point he wished particularly to make, however, was the impossibility of carrying out the clinical examination in many cases, especially in London. The examining bodies had no command of clinical material at all. If it were possible to have the run of the gynaecological wards of the London hospitals, what sort of cases would be presented? They would be largely gynaecological cases and complications of labour, and these did not touch the crux of the situation. The thing that was so difficult to teach was the diagnosis and treatment of abnormal cases of labour. Even if there were unlimited opportunities of utilizing the material available, if the examiners and students had access to all the hospitals, yet it would not be possible to ensure that cases of labour would occur on the particular date fixed for the

examiner. He believed he was subsequently corrected on the point by Dr. Norman Walker (not Sir William Smyly, as reported) who was interested in midwifery but not as reported of manual labour as the subject of examination of the candidates. It was very necessary that the general practitioner should be properly equipped in this respect, and he thought that during the student's career, while he was doing his obstetrics and gynaecology, a stringently drawn certificate should be required from his teacher to the effect that the student was competent to make the various diagnoses and perform whatever manipulations might be necessary in a labour case. In drawing up such a certificate it would be highly important that clinical gynaecology and obstetrics should be separated from one another. It was out of the question, he thought, from the nature of the case, to institute an examination in this respect on a fixed day, and the best substitute was to insist on a certificate of competence to be given under strict conditions at the end of the period of tuition.

Sir JAMES HODSDON said that from his thirty years' experience as an examiner he could testify to the value of having two examiners present. The second examiner gave increased confidence to the candidate, and did away with any grievance which otherwise he might have if the result were unfavourable. He did not think the question of marking was very important; the question an examiner put to himself was whether a particular candidate was fit to practise his profession, and having answered that question to his own satisfaction, he might convert it into any figures he chose. With regard to the unity of the final examination, he agreed that there were difficulties. He could not help thinking, however, that if the subjects other than medicine, surgery, and midwifery were passed previously, and a sufficient time was taken in preparing for the final examination—say thirty months instead of twenty-four months as at present, after passing in anatomy and physiology—the student ought to be properly prepared for his final examination. The gradual splitting up of the examination was the fault of the overcrowded and overlapping curriculum. The question of the Final Examination could not be settled until after the proposed rearrangement of the curriculum had been decided.

Professor WARDROP GRIFFITH, after replying to some remarks of the inspector on the system of marking employed at Leeds University, went on to say that he agreed with the principle that a student should have questions put to him by one examiner in the presence of the other. He did not believe in splitting up the examination in the way suggested by Sir Arthur Chance, whereby a student would go first to one examiner and then to another. It was not a good thing for the student to be examined either by his own teacher or by an external examiner alone; the presence of a second examiner, corrective and sympathetic, was needed. In the Final Examination in Leeds a man must enter generally for all the subjects, and, if he was to pass, must obtain a pass mark in each of them. Exemption, however, might be given in regard to one or more subjects if the general excellence was of a high degree—say 65 per cent.—and if in the subject in which the student had failed he had not fallen very far below the pass mark.

Professor T. SINCLAIR said that one difficulty with regard to the constant employment of two examiners was the arithmetical one; three examiners could not be divided into pairs. He thought that perhaps the spirit of the recommendation, though not its letter, might be carried out if a candidate passed before all three examiners, even though they were not together at the same time.

Sir GILBERT BARLING referred with satisfaction to the remarks of Dr. Tooth on the examination in pathology, where this formed a part of the final. He himself held that pathology was the basis of medicine, and even of surgery. If a man was well educated in pathology he would have gone far to satisfy those who had urged upon the Council the necessity for more thorough teaching in preventive medicine. Knowing pathology, he would be thoroughly imbued with the spirit of preventive medicine, which would dominate all that he did. Therefore it was very gratifying that the inspector's report on pathology should reveal such a satisfactory condition of affairs. With regard to the question of two examiners, he agreed that this arrangement would be more fair to the student, but there were other considerations. If there were a pair of examiners it was likely that one of them would be the teacher of the candidate and the other an external examiner. There was always a possible element of favouritism to be allowed for in the case of a teacher, and it might happen that if the teacher took the candidate by himself he would give him an exaggerated mark, which, although the other examiner gave him a low mark, would bring the total just above the pass level. Sir Gilbert Barling recalled a curious experience of his own when he was examining a candidate in company with another examiner. The candidate was asked to examine a patient in bed with apparently irreducible inguinal hernia. He did so, and said that there was nothing the matter with him. Thereupon his fellow examiner was about to reject the candidate, but he (the speaker) pointed out that possibly the candidate was right. On going to the bedside it was found, surely enough, that the candidate was right! His fellow examiner then said that he must have the student on another case; but to this he objected, pointing out that the student had really been submitted to the most stringent of all possible tests. He fully recognized the difficulties of a clinical examination in obstetrics and gynaecology as Sir Francis Champneys had described them. A clinical examination in gynaecology was possible if a good deal of trouble were taken over the arrangement and a good deal of discretion used in the methods. But with regard to the examination in midwifery, he hoped a system of certification might be arranged, the certificate stating that the candidate was, to the satisfaction of his teacher, proficient in this subject, and that the teacher had confidence in his ability. He saw no other way of surmounting the difficulty.

Sir SYDNEY RUSSELL WELLS agreed that no amount of extra marks gained in the written examination should be allowed to compensate for deficiencies in the oral and practical tests.

Mr. H. J. WARING said that he had seen a good deal of different methods of marking, and, taking it all round, he thought the percentage method was the most satisfactory. If it was adopted, however, there should be some means of securing that a certain minimum in clinical work was attained. With the totalling of percentages it might be possible for a man to get through who was very deficient in clinical work. It was fairer to the candidate to have two examiners present than to have only one. The personal equation in the case of the single examiner had to be reckoned with. If, for example, the examiner had been taking candidates by himself since early morning his independent decision with regard to those candidates who came up late in the day might not be quite fair to them. The report suggested—though it was not made a formal recommendation—that diseases of the eye, ear, and throat should be made the subject of test in the Final Examination. But it was extremely difficult to ensure that in any panel of examiners there would be men competent to examine satisfactorily in these subjects. It would be wise also to make a recommendation to the examining boards that students who had attended instruction in these subjects should be provided with material and appliances for the purpose of showing their knowledge along these special lines.

Sir JOHN MOORE thought it a little hard that the inspector in dealing with the Conjoint Board in Ireland, where very careful examination took place on the subject of mental diseases, should have said that the examination "as far as it goes" was satisfactory, the reason for this qualification being that he did not happen to meet with any question on mental diseases. Sir John agreed with a suggestion that where a student's marks were very low he should be put back for a longer period than three months; a period of six months would be quite reasonable. He could not quite understand why the material for the clinical examination in midwifery was not available in London, where births took place at the rate of more than two thousand a week.

Professor HARVEY LITTLEJOHN hoped that the report and the recommendations would not go out as the final view of the Council on these matters, because the revision of the curriculum which was impending might result in some modifications in the Final Examinations.

Sir JENNER VERRALL thought that the Council need not specially concern itself with the time to be allowed the candidate in dealing with his principal case in the examination in clinical medicine—at least an hour and a half was put down in the recommendation. If a time was stated it should not be too long, for the more rapidly the student could bring his brains into action the better, just as the more rapid card-player was likely to be more successful than the deliberate. He thought it important that there should be two examiners and that the candidate should be aware that there were two examiners a little critical of one another.

Dr. J. A. MACDONALD said that anything which could be done to ensure proper clinical equipment in midwifery should certainly be undertaken. He hoped that no cold water would be thrown on the idea of a teaching

certificate. The way in which men were sent out into the world to practise midwifery was a disgrace to the profession.

Mr. L. B. TURNER regretted the casual treatment of the subject of venereal diseases in the examination papers. He found very few questions relating to this subject—in all these reports on medicine there were but three: one on general paralysis of the insane, one on ocular changes in locomotor ataxia, and one on the treatment of secondary syphilis. During the meeting of the British Medical Association in Newcastle a very largely attended sectional meeting passed a resolution that the matter of the proper teaching and testing of students in this subject should be brought before the General Medical Council. A resolution had also been passed by the Medical Committee of the National Council for Combating Venereal Diseases, urging that it should be made an enactment by the General Medical Council that students should receive sufficient instruction, and should furnish proof to the Council before being admitted to registration, that they had done clinical work on this subject and had been thoroughly tested. It was very important that the coming generation of general practitioners in this country should be made thoroughly efficient in the early diagnosis and immediate treatment of these diseases by the most modern methods.

Sir E. COEY BIGGER said that while there had been vast strides in medicine and surgery, midwifery had remained almost at a standstill. This was a teaching question. There should be more midwifery hospitals where students could be properly taught.

Dr. J. C. MCVAIL, after pointing out the possibility of modifications in the Final Examinations in view of the revision and extension of the curriculum, said that it was rather a pity that there was no suggestion in the report on any means which might be devised for preventing students from going further when they had shown, quite early in their curriculum, that they were unsuited for the practice of medicine. It was a hard matter to reject a student in his Final Examination after he had wandered through the elementary subjects, when in the opinion of the examiners he was not well suited for a medical career. Some means should be found of erecting a block in such cases at an earlier period of training.

Resolutions.

It was agreed that the report should be received and entered on the minutes, and then certain recommendations were taken. Dr. NORMAN WALKER said that these would be sent to the examining bodies along with the report, and the whole matter would come up for discussion at the next session of the Council. The first resolution, which was carried, drew the attention of the bodies which did not hold a clinical examination in midwifery and gynaecology to the remarks in the report on the examinations in midwifery which were described as insufficient, and to No. 19 of the Council's recommendations (the one concerning the desirability of such a clinical examination). It was also agreed that the President should be requested to arrange for a reinspection of the examination in midwifery in London University at an early date.

It was further agreed unanimously—

That the importance of observing Recommendation 7—namely, that "A candidate should not be orally examined except in the presence of two examiners"—should be impressed on all the bodies.

Some discussion arose on the recommendation—

That in the examination in clinical medicine at least an hour and a half should be allowed for the examination by the candidate of his principal case.

Sir JENNER VERRALL moved that the time be shortened to an hour, explaining that what he meant was an hour for the examination, apart altogether from the subsequent writing of the result of the examination. The amendment was supported by Sir NORMAN MOORE, while other speakers, including Mr. WARING and Professor GRIFFITH, were of opinion that it would be wiser to leave the matter to the discretion of the examiners, and to lay down no time at all. On a division Sir Jenner Verrall's motion was carried.

It was also agreed that candidates who obtained very low marks should be remitted for further study for a longer period than three months. Sir ARTHUR CHANCE wanted some provision to be inserted to ensure that a man could not present himself more than a certain number of times, but the PRESIDENT said that this could not be taken.

On a further recommendation—

That in the final examination candidates should either pass all three subjects—medicine, surgery, and midwifery—at one sitting or be required to complete the whole of the final examination within a period of [illegible] months.

Dr. CATON moved an amendment making the recommendation run: "That in the final examination candidates should pass all three subjects at one sitting." He said that his experience of thirty-five or forty years in teaching was that medical students might be separated into two groups—those who took seriously these three most important subjects as a whole, and those who preferred by a process of cramming to pass one subject after another. The latter were men who were not wanted in the profession.

Sir S. RUSSELL WELLS seconded the amendment; he thought that the compromise in the recommendation was very unsatisfactory because it suggested that a man was allowed to take the subjects in portions provided that he got them all through within eighteen months.

Dr. J. A. MACDONALD asked whether it was not a fact that by law a candidate had the right to take these examinations piecemeal.

After some further discussion the PRESIDENT said that there was no legal question involved. Whatever the Council decided would only be a recommendation to the examining bodies.

Dr. Caton's amendment was lost, and the original resolution was agreed to. It was further agreed that the recommendations of the Council on professional examinations should be revised, and should be circulated in draft to all the bodies for their consideration.

THE STANDARD OF PRELIMINARY EXAMINATIONS.

Dr. J. Y. MACKAY, Chairman of the Education Committee, presented an oral report on the regulations for the registration of students which are to come into operation on January 1st, 1923.

He said that his committee had undertaken the task in pursuance of a mandate given to it by the Council a year ago, but the report was only in the skeleton stage, and the matter would come up for full discussion at the next session. The purpose was to secure that the minimum standard of general education required by the Council for registration as a student should be raised to a standard equivalent to that demanded in other learned professions previously to, or concurrently with, the coming into operation of the requirement of a preliminary examination in science before registration. The Council would recognize the various matriculation examinations of the universities of the United Kingdom, subject to the condition that the examination should not be lower than that of the university matriculation examinations in the Faculties of Arts and Pure Science, and that the certificate should bear evidence that the candidate had passed in: (1) English; (2) mathematics or a science (physics or chemistry, or both); (3) a language other than English; and (4) any other subject embraced in the official list of the examining university. The Council would also recognize, subject to these conditions, all examinations conducted by recognized authorities accepted by one or more of these universities as equivalent for the purposes of matriculation within the accepting university, and would continue to recognize examinations conducted by other bodies if satisfied as to their scope and standard and their fulfilment of the conditions laid down. The Council, further, would recognize all examinations of colonial universities which were accepted by one or other of the British universities as equivalent for matriculation.

Sir SYDNEY RUSSELL WELLS wished the Council not to commit itself to the proposed scheme, even to the extent of having the report recorded in the minutes, and pressed strongly for further discussion, although it meant lengthening the session by a day.

Other members, including Professor DIXON and Mr. TURNER, took the same position.

The PRESIDENT pointed out that this matter, which was now being reported on only in the interim stage, was taken in pursuance of the Council's decisions after a very long debate a year ago. The Council had given an undertaking that the regulations should come into force on January 1st, 1923, and it was important, in view of the shortness of time, that at the earliest possible moment the teaching bodies should have a preliminary sketch of the proposals, even though they were not formally endorsed by the Council.

Dr. MACKAY pointed out that the report was only of a tentative nature, and that it was desirable to obtain the

opinion of the various teaching bodies upon its details. He therefore asked that the report might be recorded in the minutes in order to give it the necessary publicity.

This was agreed to, and it was understood that the matter would be available for a full discussion at the next session.

UNIVERSITIES OF SOUTH AFRICA AND INDIA.

The PRESIDENT stated that information had been received that Part II of the Medical Act, 1886, had been extended by Order in Council to the Union of South Africa.

In South Africa, where there was formerly only one university, there were now three, and would shortly be four. Three had applied to the Council for the recognition of their medical degrees, and the committee had agreed to recognize the examination in medicine, surgery, and midwifery of the University of South Africa, the University of Cape Town, and the University of Witwatersrand, Johannesburg (formerly University College, Johannesburg, a constituent college of the University of South Africa), and to admit to the Colonial List any person holding their degrees of M.B., Ch.B., provided he satisfied the Registrar regarding the other particulars set forth in Part II of the Medical Act, 1886.

An application had also been received from the University of Lucknow, to which the King George Medical College, with its hospital and hostel, had been transferred from the University of Allahabad, that the recognition hitherto granted to the degrees of the University of Allahabad be accorded to those of the University of Lucknow. This was agreed to, with the same proviso as in the foregoing cases. The President added that the whole subject of the recognition of Indian degrees was under consideration.

The report was approved.

DISCIPLINARY CASES.

Restorations to Register.

The Council on November 22nd, after a deliberation in private, directed the Registrar to restore to the *Medical Register* the name of Nariman Hormasji Clubwala and of Thomas Stancy Sharpley.

Misleading Certificate: Postponed Judgement.

The Council, on November 22nd, considered the case of Dr. Clement Thomas Cory Kingdon, of Clapham Junction, London, with regard to whom, at the previous session, it was found that he had signed and given a certificate bearing a certain date stating that a person was suffering from influenza and unable to travel, when as a matter of fact he had neither seen nor examined the person in question on that day, or at all before the second day following. The circumstances as related at the hearing were reported in the SUPPLEMENT, June 4th, 1921, page 212.

The Council had postponed judgement and had required Dr. Kingdon in the meantime to produce testimonials as to his character and conduct, particularly as regards certification.

Dr. Kingdon now appeared and produced four testimonials in this sense from medical men in his locality—namely, Dr. Johnston Acres, Dr. Louis C. Bean, Dr. P. R. Dodwell, and Dr. James Smyth. He said that he very much regretted this occurrence, and promised that nothing of the kind should happen again. He realized the great responsibility that rested upon every medical practitioner to exercise the utmost care in the giving of certificates.

The President, after the Council had briefly deliberated in private, announced that the Council did not see fit to direct the Registrar to erase Dr. Kingdon's name.

Adultery.

The Council, on November 22nd, considered the case of Nathaniel Stevenson, M.B., C.M., 1895, U.Glasg., registered as of Rainham, Essex, who was charged with abusing his position by committing adultery and eloping with Mrs. Mary McArtney, to whose family he had been medical attendant, of which adultery he was found guilty by the decree of the Court of Session, Edinburgh, dated May 28th, 1921, in a divorce case in which he was co-defender.

Dr. Stevenson did not appear in answer to the charge, nor was he represented. The Council's Solicitor (Mr. Harper) proved that the notice of inquiry had been served, and proceeded to lay the facts before the Council. He put in the certificated copies of the notes of evidence and read a report of the proceedings in the Court of Session which appeared in a Glasgow newspaper. It appeared that Dr. Stevenson was first called in to attend Mrs. McArtney's family in July, 1914, and that later he paid frequent and prolonged visits to the house in the absence of the husband, until one day he was found there in a compromising situation by the husband who had unexpectedly returned. Subsequently an elopement took place.

The President of the Council said that from the evidence it appeared that the visits while the husband was away were very frequent indeed, and a matter of comment by the neighbours.

After deliberating in private, the President announced that the Council had judged Dr. Stevenson to have been guilty of infamous conduct in a professional respect, and had directed the Registrar to erase his name from the *Medical Register*.

(The remainder of the Council's proceedings will be reported in a later issue.)

DENTAL BOARD.

THE Privy Council has given notice that the Dental Board of the United Kingdom, as from December 1st, will be established as follows:

The Right Hon. F. D. Acland, M.P. (Chairman).
Mr. L. G. Brock, C.B.
Mr. Fred Butterfield.
Sir Arthur G. Chance, F.R.C.S.Irel.
Mr. D. McC. Cowan, M.P.
Mr. W. H. Dolamore, M.R.C.S., L.D.S.
Professor W. H. Gilmour, M.D.S., L.D.S.
Mr. William Guy, F.R.C.S.Edin., L.D.S.
Sir James Hodsdon, K.B.E., F.R.C.S.Edin.
Mr. H. A. Robertshaw.
Mr. Edward L. Sheridan, F.R.C.S.Irel., L.D.S.
Mr. John Sinclair.
Mr. H. J. Waring, C.B.E., F.R.C.S.; and
Mr. Norman C. King (Registrar).

The offices of the Board will be at No. 44, Hallam Street, Portland Place, London, W.1. All communications should be sent to the Registrar at that address.

Insurance.

RANGE OF TREATMENT.

WE have received from the Scottish Board of Health a copy of the decision and report of a special committee of inquiry appointed by the Board for the purpose of hearing and deciding the question as to whether prophylactic treatment comes within the scope of treatment to be given by an insurance service practitioner in terms of his agreement with an Insurance Committee.

The members of the committee were James A. Fleming, K.C. (Chairman), Sheriff Principal of Fife; Sir James Watson Stewart, ex-Lord Provost of Glasgow; and Sir Donald MacAlister, K.C.B., M.D., President of the General Medical Council.

Prophylactic Treatment and Medical Benefit.

The decision, dated October 25th, 1921, is as follows:

Having heard counsel for the Panel Committee of the Burgh of ..... and their Procurator for the Insurance Committee of the said Burgh, and having considered the arguments and the productions laid before us, we determine that the expression "treatment" in the first clause of Section 8 (1) of Part I of the First Schedule to the National Health Insurance (Medical Benefit) Regulations (Scotland), 1920, includes treatment for the prevention as well as for the cure of sickness.

Note.

The question we have to determine is whether the administration to insured persons free of charge of certain prophylatic measures falls within the scope of the services which medical practitioners who have entered into an agreement with the Insurance Committee have contracted to give. The answer depends entirely upon the construction to be put upon that agreement, and in that agreement upon Section 8 (1) which so far as it affects the question before us is as follows:

"The treatment which a practitioner is required to give to his patients comprises such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary professional competence and skill."

The word "patients" is defined in Section 5 of the agreement as including all insured persons who are on the practitioner's list. Section 8 (1), therefore, is not expressly confined to persons who are suffering from any ailment.

The argument submitted for the Panel Committee was that the true reading of this section is confined to treatment of patients (that is, insured persons) who are suffering from an ailment, and is therefore confined to curative treatment of an ascertained disease, and does not extend to preventive treatment against the risk of contracting a disease. Stress was laid upon the fact that vaccination for small-pox is nowhere mentioned, although as regards first vaccinations it is a form of treatment compulsory upon all but the children of conscientious objectors, and as regards revaccination it is looked upon as a form of treatment highly valuable to the individual for the prevention of sickness. It was accordingly argued that this omission leads to the conclusion that what is undertaken by the practitioner is only the treatment of a suffering person and not of one who is yet whole. Reference was also made to Section 14 (2) (*e*) of the National Insurance Act, 1911, which prohibits an approved society from passing a rule to penalize any member on account of his refusal "to submit to a surgical operation, or vaccination, or inoculation of any kind," as illustrative of the view that where vaccination is intended to be included it is specifically mentioned.

We have unanimously come to the conclusion that the restricted meaning sought to be put upon Section 8 (1) is not justifiable. We are of opinion that the more natural meaning of the words of that section is to cover all treatment of every kind which a person is entitled to receive from any general practitioner attending him in the ordinary way, that in the ordinary general practice of the profession prophylactic treatment for the prevention of sickness is given, and that the only change effected by the Act is that the practitioner, instead of being recompensed by fees, is recompensed by the capitation grant. We realize that the words of Section 8 (1) may perhaps be susceptible of the meaning contended for by the Panel Committee, but we prefer the other reading. We are confirmed in this view by the fact that the title of the Act of 1911 is "an Act to provide against loss of health, and for the prevention and cure of sickness. . . ." and that Section 1 (1) of that Act provides that insured persons shall be entitled "to the benefits in respect of health insurance and prevention of sickness conferred by this part of the Act." With this clear statement of the purpose of the Act we find ourselves unable to hold that these benefits can be restricted by any other than a definite and express provision. Such an unmistakable restriction we do not find in Section 8 (1).

Section 14 (2) (*e*) of the Act of 1911, if relevant at all, seems to us to infer that vaccination and inoculation were considered by the legislature to be, along with treatment by surgical operation, part of the treatment to which an insured person, being a member of an approved society, is entitled unless he objects.

We desire to guard ourselves against a suggestion that was made in argument that the treatment which the practitioner must give in respect of his capitation grant is to be measured by the rapid advance in medical science. The words of the section are treatment such as can "be properly undertaken by a general practitioner of ordinary professional competence and skill." In our opinion he is not bound to undertake prophylactic treatment of any kind which has not yet become matter of ordinary treatment by competent general practitioners.

MEDICAL BENEFIT.

THE Ministry of Health has issued a pamphlet[1] giving a brief summary of the main features of the scheme of medical benefit for the insured population as it is now working under the Regulations which came into operation on April 1st, 1920. The summary is merely descriptive, and does not purport to give an authoritative legal interpretation of the provisions of the Acts and Regulations under which medical treatment is provided for insured persons. Its scope does not cover the cases in which insured persons can make their own arrangements for medical treatment and receive a contribution thereto, subject to certain conditions. Nor does it deal with those cases in which members of approved medical institutions which existed in 1911 receive their treatment through such institutions.

The summary is divided into ten sections: The first defines medical benefit; and the second the persons entitled to it; the third names the administrative bodies under the Act; the fourth describes briefly the arrangements for provision of medical treatment; the fifth deals with remuneration for insurance practitioners; the sixth describes the arrangements for provision of drugs and appliances; the seventh deals with medical certification of incapacity for work; the eighth with medical records; the ninth with arrangements for securing efficiency of service; and the tenth indicates the duty of insurance practitioners in relation to the Regional Medical Staff of the Ministry.

Correspondence.

The Willesden Health Policy.

SIR,—The report of Willesden Division meeting, which was furnished to you for publication, and printed in the BRITISH MEDICAL JOURNAL for November 26th (SUPPLEMENT, p. 200), should have read as follows:

"It was decided that the following resolution should be forwarded only to the Council of the Association:

"The Willesden Division of the British Medical Association desires to impress on the Council of the Association that there exists in Willesden a Municipal Medical Service which threatens almost entirely to destroy private practice, and that though temporarily held up by economic conditions, all the plans are prepared to so extend the scheme as to substitute for private practice a service of whole-time officials working under the Medical Officer of Health.

"The Division also asks the Council of the Association to consider what steps should be taken to deal with those medical men and women who are responsible for the medical work, and who make it possible for the Willesden District Council to carry on these medical services."

Resolution No. 7 should have been included with the other resolutions.—I am, etc.,

WILLIAM PATERSON,
November 26th. Honorary Secretary Willesden Division.

[1] Memo. 278/I.C. To be obtained through any bookseller or directly from H.M. Stationery Office.

Emergency Treatment.

SIR,—As secretary to the Panel Committee for Kirkcudbright, a purely rural area, I am greatly perturbed by the letter from the Ministry of Health, published on p. 179 of SUPPLEMENT of November 5th, for, as I read it, it means that, at any rate in rural districts, the nearest doctor is *bound* to attend all cases of insured persons whether they are on his panel or not. Vide:

"But it is clearly of first importance that such treatment should be given and the doctor to whom application is made will doubtless frequently have to decide whether the emergency is so great that the mere fact that the insured person's own doctor's surgery was some distance away would make it clear that he would not be sufficiently available to give that immediate treatment which the case required."

With the "business" doctor claiming mileage within a radius of thirty miles with plenty of other practitioners intervening, it seems to me that there is "something rotten in the state of Denmark," and that it is high time the Insurance Acts Committee (especially its Rural Subcommittee) was up and doing, as it is distinctly unfair to expect a practitioner with an anaemic practice (made more so by reduction of capitation fee) to make things easy for his plethoric "business" brother.—I am, etc.,

Auchencairn, Nov. 5th. JOHN CROMIE.

Insurance Certificates. Revised Rules.

SIR,—I have just received a circular, Memo. 280/I.C., which refers to revised medical certification rules with which we are soon to be favoured.

Section II, para. 7, utterly forbids the issue of certificates to private patients, thus making it unlawful for an insured person to receive sick pay if attended by any but his own panel doctor.

According to Section II, para. 12, an insured person, if an in-patient at a hospital, must obtain his certificates from the medical officer of the institution, who, under the clause just mentioned, is forbidden to issue them.

This "Act of Parliament touch" in what should be a simple matter may prove a little embarrassing to the unfortunate insured person.—I am, etc.,

Shelley, Huddersfield, Nov. 22nd. H. DOUGLAS SMART.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

The following promotions are announced by the Admiralty: Surgeon Commander G. T. Verry (to the *Berbice*, Surg.-Lieutenant Commander G. L. Ritchie, M.C., to the *Shakespeare*, and for 6th Destroyer Flotilla.

Surgeon Lieutenant L. S. Goss, O.B.E., has been promoted to the rank of Surgeon Lieutenant-Commander (dated September 1921.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel A. H. Safford to be acting Colonel from June 16th to September 4th, 1919.

Lieut.-Colonel H. A. L. Howell, C.M.G., retires on retired pay on account of ill-health caused by military service, and is granted the rank of Colonel.

Temporary honorary Major Martin W. Flack, C.B.E., relinquishes his commission on appointment to the R.A.M.C., May 2nd, 1921.

Captain J. E. Lilleche to be Temporary Major from September 6th, 1918, to January 15th, 1920.

Capt. (Hon. Lieut.-Col.) J. E. Bowman, C.B.E., retires receiving a gratuity, and is granted the rank of Major.

Captain C. A. Wilkins is restored to the establishment.

Captain J. A. W. Ebden, from Reserve of Officers R.A.M.C., to be Captain, August 19th, 1921, with seniority, April 19th, 1920 (substituted for notification in the *London Gazette* of September 14th, 1921).

Temporary Captain W. F. Fetherstonhaugh to be Acting Lieutenant-Colonel from March 3rd to May 16th, 1918.

The following temporary Captains to relinquish their commissions and retain the rank of Captain: E. D. Lambkin, E. H. Griffin, D.S.O., M.C., J. Mackay, A. G. Cheetham.

Temporary Lieutenant H. C. Pedlow to be Temporary Captain.

ROYAL AIR FORCE.

MEDICAL BRANCH.

Flight Lieutenant W. G. L. Wamsley is granted a short service commission in the rank stated, retaining his present seniority.

The following are granted short service commissions as Flying Officers, with effect from, and with seniority of, November 7th: E. C. K. H. Foreman and W. J. G. Walker.

J. Paxton is granted a temporary commission as a Flight Lieutenant, with effect from, and with seniority of, November 3rd.

TERRITORIAL ARMY.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Majors R. Lindsay, T.D., and A. Robertson, having attained the age limit, are retired, and retain the rank of Major, with permission to wear the prescribed uniform.

The announcement regarding Major Charles Edward Walker (late R.A.M.C.) which appeared in the *London Gazette* of January 7th, 1921, is cancelled.

Captain A. S. Paterson, having attained the age limit, is retired, and is granted the rank of Major.

Captain C. A. E. I. Brownlee relinquishes his commission, and retains the rank of Captain.

Captain V. J. A. Mc'alo-Dallas, M.C., resigns his commission, and retains the rank of Captain.

... W. Murray, having attained the ... limit, is retired with ... rank of Captain.

... J. G. B. Coleman ... R.A.M.C. to be Lieutenant, with ... dates from August ...

TERRITORIAL ARMY RESERVE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Captain C. C. Grummitt, having attained the age limit, is retired, and retains the rank of Captain.

Major R. E. Williamson, V.D. (Lieutenant-Colonel and Honorary Colonel Ret., T.F.), having attained the age limit, is retired, and retains his rank, with permission to wear the prescribed uniform.

Captain J. McG. Deuchars resigns his commission and retains the rank of Captain.

Captains, from General List, to be Majors: J. H. Donnell, J. H. Blackburn, M.C., D. E. Finlay, J. H. Jordan, M.C.

To be Captains: Captains H. G. Dodd, from General List, S. L. Trimblecombe (late R.A.M.C., T.F.), and H. L. Robinson, from 1st London (C. of L.) Sanitary Company.

DIARY OF SOCIETIES AND LECTURES.

HARVEIAN SOCIETY OF LONDON, 11, Chandos Street, W.—Thurs., 8.30 p.m., Discussion: Is the Anginal Syndrome only of Cardiac Origin? To be opened by Sir Charlton Briscoe, to be followed by Sir S. Russell Wells, Dr. G. H. Hunt, and Sir William Willcox.

HUNTERIAN SOCIETY, Sion College, Embankment, E.C.1.—Wed., 9 p.m., Sir Henry Gauvain: Surgical Tuberculosis.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Thurs., 5 p.m., Thomas Vicary Lecture by Sir Charles A. Ballance: A Glimpse into the History of the Surgery of the Brain.

ROYAL SOCIETY OF MEDICINE.—*Section of Tropical Diseases and Parasitology*, Mon., 8.30 p.m., Discussion: Amoebic Dysentery in Great Britain: its Significance and Treatment. To be opened by Dr. Broughton-Alcock, Professor Warrington Yorke, and Dr. P. Manson-Bahr. Paper: Dr. M. Khalil: Thermotropism in Ankylostome Larvae. *Section of Surgery: Subsection of Orthopaedics*, Tues., 5.30 p.m., patients, casts, and photographs. Discussion on Stabilizing Operations in the Treatment of Paralytic Deformities of the Foot. To be opened by Mr. Naughton Dunn. The President (Mr. Laming Evans), Mr. Bankart, Mr. Aitken, and others will take part in discussion. *Section of Pathology*, Lister Institute, Chelsea Gardens, S.W.3: Tues., 8.30 p.m., Dr. V. Korenchevsky: Experimental Rickets in Rats. Dr. G. Ségal: Association of Typhus Virus with the Various Blood Elements. Mr. A. W. Bacot: Demonstration of Rectal Infection of Lice by Weigl's Method. Mr. A. W. Bacot and Dr. G. Ségal: Development of Rickettsia in Lice, following Intrarectal Infection with Typhus Virus. Dr. R. St. John Brooks and Dr. M. Rhodes: Observations on the Haemorrhagic Septicaemia Group. Miss E. H. Lepper: Gall Bladder Infections following Intravenous Inoculation of Coliform Organisms in Rabbits. Dr. S. P. Bedson: Demonstration of Histological Material from Experimental Purpura. Dr. S. Kanai: Dysentery Immunization per Os. *Section of Surgery:* Wed., 5.30 p.m., Sir Charles Ballance: Ligation of the Innominate Artery. Sir Lenthal Cheatle: A New Operation for Inguinal Hernia. *Section of Balneology and Climatology*: Thurs., 5.30 p.m., Dr. A. G. S. Mahomed: The Relation of Atmospheric Electrical Variations to the Incidence of Epileptic Fits. Discussion on the Organization of the Section. *Section of Neurology*, Hospital for Paralysis, Maida Vale: Thurs., 8 p.m., Clinical Meeting. *Clinical Section:* Fri., 5 p.m., Cases. *Section of Electro-Therapeutics:* Fri., 8.30 p.m., Informal Meeting: Dr. Carelli, of Buenos Aires, will demonstrate his Method of Radioscopic Examination with the Help of Gas Injections. Dr. Riddell will demonstrate a Simple Apparatus for Making Serial Radiographs of the Pyloric Region in the Horizontal and Upright Positions. *Section of Ophthalmology*, Fri., 8 p.m., Cases; 8.30 p.m., Clinical Evening.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Victoria Infirmary. Wed., 4.15 p.m., Dr. D. Russell: Medical Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Mr. H. A. T. Fairbank: Coxa Vara.

KING'S COLLEGE, Strand, W.C.—Tues., 5.30 p.m., Dr. William Brown: Psychology and Psychotherapy.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Diseases of Children: Mon., 9.15 a.m., Dr. T. Thompson: Organic and Functional Nervous Diseases and Mental Deficiency. Wed., 10.15 a.m., Dr. C. H. Miller: Clinical Demonstrations. Sat., 10.15 a.m., Dr. R. Hutchison: General Diseases.

MANCHESTER: ANCOATS HOSPITAL.—Thurs., 4.30 p.m., Mr. Harry Platt: Common Affections of the Hip-joint.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Dr. F. E. Tylecote: After-Treatment of Pneumonia.

MANCHESTER: ST. MARY'S HOSPITALS (WHITWORTH STREET WEST BRANCH).—Fri., 4.30 p.m., Dr. Fletcher Shaw: *Ante-partum* Haemorrhage.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Daily, In- and Out-patient Attendances. Lecture, Mon. 5.30 p.m., Dr. Parsons-Smith: Infective Endocarditis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Mon., Tues., Thurs., Fri., 2 p.m., Out-patient Clinics. *Lectures:* Mon., 12 noon, Dr. Greenfield: Tumours of the Brain; 3.30 p.m., Mr. Paton: Papilloedema. Tues. and Thurs., 3.30 p.m., Dr. Hinds Howell: Syphilitic Disease of the Nervous System. Fri., 3.30 p.m., Dr. Grainger Stewart: Myasthenia Gravis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., In- and Out-patient Clinics, Operations, etc. Mon., 4.30 p.m., Mr. J. Bright Banister: Some Obstetric Emergencies. Tues., 3.30 p.m., Dr. F. G. Crookshank: Physical Examination of the Chest: (III) The X Rays. Fri., 4.30 p.m., Dr. C. E. Sandell: Clinical Diagnosis of Tuberculosis in Children.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell Square, W.C.—Wed., 4 p.m., Sir Kenneth Goadby: Lead Poisoning in Industry.

SHEFFIELD UNIVERSITY.—At the Royal Hospital. Tues., 3.30 p.m., Professor Douglas: Vaccines; 4.15 p.m., Mr. Townrow: Cases. Fri., 3.30 p.m., Dr. Wilkinson: Diseases of the Accessory Sinuses of the Nose; 4.15 p.m., Mr. G. Wilson: Orthopaedics.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.—Thurs., 6 p.m. Dr. W. Griffith: Eczema.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. *Lectures:* 5 p.m., Mon., Dr. Saunders: Digestive Disorders of Old Age. Tues., Dr. Pritchard: Intravenous Therapy. Wed., Mr. Page: Anaesthesia. Thurs., Mr. Harman: Congenital Cataract. Fri., Dr. Pritchard: Blood Pressures.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

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MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (3 lines).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

DECEMBER.

2 Fri. City Division: Metropolitan Hospital, Kingsland Road, 9.15 for 9.30 p.m.
London: Whitley Council Subcommittee, 2 p.m.

5 Mon. London: Standing Subcommittee of Central Ethical Committee, 2.15 p.m.

6 Tues. Coventry Division: Coventry and Warwickshire Hospital, 8.30 p.m.
Hastings Division: East Sussex Hospital, 8.30 p.m.

7 Wed. Maidstone Division, West Kent Hospital: B.M.A. Lecture by Dr. Arthur Saunders: Nephritis in Children, 3.30 p.m.
South-Western Branch: Royal Hotel, Plymouth, 4.30 p.m., B.M.A. Lecture by Dr. W. Langdon Brown: The Practical Importance of Endocrinology.
South Middlesex Division, St. John's Hospital, Twickenham, 8 p.m., Clinical Meeting.

8 Thurs. London: Arrangements Committee (*full meeting*), 2.30 p.m.
City Division: Dinner-Dance, Abercorn Rooms, Great Eastern Hotel, 7.15 p.m.
Kent Branch: Royal Bull Hotel, Bromley, 3.15 p.m.
South Essex Division, Palace Hotel, Southend-on-Sea. Paper by Sir Berkeley Moynihan: Diagnosis and Treatment of Gastric Ulcer.

9 Fri. London: Dominions Committee, 2.30 p.m.
London: Post Office Medical Officers' Subcommittee, 3 p.m.
Cambridge and Huntingdon Branch, Medical Schools Downing Street, Cambridge, 2.15 p.m.

14 Wed. **Council** Meeting, 429, Strand, 10 a.m.
North Middlesex Division, Prince of Wales's General Hospital, Tottenham.—B.M.A. Lecture by Colonel L. W. Harrison: Treatment of Gonorrhoea in General Practice.

15 Thurs. Isle of Thanet Division: Dinner, Albion Hotel, Broadstairs, 7.30 p.m.
Swansea Division: B.M.A. Lecture by Dr. Robert Knox.
West Dorset Division: Address by Dr. G. C. Anderson, Deputy Medical Secretary, "The Advantages of Medical Organization under the B.M.A."

16 Fri. London: General Purposes Subcommittee of the Insurance Acts Committee, 2.30 p.m.

20 Tues. Croydon Division, Croydon General Hospital. Dr. J. Bright Banister: Obstetrics and Gynaecology.

APPOINTMENTS.

McDONALD, Niel, O.B.E., M.B., Ch.B.Vict., M.R.C.S., Hon. Anaesthetist, Metropolitan Ear, Nose, and Throat Hospital, Fitzroy Square, W.

TOULMIN, Arthur, F.R.C.S.Edin., Surgeon to the Preston and County of Lancaster Royal Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTHS.

ADAMS.—On November 15th, at 9, Mortimer Road, Clifton, Bristol, to Hilda Adams (*née* Ewins), M.B., Ch.B., and Arthur Wilfrid Adams, M.S., F.R.C.S., a son.

HARVEY.—On November 24th, at Kingsthorpe, Edgbaston, to Margaret M. and William F. Harvey, M.B., of 147, Oaktree Lane, Selly Oak, Birmingham, a son.

ROSS.—On November 27th, at Worcester House, Sutton, Surrey, the wife of J. N. MacBean Ross, M.C., M.D., F.R.C.S., of a son.

BRITISH MEDICAL ASSOCIATION.

FOUNDED 1832.

Patron: HIS MAJESTY THE KING.

THE BRITISH MEDICAL ASSOCIATION is established for the promotion of the Medical and allied Sciences and the maintenance of the honour and interests of the Medical Profession. It has Divisions and Branches throughout the British Empire. There are 43 Branches, with 214 Divisions, in the United Kingdom, and 49 Branches, with 67 Divisions, in the British Empire Overseas.

Any Medical Practitioner registered in the United Kingdom under the Medical Acts; any Medical Practitioner who does not reside within the area of any Branch of the Association and who though not so registered is possessed of any of the qualifications described in Schedule (A) of the Medical Act, 1858; and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom who is so registered or possesses such medical qualification as shall (subject to the By-laws) be prescribed by the Rules of the said Branch, is eligible as a Member of the Association. Members of the Association are, *ipso facto*, Members of the Division and Branch in the area of which they reside.

The liability of Members is limited.

The annual subscription, which is due in advance on January 1st in each year, and entitles the Member to all the ordinary privileges of Membership of the Association, including Membership of the Division and Branch in which he or she resides, and the weekly supply of the *British Medical Journal* post free, is as follows:—

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Member resident within the area of a Branch	1½ Guineas (or more according to Rules of Branch)
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In the case of a Member elected after June 30th in any year, the subscription for that year is one-half the current annual subscription.

If you desire to become a Member of the Association, please fill in and post this form to the Association, 429, Strand, London, W.C. 2, with a cheque or postal order for your first subscription.* Cheques or postal orders should be crossed, and made payable to "The British Medical Association." Election is ordinarily by the Council of the Branch in the area of which the Candidate resides, but in the case of Candidates resident in any area outside the United Kingdom where no Branch is organised, is by the Council of the Association. In the case of most Branches, NO signature, other than that of the Candidate, is required. For election by the Council (as above), 3 approving signatures are ordinarily required. Under no circumstances are approving signatures necessary in the case of Officers of the Royal Navy, Royal Air Force, Army, Indian or Colonial Medical Service, on the Active List.

Please Detach Here.

APPLICATION FOR ELECTION.

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429, STRAND, LONDON, W.C. 2.

(Full Christian and Surnames. Please write distinctly.)

I, ...

a Registered Medical Practitioner, am desirous of being, and hereby apply to be elected a Member of the BRITISH MEDICAL ASSOCIATION, and I agree, if elected, to pay the subscription and to abide by the Articles and By-laws of the Association for the time being in force, and the Rules of the Division and Branch to which I may at any time belong.

Signature .....

Titles .....

Home Address .....

.....

Date..... , 192 .

Additional Forms of Application for Membership and all particulars may be had on application to the BRITISH MEDICAL ASSOCIATION, 429, Strand, London, W.C. 2.

* Applicants for Membership resident in the areas of the *Oversea Branches* should send their applications and remittances to the Honorary Secretary of the Branch if his or her address is known to them, failing which the application and remittance should be sent to the Head Office, 429, Strand, London, W.C. 2.

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Branch.	No. of approving signatures required.	Branch.	No. of approving signatures required.
Cambridge and Huntingdon	2	Munster	2
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Edinburgh	2	Oxford and Reading	2
Leinster	2	South Wales and Monmouthshire ...	2
Midland	2	Staffordshire	2

OVERSEA BRANCHES WHICH REQUIRE APPROVING SIGNATURES.

Branch.	No. of approving signatures required.
British Guiana	3
New South Wales	3
Punjab	2

Candidates (other than Service) resident within any of the Branches above named are requested to arrange for the necessary approving signatures to the certificate at foot. Candidates (other than Service) resident outside the United Kingdom where no Branch is organised are requested to arrange for 3 approving signatures. In any case of doubt or difficulty, Candidates are invited to communicate with the Head Office, 429, Strand, London, W.C. 2.

CERTIFICATE.

(N.B.—For use only in the case of a Candidate (other than a Service Candidate) resident within the area of one of the Branches named above or resident outside the United Kingdom where no Branch is organised.)

We, the undersigned Members of the BRITISH MEDICAL ASSOCIATION, hereby certify that

..... named on the front page hereof, is personally known to us, and is a suitable person to be elected a Member of the BRITISH MEDICAL ASSOCIATION.

Signed (1) .....

(2) .....

(3) .....

Printed and published by the British Medical Association Publication Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, DECEMBER 10TH, 1921.

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GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1921.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

THE DIPLOMA IN PUBLIC HEALTH.

Proposed Revision of Rules.

SIR JOHN MOORE (Chairman of the Public Health Committee) submitted a report of his committee on the new draft rules for the Diploma in Public Health.

He said that the committee, as instructed by the Council a year previously, had held a special session in September last, extending over two days, to consider the revision of the existing resolutions and rules for diplomas in public health, which were adopted in 1899, and had been amended and amplified from time to time since then. It was felt necessary to bring these rules into better harmony with the duties now required of the medical officer of health. The committee had had the advantage of considering the reports of the visitors on recent examinations for the diploma held by many licensing bodies, and more particularly the reports of the inspector appointed by the Council, Dr. Bruce Low, of whose work his committee desired to express its great appreciation. Certain of the licensing bodies themselves had also made suggestions on the subject. The general impression to be gathered from the reports of Dr. Low and of the visitors was that on present requirements the examinations were satisfactorily conducted, but that the present requirements needed strengthening. His committee had come to the conclusion that it was necessary to lengthen the curriculum and generally to raise the standard of examination. It was proposed that not less than two years should elapse between the attainment by a candidate of a registrable qualification and his admission to the final examination for a diploma in public health and that the curriculum should extend over not less than twelve months, including five months' instruction in laboratory work and six months' practical instruction, under the supervision of a medical officer of health, in the duties of public health administration. Sir John Moore then read the new draft rules, as follows:

Draft Resolutions and Rules for Diplomas or Degrees in Sanitary Science, Public Health, or State Medicine.

The Council, having regard to the special privileges accorded by statute to the holders of Diplomas in Sanitary Science, Public Health, or State Medicine, granted under Section 21 of the Medical Act, 1886, will not consider such diplomas to "deserve recognition in the *Medical Register*" unless they have been granted under such conditions of education and examination as shall ensure, in the judgement of the Council, the possession of a distinctively high proficiency, scientific and practical, in all branches of study which concern the Public Health. In forming its judgement on such conditions of education and examination, the Council will expect the following rules to have been observed:

Rule 1.—A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine, Surgery, and Midwifery, and his admission to the final examination for a Diploma in Sanitary Science, Public Health, or State Medicine.

Rule 2.—The curriculum for a Degree or Diploma in Sanitary Science, Public Health, or State Medicine shall extend over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification.

Rule 3.—Every candidate shall produce evidence of having attended, during a period of not less than five months, at an institution approved by the licensing body granting the diploma, practical instruction in laboratory work in—

(*a*) Bacteriology and parasitology (including entomology), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man; and
(*b*) Chemistry and physics in relation to public health.

At least 180 hours must be devoted to course (*a*), of which not less than 150 hours shall be occupied in practical laboratory work. At least 90 hours must be devoted to course (*b*), of which not less than 70 hours shall be occupied in practical laboratory work.

Rule 4.—Every candidate shall produce evidence of having received, during not less than 100 hours, at an institution or from teachers approved by the licensing body granting the diploma, instruction in the following subjects:

The Principles of Public Health and Sanitation (30).
Epidemiology (20).
Sanitary Law and Administration (20).
Sanitary Construction and Planning (12).
Vital Statistics (10).
Meteorology and Climatology (8).

[The numbers indicate the normal proportion of time to be given to each subject.

Rule 5.—Every candidate shall produce evidence that he has attended for three months on the practice of a recognized hospital for infectious diseases, and received instruction in the methods of administration. At least thirty daily attendances of not less than two in each week and clinical records of not fewer than six cases observed in the wards shall be required.

Rule 6.—Every candidate shall produce evidence that he has, during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties, routine and special, of public health administration under the supervision of a medical officer of health, who shall certify that the candidate has received, during not less than three hours of each of sixty working days, practical instruction in these duties, including those relating to—

(*a*) Maternity and child welfare service;
(*b*) Health service for children of school age;
(*c*) Venereal diseases service;
(*d*) Tuberculosis service;
(*e*) Industrial hygiene;
(*f*) Inspection and control of food, including meat and milk.

Certificates of having received the prescribed instruction in public health administration must be given by a medical officer

of health who devotes his whole time to public health work; or in

(a) England and Wales. The medical officer of a sanitary area having a population of not less than 100,000;
(b) Scotland. The medical officer of health of a sanitary area having a population of not less than 50,000;
(c) Ireland. The medical superintendent officer of health of a county or county borough, having a population of not less than 50,000.

Rule 7.—The examination for the diploma or degree shall be divided into two parts, Part I and Part II, each of which shall extend over not less than two days, and shall be conducted by examiners specially qualified. A candidate must pass in all the subjects of Part I before being admitted to examination for Part II.

A candidate must pass in all the specified subjects in Part I, and also in Part II at one time.

Rule 8.—The examination for Part I shall be practical, written and oral, and shall include the following subjects:

Bacteriology and parasitology (including entomology); and chemistry and physics in relation to public health.

Candidates may not be admitted to examination for Part I until, after they have completed the prescribed courses of instruction in the subjects thereof.

Rule 9.—The examination for Part II shall include the following subjects:

Hygiene and sanitation;
Epidemiology and infectious diseases;
Sanitary law and vital statistics;
Public health administration.

The examination shall be written and oral, and shall include practical examinations in infectious diseases; meat inspection; inspection of premises, dwellings, workshops, schools, etc. Candidates may not be admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof. No candidate shall be admitted to Part II of the examination until after the lapse of not less than two years from the date of his obtaining a registrable qualification in medicine, surgery, and midwifery, which qualification must be registered before admission to Part II of the examination.

Sir John Moore added that the twelve calendar months over which it was proposed to make the curriculum extend were not the *annus medicus*, which meant only nine months out of twelve; at the same time a reasonable holiday would be allowed. The committee was convinced of the necessity for a thorough grounding in bacteriology and parasitology, and to these at least 180 hours would be devoted, and to chemistry and physics in relation to public health not less than 90 hours. The committee also laid stress on the desirability of having practical evidence of the work done by the candidate on the clinical records of not less than six cases observed during attendance at a fever hospital. The proposal to insist on a period of not less than two years between the attainment of a registrable qualification by the candidate and his admission to the final examination for a diploma in public health had been criticized on the ground of its hardship to the candidate; but the committee was of opinion that two years was the shortest interval which could be allowed if the candidate was to secure some valuable general experience as a qualified man before entering upon his public health career.

Dr. W. RUSSELL pointed out that although it was stated that the curriculum was to extend over a period of twelve calendar months, it was possible under the rules for a candidate to complete it in less than twelve months—namely, with five months' practical instruction in the laboratory and six months' instruction in the duties of public health administration.

The PRESIDENT said that if a candidate completed his curriculum in eleven months it would count as twelve, the remaining month being regarded as a holiday. But a student would have to be very clever to accomplish the courses so rapidly. It was not anticipated that the student would complete the curriculum in twelve months, and the rule only laid down twelve months as the minimum time. With regard to the six months which the candidate had to spend under the supervision of a medical officer of health in acquiring a practical knowledge of the duties of public health administration, it might be a good thing if all those entering the medical profession had to serve six months with a general practitioner before taking up practice themselves; the Council had never gone so far as that in its requirements, but this new rule seemed to be a step in that direction.

Professor ARTHUR THOMSON pointed out that in the preamble to the new rules it was required that the diplomas should have been granted under such conditions of education and examination as ensured "the possession of a distinctively high proficiency", in all branches of study concerning public health. He thought that this should be made clearer by stating the required percentage of marks for a pass or in some other way, so that it might be known what the Council meant by "distinctively high proficiency."

The PRESIDENT said that the words in question were almost classic in the history of the Council. They were inserted as long ago as 1902 to indicate the intention of the Council with regard to the character and standard of a diploma. He deprecated any alteration, particularly as they occurred only in the preamble, where the general aim was expressed.

Sir JENNER VERRALL agreed that it would be inadvisable to replace the words in question by certain percentages of marks a matter which must be very largely in the hands of the examiners.

Professor HARVEY LITTLEJOHN, as a member of the committee, pointed out certain differences between the new proposals and the existing procedure. To begin with, the concessions to meet the exigencies of the war were all abolished. Then certain new subjects had been included in the necessary instructions on account of the almost complete transformation which had taken place in the public health service during the last ten years, since the previous amendment of the rules wasunder taken. Another change was with regard to examination. It was most necessary that a candidate should not be allowed to participate in the second and more advanced part of the examination until it was known whether he had passed the first.

Dr. J. C. MCVAIL said that in committee the question had arisen as to the degree of knowledge which should be required of a medical officer of health concerning the clinical work of the maternity and child welfare centres, the venereal diseases centres, and so forth. The committee had debated the question whether the prospective medical officer of health should be a clinician in all these special departments, and its conclusion was that this should not be required for the diploma. The holder of the diploma in public health must have the administrative knowledge necessary to supervise the clinical work done by assistants, but he himself need not be a clinician in these subjects. It was very important that such work as these centres entailed should be in the immediate charge of someone with very special clinical knowledge, and a public authority had a very important duty in appointing a school medical officer or officer in charge of a clinic, but the special clinical knowledge required should not be demanded for the diploma in public health, or else the curriculum would extend to an unreasonable length. At the same time the committee emphasized the requirement that the candidate should not receive the diploma until he had been for two years a qualified medical man. That was an old requirement of the University of Cambridge, which had since been modified, but was now quite properly restored. The prospective medical officer of health should have an interval after his ordinary medical qualification for the gathering of experience. No requirement was laid down as to how those two years should be occupied. They need not be spent in any public health service. It was very likely that they would be spent in hospital work, and they would offer an opportunity of gaining some insight into the work and functions of the general medical practitioner. In the early days of the diploma in public health nearly all the men who took the diploma had been in private practice. That state of things had passed away and its advantages could not be restored, but the man without general experience who went directly into the position which a diploma of this kind would entitle him to hold without any intervening experience was very likely to rub up against the feelings of general practitioners, and perhaps unduly to find fault with their work. It was to be hoped that these two years would to a large extent—though no such requirement was laid down—furnish the prospective medical officer with the general experience and width of outlook which would be of so much value to him later on.

Sir NORMAN MOORE detected in Dr. McVail's remarks some underestimate of the value of clinical knowledge to the holders of these diplomas. Sir Norman was inclined to look with disfavour upon anything which would tend to diminish the knowledge of clinical medicine which a candidate should possess.

Dr. MCVAIL said in reply that the very object of this two-year interregnum was to open up to the candidate the possibility of some groundwork in clinical medicine.

The PRESIDENT thanked the Public Health Committee for the most thorough and conscientious work which it had done on this subject. The old custom whereby a man decided to take up public health work and then proceeded to qualify himself for it by experience not only of clinical medicine but of life had largely disappeared, and the diploma in public health had come to be regarded as an ornamental qualification which a smart young man

might take in addition to his ordinary qualification, and put it in his pocket, so to speak, with a view to possible advantage later on. The committee was satisfied that the diploma must be given a different standing, that it must be intended only for the people who meant business when they took it. The new rules did away with the possibility that it might be taken completely by a clever lad within nine months of his first qualification. The committee wanted to ensure that the future holder of the diploma had had time to look about, perhaps as house-surgeon or physician, or as assistant to a general practitioner, or as demonstrator in a laboratory. Whatever the position he took, he should be able during those two years to familiarize himself with the fact that he was a qualified man, to see life from that point of view, before becoming a candidate for a post of medical officer of health. By extending the period of the curriculum also a great deal was being done to encourage the most serious preparation. It was quite true that in form a man could get through the proposed curriculum in eleven months, but in practice he did not think this would happen. The whole point of the new rules was to secure greater maturity on the part of the candidate, as well as more practical experience. When these rules came into force the local authorities would be quite sure that the holder of a diploma knew his business. He hoped also that in many cases an intending medical officer, after he had taken his diploma, would remain as assistant in public health administration for a little time: thus he would be not only school-trained, but trained in actual administrative experience. All this was very important in view of the enlarged place which medical officers of health now occupied in the country. He strongly recommended to the Council the general lines on which the Public Health Committee had drafted these rules, but in order that the Council might be quite sure of a strong body of opinion behind them, it was suggested that they should not be adopted that day, but that the report, along with the report of the inspector of examinations, should be sent to the various licensing bodies so that their criticisms might be available at the next session of the Council.

Sir GILBERT BARLING pointed out that some candidates for public health appointments took the B.Sc. in Public Health of certain of the universities, and that this degree might possibly be obtained in a shorter time than the new diploma.

The PRESIDENT said that the B.Sc. degree in Public Health would not be a Diploma in Public Health within the meaning of the Act unless the rules now laid down had been applied. It might be assumed that future degrees of B.Sc. in Public Health would be given on the same curriculum as was here specified, or at all events not on a less curriculum.

Sir JOHN MOORE said that during the last year only one application for a concession on account of the war had been received, so that in withdrawing all concessions under the new rules the committee was inflicting no hardship on the public services. War concessions were at an end. He had been asked a question with regard to the hours of study under the new regulations. The hours of study hitherto had been 240; the proposals would involve their increase to 270. The recent recommendation to licensing bodies to give every facility in the curriculum for a study of the principles of preventive medicine in connexion with the registered qualifications in medicine, surgery, and midwifery would be very useful to the future candidate for the Diploma in Public Health. He expressed his gratification at the way in which the report of his committee had been received.

The Council then agreed that the report should be entered on the minutes, and should be sent to the licensing bodies and teaching institutions, who would be requested to transmit their views thereon in time for the next session of the Council, when the rules would come up for formal adoption.

OTHER COMMITTEE REPORTS.

The PRESIDENT presented the Pharmacopœia Committee report and said that a cordial offer of co-operation with the committee in matters of common pharmacopœial interest had been received and welcomed from the Chairman of the Committee of Revision of the Pharmacopœia of the United States of America, 1920–1930. He also stated, what was not in the report, that permission had been asked for a translation of the *British Pharmacopœia* from beginning to end into the Chinese language for issue in China. The committee had replied that it had no objection, provided it was not asked to guarantee the accuracy of the Chinese text.

It was understood that as a result of a conference called by the authorities of the National Physical Laboratory to consider the question of the official testing and marking of glassware for purposes of measurement, an advisory committee was likely to be set up on this subject on which the Council would have representation.

Sir NORMAN MOORE presented the report of the Students' Registration Committee, which detailed the applications made for exceptional registration as students or for the antedating of the commencement of professional study, and the manner in which the committee had dealt with them.

Dr. MACKAY, Chairman of the Education Committee, reported that the work of the curriculum subcommittees had been going on in a satisfactory manner, that practically all had by this time been reported, although their reports had not yet been studied with the attention such important documents should receive, and a conjoint report for Scotland and for Ireland was not yet available, though one had been prepared for England. The Education Committee hoped to make a considered report to the next session.

BUSINESS OF THE COUNCIL.

Dr. NORMAN WALKER, Chairman of the Business Committee, said that the standing orders of the Council had become inadequate in view of the multiplicity of business which the Council had to transact, particularly with regard to dental matters. Therefore he moved that the Executive Committee be instructed to revise the standing orders and to report to the Council at the May session.

This was agreed to.

PROPOSED REVISION OF DENTAL CURRICULUM.

Sir JAMES HODSDON presented a report of the Dental Education Committee, which dealt in the main with the various colonial and foreign applications for registration which had been received, and the manner in which these had been dealt with by the committee. The committee also proposed, in view of the passing of the Dentists Act, 1921, and of the co-operation with the Council of certain members of the new Dental Board, to enter upon the consideration of a revised curriculum in dentistry and to report to the next session.

APPLICATIONS FOR RESTORATION AND REMOVAL.

The Executive Committee reported an application from John Shaw for the restoration of his name to the *Medical Register*, from which it was removed at his own request in 1908, and from Miss Lillie M. A. Jones for the removal of her name on the ground of having ceased to practise. The Council agreed to the Committee's recommendation to restore the name of Dr. John Shaw, but the application of Miss Jones was not acceded to for the time being owing to some technical difficulty about the form of application.

DISCIPLINARY CASES.

Lax Certification of an Intending Emigrant.

The Council on November 22nd and 23rd considered the case of Alexander McRobbie Donaldson, M.B., Ch.B., 1905, U. Aberd., registered as of Briercliffe, Burnley, who was summoned on the charge that he had given a certificate to a man named Baldwin stating that he had, on the date of the certificate, examined Baldwin (and certain other persons), and had found them in good health and sound mentally and bodily, and likely to remain so, when in fact he had made no examination of Baldwin. The charge was subsequently amended, without objection from Dr. Donaldson's counsel, to include the names of four other persons, members of Baldwin's family, with regard to whom it was also alleged that Dr. Donaldson had certified their good health and soundness without examination.

Dr. Donaldson was represented by Mr. Alexander Neilson, K.C., instructed by Messrs. Hempson, solicitors. There was no complainant, but the matter had been brought to the notice of the Council by Major E. W. Morris, senior medical officer of the Australian Imperial Force.

The Council's Solicitor (Mr. Harper) said that the circumstances came to the knowledge of Major Morris in the exercise of his duties in arranging for emigration to Australia. The man Baldwin applied in March, 1921, to the Orient Line for a passage to Australia for himself, his wife, his sister-in-law, and her two children. These were not State aided passengers, but passengers paying their full fare. A Board of Trade form was sent to Baldwin, requiring him to state that he and all the persons accompanying him were in good bodily and mental health. This form did not require to be supplemented by a medical certificate. Reliance was placed in each case on the accuracy of the applicant's statement, and in practice this had been found sufficient. Baldwin, however, on March 24th, went to Dr. Donaldson and asked for a certificate, which he gave

him. This stated that he had that day examined Baldwin and the other persons and found them in good health and sound in mind and body and likely to remain so. Baldwin got his passage and was due to sail on July 27th. On arriving at the dock with his party, he, along with the other emigrants, was inspected by the authorities, who consisted of Major Morris, Dr. E. W. Evans, a medical inspector of the Marine Department of the Board of Trade, and the ship's medical officer. The dispatch officer of the Orient Line was also present. The duty of Major Morris was to see whether any of the emigrants did not look strong enough for the passage or for work in Australia, and to warn such persons, pointing out that unless they had means of their own they might not be allowed to land. The main duty of the medical inspector of the Board of Trade was to see that no one suffering from contagious or infectious disease was allowed on board. Baldwin, who was described as looking very emaciated, was at once picked out and put back, and a medical examination of him was made by Major Morris and Dr. Evans. He was found to be suffering from heart trouble, and in their opinion, having regard to the fact that he was travelling steerage, he might not survive the passage of the Red Sea at that time of year, and if he did, he might not be allowed to land in Australia. Baldwin thereupon produced Dr. Donaldson's certificate. Although it was given in March and not produced until July the man's state of health in the latter month was such that he could not have been in a sound bodily state in March. The results were serious, because Baldwin, who decided not to take the passage, had sold up his home and transported his belongings; he had paid £200 passage money for himself and his party, but this was refunded by the Orient Line.

Major Morris, in evidence, said that on examination of Baldwin he found mitral disease of the heart and arteriosclerosis. There was marked degeneration of the arteries, and in his opinion the trouble was of long standing and could not have arisen in the interval between the granting of the certificate and the date of embarkation. In cross-examination he agreed that medical certificates were not required from fully paying passengers; in other cases a medical form containing specific questions had to be filled up. He had no right to prevent the man from embarking, but only to warn him. Asked what were the actual physical signs, Major Morris replied that there was an increased area of dullness on percussion and a harsh murmur over the whole of the mitral region. The general condition was such as to make it evident that the man was not fit to work as a farm labourer in the Australian climate. He had a marked stoop, looked anaemic, and wore an anxious expression.

Dr. Ernest W. Evans said that it was his business to inspect all steerage passengers in an emigrant ship. He confirmed the evidence of Major Morris. Directly he saw Baldwin he was suspicious of his condition. In cross-examination he said that he knew that the man was a Lancashire weaver, and he agreed that weavers were almost always white and anaemic-looking owing to the steam and heat of the mills, though he did not think that the conditions in a mill were comparable with those likely to be experienced in the Red Sea. If he had thought that his appearance was due only to his occupation he would not have troubled to warn him.

Mr. Stanley H. Foss, assistant manager of the Orient Line, said that, although no definite medical certificate was required from paying passengers, a footnote on the interrogatory form supplied stated that passengers should satisfy themselves that they were in a good state of health before going on board. This was intended to suggest to passengers that if they did not feel fit they should consult a doctor before booking.

Mr. Neilson, in defence, said that Dr. Donaldson had practised since 1913 at Briercliffe, and had been accustomed to see Baldwin, who lived only a hundred yards from his house, go backwards and forwards every day for years: he had a similar knowledge of the other persons concerned in the certificate. When he was first asked by Baldwin for a certificate he instructed him to get a form from the steamship company, but later he was told that no such forms were issued. Dr. Donaldson then said that all he could do was to certify that Baldwin's general health was good: the certificate written by him was intended in that sense only. The phrase "I have to-day examined," etc., was written in a moment of carelessness. There was not the smallest intention to deceive. He had visited the other members of the party before giving the certificate, and had satisfied himself that they were in good health. He had not attended any of them professionally for some time.

Dr. Donaldson, in evidence, said that when he granted the certificate he believed Baldwin to be in a good state of health. Baldwin had only been ill once in nine years. In 1918 Baldwin was examined for the army and not rejected, although placed in a low category. In cross-examination Dr. Donaldson repeated that his certificate was intended to cover general health, and he had qualified the certificate in this sense by a verbal statement to Baldwin, and had trusted to him to explain this if necessary. He had used the word "examination" in a limited sense. He considered Baldwin fit to travel to Australia at the time he gave the certificate. Baldwin, whose age was 47, was still fit and working. On hearing what had happened at the dock Dr. Donaldson examined him again, and found no more serious condition than in many weavers. Baldwin was in the habit of walking from twenty to twenty-five miles at week-ends, and was noted in the district for his walking powers.

The President pointed out that Dr. Donaldson in letters to the Registrar had apologized for being lax and careless in the wording of the certificate.

Testimonials to Dr. Donaldson's character were read from Dr. A. M. Sinclair (ex-Mayor of Burnley), from the clerk to the Burnley Insurance Committee, and other local gentlemen, also from Dr. H. Edmundson, who enclosed a resolution passed by the Burnley Division of the British Medical Association, expressing confidence in Dr. Donaldson's personal and professional ability and integrity.

The Council deliberated in private, and adjourned until the next day, when it continued the deliberation for a long time. When the public sitting was reopened the President announced the decision as follows:

Mr. Donaldson: I have to inform you that the Council has given very careful consideration to the charge brought against you and to the evidence produced in support of it, and has found that the facts alleged against you, as indeed you yourself have acknowledged, have been proved to its satisfaction, and that the certificate in question was given, in your own words, in a "lax and careless" manner. The Council regards laxity in the giving of such a certificate as a very grave matter, and worthy of severe censure; it has resulted, as has been shown in this instance, in consequences injurious to the person to whom the certificate is given, and to others. The Council, having regard to your previous good character and to the warning which you have received during the course of these proceedings, trusts that your conduct as touching certificates will in future be beyond reproach; and it has accordingly not seen fit to direct the Registrar to erase your name from the *Register*.

Dr. Donaldson, at a suggestion from the President, gave his assurance that a similar mistake should not recur.

Canvassing for Patients.

The Council considered, on November 23rd and 24th, the case of Nariman Bejanji Kolsa-Walla, registered as care of a firm of bankers in London, L.M.S. 1910, U. Bombay, D.P.H.R.C.P.S. Eng., 1914, against whom it was charged:

"That, being a registered medical practitioner, you have sought to attract to yourself patients in the villages of Rainworth and Blidworth, Nottinghamshire:

"(1) By personal visits to and/or interviews with persons who were to your knowledge panel patients of Nowroji Merwanji Tarachand, a registered medical practitioner; (2) by offering to charge a lower fee for confinements than the charge made by the said Nowroji Merwanji Tarachand; and (3) by personal attendance at a meeting held at the Wesleyan Schools, Blidworth, when those present were asked to put their names on your panel list, and forms of notice to change doctors to yourself were distributed;

"And that in relation thereto you have been guilty of infamous conduct in a professional respect."

Dr. Kolsa-Walla was represented by his counsel, Mr. Norman Birkett; and the complainant in the case, Dr. N. M. Tarachand, by his solicitor, Mr. E. Huntsman.

Mr. Huntsman, in opening the complaint, said that Dr. Tarachand had been in practice in Mansfield for about twenty-five years. In 1919 Dr. Kolsa-Walla, who had been on active service for four years, wrote to him inquiring whether there was a good field for practice in Nottinghamshire, and subsequently he became Dr. Tarachand's guest, and for five weeks assisted him in his practice. The question of partnership arose, and negotiations went so far that draft articles were prepared, but Dr. Kolsa-Walla objected to a probationary period of six months, although it was Dr. Tarachand's view that his real objection was to a stipulation that if the partnership were terminated Dr. Kolsa-Walla should not engage in competitive practice in the neighbourhood. Dr. Kolsa-Walla, however, on the sundering of relations between himself and Dr. Tarachand, did set up in practice in Rainworth and Blidworth, villages 4 or 5 miles from Mansfield. He had acquired some knowledge of Dr. Tarachand's practice, and the benefit of his introduction to his patients; and the complainant's case was that Dr. Kolsa-Walla went to a number of his patients in these villages falsely representing that Dr. Tarachand was discontinuing practice, and endeavouring to persuade them to transfer themselves from Dr. Tarachand's insurance list to his own. It was further alleged that Dr. Kolsa-Walla himself prepared a number of forms to facilitate such transfer, and, again, that he had stated in conversation his willingness to charge less for confinements than Dr. Tarachand had charged. With regard to the meeting at Blidworth, it would be suggested by the defence that this was the climax of a movement which had been in existence for some time to secure a resident doctor in these villages, but he asked the Council to remember that the feeling on this subject was no excuse for a medical practitioner taking part in the movement.

Eight residents in these villages then gave evidence in support of Dr. Tarachand's allegations. The first, a Mr. Coupe, stated that he was an insured person on Dr. Tarachand's list, and that in May last, at a time when change of doctor was permissible, Dr. Kolsa-Walla spoke to him in his garden and asked if he would like such a change. Dr. Kolsa-Walla told him that Dr. Tarachand was giving up his practice. Mr. Coupe said that he would think it over, and Dr. Kolsa-Walla called on a second occasion, and pointed out that while Dr. Tarachand lived at Mansfield he lived on the spot; also that Dr. Tarachand charged five guineas for confinements, while he would only charge three. The witness, in cross-examination, would not admit that on the first occasion Dr. Kolsa-Walla was paying a professional visit to a neighbour, that Mrs. Coupe first spoke to him, asking him who was ill, and that it was she who asked him what his charge would be for confinements. Corroborative evidence in various particulars was given by Mrs. Coupe and Mr. and Mrs. Carline, who all lived in the same house. They would not agree that the idea that Dr. Tarachand was giving

up his practice arose out of village rumour in consequence of the appointment of Dr. Kolsa-Walla as club doctor for the local pit. Three other witnesses were examined as to the meeting at Blidworth, which, according to their story, was held to discuss the question of change of doctor. It took place immediately after a meeting in the same room in connexion with the feeding of miners' children, and Dr. Kolsa-Walla was present for half an hour, or, according to one of the witnesses, was going in and out, though whether this referred to the first or second meeting was not clear.

Mr. Bayliss, clerk to the Nottinghamshire Insurance Committee, said that in May Dr. Kolsa-Walla handed him a batch of notices relating to change of doctor, and asked him if they were all right. The doctor said, in answer to a question, that the signatures were those of the persons concerned. Subsequently, Dr. Kolsa-Walla asked him not to say, in his evidence at an inquiry by the Local Medical Committee, that he himself had taken the notices to the office, as this fact might go against him. For a doctor to hand in such notices himself was not irregular, although unusual. He was not aware that any person had complained of being transferred.

Mr. Birkett, for Dr. Kolsa-Walla, commented upon the fact that the complainant, Dr. Tarachand, had not given evidence. He maintained that it was untrue that Dr. Kolsa-Walla had abused the other's hospitality. Dr. Kolsa-Walla had refused a good offer elsewhere in order to work with Dr. Tarachand, and worked for him for five weeks without remuneration. The partnership negotiations were broken off because he refused the condition of six months' probation, but by this time he had made many friends, and a movement was set on foot in the district, with which he had nothing to do, to retain him. At a meeting arranged by the pit officials (not the meeting mentioned in the charge) Dr. Kolsa-Walla was elected a club doctor by a small majority in opposition to another medical man (not Dr. Tarachand). The "meeting" at Blidworth, mentioned in the charge, was no meeting at all. It was an informal talk after a meeting called for quite a different purpose, and Dr. Kolsa-Walla was not present when this talk took place, although he had attended the meeting itself for a few minutes, as he was interested in the feeding of miners' children, which was the purpose for which it was summoned. Counsel commented upon the similarity in phraseology in the statutory declarations of the witnesses who had given evidence, and said that it was clear that one mind was reflected in them all. The explanation of the whole matter was the malice of Dr. Tarachand, who wanted to drive Dr. Kolsa-Walla out of the district. In conclusion he put in some testimonials to Dr. Kolsa-Walla's character, together with a signed statement by seventy-seven insured persons who had been transferred from Dr. Tarachand's to Dr. Kolsa-Walla's list, declaring that their transference was entirely voluntary.

Dr. Kolsa-Walla, in evidence, denied that he had ever canvassed any persons who were on Dr. Tarachand's list. He had broken off the negotiations for the proposed partnership because the partnership was not to be of a permanent character. Then he heard that there was a movement in his favour at Ringworth, where the people had wanted a resident doctor, and he was urged to stay by one and another. With regard to the Blidworth meeting he was present only for five minutes; there was no discussion about change of doctor while he was present, nor did he know that any such discussion was to take place. He rebutted the evidence of the Coupes and Carlines. He was visiting next door to their house, and Mrs. Coupe herself began the conversation, asking what he charged for confinements. He answered three guineas, because that was the fee agreed upon between the local miners' club and the British Medical Association. He was approached afterwards by Mrs. Carline on the same subject. He admitted taking the forms of transfer to the secretary of the Insurance Committee; as he was just starting in practice, he was unaware of the proper procedure. His question as to whether they were all right related only to one form, of which he was uncertain, because a father had signed for his sons. Only one of the forms was made out in his own handwriting; a patient came to the surgery and asked him to fill up the form.

Five witnesses from the villages were called on behalf of Dr. Kolsa-Walla. One of them, Mr. Tyler, an insurance agent, said that he himself had filled up nine of the transfer forms which were produced, as the people he visited had asked him to do so. He had never canvassed for Dr. Kolsa-Walla. The other evidence related to the meeting, and it was elicited, by the testimony of the chairman and others, that the meeting was called to consider the feeding of miners' children, that Dr. Kolsa-Walla was present for a few minutes, but left at the close, and that afterwards, among those who remained, there was a little informal conversation about the election of Dr. Kolsa-Walla as pit club doctor which had just taken place. The witnesses said that they saw no forms distributed, though one of the witnesses admitted that he had carried a few forms in his pocket.

Mr. Huntsman, in replying for the complainant, said that he attached no importance to the relationship between the two practitioners, and it was because the charge would have been diverted to this side issue that he did not put his client in the box. If the witnesses for the complainant were to be believed, the first and second charges were abundantly proved. Further, why should a doctor who said that he had never done any canvassing take a batch of forms to the secretary of the Insurance Committee—forms many of which were filled in in handwriting suspiciously like his own, and written in pencil, suggesting that they were filled up during a conversation in the street—and ask him whether they were all right? That did not harmonize with the aloofness which Dr. Kolsa-Walla protested. The Council was not concerned with any squabble between the two practitioners; the question was one as between the profession as a whole and one member of it who had fallen short of the required standard of conduct.

The hearing of the case occupied eight hours. After a private deliberation, the President announced the decision as follows;

> Mr. Kolsa-Walla, I have to inform you that the Council has found that the following facts which were alleged against you in the notice of inquiry namely;
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> "That, being a registered medical practitioner, you have sought to attract to yourself patients in the villages of Rainworth and Blidworth, Nottinghamshire, by personal visits to and/or interviews with persons who were to your knowledge panel patients of Nowroji Merwanji Tarachand, a registered medical practitioner—
>
> have been proved to its satisfaction; that the Council is of opinion that the practice of advertising and canvassing is contrary to the public interest and discreditable to the profession of medicine; that the Council takes a very grave view of such practices, but that, having regard to your comparative inexperience, it is prepared to give you an opportunity to prove that you are capable of more worthy conduct in the future, for which purpose it has postponed judgement till the November session, 1922, when you will be required to attend and to produce evidence from your professional brethren regarding your conduct in the interval. Before that date you will be required to send to the Registrar of the Council the names of some of your professional brethren in the neighbourhood of your practice who may be willing, upon written application from the Registrar, to testify, by letter addressed to him for the use of the Council, as to your character and conduct during the next twelve months. You will receive, in due course, a formal written intimation of what I have just announced to you, and the intimation will specify the dates to which I have referred."

The Council closed its session on November 26th after passing certain formal resolutions and a vote of thanks to its President. Arrangements had been made for the Council to sit well into the following week, but the business of the session was got through with unexpected expedition.

British Medical Association.

CURRENT NOTES.

Ophthalmic Benefit.

OPHTHALMOLOGISTS, and particularly those attached to hospital staffs, are warned against a movement which is on foot amongst some of the approved societies. One approved society, the Domestic Workers' Friendly Society, has set an excellent example by arranging that all its members who are certified by their insurance practitioners as requiring attention to their eyes shall be sent to private ophthalmologists, who shall be paid half the current local fee for ordinary consultative work. This arrangement, as has been previously reported in a Current Note, was discussed by the Ophthalmological Section at Newcastle, which came to the conclusion that the arrangement would be in the interests of the profession, and would relieve a considerable number of persons earning small incomes from the necessity of going either to the out-patients' department of the hospitals, or to sight-testing opticians. A combination of approved societies known as the National Insurance Beneficent Society is, however, endeavouring to make arrangements with some of the London and provincial hospitals, to which they are proposing to pay the sum of 5s. a case, irrespective of the number of attendances in any one year. Obviously, if this scheme is successful, it will discourage other approved societies from going on with schemes which will impose neither upon charitable institutions nor upon the medical profession. Members of the profession attached to hospitals are urged to ask whether or not such an arrangement has been made at their hospital, and if it has been, to see that an effective protest is made to the governing body.

Dispensing Capitation Fee.

The representatives of the Insurance Acts Committee lately discussed the dispensing capitation fee with representatives of the Ministry of Health and were informed that, as a proposition had been put to insurance chemists for the reduction of the latter's remuneration, the question arose as to the reconsideration of the capitation fee paid to insurance practitioners who dispensed their own medicines. Chemists' remuneration consists in respect of each prescription of (*a*) a charge for the ingredients, and (*b*) a dispensing fee for the prescription as a whole, the first being revised monthly to agree with the actual wholesale cost at the time, while the latter is based on a series of prices varying according to the nature and quantity of the ingredients, and is fixed in the

tariff. This dispensing fee represents payment not only for professional service, but also an allowance per prescription in respect of all outgoings in the form of establishment expenses. The average dispensing fee per prescription paid to the chemists has been 5.6d., and it has been put to the chemists that this sum should be reduced by 1d. to 4.6d., and this is now under consideration by the Pharmaceutical Committees. The amount of the dispensing fee per insured person during 1921 has been 1s. 2½d., and if reduced in accordance with the Ministry's suggestion, the average dispensing fee paid to the chemists per insured person will be roughly 1s. Adding to this sum of 1s. the cost per insured person for ingredients, which is estimated at 9d., the figure of 1s. 9d. per insured person for drugs is arrived at, and it is this figure which insurance practitioners who dispense are asked to accept. This fee will hold good for two years from the time it is suggested it should come into operation—namely, on April 1st, 1922. The Ministry's representatives agreed that dispensing doctors should be relieved of the cost of any malt and cod-liver oil prescribed for tuberculous patients, such to be charged to the Drug Fund, and undertook to give sympathetic consideration to any suggestions for additions to the list of specially expensive drugs which would not be covered by the 1s. 9d. The matter will be considered by the General Purposes and Rural Practitioners Subcommittees of the Insurance Acts Committee at an early date.

Proposed Reduction in Capitation Fee for Post Office Medical Officers.

The British Medical Association has received an official communication from the Postmaster-General to the effect that it is proposed from January 1st, 1922, to reduce by 1s. 6d. per annum the capitation fee payable to Post Office medical officers on the ground that the capitation fee payable to insurance practitioners is to be reduced by that amount. There is a strong feeling that the two services are not strictly comparable, and that it does not follow that a reduction in the insurance fees must of necessity be followed by a corresponding reduction in the remuneration of Post Office medical officers. The duties of the Post Office medical officer do not end with treatment and the supply of medicines to Post Office employees. A number of other duties are involved in the appointment which have nothing to do with treatment and for which no fee is paid. For example, the furnishing of an annual report on the sanitary condition of offices and suboffices; the keeping of a journal; examinations for cycling duties; reports on cases of tuberculosis, and examination for purposes of superannuation. No mileage is payable to Post Office medical officers, and the method of payment for itinerants leaves much to be desired. They are paid for at the rate of 2s. 6d. a visit, but the maximum payable in any half year must not exceed 13s., however many visits are made.

The Postal Medical Officers' Subcommittee of the Association, which consists mainly of Post Office medical officers, is meeting on December 9th to consider the position, and will make representations to the Postmaster-General, who has asked for the opinions of the Association on the subject. The Medical Secretary will be glad to have the views of Post Office medical officers.

Meetings of Branches and Divisions.

LANCASHIRE AND CHESHIRE BRANCH: BIRKENHEAD DIVISION.

A MEETING of the Birkenhead Division was held in the Town Hall, Birkenhead, on November 23rd. Dr. GEORGE GUNN, who presided, introduced to the assembled members Dr. Alfred Cox, Medical Secretary of the Association.

Dr. COX, whose first visit it was to the Division, delivered a very forceful address, dealing mainly with the absolute necessity, in view of the ever-present possibility of dangers abroad, for a livelier and more active interest in the Association on the part of Divisions and individual members. At the conclusion of his address Dr. Cox cleared up several questions of considerable professional interest which were put to him by members present.

LANCASHIRE AND CHESHIRE BRANCH: BURNLEY DIVISION.

A MEETING of the Burnley Division, to which all medical practitioners in the district were cordially invited, was held on November 15th at the Thorn Hotel, Burnley, and the attendance was remarkably good. Dr. EDMONDSON, Chairman of the Division, presided. Dr. ALFRED COX, the Medical Secretary, gave an address on current topics and answered various questions. The meeting concluded with votes of thanks to Dr. Cox and to the Chairman.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.

A MEETING of the City Division was held at the Metropolitan Hospital on December 2nd, at 9.30 p.m., when Dr. C. E. EVANS was in the chair.

Dr. EVANS opened the meeting and introduced Mr. N. Bishop Harman, F.R.C.S.

Mr. BISHOP HARMAN gave a lecture on "Squint, its causes and treatment." He said that the appreciation of the meaning of squint could only come through a knowledge of the development and mechanism of binocular vision; he thereon traced the morphology and development of the ocular and cerebral arrangements, showing how profoundly the human form had been modified so as to secure such a position of the eyes as would allow of binocular vision, and with this there had been a corresponding growth of the ocular brain centres. Defect of the eye, muscle, or brain centre, would account for the loss of binocular vision and the onset of squint. The overruling factor was the brain centre—if that were fully developed no squint could occur, not even with serious ocular and muscle defect; but the subject would suffer seriously from eye-strain and headache. The squinter did not so suffer, for all effort had been relaxed. In this sense squint was the means nature took to relieve the undue strain of maintaining binocular vision against too heavy odds. Mr. Harman then discussed treatment and the urgency of giving early attention. If, as he believed, defective muscle balance was a common cause of the brain centre giving up its work, then much of the "orthoptic" treatment with stereoscopes was sheer waste of time and energy, and the proper course was the operative readjustment of the muscle balance at an early date. Mr. Harman concluded with a demonstration of his method of operating for squint, whereby the lengthened muscle was shortened by reefing and the shortened muscle correspondingly lengthened. The great advantage of this method lay in the fact that the muscles were not detached from the globe, so that the risk of secondary displacements was eliminated.

A discussion followed, and Mr. BISHOP HARMAN cleared up several obscure points. A vote of thanks was unanimously accorded the lecturer for his most illuminative lecture and the lantern illustrations he had exhibited.

The case of Dr. Wood-Hill of Bicester reported in the JOURNAL of November 26th, p. 919, then came up for discussion, and there was a unanimous expression of sympathy with him. The question of practical sympathy was deferred to a later date. The meeting closed at a late hour.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.

A MEETING of the Lambeth Division was held on November 25th when a paper was read by Mr. W. H. C. ROMANIS on surgical treatment of exophthalmic goitre, which proved most interesting and instructive.

METROPOLITAN COUNTIES BRANCH: LEWISHAM DIVISION.

A MEETING of the Lewisham Division was held on November 22nd. Dr. A. WELLESLEY HARRIS, M.O.H. Lewisham, opened a discussion on public health in relation to the general practitioner. He suggested that the inspection of school children should be done by their own doctor—the general practitioner—and a record kept on cards to be produced at each examination; the fees should be paid by the education authority. He described the arrangements of the child welfare centres, of which there were six voluntary centres in Lewisham. There were about 25,000 children in Lewisham. The maternity home charged a fee of six guineas, and if the patients had ever been attended by a doctor the doctor was asked if he was willing they should be admitted as patients. He urged on practitioners the necessity for the earlier notification of tuberculosis.

NORTH OF ENGLAND BRANCH: DARLINGTON DIVISION.

A MEETING of the Darlington Division was held at Greenbank Hospital on November 29th. Dr. FARQUHAR read an amusing and instructive paper on "The medical man in literature," tracing references to the doctor and his work through various authors, from Plato and Chaucer up to Bernard Shaw and Stephen Leacock.

It was unanimously agreed that the Division should contribute financially to any appeal which Dr. Wood-Hill decided to make against the judgement reported in the BRITISH MEDICAL JOURNAL of November 26th.

Dr. Kirk was appointed to represent the Division in the Representative Body.

Three lecturers were chosen from the list sent by the honorary secretary of the North of England Branch to address the Division on clinical subjects during the winter.

STIRLING BRANCH.

THE Stirling Branch held the first scientific meeting that it has held for some years on November 25th, within the County Buildings, Stirling, when Mr. ALEXANDER MILES, F.R.C.S.E., surgeon to the Edinburgh Royal Infirmary, opened a discussion on the clinical manifestations of affections of the biliary passages. Mr. Miles opened with a most lucid description of the latest views of the physiological action of the

stomach, duodenum, and bile, and then described the etiological factors leading to the condition requiring surgical interference. A discussion followed, which led to a most interesting and useful meeting. It is hoped to have further clinical meetings during the winter, and to take up seriously the scientific side of the Branch work, leaving the medico-political business more to the Panel Committees.

Association Notices.

MEETING OF COUNCIL.

THE next meeting of Council will be held on Wednesday, December 14th, in the Council Room, 429, Strand, London, W.C.2, at 10 a.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of the West Dorset Division, to which non-members are invited, will be held at Dorchester on Thursday, December 15th, when an address will be given by the Deputy Medical Secretary, Dr. G. C. Anderson, on The Advantages of Medical Organization under the B.M.A.

KENT BRANCH: ISLE OF THANET DIVISION.—A dinner, to which all medical men in the area of the Division are cordially invited, will be held at the Albion Hotel, Broadstairs, on Thursday, December 15th, at 7.30 p.m. The chair will be taken by Mr. W. G. Sutcliffe, F.R.C.S. It is hoped that as many as possible will endeavour to attend.

MALAYA BRANCH.—The annual meeting of the Malaya Branch will be held in Singapore on Friday, January 27th, 1922. The presidential address will be delivered by Dr. Malcolm Watson, who has selected Quinine and the Quinine Controversy for his subject. Four representatives of the Association will be elected members of the S.S. and F.M.S. Medical Council, under the constitution of the Medical Ordinance. Dr. W. J. Dixon will make an appeal on behalf of the Royal Medical Benevolent Fund. The annual dinner will be held in the evening, and the Watson Cup Competition will take place on the following afternoon.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.—A Divisional meeting will be held at the Hampstead General Hospital, on Thursday, December 15th, at 8.30 p.m., when the Honorary Secretary, Mr. Sidney Boyd, will read a paper on some surgical solecisms.

METROPOLITAN COUNTIES BRANCH: NORTH MIDDLESEX DIVISION.—A general meeting of the North Middlesex Division will be held in the lecture room of the Prince of Wales's General Hospital, Tottenham, on Wednesday, December 14th, at 3.30 p.m.; when Colonel L. W. Harrison, R.A.M.C., D.S.O., will give a British Medical Association lecture on "The Treatment of Gonorrhoea in General Practice."

NORTH OF ENGLAND BRANCH: DARLINGTON DIVISION. A clinical meeting of the Darlington Division will be held at Greenbank Hospital on December 22nd, at 8.30 p.m., when Dr. Cockcroft (Middleham) will read a paper on "The Endocrine Glands and their Therapeutic Uses." It is hoped that there will be a good attendance of members in appreciation of Dr. Cockcroft's willingness to travel so far to deliver the paper.

NORTH WALES BRANCH. A meeting of the North Wales Branch will be held at the Station Hotel, Llandudno Junction, on Tuesday, December 13th.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—A meeting of the Northern Counties of Scotland Branch will be held in the Palace Hotel, Inverness, on Friday, December 16th, at 6 p.m., when Dr. Edwin Bramwell, physician, Edinburgh Royal Infirmary, will give a British Medical Association lecture on a subject of general interest and practical importance in relation to general practice. After the lecture the members will dine in the Palace Hotel, at 7.30 p.m. It is hoped that there will be a large attendance at both the lecture and dinner, as there was last year.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: SWANSEA DIVISION.—A meeting of the Swansea Division will be held on Thursday, December 15th, when Dr. Robert Knox (London) will give a British Medical Association lecture.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.—A meeting of the medical profession will be held on Wednesday, December 14th, at 8.30 p.m., at the Portsea Island Gas Company's Lecture Hall, Town Hall Square (entrance, Spring Garden Lane, at back of gas company's offices). Agenda: (1) To consider recent reductions in medical officers' salaries by Portsmouth Town Council, and take any resulting action thereon. (2) Lantern lecture by Dr. J. Stanley White (London) on the Ductless Glands. All members of the medical profession in Portsmouth and district are invited to attend.

YORKSHIRE BRANCH: HALIFAX DIVISION.—A meeting of the clinical and scientific section will be held at the Royal Halifax Infirmary on Wednesday, December 14th. 8.15 p.m., Exhibition of Cases and Specimens; 8.30 p.m., Lecture on "Psycho-analysis and Common Sense," by Dr. W. H. Maxwell Telling (Leeds).

Correspondence.

Insurance Certification Rules.

SIR,—May I be permitted to draw attention to one or two inaccuracies in Dr. H. Douglas Smart's letter on page 213 of the BRITISH MEDICAL JOURNAL SUPPLEMENT of December 3rd?

First, Section II, para. 7 of the Memo. 230/I.C. does not forbid the issue of certificates to private patients; and secondly, the courts have decided that an insured person cannot be deprived of sickness benefit because he produces a certificate from a practitioner not upon the panel. What para. 7 does state is that an insurance practitioner shall only use the official form of certificate (Med. 40) when he is treating his own insured patients or those of a practitioner for whom he is acting as deputy.

Dr. Smart, again, in his third paragraph is not quite correct. All that para. 12 of Memo. 230/I.C. does say is that an insured person who is an in-patient in a hospital should secure a certificate from a responsible officer of the institution. This officer, in such cases, is not barred by para. 7 of the memorandum from giving a certificate; what he is barred from doing is to give a certificate in such a case upon the official form (Med. 40).

As a matter of fact the British Medical Association publishes a book of certificates, which is used in many cases where the official form cannot be used, and which is generally recognized by the health insurance world.—I am, etc.,

Hornsey, Dec. 5th. H. B. BRACKENBURY.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty: Surgeon Commanders T. B. Shaw to the *Vivid* for R.N. Hospital, Plymouth, T. R. L. Jones to the *Vivid* for R.N. Barracks. Surgeon Lieutenant Commanders L. E. Strugnell to the *Bee*, R. Lyon to Rosyth Dockyard. Surgeon W. Bell to the *Victory*, additional, for course at Haslar Hospital.

Surgeon Lieutenants L. W. Gemmell, R. P. Ninnis, and J. D. Murphy have been promoted to the rank of Surgeon Lieutenant Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Temporary Captain (acting Lieut.-Colonel) G. Clarke relinquishes his commission and is granted the rank of Lieutenant Colonel.

Captain T. H. Sarsfield to be temporary Major from December 9th, 1919, to July 18th, 1921.

The following Captains to be temporary Majors from February 25th, 1918: R. F. Bridges to May 19th, 1919, C. Rales to February 22nd, 921, D. Reynolds to July 25th, 1920, C. H. H. Harold to March 22nd, 19 0, S. J. Barry to October 31st 19 0, J. C. L. Hinston to July 18th, 1920, D. B. McGrigor to August 31st, 1918, F. R. Coppinger to October 9th, 1918, W. A. Spong to February 24th, 1919.

The following Lieutenants (temporary Captains) to be Captains: J. D'A. Champney, V. J. Perez.

R. W. Shaw to be temporary Lieutenant.

ROYAL AIR FORCE.

MEDICAL SERVICE.

T. J. D. Atteridge is granted a short service commission as a Flying Officer, with effect from and seniority of November 16th, 1921.

Lieutenant (temporary Captain) G. W. Allen, Army Dental Corps, is granted a temporary commission as a Flight Lieutenant in the Royal Air Force while attached for R.A.F. duty with effect from September 12th, 1921, with seniority of January 31st, 1920.

REGULAR FORCES.

1st Life Guards.—Surgeon-Captain E. D. Anderson to be Surgeon-Major.

2nd Life Guards.—Surgeon-Major E. J. H. Luxmoore, M.C., from 1st Life Guards, to be Surgeon-Major.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

The following officers relinquish their commissions: Major J. M. Darling, D.S.O., and retains the rank of Major. Captain H. W. Hills, and is granted the rank of Major. Captain J. R. Cronus, on appointment to a commission in the R.A.F., H. F. Vellacott, M.C., and retains the rank of Captain.

The following Captains to be temporary Majors: W. M. Dickson, from February 25th, 1918, to October 29th, 1919. C. A. Bignold, from June 18th, 1918, to February 21st, 1919.

TERRITORIAL ARMY.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel C. Graham-Grant, V.D., having attained the age limit, is retired, and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major J. E. Bates, T.D., having attained the age limit, is retired, and is granted the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major A. F. Rutherford, T.D., having attained the age limit, is retired, and retains the rank of Major, with permission to wear the prescribed uniform.

The following officers relinquish their commissions and retain their rank: Lieut.-Colonel J. P. S. Ward, T.D., with permission to wear the prescribed uniform. Majors with permission to wear the prescribed uniform: J. Allan, W. Y. Martin, F. B. Jelleriss, T.D., R. Thornton. Captains T. L. de Courcy, C. B. Alexander, H. B. Cunningham, T. J. Costello, M.C., A. S. Walker, D. R. Harris, W. J. H. Davis, J. Cook, M.C.

Captain J. D. Faddes, M.C., to be Major.

Captain H. F. Humphreys, M.C., to be Major, July 19th, 1921 (Substituted for notification published in the *London Gazette* of August 26th, 1921.)

Captain R. V. Favell relinquishes his commission and is granted the rank of Major.

Captains A. R. Grant and N. G. H. Salmon resign their commissions and retain the rank of Captain.

Captain P. H. Mitchiner is restored to the establishment.

Captain J. R. Griffith (late R.A.M.C.) to be Captain, with precedence as from July 1st, 1919.

1st London (City of London) General Hospital. Lieut.-Colonel (Brevet Colonel) H. J. Waring, C.B.E., resigns his commission and retains his rank.

4th London General Hospital. Captain C. Ogle, having attained the age limit, is retired and retains the rank of Captain.

2nd Western General Hospital.—Captain E. D. Telford, having attained the age limit, is retired and retains the rank of Captain.

TERRITORIAL ARMY RESERVE.

ARMY MEDICAL SERVICE.

Colonel W. Ransom, D.S.O., and Lieut.-Colonel A. M. McIntosh, C.M.G., T.D., from General List, R.A.M.C., to be Colonels.

Lieut.-Colonel A. E. Kidd, O.B.E., T.D., from 1st Scottish Casualty Clearing Station, to be Lieutenant-Colonel.

Captain A. Ramsbottom, M.C., from R.A.M.C. General List, to be Lieutenant-Colonel.

Captain J. F. Ward, from R.A.M.C. General List, to be Captain.

DEFENCE FORCE.

ARMY MEDICAL SERVICE: ROYAL ARMY MEDICAL CORPS.

Temporary Captain W. R. Watt relinquishes his commission.

DIARY OF SOCIETIES AND LECTURES.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1.—Mon., 8.30 p.m., Dr. Aldo Castellani, C.M.G.: Haemorrhagic Bronchitis of Non-tuberculous Origin; Dr. J. S. Owens: Demonstration on Dust in Expired Air.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—Thurs., 5 p.m., Bradshaw Lecture by Mr. H. J. Waring: The Operative Treatment of Malignant Disease, its Possibilities and Limitations.

ROYAL SOCIETY OF MEDICINE.—*War Section:* Mon., 5.30 p.m., Colonel H. W. Grattan: Medical Organization, with Special Reference to the Transport of Wounded in Open Warfare. *Section of Therapeutics and Pharmacology:* Tues., 4.30 p.m., Dr. H. W. Vines: The Parathyroid Gland in Relation to Calcium Metabolism. *Section of Psychiatry:* Wed., 5.30 p.m., Dr. T. A. Ross: Some Points about Repression. *Section of Dermatology:* Thurs., 4.30 p.m., Cases; 5 p.m., Major A. E. Milner: Diathermy in the Treatment of Lupus Erythematosus.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W.1.—Thurs., 7.15 p.m., Demonstration by Dr. A. Balfour, C.B., C.M.G., and Dr. D. E. Anderson, of Views, Photos, and other objects of interest from Mauritius. 8.15 p.m., Dr. Andrew Balfour: A Medical and Sanitary Survey of Mauritius: Past, Present, and Future.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST GRADUATE MEDICAL ASSOCIATION, Royal Samaritan Hospital for Women.—Wed., 4.15 p.m., Dr. N. Stark: Gynaecological Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thurs., 4 p.m., Dr. R. Hutchison: The Problem of the Solitary Child.

LONDON HOSPITAL, E.—Diseases of Children: Wed., 10.15 a.m., Dr. C. H. Miller: Clinical Demonstrations. Sat., 10.15 a.m., Dr. R. Hutchison: General Diseases.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Mr. P. R. Wrigley: Enlarged Prostates.

MANCHESTER: ST. MARY'S HOSPITALS (WHITWORTH STREET WEST BRANCH).—Fri., 4.30 p.m., Dr. Ward: Bronchial Affections in Children.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.—Daily, In- and Out-patient Attendances. Mon., 5.30 p.m., Lecture by Dr. Moon: Arterio-sclerosis.

NEWCASTLE-UPON-TYNE: NORTH OF ENGLAND BRANCH, BRITISH MEDICAL ASSOCIATION, Royal Victoria Infirmary.—Fri., 2.15 p.m., Professor W. E. Hume: Infective Endocarditis; 2.45 p.m., Mr. W. J. Harrison: Chronic Otitis Media; 3.15 p.m., Dr. Horsley Drummond: Neurasthenia; 3.45 p.m., Tea; 4 p.m., Dr. George Pall: Myopathy; 4.30 p.m., Dr. E. Farquhar Murray: Extra-uterine Pregnancy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.15.—Daily, 2.30 p.m., In- and Out-patient Clinics, Operations, etc. Mon., 4.30 p.m., Mr. J. Bright Banister: Puerperal Sepsis. Tues., 3.30 p.m., Dr. F. G. Crookshank: Physical Examination of the Chest: (IV) The Exploring Syringe. Fri., 4.30 p.m., Mr. T. H. C. Benians: Laboratory Diagnosis of Tuberculosis in Children.

ST. JOHN'S HOSPITAL, 49, Leicester Square, W.C.—Thurs., 6 p.m., Dr. W. K. Sibley: Acne.

SALFORD ROYAL HOSPITAL.—Thurs., 4.30 p.m., Dr. C. C. Heywood: Thoracic Tuberculosis in Children.

SHEFFIELD UNIVERSITY.—At Royal Infirmary. Tues., 3.30 p.m., Mr. Mount: Complications of Traumatism; 4.15 p.m., Professor Leathes: Nephritis. At Royal Hospital. Fri., 3.30 p.m., Dr. Skinner: Neurosyphilis; 4.15 p.m., Dr. Mould: Classification of Mental Disease.

WEST LONDON POST GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. *Lectures:* 5 p.m., Mon., Dr. S. Pinchin: Pulmonary Tuberculosis. Tues., Mr. Page: Anaesthesia. Wed., Dr. Grainger Stewart: Facial Palsies. Thurs., Mr. Bishop Harman: Senile Cataract. Fri., Mr. Steadman: Relation of Dental Sepsis to the Public Health.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (3 lines).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

DECEMBER.

9 Fri. London: Dominions Committee, 2.30 p.m.
London: Post Office Medical Officers' Subcommittee, 3 p.m.
Cambridge and Huntingdon Branch, Medical Schools, Downing Street, Cambridge, 2.15 p.m.
13 Tues. North Wales Branch, Station Hotel, Llandudno Junction.
14 Wed. **Council** Meeting, 429, Strand, 10 a.m.
Halifax Division: Clinical and Scientific Section, Royal Halifax Infirmary.—Cases and Specimens, 8.15 p.m. Lecture by Dr. W. H. Maxwell Telling, 8.30 p.m.
North Middlesex Division, Prince of Wales's General Hospital, Tottenham.—B.M.A. Lecture by Colonel L. W. Harrison: Treatment of Gonorrhoea in General Practice, 3.30 p.m.
Portsmouth Division, Portsea Island Gas Company's Lecture Hall, 8.30 p.m.
15 Thurs. Hampstead Division, Hampstead General Hospital, 8.30 p.m.
Isle of Thanet Division: Dinner, Albion Hotel, Broadstairs, 7.30 p.m.
Swansea Division: B.M.A. Lecture by Dr. Robert Knox.
West Dorset Division: Address by Dr. G. C. Anderson, Deputy Medical Secretary, "The Advantages of Medical Organization under the B.M.A."
16 Fri. London: General Purposes Subcommittee of the Insurance Acts Committee, 2.30 p.m.
North of England Branch, Royal Victoria Infirmary, Newcastle-upon-Tyne.—Scientific Demonstrations, 2.15 p.m.
Northern Counties of Scotland Branch, Palace Hotel, Inverness: B.M.A. Lecture by Dr. Edwin Bramwell, 6 p.m.; Dinner, 7.30 p.m.
20 Tues. Croydon Division, Croydon General Hospital.—Dr. J. Bright Banister: Obstetrics and Gynaecology.
22 Thurs. Darlington Division, Greenbank Hospital, 8.30 p.m.

JANUARY.

4 Wed. London: Hospitals Committee, 2.30 p.m.

FEBRUARY.

1 Wed. West Dorset Division: B.M.A. Lecture by Dr. J. S. Fairbairn.

APPOINTMENTS.

DUPRÉ, William Henry, M.B., B.S.Lond., Assistant Medical Officer of Health for the County Borough of Oldham, Lancs.

HUTCHINSON, R. C., M.D., D.P.H., Medical Superintendent, Royal National Hospital for Consumption and Diseases of the Chest, Ventnor, Isle of Wight.

JAGGER, E. R., M.R.C.S., L.R.C.P., House-Surgeon to the Aberystwith Infirmary and Cardiganshire General Hospital.

MAGILL, J., M.D., D.P.H., Honorary Ophthalmologist, Haywood Hospital, Stoke-on-Trent.

SOUTER, Hugh Ross, M.A., M.D.Aberd., Honorary Surgeon for Diseases of Ear, Nose, and Throat, Royal Aberdeen Hospital for Sick Children.

TRAYLEN, C. L., M.R.C.S., L.R.C.P., reappointed Honorary Anaesthetist to the Willesden Voluntary Hospital, Harlesden Road, N.W.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTHS.

DAWSON.—On November 16th, at St. Clement's, Grantham, Lincs, to Dr. H. P. and Mrs. Dawson—a son.

HARTLEY.—On December 1st, to G. C. Hartley, M.C., M.B., Ch.B., and A. Muriel Hartley, M.B., Ch.B., of Gravelly Hill, Birmingham—a daughter.

MARRIAGE.

HILL AITKEN—LUND.—On November 19th, at Kilnhurst, near Rotherham, by the Rev. Fred. Shepherd, Vicar, Chas. J. Hill Aitken, M.D., late R.A.M.C. (T.F.), attached to So. Af. N.L.C., to Lily Lund, late Sister, Royal Infirmary, Hull.

DEATH.

MACQUEEN.—On December 1st, suddenly, at Bolton House, Bolton Road, Eastbourne, Thomas MacQueen, M.B., C.M.Edin., aged 79 years.

Printed in England by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, DECEMBER 17TH, 1921.

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British Medical Association.

CURRENT NOTES.

Annual Meeting, Glasgow, 1922.

A meeting of the Arrangements Committee for the Annual Meeting at Glasgow next year was held at 429, Strand, on December 8th. The Committee consists of an equal number of local representatives from Glasgow and of members appointed by the Council, together with the officers of the Association. The Sections at the Annual Meeting will meet on Wednesday, Thursday, and Friday, July 26th, 27th, and 28th, the mornings being given up to discussions and the afternoons to clinical and laboratory demonstrations. The University Court has granted the use of the university buildings for the scientific and other purposes of the meeting. The Arrangements Committee decided to recommend to the Council that the scientific and clinical work of the meeting should be divided among nineteen Sections. Of these it is proposed that five—Medicine, Surgery, Pathology, Ophthalmology, Neurology and Psychological Medicine—shall meet on three days. Six Sections, it is proposed, shall meet on two days—namely, Obstetrics and Gynaecology, Microbiology (including Bacteriology), Diseases of Children, Public Health, Physiology, Dermatology. The remaining eight Sections, as at present arranged, will meet each on one day. These will be Laryngology, Otology, Forensic Medicine and Industrial Diseases, Medical Sociology, Radiology, Tuberculosis, Anaesthetics, Anatomy. At the Annual Meeting at Newcastle last summer the sections numbered seventeen. The Annual Representative Meeting will begin at Glasgow on Friday, July 21st, 1922, and the session will be continued on the following three week-days. The entertainments planned for the Representative Body include a dinner, a reception by the Ladies' Executive, and a smoking concert. The Annual Exhibition of Surgical Instruments, Drugs, Foods, etc., will be opened on Tuesday morning, July 25th; the statutory Annual General Meeting will take place that afternoon, and the new President, Sir William Macewen, will give his address to the Association in the evening. Further announcements will be made from time to time as the arrangements for the work of the Annual Meeting take definite shape.

Free Medical Attendance by I.M.S. Officers to the Wives and Families of Officials in India.

The attention of the British Medical Association has been called to an inquiry which has been sent out by the Government of India to the various departments concerned seeking their opinion as to the advisability of asking officers of the Indian Medical Service to give free medical attendance to the wives and families of those officials in India who are themselves entitled to free medical attendance. The Association at once approached the Secretary of State for India asking him for his views on the proposal, and he has courteously replied that he has not yet received the definite proposals of the Government of India on the subject, but that nothing will be decided until he has had an opportunity of consulting the British Medical Association on the subject. Officers of the Service may rest assured that the matter will receive the very careful attention of the Association, and that their interests will be safeguarded.

Post Office Medical Officers Subcommittee.

The Post Office Medical Officers Subcommittee of the British Medical Association met on December 9th to consider the proposed reduction in the capitation fee payable in respect of Post Office employees (see Current Note in last week's Supplement, p. 222). The Subcommittee decided to add to its numbers so as to widen its representative capacity, and to that end it will co-opt a representative from London and one each from Birmingham, Manchester, and Newcastle-on-Tyne. The duties expected of postal medical officers in respect of the capitation fee were carefully gone into, and the Medical Secretary was instructed to make representations to the Postmaster-General against any reduction, and to ask that a small deputation might be given an opportunity of elaborating the arguments put forward in the letter.

The Subcommittee also had under consideration the question of differentiation in pay made by the Post Office between its male and female doctors, and decided to seek an early opportunity of making representations thereon to the Postmaster-General, in co-operation with the Medical Women's Federation. The Subcommittee feels that the recognition of the British Medical Association by the Postmaster-General as representative of the 1,700 Post Office medical officers who are members of the Association has given the Association an avenue of approach which should greatly benefit the service, and hopes that all Post Office medical officers will give it their full support.

Intelligence Department.

The Head Office of the Association is now in possession of a very large amount of classified information affecting medical practitioners in their professional capacity. Inquiries by members, through the Honorary Secretaries of Divisions or Branches, or if necessary direct, as to matters of doubt or difficulty may be addressed to the Medical Secretary. Requests for expert opinion on income tax may be addressed to the Editor. Where information already in the possession of the Association does not of

itself solve a doubt or difficulty, the organization and machinery of the Association affords a means whereby members can be helped.

Municipal Health Policy.

The following extract from a speech by Dr. F. E. Wynne, M.O.H. for Sheffield, at a recent meeting of the Yorkshire Federation for Maternity and Child Welfare, is quoted from a report in the *Sheffield Telegraph*. As an expression of the opinion of a medical officer of health it has some bearing upon the points now at issue in Willesden. In the course of his remarks Dr. Wynne said:

There is, I think, a danger lest our preoccupation with the end-results of our faulty system, our well-meant enthusiasm for the babies of to-day, for the victims of tuberculosis whom we continue deliberately to multiply, and for the persons who choose to contract venereal diseases, may blind us to the longer, saner views taken by the framers of the great Public Health Act of 1875. Personally I believe that every water tap that replaces a standpipe in the yard, every tramcar that takes people away from the centre of the town, every drain and sewer constructed, every highway paved and cleansed, every insanitary backyard paved, and every privy midden converted to the water carriage system, is a nobler monument to public health progress than the handsomest sanatorium or the best-equipped clinic. Those who are engaged in preventive medicine have no right to forget that their patient is the community, not the individual, and my experience of life has taught me that hard-headed people have in the long run the softest hearts.

Election of Representative Body.

The provisional list of Home Constituencies for election of the Representative Body, 1922–23, was published in the SUPPLEMENT of November 19th. It will be seen that the Council proposes to repeat the 1921–22 arrangements, except that the Coventry, and Nuneaton and Tamworth Divisions of the Birmingham Branch, and the North and South Suffolk Divisions of the Suffolk Branch, will be separate constituencies. Any Division objecting as regards itself to the proposed arrangements should send to the head office, 429, Strand, not later than January 9th, a statement of its objection and the grounds therefor, and of the alteration it suggests the Council should make. The Council urges that Representatives and Deputy-Representatives be elected at once. Each constituency of not less than 150 members (according to the annual list in force at the time of the election) is entitled to elect an additional Representative for each complete number of 100 members in excess of 50. It is a matter for each constituency to decide for itself whether to elect its Representatives and Deputy-Representatives by general meeting or by postal vote. The Council hopes that each Division will carefully consider by which method most interest can be aroused. If by postal vote, a meeting of the constituency is required to be held not later than June 30th, to instruct its Representatives. Representatives and Deputy-Representatives must be elected not later than June 23rd, and their names sent to the Medical Secretary by June 30th. The Annual Representative Meeting at Glasgow begins on Friday, July 21st.

Dispensing Capitation Fee.

In the Current Note on page 222 (seventh line from the end) of the SUPPLEMENT of December 10th, as to the proposal of the Ministry of Health upon the above question, the words "for tuberculous patients" should have been omitted. It is part of the proposal of the Ministry that dispensing practitioners be relieved, in respect of *all* their patients, of the cost of malt and cod-liver oil dispensed.

Lending Library.

The Librarian will be glad to assist members of the Association in the selection of works to be sent them by post, in accordance with the arrangements for borrowing books that are notified each week on the last page of the SUPPLEMENT.

DR. T. RIDLEY BAILEY, Bilston, and Dr. W. Webster, Newcastle-under-Lyme, have been nominated by the medical profession of the county to serve on the Hospital Committee for Staffordshire set up under the scheme of the Voluntary Hospitals Commission to act as local advisers in the administration of the Government grant to voluntary hospitals.

SCOTTISH COMMITTEE.

A MEETING of the Scottish Committee of the British Medical Association was held in Perth on November 30th, when the following were present: Dr. W. SNODGRASS (in the chair), Dr. J. Stevens, Dr. H. Miller, Dr. G. W. Miller, Dr. John Hunter, Dr. Joseph Hunter, Dr. R. Thin, and Dr. F. K. Smith, with the Scottish Medical Secretary.

Resignation of Member.

The Committee received with regret the resignation of membership of the Committee of Mr. Grant Andrew, Glasgow. It was agreed to ask the Council of the Glasgow and West of Scotland Branch to nominate a successor.

Reports of Subcommittees.

Reports of the various subcommittees were received and approved: (1) The Highlands and Islands Subcommittee reported negotiations with the Board of Health as to the amount and distribution of the grant in aid of medical services in the Highlands. The subcommittee had put forward certain proposals which were under consideration by the Board. A detailed statement will be issued to practitioners concerned as soon as the reply of the Board has been received. (2) The Colliery and Public Works Surgeons Committee reported that application had been received from the Miners' Union for a reduction of the national flat rate for attendance on dependants. As the arrears accruing during the strike period had not yet been made up, and as attendance is at present being given by doctors to dependants of unemployed miners, it had been decided not to agree to the request. The Committee resolved to support the action of the Colliery and Public Works Surgeons Committee.

Circular on Ophthalmia Neonatorum.

There was submitted a circular, issued by the Scottish Board of Health to practitioners, strongly recommending the instillation of silver nitrate solution into the eyes of all newly-born children, and intimating that they will in future require a report, with particulars of treatment, from medical officers of health on all cases in which there occurs loss of vision. The Committee decided to protest against the terms of the circular, inasmuch as it recommends treatment which may not commend itself to all, and seems to place practitioners under the jurisdiction of the medical officer of health.

Membership of the Association in Scotland.

The Committee considered what steps might be taken to increase the membership of and interest in the Association in Scotland, and decided to ask the Executive Committee of each Division to undertake a systematic canvass of all non-members and to report the result to the Scottish Office.

MUNICIPAL CLINICS AND THE PRIVATE PRACTITIONER.

RESUMED CONFERENCE OF COMMITTEES OF THE BRITISH MEDICAL ASSOCIATION AND MEDICAL OFFICERS OF HEALTH.

THE Conference which was held at the offices of the Association on March 15th last (as reported in the SUPPLEMENT of April 2nd, p. 86) to discuss the question of municipal hospitals and clinics and the relation of private practitioners thereto, did not finish its discussions on that occasion, and it was left to the Chairman of Council (Dr. R. A. Bolam) to call the Conference together again at some future date.

This second meeting took place on December 7th, when Dr. BOLAM again presided. Thirty-five gentlemen attended the Conference, including members of the Medico-Political, Public Health, and Hospitals Committees, those members of the late Ministry of Health Committee who were not on these other committees, and certain medical officers of health who were invited because of their special experience in relation to municipal clinics. The draft memorandum on the whole subject, which was considered in part at the first sitting of the Conference, was again before the members. The paragraphs in this memorandum relating to maternity and child welfare clinics were the first to come up for discussion.

Maternity and Child Welfare Clinics.

Dr. C. BUTTAR moved, in order to facilitate discussion:

That no public health authority be permitted to open a child welfare clinic unless and until other methods for providing attention for children under 5 years of age have been found impracticable.

He said that the Ministry of Health had already expressed the opinion that the persons attended at these clinics should be such as could not afford a private doctor, but the Ministry of Health ought to be asked how it defined such persons. He was by no means sure that it was the best plan for the M.O.H. to run these clinics; in the majority of areas it might be better if they were an appendage of the ordinary hospitals. If his motion were accepted as a general principle it would be for the Conference to consider how far general practitioners could be integrated into the clinic scheme. Another point to be remembered was that if clinics unconnected with hospitals were widely established, teaching hospitals would be deprived of a great deal of material.

Dr. E. R. FOTHERGILL brought forward the conclusions and recommendations of the report of the Medico-Sociological Committee of the Association on the value of maternity and child welfare work in relation to the reduction of infant mortality, and Dr. BUTTAR withdrew his motion pending the consideration of these recommendations, the first of which, submitted for the approval of the Conference, ran as follows:

> The primary and main object of maternity and child welfare centres should be educational, preventive, and advisory; no treatment should be given for conditions which, in the absence of the centre, would be recognized as calling for the attendance of a medical practitioner; it is against the best interests of the centres to encourage women to go to the centre for what they can get rather than for what they can learn.

Dr. H. B. BRACKENBURY said that this recommendation was very carefully thought out by the Medico-Sociological Committee. So long as the centres were for educational, preventive, and advisory work, they had their place in the administrative health machinery of the community, and ought to be under the supervision of the medical officer of health. The great reason why these centres should not be connected with hospitals was that such connexion would emphasize treatment. Some of the witnesses before the Committee urged that if treatment was given at all it should not be given at the centre, in order that the centre might retain its purely educational character.

Dr. W. J. HOWARTH said that it did not appear to him to matter whether or not treatment was given at these centres if only a general principle to regulate their functions were laid down. The Society of Medical Officers of Health was endeavouring to formulate such a principle to cover all these conditions, and at the proper time his Society would be prepared to discuss the matter with the Council of the British Medical Association. Enormous developments of maternity and child welfare work might take place in the future, and conflict might be created between medical officers and general practitioners unless some working policy was agreed upon, to which both the Association and his Society should adhere. The best course would be to set up a standing joint committee for this purpose. He regretted that he could not at the moment give the formula which his Society was considering, but he believed it would command acceptance from his own body, and that there would be little in it to which the Association could take exception.

The CHAIRMAN pointed out that Dr. Howarth left them in a difficult position by not communicating the formula; but Dr. HOWARTH, after a consultation with his colleagues, regretted that he was still unable to disclose it. When he came to the Association it must be with a unanimous recommendation. His formula was simple and elementary; there was nothing in it of a revolutionary character, and it was perfectly general in its application.

Dr. R. A. LYSTER said that it would help the medical officers of health who were present if they could learn what the Conference felt on this subject. With regard to the recommendation now before the Conference, he felt that the phrase, "No treatment should be given for conditions which, in the absence of the centre, would be recognized as calling for the attendance of a medical practitioner," was too vague. Recognized by whom? If by the patient, it would be most variable, seeing that some persons sent for the doctor on the most trivial occasion, and others only when a case was very serious.

Mr. BISHOP HARMAN said that these centres were originally started by the Board of Education as educational centres, and later on were developed by the Local Government Board on the lines of treatment. The Conference should stress the first of these functions. He did not want to see multiplied all over the country out-patient departments of very limited capacity.

Dr. G. F. BUCHAN said that if the recommendation meant anything at all it meant that no treatment should be given. He knew of no form of treatment which did not call for the attendance of a medical practitioner. All that the medical officer was concerned with was the provision of treatment in cases where treatment was advised.

Dr. BRACKENBURY, in answer, said that it was pointed out when this recommendation was considered in the committee that there were certain things, such as the application of ointments, which in a well regulated nursery would be done by a good nurse, and which in the case of poor children should be done or advised at these centres and could be done without calling in a doctor. This was the "treatment" mentioned in the recommendation.

Dr. E. H. SNELL pointed out the difference between the Education Act and the Maternity and Child Welfare Act in connexion with the provision of medical treatment. The first Act put upon the authorities the responsibility for inspection and a certain amount of treatment of school children; the other Act had only one element of compulsion about it—namely, that the councils must set up a maternity and child welfare committee—and everything else was optional. The maternity and child welfare centre was purely a preventive institution.

Sir JENNER VERRALL moved as an amendment the elimination of the words "primary and main" and the continuation as follows after the word "advisory": "No medical treatment should be given at the centre," with the deletion of the phrase called in question by Dr. Lyster. Dr. FOTHERGILL resisted this amendment, and Dr. H. G. DAIN also pointed out that the use of the phrase "medical treatment" might be held to imply that certain treatment could be given provided it were not given by a medical man.

Dr. BUCHAN pleaded for something that was administratively possible. The resolution as it stood even as amended by Sir Jenner Verrall, was not one to which a medical officer could give effect. Lord DAWSON OF PENN asked Dr. Buchan to go further and say why, exactly, it was not administratively possible. Dr. BUCHAN replied that in many cases patients came to the centre for advice, and the advice was that they should get treatment. But in many cases where were they to get treatment if not at the centre? He wanted the resolution to stop at the word "advisory." Dr. LYSTER supported his colleague, and said that it was a common experience at a centre for mothers to come up and be told that they needed treatment, and then to come up a week later without having had any treatment, and this might go on indefinitely. As practical administrators they felt that the only solution of the problem was to treat the people on the spot at the centre. Dr. HOWARTH asked whether, supposing the interests of general practitioners were fully safeguarded, there would still be objection to treatment being given at the centre? Dr. BRACKENBURY said that the evidence before the Medico-Sociological Committee went to show that it was an unfortunate thing to institute treatment in a place meant fundamentally for education, because the centre in that case got a reputation as a place where diseased babies should be brought for treatment rather than a place where healthy babies should be brought for advice on how they could be kept well.

Sir Jenner Verrall's amendment was carried.

Dr. C. SANDERS moved a further amendment omitting the reference to treatment altogether, but this was lost, and the recommendation as amended by Sir Jenner Verrall was then agreed to. It read:

> The object of maternity and child welfare centres should be educational, preventive, and advisory; no medical treatment should be given at the centres, as it is against the best interests of the centres to encourage women to go to the centre for what they can get rather than for what they can learn.

Mr. BISHOP HARMAN moved, and Dr. LYSTER seconded, to add as a rider a clause from the draft memorandum:

> When the expectant or nursing mother or child requires any medical treatment the procedure outlined under "medical treatment of school children" (dealt with at the first sitting of the Conference) should be followed. This would limit the patients to those who are unable to provide a family doctor for themselves or their infants. Where treatment has to be provided by the local authority at a clinic it should preferably be undertaken at the common clinic for all statutory purposes,

and this was agreed to. This procedure was set out in a series of resolutions on March 15th, the first of which was that the giving of advice and treatment at school clinics should, wherever possible, be by the private practitioners of the area, and specialist treatment, wherever possible, by part-time specialists.

Sphere of Voluntary Workers.

The next recommendation of the Medico-Sociological Committee which was taken ran as follows:

> There are advantages to the work in associating with the centres a body of voluntary workers, but the whole of the work should be under the control of the medical officer of health in order that all the preventive agencies may be co-ordinated.

Dr. BUCHAN thought that the sphere of voluntary workers should be defined and limited by their qualifications. Dr. BRACKENBURY thought that, since the centres were so closely allied with the homes of the people, there was scope for a number of voluntary lady visitors. Mr. BISHOP HARMAN pointed out that the centres were started by voluntary workers, and to eliminate them would be ungrateful. Dr. J. STEVENS was of opinion that the Association should not recognize any save properly qualified voluntary workers. Dr. LYSTER wanted it specifically stated in the recommendation that the purpose of the voluntary workers was to assist the nurses and to undertake clerical duties, and Mr. BISHOP HARMAN suggested that the words "in subsidiary capacities" might be inserted, but amendments to this effect were lost and the recommendation was passed as it stood, except that the opening phrase, "There are advantages," was altered to "There may be advantages."

The Local Medical and Nursing Professions.

Dr. FOTHERGILL moved further:

> The support of the local doctors, nurses, and midwives can and ought to be secured. This can be done (*a*) if it is made quite clear that the sphere of the centres is restricted as recommended above, and, (*b*) if members of these professions are represented on the statutory committee and the committes controlling the centres, these representatives being nominated by the local organizations of these professions wherever such exist.

He said that the feeling of local doctors, nurses, and midwives generally was that their rightful sources of income were likely to be invaded if these centres were developed without their co-operation. Dr. LYSTER objected to the resolution, because, he said, the support of the local doctors could not be secured.

The resolution was carried in a slightly amended form, whereby the words "can and" were left out of the first sentence and the second sentence ran: "To effect this it is important (*a*) that it should be made quite clear," etc.

Practitioners' Appointments at the Centres.

The next recommendation ran as follows:

> The experience of the "family doctor" would be useful in the work at the centres and clinics; but practitioners accepting the appointments must have knowledge of and a real interest in the work; the appointment should be for a long enough time to be administratively convenient; and those appointed should clearly realize that in accepting the post they must undertake to carry on the work irrespective of other claims on their time.

Dr. LYSTER said that this recommendation had his support, but he was surprised to find that it encountered much opposition in his area, where it was said that it would involve one doctor seeing another's patients. Dr. BRACKENBURY said that those who framed the recommendation were in agreement with the medical officers of health—that if general practitioners took up this work they must do it with a full realization of their responsibilities and carry it through properly. Any scheme would break down if practitioners allowed some other duty of their private practice to interfere with their attendance at the stipulated time.

Dr. BUCHAN thought that there should be a definite expression of opinion by the Association that the members of the local profession should take part in this work. It was not sufficient for members of the local profession merely to take exception to the schemes suggested without being themselves prepared to take their share of responsibility. He wanted the recommendation strengthened by the insertion of words to the effect that it was the duty of the local medical profession to co-operate.

Dr. LYSTER made a similar suggestion. The Conference having expressed the opinion that the local profession should have representation on the statutory and other local committees, it seemed to him a necessary corollary to pronounce that it was practically the duty of every medical practitioner in the district to take part in the work.

Dr. BRACKENBURY said that he was prepared to second an amendment on the lines indicated by Dr. Buchan, inasmuch as it put forward what the Association had always held to be the proper course.

Sir JENNER VERRALL pointed out that to say that it was the duty of the local profession to take part in the work was to use stronger terms than had been adopted in the resolution with regard to the representation of the local medical profession on the various committees.

Dr. FOTHERGILL urged that it was the duty of the Association to smooth down any feeling on the part of private practitioners with regard to the work of the centres, and this object would be frustrated by the approval of any such amendment as this at the present stage. Dr. J. W. BONE also pointed out that the private practitioner had many other duties, and must be left to judge for himself where his primary duty lay.

Dr. Buchan's amendment was carried, and its effect was to alter the opening part of the recommendation so that it ran as follows:

> The experience of the "family doctor" would be useful in the work of the centres and clinics, and it is the duty of the local medical profession to take part in this work; but practitioners accepting the appointments . . . .

Some discussion took place on a further recommendation laying it down that domiciliary attendance by a family doctor should be available for every mother and child up to five years of age. Dr. HOWARTH, however, wanted the word "attendance" replaced by the word "supervision," and in view of the big principle involved it was felt better not to deal with such a matter at the close of a long conference, but that the matter should be considered when the Conference met again.

Before the Conference rose the opinion was expressed by several members that whatever was done by the Society of Medical Officers of Health as regards the formulation of a policy on the question of treatment by local authorities, the Conference should meet again to complete its consideration of the memorandum.

The CHAIRMAN said that he would place a report of the proceedings before the Council of the Association, and it would be for that body to decide whether or not the Conference should again be called together.

DENTAL BOARD OF THE UNITED KINGDOM.

THE first session of the new Dental Board, which is set up under the Dentists Act, 1921, was held on December 7th and the two following days at the offices of the General Medical Council in London. The Right Hon. F. D. ACLAND, M.P., the chairman appointed by the Privy Council, presided. Eleven out of the twelve members of the Board were present. The membership of the Board consists of three persons not registered medical practitioners or registered dentists, one of them appointed by the Minister of Health, one by the Scottish Board of Health, and one by the Lord Lieutenant of Ireland; three persons appointed by the General Medical Council; and six persons engaged in the practice of dentistry, two of whom are appointed by the Privy Council, two by the Minister of Health, one by the Scottish Board of Health, and one by the Lord Lieutenant of Ireland.

The names of the members are (in the first of these categories): Mr. L. G. Brock, Mr. D. M'Coig Cowan, M.P., and Mr. John Sinclair; (in the second): Mr. H. J. Waring, Sir James Hodsdon, and Sir Arthur Chance; (in the third): Mr. F. Butterfield, Mr. H. A. Robertshaw, Mr. W. H. Dolamore, Mr. W. H. Gilmour, Mr. W. Guy, and Mr. E. L. Sheridan.

Mr. ACLAND, in his address from the chair, said that his claim to the chairmanship rested only upon the fact that he had presided over the committee in 1918 which inquired into the extent and gravity of certain evils affecting dental practice. He gratefully acknowledged the sympathy and co-operation of the General Medical Council, especially its President, Sir Donald MacAlister, and its Registrar, Mr. Norman King, in setting up the Dental Board. The long experience of the Council and its officers had been placed unreservedly at the service of the members of the Board, an act of grace all the more noteworthy because the Board was taking over many of the duties and a considerable part of the funds possessed by the Council. The chairman then sketched the history of dental administration since the first movement, more than sixty years ago, on the part of the dental profession to obtain recognition from the medical profession as regards status, diploma, and registration, and to secure from the public, in the public interest, certain safeguards for qualified practice. The first statutory recognition of the power of the Royal College of Surgeons to confer qualification upon dentists appeared in a clause of the Medical Act, 1858, when the College was given the right to

hold examinations to test the fitness of persons to practise dentistry. In 1871 the certificate of the College became a diploma, bearing the College arms and the signature of the President. The next landmark was the Dentists Act, 1878, whereby, among other provisions, the compilation and custody of a *Dentists Register* were entrusted to the General Medical Council. In this connexion he read a long extract from the BRITISH MEDICAL JOURNAL of that period, criticizing the proposal to place these duties upon the General Medical Council. One passage ran: "Medicine is a profession, dentistry is largely a business. . . . To adjudicate upon charges likely to be brought against dentists involves some knowledge of trade matters as well as professional matters." The difficulties which arose in connexion with the compilation of the *Dentists Register* were summarized in a pathetic lament of the Registrar of that time (1879):

"Of the continuous toil, mental tension, great and never ceasing anxiety which this registration has brought to the Registrar it would be impossible to convey an adequate notion."

It was not until twenty years later that a dental representative, in the person of Mr. (now Sir Charles) Tomes, became a member of the Council. Mr. Acland did not enter at length into the question of the recent legislation and its causes, because, as the body he was addressing had to work the Act in letter and detail, a summary might only confuse the issues; but he said that the main work of the Board should be two-fold: to guard the public from being practised upon by incompetent persons, and to see to it that there was a sufficient number of persons to bring the most efficient dental treatment and advice within the reach of all who needed it. In Parliament, he said, the passage of the measure had been greatly facilitated by the almost complete lack of interest which the House of Commons had shown in the matter! But just as measures which took up much of the time of the Legislature might have very small results, so might those which took up little time have great ones. He hoped it might be so in this case.

At the conclusion of the Chairman's address various committees were appointed to deal with discipline, finance, students' registration, examinations, and professional registration. Mr. H. J. Waring and Mr. W. H. Dolamore were appointed treasurers, and it was agreed to ask Sir William Church, Sir Charles Tomes, and Mr. Waring to act as trustees. A communication from the Privy Council was read, notifying the approval of the Lords of the Council of the recommendation of the General Medical Council that Mr. Norman King, its Registrar, should be appointed the first Registrar of the new body. The remainder of the session was occupied with a consideration of the standing orders and certain other items of preliminary business. This was taken *in camerâ*, and the private sitting of the Board was resumed on December 8th and 9th. It has not yet been decided whether a public statement should be made with regard to the business done in the private sitting.

THE WILLESDEN HEALTH POLICY.

THE executive committees of the three Willesden Ratepayers' Associations met the Willesden medical practitioners, whom they had invited individually, in the St. Andrew's Church Hall, Willesden Green, on the evening of Wednesday, December 7th. Over seventy persons were present, the chairman being Mr. BLAXLAND, of the Willesden Ratepayers' Association.

Dr. SKENE, who is a candidate for the Willesden Council at the next election in April, said that doctors were not opposed to public health work, but they wanted it carried out properly and to have a good return for the money spent. He quoted from recent leading articles in various lay and medical journals, and amplified the points in the Memorandum of the Willesden Division of the British Medical Association already published. He and the other doctors were willing to assist in every way in the health work if they were allowed to do so, and also to consult and advise the Health Committee of the Council.

Dr. LOCK said that the last Willesden health report condemned the public health service as wasteful. Preventive work should come first and not be interfered with by treatment. A ratepayer suggested a petition to the Ministry of Health for a full inquiry. Dr. MACEVOY held that the way to deal with the matter was to return councillors at the next election who would take the proper steps. The Ministry of Health had made objections already, in a long letter, to the expenditure and to various items of the present health scheme. The general practitioner was the pillar stone in treatment, as he first saw the case, and he knew the people and the housing conditions. It was difficult for doctors to give their time to municipal council work, but there was no reason why they should not be co-opted on the Health Committee for purely consultative purposes, and they would willingly give advice. Dr. STOCKER thought much of the work for the poor children should be done by the district medical officers of the guardians.

The CHAIRMAN said that the new council should make plain the duties of the officials. Mr. WEAVER (Kensal Rise Ratepayers' Association) said that they had been waiting for years for enlightenment on health methods, and he was glad they had got it at last. The remedy for the present conditions was in the hands of the ratepayers, who could remove those responsible for the present policy. He hoped doctors would continue to meet them and assist with their advice and knowledge of health matters. Several other speakers said that they had derived great benefit from the meeting, and hoped it was the first of a series, and that some means would be found of keeping the doctors in touch with the health department of the council.

Dr. C. F. T. SCOTT (Chairman of the Willesden Division of the British Medical Association) proposed a vote of thanks to the Chairman. He pointed that out a Local Advisory Council, as suggested in the Dawson report, would go a long way to control health policy and get it on the right lines. Dr. SKENE seconded. The CHAIRMAN, in reply, invited the doctors to appoint three or four or their number to co-operate with the Ratepayers' Associations, the political associations, and some other bodies in selecting municipal candidates, so that there would be no overlapping.

Meetings of Branches and Divisions.

MESOPOTAMIAN BRANCH.

THE first general meeting of the Mesopotamia Branch was held at Baghdad, on October 29th, when Colonel A. H. MORRIS, C.B.E., A.M.S., D.D.M.S. Mesopotamia Force, was elected to the chair.

The following officers were elected:

President: Colonel A. H. Morris, C.B.E., A.M.S. *Vice-President:* Squadron Leader R. H. Knowles, M.D., R.A.F.M.S. *President-elect:* Dr. T. Barrett Heggs, T.D. *Honorary Secretary and Treasurer*, Dr. Gordon Spencer. *Branch Council:* Lieut.-Colonel A. E. Hamerton, C.M.G., D.S.O., R.A.M.C., and Major Middleton-West, I.M.S., representing the military; Dr. W. Dunlop, O.B.E., and Dr. H. E. H. Tracy, representing the civil; Captain T. J. Hallinan, R.A.M.C., representing Basra; and Dr. H. J. More, representing Mosul.

The election of a Representative on the Representative Body was postponed until it could be ascertained which suitable member of the Branch would be in England during the Representative Meeting.

The Model Rules for a Branch of one Division were adopted. After discussion it was decided to limit membership to medical practitioners registered in the United Kingdom.

It was arranged that a paper on rabies, by Lieut.-Colonel A. E. Hamerton, C.M.G., D.S.O., R.A.M.C., followed by a laboratory demonstration and inspection of the Pasteur Institute, should be delivered on December 5th.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.

A MEETING of the City Division was held at the Great Northern Hospital on November 18th, with Dr. C. E. EVANS in the chair. Mr. A. W. SHEEN, Professor of Clinical Surgery in the University of Wales, gave a lecture on "Visceral displacements as a cause of disease," an abstract report of which is printed in the JOURNAL. In proposing a vote of thanks to Mr. Sheen for his address, Dr. CLARK TROTTER, M.O.H. Islington, said that the lecture afforded not only much food for thought, but was of such a nature as to be very helpful to the profession, and would stimulate their desire for personal investigation. Mr. SHEEN acknowledged the resolution.

A report from the Shoreditch district medical officers was explained by Dr. GARRETT, and after questions by members had been answered it was agreed, on the motion of Dr. C. E. EVANS, seconded by Dr. THOMAS, that the secretary should write to the Shoreditch Board of Guardians expressing the opinion that the fees asked were fair and equitable.

At the request of Dr. THOMAS, M.O.H. Finsbury, the meeting nominated Dr. Guy Palmer for election on the Finsbury Maternity and Child Welfare Committee.

Owing to the increasing size of the Division and the number of boroughs included therein, it was decided to increase the executive committee from 15 to 20, and Dr. Clark Trotter and Dr. Latham were elected members thereof.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A CLINICAL meeting was held at the Royal Portsmouth Hospital on November 29th, when Dr. J. H. F. WAY was in the chair.

The following cases were shown: (1) Fractured pelvis in a man suffering from locomotor ataxy, by Mr. H. BURROWS. (2) Hodgkin's disease in an elderly man with temporary improvement after extraction of infected teeth, by Dr. EATON. (3) Hodgkin's disease with pruritus, by Dr. A. CAMBELL. (4) Polycythaemia with enlarged spleen, cyanosis, and evidence of cerebral congestion, by Dr. J. A. D. RADCLIFFE. (5) Prolapse of rectum in an adult radically cured by Mummery's operation, by Mr. C. P. CHILDE.

The following specimens were exhibited: (1) Resected intestine for carcinoma, by Mr. T. A. M. FORDE. (2) Multiple diverticula of small intestine, by Dr. M. ASTON KEA. 3 Acute haemorrhagic pancreatitis, by Mr. W. MARTIN. (4) Intrinsic carcinoma of larynx, laryngectomy, by Mr. C. A. SCOTT RIDOUT.

A discussion followed upon the exhibition of many of the cases and specimens.

SOUTH-WESTERN BRANCH.

THE autumn intermediate meeting of the South-Western Branch was held at the Royal Hotel, Plymouth, on December 7th, the President (Dr. A. SHAW) being in the chair. After the minutes of the last meeting had been read, Dr. W. LANGDON BROWN was introduced by the PRESIDENT, and delivered a British Medical Association Lecture, entitled "The practical importance of endocrinology." The lecturer at the outset explained that the present address followed naturally after, and further developed, themes dealt with in his previous British Medical Association Lecture to the Suffolk Branch (BRITISH MEDICAL JOURNAL, November 6th, 1920, p. 687). He first of all pointed out the relations existing between some of the main endocrine glands to the sympathetic and parasympathetic nervous systems, and then illustrated the principles enunciated by reference in turn to such conditions as myxoedema, hyperthyroidism, acromegaly, cryptorchism, and affections of the parathyroid glands, and dealing more particularly with some of the lesser known diagnostic signs and therapeutic indications recently recognized. At the close of the lecture a great many questions were asked, thus testifying to the genuine interest aroused. On the motion of the PRESIDENT, seconded by Dr. E. J. TOYE, a hearty vote of thanks was accorded Dr. Langdon Brown for his kindness in visiting the Branch. Previous to the meeting Dr. C. L. Lander, D.S.O., M.C., Chairman of the Plymouth Division, hospitably entertained members attending the meeting to tea at the hotel.

SUSSEX BRANCH: EASTBOURNE DIVISION.

Sussex Provident Hospital Scheme.

UNDER the auspices of the Eastbourne Division, a meeting of the medical profession was held at Eastbourne, on November 30th, when there were present thirty-one medical practitioners, four representatives of the dental profession and the Chairman of the Committee of the Princess Alice Memorial Hospital.

Dr. J. F. GORDON DILL attended and gave an address on the proposals of the Sussex Provident Scheme for hospital and specialized medical services, which was followed by a general and protracted discussion. A hearty vote of thanks was accorded to Dr. Gordon Dill, who was obliged to leave before the conclusion of the meeting.

Thereafter, it was duly proposed and unanimously resolved:

1. That this meeting of medical practitioners, having heard and considered the address of Dr. Gordon Dill on the proposals of the Sussex Provident Hospital Scheme, is of opinion that this scheme is unsuited to the area of this Division, and, in view of the refusal of the Honorary Medical Staff and the Committee of the Princess Alice Memorial Hospital to co-operate in the work of the scheme strongly protests against that proposal to accept for membership of the scheme the application of any person residing in the Eastbourne district of the county area.
2. That a copy of the foregoing resolution be sent to Dr. Gordon Dill, the Honorary Secretary to the Committee of the Sussex Scheme, the Chairman of Council of the British Medical Association, and the Honorary Secretary of the Sussex Branch Council.

YORKSHIRE BRANCH: HUDDERSFIELD DIVISION.

THE members of the Hudderfield Division of the British Medical Association recently completed their handicap at Fixby. There were sixteen entries. Play was by stroke in the first round and match play subsequently. The winners of the first round were Drs. Park, Aspinwall, sen., Raffan, Carleton, Copland, Prior, Pye-Smith, and Moore. In the semi-final round, Dr. Park beat Dr. Pye-Smith, and Dr. Raffan beat Dr. Prior; and in the final, Dr. Raffan (handicap 24) beat Dr. Park (handicap 15).

MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of the West Dorset Division will be held on Wednesday, February 1st, 1922, when Dr. J. S. Fairbairn (London) will give a British Medical Association lecture.

MALAYA BRANCH.—The annual meeting of the Malaya Branch will be held in Singapore on Friday, January 27th, 1922. The presidential address will be delivered by Dr. Malcolm Watson, who has selected Quinine and the Quinine Controversy for his subject. Four representatives of the Association will be elected members of the S.S. and F.M.S. Medical Council, under the constitution of the Medical Ordinance. Dr. W. J. Dixon will make an appeal on behalf of the Royal Medical Benevolent Fund. The annual dinner will be held in the evening, and the Watson Cup Competition will take place on the following afternoon.

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.—A meeting of the Kensington Division, to which non-members are invited, will be held at the Kensington Town Hall on Monday, December 19th, at 4 p.m., when an address will be given by Dr. Gordon Dill, entitled "The Hospital Crisis and the National Provident Scheme." It is hoped that as many as possible will endeavour to attend.

METROPOLITAN COUNTIES BRANCH: LEWISHAM DIVISION.—A meeting of the Lewisham Division will be held at Shrublands, Catford Road, Catford, S.E.6 (opposite Lewisham Town Hall), at 8.45 p.m., on Tuesday, December 20th. An address will be given by Dr. C. Courtenay Lord, Assistant Medical Secretary, on "The Medico-Political Committee and its Work."

NORTH OF ENGLAND BRANCH: DARLINGTON DIVISION. A clinical meeting of the Darlington Division will be held at Greenbank Hospital on December 22nd, at 8.30 p.m., when Dr. Cockcroft (Middleham) will read a paper on "The Endocrine Glands and their Therapeutic Uses." It is hoped that there will be a good attendance of members in appreciation of Dr. Cockcroft's willingness to travel so far to deliver the paper.

STAFFORDSHIRE BRANCH: SOUTH STAFFORDSHIRE DIVISION.—A meeting of the South Staffordshire Division and the Wolverhampton Panel Committee will be held on Thursday, January 5th, 1922, when the Deputy Medical Secretary, Dr. G. C. Anderson, will give an address on "National Health Insurance matters and the Organization of the Profession." The address will be preceded by a dinner at the Victoria Hotel, Wolverhampton, at 8.15 p.m.; tickets, 8s. 6d., exclusive of wine (morning dress). Members intending to be present at the dinner are requested to notify the Honorary Secretary, Dr. H. C. Mactier, 33, Tettenhall Road, Wolverhampton, by December 29th.

SURREY BRANCH: KINGSTON-ON-THAMES DIVISION. The following programme of meetings has been arranged: January 10th, 1922, address by Dr. F. W. Price, "Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease." February 7th, address by Mr. J. Cunning, F.R.C.S., "Some Conclusions in Abdominal Surgery." March 7th, address by Dr. William Brown, "Psychology and Psychotherapy." May 2nd, Annual General Meeting. All the meetings will be held at the Surbiton Cottage Hospital (by kind permission of the staff and committee) at 8.30 p.m.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list. The Library is open for consultation from 10 a.m. till 6.30 p.m. (on Saturdays 10 a.m. till 2 p.m.).

Correspondence.

The Dispensing Capitation Fee.

SIR,—The economy axe I see is to be applied to the panel chemist, and to the rural dispensing panel doctor, who is obliged to do his own dispensing, he cannot get out of it. This is not an appeal on patriotic grounds like the last cut.

I notice it is considered by a nicely worked out mathematical problem that 1s. 9d. is all that can be allowed the chemist, *ergo*, it is to be enough for the rural doctor. I have always protested at a comparison being made between the chemist and the doctor who dispenses, and for obvious reasons.

To recapitulate: Our time is of more value than the chemist's. He buys drugs in larger quantities than we can, and therefore cheaper. He has his fixed hours for that work. We have none; we dispense at all hours. We do this drudgery mostly at night after our hard day's work when the chemist is in bed. We have to pack it up for the postmen, for carriers' carts, etc., and pay carriage. It costs 9d. to send an 8 oz. bottle by post and 1s. 2d. by rail for only four or five miles. How can one pay carriage on medicines for an insured man's wife and refuse to do so for him? I know we are under no obligation to do so, but old custom dies hard, and I fear we do not possess enough of the instinct of the tradesman to ask our patients for these small sums. I understood the insured person was to have the same care and treatment as our private patients, and I think most of us have tried to carry on our panel work in that spirit.

What does the chemist know of all this kind of thing?

I carry bottles of medicine daily to people on my rounds. Prices of drugs, etc., have not fallen to warrant any such

suggested reduction. Bottles which were 12s. a gross in 1914 are now 28s. All drugs made with spirit are still very costly. I doubt if anything is at pre-war level. We were supposed to get 2s. *per capita* before the war, but never did—the drug fund was always swamped by the chemist. We got about 1s. 8d. out of that fund then, and we are to be asked to take 1s. 9d. now and for two years to come, and then I suppose a bit more will be lopped off.

I consider that 2s. a head per annum is little enough for the rural doctor in view of the time and trouble and expense involved, and many other irritating things in connexion with it that the chemist knows nothing whatever about, and I ask the Rural Subcommittee not to yield one jot on this matter; we certainly earn every penny we get for this branch of our work under the Insurance Act.—I am, etc.,

Feltham, Northumberland, Dec. 13th. ROBT. A. WELSH.

SIR,—The Government's figures on this matter, as quoted in your last issue, do not agree with those of the last completed year.

I have before me the figures issued by nine of the thirteen pricing areas of England and Wales for 1920. They show that the average cost of dispensing and drugs in these areas was 28.33d., the cost of dispensing only per script was 4.95d., not 5.6d., as stated by the Government. These returns give the cost per insured person for ingredients as 12.90d. and not 9d., as stated by the Government.

The mistakes made by the Government are due to trying to work from the figures of the first three-quarters of this year, omitting to allow for the current quarter, which is always the heaviest. I gather the Government rest their proposals on the fall of establishment charges. There has been no fall in the establishment costs of doctors, nor is there any indication that they will fall in the near future. Our charges are rent, rates, wages (domestic), lights, and fuel. We do not wish to discuss the establishment charges of the chemists, except to say they can be in no way compared to ours, being of a totally different character.

The general feeling of the rural practitioners in this county is one of extreme indignation at the Government's suggestion of breaking the compact made last month on the capitation fees, for without exception every man believed that the contract for two years was meant to cover the whole of our remuneration under the Act, and was accepted as such. The feeling is so strong in this county that 75 per cent. of the rural practitioners are prepared either to refuse service under the Act or to write prescriptions which they will dispense themselves if backed by the rest of the rural doctors in other areas.

It would be a disaster of the greatest degree if either the Insurance Acts Committee or their Rural Practice Subcommittee should settle this question without fully consulting the rural Panel Committees first. There is a hiatus in the present organization of the profession, in that at present it is not possible to call representatives of the rural areas together without calling the whole of the Representative Body. This should be altered in future.—I am, etc.,

Langford, nr. Bristol, Dec. 12th. E. D. PINEO, Hon. Sec., Somerset Panel Committee.

Insurance.

LOCAL MEDICAL AND PANEL COMMITTEES.

SURREY.

A MEETING of the Surrey Local Medical and Panel Committee was held on November 18th, with Dr. A. LYNDON, O.B.E., in the chair. The meeting, in answer to a letter from the Honorary Secretary (Surrey Branch) of the National Council for Combating Venereal Diseases, recorded its desire to take part in the prevention and cure of venereal diseases, and appointed Dr. Percy V. Fry to represent it on the Surrey Branch of the National Council.

With reference to the Joint Committee of the Local Medical Committee and the Surrey Branch of the British Medical Association to discuss with the Medical Officer of Health for Surrey any matters of importance affecting Surrey practitioners, the Surrey Branch having appointed Drs. Lyndon, Daniel, A. E. Evans, Goff, and Morton Mackenzie as their representatives, it was resolved that Drs. Bates, Cran, McDonogh Ellis, Pritchard, and Walters should be elected as representatives of the Surrey Local Medical Committee. The Secretary of the Surrey Branch (Dr. Lankester) and of the Local Medical Committee (Dr. Cockill) will be *ex-officio* members of the committee.

The committee passed a resolution that the Surrey Insurance Committee should be requested to arrange that in every area the chemists should arrange a rota by which one chemist is always on duty.

New Capitation Fee.—The committee resolved that the following resolution should be sent to the Minister of Health and the Insurance Acts Committee:

> The Surrey Panel Committee protests most strongly against the action of the Ministry of Health in decreeing that the alteration of the capitation fee shall take place on the first day of January, 1922. The Panel Committee regards as a clear breach of faith the action of the Ministry in taking advantage of a technical point, by using the "order" of the Minister as a reason for avoiding the usual three months' notice to individual practitioners by the Surrey Insurance Committee, as provided for in paragraph 2 of the First Schedule of the Medical Benefit Regulations, 1920.

The committee has decided to insert a note in the next circular to panel practitioners asking them to report to the secretary any instance in which application is, or has been, made by the Surrey Insurance Committee for details of surgery and waiting-room accommodation.

WARWICKSHIRE.

The Warwickshire Panel and Local Medical Committee met at Leamington on November 24th, under the presidency of Dr. H. TIBBITS. The representative appointed to the October Conference convened by the Insurance Acts Committee gave a detailed report as to the Conference, and explained the negotiations which led up to the acceptance of the 9s. 6d. capitation fee. The following resolution was unanimously adopted:

> That, having heard our representative's report of the negotiations of the Conference and Insurance Acts Committee with the Ministry, and taking into consideration all facts before us, this Committee endorses the action of the Conference in accepting the reduced capitation fee on the grounds of national financial stringency; but place on record their opinion that as soon as the national situation is less acute a determined effort should be made to organize the profession so as to ensure an adequate and just remuneration for the services required under the Health Insurance Acts.

A communication was received from the Warwickshire Insurance Committee, stating that it is believed that an alteration is contemplated in the provisions of the Regulations whereunder the onus of scrutinizing prescribing is laid on the Panel Committees. The suggestion was put forward that the work might suitably be undertaken by a standing subcommittee of the Insurance Committee. After a full consideration of the working of the present Regulation 34 and of possible alternatives, the following resolution was unanimously adopted as a reply:

> That this Panel Committee has no objection to the removal of the present onus of scrutinizing prescribing, on the understanding that such work shall be performed by a subcommittee of the Insurance Committee comprising a majority of medical practitioners nominated by the Panel Committee, together with a medical Chairman.

Considerable diversity of opinion occurred in regard to certain charges made by practitioners for anaesthetists' fees where operations had been undertaken by insurance practioners for their insured patients at a cottage hospital. The fact that such an institution might be subsidized by public and private subscription, etc., led the Committee to the conclusion that very great care must be exercised before consenting to the Practitioners' Fund bearing the burden of such charges; and the matter was adjourned for further investigation as to the amount of such outside support of the institution, and the method of its upkeep.

A case came up for consideration where a complete microscopic and bacteriological examination of the urine of an insured patient appeared essential to complete diagnosis. As no public provision for such examination appeared available, the Panel Committee decided that the necessary charge would have to be borne by the insured person; the necessary means of diagnosis being outside ordinary competence and skill.

GATESHEAD.

At a meeting of the Gateshead Panel Committee, held on November 11th, the Secretary (Dr. W. Smith) was directed to send the following statement for publication:

> We, the members of the Gateshead Panel Committee, view with great alarm the recent complacent acquiesence of the Panel Practitioners' Conference to the demands of the Minister of Health for a reduction of the capitation fee. We also greatly deprecate the fact that no real effort is being made to have the regulation *re* sale of practices deleted from the Act, where it should never have been allowed to be placed. We consider the time has come when the Insurance Acts Committee should give a lead and advise resistance to the constantly recurring demands of the Ministry, instead of, as hitherto, always advising tame submission. We are further of opinion that the argument so constantly advanced—namely, that the panel practitioners will not stick together—is futile; no real combination nor sacrifice can be hoped for unless the rank and file are roused to enthusiasm by their leaders. We have therefore passed the following resolutions, and direct the Secretary to send copies to the Secretary of the Insurance Acts Committee and also to the BRITISH MEDICAL JOURNAL for insertion:
>
> 1. That the Insurance Acts Committee is requested in future not to advise any reduction of the capitation fee, or any alteration of the Regulations, without two full conferences of panel practitioner delegates; the first conference to discuss details, the second conference to arrive at decisions after having placed these details before their constituents.
> 2. That the British Medical Association be asked to advise such conferences to be firm, and to assure them that their leaders will support them should they decide to resist any proposed reduction of fees or adverse alterations in terms of service.

3. That practical steps be immediately and strongly taken to have the sale of practice regulation deleted from the Insurance Act.
4. That we desire to have it put on record that we strongly protest against and condemn the action of the Insurance Acts Committee in not urging the Conference to resist the reduction of the capitation fee to 9s. 6d. to the uttermost and displaying a greater fighting attitude towards the Ministry of Health.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Mediscera, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

DECEMBER.

15 Fri. London: General Purposes Subcommittee of the Insurance Acts Committee, 2.30 p.m.
North of England Branch, Royal Victoria Infirmary, Newcastle-upon-Tyne.—Scientific Demonstrations, 2.15 p.m.
Northern Counties of Scotland Branch, Palace Hotel, Inverness: B.M.A. Lecture by Dr. Edwin Bramwell, 6 p.m.; Dinner, 7.30 p.m.
19 Mon. Kensington Division, Kensington Town Hall, 4 p.m. Address by Dr. Gordon Dill on The Hospital Crisis and the National Provident Scheme.
20 Tues. Croydon Division, Croydon General Hospital.—Dr. J. Bright Banister: Obstetrics and Gynaecology.
Lewisham Division, Shrublands, Catford Road, S.E.6, 8.45 p.m.: Address by Dr. C. Courtenay Lord (Assistant Medical Secretary) on the Medico-Political Committee and its Work.
22 Thurs. Darlington Division, Greenbank Hospital, 8.30 p.m.

JANUARY.

4 Wed. London: Hospitals Committee, 2.30 p.m.
5 Thurs. South Staffordshire Division: Wolverhampton, Address by Deputy Medical Secretary, Dr. G. C. Anderson; preceded by dinner at Victoria Hotel at 8.15 p.m.
10 Tues. Kingston-on-Thames Division, Surbiton Cottage Hospital, 8.30 p.m.: Address by Dr. F. W. Price on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease.
13 Fri. South Essex Division: Supper, Hotel Victoria, 8.15 p.m.

FEBRUARY.

1 Wed. West Dorset Division: B.M.A. Lecture by Dr. J. S. Fairbairn.
7 Tues. Kingston-on-Thames Division, Surbiton Cottage Hospital, 8.30 p.m.: Address by Mr. J. Cunning on Some Conclusions in Abdominal Surgery.
10 Fri. South Essex Division, Hotel Victoria, 8.15 p.m.: Paper by Dr. F. W. Price on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease.

MARCH.

7 Tues. Kingston-on-Thames Division, Surbiton Cottage Hospital, 8.30 p.m.: Address by Dr. Wm. Brown on Psychology and Psychotherapy.
10 Fri. South Essex Division, Hotel Victoria, 8.15 p.m.: Paper by Dr. Hector C. Cameron on The Child in General Practice.
15 Wed. Nottingham Division. Lecture by Mr. Frank Kidd: The Value of Pyelography in the Diagnosis of Urinary Diseases.

DIARY OF SOCIETIES AND LECTURES.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester Square, W.C.—Tues., 4.30 p.m., Cases; 5 p.m., Dr. Harry Campbell: Disorders of the Cutaneous Circulation.

ROYAL SOCIETY OF MEDICINE.—General Meeting of Fellows: Tues., 5 p.m. *Section of History of Medicine*: Wed., 5 p.m., Mr. C. J. S. Thompson: Parturition Chairs, their History and Use. Miss Eileen Power: An English Woman Doctor in the XVth Century. Members of the Section of Obstetrics and Gynaecology are specially invited to attend the meeting.

POST-GRADUATE COURSES AND LECTURES.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION, Royal Infirmary.—Wed., 4.15 p.m., Eye Cases.

MANCHESTER ROYAL INFIRMARY.—Tues., 4.30 p.m., Mr. J. P. Buckley: Vague Abdominal Symptoms.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations. Sat., 10 a.m., Dr. Saunders: Medical Diseases of Children.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are announced by the Admiralty:—Surgeon Commanders: J. A. Thompson to R.N. Hospital, Great Yarmouth; P. F. Woodruff Minett to *Victory VI.* for Portland Hospital and Dépôt; A. C. Rusack to the *Danae* (temporary); E. O. B. Carbery, O.B.E., to the *Vivid*, for R.N. Barracks; W. W. D. Chilcott to the *Royal Oak*.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Captain C. Helm, D.S.O., M.C., retires, receiving a gratuity, and is granted the rank of Lieutenant-Colonel.
Captain A. W. P. Todd M.C., retires, receiving a gratuity.
Captain W. H. A. D. Sutton is restored to the establishment.
Temporary Captain R. O'Connor relinquishes his commission, and retains the rank of Captain.

ROYAL AIR FORCE MEDICAL SERVICE.

Flight Lieutenant R. J. Monahan relinquishes his temporary commission on ceasing to be employed.

TERRITORIAL ARMY.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel D. L. Fisher, D.S.O., resigns his commission and retains the rank of Lieutenant-Colonel.
Lieut.-Colonel (Brevet Colonel) J. R. Kaye, having attained the age limit, is retired and retains his rank.
Majors A. MacGillivray and J. Wilson, having attained the age limit, are retired, and retain the rank of Major with permission to wear the prescribed uniform.
The following officers relinquish their commissions:—Captains and are granted the rank of Major: J. St.A. Titmas and C. Burrows. Captains and retain the rank of Captain: F. W. White, W. Dale, H. C. Simpson, W. L. Burgess, R. O. Knowles.
Captains to be Majors: J. L. Brownridge, J. D. Wells, O.B.E., R. M. Wilson.
Captains P. B. Spurgin, J. F. Molyneux, T. Rhind, and J. O. Cuthbertson, having attained the age limit, are retired, and retain the rank of Captain.

TERRITORIAL ARMY RESERVE.

ROYAL ARMY MEDICAL CORPS.

Captain W. G. McKenzie, M.C., from R.A.M.C. General List, to be Captain.

APPOINTMENTS.

WALKER, Kenneth M., F.R.C.S., Surgeon (with charge of Out-patients), The Royal Northern Hospital.

HAMPSTEAD GENERAL HOSPITAL.—The following appointments have been made:—Dermatologist: Henry C. Semon, M.D., M.R.C.P. House-Surgeon: L. H. Booth, M.B., Ch.B. House-Physician: James Fanning, M.B., B.S., M.R.C.S. Casualty Medical Officer: Miss M. Warde, M.R.C.S., L.R.C.P. Casualty Surgical Officer: Miss A. M. Collie, M.B., M.R.C.S.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road. Assistant Physicians: Dr. H. B. Russell and Dr. J. V. C. Braithwaite.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTHS.

COWELL.—On December 10th, at Shrublands Nursing Home, the wife of Lieutenant-Colonel E. M. Cowell, D.S.O., M.D., F.R.C.S. (R.A.M.C. T.A.), of 84, Park Lane, Croydon—a son.

FRASER.—On December 1st, at 60, North View, Westbury Park, Bristol, the wife of A. D. Fraser, M.A., B.Sc., M.B., Ch.B., D.P.H., of a daughter.

JACK.—On December 9th, at "Boscobel," Derby Road, Withington, Manchester, the wife of Dr. F. J. Jack, 5, Nelson Street, C.-on-M., Manchester, of a son.

THOMPSON.—On November 30th, at 37, Derby Lane, Liverpool, the wife of J. A. Thompson, M.B., Ch.B., of a son.

VARLEY.—On December 7th, at Vardre Road, Clydach, the wife of Samuel Cyril Varley, M.D.Oxon., of a son.

MARRIAGES.

LEVY–FREEDMAN.—On December 7th, at Merthyr Tydfil Synagogue, H. J. Levy, M.B., B.S.Lond., to Murielle Freedman.

MITCHELL—FINDLAY.—At Dunnottar Parish Church, Stonehaven, N.B., on December 1st, 1921, by the Rev. D. G. Barron, O.B.E., D.D., assisted by the Rev. A. R. Grant, Portlethen, James Mitchell, M.C., M.B., Ch.B., younger son of Mr. and Mrs. Mitchell, Mill o' Forest House, Stonehaven, to Catherine Margaret (Kiki), younger daughter of George Findlay, Esq., J.P., and Mrs. Findlay, Glasslaw, Stonehaven.

REES—HEMINGWAY.—On December 15th, at Regent Square Presbyterian Church, London, by the father of the bridegroom assisted by Rev. Herbert Gray, John Rawlings Rees, M.D., of 116, Harley Street, third son of Rev. R. M. Rees, M.A., and Mrs. Rees, of Epping, to Mary Isabel Hemingway, M.B., Ch.B., second daughter of Charles R. Hemingway, J.P., C.B.E., of Penrhyn House, The Park, Nottingham.

DEATHS.

HUGO.—On November 29th, after a short illness, at Bourne House, Purley, Surrey, Richard Mandeville Hugo, M.D., F.R.C.S.I., beloved husband of E. Marian Hugo, in his 58th year.

ROBERTSON.—John Alexander Robertson, M.D.Glas. 1877, aged 72, passed peacefully away at his residence, Kelvingrove, Woodstone, Peterborough, on December 3rd.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, DECEMBER 24TH, 1921.

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Members are requested to keep this Supplement until the Matters Referred to Divisions have been dealt with.

British Medical Association.

CURRENT NOTES.

Constitution and Machinery of the Association.

THERE appears in the SUPPLEMENT this week (at p. 237) the report of the Council to the Divisions and Representative Body on the revision of the constitution and machinery of the British Medical Association, in response to specific instructions given by the Annual Representative Meeting at Newcastle last July. Like the instructions, the report covers a wide field. In includes proposals giving facilities for incorporation of Oversea Branches, and for formation of Federal Councils of such Branches, where so desired. The federation question is also dealt with, and there are many suggested alterations of Articles and By-laws designed to bring the constitution and more especially the machinery of the Association into line with the needs of the times. Among noteworthy proposals in the latter category are those for non-recognition of Divisions and Branches which do not adopt rules; provision that members of Council shall be members *ex officio* of Home Branch Councils; provision whereby the Council will organize any disorganized or inactive Branch; similar provision whereby the Branch Council will deal with a disorganized or inactive Division; power to the Council to give independent representation in the Representative Body to Divisions; election of Representatives not less than two months (instead of the present four weeks) before the Annual Representative Meeting; all Deputy-Representatives to be elected for the year, as are already the Representatives in chief; twenty constituencies to be able to call a Special Representative Meeting instead of seven as at present; reduction of the membership of the Finance Committee; increase in that of the Journal Committee, including representation of the Organization Committee thereon; increase of the Science Committee; alteration of the name of the Medico-Political Committee to "Medico-Political and Parliamentary Committee," in accordance with the scope of that Committee's work; provision for a (standing) Arrangements Committee, responsible for the arrangements for the annual meetings of the Association. Another noteworthy proposal by the Council is that the number of members of the Council to be directly elected by the Representatives acting together shall be increased from the present 4 (excluding the Service members of Council) to 8. Any amendments by Divisions or Branches to the Council's proposals should be tabled not later than April 29th. All such amendments will be published in the SUPPLEMENT not later than May 20th, in order that they may rank as valid amendments and take effect as such in the Articles and By-laws of the Association, if so decided by the Annual Representative Meeting at Glasgow next July, and (in the case of Articles) by general meetings of the Association.

Annual Meeting, Glasgow, 1922.

As recorded elsewhere this week in the *Proceedings of Council*, the Arrangements Committee has recommended that the scientific and clinical work of the Annual Meeting in Glasgow next summer shall be divided among nineteen Sections, and this was approved by the Council of the Association on December 14th. These Sections are arranged as follows:

Three Day Sections.
Medicine.
Surgery.
Pathology.
Ophthalmology.
Neurology and Psychological Medicine.

Two Day Sections.
Obstetrics and Gynaecology.
Microbiology (including Bacteriology).
Diseases of Children.
Public Health.
Physiology.
Dermatology.

Single Day Sections.
Otology.
Laryngology.
Industrial Diseases and Forensic Medicine.
Medical Sociology.
Radiology.
Tuberculosis.
Anaesthetics.
Anatomy.

The President's Address will be given by Sir William Macewen, LL.D., F.R.S., at the adjourned Annual General Meeting on the evening of Tuesday, July 25th. The Scientific Sections will meet on the three following days, the morning sessions being devoted to discussions and the afternoons to clinical and laboratory demonstrations. We hope to print in an early issue the names of the officers of Sections. The local honorary secretary of the Annual Meeting is Dr. G. A. Allan, 22, Sandyford Place, Glasgow.

Testimonial to Mr. W. E. Warne.

The opening of the afternoon session of the meeting of Council on December 14th was attended by Mr. W. E. Warne, the late Financial Secretary and Business Manager, in order that he might receive a framed and illuminated address which the Council had unanimously decided to present to him in appreciation of his many years of

service for the Association. The presentation was made on behalf of the Council by its chairman, Dr. R. A. Bolam, who read aloud the address as follows:

TO
WILLIAM ELSWORTH WARNE, ESQ.

The Council of the British Medical Association, on the occasion of your retirement from the service of the Association, desires to express its grateful appreciation of your forty years of service for the Association, during which time you have filled the posts successively of Clerk, Chief Clerk, and Financial Secretary and Business Manager.

During the time in which you have been connected with it the Association has grown greatly in Membership and influence, and the Council has great pleasure in putting on record its belief that your faithful and untiring service has contributed in no small degree to the progress of the Association.

The Council sincerely trusts that you may be spared in health and strength for many years to enjoy the leisure you have so well earned, and the respect of those who know you.

DAVID DRUMMOND,
President.
R. WALLACE HENRY,
Chairman of Representative Meetings.
ROBERT A. BOLAM,
Chairman of Council.
G. E. HASLIP,
Treasurer.

The Council's wish, said the Chairman, was to show to Mr. Warne in this way that his long and faithful service was recognized as setting an example to all those who tried to make that great Association a power for good in the profession and the community. Through all those years they had admired also his unfailing courtesy and kindness to everyone around him. In conclusion, Dr. Bolam conveyed to Mr. Warne the good wishes of the Council for health and happiness in his retirement.

Mr. Warne briefly expressed the pride he felt in having won the appreciation of those he had served so long, and his pleasure in receiving this beautiful token of the Council's approval; it would always remind him of the very many happy years he had spent at the office. He thanked the Council for its gift, and the Chairman for what he had said.

Professor Ewen Maclean.

Many members will have been pleased to see that Dr. Ewen J. Maclean of Cardiff, a past Chairman of Representative Meetings, a very active worker for the Association in many other capacities, and at present Chairman of the important Contract Practice Committee of the South Wales and Monmouthshire Branch, has just been appointed the first Professor of Obstetrics and Gynaecology in the University of Wales; at about the same time he was made a Justice of the Peace for the city of Cardiff. By a happy coincidence the Council of the British Medical Association on December 14th invited Professor Maclean to accept the Presidency of the Section of Obstetrics and Gynaecology at the Annual Meeting of the Association in July next. Professor Maclean's many friends in the Association will welcome the news of these well-deserved honours.

University of Cape Town Lectureships.

Attention is drawn to the fact that the important notice in connexion with the appointments which are being made at the University of Cape Town has been withdrawn at the request of the Cape of Good Hope (Western) Branch, South Africa. The Branch Council, in discussing the matter with the university authorities, pointed out that the salary offered for these lectureships was below the minimum recognized by the Association in this connexion, with the result that the university authorities readily agreed to raise the salary offered to £500, so as to conform with the requirements of the Association. An amended advertisement has not, so far, been submitted for insertion in the JOURNAL, but it is understood that the commencing salary will in future be £500 per annum.

Dr. John Hume, honorary secretary of the Perth Branch of the British Medical Association, has been presented by his fellow practitioners and members of the Association with a handsome timepiece and a substantial cheque in recognition of his many services to the profession. Dr. Hume was president of the Branch in 1916 and had served also as treasurer for a number of years. Dr. H. Ferguson Watson, in making the presentation, paid a high tribute to Dr. Hume's ability, and referred to the manifold services which he had rendered to the Association.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held at 429, Strand, London, on Wednesday, December 14th, 1921, with Dr. R. A. BOLAM in the chair. There were present:

Professor David Drummond (President), Sir Clifford Allbutt (Past President), Dr. R. Wallace Henry (Chairman of Representative Meetings), Dr. G. E. Haslip, London (Treasurer), Dr. T. Ridley Bailey (Bilston), Dr. H. S. Beadles (London), Dr. J. W. Bone (Luton), Dr. H. B. Brackenbury (Hornsey), Dr. H. C. Bristowe (Wrington), Dr. C. Buttar (London), Mr. Russell Coombe, (Exeter), Dr. H. G. Dain (Birmingham), Lord Dawson (London), Dr. James Don (Newcastle), Dr. C. E. Douglas (Cupar, Fife), Mr T. P. Dunhill, (London), Mr. W. McAdam Eccles (London), Lieut.-Colonel R. H. Elliot, I.M.S.(ret.) (London), Dr. A. C. Farquharson, M.P. (London), Dr. A. Forbes (Sheffield), Dr. E. R. Fothergill (Hove), Dr. T. W. H. Garstang (London), Mr. N. Bishop Harman (London), Mr. F. Strong Heaney (Liverpool), Dr. R. Langdon Down (Hampton Wick), Dr. W. F. Law (Dublin), Dr. David Lawson (Banchory), Dr. Philip G. Lee (Cork), Sir Richard Luce (Derby), Dr. J. A. Macdonald (Taunton), Dr. S. Morton Mackenzie (Dorking), Major-General Sir William Macpherson, A.M.S.(ret.) (London), Dr. Hugh Miller (Hamilton), Mr. A. W. Nuthall, (Birmingham), Dr. R. C. Peacocke (Blackrock, co. Dublin), Dr. Frank Radcliffe (Oldham), Dr. D. A. Sheahan (Portsmouth), Dr. W. Snodgrass (Glasgow), Dr. John Stevens (Edinburgh), Mr. E. B. Turner (London), Dr. E. O. Turner (Great Missenden).

The Chairman was authorized to send letters of condolence to the families of the late Major-General Sir George Evatt, K.C.B., and Lieut.-Colonel E. M. Wilson, former members of Council. The Council agreed to the President and future presidents of the Association acting as trustees of the Victor Horsley Memorial Fund.

Willesden Health Policy.

Communications in regard to the medical activities of the Willesden Urban District Council were received from the Society of Medical Officers of Health and from the Metropolitan Counties Branch Council of the Association (see SUPPLEMENT, November 26th, 1921, p. 199), and it was resolved unanimously:

> That the Council sees no objection to any unit of the Association taking action, either nationally or locally, in support of the policy of the Association, even though such action may include criticism of a central or local authority which employs medical officers. Such action must, however, in the opinion of the Council, be based upon that of the central or local authority in question and not on the action of its medical officers, who are the advisers and agents of the responsible body.

With further reference to the Willesden municipal medical service, to which attention was drawn in the JOURNAL of November 26th, p. 903, a communication from the Willesden Division was considered, and it was resolved:

> That the Council draw the attention of the Ministry of Health to the circular issued by the Willesden Urban District Council, and ask the Ministry to at once take action with regard thereto as the policy outlined therein is contrary to the policy laid down by the Association, as representing the general body of the profession, against the declared policy of the Ministry itself, and against the interests of the public.

The Council directed that the two foregoing resolutions should be published in the report of its proceedings.

National Insurance.

The report of the Insurance Acts Committee was received and approved. A communication was received from the Federation of Medical and Allied Societies, enclosing a copy of the letter addressed by that body to the Minister of Health suggesting the formation of an independent committee to inquire into the working of the National Insurance Acts. (The letter was reproduced in the SUPPLEMENT of October 8th, 1921, p. 141.) It was resolved that the Federation be informed that in view of recent statements by the Minister that no immediate inquiry is likely to take place, the Council does not propose to take any action in the matter at present.

Representation on other Bodies.

Invitations to nominate representatives were received from a number of organizations. It was agreed to appoint two representatives upon the College of Preceptors' Committee of Inquiry into the Physical Training of Girls. An invitation from the Royal Sanitary Institute to its congress at Bournemouth was referred to the Public Health Committee. In response to the Air Ministry's invitation for two representatives to attend the Aerial Conference in February next, Colonel T. D. Barry, C.B.E., R.A.F., and Major-General Sir William Macpherson, K.C.M.G., A.M.S.(ret.), were appointed to represent the Association.

Care of Mental Defectives.

A deputation was appointed, in conjunction with other bodies interested, to bring the following resolution to the notice of the Government:

> That the Council of the British Medical Association expresses its alarm at the suggestion that the machinery for the care of mentally defective persons should be seriously limited on the plea of economy; and desires to emphasize the fact that it is of vital importance to the health and social well-being of the community, and especially to the mental health of future generations, that all children leaving special schools should receive suitable after-care, and that such special schools should be provided as soon as possible for all mentally deficient children.

Committee Reports: Warne Testimonial.

The remainder of the morning session was devoted to the consideration of the reports, submitted by their Chairmen, of the Scottish Committee (Dr. W. Snodgrass), the Dominions Committee (Mr. T. P. Dunhill), and the Medico-Sociological Committee (Dr. E. R. Fothergill). On the resumption after luncheon, Mr. W. E. Warne, late Financial Secretary and Business Manager, attended, and was presented by the Chairman with an illuminated address from the Council, signed by the officers of the Association; an account of this is given in a Current Note.

Revision of Constitution and Machinery.

A considerable part of the afternoon session was given to the report of the Organization Committee, whose Chairman, Dr. S. Morton Mackenzie, laid before the Council in draft form the detailed proposals of his Committee for the revision of the constitution and machinery of the Association. These were approved and ordered to be published in the present issue of the SUPPLEMENT (pp. 237 to 254), and Dr. Mackenzie was congratulated upon the outcome of his labours. The draft amended Articles and By-laws will come before the Annual Representative Meeting next July in Glasgow for approval and adoption. It was resolved to call the special attention of the Australian Divisions, Branches, and Federal Committee to the proposed amendments relating to incorporation of Overseas Branches and of Federal Councils, and to the draft form of agreement between an incorporated Branch and the parent Association, which is submitted for the approval of the Representative Body.

Visitation of Branches and Divisions.

The Council recorded the opinion that its members should be encouraged to visit their constituencies, and recommended that a sum of money be placed at the Organization Committee's disposal for the payment of railway fares on approved occasions. Various other suggestions having a bearing upon this matter were referred to the Organization and Office Committees for joint consideration and report.

A number of grants to Branches were sanctioned; draft standing orders for the conduct of elections of officials were adopted; and the remainder of the Organization Committee's report was approved.

Clayden v. Wood-Hill.

The Chairman of the Medico-Political Committee reported the action taken in the matter of the case, Clayden v. Wood-Hill (see the JOURNAL of November 26th, p. 919). A copy of the joint opinion of counsel was before the Council. Sir E. Wild, K.C., and Mr. H. F. Dickens, K.C., were unable with any degree of confidence to advise an appeal against the verdict, and a special sub-committee accordingly decided that it was not advisable to enter and prosecute an appeal in this case. The course adopted by the Committee and its sub-committee, acting under legal advice, was approved. A statement of the position was given in the JOURNAL of December 17th at p. 1052.

Inspection and Treatment of School Children.

On the recommendation of the Medico-Political Committee the Council resolved:

> (*a*) That the British Medical Association reaffirms its opinion that the medical inspection and treatment of school children is a part of the health services of the country, and should consequently be controlled primarily by the Ministry of Health and not by the Board of Education; and (*b*) that in cases where the school medical officer is technically under the Director of Education (that is, where he is not the M.O.H. or one of his staff) he should have direct access to the Education Committee and not have to submit his reports through the Director

Finance.

The TREASURER, in submitting the quarterly report of the Finance Committee, explained that no meeting of that Committee had been held since the Council last met on October 5th, but that the recommendations of other committees involving expenditure had been considered by the members. He reported that in future the usual accounts would be presented to the Council by the Finance Committee at regular periods, three times a year; this would give a truer perspective of the expenditure and income of the Association than had hitherto been possible. The Finance Committee offered no objection to the Science Committee's recommendation that a sum of £400 be set apart for 1922 out of the ordinary funds for the provision of B.M.A. lectures.

Municipal Hospitals and Clinics.

The CHAIRMAN OF COUNCIL submitted the report of the second joint meeting of the Medico-Political, Public Health, Hospitals, and Ministry of Health Committees held on December 7th to discuss the question of municipal hospitals and clinics and the relation of private practitioners thereto, of which an account appeared in the SUPPLEMENT of December 17th at p. 226. The Council approved the holding of a further conference of those Committees to complete their consideration of this subject.

Science Committee.

In accordance with recommendations of the Science Committee it was resolved:

1. That Professor J. S. Haldane, F.R.S., be appointed to represent the Association on the Standing Committee of the National Physical Laboratory to deal with the question of standardization of scientific glassware and kindred problems.
2. That the Middlemore Prize be awarded in 1923 to that person who is adjudged to have submitted to the Association the best contribution on any ophthalmological subject, whether previously published or not, provided that the contribution shall not have been published or prepared more than three years prior to the date on which applications are receivable in competition for the prize, and that the Science Committee be instructed to make the necessary arrangements.
3. That Lieut.-Colonel R. H. Elliot and Sir Humphry Rolleston be appointed to co-operate on behalf of the Association with the National Union of Scientific Workers with a view to securing the removal of certain disabilities arising from the Safeguarding of Industries Act, 1921, so far as these affect scientific workers and research and teaching institutions.

The Council expressed the opinion that it is very desirable that all clinical thermometers should be properly tested before sale, and instructed the Medico-Political Committee to co-operate with the British Lampblown Scientific Glassware Manufacturers' Association in this matter with a view to securing legislative action.

Memorials.

A Committee, consisting of the officers of the Association, together with Mr. E. B. Turner, Sir Jenner Verrall, and Dr. J. A. Macdonald, was set up to consider the question of a suitable memorial to members of the British Medical Association who fell in the war.

The same Committee was instructed to prepare a permanent record of the names of past officers of the Association, to be placed in the Council Room.

Annual Meeting, Glasgow, 1922.

The proposals of the Arrangements Committee for the scientific work of the sections mentioned in a Current Note in the SUPPLEMENT of December 17th were approved by the Council, and nominations for the officership of the several sections were accepted. The provisional time table for the Glasgow meeting was approved. It was agreed to invite Professor John Graham Kerr, F.R.S., to deliver the Popular Lecture, on the evening of Friday, July 28th. Recommendations in regard to the *Handbook* of the Annual Meeting and other matters of local administration were adopted; and certain suggestions for securing continuity of organization from one annual meeting to another were approved in principle and referred to the appropriate committees.

A further principle, but one relating to the general work of the Association, was put forward by the Office Committee in its report and accepted by the Council—namely, that dates should be fixed in advance for all the Standing Committees and for the meetings of as many other committees as possible; and the Office Committee was asked to draw up a scheme of dates.

Medical Charities.

On the proposal of Dr. BUTTAR, seconded by Dr. HASLIP, it was resolved to invite the Council of Epsom College and the Committee of the Royal Medical Benevolent Fund to confer with a Committee of the Association with a view to the issue of a joint appeal, through the British Medical Association, in support of these charities. The officers of the Association, together with Dr. Buttar, were constituted a committee for this purpose.

Committee Reports.

During the afternoon session (which continued until 7.30 o'clock) the quarterly reports of the following committees, in addition to those mentioned above, were submitted to the Council and approved: Journal Committee (chairman, Dr. J. A. Macdonald), Hospitals Committee (Mr. Bishop Harman), Central Ethical Committee (Dr. Langdon Down), Parliamentary Elections Committee (Mr. Harman), Post-Graduate Courses Committee (Sir Richard Luce). Dr. GARSTANG raised the question of the adequacy of the present method of reporting Council and Committee meetings; he desired to see (1) a fuller record in the official Minutes, and (2) the regular publication of reports of the proceedings of Committees and Council in the JOURNAL. This question was referred to the Office Committee, and Dr. Garstang was invited to attend that committee to assist in the consideration of the matter.

The business of the Council ended with the formal election of candidates for membership of the Association in accordance with By-laws 6 and 7, which govern the election of those not residing within the area of any Branch and of officers in the Services respectively.

Meetings of Branches and Divisions.

BRITISH GUIANA BRANCH.

THE second quarterly meeting of the British Guiana Branch was held in the Resident Surgeon's Quarters, Public Hospital, Georgetown, on July 12th, 1921, when Dr. EDMONDS, Vice-President, was in the chair.

Professor Leiper, Drs. Anderson, Khalil, and Lee (members of the Filariasis Commission of the London School of Tropical Medicine), and Drs. Gideon, Sutherland Richards, and Wolff (delegates of the West Indian Medical Conference), were among the visitors.

The CHAIRMAN extended a hearty welcome to the visitors, and expressed the regret of the meeting at the absence of the President, Dr. Ozzard, and the cause of his absence, wishing him a speedy restoration to health.

The Treasurer's report having been received, Dr. ROSE read a paper entitled "The laboratory worker of the tropics."

The Laboratory Worker in the Tropics.

He said that there was no more pathetic figure than that of the individual working in deadly isolation in a tropical laboratory, wellnigh buried beneath a mass of deadly routine, unable to stop and take heed, out of touch with his fellow workers in the same field, with no opportunity of consultation, fighting his own unequal battles in the face of detraction and discouragement, at times almost overwhelmed with despair at the dreary prospect of the perpetual struggle, often against heavy odds. Practically inarticulate in that few of those around him could comprehend, with no prospect of promotion on the scene of his labours and little prospect of transference elsewhere, since the number of workers was so limited, he found his colleagues ever making more demands upon his services till, almost overwhelmed by the very abundance of the clinical material which he found no opportunity of utilizing; he saw himself condemned, as the years rolled by, to a ceaseless, grinding and deadly monotony of routine examinations. It was impossible to deny that the existing scheme of laboratory service, hard as it bore on the individual worker, was also not productive of the best results for the State. A unified laboratory service was an immediately practical proposition: by removing the fatal isolation, providing opportunities for promotion to men who desired to continue in that field, facilitating team-work, and making it possible for each colony to have an opportunity of securing such service when necessary. It would be of inestimable advantage to the West Indies and capable of producing infinitely better results than was the present. The visit of the Filariasis Commission was to the laboratory like a gust of beautiful fresh air into the Black Hole of Calcutta. It brought the wide vision and recalled to their minds the vast much neglected possibilities of original research.

In conclusion Dr. Rose moved the following motion, which was carried:

> That this meeting of the British Guiana Branch of the British Medical Association is of the opinion that original research in the British West Indies is deserving of far greater support than it now enjoys, that the policy of sending research expeditions from the London School of Tropical Medicine is one which cannot fail to have fruitful and far-reaching results, and that it is desirable that an immediate preliminary step be taken towards a unified West Indian medical service for the establishment of a unified laboratory service in the West Indies.

It was also resolved:

> That this meeting considers that immediate steps should be taken to establish a combined British Guiana and West Indian Medical Journal.

This resolution was moved by Dr. GOMES, seconded by Dr. NEDD, and unanimously carried.

On the motion of Dr. EDMONDS, seconded by Dr. BOASE, it was resolved:

> That copies of the resolutions should be sent to the parent Association and through it to the Colonial Office, the Governments of the various British West Indian Colonies, and the London School of Tropical Medicine, as well as to the local press.

After this resolution had been put to the meeting and carried unanimously, the CHAIRMAN invited the visitors to address the meeting.

Professor LEIPER said that he considered it a privilege to be allowed to attend a meeting of the local Branch, having been a member of the Association for many years. The honorary secretary would bear him out that, on his arrival in the Colony, his first inquiry was after the Association and not the Georgetown Club! He did not think that he was divulging any State secrets when he said it was due to Dr. Rose's work that this visit of the Filariasis Commission had been brought about. About a year ago the Colonial Office was so impressed with his work that they invited the London School of Tropical Medicine to send an expedition to British Guiana to study filariasis. They had a preliminary consultation with Dr. Rose, and he knew that the latter had cut his leave short so as to be able to arrive in British Guiana in time to help them still further. With regard to the unified laboratory service figured in the first resolution, it appeared to him as a sort of John the Baptist; he would like to see it the forerunner of a unified Colonial laboratory service under the aegis of the Colonial Office. The laboratory worker was the handmaid of medicine, and he recalled his own experience as an isolated worker in Africa, isolated for long periods from current medical literature and from his fellow-workers. He hoped for a close association of the London School of Tropical Medicine with the unified laboratory service, if this should come to pass, and he disagreed with Sir Leonard Rogers's view that separate institutions should be endowed. With the unified journal he was entirely in sympathy. The local annual had been a pioneer and he would be sorry to lose the historical association of the *British Guiana Medical Annual* with the local Branch of the British Medical Association. The unified laboratory service and the journal should be a prelude to a unified Colonial medical service.

Dr. RICHARDS said he would like to impress on the local Branch how much the Association had done to improve the conditions of the Colonial Medical Service. Dr. GIDEON associated himself with the remarks of the previous speakers. He was very pleased to see the activity of the local Branch, and he hoped that the dormant Branch in Jamaica would revive. Dr. WOLFF said he had been made to feel quite at home in British Guiana. He had seen many Dutch names and the hospitality was overwhelming. He thought that the country was more cultivated than in Surinam. He himself had suffered from the isolation described by Dr. Rose. Dr. NEDD observed that the relics of previous occupation were to be found not only in the abundance of Dutch names, but also of French, intermingled with English. Dr. ANDERSON said he would like to endorse the sentiments of the meeting and to thank the general practitioners for their help. The CHAIRMAN, summing up, said he hoped to see them all again in the near future. He thanked Dr. Craigen for lending them the hospitality of his house, extended hearty good wishes to Mrs. Craigen, and thanked them both for the refreshments provided.

After tea, the meeting proceeded to the laboratory, where a demonstration had been arranged, which included some specimens kindly sent by Dr. Johnson, Bacteriologist of Barbados, and others provided by the Filariasis Commission.

METROPOLITAN COUNTIES BRANCH: NORTH MIDDLESEX DIVISION.

A MEETING of the North Middlesex Division was held on December 14th in the Prince of Wales's Hospital, Tottenham. A very interesting and instructive paper was given by Colonel L. W. Harrison, R.A.M.C., D.S.O., on "The Treatment of Gonorrhoea in General Practice." A hearty vote of thanks was accorded to the lecturer.

SUFFOLK BRANCH: WEST SUFFOLK DIVISION.

A MEETING of the West Suffolk Division was held on December 13th. A clinical paper on the Mayo Clinic was read by Mr. W. H. POWEN, M.S., F.R.C.S. (Cambridge). The paper was most interesting and thoroughly appreciated by those present.

MATTERS REFERRED TO DIVISIONS.

SPECIAL NOTICE TO MEMBERS.

As the subject matter of the Report of the Council printed below must be dealt with by Meetings of the Divisions and Division-Branches, this "Supplement" should be carefully preserved and taken to the Meeting, which should be called at an early date.

REPORT OF COUNCIL TO DIVISIONS AND REPRESENTATIVE BODY ON THE REVISION OF B.M.A. CONSTITUTION AND MACHINERY.

INSTRUCTIONS OF THE A.R.M., NEWCASTLE, 1921.

1. The Organisation Committee has considered, in consultation with the legal advisers of the Association, the instructions of the A.R.M. Newcastle, 1921, for revision of the constitution and machinery of the Association, or raising certain matters in this connection. All these matters have also been considered by the Council on report by the Committee, and the Council in the present Report submits to the Divisions and Representative Body recommendations to give effect to the Newcastle decisions.

ORDER FOLLOWED IN THIS REPORT.

2. The instructions of the A.R.M., Newcastle, come under the following heads:—

(i.) Facilities for incorporation of Oversea Branches where so desired;

(ii.) Facilities for formation of Federal Councils of Oversea Branches where so desired;

(iii.) Other instructions of A.R.M., Newcastle, for revision of B.M.A. constitution and machinery, including the question of federation facilities.

This Report is in three Sections accordingly.

Within each *Section* the instructions of the A.R.M., Newcastle, are as far as possible taken in numerical order of Articles and By-laws.

Under each *subject*, the following order is adopted:—

(1) Instruction of A.R.M., Newcastle;

(2) Draft Article(s) and/or By-law(s) to give effect thereto;

(3) Existing Article(s) and/or By-law(s) concerned.

NUMBERING OF DRAFT ARTICLES AND BY-LAWS PROVISIONAL.

3. As will be seen, the numbering of draft Articles and By-laws is provisional merely, to avoid confusion with existing Articles and By-laws. Articles and By-laws not mentioned in this Report are intended to remain as at present, but to be renumbered (including cross references) where necessary consequentially. References to lineage of existing Articles and By-laws are to those of the booklet print of the Memorandum, Articles and By-laws.

RECOMMENDATIONS.

The Council recommends:

Recommendation I.—That the A.R.M. Glasgow, 1922, approve and adopt, as the Articles and By-laws of the Association, the draft amended Articles and By-laws submitted by the Council pursuant to the instructions of the A.R.M., 1921, and instruct the Council to submit those Articles to Extraordinary General Meetings of the Association for adoption as Articles of the Association.

Recommendation II.—That the A.R.M. Glasgow, 1922, approve the draft form of Agreement (*see* page 254) submitted by the Council, between an incorporated Branch and the Association.

(I.) FACILITIES FOR INCORPORATION OF OVERSEA BRANCHES (WHERE SO DESIRED).

Instruction of A.R.M., 1921.

That, if possible, provision be made in the Regulations of the Association to allow the Oversea Branches to retain the character and status, the rights, powers and duties of Branches, although incorporated, such steps being taken as may be necessary to protect the Association from liability for any act of the incorporated body (Mins. 81-3).

Draft Amended Article 1.

Existing Article 1 to be amended by inserting **following new para.**, after existing definitions of "Division" and "Branch":—

"'Branch Council' or 'Council of a Branch,' when used in relation to a Corporate Branch (as hereinafter defined), means the Governing Body of that Branch by whatever name the same may be called."

[Existing Article 1.

Interpretation.

1. In these Articles of Association (where not repugnant to the context) the words and expressions following have the meanings hereinafter assigned to them respectively:—

"The Association" means the above-named Association.

"The Regulations" means the Regulations contained in these Articles of Association, with such modifications thereof or additions thereto as may from time to time be in force.

"The By-laws" means the By-laws set forth in the Schedule hereto, or other the By-laws of the Association for the time being in force.

"The Council" means the Council hereinafter mentioned.

"The Journal" means the journal to be published as hereinafter provided.

"Division" and "Branch" mean, respectively, a division and branch constituted as hereinafter provided.

"Existing" means existing at the time when these Regulations come into operation.

Expressions defined in the Companies (Consolidation) Act, 1908, shall have the meanings so defined."]

Draft Amended Article 3.

Existing Article 3 to be amended **by reading**, in 8th and 9th lines, for "Branch of the Association situate in any part of the British Empire other than":—"Branch of the Association not in".

[Existing Article 3.

"Eligibility.

3. Any Medical Practitioner registered in the United Kingdom under the Medical Acts, and any Medical Practitioner who does not reside within the area of any Branch of the Association and who, though not so registered, is possessed of any of the qualifications described in Schedule (A) of the Medical Act, 1858, and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualification as shall, subject to the By-laws, be prescribed by the Rules of the said Branch, shall be eligible as an ordinary member of the Association. Subject as aforesaid the mode and conditions of election to membership shall from time to time be determined by or in accordance with the By-laws."]

For further amendment of existing Article 3, and that Article as amended, see Section (III), para. (2), of this Report.

Draft Amended Article 7.

Existing Article 7 to be amended **by deleting** "Council," at end of last line.

[Existing Article 7.

"Re-eligibility.

7. No person who shall have been a Member of the Association and ceased to be such shall be eligible for re-election until he shall have paid all arrears of subscription (if any) due from him to the Association at the date when his former membership ceased, and no person whose former membership shall have been terminated by reason of his conviction or expulsion as hereinafter provided shall, without the previous sanction of the Council, be eligible for re-election by any Branch Council."]

Draft New Article 11A (to follow existing Article 11).

Branches not in the United Kingdom: Incorporation.

11A. (1) Subject as hereinafter provided, it shall be competent for the Members of a Branch not in the United Kingdom to procure themselves to be incorporated (in accordance with the law in force in the area of the Branch) under a name indicating that the body so incorporated is a Branch of the Association. A Branch so incorporated is hereinafter referred to as a Corporate Branch.

(2) The objects of a Corporate Branch, as defined by its Memorandum of Association, shall coincide with the objects of the Association as similarly defined, with such variations only as the Association shall approve.

(3) The Membership of the Corporate Branch (save as otherwise provided by paragraph (2) of Article 4 hereof) shall be strictly confined by its Articles of Association to Members of the Association, and it shall be thereby provided that any Member of the Corporate Branch shall, upon ceasing to be a Member of the Association, *ipso facto* and immediately cease to be a Member of such Branch.

(4) The Corporate Branch shall not be deemed to be an agent for, and shall have no power to impose any responsibility, or liability on, or to pledge the credit of the Association in respect of any acts, expenses, matters or things done or incurred by the Corporate Branch, and the Articles of Association of such Branch shall contain a provision to that effect in such form as may be approved by the Association.

(5) The drafts of the Memorandum and Articles of Association of the Corporate Branch shall, before the incorporation thereof, be submitted to the Association for approval, and such incorporation shall not be effected except under a Memorandum and Articles of Association which have been so approved.

(6) The Corporate Branch shall immediately upon the incorporation thereof enter into an Agreement with the Association to the effect mentioned in the By-laws.

(7) The Corporate Branch shall, before effecting any alteration in its Memorandum or Articles of Association, submit the same to the Association for approval, and shall not effect the same unless such approval shall have been obtained, and shall also transmit to the Association at the Head Office once in every year true and complete copies of its Memorandum and Articles of Association for the time being in force.

(8) In this Article the expression "Memorandum of Association" shall include any Charter or other instrument of foundation of the Corporate Branch and the expression "Articles of Association" shall include any similar regulations for the government of such Branch.

Draft Amended Article 12.

Existing Article 12 to be amended by (i.) making heading read:

"Formation, Alteration, Dissolution, etc., of Branches and Divisions";

(ii.) transferring its paragraph "(1)" to be paragraph "(2)" of Article 11 (*see* p. 241);

(iii.) deleting "calendar" in last line but 3;

(iv.) inserting, at end:—"and, in the case of a Corporate Branch, no alteration in the boundaries or area thereof, or of any Division thereof, shall be made without the consent of that Branch."

The Article, as amended, **to read as follows:—**

"*Formation, Alteration, Dissolution, etc., of Branches and Divisons.*

12. Subject in the case of Divisions and Branches not in the United Kingdom to the provisions of the By-laws, it shall rest with the Council from time to time to determine, recognise, and declare by resolution published in the *Journal*, what bodies of Members shall be Divisions, and what Divisions and groups of Divisions shall be Branches of the Association, and what shall be the local area of each Division, and accordingly the Council shall have full power from time to time to amalgamate, subdivide and modify Divisions and Branches and the local areas thereof. Nevertheless, not less than one month's notice in all cases shall be given (in the manner prescribed by the By-laws) to any Division or Branch in whose boundaries or area any change is proposed, and in the case of a Corporate Branch no alteration in the boundaries or area thereof or of any Division thereof shall be made without the consent of that Branch."

[Existing Article 12.

"12.—(1) Each Division shall have a local area, to be determined as hereinafter provided, and a Branch shall be a Division or a group of Divisions.

"(2) Subject in the case of Divisions and Branches not in the United Kingdom to the provisions of the By-laws, it shall rest with the Council from time to time to determine, recognise, and declare by resolution published in the *Journal*, what bodies of Members shall be Divisions, and what Divisions and groups of Divisions shall be Branches of the Association, and what shall be the local area of each Division, and accordingly the Council shall have full power from time to time to amalgamate, subdivide and modify Divisions and Branches and the local areas thereof. Nevertheless, not less than one calendar month's notice in all cases shall be given (in the manner prescribed by the By-laws) to any Division or Branch in whose boundaries or area any change is proposed."]

Draft New Article 13A (to follow existing Article 13).

13A. It shall be competent for the Association by resolution of the Council and by giving not less than six months' notice in writing to the Branch concerned, to dissolve any unincorporate Branch and to exclude any Corporate Branch from continuing to be a Branch of the Association.

Draft Amended Article 15.

Existing Article 15 to be amended **by inserting at end**:—"but so that in the case of Members of a Corporate Branch, such obligations shall not conflict with any obligations imposed by such Branch."

[Existing Article 15.

"*Grants.*

15. The By-laws may provide for contributions, grants, and subscriptions out of the general funds of the Association to Divisions or Branches, and may impose on the Members of any Division or Branch such obligations towards the Association and the Division and Branch respectively as may seem expedient."]

Draft Amended By-law 12.

Existing By-law 12 to be amended by (i.) inserting, before "Subscriptions" in line 1:—"(1) Save as hereinafter provided"; (ii.) inserting a new paragraph (2), as follows:—

"(2) Provided that the subscription to the Association of a Member of a Corporate Branch shall be paid to that Branch (whose receipt shall be a sufficient discharge to such Member) and shall be remitted by that Branch to the Treasurer."

The By-law, as amended, **to read as follows:—**

"*(Subscription) to whom paid.*

"12 (1) Save as hereinafter provided, subscriptions shall be paid by all Members to the Treasurer or to such persons (if any) as the Treasurer may authorise to receive subscriptions on his behalf (of which authorisation notice shall be given to all members concerned).

(2) Provided that the subscription to the Association of a Member of a Corporate Branch shall be paid to that Branch (whose receipt shall be a sufficient discharge to such Member) and shall be remitted by that Branch to the Treasurer."

[Existing By-law 12.

"*To whom paid.*

12. Subscriptions shall be paid by all Members to the Treasurer, or to such persons (if any) as the Treasurer may authorise to receive subscriptions on his behalf (of which authorisation notice shall be given to all Members concerned)."]

Draft Amended By-law 15.

Existing By-law 15 to be amended by (i.) deleting "Special" in heading; (ii.) substituting, in line 1, for "for any":—

"(a) for any Corporate Branch to fix and from time to time alter the amounts of the subscriptions to be paid by its Members, and (b) for any other",

(iii.) by running paras. (2) and (3) into one.

The By-law, as amended, **to read as follows:—**

"*Subscriptions to Branches not in the United Kingdom.*

"15 (1) It shall also be competent (a) for any Corporate Branch to fix and from time to time alter the amounts of the subscriptions to be paid by its Members, and (b) for any other

Branch not in the United Kingdom, by Rule (approved as hereinafter mentioned), to require each Member of such Branch to pay (in addition to his subscription to the Association and to any such special subscription) an annual subscription of such amount as may be deemed by such Branch to be necessary for defraying expenses occasioned by the special circumstances of such Branch, and not capable of being defrayed out of any grant from the funds of the Association made in pursuance of the By-laws.

(2) No such Rule shall have effect unless and until it shall have been approved by the Branch by a majority of not less than three-fourths of the Members present and voting at a General Meeting of the Branch specially convened to consider the proposed Rule, of which meeting not less than twenty-one days' notice shall have been given to all the Members of the Branch."

[Existing By-law 15.

"*Special Subscriptions to Branches not in the United Kingdom.*

15.—(1) It shall also be competent for any Branch not in the United Kingdom, by Rule (approved as hereinafter mentioned), to require each Member of such Branch to pay (in addition to his subscription to the Association and to any such special subscription) an annual subscription of such amount as may be deemed by such Branch to be necessary for defraying expenses occasioned by the special circumstances of such Branch, and not capable of being defrayed out of any grant from the funds of the Association made in pursuance of the By-laws.

(2) No such Rule shall have effect unless and until it shall have been approved by the Branch in accordance with the following provisions.

(3) Approval by the Branch may be given by a majority of not less than three-fourths of the Members present and voting at a General Meeting of the Branch specially convened to consider the proposed Rule, of which Meeting not less than twenty-one days' notice shall have been given to all the Members of the Branch."]

Draft New By-laws 15A and 15B (to follow existing By-law 15).

Incorporation of Branches not in the United Kingdom.

15A. It shall rest with the Council to consider, amend, approve or disapprove the drafts of any Memorandum and Articles of Association (as defined by Article 11A of the Regulations) submitted by any Branch which desires to become incorporated, and also any proposals for the alteration of the Memorandum and Articles of Association of a Corporate Branch.

15B Every Corporate Branch shall immediately upon its incorporation enter into an Agreement with the Association (in such form as the Council may approve) concerning the permissive user of the words "Branch of the British Medical Association," as part of the Corporate name of such Branch, and the cesser of such user upon the request of the Association, and concerning the exoneration of the Association from liability in respect of the acts and defaults of such Branch, and the submission for approval by the Association of any proposed alterations in the Regulations of such Branch, and generally concerning the relations between such Branch and the Association.

(*For draft form of Agreement see p.* 254.)

Draft Amended By-law 16.

Existing By-law 16 to be amended **by inserting** (i.) after "Branch," in line 1:—"(other than a Corporate Branch"); (ii.) at end, a new paragraph (2) as follows:—

"(2) The management of the affairs of a Corporate Branch and the composition of the Council or other governing body thereof shall be determined by the Regulations of such Branch."

[Existing By-law 16.

"*Local Management: Branches.*

16. The management of the affairs of each Branch shall, save as otherwise provided in the By-laws, be vested in a Branch Council, composed of the following Members:—

(*a*) Those Members of the Council who are elected (as hereinafter provided) by the Branch or by any group of Branches to which the Branch belongs or (wholly or in part) by Representatives of Constituencies comprised in the Branch.

(*b*) The Members elected to represent on the Representative Body the Divisions comprised in the Branch.

(*c*) Such Officers of the Branch as the Branch shall by its Rules declare to be Members *ex officio* of the Branch Council.

(*d*) Such Members (if any) of any Local Medical Committee formed under the National Insurance Act, 1911, and such Medical Members (if any) of any Insurance Committee constituted under that Act, being (in either case) ordinary Members of the Association resident within the area of the Branch as the Branch may appoint or the Branch Council may co-opt to be members of the Branch Council.

(*e*) Such other Members as the Branch may by its Rules decide."]

(*For further amendment of existing By-law 16, and that By-law as amended, see page* 243.)

Draft Amended By-law 19.

Existing By-law 19 to be amended by inserting, after the word "By-laws," in line 2:—"and subject in the case of a Division forming part of a Corporate Branch to any directions or Regulations given or made by that Branch".

[Existing By-law 19.

"*Local Management: Divisions.*

19. The management of the affairs of each Division shall, save as otherwise provided in the By-laws, be vested in an Executive Committee composed of the following Members:—

(*a*) The Member or Members representing the Division on the Representative Body;

(*b*) The Member or Members representing the Division on the Branch Council;

(*c*) Such Officers of the Division as the Division shall by its Rules declare to be Members *ex officio* of the Executive Committee.

(*d*) Such Members (if any) of any Local Medical Committee formed under the National Insurance Act, 1911, and such Medical Members (if any) of any Insurance Committee constituted under that Act, being (in either case) ordinary Members of the Association resident within the area of the Division as the Division may appoint or the Executive Committee may co-opt to be Members of the Executive Committee.

(*e*) Such other Members elected by the Division as the Division may determine."]

(*For further amendment of existing By-law 19, and that By-law as amended, see page* 243.)

Draft Amended By-law 20.

Existing By-law 20 to be amended by deleting, in line 2:—"Council of the."

[Existing By-law 20.

"*Relations between Divisions and Branches.*

"20. The Executive Committee of every Division shall, as soon as may be, notify to the Council of the Branch comprising that Division each decision of the Division or the Executive Committee relating to or affecting the organization or policy of the Branch or of any Division comprised in the Branch."]

Draft Amended By-law 22.

Existing By-law 22 to be amended by inserting, in line 1, after "shall":—"(subject in the case of a Division forming part of a Corporate Branch to any directions or regulations given or made by that Branch)".

[Existing By-law 22.

"*Divisions not in the United Kingdom: Special Powers.*

"22. A Division not in the United Kingdom shall be competent from time to time to adopt, by the vote of a General Meeting of the Division, and without the approval of the Council, Rules dealing with all or any of the following matters, which Rules shall be binding upon the Members of the Division to which they relate:—

(i.) The number, duties, and designation of office bearers of the Division, provided that the Division shall at all times have an Honorary Secretary, who shall be the official medium of communication with the Association, and with other Divisions and Branches.

(ii.) The holding of Meetings of the Division and the business to be considered thereat, but so as not to conflict with the By-laws as to the holding of Meetings of Constituencies for the election, and, if necessary, for the instruction of Representatives, and for considering the Agenda of Representative Meetings.

(iii.) The voting by proxy at any such Meeting and at any Meeting of the Executive Committee of the Division.

(iv.) Any other matter as to which the Council may, from time to time, authorise the Divisions not in the United Kingdom to make Rules without the approval of the Council."]

Draft Amended By-law 78.

Existing By-law 78 to be amended by substituting, in line 2, for "any Branch Council or" :—"the Council of any Branch (other than a Corporate Branch) or of any."

The By-law, as amended, **to read as follows:—**

"*Validity of Proceedings.*

"78. The proceedings of the Representative Body or of the Council, or of the Council of any Branch (other than a Corporate Branch) or of any Committee or other Body acting under the Regulations or the By-laws, shall not be invalidated by any accidental omission to give any notice thereby required or by any vacancy among their Members, or by any defect in the election or qualification of any of their Members."

[Existing By-law 78.

"*Validity of Proceedings.*

78. The proceedings of the Representative Body or of the Council, or of any Branch Council or Committee or other Body acting under the Regulations or the By-laws, shall not be invalidated by any accidental omission to give any notice thereby required or by any vacancy among their Members, or by any defect in the election or qualification of any of their Members."]

Draft Amended Schedule to By-laws, as to Composition of Dominions Committee.

Existing Schedule to By-laws, "Dominions Committee," to be amended by reading, in column 2 ("Additional Members, *ex-officio*"), for "All the Members of the Council who represent Colonial Branches":—". . . who represent Branches not in the United Kingdom."

Existing provision as to "Additional Members, *ex-officio*," of Dominions Committee :—

"All the Members of the Council who represent Colonial Branches."]

(II.) FACILITIES FOR FORMATION OF FEDERAL COUNCILS OF OVERSEA BRANCHES (WHERE SO DESIRED).

Instruction of A.R.M., 1921.

That provision be made in the Regulations of the Association for Federal Councils of the Association in Oversea Dominions and India, consisting in either case of Representatives of the Branches concerned, to carry out in these countries, on behalf of the local Branches collectively, the objects of the Association, and generally to have the powers and duties of the existing Federal Committees. (Min. 86.)

Draft New Article 13 B (to follow new draft Article 13A).

FEDERAL COUNCILS.

13B. Federal Councils representative of the Branches in any area outside the United Kingdom defined and approved by the Council may be formed in the manner and for the purposes specified in the By-laws.

Draft New By-law 18A (to follow existing By-law 18).

FEDERAL COUNCILS.

18A. (1) The Branches in any defined area outside the United Kingdom which shall be approved by the Council for the purpose, may form a Federal Council consisting of Members of the Association representing each of the Branches concerned, for the purpose of carrying out the objects of the Association on behalf of those Branches collectively within the area so defined and approved. Subject as hereinafter provided, any such Federal Council may be corporate or unincorporate.

(2) Any proposal for the formation of any such Federal Council, specifying the area in which the same is intended to act and its constitution, powers and duties, shall be submitted by the Branches concerned to the Council, and no such proposal shall become operative unless and until the same shall have been approved by the Council.

(3) This By-law shall apply to a Corporate Branch subject and without prejudice to anything contained in the Memorandum and Articles of Association or other the instrument of foundation or Regulations of such Branch.

(III.) OTHER INSTRUCTIONS OF A.R.M. NEWCASTLE, FOR REVISION OF B.M.A. CONSTITUTION AND MACHINERY, INCLUDING THE QUESTION OF FEDERATION FACILITIES.

(1) QUESTION OF FEDERATION FACILITIES.

Instructions of A.R.M., 1921.

That the proposals so far as refer to the Oversea Branches, published in the *B.M.J.* Supplements of March 5th and April 30th, 1921, as to "the question of steps to be taken whereby the Association may become in part a Federation," be withdrawn, pending further consideration of the matter (Min. 80).

That as regards the present policy of the Association, Minute 44 of the A.R.M., 1920, in so far as that Minute contemplated that there might possibly be admitted to affiliation any body or bodies other than a purely medical body or bodies representing substantially an ex-Branch or group of ex-Branches of the Association outside Great Britain, be rescinded (Min. 89).

Action by the Council.

The question of possible federation facilities, to meet the case of a medical body or bodies representing, substantially, a Branch or group of Branches of the Association outside Great Britain which might prefer that method of organisation of the profession, has arisen in the autumn of 1921 in respect of the Commonwealth of Canada and the Union of South Africa and Rhodesia. It is possible that it may arise in connection with Ireland.

The Council is giving the matter urgent consideration. The federation proposals, of different scope, which were formulated in the spring of 1921 (see *B.M.J.* Supplements, March 5th and April 30th, 1921), have been forwarded to the Canadian Medical Association, the B.M.A. Branches in Canada, the B.M.A. South African Committee, and the B.M.A. Branches in South Africa, with a request for their comments. Copies will also be sent to any other Branches expressing a wish to have them. As soon as the comments have been received, the Council intends to draft Articles and By-laws whereby it will be possible for there to be affiliated to the Association any purely medical body outside Great Britain representing substantially an ex-Branch or group of ex-Branches of the Association.

(2) ELIGIBILITY FOR MEMBERSHIP.

Instruction of A.R.M., 1921.

That Article 3 be brought up to date so as to provide that any medical practitioner who does not reside within the area of any Branch, and who, though not registered in the United Kingdom, is possessed of a qualification registrable there, shall be eligible for membership of the Association. (Min. 59.)

Draft Amended Article 3.

(See, also, Section (I) of this Report, page 237).

Existing Article 3 to be amended by reading in line 5 :—
". . . is possessed of any qualification entitling him to be so registered,"

The Article, as amended, **to read as follows :—**

"*Eligibility.*

"3. Any Medical Practitioner registered in the United Kingdom under the Medical Acts, and any Medical Practitioner

who does not reside within the area of any Branch of the Association and who, though not so registered, is possessed of any qualification entitling him to be so registered, and any Medical Practitioner residing within the area of any Branch of the Association not in the United Kingdom, who is so registered or possesses such medical qualification as shall, subject to the By-laws, be prescribed by the Rules of the said Branch, shall be eligible as an ordinary Member of the Association. Subject as aforesaid the mode and conditions of election to membership shall from time to time be determined by or in accordance with the By-laws."

(3) Question of Recognition of Divisions and Branches which have not Adopted Rules.

Instruction of A.R.M. 1921.

That the Articles be amended to provide that no new group of Members within the British Islands shall be finally recognised as a Division or as a Branch until such Division or Branch shall have adopted Rules of Organisation and the current Rules governing Procedure in Ethical Matters, and until such Rules shall have been approved by the Council. (Min. 104.)

Draft Amended Article 11.

Existing Article 11 to be amended by (i.) omitting heading "Formation"; (ii.) inserting "(1)" after "11"; and (iii.) inserting 2 new paragraphs as follows: -

"(2) Each Division shall have a local area to be determined as hereinafter provided and a Branch shall be a Division or a Group of Divisions (from present Article 12 — see page 238):

(3) Provided that no body of Members shall be finally recognised as a Division or Branch until they shall have adopted Rules of Organisation and the current Rules governing Procedure in Ethical Matters, and such Rules shall have been approved by the Council."

The Article, as amended, **to read as follows:—**

"11. (1) The Members of the Association shall be formed into separate local bodies styled Divisions and Branches.

(2) Each Division shall have a local area to be determined as hereinafter provided, and a Branch shall be a Division or a group of Divisions.

(3) Provided that no body of Members shall be finally recognised as a Division or Branch until they shall have adopted Rules of Organisation and the Current Rules governing Procedure in Ethical Matters and such Rules shall have been approved by the Council."

[Existing Article 11.

"*Formation of Divisions and Branches.*

11. The members of the Association shall be formed into separate local bodies styled Divisions and Branches."]

(4) Chairman and Deputy-Chairman of Representative Body: Past-Chairman to be a Member of R.B., *ex officio*, for 12 Months.

Instruction of A.R.M., 1921.

That the Chairman of Representative Meetings be called "Chairman of the Representative Body," and the Deputy-Chairman of Representative Meetings, "Deputy-Chairman of the Representative Body." (Min. 179.)

That the Chairman of the Representative Body be during his period of office and for one year thereafter a member of the Representative Body *ex officio*. (Min. 180.)

Draft Amended Article 28.

Existing Article 28 to be amended by inserting, after "composed of," in line 4, "the Chairman and the immediate Past-Chairman of the Representative Body, *ex officio*, and of".

The Article, as amended, **to read as follows: -**

"*General Powers (of R.B.)*

"28. Subject to the provisions of any Statute, the general control and direction of the policy and affairs of the Association shall be vested in a body of Representatives styled "the Representative Body," and composed of the Chairman and the immediate Past-Chairman of the Representative Body *ex-officio* and of Members of the Association elected by the Divisions in the manner prescribed by the By-laws, and of the Members of the Council for the time being in office or elected to take office."

[Existing Article 28.

"*General Powers (of R.B.)*

28. Subject to the provisions of any statute the general control and direction of the policy and affairs of the Association shall be vested in a body of Representatives styled "the Representative Body" and composed of Members of the Association elected by the Divisions in the manner prescribed by the By-laws, and of the Members of the Council for the time being in office or elected to take office."]

(5) Referendum.

Instruction of A.R.M., 1921.

That the Meeting of the Council to consider a resolution of the R.B., or of a General Meeting, must be held within one month of the passing of the resolution. (Min. 129.)

Draft Amended Article 31.

Existing Article 31 to be amended by reading in line 1 of paragraph (a) and in lines 2, 7 and 8 of paragraph (f), for "three months", "one month".

Paragraphs 31 (a) and (f), as amended, **to read as follows:—**

"(a) Within one month after the date on which the resolution is passed, the Council shall hold a Meeting for the purpose of considering the resolution. Such Meeting may be convened by a notice given either before or after or during the progress of the Meeting at which the resolution is passed."

"(f) If the said Meeting of the Council shall not be held within the said period of one month, or if the requisition prescribed by paragraph (e) of this Article shall not have been issued within the said period of eight weeks, then the resolution shall come into operation immediately upon the expiration of the said period of one month or of the said period of eight weeks (as the case may be). Save as aforesaid, the resolution shall have no operation unless and until it shall have been approved either by the Council or on a Referendum as hereinbefore provided, and if and when so approved the same shall come into operation as a valid and effectual decision of the Association."

[Existing Article 31.

"*Referendum.*

31. In respect of every resolution of a General Meeting of the Association (except a resolution capable of being confirmed as a special resolution or a resolution confirming as a special resolution a resolution previously passed, or an extraordinary resolution or a resolution relating solely to the procedure of the Meeting), and in respect of every resolution of the Representative Body, the following provisions shall have effect:—

(*a*) Within three months after the date on which the resolution is passed the Council shall hold a Meeting for the purpose of considering the resolution. Such Meeting may be convened by a notice given either before or after or during the progress of the Meeting at which the resolution is passed.

(*b*) The Council, at its said meeting, may approve the resolution, and shall be deemed to have approved the same unless one-half at least of the total number of the Council be present, and it be determined by a majority of not less than two-thirds of the votes given on the question that the resolution does not properly represent the wishes of the Association, and that a Referendum is expedient.

(*c*) If the Council at its said meeting determine in manner aforesaid that a Referendum is expedient then an officer of the Association to whom such duty shall be assigned by the Council shall as soon as may be after the said meeting, and not later than eight weeks from the date thereof, send by post to the Secretary of each

Division of the Association a requisition requiring him within four weeks to convene a meeting of the members of his Division (hereinafter called "the Division Meeting") for the purpose of considering the resolution and shall with each such requisition transmit such observations on the subject of the resolution as the Council may direct.

(*d*) The Secretary of each Division shall convene the Division Meeting accordingly and shall immediately after the holding thereof certify in writing to the Council the number of the votes given at the Division Meeting for and against the resolution.

(*e*) If the aggregate number of votes given for the resolution at all the Division Meetings shall exceed the aggregate number of votes given against the resolution at all the Division Meetings, or if no vote shall be given at any Division Meeting against the resolution the same shall be deemed to have been approved on a Referendum. Provided that for the purpose of this provision no vote shall be reckoned unless the same shall be included in such certificate as aforesaid and such certificate shall have been received at the Head Office of the Association within four months after the date of the said meeting of the Council.

(*f*) If the said Meeting of the Council shall not be held within the said period of three months, or if the requisition prescribed by paragraph (*c*) of this Article shall not have been issued within the said period of eight weeks, then the resolution shall come into operation immediately upon the expiration of the said period of three months or of the said period of eight weeks (as the case may be). Save as aforesaid the resolution shall have no operation unless and until it shall have been approved either by the Council or on a Referendum as hereinbefore provided and if and when so approved the same shall come into operation as a valid and effectual decision of the Association.

(*g*) The fact of the resolution having been so approved shall be forthwith published in the *Journal*."]

(6) Composition of Council.

Instructions of A.R.M., 1921.

That the Past-Chairman of the Representative Body, and the Past-Treasurer, shall for the year immediately following their period of office as Chairman of the Representative Body and Treasurer, respectively, be members of the Council, *ex officio*; and that the Deputy-Chairman of the Representative Body be also a member of the Council, *ex officio*. (Mins. 145, 146, 152.)

Draft Amended Article 32.

Existing Article 32 to be amended **to read**:—

"32. The Council shall be composed of the President of the Association, the President-Elect, the Past-President, the Chairman, the immediate Past-Chairman and the Deputy-Chairman of the Representative Body, the Chairman and the immediate Past Chairman of Council, the Treasurer and the immediate Past-Treasurer *ex officio*, and of Members of the Association elected by the bodies, and in the manner prescribed in that behalf by the By-laws."

[Existing Article 32.

"*Composition of Council*).

32. The Council shall be composed of the President of the Association, the President-Elect, the Past-President, the Chairman of Representative Meetings, the Chairman of Council, the Past-Chairman of Council, and Treasurer *ex officio*, and of Members of the Association elected by the bodies and in the manner prescribed in that behalf by the By-laws."]

(7) Officers.

Instruction of A.R.M. 1921.

That the Deputy-Chairman of the Representative Body shall be an Officer of the Association. (Mins. 179 and 181.)

Draft Amended Article 36.

Existing Article 36 to be amended by (i.) substituting, in line 3, for "of Representative Meetings":—

"and a Deputy-Chairman of the Representative Body";

(ii.) inserting, in line 5, after "shall", :—"be elected in such manner and shall".

The Article, as amended, **to read as follows**:—

"*Officers.*

"36. There shall be the following Officers of the Association, namely, a President, a President-Elect, a Past-President, a Chairman and a Deputy-Chairman of the Representative Body, a Chairman of Council, Vice-Presidents, and a Treasurer. The Officers aforesaid shall be elected in such manner and shall hold office for such term, and shall have and enjoy such duties, powers and privileges as shall be determined from time to time by the By-laws."

[Existing Article 36.

"*Officers.*

36. There shall be the following Officers of the Association, namely, a President, a President-Elect, a Past President, a Chairman of Representative Meetings, a Chairman of Council, Vice-Presidents, and a Treasurer. The Officers aforesaid shall hold office for such term, and shall have and enjoy such duties, powers, and privileges as shall be determined from time to time by the By-laws."]

(8) Election of Members of the Association by Home Branches.

Instruction of A.R.M. 1921.

That candidates for membership resident in the United Kingdom shall forward their applications to the Head Office, and that thereupon the latter shall at once notify both the Division and Branch Secretaries concerned. (Min. 60).

Draft Amended By-law 5.

Existing By-law 5 (1) to be amended by reading, in line 4:—

". . . shall forward his application to the Association at the Head Office, and every such application shall forthwith be notified to the Secretary of each Branch and Division concerned. Notice of the proposed election shall be sent by the Branch Secretary to every member of the Branch Council, and (etc., as at present)."

The By-law, as amended, **to read as follows**:—

"*Election by Branches.*

"5. (1) In the case of a Branch in the United Kingdom, the mode of election of Members shall be as follows:—Every candidate who resides within the area of a Branch shall forward his application to the Association at the Head Office, and every such application shall forthwith be notified to the Secretary of each Branch and Division concerned. Notice of the proposed election shall be sent by the Branch Secretary to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said notice. A Branch may require that each candidate for election shall furnish a certificate signed by 2 Members (either of the Association, or of the Branch or of the Division in which he resides as the Rules of the Branch may prescribe), stating that from personal knowledge they consider him a suitable person for election.

(2) In the case of a Branch not in the United Kingdom the mode of election shall be such as may, with the consent of the Council, be prescribed by the Rules of the Branch."

[Existing By-law 5.

"*Election by Branches.*

5. (1) In the case of a Branch in the United Kingdom, the mode of election of members shall be as follows:—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the Association at the Head Office, and to every member of the Branch Council, and the candidate if not disqualified by any Regulation of

the Association, may be elected a member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said notice. A Branch may require that each candidate for election shall furnish a certificate signed by two members (either of the Association, or of the Branch, or of the Division in which he resides, as the Rules of the Branch may prescribe) stating that from personal knowledge they consider him a suitable person for election.

(2) In the case of a Branch not in the United Kingdom the mode of election shall be such as may, with the consent of the Council, be prescribed by the Rules of the Branch."]

(9) ELECTION OF MEMBERS OF THE ASSOCIATION BY THE COUNCIL.

Instructions of A.R.M., 1921.

That only 2 (instead of 3) approving signatures shall be required in the case of a candidate for membership of the B.M.A. who is not resident within any Branch area. (Min. 63.)

That in respect of the proposed election by the Council of a candidate not resident within a Branch area, notice be sent to each member of the Council with the Agenda of the meeting at which the election is proposed to be held. (Min. 64.)

Draft Amended By-law 6.

Existing By-law 6 to be amended by (i.) reading in line 4, for "3", "2"; (ii.) reading, in last 6 lines:—"... to every member of the Council, together with, or as part of, the Agenda for the Meeting at which the election is proposed to be held, and the candidate, if not disqualified by any of the Regulations or the By-laws, may be elected a member of the Association by the Council at that Meeting or any adjournment thereof."

The By-law, as amended, to read as follows:—

"*Election by the Council.*

"6. Every candidate who does not reside within the area of any Branch shall forward his application to the Association at the Head Office, together with a certificate signed by two Members of the Association stating that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the Association from the Head Office to every Member of the Council together with or as part of the Agenda for the meeting at which the election is proposed to be held, and the candidate, if not disqualified by any of the Regulations or the By-laws, may be elected a Member of the Association by the Council at that meeting or any adjournment thereof."

[Existing By-law 6.

"*Election by the Council.*

"6. Every candidate who does not reside within the area of any Branch shall forward his application to the Association at the Head Office, together with a certificate signed by three Members of the Association stating that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the Association from the Head Office to every Member of the Council, and the candidate, if not disqualified by any of the Regulations or the By-laws, may be elected a Member of the Association by the Council at any Meeting thereof held not less than one month after the date of the said notice."]

(10) NON-MEMBERS OF B.M.A. NOT TO BE ELIGIBLE FOR MEMBERSHIP OF DIVISION EXECUTIVE COMMITTEES OR BRANCH COUNCILS: HONORARY SECRETARIES OF DIVISIONS TO BE MEMBERS OF BRANCH COUNCILS: MEMBERS OF STATUTORY COMMITTEES AND LOCAL MEDICAL SOCIETIES TO BE ELIGIBLE FOR MEMBERSHIP OF DIVISION EXECUTIVE COMMITTEES AND BRANCH COUNCILS: WHICH MEMBERS OF COUNCIL SHALL BE MEMBERS *ex officio* OF BRANCH COUNCILS!

Instructions of A.R.M., 1921.

That a Branch Council or Division Executive Committee shall not include non-members of the Association (Mins. 65, 184-5).

That the Honorary Secretaries of the Divisions (*i.e.*, one from each Division) shall be members *ex officio* of the Branch Council (Min. 69).

That Branches and Divisions shall have the power of placing upon their Councils and Executive Committees, not only members of Local Medical Committees and medical members of Insurance Committees under the National Insurance Act (as at present), but medical members of any local Council or Committee under any Act whatsoever, and representatives of any local medical societies (being in either case members of the Association) (Min. 70).

That the further membership of the Division Executive Committee (existing By-law 19 (*e*)) be left to the Division to decide by its Rules, as is already (existing By-law 16 (*e*)) provided in the case of the Branch Council (Min. 71).

That every member of the Council elected by a Branch or group of Branches shall, *ipso facto*, be a member of the corresponding Branch Council or Councils, and that no other member of the Council, as such, shall be a member of the Branch Council (Min. 142).

Draft Amended By-law 16.

(*See, also, page 239 above.*)

That the following be substituted for existing By-law 16:—

"*Local Management: Branches.*

"16 (1) The management of the affairs of each Branch (other than a Corporate Branch) shall, save as otherwise provided in the By-laws, be vested in a Branch Council, composed of the following persons (being Members of the Association):—

(*a*) In the case of a Branch in the United Kingdom, those of the 24 Members (hereinafter mentioned) of the Council who are elected (as hereinafter provided) by the Branch or by any group of Branches to which the Branch belongs, and those of the 12 Members (hereinafter mentioned) of the Council who are elected (as hereinafter provided) wholly or in part by Representatives of Constituences comprised in the Branch.

(*b*) Those Members of the Representative Body who are elected (as hereinafter provided) to represent the Divisions comprised in the Branch.

(*c*) Such Officers of the Branch as the Branch shall by its Rules declare to be members *ex officio* of the Branch Council.

(*d*) The Honorary Secretaries of all the Divisions comprised in the Branch (one for each such Division).

(*e*) Such Medical members (if any) of any local Council or Committee formed under any Act of Parliament, and such representatives (if any) of any local Medical Society as the Branch may appoint or the Branch Council may co-opt to be Members of the Branch Council.

(*f*) Such other Members of the Association as the Branch may by its Rules decide.

(2) The management of the affairs of a Corporate Branch, and the composition of the Council or other governing body thereof, shall be determined by the Regulations of such Branch."

[Existing By-law 16.

See Section (I) of this Report.]

Draft Amended By-law 19.

(*See, also, page 239 above.*)

That the following be substituted for existing By-law 19:

"*Local Management: Divisions.*

19. The management of the affairs of each Division shall, save as otherwise provided in the By-laws, and subject in the case of a Division forming part of a Corporate Branch to any directions or Regulations given or made by that Branch, be vested in an Executive Committee composed of the following persons (being Members of the Association):—

(*a*) The Member or Members representing the Division on the Representative Body;

(*b*) The Member or Members representing the Division on the Branch Council;

(*c*) Such Officers of the Division as the Division shall by its Rules declare to be Members *ex-officio* of the Executive Committee;

(*d*) Such Medical Members (if any) of any local Council or Committee formed under any Act of Parliament, and such representatives (if any) of any local Medical Society as the Division may appoint or the Executive Committee may co-opt to be Members of the Executive Committee;

(*e*) Such other Members of the Association as the Division may by its Rules decide."

[Existing By-law 19.
See Section (I) of this Report.]

(11) Council to Organise Disorganised or Inactive Branch.

Instruction of A.R.M. 1921.

That the By-laws empower the Council to organise any Branch which may have become unorganised or inactive, and to act for such Branch pending its reorganisation. (Min. 72.)

Draft New By-law 16A (to follow existing By-law 16).

"*Powers as to Disorganised or Inactive Branch.*

16A. If at any time any Branch (other than a Corporate Branch) shall in the opinion of the Council have become disorganised or inactive, or if any Branch Council shall not be properly constituted, it shall be competent for the Council to do anything which may appear to it expedient for restoring the organisation and activity of the Branch, and for that purpose to appoint Members of the Branch Council and to convene or provide for the convening of the Branch Council and for the Council itself to act in the place of, and to exercise and perform all or any of the powers and duties of the Branch Council, and anything done or purporting to be done by the Council in pursuance of this By-law shall be valid and effectual and shall not be questioned."

(12) Co-ordination of Policy of Divisions: Disorganised or Inactive Division.

Instruction of A.R.M. 1921.

That it shall *inter alia* be the duty of every Branch Council:

(a) To advise the Divisions forming the Branch in matters of policy affecting the medical profession, with a view to promoting a common policy throughout those Divisions.

(b) To suggest to the Divisions concerned, where considered necessary or desirable by the Branch Council, or in the case of inactivity of a Division, to the Council, such modification of Division areas as would, in the opinion of the Branch Council, contribute to the more effective working of such Division or Divisions, and to advise the Council thereon from time to time.

(c) To call, when deemed necessary or desirable by the Branch Council, joint meetings of the Members of two or more Divisions for the purpose of discussing matters in which those Divisions are jointly interested.

(d) To take, where considered necessary or desirable by the Branch Council, action to organise any Division which may have become unorganised or inactive, and pending such reorganisation to act for such Division.

(e) To report to the Council upon the questions dealt with by such advice or action in all cases in which such a report is considered by the Branch Council to be necessary or desirable, or is requested by the Council. (Min. 73.)

(NOTE.—*(b), (c) and (d) above are additions proposed by the Newcastle Meeting to existing By-law 17.*)

Draft Amended By-law 17.

Existing By-law 17 to be amended to read:—

"*Co-ordination of Policy of Divisions: Disorganised or Inactive Division.*

17. The duties of every Branch Council shall include the following:—

(*a*) To advise the Divisions forming the Branch in matters of policy affecting the medical profession, with a view to promoting a common policy throughout those Divisions.

(*b*) To suggest to those Divisions (where considered by the Branch Council to be desirable) or, in the case of inactivity of a Division, to the Council, such modification of the areas of Divisions as would in the opinion of the Branch Council conduce to the more effective working of any Division or Divisions, and to advise the Council thereon from time to time.

(*c*) When considered desirable by the Branch Council to call joint meetings of the Members of two or more Divisions for the purpose of discussing and taking common action on matters in which those Divisions are jointly interested.

(*d*) In any case in which any Division shall in the opinion of the Branch Council have become disorganised or inactive, or in which the Executive Committee thereof shall not be properly constituted, to exercise in relation to the Division and the Executive Committee thereof, the like powers as are by these By-laws conferred on the Council in the like case in relation to a Branch and the Council thereof, and so that anything done or purporting to be done by the Branch Council in pursuance of this paragraph shall be valid and effectual and shall not be questioned.

(*e*) To report to the Council upon the matters dealt with by this By-law in all cases in which such a report is considered by the Branch Council to be necessary or desirable or is requested by the Council."

[Existing By-law 17.
"*Co-ordination of Policy of Divisions.*

17. It shall be the duty of every Branch Council to advise the Divisions forming the Branch in matters of policy affecting the medical profession, with a view to promoting a common policy throughout those Divisions. The Branch Council shall report to the Representative Body or to the Council upon the questions dealt with by such advice in all cases in which such a report is considered by the Branch Council to be necessary or desirable or is requested by the Representative Body or by the Council."]

(13) Division and Branch Honorary Secretaries must be B.M.A. Members.

Recommendation by Council.

That all Honorary Officers of Divisions and Branches must be Members of the Association.

New Draft By-law 17A (to follow existing By-law 17).

17A. Every Branch and every Division shall have an Honorary Secretary who shall be a Member of the Association, and shall be the official medium of communication with the Association and with other Branches and Divisions.

(NOTE.—*Draft amended By-laws 16 and 19 (para. (10) above) make this provision as regards the Branch Council and Divisional Executive Committee Members in general.*)

(14) Discontinuance of Sub Divisions: Joint Meetings and Joint Committees of Divisions.

Instructions of A.R.M., 1921.

That By-law 21 (1), as to Sub-Divisions, be deleted (Min. 91).

That By-law 21 (3), as to Joint Meetings of Divisions, be amended to read somewhat as follows:—

"(3) Where the members of two or more Divisions desire to meet in combination for the purpose of discussing matters in which those Divisions are jointly interested, or for the appointment of Joint Committees as aforesaid, such meetings shall be convened by the Honorary Secretaries of those Divisions, or by agreement, by one of such Secretaries, or if necessary, by the Branch Council." (Min. 92.)

Draft Amended By-law 21.

Existing By-law 21 to be amended by (i.) altering heading to read "Joint Committees and Joint Meetings of Divisions"; (ii.) deleting existing paras. (1) and (3); and (iii.) inserting a new para. (2) as follows:—

"(2) Where the Members of two or more Divisions desire to meet in combination for the purpose of discussing matters in which those Divisions are jointly interested, or for the appointment of any such Joint Committees as aforesaid, such meeting may be convened by the Secretaries of those Divisions jointly or by agreement by one of such Secretaries, or if necessary by the Council or other governing body of the Branch."

The By-law, as amended, **to read as follows**:—

"*Joint Committees and Joint Meetings of Divisions.*

"21. (1) Any Division may concur with any other Division or Divisions in appointing a Joint Committee for any purpose in which those Divisions are jointly interested, and in conferring with or without conditions or restrictions on any such Joint Committee any powers which each appointing Division might exercise if the purpose related exclusively to the area of such appointing Division, and in providing for the constitution and term of office of such Joint Committee.

(2) Where the Members of two or more Divisions desire to meet in combination for the purpose of discussing matters in which those Divisions are jointly interested or for the appointment of any such Joint Committees as aforesaid, such meeting may be convened by the Secretaries of those Divisions jointly or by agreement by one of such Secretaries or, if necessary, by the Council or other governing body of the Branch."

[Existing By-law 21.

"*Sub-divisions: Joint Committees of Divisions.*

21.—(1) Any Division by resolution from time to time may divide the local area of the Division into Sub-divisions, and may appoint local bodies consisting of Members of the Division, for the exercise within such Sub-divisions of any powers or functions of the Division which in the opinion of the Division can and ought to be exercised by such local bodies, and may specify the powers and duties of such local bodies and provide for their constitution and term of office.

(2) Any Division may concur with any other Division or Divisions in appointing a Joint Committee for any purpose in which those Divisions are jointly interested, and in conferring with or without conditions or restrictions on any such Joint Committee any powers which each appointing Division might exercise if the purpose related exclusively to the area of such appointing Division, and in providing for the constitution and term of office of such Joint Committee.

(3) Meetings of the Members of more Divisions than one shall be convened (if the Divisions are comprised in a single Branch by the Secretary of that Branch, and if the Divisions are comprised in more Branches than one by the Secretaries of those Branches jointly) upon the requisition of any of those Divisions for the purpose of discussing matters in which those Divisions are jointly interested, and appointing any such Joint Committees as aforesaid."]

(15) Ordinary Grants may be Paid, in Part, Direct to Divisions.

Instruction of A.R.M. 1291.

That in exceptional circumstances, and at the discretion of the Council, a portion of the ordinary annual grant to a Branch may be paid by the Treasurer of the Association direct to a Division or Divisions of a Branch, instead of to the Branch. (Min. 93.)

Draft Amended By-law 23.

Existing By-law 23 to be amended by (i) inserting at the end of para. (1):—

"Provided that, if at any time the Council (in circumstances appearing to it to be exceptional) shall so determine, the Treasurer shall pay direct to any Division or Divisions of a Branch such proportion of the sum payable hereunder to the Branch as may be specified in such direction"; (ii) inserting, in lines 1, 2, and 5 of para. (2), after "Branch":—"or Division"

The By-law, as amended, **to read as follows**:—

"*Grants to Branches: Ordinary.*

"23. (1) The Treasurer of the Association shall annually pay or allow, out of the funds of the Association, to the Treasurer of each Branch such sum, not exceeding six shillings, as the Council shall order to be paid in respect of each Member of that Branch whose name appears in the Annual List for the time being in force.

Provided that if at any time the Council (in circumstances appearing to it to be exceptional) shall so determine, the Treasurer shall pay direct to any Division or Divisions of a Branch such proportion of the sum payable hereunder to the Branch as may be specified in such direction.

(2) A Grant made under this By-law to any Branch or Division shall be applied at the discretion of that Branch or Division in or towards defraying expenses properly incurred in using such of the means for the attainment of the objects of the Association as that Branch or Division may for the time being be competent to use."

[Existing By-law 23.

"*Grants to Branches: Ordinary.*

23.—(1) The Treasurer of the Association shall annually pay or allow, out of the funds of the Association, to the Treasurer of each Branch such sum, not exceeding six shillings, as the Council shall order to be paid in respect of each Member of that Branch whose name appears in the Annual List for the time being in force.

(2) A Grant made under this By-law to any Branch shall be applied at the discretion of that Branch in or towards defraying expenses properly incurred in using such of the means for the attainment of the objects of the Association as that Branch may for the time being be competent to use."]

(16) Grants by Branches to Divisions.

Instruction of A.R.M.

That By-law 26 be amended to read, in the last line but two:—". . . such sum or sums as the Branch Council may from time to time consider necessary to enable the Division to defray its expenses." (Minute 96.)

Draft Amended By-law 26.

Existing By-law 26 to be amended by inserting (i.) in line 4, after "sum", "or sums", (ii.) in line 5, after "may", "from time to time"

The By-law, as amended, **to read as follows**:—

"*Application of Grants.*

"26. Out of the moneys received by way of grant from the Association as aforesaid, each Branch shall (so far as possible) defray all its expenses, and shall also pay to each Division of the Branch such sum or sums as the Branch Council may from time to time consider necessary to enable the Division to defray its expenses."

[Existing By-law 26.

"*Application of Grants.*

26. Out of the moneys received by way of grant from the Association as aforesaid each Branch shall (so far as possible) defray all its expenses, and shall also pay to each Division of the Branch such sum as the Branch Council may consider necessary to enable the Division to defray its expenses."]

(17) REPRESENTATION OF DIVISION IN REPRESENTATIVE BODY.

Instruction of A.R.M. 1921.

That the Council shall have power to give separate representation to any Division, when it appears to the Council to be desirable (Minute 107).

Draft Amended By-law 33.

Existing By-law 33 to be amended by substituting a **new paragraph (3)** as follows :—

"(3) Provided that the Council shall in any case in which it appears to it to be desirable have power to give separate representation to a Division having less than fifty Members."

[Existing By-law 33.

"*Formation of Constituencies.*

33.—(1) Representatives of Divisions shall be elected by Constituencies formed as follows :—

(2) Any Division having not less than fifty Members may form a Constituency, and except as hereinafter provided every Division having less than fifty Members shall be grouped by the Council with another Division, or with other Divisions, to form one Constituency having not less than fifty Members.

(3) Provided that the Council shall have power to give separate representation to Divisions having fewer than fifty Members in those cases in which it appears to the Council that special difficulties exist as to the holding of joint meetings with neighbouring Divisions.

(4) In no case shall the total number of Constituencies formed throughout the Association exceed 300.

(5) Subject as aforesaid the Constituencies shall be formed and may be from time to time altered by the Council, and the Council shall publish lists of the Constituencies as and when it may think expedient."]

(18) ELECTION OF REPRESENTATIVES.

Instructions of A.R.M., 1921.

That Representatives shall be elected not more than 9, nor less than 2 months (instead of 4 weeks) before the A.R.M. at which they take office (Min. 108).

That the Executive Committee(s) of the Division(s) comprised in the Constituency, meeting together, shall decide whether the election of the Representative(s) is to be by General Meeting of the Constituency or by postal vote (Min. 109).

That in the case of a Constituency containing more than one Division, the meeting for election of the Representative(s) shall be called, or the voting papers issued, by the Secretary of the largest Division, or, failing action by him, by the Council (Min. 112).

That a meeting of each Constituency shall be held within 28 days before the A.R.M., to consider the Agenda of the A.R.M., and instruct the Representative(s) thereon (Min. 115).

That notice of the names and addresses and mode of election of the Representatives be sent to the Head Office not less than 6 weeks (at present 3 weeks) before the A.R.M. (Min. 116).

Draft Amended By-law 35.

That existing By-law 35, be amended, **to read as follows** :—

"*Election of Representatives.*

"35. (1) Every Representative shall be elected, not more than nine months nor less than two months before the Annual Representative Meeting at which he takes office, by a General Meeting of the Constituency or by voting papers sent to each Member of the Constituency as may be determined by the Executive Committee of the Division or at a joint meeting of the Executive Committees of the Divisions forming the Constituency.

(2) The said meeting shall be convened (or where the election is by voting papers, the voting papers shall be despatched) by the Secretary of the Division forming the Constituency, or in the case of a Constituency comprising more Divisions than one, by the Secretary of the Division containing the largest number of Members or in his default by the Council.

(3) A meeting of the Members of the Constituency (convened as aforesaid) shall be held within twenty-eight days before the date of the Annual Representative Meeting, for the purpose of considering the Agenda of that Representative Meeting, and passing resolutions and instructing the Representative or Representatives thereon, and if such Meeting of the Members of the Constituency shall not be held, no Representative of the Constituency shall be entitled to attend the Representative Meeting.

(4) The person acting under Clause (2) of this By-law shall, not less than 6 weeks before the Annual Representative Meeting, give notice to the Association at the Head Office of the name and address of the Representative or Representatives elected by the Constituency, and submit satisfactory evidence as to the holding of the subsequent Meeting of the Members of the Constituency, and the Chairman of the Representative Body, or any person authorised by him in that behalf, shall, on being satisfied as to the matters aforesaid, cause a ticket of admission to the Meeting to be issued to every such Representative."

[Existing By-law 35.

"*Election of Representatives.*

35.—(1) Every Representative shall be elected, not more than nine months nor less than four weeks, before the Annual Representative Meeting at which he takes office, by a General Meeting, or by voting papers sent to each Member of the Constituency as the said Constituency may decide.

(2) The said Meeting shall be convened (or where the election is by voting papers, the voting papers shall be despatched) by the Secretary of the Division forming the Constituency, or in the case of a Constituency comprising more Divisions than one, by the Secretary of one of those Divisions to be chosen by the Secretaries of those Divisions, or if they cannot agree, by the Council.

(3) Where the election is by voting papers, a Meeting of the Members of the Constituency (convened as aforesaid) shall be held after the election, and not less than twenty-one days before the date of the Annual Representative Meeting, for the purpose of considering the Agenda of that Representative Meeting, and passing resolutions and instructing the Representative or Representatives thereon, and if such Meeting of the Members of the Constituency shall not be held, no Representative of the Constituency shall be entitled to attend the Representative Meeting.

(4) The person acting under Clause (2) of this By-law shall, not less than twenty-one days before the Annual Representative Meeting, give notice to the Association at the Head Office of the name and address and mode of election of the Representative or Representatives elected by the Constituency, and if the election was by voting papers, shall submit satisfactory evidence as to the holding of the subsequent Meeting of the Members of the Constituency, and the Chairman of Representative Meetings, or any person authorised by him in that behalf, shall, on being satisfied as to the matters aforesaid, cause a ticket of admission to the Meeting to be issued to every such Representative."]

(19) FILLING OF CASUAL VACANCY IN OFFICE OF REPRESENTATIVE :

Instruction of A.R.M. 1921.

That the name and address of the new Representative shall be forwarded as soon as may be to the Head Office (Min. 117).

Draft Amended By-law 36.

Existing By-law 36 to be amended by **inserting at end** :—

"and the person acting under Clause (2) of the last preceding By-law shall, as soon as may be, give notice to the Association at the Head Office, of the name and address of the person elected to fill the vacancy."

[Existing By-law 36.

"*Term of Office: Resignation.*

36.—(1) Every Representative of a Constituency shall come into office at the commencement of the Annual Representative Meeting next succeeding the date of his election, and shall (unless he shall die or resign) continue in office until the commencement of the Annual Representative Meeting in the following year, and shall be re-eligible.

(2) Any Representative of a Constituency may resign his office by notice in writing to the Secretary of the Division or of one of the Divisions forming the Constituency.

(3) A Constituency may, by a resolution passed by a majority of not less than two-thirds of the Members present and voting at a meeting of the Constituency specially convened for the purpose, request any Representative of that Constituency to resign his office. Any such Meeting shall be convened (in the manner provided by the last preceding By-law) upon a request in writing signed by not less than ten Members of the Constituency and delivered to the Secretary of the Division or of one of the Divisions forming the Constituency. A copy of any resolution passed at such Meeting shall be sent as soon as may be by the convenor of the Meeting to the Representative in question.

(4) A casual vacancy caused by the death or resignation of a Representative shall be filled as soon as may be by an election to be conducted in accordance with the provisions of the last preceding By-law."]

(20) Deputy-Representatives to be Elected for the Year.

Instruction of A.R.M., 1921.

That at the same time as it elects its Representative(s), each Constituency shall elect its Deputy Representative(s) for the year. (Min. 118.)

Draft Amended By-law 37.

That existing By-law 37 be amended **to read as follows:—**

"*Deputy-Representatives.*

"37. (1) Each Constituency shall elect a Member or Members of the Association (no such Member being the Representative or Deputy-Representative of any other Constituency) who (or one of whom in such order of precedence as may be fixed by the Constituency at the time of the election), shall act as Deputy in the place of any Representative of that Constituency at any Representative Meeting in the event of that Representative being unable or unwilling to attend such Meeting, and any such Deputy shall, for the purposes of such Meeting, be the Representative of the Constituency so electing him.

(2) Such Deputy shall be elected at the time and in the manner provided by By-law 35 with respect to the election of Representatives, and his name and address shall be notified under Clause (4) of that By-law.

(3) The Chairman of the Representative Body or any person authorised by him in that behalf, shall, on being reasonably satisfied that any Member is entitled under this By-law to act as Deputy at any Representative Meeting, cause to be issued to him a ticket of admission to that Meeting.

(4) The election of a Member as a Deputy under this By-law shall not constitute him a Member of a Branch Council under By-law 16, or of an Executive Committee under By-law 19, but shall entitle him to take part in any election of Members of Council under paragraph (c) of By-law 46 which may take place at, or at the time of any Representative Meeting at which he is acting as Deputy under this By-law.

[Existing By-law 37.

"*Deputy-Representatives.*

37.—(1) Each Constituency may elect a Member of the Association, or one out of several Members nominated by way of succession (not being the Representative or Deputy-Representative of any other Constituency) to act as Deputy in the place of any Representative of that Constituency at any Representative Meeting in the event of that Representative being unable or unwilling to attend such Meeting, and any such Deputy shall, for the purposes of such Meeting, be the Representative of the Constituency so electing him.

(2) Any such Deputy may be elected either (a) with authority to act generally (in the event aforesaid) at any Representative Meeting held during the year of office of the Representatives, or (b) with authority to act (in the event aforesaid) at any specified Representative Meeting or Meetings.

(3) Where the Deputy is to be authorised to act generally, he may be elected at the time and in the manner provided by By-law 35 with respect to the election of Representatives, and his name and address shall be notified under Clause (4) of that By-law. Where he is to be authorised to act only at any specified Representative Meeting or Meetings, he may be elected at any time before the holding thereof by the Constituency in General Meeting or by such Officer or Member of any Division comprised in the Constituency as may have been authorised in that behalf by the Rules of the Division or Divisions composing the Constituency or by a Resolution of the Constituency.

(4) The Chairman of Representative Meetings or any person authorised by him in that behalf, shall, on being reasonably satisfied that any Member is entitled under this By-law to act as Deputy at any Representative Meeting, cause to be issued to him a ticket of admission to that Meeting.

(5) The election of a Member as a Deputy under this By-law shall not constitute him a Member of a Branch Council under By-law 16, or of an Executive Committee under By-law 19, but shall entitle him to take part in any election of Members of Council under paragraph (c) of By-law 46 which may take place at, or at the time of, any Representative Meeting at which he is acting as Deputy under this By-law."]

(21) Place of Annual Representative Meeting

Instruction of A.R.M., 1921.

That it shall be the duty of the Council to submit to the Annual Representative Meeting a Recommendation as to where the next Annual Representative Meeting should be held. (Minute 119.)

Draft Amended By-law 38.

Existing By-law 38 to be amended **to read as follows:—**

"*Convening of Annual Representative Meetings.*

38. (1) The Council shall submit to the Annual Representative Meeting in each year a proposal as to the time and place for the holding of the Annual Representative Meeting in the following year.

(2) The Annual Representative Meeting shall be convened in every year by the Council, and shall be held at such time and place as shall have been prescribed by the Association in the previous Annual Representative Meeting, and if no time or place shall have been so prescribed, the same shall be determined by the Council.

(3) All persons who have been elected to take office as Members of Council at the close of an Annual Representative Meeting shall be entitled to take part in such Meeting."

[Existing By-law 38.

"*Convening of Annual Representative Meetings.*

38. The Annual Representative Meeting shall be convened in every year by the Council, and shall be held at such time and place as shall have been prescribed by the Association in the previous Annual Representative Meeting, and if no time or place shall have been so prescribed, the same shall be determined by the Council. All persons who have been elected to take office as Members of Council at the close of an Annual Representative Meeting shall be entitled to take part in such meeting."]

(22) 20 Constituencies to be able to call a Special Representative Meeting.

Instruction of A.R.M., 1921.

That Special Representative Meetings may be convened on the requisition of Council (as at present) or on the requisition of not less than 20 (at present 7) Constituencies. (Min. 120.)

Draft Amended By-law 39.

Existing By-law 39 (1) to be amended by (i) substituting, in line 4, for "Chairman of Representative Meetings:"—"Chairman of the Representative Body"; (ii) substituting, in line 6 for "7":—"20;" the para., as amended, **to read as follows**:—

"39. (1) Representative Meetings, other than the Annual Representative Meeting, shall be styled Special Representative Meetings and shall be convened at any time by the Chairman of the Representative Body on the requisition of the Council, or on the requisition of not less than 20 Constituencies.

[Existing By law 39.

"*Special Representative Meetings.*

39. (1) Representative Meetings, other than the Annual Representative Meeting, shall be styled Special Representative Meetings, and shall be convened at any time by the Chairman of Representative Meetings on the requisition of the Council, or on the requisition of not less than seven Constituencies.

(2) At least fourteen days' notice of such Meeting shall be given in the *Journal*, and such notice shall indicate the object for which such Meeting is convened.

(3) No business shall be dealt with by a Special Representative Meeting other than that for which it is specially convened."]

(23) Business of A.R.M.

Instructions of A.R.M., 1921.

That By-law 40 should not specify the number of members of Council to be elected by the R.B. (Min. 122).

That there should be stated as part of the business of the A.R.M.:—

". . . . to consider any resolution relating to the promotion of the medical or allied sciences or the maintenance of the honour or interests of the medical profession or of the Association which shall" (etc., as at present) (Min. 123).

That By-law 40, last line but 2, be amended, as regards consideration of matters by Divisions, to accord with Article 30 (Min. 124).

Draft Amended By-law 40.

Existing By-law 40 to be amended by (i) reading in line 3, for "Chairman of Representative Meetings," "Chairman of the Representative Body"; (ii) substituting in line 5, for "twelve members of the Council":—"such members of the Council"; (iii) inserting, in last line but 7, after "relating to":

"the promotion of the medical or allied sciences, or the maintenance of the honour, or;"

(iv.) reading in last line but 2, for "submitted through", "published in".

The By-law, as amended, **to read as follows**:—

"*Business of Annual Representative Meeting.*

40. The business of the Annual Representative Meeting shall be to elect a Representative of a Constituency as the Chairman of the Representative Body, and also a Representative of a Constituency as Deputy Chairman; to elect a President of the Association; to elect such members of the Council, and such other Officers and such members of Committees as by the Regulations or By-laws may be required to be so elected; to consider the election of Honorary Members when recommended by the Council; to appoint a place at which the next Annual Representative Meeting shall be held; to consider the Annual Financial Statement and Balance Sheet presented by the Council; to consider Reports of the Council, Reports of Committees instructed to report to such Meeting, and Reports of Branches and Motions relating to the adoption of such Reports in whole or in part; to make new By-laws, and alter and repeal By-laws, and to consider any Resolution relating to the promotion of the medical or allied sciences or the maintenance of the honour or interests of the medical profession or of the Association which shall have been adopted by any Division or Branch; provided that any such Resolution proposing material alteration of the Constitution or Policy of the Association shall have been published in the *Journal* for the consideration of all the Divisions not less than two months previously."

[Existing By-law 40.

"*Business of Annual Representative Meeting.*

40. The business of the Annual Representative Meeting shall be to elect a Representative of a Constituency as the Chairman of Representative Meetings, and also a Representative of a Constituency as Deputy-Chairman; to elect a President of the Association; to elect twelve members of the Council, and such other Officers and such members of Committees as by the Regulations or By-laws may be required to be so elected; to consider the election of Honorary Members when recommended by the Council; to appoint a place at which the next Annual Representative Meeting shall be held; to consider the Annual Financial Statement and Balance Sheet presented by the Council; to consider Reports of the Council, Reports of Committees instructed to report to such Meeting, and Reports of Branches and motions relating to the adoption of such Reports in whole or in part; to make new By-laws, and alter and repeal By-laws, and to consider any Resolution relating to the honour and interests of the medical profession or of the Association which shall have been adopted by any Division or Branch; provided that any such Resolution proposing material alteration of the Constitution or Policy of the Association shall have been submitted through the *Journal* for the consideration of all the Divisions not less than two months previously."]

(24) Chairman and Deputy-Chairman of the Representative Body.

Instruction of A.R.M., 1921.

That the Chairman and Deputy-Chairman of Representative Meetings be styled Chairman and Deputy-Chairman "of the Representative Body" respectively (Minute 179).

Draft Amended By-law 41.

Existing By-law 41 to be amended by **reading, in lines 2 and 3** (twice), for "Representative Meetings":—"the Representative Body."

[Existing By-law 41.

"*Chairman.*

41. At every Representative Meeting the Chairman of Representative Meetings, when present, and in his absence the Deputy-Chairman of Representative Meetings, when present, shall preside. In the absence of both the said Officers the Meeting shall appoint a Chairman from its own number."]

(25) Vote by Roll-Call at Representative Meetings: Card Vote.

Instruction of A.R.M., 1921.

That at Representative Meetings, voting shall be by show of hands, unless before such vote is taken 15 Representatives present request that the vote be taken by roll-call, in which event it shall, subject as below, be

so taken. If, however, upon the Chairman proceeding to take the vote of the Meeting, a vote by card is requested by a majority of the (present 20) Representatives present, the vote shall be by card. (Minute 128.)

Draft Amended By-law 42.

Existing By-law 42 (2) to be amended to read as follows:—"(2) Voting shall be by show of hands, unless before the vote is taken fifteen Representatives present request that the vote be taken by roll-call in which event it shall (subject as hereinafter provided) be so taken. If however upon the Chairman proceeding to take the vote, a vote by card is demanded by a majority of the Representatives present, the vote shall be taken by card."

[Existing By-law 42 (2).

"*Voting (in Representative Meetings).*

"(2) Voting shall be by show of hands, unless before such vote is taken twenty Representatives present request that the vote be taken by card."]

(26) NUMBER OF MEMBERS OF COUNCIL TO BE ELECTED BY R.B.: STANDING OF U.K. MEMBERS OF COUNCIL AS MEMBERS OF ASSOCIATION.

Instruction of A.R.M., 1921.

That the Council consider the desirability of increasing the number of members of Council directly elected by the Representative Body, by adding to the number of the Council for that purpose (Min. 137).

That no one shall be eligible for election as a member of Council to represent a Branch or Group in the United Kingdom, unless at the time of his or her election he or she has been a member of the Association for at least the three years immediately preceding the election (Min. 144).

The Council considers that the principle of Minute 144 should also apply to those members of Council elected by the Representatives as a whole. (By-law 46 (d)).

Draft Amended By-law 46.

Existing By-law 46 to be amended by (i.) substituting in line 1 of para. (d), for "Four", "Eight"; (ii.) inserting, in line 1 of para. (a) after "Twenty-four":—"(being persons who have been members of the Association for at least the period of 3 years preceding their respective elections)"; (iii.) and (iv.) inserting, in line 1 of para. (c), after "Twelve," and in line 1 of para. (d), after "Eight":—("being persons who have been members of the Association for at least the period aforesaid);" the By-law, as amended, to read as follows:—

"*Composition (of Council).*

46. The Council shall be composed of the members *ex officio* mentioned in the Regulations and of members elected in manner following, namely:—

(*a*) Twenty-four (being persons who have been Members of the Association for at least the period of three years immediately preceding their respective elections) by the Branches and Divisions of the Association in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned.

(*b*) Seven by the Branches of the Association not in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned.

(*c*) Twelve (being persons who have been members of the Association for at least the period aforesaid) by the elected Representatives of the Constituencies comprised in the Branches and Divisions of the Association in the United Kingdom, which Branches and Divisions shall be formed for that purpose into twelve groups as hereinafter mentioned, the Representatives of all the Constituencies in each such group being entitled together to elect one Member of Council.

(*d*) Eight (being persons who have been members of the Association for at least the period aforesaid) by the Representative Meeting, which shall have power to elect such Members at such time and in such manner as the Meeting may decide, provided that the term of office of each Member so elected shall expire at the close of the Annual Representative Meeting next following the date of his election.

(*e*) One Medical Officer on the active or retired list of each of the following Services, namely:—The Royal Navy Medical Service, the Royal Air Force Medical Service, the Army Medical Service and the Indian Medical Service, to be elected by the Representative Body from Officers nominated by the Council, but so that no Officer shall be elected who shall have retired from the active list more than five years before the election."

[Existing By-law 46.

"*Composition.*

46 The Council shall be composed of the members *ex officio* mentioned in the Regulations and of Members elected in manner following, namely:—

(*a*) Twenty-four by the Branches and Divisions of the Association in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned.

(*b*) Seven by the Branches of the Association not in the United Kingdom which shall be grouped for that purpose as hereinafter mentioned.

(*c*) Twelve by the elected Representatives of the Constituencies comprised in the Branches and Divisions of the Association in the United Kingdom, which Branches and Divisions shall be formed for that purpose into twelve groups as hereinafter mentioned, the Representatives of all the Constituencies in each such group being entitled together to elect one Member of Council.

(*d*) Four by the Representative Meeting, which shall have power to elect such Members at such time and in such manner as the Meeting may decide, provided that the term of office of each Member so elected shall expire at the close of the Annual Representative Meeting next following the date of his election.

(*e*) One Medical Officer on the active or retired list of each of the following Services, namely:—The Royal Navy Medical Service, the Royal Air Force Medical Service, the Army Medical Service, and the Indian Medical Service, to be elected by the Representative Body from Officers nominated by the Council, but so that no Officer shall be elected who shall have retired from the active list more than five years before the election."]

(27) FILLING OF VACANCY IN COUNCIL CAUSED BY FAILURE TO ELECT.

Instruction of A.R.M., 1921.

That in the event of a vacancy (other than a casual vacancy under By-law 55) among the elected members of the Council, the Council shall in its discretion take steps to fill such vacancy, either by an election conducted in the usual way, or by itself appointing a member to fill the vacancy (Min 153).

Draft Amended By-law 54.

Existing By-law 54 to be amended to read as follows:—

"*Powers of incomplete Council.*

54. (1) In default of, and until election of, a Member or Members by any body authorised to elect, or so far as such elections shall not be complete, all the powers conferred on the Council shall belong to and be exercised by the Members *ex officio* thereof alone, and such other Members (if any) of the Council as may have been duly elected by bodies authorised to elect.

(2) Provided that in the case of a vacancy in the Council occasioned by a failure to elect, the Council in its discretion may either cause the vacancy to be filled by means of an election by the Body authorised to elect, or may itself appoint a Member of the Association to fill the vacancy, and the person so elected or appointed shall retain his office as if he had been duly elected at the proper time by the Body so authorised."

[Existing By-law 54.

"*Powers of incomplete Council.*

54. In default of, and until election of, a Member or Members by any Body authorised to elect, or so far as such election shall not be complete, all the powers conferred on the Council shall belong to and be exercised by the Members *ex officio* thereof alone, and such other Members (if any) of the Council as may have been duly elected by bodies authorised to elect."]

(28) FILLING OF CASUAL VACANCIES IN COUNCIL.

Instruction of A.R.M., 1921.

(*See Min.* 179 *of A.R.M., quoted in para.* (24) *above.*)

Draft Amended By-law 55.

Existing By-law 55 to be amended by substituting, in line 5, for "Representative Meetings":—"the Representative Body."

[Existing By-law 55.

"*Casual Vacancies.*

55. Any casual vacancy occurring in the Council not less than four months before the Annual Representative Meeting amongst the Members of Council elected by Representatives of Constituencies shall be filled by the Chairman of Representative Meetings. Any other vacancy which may so occur shall be filled by the body which appointed the Member of Council whose place shall have so become vacant, and the election to fill such last-mentioned vacancy shall be conducted in the same manner as the annual election. Any person so chosen shall retain his office so long only as the Member in whose office such casual vacancy shall have occurred would have retained the same if such vacancy had not occurred."]

(29) DEPUTY-CHAIRMAN OF REPRESENTATIVE BODY.

Instruction of A.R.M., 1921.

That Section VIII. of the By-laws be amended so as to include therein, as requiring to be elected annually at the Annual Representative Meeting (in addition to the Chairman of Representative Meetings as at present), the Deputy-Chairman of Representative Meetings. (Min. 182.)

Draft Amended By-law 61.

That existing By-law 61 be amended to read as follows:—

"*Chairman and Deputy-Chairman of Representative Body.*

"61. The Chairman and the Deputy-Chairman of the Representative Body shall be elected annually at the Annual Representative Meeting, and shall enter upon the duties of their respective offices at the close of the Meeting, and shall continue in office until the close of the next succeeding Annual Representative Meeting, and shall be re-eligible. The said Chairman shall not, while holding office as Chairman, act personally as the Representative of any Constituency, but the Constituency which he represents at the time of his election to the said office shall during such time as he holds the said office be represented by a Deputy elected in manner provided by By-law 37."

[Existing By-law 61.

"*Chairman of Representative Meetings.*

"61. The Chairman of Representative Meetings shall be elected annually at the Annual Representative Meeting, and shall enter upon the duties of his office at the close of the Meeting, and shall continue in office until the close of the next succeeding Annual Representative Meeting, and shall be re-eligible. He shall not while holding office as Chairman act personally as the Representative of any Constituency, but the Constituency which he represents at the time of his election to the said office shall be entitled to select (in manner provided by By-law 37) a Deputy to act on his behalf as Representative during such time as he holds the said office."]

(30) CHAIRMAN OF COUNCIL.

Instruction of A.R.M., 1921.

(*Verbal, Min.* 183, *as below.*)

Draft Amended By-law 62.

Existing By-law 62 to be amended by reading, in line six, for "Group of Branches":—"body or bodies".

[Existing By-law 62.

"*Chairman of Council.*

"62. The Chairman of Council shall be elected by the Council from its own number, and shall hold office for such term and discharge such duties as shall be determined by the Council. During his term of office and for one year thereafter he shall be a Member of the Council *ex officio*, and for that period any Group of Branches which at the time of his election he represented on the Council shall be entitled to elect another Member of Council in his stead."]

(31) CHAIRMAN OF REPRESENTATIVE BODY.

Instruction of A.R.M., 1921.

(*Verbal, Min.* 179, *see para.* (24) *above.*)

Draft Amended By-law 64.

Existing By-law 64 to be amended by reading in line 3 and line 1 of para. (c), for "Representative Meetings":—the Representative Body".

[Existing By-law 64.

"*Vacancies in Offices.*

64. (1) In the event of the death during his term of office or the resignation of the President, the President-Elect, the Chairman of Representative Meetings, or the Treasurer, the vacancy thus created shall be filled until the next Annual Representative Meeting, in the manner following, namely:—

(a) In the case of the President, the Past-President shall discharge the duties of the office.

(b) In the case of the President-Elect, the Council shall appoint a President-Elect in his stead.

(c) In the case of the Chairman of Representative Meetings the Deputy Chairman shall discharge the duties of the office.

(d) In the case of the Treasurer the Council shall appoint a Treasurer in his stead.

(2) In the event of a vacancy occurring in any of the executive offices above mentioned through circumstances not provided for in this By-law it shall rest with the Council to make such appointment or other provision as it may deem expedient for the discharge of the duties of the said office until the next Annual Representative Meeting."]

Draft Amended By-law 68.

Existing By-law 68 to be amended by reading in line 2 for "Representative Meetings", "the Representative Body."

[Existing By-law 68.

"68. The President of the Association, the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer shall be Members *ex officio* of all Committees."]

(32) CHAIRMEN OF IRISH, WELSH AND DOMINIONS COMMITTEES.

Instruction of A.R.M., 1921.

That the Irish, Welsh and Dominions Committees shall have the same option as regards the Committee Chairman, Deputy-Chairman or Honorary Secretary being a member of the Council, as is already the case as regards the Scottish Committee (Min. 154).

Draft Amended By-law 70.

Existing By-law 70 to be amended by (i.) reading in lines 1 and 2, for "Scottish Committee"; "Scottish, Irish, Welsh and Dominions Committees"; (ii.) reading, in line 3, for "The Scottish": "Each such excepted." The By-law, as amended, to read as follows:—

"70. Each Standing Committee except the Scottish, Irish, Welsh and Dominions Committees, shall appoint from its own number a Member of Council as Chairman. Each such excepted Committee shall appoint from its own number a Deputy-Chairman, as well as a Chairman, and either the Chairman or the Deputy-Chairman or the Honorary Secretary of that Committee shall be appointed from amongst Members of Council."

[Existing By-law 70.

"70. Each Standing Committee except the Scottish Committee shall appoint from its own number a Member of Council as Chairman. The Scottish Committee shall appoint from its own number a Deputy-Chairman, as well as a Chairman, and either the Chairman or the Deputy-Chairman or the Honorary Secretary of that Committee shall be appointed from amongst Members of Council."]

(33) CASUAL VACANCIES IN CENTRAL COMMITTEES.

Instruction of A.R.M., 1921.

That each Central Committee (Standing or other) shall have power to fill any casual vacancy among its appointed members. (Min. 155.)

Draft Amended By-law 71.

Existing By-law 71 to be amended by reading, in line 1, for "Each Standing":—"Every".

[Existing By-law 71.

"71. Each Standing Committee shall have power to fill any casual vacancy arising amongst its appointed Members."]

(34) CONSULTATION BETWEEN CENTRAL COMMITTEES.

Instruction of A.R.M., 1921.

That there be a new By-law somewhat as follows:—

In respect of any matter with which it is dealing, it shall be competent for any Committee to consult, report to, or make suggestions to any other Committee of the Association. Similarly, it shall be competent for any Sub-Committee to consult, report to, or make suggestions to, any other Sub-Committee of the same parent Committee. (Min. 157.)

New Draft By-law 71A (to follow existing By-law 71).

71A. Any Committee may in respect of any matter before it consult, or make any report or suggestion to, any other Committee of the Association, and this By-law shall apply as between Sub-committees of the same parent Committee.

(35) ABSENCE FROM MEETINGS OF CENTRAL COMMITTEES.

Instruction of A.R.M., 1921.

That if an appointed member of any Committee or Sub-Committee shall be absent from 3 successive meetings of that Committee or Sub-Committee, such member shall (except in case of illness or for some reason approved by the Chairman of the Committee or Sub-Committee) be deemed to have resigned his or her membership thereof, and a casual vacancy thereupon arise. (Min. 156.)

Draft Amended By-law 72.

Existing By-law 72 to be amended to read as follows:

"72. If any appointed Member of any Committee or Sub-committee shall be absent from 3 successive Meetings of that Committee or Sub-Committee, such Member shall (except in case of illness or for some reason approved by the Chairman of the Committee or Sub-committee) be deemed to have resigned his membership thereof, and a casual vacancy shall thereupon arise."

[Existing By-law 72.

"72. If any appointed Member of a Standing Committee shall be absent from three successive Meetings of that Committee (except in case of illness or for some reason approved by the Chairman of that Committee) he shall be deemed to have resigned his membership of that Committee, and a casual vacancy shall thereupon arise."]

(36) POSSIBLE SPECIAL ASSISTANCE FOR CENTRAL STANDING COMMITTEES.

Instruction of A.R.M., 1921.

That each Standing Committee shall have power to call to its assistance for special purposes persons specially qualified to assist in any branch of its reference. (Min. 158.)

Draft New By-law 74A (to follow existing By-law 74).

74A. Every Standing Committee shall have power to call to its assistance for special purposes, persons specially qualified to assist in any branch of the subject referred to.

(37) COMPOSITION AND REFERENCE OF FINANCE COMMITTEE.

Instruction of A.R.M., 1921.

That no members be appointed to the Finance Committee by the Council or the Journal Committee. (Min. 161.)

That the reference to the Finance Committee read somewhat as follows:—"To certify the accounts prior to their presentation to the Council; to advise (a) on the administration of any funds held in trust by the Association not administered by any other Committee and of the Superannuation Fund; (b) as to the appointment of administrators for any such Funds; (c) as to the financial bearings of any proposals involving special expenditure; and (d) as to the financial position of the Association and the administration of its real estate." (Min. 164.)

Draft Amended Schedule as to Finance Committee.

Existing Schedule to By-laws, "Finance Committee," to be amended by (i.) **omitting** columns 4 and 5; and (ii.) **reading, under "Duties, Powers, etc."** as follows:—

"To certify the accounts prior to their presentation to the Council; to advise (a) on the administration of the Superannuation Fund and of any funds held in trust by the Association and not administered by any other Committee; (b) as to the appointment of administrators for any such funds; (c) as to the financial bearings of any proposals involving special expenditure; and (d) as to the financial position of the Association and the administration of its real and personal property."

[Existing Provision as to Finance Committee.

1	2	Appointed Members. 3	4	5	6
Name of Committee.	Additional Members co-opted.	Appointed by the Representative Body.	Appointed by the Council.	Otherwise appointed.	Duties, Powers, &c.
Finance	The Chairman of each of the following Committees:—Organisation, Journal, Science, Medico-Political, Central Ethical, and Insurance Acts.	4	4	2 Members appointed by the Journal Committee.	To certify the accounts prior to their presentation to the Council; to advise the Council on the administration of any funds held in trust by the Association, and of the Superannuation Fund. When necessary, the appointment of administrators for any such funds; to report to the Council and to the Representative Body on the financial bearings of any proposals involving special expenditure; to supervise and report to the Council on the general working and organisation of the Central Office]

(38) REFERENCE TO ORGANISATION COMMITTEE.

Instruction of A.R.M., 1921.

That the reference to the Organisation Committee read somewhat as follows:—

"(a) To organise systematic endeavours to maintain and increase the membership of the Association; to make reports to other Committees and the Council accordingly; and to advise and assist Divisions and Branches in the strengthening of their organisation, including the organisation of their work for the promotion of the medical and allied sciences;

(b) To advise as to the interpretation or alteration of the existing, or the adoption of new, Regulations and By-laws; as to questions of areas of existing, or formation of new, Divisions and Branches; as to grouping for electoral purposes: and as to the Rules (other than those relating to ethical matters) of Divisions and Branches and combinations thereof;

(c) To advise as to the ordinary and supplementary grants to Branches and Divisions." (Min. 166.)

Draft Amended Provision as to Duties, Powers, etc., of Organisation Committee.

Existing Schedule to By-laws, "Organisation Committee," to be amended by **reading, for existing column 6, the following:—**

"*Duties, Powers, etc.*

"(a) To organise systematic endeavours to maintain and increase the membership of the Association, to make reports to other Committees and the Council accordingly; and to advise and assist Divisions and Branches in the strengthening of their organisation including the organisation of their work for the promotion of the medical and allied sciences.

"(b) To advise as to the interpretation or alteration of the existing or the adoption of new Regulations and By-laws; as to questions of areas of existing or formation of new Divisions and Branches; as to grouping for electoral purposes and as to the Rules (other than those relating to ethical matters) of Divisions and Branches and combinations thereof.

"(c) To advise as to the ordinary and supplementary grants to Branches and Divisions."

[Existing Provision as to "Duties, Powers, &c." of Organisation Committee.

(Column 6.)

"To consider and advise upon questions affecting the interpretation or alteration of the Regulations and the By-laws; to deal with questions as to the boundaries or area, the grouping for electoral purposes, and the Rules (other than those relating to ethical matters) of Divisions and Branches and combinations thereof, and the ordinary and supplementary grants to Branches and Divisions, and to exercise such powers as may be conferred upon it by the Council in advising and assisting Divisions and Branches in the strengthening of their organisation. This Committee shall have power to add to its numbers for special purposes a limited number of Members specially qualified to assist in its work."]

(39) COMPOSITION AND REFERENCE OF JOURNAL COMMITTE.

Instruction of A.R.M., 1921.

That the Representative Body and Council (each of which at present appoints 3), shall each appoint 4 members, and the Organisation Committee one member of the Journal Committee. (Min. 167.)

That the reference to the Journal Committee read somewhat as follows:—

"To consider matters connected with the *Journal* and any other publications of the Association which do not come within the scope of other Committees." (Min. 168.)

Draft Amended Schedule as to Journal Committee.

Existing Schedule to By-laws, "Journal Committee," to be amended (i.) by reading in columns 3 and 4, for "3": "4"; (ii.) by inserting, in column 5, "one by the Organisation Committee"; (iii) by reading, for existing column 6 ("Duties, Powers, etc."), the following:—

"To consider matters connected with the *Journal* and any other publications of the Association, not coming within the scope of any other Committee."

The Schedule, as amended, **to read as follows:—**

(NOTE.—*For headings of columns see* (37) *above.*)

1	2	3	4	5	6
Journal	The Chairman of the Central Ethical Committee	4	4	1 by the Organisation Committee	To consider matters connected with the *Journal* and any other publications of the Association, not coming within the scope of any other Committee.

[Existing Schedule as to Journal Committee.

1	2	3	4	5	6
Journal	The Chairman of the Central Ethical Committee	3	3	..	To consider and report to the Council upon any matters connected with the *Journal* or other publications of the Association, and to appoint Annually two members of the Committee to serve on the Finance Committee."]

(40) DISCONTINUANCE OF PREMISES COMMITTEE.

Instruction of A.R.M., 1921.

That the Premises Committee be discontinued (Min. 165).

Draft Amended Schedule to By-laws.

Existing Schedule to By-laws "Premises Committee" **to be deleted.**

[Existing Provision for a "Premises Committee."

(NOTE.—*For headings of columns see* (37) *above.*)

1	2	3	4	5	6
Premises	.	.		..	To consider and report to the Council upon the management of the land and house property of the Association."]

(41) COMPOSITION AND REFERENCE OF SCIENCE COMMITTEE.

Instructions of A.R.M., 1921.

That the R.B. shall appoint 4 (none at present) and the Council 6 (8 at present) members of the Science Committee (Min. 169).

That the reference to the Science Committee read somewhat as follows:—

"To advise and, when so directed, act for the Council in all matters not specifically referred to other Committees which concern the work of the Association for the promotion of the medical and allied sciences, including the conditions of award of scholarships or grants given by the Association or under trusts undertaken by the Association; the arrangement of Committees for special scientific work; the provision of lecturers on scientific and clinical subjects to the Divisions and Branches or otherwise; and all matters connected with the library and its management." (Min. 170.)

Draft Amended Schedule as to Science Committee.

Existing Schedule to By-laws, "Science Committee," to be amended by (i.) inserting in column 3:—"4"; (ii.) reading,

in column 4, for "8":—"6"; (iii.) reading in column 6 ("Duties, Powers, &c.") the following:—

"To advise and, when so directed, act for the Council in all such matters as are not specially referred to other Committees and concern the work of the Association for the promotion of the medical and allied sciences, including the conditions of award of Scholarships or Grants, given by the Association, or under Trusts undertaken by the Association, the arrangement of Committees for special scientific work, the provision of lecturers on scientific and clinical subjects to the Divisions and Branches or otherwise and all matters connected with the Library and its management."

The Schedule, as amended, **to read as follows**:—

(NOTE.—*For headings of columns see* (37) *above.*)

1	2	3	4	5	6
Science	..	4	6	..	To advise and, when so directed, act for the Council in all such matters as are not specially referred to other Committees and concern the work of the Association for the promotion of the medical and allied sciences, including the conditions of award of Scholarships or Grants, given by the Association, or under Trusts undertaken by the Association, the arrangement of Committees for special scientific work, the provision of lecturers on scientific and clinical subjects to the Divisions and Branches or otherwise, and all matters connected with the Library and its management.

[Existing Provision as to Science Committee.

1	2	3	4	5	6
Science	..	..	8	..	To advise and, when so directed, act for the Council in all matters not specially referred to other Committees which concern the work of the Association for the promotion of the Medical and allied Sciences, including the conditions of award of Scholarships, Grants, or Medals (except the Gold Medal of the Association), given by the Association, or under Trusts undertaken by the Association, the assistance of the Officers of the Sections at the Annual Scientific Meeting, the arrangement of Committees for special Scientific work, the encouragement and assistance of the Scientific work of the Branches and Divisions, and all matters connected with the Library and its management. The Committee shall have power to co-opt, for the consideration of the award of Scholarships, Grants, and Medals, Members not exceeding four in number, specially qualified to assist in its work.]

(12) NAME AND REFERENCE OF "MEDICO-POLITICAL" COMMITTEE.

Instructions of A.R.M., 1921.

That the reference to the Medico-Political Committee be somewhat as follows:—

"To deal with Parliamentary and Medico-Political questions, and generally with all matters involving the public relations of the profession not specially referred to other Committees." (Min. 171.)

"That the name of the Medico-Political Committee be altered to "Medico-Political and Parliamentary Committee." (Min. 173.)

Draft Amended Schedule as to "Medico-Political and Parliamentary Committee."

Existing Schedule to By-laws under "Medico-Political" Committee to be amended by (i.) inserting in column 1, after "Medico-Political":—"and Parliamentary"; (ii.) by reading in column 6 ("Duties, Powers, etc."), the following:—

"To deal with medico-political and parliamentary questions, and generally with all matters involving the public relations of the Profession not specially referred to other Committees."

[Existing Provision as to Medico-Political Committee.

(NOTE.—*For headings of columns see* (37) *above.*)

1	2	3	4	5	6
Medico-Political	The Chairman of the Public Health Committee.	6	6	..	To deal with all matters involving the public relations of the Profession not specially referred to other Committees]

(43) REFERENCE TO NAVAL AND MILITARY COMMITTEE.

Recommendation of Council.

That inasmuch as the "Army Medical Service" includes the "Royal Army Medical Corps (Territorial)," the latter name be omitted from the statement of the "Duties, Powers, etc." of the Naval and Military Committee.

Draft Amended Schedule as to Naval and Military Committee.

Existing Schedule to By-laws, Naval and Military Committee, to be amended **by reading** in column 6 ("Duties, Power, etc."), the following:—

"To consider matters relating to the Royal Navy Medical Service, the Royal Air Force Medical Service the Army Medical Service, and the Indian Medical Service.'

[Existing Provision as to "Duties, Powers, etc.," of Naval and Military Committee:—

"To consider matters relating to the Royal Navy Medical Service, the Royal Air Force Medical Service, the Army Medical Service, the Indian Medical Service, and the Royal Army Medical Corps (Territorial)."]

(44) PROVISION FOR A (STANDING) ARRANGEMENTS COMMITTEE.

Instruction of A.R.M., 1921.

That provision be made for a (Standing) Arrangements Committee, somewhat as follows:—

The Arrangements Committee shall consist of the Officers of the Association mentioned in By-law 68. together with 6 members elected by the Council and 6 members elected by the Local Committee of Management of the Annual Meeting. The duty of the Arrangements Committee shall be to consider and advise the Council as to the appointment of Officers of Sections and Readers of Addresses at the Annual Meeting, and such other matters affecting the arrangements for the Annual Meeting as shall be referred to it. (Min. 177.)

Draft Provision for an "Arrangements Committee" (to follow Naval and Military Committee).

	Appointed Members. By R.B.	Appointed Members. By Council	Appointed Members. Otherwise.	
Arrangements	..	6	6 by the local Committee of Management of the Annual Meeting	To consider and advise the Council as to the appointment of officers of sections and readers of addresses at the Annual Meeting and as to such other matters affecting the arrangements for the Annual Meeting as shall be referred to this Committee.

(15) HONORARY SECRETARIES OF WELSH BRANCHES TO BE MEMBERS OF WELSH COMMITTEE.

Instruction of A.R.M., 1921.

That the Council consider the advisability of amending the constitution of the Welsh Committee so as to provide for inclusion of the Secretaries of the North Wales and South Wales and Monmouthshire Branches. (Min. 321.)

Draft Amended Schedule as to "Welsh Committee."

Existing Schedule to the By-laws, "Welsh Committee," to be amended by inserting, in column 2, ("Additional Members *ex-officio*"), after "Monmouthshire":—"The Secretaries of the North Wales and of the South Wales and Monmouthshire Branches."

[Existing Schedule under Welsh Committee (column 2).

"All the Members of the Council who represent Branches in Wales, including Monmouthshire."]

APPENDIX.

DRAFT FORM OF AGREEMENT BETWEEN AN INCORPORATED BRANCH AND THE ASSOCIATION.

(*See, also, pages 237 to 241 of this Supplement.*)

AN AGREEMENT made the day of 19 BETWEEN THE* BRANCH of the BRITISH MEDICAL ASSOCIATION, a Society incorporated under† and hereinafter called "the Branch" of the one part and THE BRITISH MEDICAL ASSOCIATION, a Society incorporated under the Companies (Consolidation) Act, 1908, and hereinafter called "the Association" of the other part. WHEREAS the members of the Association in the‡ of have for many years formed a Branch of the Association under and subject to the Articles of Association and By-laws (hereinafter together referred to as "the Regulations") of the Association for the time being in force. AND WHEREAS the said members lately procured themselves to be incorporated under¶ by the name of the§ Branch of the British Medical Association." AND WHEREAS the ‖Memorandum and Articles of Association‖ of the Branch were (previously to the said incorporation) submitted to and approved by the Association as required by the existing Regulations of the Association. AND WHEREAS the Association acting in pursuance of its said Regulations has consented to the use by the Branch of the words "Branch of the British Medical Association" as part of the name of the Branch upon the terms and subject to the conditions hereinafter expressed.

NOW IT IS HEREBY AGREED as follows:—

1. Subject as hereinafter provided the Branch shall continue to be a Branch of the Association, and shall be entitled to use the words "Branch of the British Medical Association" as part of its name.

2. The membership of the Branch shall be strictly confined to members of the Association save so far as non-members thereof may under the Regulations thereof for the time being in force be admissible to certain of the privileges of membership of the Association.

3. The Branch will conform to and observe the Regulations of the Association for the time being in force and applicable to Corporate Branches.

4. The Branch will not at any time hold itself out as being an Agent for, or impose, or attempt to impose, any responsibility, or liability on, or pledge, or attempt to pledge the credit of the Association.

5. The Branch will not effect or attempt to effect any alteration in the Memorandum or Articles of Association‖ thereof unless such alteration shall have been previously submitted to the Association for approval and such approval shall have been obtained.

6. The Branch shall transmit to the Association at its Head Office in London in or about the month of‖ in every year copies certified by the Secretary of the Branch as complete and correct of its ‖Memorandum and Articles of Association‖ for the time being in force.

7. If at any time the Association shall by not less than six calendar months' notice in writing to the Branch (served in manner prescribed by the Regulations for the time being of the Association) exclude the Branch from continuing to be a Branch of the Association, the Branch shall forthwith discontinue the use of the words "Branch of the British Medical Association," or of the words "British Medical Association," as part of its name, and shall cease to describe itself, or in any way to hold itself out as being a Branch of, or having any connection whatsoever with the Association.

IN WITNESS whereof the respective parties hereto have hereunto affixed their Common Seals the day and year first above written.

‖ The month in which this is to be done in each year should be specified here.

* The name of the Branch as incorporated to be specified here.
† The Act or other authority under which the Branch is incorporated to be specified here.
‡ The locality of the Branch should be stated here.
§ The Act or authority to be specified here in accordance with three next.
¶ The name of the Branch as incorporated to be specified here.
‖ Or insert the instrument of foundation or regulations of the Branch.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of the West Dorset Division will be held on Wednesday, February 1st, 1922, when Dr. J. S. Fairbairn (London) will give a British Medical Association lecture.

ESSEX BRANCH: SOUTH ESSEX DIVISION.—Further meetings of this Division will be held on January 13th, 1922, when there will be a supper at the Hotel Victoria, at 8.15 p.m., and on February 10th, at the same place, at 8.15 p.m., Dr. F. W. Price will read a paper, illustrated by original lantern slides, on "Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease." At the meeting on March 10th, at the Hotel Victoria, at 8.15 p.m., Dr. Hector C. Cameron will discuss the subject of The Child in General Practice; and on April 14th, at 8.15 p.m., there will be a supper at the Hotel Victoria.

MALAYA BRANCH. The annual meeting of the Malaya Branch will be held in Singapore on Friday, January 27th, 1922. The presidential address will be delivered by Dr. Malcolm Watson, who has selected Quinine and the Quinine Controversy for his subject. Four representatives of the Association will be elected members of the S.S. and F.M.S. Medical Council, under the constitution of the Medical Ordinance. Dr. W. J. Dixon will make an appeal on behalf of the Royal Medical Benevolent Fund. The annual dinner will be held in the evening, and the Watson Cup Competition will take place on the following afternoon.

STAFFORDSHIRE BRANCH: SOUTH STAFFORDSHIRE DIVISION.—A meeting of the South Staffordshire Division and the Wolverhampton Panel Committee will be held on Thursday, January 5th, 1922, when the Deputy Medical Secretary, Dr. G. C. Anderson, will give an address on "National Health Insurance matters and the Organization of the Profession." The address will be preceded by a dinner at the Victoria Hotel, Wolverhampton, at 8.15 p.m.; tickets, 8s. 6d., exclusive of wine (morning dress). Members intending to be present at the dinner are requested to notify the Honorary Secretary, Dr. H. C. Mactier, 33, Tettenhall Road, Wolverhampton, by December 29th.

SURREY BRANCH: KINGSTON-ON-THAMES DIVISION.—The following programme of meetings has been arranged: January 10th, 1922, address by Dr. F. W. Price, "Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease." February 7th, address by Mr. J. Cunning, F.R.C.S., "Some Conclusions in Abdominal Surgery." March 7th, address by Dr. William Brown, "Psychology and Psychotherapy." May 2nd, Annual General Meeting. All the meetings will be held at the Surbiton Cottage Hospital (by kind permission of the staff and committee) at 8.30.

COLLECTIVE ARRANGEMENTS FOR LOCUMTENENCIES.

THE LEICESTER SCHEME.

MANY readers will be aware that a scheme for collective locumtenencies during holidays or sickness has been in operation at Leicester for the past three years. We learn from Dr. W. Moffat Holmes, honorary secretary, Leicester Subdivision of the Union of Medical Practitioners, that this scheme has been so much appreciated by the local medical profession that it has now become a continuous arrangement.

At a recent meeting of the Committee a statement of the working of the scheme for the six months ended September 30th, 1921, was presented; this showed that during the summer period thirty-three doctors attended patients under the scheme and eighteen availed themselves of the facilities afforded. Approximately £243 was contributed to the pool, and the expenses of printing, stationery, postage, etc., amounted to £7 18s., thus leaving about £235 for distribution among those practitioners who did the work.

By the courtesy of Dr. Moffat Holmes we are able to reproduce below the detailed arrangements for the working of the scheme. It will be seen from paragraph 9 that the amount of money remaining after general expenses have been deducted is divided in accordance with a system of units, each private patient counting as three units, and other patients as one each. During the six months under review the number of such units amounted to 2,997 and the rate of payment per unit worked out at 1s. $6\frac{7}{6}$d.

A similar scheme is in operation for the winter months for sickness and short holidays, the rate of contribution to the pool being four guineas a week during illness and eight guineas a week during holidays. The index cards used for recording the particulars of attendances are of three kinds—namely, for private patients, for panel patients, and for public medical service (P.M.S.) patients—each card being of a different colour.

Scheme for Collective Locumtenencies During Holidays or Sickness.

1. A nominal roll of the practitioners prepared to enter into the scheme will be compiled by the Manager of the P.M.S.

2. Each practitioner going away or becoming ill will inform the Manager, and make payment at the rate of £4 4s. a week for the first or second week, £6 6s. for the third or fourth week, and £8 8s. for the fifth or any further week, during the time he is away from duty.

3. The general expenses of the scheme will be a first charge on this pool.

4. Appropriate cards, on which practitioners doing work under the scheme are required to enter the necessary particulars, will be provided. In the case of private and panel patients a separate card should be used for each patient attended, and on it entered the name and address of patient, the name of the patient's doctor, and a detailed list of visits, consultations, etc. It will be sufficient if the name and address of each P.M.S. or club patient is entered once however many attendances are made, and the names of several patients of the same doctor may be entered on one card.

5. The absent practitioner will arrange for the patients who require treatment to be informed of the doctor or doctors responsible for attendance verbally or by notice attached to his door. In the case of any difficulty experienced in obtaining treatment the patient should be referred to the Manager of the P.M.S. Two methods are suggested for the allocation of the work.

(*a*) *Scheme Adapted Best for Local Practices.* Patients may be allotted to definite practitioners on definite days. Thus if Dr. X were away a notice on his door might refer patients coming on Monday to Dr. Y., on Tuesday to Dr. Z., etc. Dr. X. would, of course, get the consent of Drs. Y. and Z. to this allocation before his departure.

(*b*) *Scheme Adapted Best for Scattered Practices.*—Patients may be allocated to the doctor on the rota of paragraph 1 whose residence is nearest to their own.

In either case the doctor who sees the case first will continue attendance throughout.

6. A practitioner may undertake any case, but definitely undertakes responsibility for patients allotted to him under paragraph 5.

7. With regard to absence from practices for any cause except illness each doctor will notify the Manager of the P.M.S. with at least seven days' notice of the dates of his departure and return, for the general information of the practitioners entering into the scheme.

8. Confinements, insurance examinations, and lunacy cases do not come within the scope of the scheme.

9. On September 30th all cards will be returned to the Manager of the P.M.S. and the number of patients counted, each Panel, P.M.S., or other Contract patient counting as one unit, and each private patient as three units. The balance of the pool will then be divided in proportion to the number of units to the credit of each practitioner.

10. Practitioners who dispense for contract patients must arrange for the dispensing being done during their absence, either at their own surgery or at the dispensaries of the P.M.S. If the latter arrangement is desired the terms can be ascertained on communicating with the Manager of the P.M.S.

11. The scheme to be confined to Leicester.

12. No practitioner is eligible to avail himself of the benefits of the scheme unless he is also prepared to do some of the work of absent members.

March, 1921.

THE WILLESDEN HEALTH POLICY.

IN a leading article in the JOURNAL of November 26th, 1921 (p. 908), comment was made on a leaflet issued recently by the Willesden Urban District Council. The main items in the scale of charges for medical services were quoted in our article, but it may be well to place on record in the SUPPLEMENT the actual terms of the leaflet—of which copies were before the Council of the British Medical Association when it discussed this subject on December 14th. (See *Proceedings of Council* printed at p. 234.)

WILLESDEN URBAN DISTRICT COUNCIL.

Health Department.

MEDICAL SERVICES—SCALE OF CHARGES.

The Council, at its meeting on July 26th, 1921, decided to make the following Charges for Medical Services as from October 1st, 1921:

Persons for Whom the Medical Services are Available.

The Medical Services established by the Council are open to Mothers and Children under 5 years of age resident in Willesden, and all Children attending Willesden Public Elementary Schools.

Ordinary Benefits.

On payment at the Municipal Clinics of a Registration Fee of 2s. 6d. per person, the following Ordinary Benefits will be available for one year from the date on which the Registration Fee is paid:

Out-patient Medical and Dental Care, supervision and treatment of Mothers and Children under 5 years of age resident in Willesden, and Children attending Willesden Public Elementary Schools, including the benefit of the following:

(*a*) Mothers' Clinics.
Baby Clinics.
Minor Ailment Clinics.
Throat, Nose and Ear Clinics.
Eye Clinics.
Ringworm Clinics.
Dental Clinics.
(*b*) Specialist Consultations.
(*c*) Prescriptions.
(*d*) Home Nursing.

Additional Benefits.

Additional Benefits are available at the followin Scale of Charges:

Provision of Artificial Teeth	... Cost Price.
,, Surgical Instruments	... Cost Price.
,, Spectacles	... 2s. 6d.
Repairs to Spectacles	... 1s. 0d.
In-patient Treatment at the Municipal Hospital as follows:	
Confinement Cases	£2 (inclusive fee).
Operative Treatment of Tonsils and Adenoids	7s. 6d. ,,
Diseases of Women	3s. 0s. per day.
Diseases of Children up to School-leaving Age	1s. 6d ,,

The Council reserve to themselves the right to vary these Charges as may be required.

General Conditions.

The Council will consider the remission of the above Charges (excepting Repairs to Spectacles, 1s. 0d.; and the Registration Fee, 2s. 6d.) in cases whose circumstances are below the Council's Scale.

The Council reserve to themselves the right to refuse treatment where accommodation or equipment is not available.

GEORGE F. BUCHAN,
Medical Officer of Health.

Town Hall, Dyne Road Kilburn, N.W.6,
September 7th, 1921.

DENTAL BOARD OF THE UNITED KINGDOM.

AT the meetings of the Dental Board of the United Kingdom held on December 7th, 8th, and 9th, the following matters were dealt with at 44, Hallam Street, London, W.:

Premises.—The Board resolved to take a lease of the vacant ground to the north of the office of the General Medical Council, and to erect suitable offices thereon.

Victoria, Australia.—The Board considered a letter from the Dental Board of Victoria, asking for information in regard to

the Dentists Act, 1921, especially as dentists registered in the United Kingdom are eligible for registration in the State of Victoria. A reply was sent suggesting that no action should be taken at present to alter the law admitting practitioners registered in the United Kingdom to practise in the State.

Solicitor.—The Board appointed Mr. Charles J. S. Harper to be its solicitor.

Regulations under the Dentists Act, 1921.—The Board considered and adopted regulations to be transmitted to the General Medical Council and to the Privy Council for their approval, and in due course to be laid before both Houses of Parliament.

Publication of the Names of those Applying for Registration.—The Board accepted an offer from the British Dental Association to publish these names in its journal.

An account of the opening of the first session, with a summary of the chairman's address, appeared in last week's SUPPLEMENT at p. 228.

Insurance.

LONDON PANEL COMMITTEE.

THE second annual dinner of the Local Medical and Panel Committee for the County of London was held on December 15th, when a very successful evening was spent under the presidency of Dr. H. J. CARDALE, Chairman of the Committee. Considerably more than a hundred members and guests were present.

The health of the Committee was proposed by Mr. R. W. HARRIS, Assistant Secretary, Ministry of Health, who pointed out the special responsibility which rested upon insurance practitioners in London, where Ministers, members of Parliament, and writers for the press formed first-hand opinions of an insurance medical service which still remained a great experiment. It was not too much to say that upon the spirit of the doctors engaged in insurance practice in London depended the ultimate success or failure of the national insurance system.

Dr. LAURISTON SHAW, in responding to the toast, said that what had been described as a great experiment had after ten years established the fact that no system of medical service could possibly succeed except on the firm foundation of the goodwill of the general medical practitioner.

Sir THOMAS NEILL, Chairman of the London Insurance Committee, and Dr. SMITH WHITAKER replied for the visitors, the latter remarking that the success of the insurance service depended on no body more than on the Panel Committees. When the testing time came, and another system was suggested as an alternative, the present system would not be judged by this or that detail, but by the degree of its success in giving to the insured the kind of service they ought to have.

Other speakers were Dr. E. A. GREGG, Dr. FRANK COKE and Dr. ETHEL ALLMAN, and the evening's entertainment was rounded off by a musical programme and a dance.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments are notified by the Admiralty:—Surgeon Commander E. F. Ellis to Malta Dockyard. Surgeon Lieutenant Commanders: F. C. Hunot to R.N. Hospital, Haslar; A. C. Paterson to the *Barham*.

Surgeon Lieutenants C. M. Williams and H. F. Stephen have been promoted to the rank of Surgeon Lieutenant Commander.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel and Brevet Colonel M. H. G. Fell, C.B., C.M.G., is restored to the establishment.

Captain E. G. S. Cane, D.S.O., relinquishes the temporary rank of Major.

Temporary Captain E. C. A. Smith relinquishes his commission on appointment to the Indian Medical Service.

Temporary Captain S. P. Snook relinquishes his commission, September 14th, 1921, and retains the rank of Captain (substituted for the notification in the *London Gazette*, July 19th, 1921).

ROYAL AIR FORCE MEDICAL SERVICE.

Group Captain D. Munro, C.I.E., to be Air Commodore.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captains to be Majors: J. Inkster, G. R. Ward, A. R. Dale, M.C.

TERRITORIAL ARMY RESERVE.

ROYAL ARMY MEDICAL CORPS.

Major A. Greenwood, from General List, R.A.M.C., to be Lieutenant-Colonel.

DEFENCE FORCE.

ROYAL ARMY MEDICAL CORPS.

Temporary Colonel F. H. Westmacott, C.B.E., T.D., relinquishes his temporary commission, July 12th, 1921 (substituted for notification in the *London Gazette*, September 1st, 1921).

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Colonel E. M. Callender, C.B.E., having attained the age limit, is retired, and retains the rank of Lieutenant-Colonel, with permission to wear the prescribed uniform.

Major R. C. Righet (Lieut.-Colonel ret., T.F.) reverts to the retired list and retains his rank, with permission to wear the prescribed uniform.

The following officers, having attained the age limit, are retired, and retain their rank, except where otherwise stated: Lieut.-Colonel J. Allison, T.D., with permission to wear the prescribed uniform; Lieut.-Colonel P. C. Smith, C.B.E., Majors W. W. Jones, T.D., and R. P. Ryan, with permission to wear the prescribed uniform; Major A. Robertson, O.B.E., Major P. B. Spurgin (substituted for notification in the *London Gazette* of December 5th, 1921); Captains A. Baxter, and is granted the rank of Lieutenant-Colonel, A. N. S. Carmichael, D. G. Kennard, A. E. Ridsdale, and J. Wood, and are granted the rank of Majors, R. A. Burditt, H. A. Beetham, H. W. Lance, J. S. Clarke, F. G. Vicars.

The following officers have relinquished their commissions and retain their rank except where otherwise stated: Captains P. H. G. Gosse, C. G. Brentnall, M.C., A. L. Bodley, M.C., J. Graham (and is granted the rank of Major), J. W. M. Jamieson, A. W. Sutherland, J. M. Kirkness; Lieutenant E. V. Suckling (1st London, C. of L., Sanitary Company).

Supernumerary for service with O.T.C.: Captain P. H. Mitchiner, from General List, R.A.M.C., T.A., to be Captain, for service with the medical unit of the University of London O.T.C., February 5th, 1919. Captain I. W. Corkey (late R.A.M.C.) to be Captain, for service with Dublin University Contingent (Medical Unit), Senior Division, O.T.C., April 23rd, 1920 (substituted for notification in the *London Gazette*, April 22nd, 1920). Captain T. B. Layton, D.S.O., from General List, R.A.M.C., T.A., to be local Major, and to command a section of the Medical Unit of the London University Contingent, Senior Division, July 31st, 1920 (substituted for notification in the *London Gazette* of August 25th, 1920). Captain F. A. E. Crew to be Major and to command the Medical Unit of the Edinburgh University O.T.C., June 21st, 1921 (substituted for notification in the *London Gazette* of August 25th, 1921).

4th Northern General Hospital.—Major D. J. G. Watkins, having attained the age limit, is retired, and retains the rank of Major.

British Medical Association.

OFFICES AND LIBRARY, 429, STRAND, LONDON, W.C.2.

Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate, Westrand, London).
MEDICAL SECRETARY (Telegrams: Medisecra, Westrand, London).
EDITOR, *British Medical Journal* (Telegrams: Aitiology, Westrand, London).
Telephone number for all Departments: Gerrard 2630 (*3 lines*).

SCOTTISH MEDICAL SECRETARY: 6, Rutland Square, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 4361 Central.)
IRISH MEDICAL SECRETARY: 16, South Frederick Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 4737 Dublin.)

Diary of the Association.

JANUARY.

4 Wed. London: Hospitals Committee, 2.30 p.m.
5 Thurs. South Staffordshire Division: Wolverhampton, Address by Deputy Medical Secretary, Dr. G. C. Anderson; preceded by dinner at Victoria Hotel at 8.15 p.m.
10 Tues. Kingston-on-Thames Division, Surbiton Cottage Hospital, 8.30 p.m.: Address by Dr. F. W. Price on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease.
13 Fri. South Essex Division: Supper, Hotel Victoria, 8.15 p.m.
20 Fri. North of England Branch, Royal Victoria Infirmary, Newcastle-upon-Tyne: Scientific Demonstrations, 2.15 p.m.

FEBRUARY.

1 Wed. West Dorset Division: B.M.A. Lecture by Dr. J. S. Fairbairn.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W. Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations.

APPOINTMENTS.

ALEXANDER, J. Browning, M.D., M.R.C.P.Lond., Physician with Charge of Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park, E.

MOFFATT, C. W. Paget, M.B., B.C., D.P.H.Lond., Medical Officer of Health for the Borough of Bolton.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

DEATHS.

DILWORTH.—On December 4th, after a short illness, Timothy Francis Moya Dilworth, M.B., M.Ch., B.A.O., N.U.I., Senior Demonstrator of Anatomy at St. Thomas's Hospital.

ELLIOTT.—On December 19th, after a short illness, at 21, Nicholas Street, Chester, John Elliott, M.D.Lond., F.R.C.P.Lond., in his 61st year.

MIDDLETON.—On Thursday, December 8th, at 81, Dorset Road, Bexhill, William Robert Colvin Middleton, M.A., M.D., C.M., D.P.H., late Medical Officer of Health of Singapore, S.S., for twenty-seven years, son of the late Rev. William Middleton, M.A., Chaplain of Kurrachee.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, DECEMBER 31ST, 1921.

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British Medical Association.

CURRENT NOTES.

Dispensing Capitation Fee.

We recorded in this column on December 10th, p. 221, that representatives of the Insurance Acts Committee had lately discussed the dispensing capitation fee with representatives of the Ministry of Health. The proposal to reduce the dispensing fee for insurance practitioners who dispense their patients' drugs was further discussed on December 20th between the Ministry and the following members of the Insurance Acts Committee: Dr. J. P. Williams-Freeman, Dr. Wood Locket, Dr. T. Cuming Askin, Dr. H. B. Brackenbury, with the Medical and Deputy Medical Secretaries. The case put forward by the members of the Committee was based upon a Memorandum which was afterwards sent to the Ministry, and is printed in the SUPPLEMENT this week.

Fee for Notification of Infectious Diseases.

It has been found necessary to refer again to the seemingly endless topic of the fee for notification of infectious diseases. The Current Note of December 3rd was inserted because there were good grounds for the belief that the full fee, which came into operation on September 1st, was not being paid to medical practitioners everywhere. That misapprehension undoubtedly exists is supported by the fact that a correspondent, in an official position, who should have been fully informed, challenged the truth of the statements made in these columns on the subject and only admitted his error when he had been requested to peruse carefully all the official pronouncements relevant thereto. Another correspondent makes the definite statement that in his area the 1s. fee is still being paid. There is, therefore, evidence that the full fee is not yet being paid all over the country. Medical practitioners are advised to scrutinize carefully the fees paid to them since September 1st, not only for notification of infectious cases but also for cases of tuberculosis, and to see that they are getting the correct amount for each case—namely, half a crown.

Fees for Examination of Emigrants.

Several letters have been received lately calling attention to the scale of fees offered by the Commonwealth of Australia and other Dominions—Canada, New Zealand, South Africa, and Newfoundland—for the examination of emigrants to those countries. The fees offered are as follows: 10s. 6d. for an adult, 15s. for man and wife, 2s. 6d. for each child; with a limit of £1 1s. for one family. Before this scale was published the opinion of the British Medical Association was asked by the Chief Medical Officer to the Commonwealth of Australia. The Medico-Political Committee took the matter into consideration, and, as the Chief Medical Officer strongly pressed for a low fee in consideration of the fact that most of the emigrants would be ex-soldiers, it decided to suggest 10s. 6d. for adults and 2s. 6d. for children. Subsequently the Committee was again urged by the Chief Medical Officer to fix an even lower fee, but it was pointed out to him that no further reduction could be agreed to if such responsible work was to be carried out properly. The Association is therefore not responsible for a "reduction on quantity" principle involved in the 15s. fee for man and wife or for the £1 1s. limit, nor does it propose to ask its members to accept such limitations. The responsibility involved in filling up these certificates is very great—a mistake made may entail the emigrant being sent back after selling up his home and making the voyage. A fee of 10s. 6d. for each adult and 2s. 6d. for each child is therefore very moderate.

A Part-time Ophthalmic Surgeon.

The Beckenham Education Committe erecently proposed to appoint a part-time ophthalmic surgeon at a salary of 1½ guineas per session of three hours. The minimum salary laid down by the Representative Body for this class of appointment is 3 guineas for a session not exceeding two and a half hours, and the Beckenham Education Committee was informed accordingly. In addition an Important Notice was inserted in the advertisement pages of the JOURNAL. A reply has now been received from the secretary of the Education Committee intimating that his committee has agreed to the Association's minimum. This is another instance of the effective use which can be made of the Important Notice in the JOURNAL.

Meetings of Branches and Divisions.

BORDER COUNTIES BRANCH.

A GENERAL meeting of the Border Counties Branch was held at Penrith on December 9th. In the temporary absence of Dr. Edington (the President), Dr. CRERAR took the chair.

Dr. MACDONALD (Penrith) gave, in the Pensions Electrical Treatment Room, a practical demonstration of electrical nerve-muscle testing. Dr. CAIRD (Carlisle) showed a series of cases of tendon transplantation. Dr. ROSS (Carlisle) showed a case of trephining for glaucoma.

Tea was taken at the George Hotel, and afterwards, with the PRESIDENT in the chair, Dr. CONNELL (Carlisle) read a paper on the use of x rays in pulmonary tuberculosis, and showed in illustration a number of plates and skiagrams.

Mr. NORMAN MACLAREN (Carlisle) opened a discussion on voluntary hospitals organization, with special reference to Cumberland, and explained with maps and statistics the present conditions. This was followed by a long and interesting discussion.

NORFOLK BRANCH.

A MEETING of the Norfolk Branch was held at the Norfolk and Norwich Hospital on November 23rd.

The President, Dr. R. C. M. COLVIN-SMITH (Cromer), who was in the chair, informed the meeting that the Branch Council had appointed the following to fill offices which had become vacant: President-elect, Dr. A. J. Cleveland; Vice-Presidents, Dr. D. T. Belding and Dr. H. Ellis Rowell.

Dr. A. CROOK (Norwich) read a paper on albuminuria and pregnancy, and Dr. G. P. C. CLARIDGE (Norwich) read a paper

on our present knowledge of vitamins. Both papers were much appreciated and were freely discussed. Afternoon tea was then served and the meeting closed.

SOUTHERN BRANCH: PORTSMOUTH DIVISION.

A MEETING of the Portsmouth Division was held on December 14th. A vote of sympathy was accorded to Dr. Fraser, M.O.H., with reference to the proposed reduction of his salary by £150 per annum. A resolution was also adopted expressing the opinion that the salary of £1,250 for an M.O.H. of an important borough such as Portsmouth, with a population of 250,000, was an unworthy one.

A resolution was carried affirming that the minimum scale laid down by the British Medical Association regarding the salaries of whole-time school medical officers should be adhered to.

Dr. STANLEY WHITE gave an interesting address on ductless glands, which was illustrated by lantern slides.

SOUTH WALES AND MONMOUTHSHIRE BRANCH: SWANSEA DIVISION.

A MEETING of the Swansea Division was held on December 15th, when Dr. ROBERT KNOX, radiologist to King's College Hospital and to the Cancer Hospital, Fulham Road, gave a British Medical Association lecture on radium-therapy, with special reference to the treatment of malignant diseases, illustrated by lantern slides.

Dr. KNOX, after a brief survey, historical and physical, of *x* rays and radium, claimed that their proper place in malignancy was as adjuncts of the greatest service to, not as substitutes for, the surgeon. He appealed for a combination of the three as most essential for efficient treatment of every case of cancer. The "striking distance" of radium, though much greater than that of *x* rays, was shown to be very limited, whence he advocated the use of multiple needles or tubes containing the radium, to space out the growth. One maximum of attack, including in this both quantity of radium and duration of application, to follow operation immediately, was preferred to medium doses at recurrent intervals of a few months. Treatment in non-operable cases was also dealt with. The use of radium in non-malignant diseases was then referred to, being extolled in certain uterine conditions—for example, fibromyomata, menorrhagia, etc. In naevi it was stated to be superior to any other treatment, especially when given in moderate dosage over periods extending up to or beyond a year, but its use in port-wine stains was deprecated.

At the termination of the lecture a hearty vote of thanks was, on the motion of Dr. H. E. QUICK, Chairman of the Division, accorded with acclamation to Dr. Knox for his address.

Subsequently the members, to the number of 50, entertained Dr. Knox to dinner, which was presided over by Dr. EDGAR REID, gynaecologist to the Swansea Hospital. Dr. J. M. MORRIS (Neath) having proposed the health of the guest, Dr. KNOX narrated his experience in general practice in South Wales. He said that after graduating in Edinburgh his first post was that of assistant to the late Dr. Naunton Davies, to whose memory he paid the highest tribute as the beau-ideal of a medical practitioner. Dr. Knox stated that he was firmly convinced that general practice was the only portal through which medical specialization should be sought, and he urged that every qualified practitioner after having obtained a sound experience in general practice was in a position and ought to pursue some speciality for which he found himself adapted. The CHAIRMAN, in response to repeated calls, gave some anecdotes—golfing, gynaecological, religious, and Scottish. A most enjoyable function was brought to a close by a cordial vote of thanks to Dr. Urban Marks, secretary of the Division, for the excellent arrangements he had made for the gathering.

SUSSEX BRANCH: HASTINGS DIVISION.

A MEETING of the Hastings Division was held at the East Sussex Hospital on December 6th, when Dr. HESSEY presided. Dr. O'LOUGHLIN showed an interesting case of pseudo-hypertrophic paralysis and Dr. REED showed a patient apparently cured of severe psoriasis. The chief business of the evening was a paper by the Chairman, Dr. HESSEY, on the use of colour in the treatment of disease. A hearty vote of thanks was accorded to Dr. Hessey for his interesting communication.

Executive Committee.—At a committee meeting, held on December 15th, Dr. A. E. LARKING proposed "that the Executive Committee of the Hastings Division strongly objects to the insertion of letters of the character as written by 'Venerealee' in the JOURNAL of November 26th, especially as he is a layman." This was seconded by Dr. G. H. HOWE and carried unanimously.

MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH: WEST DORSET DIVISION.—A meeting of the West Dorset Division will be held on Wednesday, February 1st, 1922, when Dr. J. S. Fairbairn (London) will give a British Medical Association lecture.

DUNDEE BRANCH.—At a meeting of the Dundee Branch to be held on Wednesday, January 11th, 1922, Professor Robert Jardine will give a British Medical Association lecture on "Eclampsia."

ESSEX BRANCH: SOUTH ESSEX DIVISION.—Further meetings of this Division will be held on January 13th, 1922, when there will be a supper at the Hotel Victoria, at 8.15 p.m., and on February 10th, at the same place, at 8.15 p.m., Dr. F. W. Price will read a paper, illustrated by original lantern slides, on "Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease." At the meeting on March 10th, at the Hotel Victoria, at 8.15 p.m., Dr. Hector C. Cameron will discuss the subject of The Child in General Practice; and on April 14th, at 8.15 p.m., there will be a supper at the Hotel Victoria.

SURREY BRANCH: KINGSTON-ON-THAMES DIVISION.—The following programme of meetings has been arranged: January 10th, 1922, address by Dr. F. W. Price, "Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease." February 7th, address by Mr. J. Cunning, F.R.C.S., "Some Conclusions in Abdominal Surgery." March 7th, address by Dr. William Brown, "Psychology and Psychotherapy." May 2nd, Annual General Meeting. All the meetings will be held at the Surbiton Cottage Hospital (by kind permission of the staff and committee) at 8.30 p.m.

SUSSEX BRANCH: HASTINGS DIVISION.—A meeting of the Hastings Division will be held at the East Sussex Hospital on January 3rd, 1922, at 8.30 p.m. A general discussion on Experiences in Midwifery will be opened by Dr. Gover, and it is hoped that all present will join in.

Insurance.

THE DISPENSING CAPITATION FEE.

THE following is the case put forward by the Insurance Acts Committee against the proposal of the Ministry of Health to reduce the present dispensing fee for insurance medical practitioners:

Prior to 1920 there was a general belief amongst dispensing practitioners that the varying amounts received for dispensing did not cover the outgoings, though from the nature of the case it was very difficult to prove this by figures. They therefore asked for and accepted the 2s. capitation fee on the number on their lists as a fixed payment to cover the average cost in both good and bad years.

It was generally felt that in 1920 the 2s. was not enough, but the Insurance Acts Committee took no action as they looked upon it as of the nature of an agreed premium. That the Ministry took the same view is shown by the fact that, though the chemists demanded and obtained an increase in that year to meet increased expenses, no increase was made to the doctors nor was the Insurance Acts Committee informed that such an increase had been found necessary for the chemists.

When the reduction of the treatment capitation fee was notified to the doctors in October last, no hint was given that a reduction would also be made in the dispensing capitation fee, and, rightly or wrongly, rural practitioners accepted the reduction on the assumption that the dispensing fee, which was already being assessed upon agreed principles—like the mileage grant—would be left alone. This fresh proposal to reduce their insurance income has therefore produced an extremely bad impression on the mind of the rural practitioner—"almost a breach of faith" is an expression frequently heard—and, if persisted in, will undoubtedly cause discontent quite out of proportion to the actual loss of money, and will react very unfavourably on the satisfactory working of the insurance service.

General Considerations.

It is not easy to arrive at the real cost per head of dispensing by a rural practitioner. Few men keep an accurate record of all the "rep. mists." and refills for their club and pauper patients, and without these, which constitute a large proportion of their dispensing, the most accurate record of the medicine dispensed for insured persons is valueless unless each prescription is separately priced—an obvious impossibility for the general practitioner. It has, however, been found by the Mileage Committee that the number of visits paid to insured persons is almost exactly one-third of those paid to all patients, and since private patients probably receive rather more visits as compared with attendances than do insured persons, the assumption that insured persons consume one-third of the medicine dispensed will be rather under than over the mark.

The cost of dispensing to a rural practitioner falls under four heads:

(*a*) Cost of drugs and containers;
(*b*) Carriage of medicines;
(*c*) Value of doctor's time, or, alternatively, dispenser's salary;
(*d*) Cost of rent and maintenance of dispensary;

and working out these costs for the last five years on these lines in a typical practice almost entirely a dispensing one—the following figures are arrived at:

	1916.	1917.	1918.	1919.	1920.	1921 (First half)
Average number of insured persons on list	835	859	804	833	857	949½
Average number of *dispensing* insured persons on list	819	813	779	803	869	922
Expenses.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
(*a*) Cost of drugs, bottles, etc.	85 14 9	79 11 11	109 2 1	93 17 1	105 6 5	40 0 2
(*b*) Carriage of medicines.	3 9 7	3 7 10	3 16 3	3 9 3	1 17 6	1 10 0
(*c* Salary of dispenser	79 10 0	88 13 0	89 18 0	100 11 3	145 14 11	63 18 4
(*d*) Rent, maintenance, etc.—dispensary only	33 13 4	33 13 4	33 13 4	33 13 4	33 13 4	16 6 8
Total	202 7 8	205 6 1	236 9 8	231 10 11	287 12 2	121 15 2
Total cost of insured persons (one third)	67 9 3	68 8 8	78 16 9	77 3 8	95 17 5	40 11 8
Rate per head of *dispensing* insured persons on list	19·7d.	20·2d.	24·2d.	23·0d.	26·4d.	21·1d.
Cost of drugs only per dispensing insured person	8·4d.	7·8d.	11·2d.	9·3d.	9·7d.	6·9d.
Receipts.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
From Insurance Committees—total	49 17 2	52 10 5	49 9 7	54 14 7	86 18 6	46 1 6
Rate per head of *dispensing* insured persons on list	14·6d.	15·5d.	15·4d.	16·3d.	24d.	24d.
Rate paid to chemists (but reckoned on actual numbers of insured persons)	—	17d.	22d.	21d.	26d.	25d.

It will be seen that each of the five years shows a loss varying from 2·4d. per insured person to 8·8d. This loss was suspected by many rural practitioners before 1920, but was not fully realized by some owing to the confusion introduced by the floating sixpence and to the mistaken impression that the rate was paid on the dispensing insured persons on the doctors' (inflated) lists, instead of on the real numbers as determined for central pool purposes. The present 2s. capitation is so based, but it nevertheless fell short of the cost in 1920 by 2·4d. per head of the number on the above practitioner's list. It is extremely difficult from the various statements to get clear figures for comparison as to the cost of drugs per head. The 2s. capitation fee is, as stated, based on the numbers on the total, more or less inflated, lists of the Insurance Committees. The rate given at the foot of the table supplied by the Ministry is, however, arrived at by dividing the total cost of all payments for drugs (including the 2s. capitation fee) by the actual number of insured persons as estimated for the purposes of the Central Pool—including, of course, the persons on the doctors' dispensing lists for whom the 2s. is paid. Were these insured persons and their 2s. capitation fees excluded from the calculation, the cost of drugs supplied by chemists per insured person would, of course, be somewhat higher, and the 2s. fee for 1920 and 1921 be shown to have been still more inadequate. The rate given by the Pricing Bureaux is, on the other hand, based on the numbers on the Committees' lists, and are therefore only comparable with the doctors' 2s. But a comparison of our dispensing capitation fee with the money received by the chemists is not necessary, as the whole case put forward by the Committee is that the dispensing practitioner is not on a par with the chemist; that the conditions under which he works are quite different; and that he is entitled to higher remuneration on many grounds.

The Act assumes, and many practitioners agree, that a separation of prescribing and dispensing is desirable. This is impossible under present conditions in village practices where there is no chemist, but the making up of bottles of medicine, mixing of ointments, and weighing out ingredients; the ordering of drugs, comparing of price lists, packing and unpacking of hampers, etc., is not the practitioner's proper function; it is a waste of professional time, and should be paid for at a higher rate than is paid to the chemist, whose trade it is.

This service is an enforced one to enable the Ministry to fulfil its obligations under the Act. However much rural practitioners may dislike it, and however little the Government may choose to pay for it, this class of practitioner is compelled by regulation, if he dispenses at all, to do so for insured persons. The chemist can refuse the Government terms and often does so; the doctor cannot. All compulsory service carries with it a moral obligation for generous remuneration.

Special Considerations.

Apart from these general considerations there are certain special points which differentiate between the conditions of the chemist and the doctor.

Wholesale druggists charge higher prices to doctors than to chemists. The result of three experimental orders showed a difference of 15 per cent. against the doctor. It is said that, as a set-off against this, the rural practitioner is only obliged to stock such drugs as he is in the habit of using, but most doctors buy unusual drugs now and again for special cases, which results in much waste of surplus material. It is said by practitioners in small country towns that it is quite as common for the chemists to borrow expensive drugs from them as for them to apply to the chemist.

Contrary to what was expected when the Act came into force, it is probable that the insured persons in really rural areas receive more medicines from the doctor than are prescribed by doctors in town areas, for the reasons (*a*) that many persons in a town district get the chemists to prescribe for them in minor ailments or buy some much advertised proprietary medicine without going to the doctor. In rural areas, on the contrary, the doctor has to be applied to for the cough medicine or the box of pills. (*b*) In town districts serious and chronic cases are often treated in hospitals either in the wards or the out-patient department; the village doctor, on the other hand, has to supply all drugs and dressings through many prolonged cases.

Many chemists aver that the actual dispensing for insured persons yields little or no direct profit, but that everybody who enters the shop is a potential customer and the profit is made on such things as soap, scent, and proprietary articles. To the doctor there are no such compensations.

The chemist has fixed hours. He can—and often does—refuse to dispense for late comers and emergencies. The doctor not only has to dispense for emergencies at all hours but the man with the punctured bicycle, or the child delayed by the rain, who arrives from a distant village after he has at last shut up the surgery and started dinner, has to be attended to in deference to common humanity, if not to the Regulations.

There are two services which the rural practitioner has to undertake from which the chemist is completely free—that is, arrangements for the sending of medicines and the supply of containers. Neither is obligatory under the Regulations; neither is financially important, but both have to be undertaken if the patient is to benefit from medicinal treatment, and the first, at least, is one of the constant minor worries of the day's work. Planning how a patient six or more miles away in the country can get his medicine, trying to remember which are the carriers' days or the bakers' days, or which postman delivers to an outlying house, trying to arrange to drop the medicine on one's round, sending the bottle to the post office or the postman's house overnight, packing bottles in parcel post boxes, etc.—all this constitutes a perpetual drain on one's attention and temper. It is simply futile to say that it is not in the contract. Like supplying the forgotten bottle to the penniless child messenger, it has to be done if the patient is not to suffer, and it ought to be taken into consideration in fixing the dispensing fee.

Conclusion.

The Insurance Acts Committee hopes that the foregoing considerations may convince the Minister that the rural practitioner's services in dispensing have not been adequately remunerated in the past: that they do not run parallel with those of the chemist, and ought not to be rigidly subject to the same financial fluctuations; and that the 2s. capitation fee should be regarded as a premium which has not been sufficient hitherto, and since there has been a loss in 1920 and 1921, it should be continued for at least the next two years now that prices are beginning to come down.

Finally, the Committee is bound also to point out that efficient prescribing by dispensing doctors is entirely in their own hands; that it cannot be checked by any supervision, medical or lay; that though the vast majority of insurance practitioners treat their panel and their private patients in exactly the same way as regards drugs, the memory of the bad old days, when in some practices the "Clubbers" were treated from a few cheap stock bottles, is not yet extinct, and that the loss to the practitioner or the gain to the Treasury of the proposed reduction are small indeed compared to the loss to the efficiency of the service which will result if the dispensing practitioners feel—as in the opinion of the Committee they will justly feel—that they have been meanly treated by the Government in the matter of drugs.

429, Strand,
December, 1921.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notifications are announced by the Admiralty:—Surgeon Commanders F. C. B. Gittings to the *Repulse*; H. P. Jones to the *Victory*, additional, for R.N. Barracks, Portsmouth; A. H. H. Vizard to the *Dryad* (Navigation School); S. Roach to the *President*, additional, for R.N. College and Hospital School, Greenwich; R. S. Osborne to the *Orion*; P. H. M. Star to the *President*, additional, for R.N. Recruiting Headquarters; N. H. Harris, to the *Crescent* for Rosyth Dockyard; L. M. Morris, O.B.E., to the *Woolwich* (temporary); W. E. Gribbell to the *Vivid*, for Devonport Dockyard; W. H. Hastings to the *Inconstant*; W. H. Pope, O.B.E., to the *President*, additional, for recruiting duties, Southampton; R. J. Mackeown, O.B.E., to the *Vernon*; D. H. C. Given to the *Victory*, for R.N. Barracks, Portsmouth, on technical staff of: Commander in Chief as Naval Health Officer.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

Major R. J. Cahill, D.S.O., relinquishes the acting rank of Lieut.-nant-Colonel.

Captain C. H. Stringer, D.S.O., relinquishes the temporary rank of Major.

The following temporary Captains relinquish their commissions and retain the rank of Captain: H. P. Hodge, H. J. Brink.

J. O. Cuthbertson, late Captain R.A.M.C.(T.F.), to be temporary Captain with seniority of June 20th, 1916.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

Captain W. W. Shorten relinquishes Army commission on appointment to a permanent commission in the R.A.F., August 1st, 1919 (substituted for notification in the *London Gazette*, October 19th, 1920).

ROYAL AIR FORCE MEDICAL SERVICE.

Flight Lieutenants granted permanent commissions with effect from July 13th, 1920, retaining their present substantive ranks and seniority (the notifications in the *London Gazette* of July 13th, 1920, appointing these officers to short service commissions are cancelled): W. F. Wilson, P. A. Hall, H. B. Troup, E. G. O'Gorman, T. J. X. Canton.

TERRITORIAL ARMY.

ROYAL ARMY MEDICAL CORPS.

Major F. G. Hobson, D.S.O., to be Lieutenant and relinquishes the rank of Major.

To be Captains: Captain R. L. Williams, D.S.O., M.C., from 5th Battalion Welsh Regiment, with precedence as from April 7th, 1916, Captain W. A. Robertson, M.C., from T.A. Res., with precedence as from April 1st, 1915, Lieutenant A. S. L. Malcolm.

Captain M. T. G. Clegg resigns his commission and retains the rank of Captain.

Lieutenant J. Bowen-Jones, late R.A.M.C., to be Lieutenant, with precedence as from December 1st, 1915.

The following officers, having attained the age limit, are retired, and retain their rank, except where otherwise stated: Lieut.-Colonels C. A. Goullet, T.D., and J. W. Nicholson, T.D., with permission to wear the prescribed uniform. Major (Brevet Lieut.-Colonel) H. W. Laing. Majors V. Graham, T.D., D. A. Hughes, T.D., J. P. Brown, D.S.O., T.D., S. F. Barber, and H. Stallard, with permission to wear the prescribed uniform. Captain (Brevet Major) A. A. Jubb, and is granted the rank of Major. Captain A. Ricketts, C.M.G., and is granted the rank of Major. Captains T. N. Thomas, J. R. Garrood, F. F. C. Lasker, P. L. Wood, H. W. Godfrey, T. R. W. Adkins.

Supernumerary for service with O.T.C.: Captain A. E. Webb-Johnson, C.B.E., D.S.O., from General List, R.A.M.C., T.A., to be Major [illegible] with the Medical Unit of the London University Contingent, Senior Division, O.T.C.

British Medical Association.

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Reference and Lending Library.

THE READING ROOM, in which books of reference, periodicals, and standard works can be consulted, is open to members from 10 a.m. to 6.30 p.m., Saturdays 10 to 2.

LENDING LIBRARY: Members are entitled to borrow books, including current medical works; they will be forwarded, if desired, on application to the Librarian, accompanied by 1s. for each volume for postage and packing.

Departments.

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Diary of the Association.

JANUARY.

4 Wed. London: Hospitals Committee, 2.30 p.m.
5 Thurs. South Staffordshire Division: Wolverhampton, Address by Deputy Medical Secretary, Dr. G. C. Anderson; preceded by dinner at Victoria Hotel at 8.15 p.m.
9 Mon. London: Central Ethical Committee, 2.15 p.m.
10 Tues. London: Whitley Council Subcommittee, 2.15 p.m.
Kingston-on-Thames Division, Surbiton Cottage Hospital, 8.30 p.m.: Address by Dr. F. W. Price on Recent Advances in the Diagnosis, Prognosis, and Treatment of Heart Disease.
11 Wed. London: Post-Graduate Courses Committee, 2.30 p.m.
Dundee Branch: B.M.A. Lecture by Professor Jardine on Eclampsia.
12 Thurs. Cleveland Division, Middlesbrough: Address by the Medical Secretary.
13 Fri. Darlington Division, Greenbank Hospital: Address by the Medical Secretary, 8.30 p.m.
South Essex Division: Supper, Hotel Victoria, 8.15 p.m.
17 Tues. Lambeth Division, Carlton Club, 376, Coldharbour Lane, S.W.: Address by the Medical Secretary, 9.30 p.m.
London: Naval and Military Committee, 2.30 p.m.
18 Wed. London: Organization of Medical Students Subcommittee, 2.15 p.m.
20 Fri. North of England Branch, Royal Victoria Infirmary, Newcastle-upon-Tyne: Scientific Demonstrations, 2.15 p.m.
24 Tues. London: Organization Committee.
25 Wed. London: Medico-Political Committee, 2.30 p.m.
27 Fri. London: Public Health Committee, 5 p.m.

FEBRUARY.

1 Wed. West Dorset Division: B.M.A. Lecture by Dr. J. S. Fairbairn.
7 Tues. Kingston-on-Thames Division, Surbiton Cottage Hospital, 8.30 p.m.: Address by Mr. J. Cunning on Some Conclusions in Abdominal Surgery.
8 Wed. Lancaster Division: B.M.A. Lecture by Dr. T. Eastham, on "Medical Men and their Legal Difficulties."

DIARY OF SOCIETIES AND LECTURES.

ROYAL SOCIETY OF MEDICINE. *Section of Surgery:* Wed., 5.30 p.m., Discussion on Post-operative Embolism and Infarction, to be opened by Mr. J. P. Lockhart-Mummery followed by Mr. Victor Bonney, Professor Collingwood, Sir Charles Gordon-Watson, and Dr. Arthur Latham. *Section of Obstetrics and Gynæcology:* Thurs., 8 p.m., Mr. Beckwith Whitehouse: (*a*) Salpingotomy *versus* Salpingectomy in the Treatment of Tubal Gestation; (*b*) Specimen of Tubal Lithopaedion. Mr. John B. Hunter: Note of a Case of Diffuse Carcinoma following Cancer of Cervix (illustrated). Mr. Aleck W. Bourne: Hyperthyroidism in Functional Menorrhagia.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith, W.—Daily, 10 a.m., Ward Visits; 2 p.m., In- and Out-patient Clinics and Operations.

APPOINTMENTS.

HIGGINS, James Basil, M.B., Ch.B.Vict., Honorary Assistant Radiologist to the Salford Royal Hospital.

KING, William S., M.B., Ch.B.St. And., Medical Officer of Health for Stirling.

MITCHINER, P. H., M.S.Lond., F.R.C.S.Eng., Surgeon with Charge of Out-patients, Royal Northern Hospital, London.

RIMMER, Ralph, M.B., Ch.B.Liverp., Assistant Bacteriologist in the Health Department of the Bradford Corporation.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 9*s.*, *which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.*

BIRTH.

POOLE.—December 19th, at Point House, Magdalen Road, Norwich, to Dr. Frederick and Dr. Mary Poole, a daughter.

DEATH.

COOK.—On December 25th, 1921, at 29, Hayes Road, Clacton-on-Sea, John Weil Cook, M.D., M.R.C.S., aged 85 years. Funeral at Colchester Cemetery on Thursday, December 29th, at 12 noon.

Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London.

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EPITOME

OF

Current Medical Literature.

JULY TO DECEMBER, 1921.

London:

PRINTED AND PUBLISHED AT THE OFFICE OF THE BRITISH MEDICAL ASSOCIATION.
429, STRAND, W.C.

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READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral; Heart and Cardiac; Liver and Hepatic; Renal and Kidney; Cancer and Carcinoma, Epithelioma, Malignant Disease, New Growth, Sarcoma, etc.; Child and Infant; Bronchocele, Goitre, and Thyroid; Diabetes, Glycosuria, and Sugar; Eye, Ophthalmia, and Vision, etc.

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Printed and published by the British Medical Association at their Office, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of London

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. Diphtheria Bacillus Carriers.

MOSS, GUTHRIE, and GELIEN (*Johns Hopkins Hosp. Bulletin*, April, 1921), in investigating diphtheria bacillus carriers in an orphan asylum, found that from a total of 270 cultures taken from 81 inmates 56 (20.7 per cent.) were positive, and 30 (37 per cent.) of the 81 children showed positive cultures at some time, though none of these developed diphtheria and none gave a history of previous exposure to the disease. No cases of diphtheria developed among the associates of these carriers, nor had there been any cases of the disease for twenty-three years. Virulence tests, carried out on 44 of the 56 positive cultures, proved the cases to be non-virulent. No one but the investigators knew of the presence of the carriers, and the daily life and routine of the orphanage was not in any way interfered with, yet neither the carriers nor their associates developed the disease. At the end of twelve weeks the incidence of positive cultures dropped from 32 per cent. to 5 per cent., and in view of these findings it is concluded that the carriers of non-virulent diphtheria bacilli are not a menace to the community. A positive throat culture, elevation of temperature and a pathological throat condition, without definite membrane formation, are insufficient evidence for a certain diagnosis of diphtheria, and that virulence tests are necessary in order to avoid inflicting needless hardships on such carriers.

2. Treatment of Infantile Pneumonia.

FISCHER (*Med. Record*, May 14th, 1921) regards the leucocyte count as the best prognostic sign, a high count denoting a good resistance and prognosis. Toxins can best be eliminated by stimulating the excretions. Aconite with acetate of ammonia followed by a warm pack once a day promotes diaphoresis, caffeine or digitalis being administered if necessary for the cardiac condition, or adrenaline in 5, 10, or 20 minim doses as a cardiac stimulant. Large quantities of water, by mouth or by colonic instillation, should be given. A low leucocyte count can be increased by the administration of 10 to 20 c.cm. of leucocytic extract once a day until a count of 20,000 or 25,000 is attained. Fresh air, warmed to 65° or 70° to avoid chilling of the body, is needed. In high fever the loss of fluid to the tissues can be made up by hypodermoclysis of 4 oz. physiological saline solution daily, or by warm (105°) saline colonic irrigation twice daily. A teaspoonful of a saline aperient each morning should be given to ensure daily elimination through the bowels. Careful feeding to supply proper nutrition is essential, yolk of raw egg in broth, or milk and steak juice being useful stimulants, with gruels and carbohydrates should acidosis indicate carbohydrate starvation. Fruit juices are useful, as being palatable and thirst quenching.

3. Simulation of Phthisis by Chronic Nasopharyngeal Affections.

FESTAL (*Journ. de Méd. et de Chir. Prat.*, March 25th, 1921) states that chronic disease of the upper respiratory tract sometimes so closely resembles incipient or advanced pulmonary tuberculosis that one should be on one's guard to avoid making this error. In some cases the patients have for some time shown a change in their general condition, more or less considerable loss of flesh, and a state of general lassitude with slight rise of temperature. As a rule, these symptoms are accompanied by an obstinate paroxysmal cough with expectoration, which is most abundant on waking up in the morning. On percussion of the pulmonary apices the finger meets with a certain resistance, and in the supraclavicular or supraspinous fossa. There is a diminution in the intensity of the note which amounts to a definite impairment of resonance. On auscultation there is a diminution in the intensity of the vesicular murmur, with prolonged expiration and adventitious sounds in the form of small crepitant or subcrepitant râles. *X*-ray examination in such cases shows a diminution in the transparency of the pulmonary apices, with or without enlargement of the tracheal glands. All the signs and symptoms of pulmonary tuberculosis are thus present, but repeated examination of the sputum fails to show any tubercle bacilli. In most of these cases rhinological examination shows nasal obstruction with muco-purulent or purulent secretion, whether the condition be due to malformation of the septum, hypertrophy of the inferior turbinate bones, chronic empyema of the sphenoid, frontal or maxillary sinuses, atrophic rhinitis, or adenoids. In most of the cases the course of the disease is latent and insidious. Treatment consists in appropriate operative or special treatment, and within two or three months there is usually a complete change in the patient's condition.

4. Radium Treatment of Ringworm.

MAZZONI and PALUMBO (*Il Policlinico*, Sez. Prat., April 11th, 1921), from January, 1919, to February, 1921, treated 132 cases of ringworm by applications of radium at the Florence Dermatological Clinic. There were 116 cases of tinea tonsurans, of which 84 were cured and the rest were still under treatment or lost sight of; 6 cases of favus, of which 5 were cured and 1 was still under treatment; and 10 cases of sycosis barbae, of which 5 were cured and the rest were still under treatment or lost sight of. The treatment consisted in applying a starched cap previously modelled to the patient's head, extending about 2 cm. beyond the hairy scalp. Upon the cap were fixed hexagonal applicators containing filtered radium with about 6 cm. interval between each applicator. The cap was kept in position by a bandage, which also served to protect the radium. Two sittings were found sufficient to produce complete depilation. Fresh growth of hair began at a period varying from twenty-five to thirty days after complete loss of the hair, the reappearance of the hair being preceded by a profuse downy growth. The patients did not complain of any local or general disturbance during or after the treatment, nor was there any cutaneous reaction except a very slight erythema in one of the cases of favus. The advantage of the method over *x*-ray treatment consisted in the uniform and constant action of a given quantity of radio-active substance applied under the same conditions. In *x*-ray treatment, on the other hand, the quantity and quality of the rays varied from one moment to another owing to various causes.

5. Paraffin in Dermatology.

KISSMEYER (*Ugeschrift for Laeger*, April 7th, 1921) has experimented at the Finsen Institute in Copenhagen with two substances containing paraffin. One of these was "ambrine," which was extensively used during the war for burns. The composition and manufacture of this preparation is, apparently, a trade secret, and the author has devised a similar preparation, "parasan" the composition of which he publishes. It consists of 1 part of resina benzoe, 5 parts of resina elastica electa, and 100 parts of neutral paraffins with a melting point of 52° C. Sterility was secured by repeated heating to a high temperature. While the principal indication for these paraffin preparations has hitherto been burns, the author extends it to various conditions of the skin, such as eczema, varicose ulcers, neurodermatitis, intertrigo, fissures, and chilblains. Among his 84 cases were 23 of eczema, and in this disease he considers the use of "ambrine" or "parasan" an important advance. He gives details of cases showing how eczema, which had persisted in spite of vigorous and varied treatment, responded rapidly. The technique consists in melting the preparation, painting it over the lesion, and then covering it with a thin layer of cotton-wool, over which in successive layers are placed a second film of the paraffin mixture, cotton-wool, and a gauze bandage. The dressings are changed daily or, if the lesion is freely discharging, twice a day. The author has seen no ill effects from this treatment, the success of which he believes depends partly on the direct therapeutic effect, partly on the immediate and permanent relief from itching.

6. Silver-Salvarsan.

ANGELI (*Il Policlinico*, Sez. Prat., March 28th, 1921) states that experiments carried out in Germany on animals have shown that the chemo-therapeutic effect of silver-salvarsan is twice as great as that of salvarsan and three times as great as that of neo-salvarsan, so that 0.10–0.30 gram of silver-salvarsan corresponds to 0.30–0.60 gram of neo-salvarsan. The silver in the molecule of silver-salvarsan, by increasing the specific affinity of salvarsan for the *Spirochaeta pallida*, not only renders the preparation more effective against the parasite, but also exercises a favourable action on syphilitic tissue. The clinical results of treatment by silver-salvarsan, according to Angeli, are as

follows: In the primary stage silver-salvarsan acts much more rapidly and effectively on the chancre than any other substance, so that in a few days the ulcer cicatrizes and becomes covered with epithelium. In the secondary stage the roseola disappears rapidly, often within twenty-four hours of the injection, and in a few days, after one or at most two injections, the mucous patches on the palate, pharynx, tonsils, vulva, and perianal region also disappear. In the tertiary stage gummata also show the beneficial effects of the drug. In pregnancy it can be used fearlessly. Angeli has had no experience of it in the treatment of congenital syphilis.

7. Metabolism in Pellagra.

SULLIVAN, STANTON, and DAWSON (*Archiv. Int. Med.*, April 15th, 1921) studied the urine in pellagra for any variation in normal constituents, the presence of physiologic bases, and the presence of abnormal constituents. The excretion of phosphates was less than that in normal people, especially in the actively pellagrous state, although the diet was generous, with abundance of milk. The presence of indican pointed to a heightened putrefactive process in the intestines, and in about 50 per cent. of the cases the presence of casts or albumin, or both, was evidence of kidney change, though marked pellagra can occur without any evidence of such change. The excretion of total nitrogen and the ordinary ingredients was low, as also was the urea ratio, suggesting liver insufficiency. The ratio for ammonia nitrogen and undetermined nitrogen was heightened. The creatinin coefficient was much below normal, and its low excretion, together with a low excretion of uric acid, showed that the metabolic level during the active stage of the disease was low. The utilization of protein was subnormal even after several weeks of remedial diet, but after at least a month's curative dietary containing a higher protein content and a higher calorie value the urinary ingredients approximated normal in amounts, the urea rising, and the ammonia ratio falling, to normal. The disease may be differentiated into at least two types: (1) with marked skin symptoms, but with little physical degeneration; and (2) with slight skin symptoms, but with profound systemic involvement, the abnormality in the urinary findings being greater in the latter.

8. Treatment of Asthma by Tracheal Injections.

BALVAY (*Paris méd.*, April 23rd, 1921) has treated a large number of cases of essential and symptomatic asthma by intratracheal injections of 2 c.cm. of a mixture containing camphor, paraisopropyl metacresol, melaleucin, and essence of thyme in an oily medium, the injections being given daily for four or five days, another at intervals of four or five days, or ten to fifteen days, according to the age and intensity of the asthmatic attacks. Balvay claims that the method is safe and painless, and gives immediate and favourable results. It also prevents the development of further attacks. It may be performed at all ages, except in infancy. Albuminuria and cardiac lesions are not contraindications.

SURGERY.

9. Local Anaesthesia in Fractures.

HAGENBACH (*Schweiz. med. Woch.*, May 26th, 1921) comments on the fact that the value of local anaesthesia in fractures seems to be given lip-service only; few deny its usefulness in this sphere, but few follow the logical sequence of this admission. The author has used local anaesthesia in thirteen cases of Colles's fracture, and in five cases of fracture of the foot below the knee. He considers the injection of an anaesthetic at the site of the fracture unsatisfactory, as it is apt to be painful, to promote sepsis, and to be comparatively inert owing to the dilution of the anaesthetic by effused blood. Accordingly, he injects the anaesthetic—a 1 per cent. solution of novocain-suprarenin—two to three fingerbreadths above the fracture, and he deposits the anaesthetic in a circle closely embracing the fractured bone. It is seldom necessary to establish anaesthesia of the more superficial tissues by subcutaneous deposits of the anaesthetic. But this subcutaneous anaesthesia should supplement the deep bony anaesthesia when the fracture is compound. In but one of his 13 cases of Colles's fracture was the anaesthesia only partial, and the fault in this case was probably due to inferior quality of the anaesthetic. A Colles's fracture may, indeed, be set without an anaesthetic by quick, vigorous manipulation, but as this is very painful, the surgeon is apt to desist before he has secured complete correction. The author describes a case of fracture-dislocation at the ankle in which local anaesthesia was used before an attempt was made to correct the displacement. The *x* rays showed that the setting was faulty; renewed manipulation was accordingly required, and this, under local anaesthesia, was completely successful. The author points out that the patient would surely not have submitted to the second manipulation had not the first proved practically painless. Stress is also laid on the remarkable degree of muscular relaxation effected by local anaesthesia.

10. Fundamental Principles of Thoracic Surgery.

MEYER (*Med. Record*, April 9th, 1921) urges the observance of three main principles as the basis for safe and rapid progress in thoracic surgery, in order to eliminate its dangers as completely as possible. These are: (1) The avoidance of acute pneumothorax, or acute operative collapse of the lung, during the operation; (2) the avoidance of acute post-operative pneumothorax as the result of efforts to render the exudate harmless; and (3) the avoidance of anything that favours the development of a post-operative pneumonia. Suitable arrangements should be made for safe intrathoracic work by employing one of the four methods of differential air pressure so as to avoid sudden collapse of the lung, and only in emergency work should such methods be dispensed with if not readily to hand. Post-operative drainage must be air-tight, so that the lung is able to remain distended while free drainage is obtained. Such absolute air-tightness of the drainage tube is only necessary for two or three days while the lung is distending and adhesions are forming. In order to avoid post-operative pneumonia it is important to select the proper type of differential pressure apparatus for general anaesthesia, with precautionary preparations against possible difficulties. By the use of regional and local anaesthesia aspiration of intrabronchial contents into the lung tissue is avoided, and, in patients accustomed to the introduction of the bronchoscope, thorough aspiration of the bronchial tree by a trained bronchoscopist may be adopted.

11. Goitre Operations and After-Effects.

BERRY (*Brit. Journ. of Surg.*, April, 1921) reports experience on a further series of 500 goitre operations, with special reference to after-results, ranging over a period of six years. Dyspnoea is the most common and important reason for operating, thyroidectomy being preferable to tracheotomy, seeing that the dyspnoea is due to pressure which a tracheotomy may not relieve. In bilateral compression removal of one lobe may not be sufficient to relieve the dyspnoea, or may even make it worse by allowing the already compressed trachea to be kinked by being pushed over to the side from which the lobe has been removed. It is not always the most prominent or most obvious portion of the goitre which is the actual cause of the compression, and a careful examination of the root of the neck is needed, by *x* ray if possible, lest the wrong half or portion of the goitre should be removed, and no relief obtained. Before operating for a malignant goitre it is important to note not only whether the gland moves on swallowing, but whether it moves also upon the larynx and trachea, lest at operation it be found so hopelessly incorporated with the trachea as to render removal out of the question. The operation for exophthalmic goitre is more dangerous than most operations for simple goitre with dyspnoea, and many acute cases unsuitable for hemithyroidectomy will benefit by ligation of the superior thyroid arteries. Recurrent laryngeal nerve paralysis is a complication which is at times unavoidable in large deep-seated tumours. Tetany sometimes follows complete thyroidectomy, but in the author's opinion it is doubtful whether this operation is ever necessary.

12. Acute and Subacute Osteomyelitis of the Spine.

PLENZ (*Deut. med. Woch.*, April 14th, 1921) observes that by 1915 Volkmann was able to collect as many as sixty-two recorded cases of acute osteomyelitis of the spine, and that since then other cases have been recorded. After giving details of three cases of acute or subacute osteomyelitis of the spine, one of which was traced to staphylococcal tonsillitis, and another to furunculosis, the author points out that, while in some cases the correct diagnosis is easily made by a conscientious examination, in others the symptoms are so varied that nothing short of a necropsy is likely to disclose the true state of affairs. The symptoms may point chiefly to the pulmonary or renal systems, and if the cord is involved, symptoms referable to the nervous system may dominate the clinical picture.

The author gives the following characteristics: (1) As in other cases of acute inflammation of the bone marrow there are signs of severe general disease, with high fever, rigors, albuminuria, generalized pain and a typhoid or septic state. (2) Leucocytosis may be excessive. (3) Local tenderness is combined in some cases with a bossy swelling near the affected vertebra and there is also limitation of movement. (4) With involvement of the lower thoracic vertebrae and of the lumbar vertebrae, the above signs may be supplemented by meteorism, distension of the veins of the abdominal wall, and pain when the bodies of the affected vertebrae are palpated through the abdominal wall.

13. Non-operative Treatment of Scoliosis.

TILESTON (*Journ. orthopædic Surg.*, Vol. II, 1921), in discussing the non-operative treatment of true rotary structural lateral curvature of the spine, aims at stopping the deforming process, lessening existing deformity, and assuring its non-return, by the use of—separately or in conjunction—corrective plaster of Paris jackets, with pressure paddings and negative window spacing, and specific intensive exercises with retention brace. Each case must be treated individually and the varying general condition watched by measuring the deformity at regular intervals at each change of the plaster jacket, while the intensive exercises are being taken. Succeeding records should show the deviation of the spine, standing and lying prone; the relative carriage of the shoulders, standing; the relation of the upper trunk lean to a spinal perpendicular, standing; and the rotation of the spine, lying prone. An alternation of plaster corrective jackets, of retention brace, and of intensive exercises, gives the most satisfactory results, the position of the patient when the jacket is applied being responsible for improving posture and shoulder carriage, the successive paddings taking care of the spinal deviation and rotation. A retention brace must hold the correction so attained, and be capable of accurate self-application and of extensibility and lateral compressibility to meet growth and progressive deformity decrease. Exercises must be progressive, intensive, and aim at correcting all the elements of deformity, especially rotation. Natural support may gradually replace artificial, but the paralytic scoliotic will require a larger proportion of artificial support than is required by those whose trunk muscles are not paralysed. In severe paralytic cases operative bone fixation by internal splinting may be necessary.

14. Treatment of Joint Injuries.

COHEN (*New York Med. Journ.*, May 18th, 1921) claims that Willems's treatment of joint injuries is applicable to civil as well as to hospital practice, and results in normal function without ankylosis. The operative treatment consists of joint puncture in simple arthritis, arthrotomy where foreign bodies are present, with immediate complete closure without irrigation after their removal, and in suppurative arthritis leaving the joint wide open. Arthrotomy should be performed by longitudinal incisions, unilateral or bilateral according as the discharge is scanty or profuse, avoiding a U-shaped incision, and never inserting a drain into a joint cavity. Post-operative treatment consists in immediate active mobilization of the joint as soon as the patient is out of the anaesthetic, the movements being actively and continuously performed by the patient with maximum excursions early under nursing supervision. The results claimed are complete drainage, apyrexia, limitation of infection to the synovial membrane, and elimination of post-operative muscular atrophy, the only contraindications being displacements of fragments due to mobilization, and destruction of ligaments and capsule at the time of the injury.

15. ELSING (*New York Med. Journ.*, May 18th, 1921) urges the wider application of Willems's treatment in knee-joint injuries, the synovial membrane being completely closed after flushing the joint with Dakin's or salt solution and pure ether, except in septic cases, when no attempt is made at primary suture in order to allow for daily irrigation of the joint cavity, active motion being started at once and repeated day and night every two hours.

16. Gonorrhoea in Childhood.

VALENTIN (*Deut. med. Woch.*, May 26th, 1921) has examined 161 girls in a hospital for children suffering from gonorrhoea, and has tried to ascertain the frequency with which the structures adjoining the vagina were involved. She found that the urethra was infected in every case. She is more reserved in her judgement as to involvement of the bladder; in 41 consecutive cases she took every precaution (washing the vulva, syringing the urethra with a solution of protargol, and examining only catheter urine) to obtain uncontaminated urine for examination, and she found the gonococcus in 30 cases. But she could not satisfy herself that these gonococci had not been simply displaced from the urethra without securing a foothold in the mucous lining of the bladder. In her examination of the cervix for gonococci she took numerous precautions to avoid contamination of the exploring platinum needle by the vaginal discharge, and in 17 cases of acute gonorrhoea she found 7 with gonococcal infection of the cervix. But in 37 cases of chronic and healed gonorrhoea the cervix was never found infected. The rectum was infected in all but 2 of the 94 children submitted to a bacteriological examination of the rectum.

OBSTETRICS AND GYNAECOLOGY.

17. Hepatic Insufficiency with Acidosis in Pregnancy.

LABBÉ, HUGUENET, and NEVEUX (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 21st, 1921), who record an illustrative case, consider that hepatic insufficiency plays the chief part in the toxaemia of pregnancy, especially in cases associated with acidosis. Their patient was a woman, aged 24, who in the seventh month of pregnancy developed headache, dyspnoea, tachycardia, pain in the epigastrium, and uncontrollable vomiting. Transient improvement followed bleeding, but the dyspnoea and tachycardia persisted. Gerhardt's and Legal's reactions were strongly positive, and a considerable quantity of acetone was found in the urine. Considerable but temporary improvement resulted from administration of sodium bicarbonate by mouth and intravenously. Induction of abortion aggravated the condition and death took place the following day. No naked-eye lesions were found *post mortem*, but histological examination showed well-marked degeneration of the liver in both mother and foetus. All the other organs were healthy. The writers are of opinion that if examination of the urine were made systematically by accoucheurs cases of hepatic insufficiency would be found to be more frequent in obstetric practice. Not all the cases are equally grave. Some are curable and even mild in character. Cases with acidosis are the most severe. The writers conclude by saying that the study of the hepatic function in pregnancy is as important as the study of the renal functions and examination for albuminuria.

18. Utero-placental Haemorrhage.

OF 50 cases of utero-placental (so-called "accidental") haemorrhage, LEE (*Journ. of Obstet. and Gynec. of the British Empire*, vol. 23, No. 1, New Series) found 18 per cent. to be primigravidae; a history of abortion was less frequent than in other subjects. Neither trauma nor undue shortness of the umbilical cord played any etiological part, but albuminuria was present in 84 per cent. and toxaemia (shown by headache, vomiting, oedema, etc.) in 34 per cent. The cases are classified as (1) external (14 per cent.), the effused blood escaping *per vias naturales*, (2) internal (36 per cent.), the blood being entirely retained *in utero*—this group includes retroplacental haematomata, for the most part unrecognizable clinically; (3) combined (50 per cent.), free escape of blood being associated with considerable uterine retention of blood. The treatment advised for these three classes of case is as follows: (1) In external cases in which a slight bleeding has ceased, expectant treatment may result in the pregnancy coming to term. For more serious cases, in which pains are always present, rupture of the membranes, tight binding, administration of pituitary extract, and (if the haemorrhage is alarming) vaginal plugging should be carried out; plugging, however, is associated with some risk of rupture of the uterus. (2) In cases of internal haemorrhage attempts to stimulate the paralysed uterus increase the shock and are contraindicated; rupture of the membranes diminishes the intrauterine tension and increases the haemorrhage; vaginal delivery, as a rule, is attended with fatal results. These patients should be carefully watched for a short time; a certain number show improvement of the general condition, with onset of uterine contractions and external "show"; at this stage rupture of the membranes, binding, plugging, and pituitary medication can be employed. If, on the other hand, the pulse becomes more frequent or the uterus more distended, Caesarean section should be performed abdominally, followed, if the

uterus does not contract satisfactorily, by subtotal hysterectomy. (3) Combined cases should be treated on lines which are governed by the signs which predominate at the moment. According to the author, utero-placental haemorrhage is due to widespread necrosis, haemorrhage, and oedema in the myometrium, consequent on a pregnancy toxaemia which damages liver, kidneys, and uterus.

19. Prognosis of Myomectomy

REFERRING to the comparative safety of myomectomy, VINEBERG (*Amer. Journ. of Obstet. and Gynec.*, April, 1921) quotes the statistics of the Mayo Clinic, which had three deaths among 617 cases of abdominal myomectomy; his own series comprises 120 cases without mortality. Of the author's cases 27 per cent. afterwards conceived, and recurrences were reported in none. In Mayo's cases only 2.56 per cent. required further operation. With regard to the choice between treatment of myomata by *x* rays or radium or by operation, it is the author's practice to leave the choice to the patient, who is told that operation carries with it greater risk but is more nearly certain to be followed by permanent cure; if she is under 40 endeavour is made to impress her with the advantages attaching to a (myomectomy) operation as compared with *x* ray or radium therapy—namely, that the menstrual function will be preserved, and that subsequent pregnancy is not necessarily precluded.

20. Rectal Infusion for Hyperemesis Gravidarum.

CALLE (*Revista Clinica*, March, 1921) records two cases of hyperemesis gravidarum cured by rectal infusions given drop by drop. The first was that of a 4-para, aged 25, who from the second month suffered from emesis leading to wasting, oliguria, extreme thirst, tachycardia and incipient mental symptoms: the second, that of a primipara, aged 25, who at the same stage of gestation suffered from excessive vomiting, wasting, obstinate constipation, extreme thirst, insomnia, restlessness, and albuminuria. The first patient was treated by drop-by-drop rectal infusions of cold saline solution; the second, by similar infusions of a solution containing 5 per cent. of lactose. Both patients gave birth at term to living children and became free from urinary abnormalities.

21. Coexisting Cancers of Cervix and Corpus Uteri.

DURAND and LEFORT (*Gynéc. et Obstét.*, 1921, No. 5) reported to the Société Anatomique de Paris the case of a 3-para aged 57, in whom, eight years after the menopause, hysterectomy was performed for cervical cancer apparently of one and a half years' duration. The uterus when opened showed the coexistence of a papillary neoplasm of the fundus with an ulcerating and proliferating growth of the cervical canal; the tumours were separated by a zone of healthy tissue. Microscopically the growth in the fundus was an adenocarcinoma, and had not infiltrated the myometrium; that of the cervix contained elements of cylindrical and of squamous epithelium.

PATHOLOGY.

22. Researches on the Theory of Anaphylaxis.

PESCI (*Ann. de l'Inst. Pasteur*, May, 1921) brings forward evidence to show that the specific antibodies of anaphylaxis and the proteolytic ferments resulting from the parenteral introduction of foreign protein are entirely distinct. Thus he finds that (1) guinea-pigs injected with the internal wall of hydatid cysts constantly present the phenomena of anaphylaxis, but practically never give a positive Abderhalden reaction; (2) guinea-pigs injected with white of egg not only give a positive Abderhalden test for proteolytic ferments, but likewise are rendered anaphylactic, while this state of anaphylaxis persists after the Abderhalden reaction has disappeared; (3) guinea-pigs injected with white of egg give at first a positive Abderhalden reaction, but are incapable of transmitting passive anaphylaxis, while in the later stages the reverse holds good. Proteolytic ferments and anaphylactic antialbumins represent two different modes of reaction against the antigen; the two reactions develop independently of each other; in the first stage they may coexist together, while later one may persist and the other disappear; in the final stage proteolysis vanishes, anaphylaxis alone remains. He finds that in guinea-pigs, as the result of anaphylactic shock, the blood platelets drop from a normal of 400,000 per cubic millimetre to 28,000 per cubic millimetre. The diminution of platelets is proportional to the gravity of the shock. In explanation of the phenomenon of anaphylaxis he elaborates the following theory. *First phase:* The antigen, after the first introduction into the blood, is gradually modified until it becomes an integral part of the living colloids of the cells, and impresses on these a new character, particularly an affinity for the primary antigen. *Second phase:* The cells, stimulated by the new product derived from the antigen, manufacture albumins identical with the new colloidal complexes, and having the same physico-chemical affinity for the primary antigen. These new complexes exist in abundance in the plasma and in certain tissues of the body. *Third phase:* The antigen, introduced in the form of the dechaining dose, reacts with the new colloidal complexes, causing them to flocculate. The intravascular flocculation gives rise to agglutination of the blood platelets and to capillary emboli, which are the immediate cause of the anaphylactic shock. The intracellular flocculation produces a profound cellular disturbance, increases the shock, and favours capillary obstruction *in situ* followed by local and general reactions.

23. The Lipoids of the Leucocytes.

SAVINI (*Arch. méd. Belg.*, April, 1921) has invented a stain which clearly proves that the granules in the leucocytes of normal man contain substances of a lipoid nature in addition to their albuminoid substratum. Thin blood films are dried and placed for twenty-four hours in a freshly prepared and filtered 5 per cent. solution of copper sulphate. After washing in distilled water they are stained for three or four days in a saturated alcoholic solution of scarlet red. They are then washed in alcohol to remove the excess of stain, then in distilled water, counterstained with methylene blue or haemalum, washed again in distilled water, mounted in glycerin, and examined with the oil immersion lens. The granules in the different varieties of leucocytes will then be found to be stained a more or less intense red, while the red cells assume a uniform reddish-yellow colour. If the films are subjected to the prolonged action of ether or ether-alcohol the scarlet-red staining does not occur at all, although staining by Giemsa or panchrome takes place. The same effect is obtained if the films are treated by chloroform, xylol, or benzine, all of which dissolve fatty substances and lipoids. From this it follows that the leucocytes contain a non-lipoid substratum which can be stained by the ordinary methods and a lipoid element which can be detected by special methods only. Savini is of opinion that the antitoxic and diastasic properties of the leucocytes are due to their lipoid elements.

24. Cystic Intestinal Pneumatosis.

TORRACA (*Ital. Archiv. di Chirurg.*, December 20th, 1920) reports a case of the above condition in a man aged 33. The cysts were discovered in the course of an operation for gastrectasia. They appeared as mother-of-pearl cysts scattered over the small intestine, looking very much like soap bubbles and containing a colourless, odourless gas consisting of CO_2 and nitrogen. Similar cysts have been described in connexion with the bladder and the vagina. About 70 cases have been recorded in connexion with the intestine, and in a large number of cases they have been associated with gastric ulcer. They may appear at any age except the first ten years, and seem most frequent in mid-life, more common in men than in women. Microscopically they contain giant cells, either in the lining epithelium of the cysts or collected in masses. They have been attributed to bacteria, to a mechanical process, or more recently to a process of chronic obliterating lymphangitis, but what causes the lymphangitis remains doubtful. No definite symptoms can be ascribed to these cysts, and from observation in subsequent laparotomies or in autopsies it seems that their tendency is to disappear. The *x* rays may reveal a certain clarity where one would expect duskiness, but this is not very reliable. The writer gives references to some 80 cases.

25. Effects of Ligature of the Fallopian Tube.

SCHIFFMANN (*Zentralbl. f. Gynäk.*, April 2nd, 1921) examined microscopically the Fallopian tubes of a woman, aged 28, in whom, at operation performed seven months previously, each Fallopian tube had been doubly ligatured by fine silk thread. He found that the lumen, although constricted, was far from being a condition of atresia. This result is in accord with the similar observations of Kalliwoda, and with the animal experiments of Fraenkel and others. A considerable number of pregnancies have been clinically reported after ligature of both tubes at operation.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

26. Influenzal Meningitis

ABT and TUMPLER (*Amer. Journ. Dis. of Children*, May, 1921) discuss influenzal meningitis from observations on a case, and from the results of the study of cultures and animal inoculations with the bacillus isolated from the spinal fluid, blood, throat, nose and nasopharynx. The disease occurs more frequently and is more severe in infants and young children than in adults. There is a widespread distribution of the influenza bacillus in the upper respiratory tract, and the organism is easily cultivated from the spinal fluid and sometimes from the blood. In the spinal fluid it is usually pleomorphic, with many long thread forms, this being probably a minor variation of the influenza bacillus due to its habitat. A large number of polymorphonuclear cells showing no tendency to phagocytosis are present. There is not the typical leucopenia of respiratory influenza, and animals vary in their response to injections of the organism, although it is usually pathogenic for laboratory animals. Prognosis is exceedingly grave. Treatment consists in the administration of convalescent serum or normal serum, which promotes phagocytosis, together with frequent removal of fluid by spinal puncture, which increases phagocytosis.

27. Artificial Pneumothorax in Acute Diseases of the Lungs.

FRIEDEMANN (*Deut. med. Woch.*, April 21st, 1921) has treated nine cases of pneumonia by the induction of a pneumothorax. In support of his proposition that this treatment is rational, he argues that by limitation of the excursions of the lungs they are better able to cope with an infection, just as a limb which is the seat of an acute inflammation is best fitted to overcome it by immobilization. Another argument in favour of an artificial pneumothorax is the relief it affords to the pleural pain, which is often distressing in acute pneumonia. All the author's nine patients recovered, although in two cases the disease extended to both lungs. In every case the pneumonia was croupous, and the author did not venture to apply this treatment to cases of influenzal pneumonia. As he did not aim at complete compression of the lung, but only immobilization, he admitted only 400 to 600 c.cm. of nitrogen into the pleural cavity. Only in one case did he have to limit the injection to 50 c.cm. because the pressure suddenly became high, and pain was provoked owing to an adhesive pleurisy. The immediate effects were in many cases striking, violent pain being banished, the respiration becoming quicter, an expression of anxiety disappearing, and general improvement in the patient's condition ensuing. The temperature usually fell by lysis, but in one case it fell by crisis a few hours after the injection.

23. Tuberculosis in Children.

LEVINSON (*Med. Record*, May 7th, 1921) studied clinically the children attending the tuberculosis clinic for the purpose of following up those with tuberculous parents. Many cases gave no contact history, but were referred to the clinic with suspicious symptoms. Of 300 children between the ages of 2 and 16, 141 reacted positively to the von Pirquet test, 83 were negative, and 76 are still pending diagnosis. Of the 141 positive, 13 showed signs of active and 128 of latent tuberculosis. The father was generally the source of infection, although the mother was also infected in many instances. The majority of cases (98 per cent.) with latent tuberculosis showed no subjective symptoms of cough or fever, but over 90 per cent. were under weight and were anaemic, with long eyelashes and visible pectoral veins. Of the positive cases 75 per cent. showed hilus dullness and whispered bronchophony to the seventh dorsal vertebra, strongly indicative of bronchial gland tuberculosis, and these findings were generally confirmed radiographically. A hum over the aortic region (Eustace Smith sign) was very infrequent in the latent cases. Positive tuberculin tests established the diagnosis, the classification of the type depending upon the subjective and objective symptoms and the *x*-ray findings. All contacts should continue under observation at home if the conditions are good, or in a sanatorium if these are poor or there is an open case of tuberculosis in the family, but latent tuberculosis does not require any active treatment beyond general hygienic measures.

29. The Dangers of Subcutaneous Medication.

CHRISTIANSEN (*Hospitalstidende*, April 13th, 1921) has investigated the conditions under which the subcutaneous injection of caffeine and digitalis preparations may give rise to gas phlegmon and other inflammatory reactions. During the recent epidemic of influenza in Denmark several patients succumbed to gas phlegmon, which developed at the site of a subcutaneous injection. The author has examined preparations of digisolvin sold (*a*) in small glass-sealed bulbs containing 1.1 c.cm. digisolvin, sterilized by heating for twenty minutes to 100° C., and (*b*) in cork-stoppered bottles containing 15 c.cm. digisolvin, to which alcohol and glycerin had been added as preservatives. He also examined five rubber-stoppered bottles containing 15 c.cm. of digalen. The contents of the small glass-sealed bulbs invariably proved to be sterile, whereas several of the large corked bottles of digisolvin and one bottle of digalen contained microbes. These, however, were not pathogenic. The author found that, provided an alcoholic extract of digisolvin was heated for two hours at a temperature of 70° C., there was no risk of the drug containing pathogenic microbes. His findings point to the small, single dose, glass-sealed bulb being a safer receptacle for drugs intended for hypodermic medication than the large bottle from which several doses are taken at different times.

30. Constituents of Chaulmoogra Oil Effective in Leprosy.

THE standard treatment of leprosy employed by MCDONALD and DEAN of Honolulu (*Journ. Amer. Med. Assoc.*, May 28th, 1921) consists of weekly intramuscular injections of the mixed ethyl esters of chaulmoogra oil containing 2 per cent. of iodine in chemical combination. This is supplemented by the oral administration of the fatty acids, and combined with 2.5 per cent. of iodine. The latter material is placed in capsules and given three times a day, according to a graduated dosage. Data presented show that 50 per cent. of the patients who have been in the hospital at all during the period considered have recovered and been put on parole. Most of the eighty-seven in residence on March 15th, 1921, are comparatively recent arrivals. It has not been necessary to transfer any patients from the Kalihi Hospital to the settlement on Molokai since June, 1919. It would appear, therefore, that these methods hold the disease under control. The results obtained with those patients who have received no chaulmoogra oil or its derivatives by way of the mouth, but have received injections of the ethyl esters, have shown conclusively that the oral administration is not necessary. Whatever the reasons, the fact remains that intramuscular injections are effective, and that the auxiliary use of oral administration is of doubtful utility. The authors incline to the view that hydnocarpic acid is more effective than chaulmoogric acid, and that as one goes down in the chaulmoogric acid series the acids of lower molecular weight will prove even more active.

31. Unpleasant Symptoms from Lumbar Puncture.

BUMKE (*Zentralbl. f. Chir.*, April 2nd, 1921), after alluding to Küttner's remarks on the increase of accidents after lumbar anaesthesia, states that unpleasant symptoms following simple lumbar puncture have become much more frequent during the last few years than was formerly the case. Whereas formerly lumbar puncture could be performed without harm during a consultation and the patient sent home after half an hour's rest in the recumbent position, in 1915 and 1916 it was found necessary to perform lumbar puncture only in clinics. At first the recumbent position for twenty-four hours was sufficient to prevent any severe symptoms, but in 1918, 1919, and 1920, many patients had to be kept in bed two or three days until the headache, nausea, and vomiting had subsided, and in not a few cases the symptoms did not appear till later. Before the war lumbar puncture was usually worst tolerated by those patients whose spinal fluid was normal. Now, however, multiple sclerosis, tabes, latent syphilis, and indeed any organic diseases, seemed to predispose to the occurrence of these symptoms. The cause of this change was obscure, but was probably to be found in some general factor such as defective nutrition.

32. The Etiology of Nocturnal Enuresis.

BOSSERT-ROLLETT (*Deut. med. Woch.*, April 28th, 1921) notes that little has been observed as to the relation of nocturnal enuresis to circulatory disturbances. Since the time of Quincke it has been common knowledge that, in cardiac and renal disease, the excretion of urine may be more active by night than by day, whereas in health the night urine amounts only to a quarter or a half of the day urine. Rietschel has recently shown that the subjects of war neuroses may excrete comparatively much urine by night, and the author has found that children exhibiting nocturnal enuresis, and not suffering from advanced disease of the heart or kidneys, may excrete much more urine by night than by day. In most of the author's cases of nocturnal enuresis in children this anomalous condition of the rate of excretion of urine was not demonstrable. But in a few cases, the children being pale, sluggish, of poor muscular development and asthenic, and the first cardiac sound being soft and muffled, the secretion of urine at night was abnormally active. As soon as such children were kept in bed by day their excretion of urine by night ceased to be excessive. But as soon as they were allowed to run about by day they flooded their beds by night unless roused every other hour. The author publishes charts showing how nocturnal excretion of urine can be controlled by rest in bed by day, and the hypothesis is advanced that the nocturnal enuresis of such cases is the expression of a morbid condition of the cardio-vascular system.

SURGERY.

33. Fractures of the Humerus.

BLAKE (*Amer. Journ. of Surg.*, May, 1921) describes the treatment of fractures of the humerus by suspension and traction. At first used in the war to overcome the swelling of the arm, forearm, and hand associated with infected gunshot fractures, its advantages in facilitating dressing and obtaining good reduction and early union have brought it into general use also for simple fractures. Union is obtained and suspension discontinued during the day, in about four weeks. The patient has to remain in bed. No splints are used, immobilization of the fragments one upon the other being obtained by traction and the method of suspension, while movement is prevented at both the shoulder and elbow. A gallows frame is sufficient, with the post behind the patient's head and its arm in the direction in which traction is made, so that the patient's arm can hang directly below it. Traction bands of adhesive strapping are applied to the inner and outer surfaces of the arm, extending beyond the elbow, and suspension bands are applied to the flexor and extensor surfaces of the forearm, and these are attached by spreaders to cords over pulleys for their respective directions. The arm is slung in a piece of duck (or rubber sheeting if there are wet dressings) corresponding in width to the length of the upper arm (about 8 inches) and about 20 inches in length, attached to a cord with weight and pulley. In all fractures (except of the surgical neck) the arm lies in the sling in a horizontal position, with the forearm vertical, the elbow being flexed to 90 degrees. As a rule equal weights are used for both arm and forearm, but bowing forwards or backwards can be corrected by adjusting the respective weights on the forearm and arm. The earlier union obtained by this method is probably in the main due to better nutrition from maintenance of function and normal circulation.

34. Points in Orthopaedic Surgery.

SPELLISSY (*The Practitioner*, May 15th, 1921) reviews some points in orthopaedic surgery of interest to the general practitioner, and urges the importance of at least annual examinations of every child up to the age of 12, in order that the development of any deformity may be recognized early. Of congenital deformities, the treatment of club-foot may be begun at once by moulding, or later, soon after walking begins, by operation, if needed. In hare-lip without cleft palate he considers the third month is the best time to operate, but if complicated with cleft palate the lip operation may be postponed until after palatal closure. The period of election for treatment of congenital dislocation of the hip is between the third and sixth year, but in spina bifida operation should be prompt if rupture of the sac is threatened, but otherwise delayed until the child is two months old. Supernumerary fingers may be amputated early, but operation for web fingers should be delayed until childhood. In regard to acquired deformities from rickets, he remarks that remedial instruments require careful adjustment and periodic inspection. Osteotomy for knock-knee or bow-legs should be performed about the fourth year, prior to which early treatment should be undertaken by mechanical correction, and exercises for pigeon-breast and flat-foot cannot be begun too early. Scoliosis should be forestalled before it commences, by prophylactic measures and exercises. Tuberculous joint infections require early detection, removal of weight bearing, joint immobilization, and good feeding and hygiene. In infantile paralyses intelligent after-care is needed for the prevention and treatment of contractions and for proper muscle training.

35. Post-operative Hiccough.

KÜTTNER (*Deut. med. Woch.*, April 14th, 1921) does not consider severe post-operative hiccough very common, for, apart from hiccough associated with peritonitis, brain disease and influenza, he has only seen 12 cases of severe hiccough after operations in the course of fourteen years. He classifies his cases according as the operations were performed on (1) the abdomen, (2) the urinary system, and (3) other parts of the body. The cases in each category numbered 7, 4, and 1 respectively. This last case was one of severe diabetes which terminated fatally in coma. The operation was amputation at the thigh for gangrene, and the hiccough was evidently of toxic origin. A study of these 12 cases brought out the instructive facts that all the patients were over 50, all but one were men, and all were private, not hospital, patients. The condition could not be correlated with the nature of the anaesthesia or the position in which the patient had been operated on. None of the author's cases terminated fatally, although this symptom was extremely distressing. But he notes that Marion in 1914 recorded a case in which hiccough following prostatectomy contributed to, if it was not wholly responsible for, the fatal issue. Though the author considers the etiology of this condition to be still very obscure, he is inclined to regard it as a sign of toxaemia (nitrogen retention in the blood). He admits that the treatment of this condition is unsatisfactory, and that it may come and go without reference to any measures the surgeon may take.

36. Post-operative Morbidity and General Anaesthesia.

THOMSON (*Edin. Med. Journ.*, June, 1921) urges close co-operation between the surgeon and anaesthetist, and the importance of the study of post-operative morbidity to the latter, seeing that general anaesthesia has a distinct influence on the post-operative condition. Post-operative nausea and vomiting, being due to a reduction of the alkali reserve, can be guarded against by choice of anaesthetic and careful preliminary dieting, without undue fasting and purgation. Post-operative chest complications should be avoided by care in administration, if ether is used, avoidance of chill, and the preliminary administration of atropine. In general anaesthesia and shock the essential factor is a prolonged and progressive fall in blood pressure, cold effecting delay in the capillaries and depressing body functions. Operations under general anaesthesia are accompanied by a reduction in the alkali reserve of the blood plasma, and in genuine acidosis there is a big drop in the CO_2 capacity. The anaesthetic is capable of affecting the condition of the patient in operations on shocked patients, N_2O–O anaesthesia being apparently the most suitable. In prophylaxis of shock the emotional factor must be borne in mind, and overcome by reassuring the patient and dulling sensibility with morphine. In abdominal operations quinine and urea hydrochloride injected at some distance from the wound protects the patient from noci-influences. Fasting and purgation are to be avoided. The pre-operative administration of sodium bicarbonate greatly increases the alkali reserve of the body and prevents depression.

37. Hydrochloric Acid Irrigations in Calculus of the Bladder.

IVERSEN (*Hospitalstidende*, April 27th, 1921) describes a device for preventing secondary deposits of stone in the bladder, and in the literature on the subject he can find no record of experiments in this direction. The case with which he illustrates his thesis was that of a man, aged 62, who at the age of 32 had been operated on for calculus of the bladder. He also suffered from a post-gonorrhoeal stricture of the urethra. He was admitted to the author's hospital suffering from retention of urine. Sounding of the much-dilated bladder revealed several calculi. These were removed by a *sectio alta*, at which marked cystitis and hypertrophy of the middle lobe of the prostate were found. A Pezzer's catheter was secured in the bladder, and the cystitis treated with silver nitrate irrigations. The urine was acid and cloudy. The catheter was changed every third week. The patient was anxious to retain his

suprapubic fistula so as to avoid passing a catheter himself. After several months deposits began to form on the catheter, and on one occasion, while it was being withdrawn, its tip broke off and was left in the bladder. He was therefore readmitted to hospital, and the tip of the catheter and several small "secondary" calculi, consisting of calcium carbonate and ammonio-magnesium phosphate, were removed. Small particles of these calculi proving to be readily soluble in 5 per cent. hydrochloric acid, and the urine being alkaline, irrigations of the bladder with 15 per cent. hydrochloric acid were instituted. The tenesmus provoked was not worse than with the silver nitrate irrigation, and after a time the patient could retain 50 c.cm. for about half an hour. He also took boric acid by the mouth and about 1 litre of distilled water every day. Under this treatment the catheter ceased to be encrusted, and was found to be soft and smooth when changed. He was discharged with instructions to irrigate himself daily with hydrochloric acid, but he neglected this treatment, and died a few months later with signs of uraemia.

38. Fracture of Forearm in Children.

GROSSMAN (*Journ. Orthopaed. Surg.*, May, 1921), from a study of 200 cases of fracture of the forearm in children, points out that a complete fracture of the lower end of the radius is rare, greenstick fracture of one or both bones being the most common. Subperiosteal fractures simulating a Colles's fracture occur from falling on the outstretched hand, localized "pencil" tenderness being a characteristic sign, with slight swelling and disability, but never any crepitus, false mobility, and deformity. In about 6.5 per cent. of the cases there was epiphyseal separation of the lower end of the radius, varying in degree, and in severe cases simulating the signs of Colles's fracture. This possibility should always be borne in mind, since mild cases are often treated as sprains. *X* ray will settle the diagnosis. Pain, especially on movement, restricted function with the arm hanging limply, swelling, bruising and deformity are among the principal signs, but with the subperiosteal type deformity is absent and "pencil" tenderness is present. Plaster-of-Paris bandages he considers preferable to splints in treatment, as the latter are liable to become displaced, and there is a danger of pressure blebs from undue tightness. After reduction the bandages are applied from the middle of the arm to the metacarpophalangeal joints, with the elbow at right angles and the forearm midway between pronation and supination, the patient being encouraged to exercise the fingers from the first. At the end of ten days the plaster is divided laterally and the limb massaged daily, the plaster being reapplied each day for a week, to be followed by active movements and exercises. A pad between the shafts of the fractured bones is not necessary, as it could only prevent fusion of the bones by exerting such pressure as might be injurious to the circulation of the limb.

OBSTETRICS AND GYNAECOLOGY.

39. Phlebotomy in Eclampsia.

NEVERMANN (*Zentralbl. f. Gynäk.*, April 30th, 1921), who regards venesection as the most useful therapeutic measure in the treatment of eclampsia, discusses the mechanism by which its beneficial effects are produced. Since clinical improvement follows withdrawal of so small amounts as 100 to 300 c.cm. of blood, it cannot be attributed, it is said, to diminution of toxin concentration in the plasma; moreover, Bumm found that no untoward results followed the transfusion into a healthy subject of 1,000 c.cm. of blood from an eclamptic patient. It is unlikely that small venesections can produce significant alterations in the viscosity of the blood. With regard to arterial blood pressure, venesection of 500 c.cm. diminishes this by 20 to 30 mm. only, and the clinical improvement is said very considerably to outlast the transitory diminution of blood pressure. The author claims to have found the true explanation in studying the capillary circulation of eclamptic patients, before and after phlebotomy, by means of Weiss's capillary microscope. Before phlebotomy the capillaries were thin and but slightly tortuous, with venous radicles twice as thick as arterial; the blood stream was slow, and about every three seconds ceased during half that period of time. After phlebotomy the stream was much faster and the vascular stases occurred twenty times less frequently. No such difference was visible as a result of administration of preparations of opium or of ovarian tissue. It is concluded that the beneficial effect of phlebotomy is due to improvement in capillary circulation, whether produced mechanically or reflexly by means of nervous impulses which alter the venous and capillary calibre; possibly capillary microscopical examinations may be found useful in the control of the amount of blood-letting which is requisite not only in cases of eclampsia but also of the pre-eclamptic state and of the glomerulo-nephritis of pregnancy.

40. Scope and Methods of Caesarean Section.

MARTIUS (*Zeit. f. Geburts. und Gynäk.*, lxxxiii, 1921), from a study of 137 cases of abdominal Caesarean section in the Bonner Frauenklinik, gives the conclusions which appear to have become justified during the last ten years. Pubiotomy and symphysiotomy have been abandoned in all save the rarest instances. The outstanding feature of recent experience is the retention of classical Caesarean section for exceptional cases, with the adoption (as a routine) of incision into the lower uterine segment, approached intraperitoneally. The so-called extraperitoneal incision is rarely justified, and in non-infected cases is definitely contraindicated. The practice of the clinic with regard to sterilization is drastic. Sterilization is effected at the patient's desire, even during the first Caesarean section. Porro's operation, with suture of a somewhat large cervical stump beneath the peritoneum, is the method to which preference is accorded. According to the author, improvement in technique has rendered possible the extension of the scope of the abdominal Caesarean operation, so as to be applicable to infected cases, in which the method involves less danger than does the true extraperitoneal approach. The treatment of pelvic contraction is said now to have become independent of prophylactic induction of abortion and less dependent on exact measurement of the true conjugate. Caesarean section has come to occupy a more extensive place in the treatment of placenta praevia, especially when the os is imperfectly or not at all dilated.

41. Treatment of Vomiting of Pregnancy.

VAN SCHAICK (*Med. Record*, April 30th, 1921) describes a method of treatment of persistent vomiting of pregnancy which gave rapid relief. Notes of three cases are given, in which the patients were brought very low because of the persistent vomiting of all food, and even of water. Enemata of saline solution given several times a day gave relief, and these were replaced by the Murphy drip, used continuously for many hours day and night, with colonic washings twice a day. Within three weeks the symptoms began to subside, water and peptonized foods being first retained, and in each case improvement was marked and the pregnancy continued to full term, with delivery of a healthy child. By thus obtaining the absorption of large amounts of water rapidly through the intestines the severity of the condition is quickly relieved, and the pregnancy rendered capable of proceeding to a normal issue.

42. Conservation of the Non-gravid Tube in Operations for Tubal Pregnancy.

ACCORDING to DIETRICH (*Zentralbl. f. Gynäk.*, April 9th, 1921), various counsels have been put forward for dealing with the non-gravid Fallopian tube in cases operated on for ruptured tubal gestation. Most German authors advise that as a routine method the non-gravid tube should be left *in situ*, but Kulenkampff recommends its conservation only in those cases in which the patient has living children and has expressed a desire for the retention of the tube. Jacobs recommends that the contralateral tube, which, he considers, is always diseased, should always be removed. Other writers leave the decision to the patient. Some authorities recommend that while as a general rule the non-gravid tube should be preserved, on the other hand, if it is adherent to neighbouring organs, or if it is apparently closed at the external end, it should be extirpated. From the literature Dietrich has collected records of several thousand cases, and made a critical estimate of the probability of uterine and of extrauterine pregnancy respectively occurring after extirpation of the pregnant with conservation of the non-pregnant tube. (1) With regard to the occurrence of a second tubal gestation, the collected figures of seventeen authors—including 2,998 cases reviewed by R. R. Smith—give 4.68 per cent. of such gestations following 4,526 operations. (2) On the other hand, at least one uterine pregnancy supervened in 28.62 per cent. of cases after 615 conservative operations for tubal gestation. (3) In a series of 597 cases operated on for ectopic pregnancy, of whom 37 per cent. subsequently became pregnant, the relation of uterine to

extrauterine gestations among these subsequent pregnancies was 4.8 to 1. The corresponding ratio drawn from the series (1) and (2) was 5.4 to 1. In a small series of 42 cases operated on by the author a second tubal pregnancy occurred in one instance only: on the other hand, 17 patients gave birth after uterine gestation to twenty living children. It is concluded that, on the one hand, the risk of recurrent ectopic gestation is sufficiently small, and, on the other hand, the proportion of uterine gestations which may be expected to follow preservation of the contralateral tube in operations for ectopic pregnancy is sufficiently great, to provide abundant justification for leaving the non-pregnant Fallopian tube *in situ*. Even when there are gross pathological changes (short of pyosalpinx) in that tube there is a considerable chance of a supervening uterine pregnancy coming to term.

PATHOLOGY.

43. Anaphylaxis and Chemiotaxis.

METALNIKOW (*C. R. Soc. Biologie*, May 21st, 1921), studying the chemiotaxis of phagocytes, finds that there is a close relationship between this phenomenon and anaphylaxis. The introduction of a foreign antigen into the normal organism gives rise to an inflammatory reaction, in which an exudation of leucocytes usually plays an important part. The introduction of a foreign antigen into an organism previously rendered anaphylactic to this antigen gives rise to an excessive inflammatory reaction, in which large numbers of leucocytes take part; not only the white cells, but the cells of the whole body are hypersensitive to the antigen; as a consequence, the inflammatory response is both more rapid and more severe. The experimental proof adduced is: (1) Guinea-pigs and rabbits were given two or three injections of different antigens; two weeks after the last injection several small capillary tubes were introduced into the peritoneum or subcutaneously; some were filled with the particular antigen employed, others with a neutral fluid exerting no chemiotactic effect on leucocytes. After ten to twenty-four hours the tubes were removed and examined microscopically; the tubes containing the neutral fluid showed very few leucocytes, and those containing antigen were packed with leucocytes. (2) Same technique, except that before the introduction of the capillary tubes the animals were desensitized by one or more small doses of antigen. On removal, neither the tubes containing antigen nor the control tubes showed an excess of leucocytes. (3) Same technique as the first, except that the animals were anaesthetized and kept narcotic during the period that the tubes were *in situ*; no accumulation of leucocytes occurred in the tubes. In anaphylaxis there is an excessive inflammatory reaction; the leucocytes are poured out in abundance and accumulate in the capillaries of the lungs and other tissues; hence the leucopenia which Richet has shown to occur in anaphylactic shock.

44. The Characters of Menstrual Blood.

ACCORDING to ZONDEK (*Zentralbl. f. Gynäk.*, April 23rd, 1921), who for purposes of examination removed blood from the interior of the body of the menstruating uterus by means of a specially constructed capillary tube, the characters of menstrual blood differ considerably from those both of normal blood and of extensive haemorrhages from the genital tract. Menstrual blood shows a relative oligocythaemia (average 2,900,000 per cubic millimetre) and leucopenia (average 3,100 per cubic millimetre); the haemoglobin content is relatively high and the colour index as a rule greater than 1. These variations are of local origin, being due to partial haemolysis of menstrual blood. During menstruation there is an alteration, both in the circulating and the menstrual blood (but more markedly so in the latter), in respect of the white cell differential count; neutrophiles are notably diminished, but eosinophiles are not altered. The specific gravity of menstrual blood shows a definite diminution, and the ash of the dried blood is decreased. Estimation of molecular concentration shows, in comparison with normal blood, an elevated freezing point, but the protein concentration, estimated refractometrically, is unaltered. Dialyzation shows normal diffusion rates, so that the haemolytic changes in menstrual blood may be attributed not to altered saline concentration but to a specific modification, produced in the uterine mucosa, of the permeability of the envelope of the erythrocyte. The coagulation time of menstrual blood is very considerably prolonged; it may be said to be practically incoagulable, and Zondek regards the "clots" which are said to accompany menstruation not as true coagula but as products of sedimentation. Blood removed from the portio cervicalis was found to have the same characters as the circulating blood; it is inferred that the special properties of the menstrual blood, taken from the corpus uteri, are due to specific changes produced as a result of the action of the corporeal endometrium.

45. Chondroituria in Pulmonary Tuberculosis.

DIETL (*Wien. klin. Woch.*, March 24th, 1921) examined the urine of 175 cases of severe pulmonary tuberculosis for chondroitin, the test being carried out as follows: To 5 c.cm. of urine were added some drops of dilute acetic acid and 1 c.cm. of 1 per cent. horse serum. A distinct turbidity only was regarded as a positive reaction, 1 c.cm. of 1 per cent. horse serum being always added to 5 c.cm. of non-acidified urine as a control. Albuminuria was found in 20 cases, or 11.4 per cent., and chondroituria in 85 cases, or 42.8 per cent. As regards the significance of chondroituria in pulmonary tuberculosis, Dietl takes into consideration 61 cases in which the urine was examined ten times or even more frequently. Of the 61 cases, 24 showed a distinct aggravation of their condition during the period of observation, 26 showed improvement, and 11 remained unchanged. The prognostic value of chondroituria is therefore slight, but it can at least be said that its presence in tuberculosis makes the prognosis less uncertain. This is shown by the fact that in 11 cases of amyloid disease and nephritis chondroituria regularly preceded albuminuria, while in the 26 cases which improved the chondroituria became less frequent and finally disappeared. The pathological significance of chondroituria appears to resemble that of urobilinuria, which is also frequently observed in pulmonary tuberculosis, chondroituria indicating damage to the kidney and urobilinuria damage to the liver. Dietl therefore suggests that it would be of interest to investigate involvement of the kidneys by means of so delicate a test as is represented by chondroituria.

46. Thyro-ovarian Insufficiency, with Hypertrophy of Thymus and Hydrocephalus.

SABRAZÈS and DUPERIÉ (*C. R. Soc. Biologie*, May 14th, 1921) draw attention to a syndrome, which is not infrequently met with, of thyro-ovarian insufficiency associated with hydrocephalus and hypertrophy of the thymus. They quote the case of a woman who, since infancy, had suffered from a goitre, myxoedema, ovarian insufficiency, and hydrocephalus. Although the thyro-ovarian insufficiency was combated by organotherapy, the woman died at the age of 29, suddenly failing during the course of an attack of typhoid fever. The autopsy showed a large goitre, a persistent thymus, normal parathyroids, hyperplasia of the pituitary, sclerosis of the choroid plexus, and a large hydrocephalus. Known as it is to occur in cretinism and rickets, hydrocephalus has not yet been recognized in association with pluriglandular lesions. Emphasis is laid on the connexion existing between the choroid plexus and the endocrine glands, and it is to this connexion that the symptom of hydrocephalus is ascribed.

47. So-called Interstitial Glands in the Ovary.

MEYER (*Zentralbl. f. Gynäk.*, April 30th, 1921) traverses the descriptions which have been given of "interstitial glands" and "puberty glands" as occurring in human ovarian tissue, and criticizes the theories and even the therapeutic methods which have been based on their supposed existence. From histological examination of ovaries taken from female subjects of all ages, the author concludes that interstitial glands of the ovaries are absent in the human species; their description has been due to misinterpretation of sections made tangentially through the theca follicularis or to misconstruction of lipoid remnants of dead cells derived from follicles or corpora lutea. Similarly, the term "puberty glands" is incorrect; at the time of puberty there is no increase of theca cells, much less are interstitial glands visible. The secondary female characteristics, mental and physical, may develop in the absence of ovaries, and in some cases are not hindered by the presence in the body of numerous testicular interstitial cells; it is incorrect therefore to ascribe sexual specificity to interstitial cells or "glands." The true function of the theca cells is unknown, but they may be concerned with the store of nutrition for the ovum or corpus luteum; the theca cells of retrogressing follicles have disappeared by the end of pregnancy or the beginning of the puerperium.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

48. Treatment of Pneumonia by Antipneumococcic Serum and Adrenaline.

LENAUD (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*, June 23rd, 1921) gives the results of a series of pneumonia cases treated by his method of intravenous injection of antipneumococcic serum and adrenaline—a method which he described two years ago. He considers that of 100 patients suffering from acute pneumococcal and influenzal pneumonias 70 clear up rapidly, while 30 are seriously ill and show large areas of pulmonary inflammation; of these 30, however, 20 recover by crisis in five days with no other medication than that of digitalin; the remaining 10 give cause for anxiety. These he treats by systematic cold baths from the outset; if the fever has not declined by the fifth day, and if respiratory embarrassment together with the least trace of cyanosis appears, he practises a large venesection. If after this a crisis does not occur, and if, on the other hand, signs of cardiac failure or pulmonary distress become apparent, he gives an intravenous injection of adrenaline, combined with, or followed in twenty minutes by, antipneumococcal serum (dose and type not stated). After a transient reaction the patient returns to his previous state, but in the next hour a more definite reaction appears, manifested by a rise of temperature, malaise, anxiety, coldness of the extremities, and shivering. This period is succeeded in ten to thirty minutes by a crisis, and the patient recovers. With treatment carried out on these lines, in a series of 750 cases, he has only lost one patient, and this was one to whom, by force of circumstances, the injection could not be given. No explanation of the mode of action is given, but it is suggested that the antiserum produces a haemoclasic shock in the blood, the colloidal condition of which has been altered by the previous introduction of adrenaline.

49. Fixation Abscess in the Treatment of Typhoid Fever.

CATALDI (*Il Policlinico*, Sez. Prat., June 6th, 1921) states that during a severe and prolonged epidemic of typhoid fever in Rome in 1912–1914 he had observed that, while among the hundreds of injections of quinine given to malarial patients he had seen only two or three cases of suppuration, which was more of a chemical than bacterial character, with a puriform fluid consisting of pieces of necrotic tissue, among the typhoid patients he had seen a large number of cases in which quinine injections had given rise to abscesses containing sterile pus. He observed, moreover, that the suppuration in these cases almost always coincided with the patient's improvement and recovery. During the autumn and winter of 1920–21 a fresh outbreak of typhoid fever occurred, when he determined to employ fixation abscesses, which were produced by subcutaneous injection of 1 or 2 c.cm. of oil of turpentine. He records 4 cases of severe typhoid—2 in adults and 2 in children aged 11 and 14—in whom this treatment was employed with success.

50. Acute Leukaemia with Laryngeal and Intestinal Ulceration.

KALTENBACH (*Arch. des mal. du coeur*, April, 1921) records a fatal case of acute leukaemia in a man aged 30, in whom death occurred suddenly owing to oedema of the glottis secondary to ulceration of the epiglottis after three weeks' illness. The other remarkable features in the case were the occurrence of pleural effusion and intestinal ulceration. Allusion is made to a case recorded by Epstein of leukaemia complicated by oedema and superficial necrosis of the epiglottis and aryepiglottidean folds. Hinterberger also reports a case of acute leukaemia in which death was due to oedema of the glottis, and Fuchs and Heyden have reported cases of simple oedema of the glottis without any laryngeal ulceration. It not infrequently happens that a patient may be treated for an ordinary pleural effusion when he is really suffering from acute leukaemia. The occurrence of intestinal ulceration, which was first described by Virchow in chronic leukaemia and later by Lauenstein in acute leukaemia, may give rise to no symptoms at all, but in most of the cases symptoms such as pain in the gastric region, vomiting, and distension have been described. Diarrhoea and blood in the stools have often been observed. In the present case, although there were numerous and deep ulcers, the blood in the stools was always very slight in amount and could only be detected by chemical examination.

51. Treatment of Tuberculosis with Living Acid-fast Bacilli.

SELTER (*Deut. med. Woch.*, May 12th, 1921) has experimented on himself with attenuated living tubercle bacilli of the human type. Before doing so, he proved that he had already been infected with tubercle by obtaining a positive intracutaneous reaction to tuberculin. He then injected under his skin 2 mg. of a culture of attenuated tubercle bacilli. A severe local reaction followed, a swelling of the size of an egg formed, and the fever of 39.5° C. took three days to subside. After a couple of weeks a small abscess developed, but no bacilli could be found in the pus. The author gave similar injections to thirty-four tuberculous patients, and he found that severe local and general reactions could be avoided by keeping the dosage below 0.1 mg. of the culture. With injections ranging from 0.1 to 1 mg., suppurative infiltration was apt to follow, and in the case of four patients with lupus the injection of 1.5 mg. provoked lupus-like nodules. As in his own case, the abscesses excited by the injections were never found to contain tubercle bacilli. No ill effects followed apart from the local swellings, which disappeared in a few days. In another series of forty-five cases the author injected attenuated tubercle bacilli crushed in an agate mortar. He calls the product of this process "vital-tuberculin." This preparation was considerably better tolerated than the living culture, but as far as actual immunization is concerned, the author considers it immaterial whether crushed or living bacilli are injected. But what he does consider important is to give bacterial protoplasm which has not been altered in any way by heat, acids, or other chemicals. He reserves judgement as to the ultimate therapeutic effect of "vital-tuberculin," contenting himself with the provisional verdict that the results were better than with other tuberculins.

52. Treatment of Psoriasis.

SACHS (*Wien. klin. Woch.*, April 21st, 1921) has treated 34 cases of psoriasis since the beginning of 1918 with intravenous injections of a 20 per cent. sterile solution of sodium salicylate, the rationale of the treatment being the keratolytic action of salicylic acid. The first dose consisted of 10 c.cm.; the second dose, given two days later, of 15 c.cm.; the third dose, given in another two or three days, of 20 c.cm. The average single dose amounted to 2.75 to 3.5 grams of sodium salicylate, and the total amount to 21 to 28 grams. The injections were well tolerated as a rule. In only a few cases did the patient complain of fever, and, when larger doses than 4 grams were given, of headache and tinnitus. Renal irritation was never observed. It is important that the sodium salicylate used for intravenous injection should be free from such impurities as carbolic acid. The drug is dissolved in warm water, and the solution is filtered and then sterilized. The colour of the solution should be light yellow and not dark or reddish. On the day following the injection in some cases, but in most cases after the second or third injection, a weak but distinct Herxheimer's reaction is perceptible in the skin lesions. Six to eight injections given in the course of three to four weeks are often sufficient to cause complete disappearance of the lesions without application of ointments or use of baths. The method is a simple one and can be readily carried out by any practitioner.

53. Tinea Barbae Cured by Injections of Gram's Solution.

RAVAUT (*Ann. de Derm. et de Syph.*, No. 5, 1921) reports a case of tinea barbae, which he cured by intravenous injections of Gram's solution after other recognized methods of treatment had failed. The man developed tinea in October, 1920, and in January, 1921, he consulted Ravaut. The classic symptoms were present, and he was treated with ointments, lotions, and x rays without improvement, and on his becoming impatient the injection of Gram's solution was suggested. On February 7th 1 c.cm. Gram's solution in 5 c.cm. of water was injected intravenously, followed by 2 c.cm. on the 9th and 11th,

and 4 c.cm. on the 12th, all in 5 c.cm. of water. All these injections were painless and free from local or general reaction. On February 14th 5 c.cm. of the solution in 10 c.cm. of water were given, repeated on the 16th, 18th, and 21st. Slight redness and sensitiveness along the vein followed the first of these injections, so the last two were diluted with 15 c.cm. of water. By this time a complete cure had resulted and the patient could shave himself. The examination of hairs failed to reveal any fungus, either immediately after the cure or a month later.

54. Fatal Lethargic Encephalitis with Bilateral Parotid Swelling.

BARONNEIX and HUBAC (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 26th, 1921) record a fatal case of lethargic encephalitis in a man aged 45, accompanied by a bilateral parotid swelling. According to Netter, who first described this complication, it is frequently accompanied by sialorrhœa, and may be replaced by a swelling of the submaxillary glands. In such cases, and even in those where involvement of the salivary glands is not manifested by any symptoms, there are always important lesions in the glandular parenchyma and often signs of excessive function. Lethargic encephalitis may in this respect be compared with rabies. The practical conclusion to be drawn from this is, they suggest, that as the virus of the disease is probably eliminated by the saliva, jaborandi or a similar product should be given to stimulate the salivary secretion. The writers allude to a recent paper by Lesné and Langle, in which they stated they had seen 10 cases of lethargic encephalitis complicated by swelling of the parotids.

SURGERY.

55. Intestinal Obstruction Due to Gall Stones.

ACCORDING to PANSERA (*Il Policlinico*, Sez. Prat., April 4th, 1921), who records a personal case, intestinal obstruction due to gall stones was first described by Bartholin in 1654. The cases reported since then have been relatively few, so that Wagner, in 1914, collected a total of 334 only; 161 of them had been operated on, with a mortality of 62 per cent., and of 173 which did not undergo operation 93 recovered after spontaneous expulsion of the stone and 80 died. Since Wagner's publication about 30 cases have been reported, the majority of which were in women who had shown no previous evidence of gall stones. In Pansera's case, which occurred in a previously healthy woman, aged 64, operation was not performed until she was *in extremis*, when an artificial anus was made. At the autopsy two calculi were found in the intestine at the junction of the middle and lower third of the ileum at 10 cm. distance from one another, one weighing 20 grams, with a long diameter of 12 cm. and a transverse diameter of 10 cm., and the other weighing 10 grams and of somewhat smaller size. The larger stone completely blocked the lumen of the intestine. Nothing was to be found in the other abdominal organs. The two stones, which were too large to have passed through the bile ducts, had caused a local inflammatory process, which had given rise to adhesions between the gall bladder and duodenum, and the continuous pressure exerted by the calculi had caused a perforation into the duodenum.

56. Osteomyelitis following War Injuries.

STEPHENS (*Journ. Orthopaedic Surg.*, April, 1921), from a study of 61 cases of chronic osteomyelitis following war injuries, concludes that a large number of bone injuries in the recent war have gone on to a very chronic condition and are still uncured. On account of its extreme chronicity it is practically impossible to determine when a cure is effected, as some cases light up again after an interval of many years, and a case is recalled in which a sequestrum had to be removed after being healed and supposedly cured for ten years. Of the series studied 54 were the results of gunshot wounds inflicted from ten to twenty-one months prior to these observations, the osteomyelitis having been quiescent for varying periods up to one year. It is only by efficient early treatment that the chances of the cases becoming chronic can be lessened or prevented. Conservative treatment should be aimed at, though some operative treatment is indicated in practically every case, since it is essential that any remaining foreign bodies or sequestra and all infection should be removed, the cavity obliterated and the space filled in. This latter is accomplished best by the overlying soft parts if plenty of tissue is available, or by muscle flaps where necessary.

57. Treatment of Empyema by a Closed Method.

MOZINGO (*Amer. Journ. Med. Sciences*, May, 1921) describes a closed method of treating empyema used by him in 138 cases, with less than 2 per cent. mortality. At the eighth interspace in the post-axillary line a trocar, with cannula just large enough to admit a standard Carrel tube, is inserted, care being taken not to wound the lung. On removal of the trocar the Carrel tube, about 15 in. long with five to ten fenestrae, is instantly inserted through the cannula and the fluid removed, the tube being held in position with layers of gauze and strapping, its outer end being clamped and capped. About every four hours by day, and once or twice in the night, from 50 to 200 c.cm., according to the size of the cavity, of Dakin's fluid is injected, agitated, and removed, until the return is clear. About one-fifth of the original capacity is then injected, left for from five to thirty minutes and then removed, and the maximum negative pressure re-established. The treatments continue until the pyogenic membrane and fibrous exudate have been dissolved, taking from two to fourteen days. Bulb syringes are preferable to glass, and should have a suction power capable of lifting water 8 ft. in a 6 mm. tube. Thereafter, once daily, a 2 per cent. solution of formaldehyde in glycerin is injected, and complete sterilization is attained in about a week, after which the tube can be removed, the cavity being thoroughly treated with Dakin's solution, and 10 c.cm. formalin solution left in, care being taken to avoid entrance of air. Economy in time and dressings, less liability to recurrence and chronicity, maximum lung expansion, ease of post-operative treatment, and low mortality are among the advantages claimed.

58. Familial Predisposition to Peritonsillar Abscess.

LEEGAARD (*Norsk Mag. for Laegevidenskaben*, May, 1921) finds that some families are much more disposed to peritonsillar abscess than others. He arrived at this conclusion by comparing the family histories of 120 patients suffering from peritonsillar abscess with the family histories of 120 of his patients who had not suffered from this condition. In the first class there were 76 patients in whose families peritonsillar abscess had occurred; in some of these families as many as 8 members had suffered from peritonsillar abscess. In the second class there were only 10 patients in whose families peritonsillar abscess had occurred, and in 7 out of these 10 more than one member of each family had suffered from this condition. Grouping his cases of peritonsillar abscess according as it had occurred once or several times in the same patient, the author found that in the first group only a third gave a family history, whereas about three-quarters of the second group gave a family history of peritonsillar abscess. Thus, it would seem that recurrence of tonsillar abscess cannot be solely due to adhesions and similar factors acquired at the first attack, but must also be traced to congenital, predisposing, anatomical factors, such as exceptional length and narrowness of the tonsillar crypts, and the relation of the surrounding structures to the tonsils.

59. Examination of Thyroidectomy Cases.

DENK and WINKELBAUER (*Zentralbl. f. Chir.*, April 30th, 1921), as the result of systematic examination of patients who had been operated on for goitre, found that the trachea did not always lose, after the operation, the changes in form and position which were caused by the goitre. Periodical *x*-ray examination showed that in the majority of cases the trachea returned to its normal form and position within six months. A certain number of cases showed fresh changes in the trachea which might disappear in course of time or persist. In a small proportion of cases the form of the trachea remained the same as before the operation. No extrinsic causes could be found to account for the resistance of the trachea, and even after extensive bilateral resection the pre-operative changes in the trachea persisted, so that changes in the wall of the trachea were to be regarded as the cause of the resistance. The dyspnœa almost always disappeared after the operation even when the changes in the trachea persisted.

60 The Prostate and Seminal Vesicles in Arthritis.

LOWSLEY (*New York Med. Journ.*, May 4th, 1921) calls attention to the prostate and the seminal vesicles as sites of focal infection in arthritis, from observations upon 100 cases of gonococcal infection of the joints. In order of frequency the joints are affected as follows: Knees, ankles, wrists, feet, hips, shoulders, hands, elbows, spinal column, sterno-clavicular joint, and cervical vertebrae. The prostate was pathological, together with involvement of the seminal vesicles, in 13 per cent. of the cases. In treatment better

results were obtained by operation upon the seminal vesicles, and by casts and splints to the joints followed by baking, than were afforded by internal medication, local applications, or vaccines. In all cases of arthritis in adult males a rectal examination should be made and the prostatic fluid examined for pus or other pathological elements. In chronic prostatitis the gonococcus is rarely found. While every case of arthritis requires special consideration as to the type of treatment best suited to it, the following suggestions are made in very acute gonorrhoeal cases: Rest in bed, massive doses of gonococcus vaccine, which often relieves pain, seminal vesiculectomy, and autogenous vaccines prepared from prostatic and seminal vesicle fluid, combined with routine prostatic treatment to prevent adhesions.

61. Pedographs in Abnormal Foot Conditions in Children.

GROSSMAN (*Med. Record*, April 23rd, 1921) points out the value of pedographs in recording and diagnosing abnormal foot conditions in children, thus enabling us accurately to tell exactly what treatment has done, and whether the condition has improved, remained stationary, or become worse. Five prominent signs are considered: (1) the pedograph picture; (2) the contour line of the foot; (3) the height of the scaphoid; (4) the muscular development of the soles, especially under the arch; and (5) the presence or absence of the juvenile fat pad. The bare foot, after being painted with an iron solution, is placed on blotting paper with all the weight on the foot. The contour line is drawn with a pencil at right angles to the plane surface. The muscular development of the soles is noted, as also the height of the scaphoid estimated by the Feiss line. The juvenile fat pad, invariably present up to four years of age, is looked for, as its presence may give a flat impression. The application of a solution of tannic acid to the iron impression produces a permanent black record, upon which the base and auxiliary lines are drawn for estimating deformity. An analysis of 100 children with apparently normal feet showed abnormalities in more than half. Pedographs should be made in all school children for early detection and prophylaxis of deformities where necessary, and for comparison on future occasions.

OBSTETRICS AND GYNAECOLOGY.

62. Treatment of Hyperemesis Gravidarum.

ACCORDING to MACK (*Zeit. f. Geburts. u. Gynäk.*, lxxxiii, 1921) every case of pernicious vomiting of pregnancy should be subjected to the psychological influences arising from admission to a clinic, with exclusion of friends and relatives. Being kept in bed, moderately severe cases should receive rectal infusions of Ringer's solution, to which sodium bromide may be added. The diet should consist at first of one or two tablespoonfuls of iced milk daily, gradually increased if the symptoms abate. In other cases treatment by injection of the serum from healthy pregnant subjects should be instituted. If this fails, subcutaneous injections of 250 grams of Ringer's solution may be given twice daily. If, in spite of these measures, the general condition of the patient becomes worse, with the appearance of acetonuria, considerable elevation of temperature, tachycardia and disordered cerebration, induction of abortion should be practised forthwith. With regard to the etiology of pernicious vomiting, the author found in a series of fifty cases no instance of displacement of the uterus, nor of notable abnormality of the abdominal or pelvic organs; hysterical stigmata were present in eleven. He concludes that the intoxication must originate in the foetus or placenta, hysteria constituting a predisposing cause.

63. Pregnancy in a Uterine Diverticulum.

ACCORDING to MÜLLER (*Zentralbl. f. Gynäk.*, May 7th, 1921), who describes a case, 7 cases of pregnancy in a uterine diverticulum had hitherto been recorded. Five of these occurred in multiparae who, in connexion with previous pregnancies, had been the subjects of dissecting metritis, curettage, or manual removal of adherent placenta; a clue to the etiology of the diverticular gestation was thus forthcoming. Müller's case was that of a primipara, aged 21, who, after five months' suppression of the menses, suffered for fourteen days from abdominal pain, which led to a diagnosis being made of abdominal pregnancy; after a sudden increase in the severity of the pain, symptoms of internal haemorrhage and of collapse led to admission to hospital. The uterus, of five months' dimensions, was deflected to the right, and was extremely tender; cervical dilatation and vaginal bleeding were absent. Laparotomy being performed, a foetus 22 cm. long escaped from a tear, which had evidently occurred spontaneously in the greatly thinned wall of the gestation sac, which was situated towards the fundus and towards the right of the uterus; supravaginal hysterectomy was performed, the ovaries being left *in situ*, and the patient made a good recovery. Examination of the specimen showed the bicornuate uterine cavity to be very slightly enlarged, containing polypoid masses of decidual tissue; the myometrium was normal, except above and to the right in the wall of the gestation sac, which, dissecting between the muscular bundles and thinning the muscular investment, was lined by decidual and placental tissue. According to the author, the possibility that this was a case of interstitial tubal pregnancy must be rejected on account of (1) the lack of notable hypertrophy of the right round ligament; (2) the insertion of that ligament to the outer side of the gestation sac; (3) the free communication of the sac with the uterine cavity. In this, as in a case recorded by Freund, the patient was of somewhat infantile habitus.

64. Transperitoneal Caesarean Section in the Lower Uterine Segment.

GARFAMI (*Il Policlinico*, Sez. Prat., May 16th, 1921) within the last few months has treated seven cases by transperitoneal Caesarean section in the lower uterine segment, for which he claims the following advantages: Greater resistance of the cervical cicatrix, absence of operative difficulties, and equally good prognosis for the foetus. But the chief merits of the operation are that post-operative hernia is easier to prevent, abdominal traumatism is reduced to a minimum, there is an absence of those forms of intestinal obstruction which often follow the ordinary Caesarean section, the haemorrhage is certainly less, and there is no danger of post-operative visceral or parietal adhesions.

65. Focal Infection of the Cervix.

LANGSTROTH, JUN. (*Med. Record*, May 21st, 1921), considers the relation of focal infection of the cervix uteri to systemic and mental diseases with the object of establishing the fact that chronic infection of the cervical mucosa with pathogenic bacteria very frequently occurs, thus becoming a focus of infection as prone to cause systemic and mental manifestations as foci in the tonsils, teeth, sinuses, intestines, etc. A series of fifty cases are analysed, which were operated upon for the removal of infective foci in the cervix with the deliberate aim of relieving some mental or nervous condition. In 58 per cent. the same infection was found both in the stomach and cervix, pointing strongly to either a lymphatic or haematogenous transference of bacteria. The majority of cases did not come under review until every other focus of infection had been removed and vaccines given. Conical enucleation of the cervix was followed in nearly every case by cure of the local condition, with marked improvement in weight, general health, and mental state, recovery following in many instances which previous removal of other foci of infection had failed to cure. The most frequently offending organisms were various types of the streptococcus and colon bacillus, occurring singly or combined, though the possibility of harmful results from various staphylococci must be borne in mind. In order to obtain good results all the active foci must be sought for and removed as early as possible in the course of the disease, and vaccines should be given to aid in neutralizing the toxins, though they do not appear to destroy the infecting organisms.

66. Hysterectomy in Acute Puerperal Infection.

DELÉTREZ (*Le Scalpel*, April 23rd, 1921) after a brief review of the history of this operation decides that it is still on its trial. Puerperal infection is either benign, going on to cure, or serious from the outset and fatal. In the severe cases the leucocytosis is marked (over 25,000), the polynucleosis surpasses 95 per cent., and the eosinophiles disappear. As long as the eosinophiles are present the prognosis is favourable. Whether to operate or not depends on a clinical review of the whole case. If hysterectomy is decided upon the author prefers the vaginal route for its facility, rapidity, and lessened chance of infection of the peritoneal cavity. Friability of the uterus is not as great a danger as is sometimes thought. Mortality is greater after cases of abortion than full-time labour.

67. Prevention of Icterus Neonatorum.

ACCORDING to KEIFFER (*Gynéc. et Obstét.*, 1920, No. 5) "idiopathic" jaundice, which, if Porak's figure be accepted, occurs in 80 per cent. of the newborn, is a consequence of

too great a fall of temperature occurring during the period immediately after birth. Robust, full time infants undergo in the first ten minutes of this period a fall of body temperature amounting to 1.8°F.—a figure which is doubled at least in premature or weakly infants, or in those who, until attention has been paid to the mother, are hastily relegated to a scanty covering of linen. It is recommended that ligature of the cord should be performed immediately after the termination of the second stage of labour, without waiting for cessation of the pulsations; after separation the infant should be wrapped in wool and at once placed between two hot-water bottles. These measures Keiffer believes led to the non-appearance of jaundice in a consecutive series of sixty-seven infants.

PATHOLOGY.

68. The Changes in the Blood after Splenectomy.

WEINERT (*Zentralbl. f. Chir.*, April 9th, 1921) states that, though splenectomy is not prejudicial to the patient, it is not correct to suppose, as several recent writers have done, that the loss of the spleen has no obvious persistent influence on the composition of the blood. For a more or less long period after splenectomy there are lymphocytosis, eosinophilia, and often mononucleosis. The principal change in the red cell picture is the appearance of Jolly-bodies—that is, red corpuscles containing the remains of nuclei, which persist in the peripheral blood for years, perhaps throughout life. As a rule, they are more marked after removal of a diseased spleen, as in haemolytic icterus or splenic anaemia, than in removal of a healthy organ for rupture. In recent splenectomies for rupture in the Magdeburg clinic Weinert has observed a rise in the number of the red cells from 2,200,000 to 3,700,000 and 4,000,000 within a few weeks. His conclusions are as follows: (1) By removal of the spleen an organ is eliminated whose action at least aggravates processes in other organs, such as the liver. (2) By removal of certain functions of the spleen which inhibit and regulate the bone marrow a stimulus is exercised on that part of the bone marrow that is still active, so that, as a general rule, a considerable change in the composition of the blood occurs, especially as regards the red cells.

69. Blood Urea Nitrogen in Acute Intestinal Obstruction.

LOURIA (*Arch. Int. Med.*, May 15th, 1921) reports observations upon the blood urea nitrogen in seven cases of acute intestinal obstruction, since the recent development of blood chemistry methods has shown a striking elevation in the blood urea nitrogen and non-coagulable nitrogen, both in clinical and experimental intestinal obstruction, which suggests its possible value in diagnosis. All seven cases showed an increase in blood urea nitrogen, the lowest being 54 mg. and the highest 170 mg. per 100 c.cm. In one case, in which the blood urea nitrogen was 130 mg. per 100 c.cm., the phenolsulphonephthalein excretion was studied and found to be 58 per cent. in two hours and ten minutes, while in another a generalized urticarial eruption developed which was regarded as a cutaneous manifestation of proteose intoxication, on the assumption that the substance causing the toxaemia of acute intestinal obstruction is of proteose nature. Since all the cases were free from chronic renal disease, the elevation in the blood urea nitrogen may be fairly regarded as resulting from the acute intestinal obstruction. Cases from the previous literature on the subject are referred to, as well as a recent publication by Rabinowitch in the *Canadian Medical Association Journal* for March, 1921, of a series of cases of intestinal obstruction, acute general peritonitis and pancreatitis, in which an increase in blood urea nitrogen was noted.

70. Persistence of Virus of Lethargic Encephalitis.

NETTER, CLAVEL, and DURANDEAU (*C. R. Soc. Biologie*, May 14th, 1921) report the case of a man who, after recovering from an attack of encephalitis lethargica, died fifteen months later from paralysis agitans. An extract of the brain, filtered through a Berkefeld filter, and injected into a rabbit, produced paralysis and convulsions with death in fifteen days. The salivary glands of this rabbit were emulsified and injected intradurally into another rabbit, which died, also with paralysis and convulsions, in four days. Three successive passages of the filtered salivary gland emulsions were made, each causing death in four or five days with the same symptoms. *Post-mortem* examination of the rabbits showed congestion of the nervous centres with characteristic histological lesions. In this connexion we would remind the reader that Da Fano demonstrated the existence of peculiar granular corpuscles both in the brain and in the salivary glands of patients who had succumbed to encephalitis lethargica.

71. The Action of Serum and Cerebro-spinal Fluid on Syphilitic Spirochaetes

SCHARNKE and RUETE (*Zeits. f. die Gesamte Neurologie und Psychiatrie*, February, 1921) believe that the healthiness of the offspring of male general paralytics may be explained by the facts that in many instances the mother is not infected, and that in the fathers the distribution of spirochaetes is confined to regions, such as the brain and aortic walls, which have imperfect lymphatic communication with the rest of the body. The authors believe that the localization of the germs in the central nervous system is due to its relative poverty in defensive substances, and quote in confirmation of this suggestion the feebleness of the luetin reaction as observed in the subjects of general paralysis. That their cerebro-spinal fluid contains such substances, however, is shown by the observations of Steinert, who found that the virulence of spirochaetes, inoculated into the testicle of rabbits, was considerably diminished by their previous admixture with cerebro-spinal fluid taken from general paralytics. Scharnke and Ruete have examined the modifications of the motility of the spirochaete which result from its being subjected to the action of serum and of cerebro-spinal fluid derived from normal, syphilitic, and general paretic patients respectively. Fresh serum had a well-marked immobilizing effect, which in the case of non-syphilitic persons was gradually lost when the serum had been inactivated by heat or by exposure to the atmosphere. The cerebro-spinal fluid of healthy subjects had no effect, or had an immobilizing effect much less than that of the serum. The cerebro-spinal fluid of a patient suffering from secondary syphilis had a well-marked effect which persisted for more than thirty-two hours. That of general paralytics had the most marked immobilizing effect, which was well shown (although somewhat less) in the case of patients in whom the Wassermann test was negative. The cerebro-spinal fluid of patients having general paralysis had invariably a greater immobilizing action than that of their serum. It is concluded that in such patients the brain is accorded little assistance from the rest of the organism in the task of producing antibodies.

72. Impetigo Contagiosa.

IN a study of 30 cases of impetigo FARLEY and KNOWLES (*Arch. Derm. and Syph.*, June, 1921) succeeded in cultivating a streptococcus from the lesions in 24. Cultures were made either from the serum of unbroken lesions or from the bloody serum obtained after scraping the base of the pustules with sterile swabs. Using Holman's classification, they find that the streptococci isolated fall into four groups: *Streptococcus pyogenes*, *S. anginosus*, *S. salivarius*, and *S. faecalis*. With the exception of the last, all of these are haemolytic. Agglutination tests gave unsatisfactory results; the absorptive properties do not appear to have been studied. In view of the criticism of Holman's classification by haemolysis and sugar reactions, and in view of the serological studies recently reported both in this country and in America, it would undoubtedly be of value if a careful investigation of the serological relationships of the streptococci were made in every extended series of cases in which these organisms are encountered.

73. Is Lupus Erythematosus Discoides Chronicus due to Tuberculosis?

GOUGEROT and BURNIER (*Arch. Derm. and Syph.*, June 1921) seek to answer this question in ascertaining the correlation existing between clinical tuberculosis, on the one hand, and lupus erythematosus and skin lesions of various origins, on the other. Only those patients are taken into consideration in whom a definite search for clinical tuberculosis was made. The conclusions reached are: (1) The incidence of clinical tuberculosis in cases of lupus erythematosus is 35.7 per cent. (2) In dermatoses such as dermatitis herpetiformis, lichen planus, and eczematoid dermatitis, which are not ordinarily associated with tuberculosis, the incidence is 32.1 per cent. (3) In dermatoses such as erythema multiforme and erythema nodosum, which in some cases are probably of tuberculous origin, the incidence is 32 per cent. (4) In patients with known tuberculides the frequency of clinical tuberculosis is 84 per cent. The contrast between the presence of clinical tuberculosis in patients with tuberculides (84 per cent.) and in patients suffering from lupus erythematosus (35.7 per cent.) is so great that the writer believes that the pathogenesis of the two cannot be identical.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

74. The Etiology of Influenza.

DAVIDE (*Hygiea*, March 16th and 31st, 1921) publishes a long series of studies in the etiology of influenza carried out at the Swedish State Bacteriological Laboratory. Though every modern technical device was adopted for the demonstration of Pfeiffer's bacillus, this could not be found even once in a series of 76 cases observed in the autumn of 1918. During the epidemic in the spring of 1920 60 cases were examined, and in 12 Pfeiffer's bacillus was found. A peculiarly instructive outbreak was one which occurred at a naval station, where the disease ran a brief and uncomplicated course in 25 persons, many of whom harboured Pfeiffer's bacillus. In both epidemics streptococci were often found, being demonstrable in 83 per cent. of the cases in the first and in 92 per cent. of the second epidemic. Pneumococci were found in 14 per cent. of all cases in the first and in 5 per cent. of all cases in the second epidemic. Summarizing his own observations and those of other workers, the author concludes that since Pfeiffer described his bacillus and associated it with the origin of influenza no reliable evidence confirmatory of his claims has been forthcoming. The virus of influenza has yet to be discovered: but this much is known: it favours (and this is one of its most important properties) the development of secondary organisms, among which Pfeiffer's bacillus can probably be included. The frequency with which it occurs seems to vary in different places.

75. Effect of Increased Protection upon the Blood of Radium Workers.

MOTTRAM (*Arch. of Radiol. and Electrotherapy*, May, 1921) records the results of increased protection from radiation upon the blood of workers at the Radium Institute, London. Prior to its adoption a profound leucopenia affected the polynuclears and lymphocytes, with mild anaemia and a high colour index. After six months' increased protection the blood conditions, with few exceptions, have returned to normal, so that the protection devices may be considered effective, at any rate for the red cells and polymorphs. Well-ventilated rooms are provided with an electric fan for rapidly changing the air when there is any possibility of the escape of radium emanation, so that the workers are not subjected to an atmosphere contaminated with such emanation. Against beta radiation the handling of emanation is carried out three hours after it is pumped off the radium solution, before it becomes fully active. Long-handled wooden forceps are used, and lead-lined boxes with long slings, lead-rubber gloves, and the screening of applicators by a team of workers changed every three months. In gamma radiation the whole body needs protection, the radium being manipulated from behind and round lead screens 5 cm. thick, the work tables being also covered with lead to screen the legs of the workers. The mere provision of protections is insufficient unless the workers know how to take advantage of them.

76. Treatment of Auricular Fibrillation by Quinidine.

FABER (*Ugeskrift for Laeger*, May 5th, 1921), in a review of the recent but voluminous literature of quinidine in heart disease, shows that several writers have found this drug exert a remarkably beneficial action on arrhythmia perpetua. In contrast to these claims, Klewitz of Matthes Hospital, Königsberg, has found quinidine banish auricular fibrillation only in 1 out of 15 cases. The author publishes 2 cases in detail to illustrate his point that, as tested by their reaction to quinidine, cases of auricular fibrillation may be grouped in two quite different classes. In the one class, as an illustrative case shows, the drug may be dramatically beneficial; in the other, as a second illustrative case shows, it does not affect this symptom in the slightest degree. How to distinguish one class from the other without testing each case with quinidine is not clear, but the author refers to the experience gained at Romberg's hospital, where it has been noted that the cases which do not respond satisfactorily to a preliminary course of digitalis are not likely to benefit from quinidine, which may even prove harmful. Digitalis is not only useful in the selection of cases for quinidine treatment, but by steadying the action of the heart it seems to pave the way to a successful exhibition of this drug. There can be no doubt that it can affect auricular fibrillation, and "the significance of this fact cannot be overrated."

77. Diagnosis of Tuberculosis in the Infant.

DEBRÉ (*La Médecine*, May, 1921) states that tuberculosis is frequent in the infant, but is often not recognized owing to the difficulties of diagnosis. Numerous infants who die with digestive disturbances, meningeal symptoms, and multiple foci of suppuration are merely the victims of an unrecognized tuberculous infection. Tuberculosis in the infant is a very grave disease, but it is an exaggeration to regard it as absolutely fatal even below one year. Congenital tuberculosis being extremely rare, tuberculosis in the infant is generally due to contamination by a tuberculous relative, especially the mother or nurse. The clinical picture is as follows: The infant is generally pale, remains quiet, takes its food badly, and either does not gain weight or loses flesh. There is an abnormal growth of hair on its body. As a rule the temperature is not very high, and ranges in the morning from 99.4° to 100.4°, and in the evening from 100.4° to 101.2°, or sometimes 102.2°. Bouts of fever last for a few days or weeks, and then the temperature becomes normal or subnormal, sometimes for a very long period. Digestive disturbances are frequent and of the most varied character, and persist in spite of treatment. In addition to rickets, which, as Marfan has shown, is frequently caused by tuberculosis, the skeleton shows various important changes in the long bones and the skull, but the most characteristic lesions are found in the fingers and toes (spina ventosa). The most frequent skin lesions are papulo-necrotic and papulo-squamous tuberculides. Some forms of subcutaneous suppuration wrongly attributed to pyodermia are really tuberculous lesions. Phlyctenular conjunctivitis has also considerable diagnostic value. Stethoscopic examination of the lungs is usually negative. On the other hand, involvement of the mediastinal glands is manifested by a cough resembling pertussis. The most important physical signs are dullness or impairment of resonance in the interscapulo-vertebral region and bronchial or amphoric breathing in the same area. *X* rays confirm the diagnosis by showing enlargement of the hilar and mediastinal glands, which are easily distinguished from the shadow of an enlarged thymus or the heart.

78. Symptomatic Significance of Hiccough.

DE BRUN (*New York Med. Journ.*, June 1st, 1921) points out that singultus, or hiccough, as a symptom has attracted attention lately because the condition has been known to be the sole apparent cause of death. The symptoms are classified in regard to cause as (1) simple, due to sudden chilling and rarely lasting many minutes without treatment; (2) inflammatory, arising chiefly in inflammatory diseases of the abdominal organs; (3) irritative, usually transitory in acute indigestion or dilatation of the stomach; (4) traumatic, from gunshot wounds of the neck, chest, or abdomen; (5) specific, in such diseases as uraemia, malaria, gout, diabetes, and acute rheumatism, or where there is a general congestion of organs supplied by the pneumogastrics or phrenics; (6) neurotic, in the mentally inferior, in epilepsy and hysteria; and (7) cases of unknown origin. The duration of attacks may vary from one minute to several months, with or without spasms, during sleep, and with or without remissions. Numerous physico-mechanical and medicinal lines of treatment are indicated, but in the majority of instances no treatment is necessary unless the attack lasts more than five minutes. Failing these measures resort may be had to narcotics and anaesthetics, and, in the persistent hiccough of the late influenza epidemic, spraying the nose and throat with a solution of cocaine and adrenaline, combined with hot applications to the epigastrium and small doses of atropine, gave the best results.

79. Von Pirquet's Reaction Indicted.

HAMBURGER (*Norsk Mag. for Laegevidenskaben*, April, 1921), of Graz, whose investigations into the frequency of positive tuberculin reactions among children in Vienna were carried out in conjunction with Monti, has come to the conclusion that von Pirquet's reaction grossly underestimates the frequency of infection with tuberculosis. Von Pirquet found his reaction positive only in 56 per cent. of children between the ages of 11 and 14, whereas Hamburger and

Mantoux got a positive reaction by the local subcutaneous injection of tuberculin in 20% per cent. of children at the same age. The author points out that von Pirquet's reaction is far too dependent on fortuitous and other circumstances which may obscure the results. The reaction may be influenced by the depth of the injected serum and the character of the instrument with which it is made, by the time during which the tuberculin acts, by the composition of the tuberculin employed by the several laboratories, and by the fact that successive tests yield a higher proportion of positive results than a single test), and by the time of year. Accordingly, the author attaches importance to von Pirquet's reaction only when it is positive. When it is negative further evidence must be sought by successive subcutaneous injections of tuberculin before the absence or presence of tuberculosis can be determined with certainty.

80. Jacksonian Epilepsy due to Worms

SIRONI (*La Pediatria*, May 1st, 1921) reports a case of Jacksonian epilepsy in a child aged 3½ years, which seemed to be due to ascarides. At any rate, after the worms were expelled, about thirty in number, no fits occurred in the following six months, although previously the attacks were very frequent. The attacks affected the left arm. There was nothing in the past history to explain why the child should have fits, and there was no evidence of disease of the nervous system or any other system. The author suggests that the local character of the fits might perhaps be due to some slight foetal encephalitis, which was latent until brought out by the intoxication due to the presence of worms.

81. Giardia (Lamblia) Intestinalis.

MANCY (*Johns Hopkins Hosp. Bulletin*, May, 1921) studied the frequency with which *Giardia intestinalis* is present in the intestinal tract of normal children, with a view to ascertaining to what extent it is harmless or capable of setting up disturbance. While from its wide distribution as an intestinal parasite in man it may be suspected of being able to harm its host, this power has not yet been proved. In children over 1 year of age one out of every five harboured the parasite, 17 per cent. being positive in children from 1 to 5 years of age, and nearly 40 per cent. in those from 6 to 12. Only three children showed a tendency towards increased frequency of motions out of a total of 89 examined. Owing to the intermittency with which the *Giardia* cysts are discharged, repeated examinations are necessary before arriving at a negative result. A much higher incidence is found in children than adults, and, although a larger experience is needed before ruling out this parasite as of no importance clinically, its presence in so large a number of normal children points to its being apparently harmless, and the mere finding of a considerable number in the stools of a child suffering with diarrhoea and dysentery does not necessarily mean that *Giardia* is the cause of the condition. In rare instances it may be responsible for some intestinal disturbance, though this is not definitely proved, and drugs are apparently useless in ridding the patient permanently of the infestation.

82. Sodium Lactate in Diabetes.

CURATOLO (*Il Morgagni*, March 25th, 1921, and *Il Policlinico*, December 20th, 1920) records three cases of diabetes successfully treated with full doses of sodium lactate (12 to 30 grams per diem). It is especially useful when acetonuria is present and in the acidosis of children. The drug is well borne and never gave rise to lactic acid in the urine. Under his treatment the amount of sugar was much reduced. If sodium lactate cannot conveniently be procured, equal parts of sodium bicarbonate and lactic acid in aqueous solution may be substituted.

83. Herpetic Stomatitis.

PETIT-DUTAILLIS (*Bull. et Mém. Soc. Méd. des Hôpitaux*, May 1st, 1921), who reports an illustrative case in a woman aged 24, states that herpetic stomatitis, like herpetic angina, is a rare occurrence. The predominating symptom in both conditions is the intense pain, which is quite out of proportion to the lesions present. It is hardly ever possible to find the lesion in the vesicular stage, as the vesicles become ruptured very rapidly and are each replaced by a small rounded greyish area, surrounded by a narrow inflammatory zone. The lesions are never confluent, but appear to be sprinkled over a healthy and non-infiltrated mucous membrane. Treatment consists in the administration of [illegible] to wipes, boric gargles, and the local application of collyrium of iodine.

1 F

SURGERY.

84. Malformation of the Ureter.

[illegible] to Pirquet's reaction (*Il Policlinico*, Sez. Chir., April 15th, 1921), who records a case of incomplete duplication of the left ureter with intermittent hydronephrosis followed by a pyelonephritis [illegible] in a man aged 37, duplication of the ureter, complete or incomplete, is the commonest form of ureteral malformation, although, as a rule, its presence is only detected by accident during operation. According to Krause a double ureter occurs in 1 per cent. of all diseases of the urinary system; Weigert estimates its frequency at 4 per cent., Bostroem at 3 per cent., and Potter and Schwarzenek at 4 per cent. Pavlov at the Petrograd Surgical Clinic found duplication of one or both ureters six times in 200 operations on the kidneys, or in 3 per cent. In complete duplication the supernumerary and the normal ureter are quite distinct from one another throughout their course, and open by two separate orifices into the lower genito-urinary tract, while in incomplete duplication the ureters, leaving the kidneys, separately unite after a more or less short course in a single canal which opens by an orifice in the bladder or in some unusual situation. Duplication of the ureter may be bilateral, but is usually unilateral, and appears to be commoner on the left side. It is generally agreed that the ureter arising from the lower segment of the kidney is the normal ureter, while that which drains the upper part of the organ is the abnormal, accessory, or supernumerary ureter. The supernumerary ureter, as may also the normal duct, instead of opening into the bladder may open into a lower part of the genito-urinary tract such as the urethra, ejaculatory duct, seminal vesicle, vestibule of the vagina, or Gärtner's duct. In some cases it may terminate in a cul-de-sac and give rise to cystic formations of various sizes, which protrude into the bladder or may be found in the thickness of the bladder wall, or form actual abdominal tumours. The diagnosis of ureteral duplication is difficult, especially when it is incomplete. In some cases the presence of supernumerary ureteral openings in the bladder may be shown by cystoscopy, but the special morphological condition of these orifices may render their identification difficult and prevent catheterization, as in a case described by Pavlov. Incomplete ureteral duplication can only be detected by radiography of the kidney and ureter after previous injection of the ureter with a fluid opaque to x rays. The prognosis and treatment are determined by the renal condition, apart from cases in which the only morbid phenomenon is incontinence, in which case the aim of the operator should be to insert the distal end of the supernumerary ureter in the bladder.

85. Chronic Appendicitis.

SCHELTEMA (*Nederl. Tijdschr. v. Geneesk.*, May 21st, 1921) applies the term "appendicitis chronica nervosa" to cases in which the symptoms are really due to appendicitis, although the clinical picture is dominated by nervous manifestations. The nervous symptoms are as follows: (1) Headache, which is principally situated in the frontal region and above the eyes. It becomes worse in the course of the day, and is not usually present in the morning. (2) Mental fatigue. Children do badly at school and have difficulty with their work at home in the evening. Older persons lose their usual aptitude for their ordinary occupations, and their general appearance is similar to that seen in aprosexia. (3) Bad temper in children and a melancholic disposition in older persons are the rule. (4) Children are often shy and easily frightened. (5) Insomnia and dreams are frequent. (6) Giddiness is sometimes the chief complaint. In addition to these principal symptoms the following are sometimes found: (7) Obstinate constipation. (8) Slight rise of temperature, the highest temperatures often occurring at noon. (9) General debility and anorexia. Such cases are very liable to be mistaken for neurasthenia in men and hysteria in women. The symptoms are to be attributed partly to an autointoxication and partly to a reflex origin. Treatment consists in removal of the appendix.

86. Lesions of the Hypophysis in Fractures of the Base of the Skull.

REVILLIOD and WORMS (*Bull. et Mém. Soc. de Chir. de Paris*, May 14th, 1921) report the case of a man, aged 34, who as the result of a motor accident sustained a fracture of the base of the skull, which was manifested not only by bilateral paralysis of several cranial nerves (fifth, sixth, and seventh), but also by symptoms of diabetes insipidus (polyuria and polydipsia), with intense anaemia, asthenia, fall of blood pressure, and a mental state characterized by

puerilism and apathy. The autopsy showed that the diabetes insipidus was due to extensive changes in the hypophysis, which was reduced to a small fibrous nodule in which no trace of normal tissue could be found on histological examination. This case suggests that the hypophysis is injured more frequently than is supposed in fractures of the base, either directly or by compression by a haemorrhagic effusion. This hypothesis is all the more likely as the hypophysis is a vascular organ very liable to haemorrhage. It is therefore advisable, in fractures of the base, to investigate not only the well known signs of this condition but also the symptoms of diabetes insipidus together with changes in the general condition and mentality. *X* rays in such cases will be of value in showing lesions of the posterior wall of the sella turcica, which would justify the hypothesis of a pituitary lesion. If the clinical findings agreed with *x*-ray examination, pituitary opotherapy would be indicated.

87. Vaccine Treatment of Gonorrhoea.

SÉZARY (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 28th, 1921), in a paper based on 150 cases of various gonorrhoeal manifestations, states that no vaccine should be employed in the treatment of gonorrhœa unless it produces a febrile reaction ranging from 100.4° to 101.2° and not exceeding 102.2° F. Each injection should produce a similar result, and as the organism becomes habituated progressively larger doses should be given. Before a reinjection is given the febrile reaction should have subsided for at least twenty-four hours, otherwise recovery is retarded instead of being promoted, doubtless owing to prolongation of the negative phase of the opsonic index. As a rule an injection should be given every three days. When a lipo-vaccine is used, six or seven injections, representing 60 to 80 thousand million organisms, are required to cause an improvement. In rare cases a very marked improvement occurs on the day after the first injection, especially if it has caused a marked febrile reaction.

88. Foreign Bodies in Air and Food Passages.

CHEVALIER JACKSON (*Amer. Journ. Med. Sciences*, May, 1921) summarizes the main points in the symptomatology and diagnosis of foreign bodies in the air and food passages. In the larynx they cause an initial spasm and, if remaining lodged, wheezing and a croupy cough, with impaired phonation, and pain referred to the ears may be present. In the trachea the patient is conscious of the movements of the foreign body, and the vibration may be palpable and heard with the stethoscope. Paroxysmal cough with a sudden shutting off of the respiratory blast and phonation is almost pathognomonic, and dyspnœa, with an asthmatic wheeze heard at the mouth, is common. In the bronchi a diffuse laryngo-tracheo-bronchitis develops within twenty-four hours with fever, toxæmia, cyanosis, and dyspnœa. Abscess rapidly forms, and signs of acute obstructive emphysema can be confirmed radiographically. If the foreign body has been present a long time there may be a delusive symptomless interval before cough and purulent expectoration develop, and all the signs of tuberculosis may be simulated, but tubercle bacilli are naturally absent. Rapid recovery follows removal, and it is a textbook error that such conditions are followed by pulmonary tuberculosis. Offensive sputum should suggest the possibility of a foreign body, and the asthmatoid wheeze is of value in diagnosis, though its absence is not negative. Symptoms rapidly follow complete obstruction of a bronchus, but there may be no dyspnœa if its fellow is functioning. Chest cases should be radiographed to exclude the possibility of a foreign body as an etiological factor, especially when symptoms develop a few weeks after teeth extraction. In the œsophagus there may be no diagnostic symptoms, though dysphagia and the subjective sensation of its presence are usually present. Fluoroscopic study while swallowing a barium mixture will locate a body which may not be radio-opaque, and antero posterior and lateral radiograms before and after removal are essential. Foreign bodies in the stomach are usually symptomless, diagnosis depending upon *x* rays.

89. Prevention of Retention of Urine after Operation.

PÓLYA (*Zentralbl. f. Chir.*, May 28th, 1921) remarks that retention of urine is fairly frequent after operation for hernia, especially inguinal hernia, and almost constant for a few days after operations round the anus, as for piles, fistulæ, and fissures. The cause of the retention, in addition to the pain caused by contraction of the abdominal muscles, is the supine decubitus, which, owing to the lack of habit, interferes with the normal reflex of micturition. To prevent this inhibition Pólya has been in the habit of making the patient practise micturition in the supine decubitus some time before the operation, the patient being told to empty his bladder lying on his back in bed from the time that he is admitted to hospital. In most cases the patient succeeds, though with some difficulty, at the first attempt, but many have to try several times before they succeed. Pólya believes that by this simple device many may be saved post-operative catheterization. Of 31 patients—29 men and 2 women—so prepared who were operated on for inguinal hernia only one had to be catheterized. Of 17 patients operated on for piles by Whitehead's method, 12—6 men and 6 women—could pass water spontaneously and 5 had to be catheterized, 3 once and one for two days. Four of these patients, however, were able to pass their urine at once as soon as the drainage tube had been removed from their rectum, so that if a patient cannot pass his water after an operation for piles the tube is removed at once. Since this practice has been carried out Pólya has had only one case in which catheterization was necessary after operation for piles.

90. Treatment of Acute Abscesses by Puncture and Injection of Alcohol.

MORGANTE (*Il Policlinico*, Sez. Prat., April 11th, 1921) recommends one or more evacuant punctures followed by injection of alcohol in place of the usual incision and drainage employed in the treatment of acute abscesses, and claims the following advantages for this method: (1) The pain is reduced to a minimum, especially as the nerve terminations supplying the most fluctuating area into which the needle is driven are almost entirely destroyed. (2) Rapid cure follows without a scar in a time varying from three to eight days or a little more. (3) Fall of the temperature in twenty-four hours. (4) The saving of dressings, which are at present so costly. (5) Rapid preparation of the field of operation and the operator's hands, alcohol only being used.

OBSTETRICS AND GYNAECOLOGY.

91. Sterilization in Association with Various Obstetrical Procedures.

WHITRIDGE WILLIAMS (*Amer. Journ. of Obstet., and Gynec.*, May, 1921) discusses this subject and gives details of 29 patients in whom sterilization had been brought about. He gives a brief outline of the history of operations for sterilization, and divides the methods into four groups—first, operations on the ovaries; second, operations on the tubes; third, operations on the uterus; last, the employment of *x* rays and radium. The first of these he considers undesirable, because it causes a premature menopause, with all the serious symptoms that condition may give rise to; and moreover, if it is done at term, the involuting uterus may cause the ligatures to slip. The fourth method has the objection of causing premature menopause. There are, therefore, two methods which are the more advisable to use, and the author is largely guided by the patient, whether she wishes to continue to menstruate or not. In 11 of his cases Williams ligatured the tubes in two places, divided them and buried the proximal end beneath the peritoneum. The majority were sterilized by removing the uterus. The important question of indications was next discussed, and the author stated that in nearly every case the indication was contracted pelvis, in which two or more Caesarean sections had been performed. Even at the present time he never advised a patient to have more than three children by section, and in the past he considered that two were the limit of safety.

92. Caesarean Section in Infected Cases.

ACCORDING to KOERTING (*Zentralbl. f. Gynäk.*, May 22nd, 1921) the existence of pyrexia due to infection can no longer be regarded as an absolute contraindication to Caesarean section; the dangers ensuing from peritoneal infection are less than those likely to be caused by infection of the pelvic connective tissue. In support the case is related of a primipara aged 18, whose labour, obstructed by flat pelvis, was accompanied by pyrexia and albuminuria. During a Caesarean operation, which followed an unsuccessful attempt to deliver by forceps, peritonitis with sero-haemorrhagic exudate was demonstrated. Gram-positive, non-haemolytic streptococci were found in cultures made at the time of operation from the peritoneal effusion and the interior of the uterus, and later from the venous blood and the urine. The abdominal incision was closed without drainage; both child and mother survived.

93. Non-operative Treatment of Fibroids.

HAMANT (*Rev. méd. de l'Est*, April 15th, 1921) discusses the following methods: (1) A stay at certain spas, such as Salins or Salies de Béarn, benefits some patients, but the results are not often permanent. (2) The galvanic puncture advocated by Apostoli in 1883, though brilliantly successful in some cases, was responsible for a number of serious and even fatal accidents, so that this method, which was once very popular, has now been abandoned. (3) *X*-ray treatment for fibroids was introduced by Foveau de Courmelles in 1904. According to Anglo-American and German writers the *x* rays have a selective action on the ovarian follicles and by causing an early menopause produce a regression and then a disappearance of the fibroid. French writers, on the other hand, maintain that the *x* rays have a selective action on the muscular fibres. The technique of the two schools differs accordingly, the Anglo-Americans and Germans concentrating the action of the rays upon the ovaries alone, while the French irradiate the uterus. Although remarkably successful results have been obtained the treatment has often been a failure, and more or less serious symptoms have developed. Not only has the fibroid shown little or no change in size and haemorrhage reappeared, even if it has ceased for the time being, but in some cases the tumour has rapidly increased in size, so that an operation has to be carried out under unfavourable conditions. The *x* rays may also cause troublesome dermatitis as well as affect some of the internal organs, especially the suprarenals, and give rise to a syndrome characterized by nausea, vomiting and malaise. (4) Radium treatment. Tubes containing radium are introduced directly into the uterine cavity and allowed to remain there several hours, the duration of their stay depending on the size of the tumour and the quantity of radium. The disadvantage of this method is that, though the radiations do not have a bad effect on the neighbouring organs, they do not act on excentric tumours, such as subperitoneal fibroids. Though in some cases brilliant results have been obtained, other patients cannot tolerate the presence of the radium tube in the uterine cavity, and in spite of morphine the uterine pain is so severe that the tube has to be removed.

94. The Relation of Small Uterine Fibroids to Sterility and Pregnancy.

CHRISTITCH (*Rev. méd. de l'Est*, April 15th, 1921) comes to the following conclusions in regard to the relation of small uterine fibroids to sterility and pregnancy: (1) The small uterine fibroid develops as the result of primary or secondary sterility; (2) it does not interfere with conception; (3) it has no effect upon pregnancy, but often gives rise to complications during labour; (4) it takes part in uterine involution, and may disappear spontaneously; (5) the best treatment for a commencing fibroid is fecundation.

PATHOLOGY.

95. Autopsy in a Case of Epidemic Hiccough.

CLERC, FOIX, and MERCIER DES ROCHETTES (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 21st, 1921) report a fatal case of epidemic hiccough in a woman, aged 68, in whom the hiccough lasted for six days. On the seventh day the temperature rose to 100.4° F. and the patient became somnolent. Death took place the following day, with a temperature of 104° F. At the autopsy not much was to be found with the naked eye, but histological examination showed the characteristic changes of epidemic encephalitis—namely, perivascularitis, lymphocytic infiltration, and cellular changes. The situation of the lesions, however, was different from that in epidemic encephalitis, in which they are found in the brain and cerebral peduncles, whereas in this case they were confined to the cervical portion of the spinal cord, in which the cervical centres of the phrenic nerve were situated.

96. Etiology of Osteo-arthropathy.

WEINBERGER (*Zeit. f. Tuberk.*, 1921, xxxiv, Part 5) considers the three chief causes of osteo-arthropathy are: (1) Chronic purulent and discharging processes, especially of the lungs, bronchiectasis, cavernous phthisis, and empyema. (2) Malignant tumours of the lungs or mediastinum, or metastases in the lungs or mediastinum. (3) Biliary hepatic cirrhosis, with chronic jaundice in rare instances. The bony change is an early symptom, whilst the tumour remains clinically indefinite. It is due to the production of poisons from the primary affection, which poisons have a productive action on the periosteum.

97. Coincidence of Nervous and Non-nervous Lesions in Syphilitic Patients.

SIMON (*Bull. Soc. Franç. Derm. et Syph.*, April, 1921) reports two cases of syphilis, the one showing tertiary ulceration of the prepuce, with loss of the tendo Achillis reflex on the right side and diminution on the left, the other showing a left facial paralysis of the peripheral type, with osteoperiostitis of the sterno-costal region. He appears to consider these two cases, showing the coexistence of nervous and general syphilitic lesions in the same patient, as discountenancing the view that there are two distinct types of *Treponema pallidum*, the one attacking the nervous system, the other confining its attention to the rest of the body. Though the cases themselves are unconvincing, the discussion which they evoked is particularly interesting in showing that the differences of the clinicians on this subject of the dual nature of the spirochaete are no less than those prevailing amongst the pathologists. Though one or two isolated cases are of little value, it is clear that the collection by clinicians of any considerable series of patients manifesting simultaneously syphilitic lesions, both in the nervous system and in the body generally, may prove of definite help in the solution of this problem.

98. Morbid Histology of Hypertrophic Familial Neuritis.

IN an extensive study of progressive interstitial neuritis of infants SOUQUES and BERTRAND (*Ann. de Méd.*, ix, 5, 1921) find that the disease is due to a primary lesion of the sheath of Schwann, followed later by degeneration of the myelin sheath, and finally by that of the axis cylinder. Starting in the peripheral nerves, the pathological process passes on to affect the spinal cord. Both motor and sensory nerve fibres are involved. The change, which appears to be of an inflammatory nature, is first manifested by a proliferation of the nuclei and of the protoplasm of the neurilemmal sheath. As the proliferation continues vacuolation sets in, and a cross section of the nerve fibre at this stage shows a central axis cylinder surrounded by an enormously hypertrophied whorl of fibrils, separated by clear spaces—probably of myelin—and containing large numbers of nuclei. Ultimately extensive multinucleated plaques are formed, arranged like the coats of an onion, and it is to these that the nerve fibres owe their extraordinary thickness. Later in the disease the spinal ganglia are affected, and from these the process passes upward to the cord, leading to degeneration of the posterior columns. The lesions of the motor regions of the cord, which are particularly marked in the dorsal region, are characterized by cytolysis of the anterior horn cells, disappearance of the Nissl granules, and perivascular infiltration of the nervous parenchyma with round cells.

99. Chemical Conversion of Non-pathogenic to Pathogenic Bacteria.

MUCH (*Deut. med. Woch.*, June 2nd, 1921) believes he has discovered a process of great potential importance to the study of the problems of immunity. He suggests that the non-pathogenic bacteria of the air may be given highly pathogenic properties by the simultaneous injection of certain acids. Thus, *B. mycoides* is not ordinarily pathogenic to the mouse even when injected in comparatively large doses; but if lactic or formic acid be injected simultaneously, the bacteria will prove fatal in two to four days and will be found in enormous quantities throughout the body. If either of these acids is injected alone into the mouse no ill effects follow, whereas the combination of acid with non-pathogenic bacteria is equally fatal, whether the acid is injected under the skin and the bacteria into the abdominal cavity or vice versa. Injected together under the skin or together into the abdominal cavity, these acids and hitherto non-pathogenic bacteria prove fatal, and the mouse putrifies more rapidly than other mice succumbing at the same time to other infections. The author has rung the changes in various ways—injecting other non-pathogenic bacteria, using guinea-pigs as well as mice, and varying the strength of the solutions of acid—but the results were the same; it appeared to be immaterial whether 0.2 c.cm. of a 1 per cent. solution or 0.2 c.cm. of a 0.01 per cent. solution of one of these acids was injected. The author quotes Ehrlich as saying that there may be undreamed-of relations between chemical processes and the genesis of disease, and he believes that though the above investigations deal with the conversion of non-pathogenic to pathogenic bacteria, the process may be reversed on the same lines.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

100. Acute Encephalitis in Children.

COMBY (*Bull. Soc. de Péd. de Paris*, February 15th, 1921) in the course of fifteen years observed 62 cases of acute encephalitis, whether sporadic or epidemic, primary or secondary, in children aged from 1½ months and upwards. Apart from epidemic encephalitis, the causes of the condition were as follows: Influenza, 12 cases; enteritis, 10 cases; pertussis 7 cases; congenital syphilis, 2 cases; measles, 2 cases; vaccination, 2 cases; gastric disturbance, 2 cases; fall on the head, 2 cases; otitis, 1 case; carbon dioxide poisoning, 1 case; unknown causes, 21 cases; 27 cases were in boys and 35 in girls. In 32 the onset was sudden. When the encephalitis was secondary to an acute infectious disease the onset was often insidious and might escape notice altogether. Spasms, contractures, and rigidity were noted in a larger number of cases. The eyes were frequently involved, as was shown by ptosis, strabismus, mydriasis, diplopia, nystagmus, and conjugate deviation. Optic neuritis, causing blindness, was observed in 2 cases. Aphasia and mutism were occasionally noted. Transient or persistent paralysis was more frequent, spasmodic hemiplegia being observed in 18 cases—in 10 on the right and in 8 on the left side—brachial monoplegia in 1 case, paraplegia in 5 cases, facial paralysis in 7 cases, and vesical paralysis in 1 case. Myoclonic symptoms were frequent, especially in the epidemic encephalitis of the last three years. Lethargy was less common than insomnia. Fever was very variable. There was often apyrexia or moderate fever. In a few cases the temperature was as high as 105.8° F. The acute stage might be followed by psychical or motor disturbances, such as dementia praecox, backwardness, loss of memory, epilepsy, spastic paralysis, and athetosis. The prognosis of acute encephalitis appeared to be less severe in children than in adults. Six of the 62 cases died—a mortality of 9.60 per cent. Recovery without sequelae occurred in 20 per cent., and recovery with sequelae in 66 per cent. Treatment was only symptomatic or palliative, and consisted in application of an ice-bag to the head, blisters to the back of the neck, and purgative enemata. Comby condemns fixation abscess, which is warmly recommended by Netter, as barbarous and ineffective.

101. Skin Reactions in Asthma.

SABATINI (*Il Policlinico*, Sez. Prat., April 16th, 1921) carried out a series of skin reactions on fifty-two individuals, consisting of healthy persons, those suffering from non-asthmatic disorders, and four cases of bronchial asthma. The results were as follows; In 19.2 per cent. of the cases in whom bronchial asthma could absolutely be excluded a positive reaction was obtained, so that about one-fifth of non-asthmatic subjects are sensitized to one or more of those substances which are generally regarded to-day as liable to give rise to asthma. Sabatini thinks that this figure will rise if a larger number of proteins be used for the skin reactions of each individual. As regards the four cases of essential asthma three did not react to any of the proteins used by Sabatini, and one gave a positive reaction to horse scurf and corn protein in a dilution of 1 in 100,000. Sabatini concludes that apart from cases of asthma there may be a positive skin reaction in about 20 per cent. of all cases, so that a positive skin reaction to proteins regarded as asthmogenic is not specific of asthma.

102. Meningitis Due to Pfeiffer's Bacillus.

CHRISTIANSEN and KRISTENSEN (*Ugeskrift for Laeger*, April 28th, 1921) calculate that since Pfeiffer's bacillus was named, about thirty years ago, some 100 cases of meningitis have been recorded in which it was found in pure culture in the cerebro-spinal fluid, meninges, or brain. Discussing these cases, and three which they have themselves recently observed, the authors point out that there is nothing in the clinical picture to distinguish this form of meningitis from that of the meningococcus or from other forms of purulent meningitis. The diagnosis can therefore be made only by a bacteriological examination, and even this may be misleading, for it is singularly easy to confuse the meningococcus with Pfeiffer's bacillus isolated from the cerebro-spinal fluid. With regard to the epidemiology, they note that the disease often occurs in couples, but no actual epidemic, with more than two patients at a time, has hitherto been described. Their three patients came from widely different parts, and had had nothing to do with each other. The treatment they recommend is systematic lumbar puncture, repeated once or twice a day as long as the fever lasts, the intraspinal pressure is raised, and pus is present. In all three cases they removed as much as 50 to 55 c.cm. of cerebro-spinal fluid at a time, and they never saw any ill effects from this procedure. Two of the patients died. From the one that recovered 560 c.cm. of cerebro-spinal fluid were removed within a month. The promptness of the beneficial effect of this procedure was proved by the diminution of restlessness immediately following the aspiration. The authors conclude with the advice that in every case of meningitis the possibility of Pfeiffer's bacillus being the cause should be entertained.

103. Friedmann's Remedy for Tuberculosis.

HASSENCAMP (*Zentralbl. f. inn. Med.*, April 16th, 1921) states that the inquiry made by Schwalbe, editor of the *Deutsche medizinische Wochenschrift*, as to the value of this method yielded the following results. Almost all the internists gave an unfavourable reply, many indeed considered that its use was unjustifiable. Pediatrists gave a similar verdict. A few favourable reports were received from surgeons, but the majority of them were unfavourable. The successes reported by some writers can be explained in different ways. In the first place it must not be forgotten that tuberculosis often clears up spontaneously. Secondly, in many of the reported cases inactive processes have been treated. Thirdly, in some cases the favourable result is due to the non-specific action of the protein introduced. Hassencamp's personal experience of Friedmann's remedy has been as follows: A true cure even in cases of mild incipient apical disease was not observed. Arrest or transient improvement occasionally occurred, but this is not infrequent independently of treatment in tuberculosis. Permanent cessation of fever, cough, expectoration, etc., was never observed. In some cases the injection did not appear to have any effect whatever. Finally, in several cases decided aggravation of the symptoms occurred during treatment. Hassencamp concludes that clinical experience has not confirmed the curative action of Friedmann's remedy, and that much work and expense have been in vain.

104. Pleural Adhesions after Absorption of Artificial Pneumothorax.

BURNARD (*Paris méd.*, April 23rd, 1921) states that if artificial pneumothorax is complicated by pleurisy, however benign and transient the latter may be, the pleura undergoes permanent inflammatory changes which deprive it of its normal anatomical qualities, and consequently, when the two layers come in contact again, they are almost bound to become adherent to one another. This symphysis appears to be inevitable, whatever the treatment employed, even if the fluid has been evacuated by puncture or has been absorbed spontaneously. The union of the two layers does not take place immediately, and if one intervenes during the period when a rub is audible, which usually does not exceed a month after the two layers have been brought together, they may be separated by reconstitution of pneumothorax. On the other hand, in cases in which artificial pneumothorax has not been accompanied by any obvious pleurisy, it is possible that the layers of the pleura may remain separate. This, however, is only likely to occur when the traumatism has been insignificant and transient, which is never the case in artificial pneumothorax of a few months' duration. Moreover, in 50 to 80 per cent. of the cases, artificial pneumothorax becomes complicated by pleurisy, which cannot be prevented by the most careful precautions.

105. Wildbolz's Auto-urine Test for Active Tuberculosis.

ALEXANDER (*Zeit. f. Tuberk.*, Bd. 33, Heft 6, April, 1921) employed Wildbolz's auto-urine test for active tuberculosis in 91 cases, which included 76 cases of lung or glandular tuberculosis, 2 of surgical tuberculosis, and 13 without any morbid clinical focus. The test is performed by evaporating a small amount of the patient's urine *in vacuo* to one-tenth of its volume and injecting it intracutaneously, a circumscribed infiltration indicating a positive result. In

77 cases von Pirquet's reaction was performed some time before or after the Wildbolz reaction. Most of the patients were German children who had been sent to Davos suspected to be suffering from tuberculosis. Fifteen undoubted cases of active tuberculosis gave a negative Wildbolz reaction, in 11 of which the cuti-reaction was strongly positive, in 2 weakly positive, and in 2 not performed. These negative cases were no means absolutely hopeless ones; on the contrary two of the worst cases which died both gave positive Wildbolz reactions. Alexander's conclusions are as follows: (1) A negative Wildbolz reaction does not exclude active tuberculosis, nor are the cases of active tuberculosis with a negative reaction necessarily examples of progressive and absolutely hopeless disease. (2) A positive reaction, provided that only a distinct infiltration be regarded as such, is a very probable sign of active tuberculosis. (3) No parallelism could be found between the von Pirquet reaction and the Wildbolz reaction; insusceptibility to tuberculin was sometimes associated with a strong Wildbolz reaction and vice versa. (4) A positive Wildbolz reaction was never obtained with unevaporated urine. (5) Urine evaporated to one-tenth of its volume gave in most cases a decidedly weaker reaction than urine treated in a vacuum according to Wildbolz's directions.

105. LIEBHARDT (*Zeit. f. Tuberk.*, Bd. 34, Heft 2, April, 1921) tested Wildbolz's reaction in 51 cases and found a positive result in 19, although it might have been expected in 30, and a negative reaction in 21 cases where a negative reaction was expected. He comes to the following conclusions: (1) The auto-urine reaction is a specific reaction in persons suffering from active tuberculosis. (2) The reaction is of slight intensity; in many cases there is not a distinct circumscribed infiltration, but merely a small thickening which can only be detected by palpation. (3) The reaction is too inconstant to possess any practical value in its present form.

SURGERY.

107. Local Anaesthesia in Abdominal Surgery.

FARR (*Amer. Journ. of Obstet. and Gynec.*, May, 1921) considers that the use of local anaesthesia in major surgery has been neglected. He points out that the risk is so very small compared to general anaesthesia that only insuperable difficulties in the operation justify the surgeon in subjecting the patient to a more hazardous procedure. The "psyche" of a patient is an important factor, but must not be exaggerated; and a distinction must be made between fear of pain and actual pain. The author does not consider there is any objection from the point of view of getting primary union. The question of extra time is of no importance except to the surgeon. Many surgeons find it a strain to operate under local anaesthesia, but Farr thinks that this difficulty is soon got rid of. The difficulty of acquiring the necessary technique is an important objection, and there are several points that must be insisted upon. In local anaesthesia for a laparotomy it is better to inject all layers of the abdominal wall at once. The author admits that the intestines are liable to obstruct operations in the pelvis, and discusses at length the question whether the peritoneum is sensitive. Farr has for many years done all straightforward hysterectomies and oöphorectomies under local anaesthesia. He sometimes combines local with caudal anaesthesia.

108. Volvulus of the Stomach.

ACCORDING to SIEGEL (*Zentralbl. f. Chir.*, May 7th, 1921), who records a case cured by operation in a child aged 2 years, volvulus of the stomach is not a frequent disease, though it is not rare enough to be neglected in the consideration of the diagnosis of intestinal obstruction. It is true that only twenty cases have been published, but probably a much larger number have been observed, as many of the cases have not been operated on until they were *in extremis*. The case reported by Siegel is of interest as it is only the second on record which has occurred in a child. Volvulus of the stomach has been classified by Payr according as it is caused by diaphragmatic hernia, tumour of the stomach, adjacent inflammatory processes, and displacement of neighbouring organs. Volvulus occurring in an hour-glass stomach may be placed in a group of its own. Lastly, there is an idiopathic gastric volvulus for which no cause can be found. Treatment consists in replacing the stomach in its normal position and thereby removing the immediate danger. Fixation of the stomach wall or shaking of the hepato-duodenal ligament has been proposed to avoid relapse, but each of these methods has obvious drawbacks.

109. Tonsillectomy under Local Anaesthesia in Children.

JACOBSON (*Nederl. Tijdschr. v. Geneesk.*, April 30th, 1921), an oto-rhino-laryngologist of Amsterdam, who has performed the operation on 162 persons, states that tonsillectomy can be carried out under local anaesthesia by anyone who possesses a good technique with hardly any danger. In only one case did he have any bleeding, which was slight in degree. He claims that tonsillectomy under general anaesthesia is more dangerous than under local anaesthesia, owing to the possibility of status lymphaticus being present and the greater likelihood of aspiration pneumonia developing after general anaesthesia. He has operated on 37 children below 14 years under local anaesthesia without any haemorrhage or other sequel following the tonsillectomy.

110. Treatment of Naevi in Infants.

PAPIN (*Gaz. hebd. des Sci. Méd. de Bordeaux*, May 15th, 1921) argues that the treatment of naevi in infants is sometimes a difficult matter, not so much owing to the technical difficulties as in the choice of a method. He reserves electrolysis for the following cases: (1) Extensive naevi of the face in the neighbourhood of the natural orifices (nose, eyelids, and lips), where excision would cause an extreme narrowing of the orifices; (2) diffuse naevi of the face, of which submucous angioma of the mouth involving the lips is a typical example; (3) extensive angioma of the face in which extirpation, in spite of autoplasty, would cause a great change in the facial appearance; (4) cases in which the parents are afraid of a surgical operation. Apart from these cases Papin greatly prefers excision, as it is a mild operation and ensures a rapid and complete cure. If the naevus is growing rapidly the operation should be performed without delay, but as a rule one should wait until the infant is three months old. Local anaesthesia should be avoided, and chloroform is preferable to ether. The incision should not pass more than 1 cm. beyond the limits of the naevus. Owing to the extreme elasticity of the skin in young infants, suturing is easy, even if there is much loss of substance.

111. Middle-ear Disease and Diabetes.

MYGIND (*Hospitalstidende*, May 18th, 1921) disagrees with Naunyn, who maintains that diabetics are peculiarly liable to acute suppuration of the middle ear. The author has found this combination only in 6 out of 1,500 cases of acute middle-ear disease treated at his hospital since 1905; 5 of these cases were complicated by mastoid disease, for which they were operated on. This combination must therefore be regarded as rare, its incidence being only about 0.5 per cent. of all cases of acute middle-ear disease. But when this is complicated by diabetes the prognosis is indeed bad. Only one of the 5 patients whose mastoid process was operated on recovered, and more than three years later he was still alive and comparatively well. The remaining 4 patients died in diabetic coma, 3 within twelve days of the operation and a fourth within two months. The author believes that the general anaesthesia (ether) employed at these operations may have inflicted injury to the nervous system, precipitating coma. He therefore suggests that local anaesthesia should be employed, and that, if time permit, the operation should be delayed till a rigid anti-diabetic diet has reduced the quantity of sugar in the urine. With these modifications it may still be feasible to operate and to avoid the practically hopeless state of affairs entailed by a refusal to operate under any circumstances.

112. Methyl Alcohol Blindness.

ROSTEDT (*Finska Läkaresällskapets Handlingar*, March–April, 1921) calls attention to the great increase of methyl alcohol blindness in Finland since 1917, and he associates this state of affairs with the introduction of total prohibition in 1919. The author's cases number 60, in about half of which amaurosis, in the other half amblyopia, resulted. It was seldom possible to get an accurate estimate of the amount of alcohol consumed, but in 8 cases this amount was computed at 100 to 400 grams. The percentage of methyl alcohol in methylated spirits being between 2 and 3, these patients must have taken 2.5 to 10 grams of methyl alcohol. The average quantity of methylated spirit taken being a quarter of a litre, the author gives 7.5 grams of methyl alcohol as the toxic dose so far as the eyes are concerned. He notes that pure methyl alcohol possesses only a third to a quarter of the toxicity of ethyl alcohol, and that the poisonous properties of raw wood spirit depend on certain impurities, many of which have not yet been identified. In most of his cases disturbances of

vision began during the third day after the alcohol was taken; during the next two to three days vision rapidly failed, and the improvement often observed during the following two to four weeks was seldom maintained. There was at first no limitation of the field of vision, and the outlines of the central scotomata were often diffuse. With the gradual atrophy of the optic nerve there was a concentric limitation of the field of vision. Loss of colour sensation followed the same course, but no parallelism could be established between acuity of vision and limitation of the field of vision. After a couple of months the optic disc was pitted, pale, and often showed a green tinge.

113. Surgical Treatment of Congenital Megacolon.

VISCONTINI (*Il Policlinco*, Sez. Chir., April 15th, 1921) reviews the various operations for congenital megacolon and comes to the following conclusions: Colostomy is an excellent operation in an emergency when symptoms of intestinal obstruction are present or as a preliminary to a more radical operation. Exclusion of the colon and resection may be employed if the patient be considered able to withstand the operation. Resection is indicated when, in addition to dilatation, one segment of the colon is of an abnormal length. Exclusion, which is a less severe operation, has the disadvantage of doing away with the function of the colon. Coloplication, which Viscontini regards as the most suitable operation, owing to its simple and conservative character, was advocated by Parlavecchio in 1904 and first performed by Bastianelli in 1905. Viscontini records a case in a woman, aged 22, on which this operation was successful.

114. Post-operative Intussusception.

COHEN (*Amer. Journ. Dis. of Children*, April, 1921) discusses the literature of the post-operative recurrence of intussusception and gives notes of four personal cases. Repeated attacks of intussusception in persons previously operated upon for the same condition are not as infrequent as generally supposed. Of 41 cases at Lebanon Hospital, post-operative recurrences were present in 4. In the event of an acute abdominal condition occurring in a child previously operated upon for intussusception the possibility of a recurrence must be considered. Most of the cases are of the ileo-caecal type, and this points to the existence of some anatomical factor as a probable predisposing cause, and suggests the possibility of some operative procedure being established to prevent recurrence.

115. Death from Haemorrhage after Puncture of the Spleen.

WOHLGEMUTH (*Zentralbl. f. Chir.*, May 14th, 1921) remarks that many writers have recommended diagnostic puncture through the abdominal wall in various disorders of the spleen, such as hydatid disease, abscesses, cysts, and tumours. Some authorities have drawn attention to the dangers of the practice, but chiefly on account of the possibility of infecting the abdominal cavity. The possibility of fatal haemorrhage, of which Wohlgemuth reports an example, has hitherto received little attention. In his case, owing to the probable presence of a subphrenic abscess, an exploratory puncture was made below the left costal arch. No pus was found, but only blood containing haemolytic streptococci. Death took place ten hours later. The autopsy showed 2,500 c.cm. of partly coagulated and partly fluid blood in the abdominal cavity, and three punctures in the spleen. Numerous small abscesses were found in the left kidney.

116. Excision of One Suprarenal Body in Epilepsy.

KUTSCHA-LISSBERG (*Wien. klin. Woch.*, June 23rd, 1921) publishes two cases of epilepsy in which the removal of one suprarenal body was comparatively successful, the fits being less violent and recurring at longer intervals than before the operation. The author is, however, doubtful as to the permanency of this effect, as he anticipates compensatory hypertrophy of the remaining suprarenal body. The rationale of this operation is founded on Fischer's correlation of suprarenal function with spasmodic conditions of the body.

117. A Comparison of Operation and X-ray Treatment of Tuberculous Glands.

TICHY (*Zentralbl. f. Chir.*, April 16th, 1921) states that since 1909 seventy-nine cases of tuberculous glands have been operated on at the Marburg University Surgical Clinic; 31 of these came up for examination at the end of January, 1921, when it was found that 23, or 74 per cent., had had relapses. On the other hand, of 27 cases that had been treated by *x* rays since 1918 only 3, or 11 per cent., had had relapses. As many of the operated cases had been under observation for a much longer time, 8 of them were selected in whom the operation had been performed only two years previously, and it was found that 6, or 75 per cent., had relapses, as compared with 3, or 12 per cent., among 25 cases treated by *x* rays that had been under observation for the same period.

OBSTETRICS AND GYNAECOLOGY.

118. Treatment of Cancer of the Uterine Cervix by X Rays and Radium.

RECASENS (*Gynéc. et Obstét.*, vol. iii, No. 6, June, 1921), in discussing the treatment of cancer of the cervix of the uterus, says that while the present tendency in the treatment of cancer is to employ *x* rays rather than radium and radio-active substances—particularly in cutaneous cancers and in those epithelial neoplasms which are situated deeply in the tissues, such as in cancer of the pancreas, stomach, and liver—for his own part he does not find it beneficial not to make use of radium radiations in the treatment of cancer of the cervix of the uterus. Seven years' experience of the combined treatment of *x* rays and radium has shown him the benefit of radium placed in the cervix, in the middle of the cancerous tissue, thus producing the maximum local effect, together with the abdominal application of *x* rays which supplement the action of the radium, particularly on the parametrium and the lympathic glands. Recent results obtained with an apparatus of from 180,000 to 200,000 volts, and with a hard tube, have given much better results, so much so that cases he previously considered incurable are being treated by this method. The application of radium is made in repeated doses with intervals of eight, ten, or fifteen days; the application of *x* rays is effected in one very intensive sitting, which may be repeated three months afterwards when it is certain that the skin has not been affected. With 50 or 70 mg. of radium elements applied for twenty-four hours a lethal effect is produced upon the cancerous cells in the neighbourhood of the tube of radium, while cells at a greater distance are definitely affected. The latter effect is temporary, and after ten to fifteen days another application of radium is necessary in order to complete the lethal effects. The irritative effect of radium must at the same time be remembered, and if the applications are insufficient in strength and duration the effect upon the neoplasm will be that of aggrandizement rather than that of destruction. Recasens considers that we are still far from perfection in the treatment of cancer of the uterus by radio-active methods, but the continual progress which is being made leads him to believe that results will gradually improve. The excellent results that he has been obtaining leads him to think that the figure of 25 per cent. of durable cures (five years and over), which he obtained by the older procedures, will soon be greatly improved.

119. Treatment of Cancer of the Uterus.

ADLER (*Wien. klin. Woch.*, June 30th, 1921) reviews the results he has obtained in a hospital in Vienna, where he has treated cancer of the uterus by actinotherapy, operation, and a combination of the two. He finds that actinotherapy is not yet in a position to displace operative treatment, and that in operable cases the best course is first to operate and then to use radium and the *x* rays. With regard to his 52 cases of inoperable cancer of the cervix treated with radium in 1913 and 1914, no fewer than 13, or 25 per cent., were still relapse-free. Considering the length of the observation period, he regards these results as permanent, and he points out that they are comparable with the best operative results. All the same, he prefers operative treatment in early cases because of the difficulty of graduating actinotherapy and of its potentialities for harm. Radium in the uterus or the vagina has induced fatal sepsis in many cases, and though the author has seen no radium fatalities in his own hospital, he has frequently had to cope with severe radium sepsis. Another objection to the adoption of actinotherapy without operative treatment is the temptation it offers to many women to discontinue treatment too soon. They feel so much better after a few exposures to radium that they insist on their premature discharge, and they do not again apply for treatment till some time afterwards, when the disease has progressed irrevocably. The author has found more than 40 per cent. of his patients absent themselves from hospital on this account. In 1913 he began to use radium as a supplement to operative treatment. In

both his first two cases treated on this principle he was unable to remove all the malignant structures; his surprise was great when, three or four years later, he found both patients relapse-free. Comparing the results of operative treatment alone with those of operative treatment *plus* radium, he notes that after an observation period of five to six years, only 42 per cent. were relapse-free in the first class as compared with 58.8 per cent. in the second class (17 relapse-free cases out of 29 in which operative treatment was supplemented by radium). More recently the author has combined intensive *x*-ray treatment with radium treatment, and though he considers this combination an advance, he reiterates his advice: Operate on every operable case.

120. "Endogenous" Infection in Gynaecology.

ACCORDING to SALOMON (*Arch. f. Gynäk.*, cxiv, 1, 1921) it is no longer possible to doubt the occurrence of endogenous infection in gynaecology and obstetrics; about one in ten cases of infection are of this nature. Endogenous infection is due to a disturbance of the balance normally existing between bacterial toxicity and bodily resistance, and the organisms chiefly concerned are the vaginal and cervical flora. Before any gynaecological operation it is expedient, in order that subsequent severe auto-infection may be prevented, that the cervix and vagina be examined with regard to the presence of virulent bacteria, and that the blood be examined with respect to its content of toxins and immune bodies. The recognition of the frequency of endogenous infection must not be taken as excusing the occurrence of post-operative sepsis; rather does it give the operator an opportunity of perfecting his results by prevention of auto-infection. This may be accomplished by destruction or modification of the vaginal bacteria, and by pre-operative raising of the tissue resistance through treatment by auto-vaccines made from the vaginal flora, the operation (when possible) being deferred to a time when these conditions have been fulfilled.

PATHOLOGY.

121. Method for Concentration of B. tuberculosis in Sputum.

THE technique described by FAISCA (*C. R. Soc. Biologie*, May 28th, 1921) is a modification of Distaso's method. Five or six purulent plugs of sputum are warmed gently over a flame with one or two drops of 15 per cent. antiformin till the mixture is rendered homogeneous. It is then spread out in thin films on slides, which are placed on a warm plate so as to dry the preparations rapidly. The concluding steps are fixation by heat and staining with Ziehl-Neelsen. One hundred sputa of patients diagnosed clinically to be suffering from tuberculosis were examined. In 55 of these direct examination was negative. Of these 55 the method of homogenization with subsequent centrifugalization gave positive results in 17, while the technique of direct spread on slides after homogeneization with antiformin yielded positive results in 27 cases. Since this method gives 20 per cent. more positive results than the old method of concentration and centrifugalization, and since it is more economical of time and labour, it deserves an extended trial.

122. Researches on Spontaneous Spirochaetosis in the Rabbit.

ACCORDING to LEVADITI, MAYER, and ISAAC (*C. R. Soc. Biologie*, June 11th, 1921) spontaneous spirochaetosis in the rabbit is a purely local disease, affecting particularly the genital organs and the nostrils, and caused by the *Spirochaeta cuniculi*—an organism bearing close resemblance to the *Treponema pallidum*. The lesions are of the nature of papules, which break down, ulcerate, and become covered with scaly crusts. Histologically there is seen to be an intense proliferation of the epithelial cells of the skin with infiltration by polymorphonuclears, mononuclears, lymphocytes, and plasma cells. The vessels are unaltered. Stained by Levaditi's method, the sections show dense masses of spirochaetes situated for the most part at the level of the germinal layer of the epidermis, and becoming rarer as the surface is approached. The impression is gained that the extraordinary multiplication of the spirochaetes in the germinal layer excites a neoplastic formation, leading to papillomatous growths in the epidermis. Examination of the internal organisms for spirochaetes is negative. Experimentally the disease can be transmitted by scarification and deposit of the infectious material on the genital organs. Naturally infection occurs by sexual contact, and probably by elimination of spirochaetes from the hair follicles, which generally show extensive invasion. The organism is constantly pathogenic for the rabbit but not for the white rat or the mouse. No evidence of pathogenicity for man has been obtained. The disease is cured by intramuscular injection of sodium and potassium tartrobismuthate, or by intravenous administration of novarsenobenzol.

123. A Rapid Method of Destroying the Resistance of Anthrax Spores to the Action of Alcohol-Ether.

STAUB and FORGEOT (*C. R. Soc. Biologie*, June 11th, 1921) describe a rapid method for obtaining suspensions of killed anthrax spores suitable for antigenic purposes. Normally the spores, if submitted to the action of equal parts of alcohol and ether, remain viable for thirty-one days. If, however, they are placed in contact with Schweitzer's reagent—a cupro-ammoniacal compound—for half an hour, they are killed by the subsequent application of alcohol-ether in twenty-four hours. After this lapse of time, in contrast to the more radical method of destruction by heat, they are found to have retained their acid-fast properties, and appear to be more suitable for the antigenic purposes for which they are employed.

124. The High Form of Anterior Mediastinal Pleurisy.

ACCORDING to WEILL, GARDÈRE, and DUFOURT (*Journ. de Méd. de Lyon*, July 5th, 1921) there exist two types of anterior mediastinal pleurisy: (1) the low form, which simulates a pericardial effusion, and (2) the high form, which is apt to be mistaken for an apical pneumonia. It is with the latter form that they are chiefly concerned. Of this type they record two cases, both in infants. The physical signs in each case were (1) localized dullness under the clavicle, occupying the first two or three intercostal spaces, and extending out to the anterior axillary line; (2) absence of breath sounds over this area; (3) normal percussion note and normal breath sounds over the base in front and over the whole lung behind; (4) heart not displaced and cardiac dullness not increased; (5) radiography negative. Both cases terminated fatally. At autopsy the one showed a mediastinal pocket of pus over the front of the left lung, the other a similar, but smaller, pocket of clear yellow fluid. In neither case was there any consolidation of the apex. The authors lay stress on the high position of the effusion, its location above the base of the heart, and its tendency to be confused with apical pneumonia. It may be remarked that the term "mediastinal pleurisy" is not altogether a happy one, for, strictly speaking, the mediastinum is the septum intervening between the two pleural cavities, where, of course, a pleurisy cannot occur.

125. The Internal Secretory Organs in Experimental Gas Gangrene.

A STUDY is made by VAN GEHUCHTEN (*Ann. de l'Inst. Pasteur*, June, 1921) of sixty-five guinea-pigs experimentally infected with *B. welchii*, *V. septique*, *B. oedematiens*, *B. histolyticus*, *B. sporogenes*, and *B. proteus*, either singly or in combination. The doses were so graded as to vary the length of time of the infection. Autopsy was performed immediately after death, and the organs were removed for histological examination, particular reference being paid to the thyroid, pituitary, and adrenals. He finds that the modifications in these glands in anaerobic infections are comparable to those met with in aerobic infections and in various intoxications. Beyond a slight degree of congestion there is little noticeable in the thyroid and pituitary, but in the adrenal there are definite haemorrhagic lesions together with functional alterations, as evidenced by changes in the amounts of neutral fats, cholesterin, and pigment granules in the cortex, and a diminution in the chromaffin content of the cells in the medulla. In animals surviving for seven or eight days there appears to be a cortical insufficiency of the adrenaline due to lack of cholesterin and a medullary insufficiency resulting in diminution of the secretion of adrenaline. In view of these considerations he advocates the reinforcement of the sero-therapeutic treatment of gas gangrene by the addition of adrenaline.

123. The Luetin Test.

CALICO (*Lab. rat. ria*, March, 1921), as the result of his own investigations and a study of the literature, comes to the following conclusions: (1) The luetin test is specific for syphilis. (2) The reaction is most frequent and intense in the tertiary and latent stages. (3) Generally it does not occur at all or is very ill marked in the primary and secondary stages. (4) In congenital syphilis in infants it is less pronounced than in adults under similar circumstances.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

127. Dysenteriform Entero-colitis in Infancy.

Martan (*Journ. de méd. et de chir. prat.*, May 10th, 1921) states that this condition is rare before the first year of life, and is most frequent during the second and third years. It is rare in exclusively breast-fed infants, and is almost entirely confined to those artificially fed. It is usually sporadic, but may occur in epidemic form. It is rare in winter, and most frequent in summer, but it may occur at any time of the year. The onset may be insidious or sudden. The child complains of colic, which is soon followed by the appearance of characteristic stools. At first the faecal discharges are solid, but soon become liquid and contain mucus and blood. The number of the stools ranges from eight to thirty daily. The entero-colitis gives rise to a more or less marked tenesmus, and sometimes there is an eversion of the rectal mucous membrane at each evacuation. In the mild form, which is the most frequent, the number of stools in the twenty-four hours is not very great, the tenesmus is moderate, the fever is not very high, and lasts only two or three days, and recovery takes place in eight to ten days, though convalescence may be interrupted by relapses. In the severe form the onset is acute with high fever, and even a meningeal reaction, the stools are very frequent, and there is considerable loss of flesh. The disease may last several weeks, and death is liable to occur, especially in young infants. Complications, which are only likely to develop in the severe forms, are bronchopneumonia due to secondary infection with pneumococci or streptococci, nephritis, pyelonephritis, and cystitis due to *B. coli* infection; erythemata, which may be polymorphous, morbilliform or scarlatiniform; oedema of the extremities and convulsions. The infective origin of the disease seems certain. As a rule it appears to be due to an enterococcus or a special variety of *B. coli*, but further researches are required to prove conclusively the action of these micro-organisms. The diagnosis can only be made by bacteriological examination of the stools. Treatment consists in preventing the formation of irritating or toxic products in the intestine, and in the elimination of those already present. These aims are achieved by a water diet, washing out the bowel, and the use of a mild purgative, especially sodium sulphate, followed by astringents such as sodium tannate, subnitrate of bismuth, and beta-naphthol.

128. Obesity as a Sequel of Lethargic Encephalitis.

Livet (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 12th, 1921) records four cases of obesity following lethargic encephalitis. Two of the patients were males and two females, their ages ranging from 16 to 43. He attributes the phenomenon to involvement of certain glands of internal secretion, especially the hypophysis, and possibly the thyroid and genital glands, by the infective process, and suggests that opotherapy should form part of the treatment of lethargic encephalitis. In the subsequent discussion Netter remarked that obesity was not a frequent complication of lethargic encephalitis, as he had seen it in only 3 out of 150 cases of lethargic encephalitis whom he had kept under observation for a period varying from three months to three years.

129. The Cause of Transitory Hypermetropia in Diabetes.

Hagen (*Norsk. Mag. for Laegevidenskaben*, June, 1921) finds that transitory hypermetropia is a comparatively common associate of diabetes, and is far more often seen than transitory myopia in combination with diabetes. In the course of six months he has seen three cases of transitory hypermetropia in diabetes, and he supplements these cases with two from hospital practice. The most important conclusion to which he comes, and which is apparently new, is this: while other well known complications of diabetes, such as cataract, retinitis, retrobulbar neuritis, and paralysis of accommodation, are due to the disease itself, transitory hypermetropia is a sequel to the treatment instituted rather than to the disease itself. In all the author's private cases this hypermetropia did not occur till a diabetic diet had been instituted and the amount of sugar in the urine had been greatly reduced. In all three cases the patients noticed disturbances of vision one week after the institution of dieting, and they lasted six to eight weeks, long after the urine had ceased to contain sugar. The author confesses to ignorance of the immediate causes of this form of transitory hypermetropia, and he notes that the assumption that it is due to changes of refraction caused by an accumulation of sugar in the aqueous and vitreous constituents of the eye has been proved to be incorrect. Ask and Lundsgaard have come to the conclusion that changes in the lens are responsible for this form of transitory hypermetropia, but the author professes complete nescience as to the exact nature of these changes.

130. The Treatment of Trigeminal Neuralgia.

Magnus (*Norsk Mag. for Laegevidenskaben*, June, 1921) summarizes his review of this subject in the two following statements: (1) There are only two effective methods for the treatment of trigeminal neuralgia—injections of alcohol into the branches of the nerve, and excision of the Gasserian ganglion or its pontine root; (2) peripheral resections of the nerve are obsolete because their place can be taken by the far simpler measure of alcohol injection. The author has performed peripheral resections of the nerve in 29 cases, in all of which a relapse occurred in twelve to eighteen months. He has given 248 injections of alcohol into various branches of the nerve in 118 cases, and in one of these cases the patient was free from pain for eight years. Four patients were free from pain for five years, and the average duration of freedom from pain was twelve to eighteen months. There was little difference in the effects of peripheral or more central injections. After 211 of the 248 injections the pain disappeared at once; 37 injections failed of their object. The author has never injected alcohol into the Gasserian ganglion, and he justifies his opposition to this procedure by references to complications, some fatal, which this method has provoked. He is far better pleased with operative removal of the Gasserian ganglion or its pontine root, and in not one of the 31 cases which he has operated on has he seen paralyses of the ocular muscles, and only in one case did transitory facial paralysis occur.

131. The Etiology of Febrile Herpes.

Luger and Lauda (*Wien. klin. Woch.*, May 26th, 1921) made a microscopical examination of the contents of the vesicles in 25 cases of febrile herpes of various kinds (purulent cerebro-spinal meningitis, lobar pneumonia, cases injected with milk or salvarsan, herpes with general symptoms, etc.). In another 12 cases smears from the cornea and conjunctiva of rabbits and guinea-pigs infected with febrile corneal herpes were examined. Lastly, in a number of cases an attempt was made to grow the vesicular contents of febrile herpes on various solid and fluid media. In only a very few cases could cocci of the type of streptococci and staphylococci be found as well as a few large Gram-positive cocci which could not be further differentiated. In the great majority microscopical and cultural investigations were negative. The writers were unable to confirm the researches of Kooy, who cultivated a Gram-negative polymorphous bacillus from cases of febrile herpes, and are inclined to regard a filtrable virus as the cause of febrile herpes.

132. Aneurysm of the Abdominal Aorta.

Rijtma (*Nederl. Tijdschr. v. Geneesk.*, April 23rd, 1921) states that in contrast with the frequency of aneurysm of the thoracic aorta aneurysm of the abdominal aorta is a rare occurrence, as is shown by the following statistics. Among 18,000 patients Osler saw only 16 cases. In Vienna, of 222 aneurysms found among 19,300 autopsies only three were found in the abdominal aorta. Of 468 cases of aneurysm at St. Bartholomew's Hospital there were only 23 examples of abdominal aneurysm; and at Guy's Hospital only 54 among 525 aneurysms of all kinds. In America, where cardio-vascular syphilis is more frequent, especially among the negro population, aneurysm of the abdominal aorta is less uncommon. Among 2,200 autopsies performed at Johns Hopkins Hospital 49 aneurysms were found, in 11 of which the abdominal aorta was affected. Aneurysm of the abdominal aorta is commonest in men, syphilis being the most frequent cause. Occasionally there is a history of trauma. The commonest initial symptom is vague pain in the back or abdomen. The prognosis is

very grave. Although some cases showing a tendency to recovery have been reported by Stengele and others, the aneurysm usually proves fatal by rupturing into the abdominal cavity, the stomach, or the pleural cavity, through the diaphragm.

133. Beginnings of Cancer of the Skin and Mouth.

DARIER (*Journ. de Méd. et de Chir.*, April 10th, 1921) recognizes three different types of epithelioma of the skin: (1) Epithelioma spino-cellulaire (or the Malpighian type); (2) Epithelioma baso-cellulaire (rodent ulcer); (3) Epithelioma arising in a naevus. In a commencing cancer of the skin or accessible mucous membrane, in a pre-epitheliomatous lesion, or even in a lesion suspected to be a commencing epithelioma, he considers that it is not necessary to wait in order to obtain exact evidence of cancer before interfering. It is not necessary to wait until the lesion has begun to extend, indurate, or ulcerate, as the favourable opportunity for a cure is thus liable to be missed, and an incurable cancer is left. It is inadvisable to irritate the lesion mechanically by scraping or chemically by antiseptics or caustics, as is so frequently done. Such procedure will, the author considers, make precancerous lesions take on a malignant nature. It is not necessary to administer *x* rays or radium to every suspicious lesion. Such treatment is proper for rodent ulcer, but not for the other two varieties. It is inadvisable to give a course of anti-syphilitic treatment, as is so frequently done. Valuable time is thus frequently lost, as many of these lesions improve—at first—with antisyphilitic treatment. The proper course to pursue is to take a section of the tissues, and such a course is open to all practitioners who can send the specimen to a laboratory for an opinion. Should the practitioner not have the means or the time to take a section, the case should at once be sent to a specialist. Following the exact diagnosis the proper treatment is: (1) For epithelioma spino-cellulaire (Malpighian), surgical excision, early and complete; (2) for epithelioma baso-cellulaire (rodent), radiotherapy or radium: if the section shows an intermediate type between (1) and (2), surgical excision is indicated. (3) For epithelioma naevique the treatment is electrolysis. The author is convinced that the adoption of these simple rules will save many patients from the disastrous consequences of cancer.

SURGERY.

134. Suprapubic Prostatectomy.

EISING (*Med. Record*, June 25th, 1921) describes a simplified method of suprapubic prostatectomy. A routine *x*-ray examination of kidneys and bladder should be made, with rest in bed for from three to five days, with catheterization every two or three hours to reduce the residual urine and allow the bladder to resume its normal tonicity, and, if cystitis be present, daily irrigations with a mild antiseptic. The daily urea output should be estimated and a cystoscopic examination made when possible. After the bladder has been washed and emptied the catheter is left *in situ*, an atomizer bulb with glass connecting piece being attached to its distal end. The bladder is reached through a median incision and is inflated with air through the catheter by an assistant until it is felt to rise in the wound, when it is incised at a high level for about an inch, the index finger being introduced by the side of the knife. This opening is stretched to admit two fingers, a stretched or torn wound healing more rapidly than an incised one, since the muscular fibres determine the direction of the tear and their subsequent contraction hastens closure. Prostatectomy can be proceeded with at once, or after an interval, in which latter event a large sized rubber tube is inserted into the bladder and fixed by a suture into the wound. If proceeded with at once, two ungloved fingers of the right hand are placed in the bladder and the general contour of the prostate, and the degree of dilatability of the urethral orifice determined, the gland being brought into reach and firmly steadied by two fingers in the rectum while it is enucleated. It is rarely necessary to incise the capsule with the knife or finger-nail, but, with the index finger in the urethral orifice, firm, gentle pressure downwards and laterally will usually find a path of lesser resistance where the capsule is thinned out and weakened. The capsule is packed with a long strip of gauze until bleeding is checked, and a tube inserted, as in cystotomy, through which gentle irrigation can be carried out, no catheter being needed at any time.

135. Mesenteric Lymphadenitis Simulating Appendicitis.

STRUTHERS (*Edinburgh Med. Journ.*, July, 1921) in two years met with twenty-two cases of mesenteric lymphadenitis simulating appendicitis, and considers that in children and adolescents lymphadenitis is more often confused with appendicitis than any other condition. In such cases the appendix at operation is found to be healthy, the only lesion being enlargement of the mesenteric glands with signs of peritoneal irritation over them. In most cases, though not in all, the enlargement is due to tuberculosis, but it is difficult to say at present whether the acute symptoms are due to tuberculosis alone, to tuberculosis with some superadded transient infection, or to non-tuberculous lymphadenitis only, though the author inclines to the view that most of the cases are due to a reaction provoked by extension of the tuberculous infection. The possibility of such an occurrence should always be borne in mind in the case of young people with signs suggestive of appendicitis, and its frequency may be gauged by the fact that during the period covering the author's twenty-two cases he also dealt with 187 cases of appendicitis. As contrasted with appendicitis the attacks are relatively mild, with moderate fever and constitutional disturbance, the general appearance not being that of an acute illness, the tongue not being furred nor the breath peculiar in odour. The symptoms tend to subside in a day or two. Diagnosis may be impossible, and, since a wait and see policy may be dangerous, operation is advisable in doubtful cases, especially as such a course apparently does not unfavourably influence the glandular affection. Unless the gland is softened and on the point of bursting tuberculous mesenteric glands are best left alone.

136 Rectal Anaesthesia.

HOWDEN (*Med. Journ. of Australia*, May 21st, 1921) points out the value of rectal anaesthesia with ether and olive oil. Castor oil is given the morning of the day before, morphine and atropine hypodermically, and a chloretone suppository an hour before the operation. The mixture for anaesthesia consists of ether and olive oil (50 to 75 per cent.), the amount given being reckoned upon a basis of 31 c.cm. to every 10 kg. of body weight. After shaking and slightly warming, with the patient lying in bed on the left side, the mixture is allowed to flow in by gravity only through a catheter introduced about 10 to 15 cm. into the rectum, about ten to fifteen minutes being taken for the selected dose to run in. Drowsiness quickly supervenes, but there may be some excitement, which, if marked, is best controlled by a little ether given on a face mask. In about half an hour the anaesthesia is sufficiently developed to permit removal to the theatre, its maintenance being controlled by increasing or decreasing the freedom of respiration, a towel over the face inducing deeper narcosis from rebreathing the expired ether, while a pharyngeal tube will lower the narcosis. The anaesthesia usually lasts about an hour and a half. If the anaesthesia is not sufficiently deep it may be supplemented by a few drops on a mask, and if too deep the mixture may be withdrawn from the rectum by allowing it to flow away through a catheter. After operation the rectum and bowel should be thoroughly washed out by a large soap and water enema. Among advantages claimed for this method is its suitability in operations upon the head and neck regions.

137. Prophylaxis of Venereal Disease.

WINTSCH (*Rev. méd. Suisse rom.*, May, 1921) comes to the following conclusions: (1) There is no parallelism between prostitution and venereal disease at the present time. More than two-thirds of women suffering from venereal diseases are not prostitutes, and about two-thirds of the male patients have been infected by women who are not professional prostitutes. (2) One of the most important requirements in combating venereal disease is that the patient should be treated thoroughly. In the case of syphilis, in addition to clinical examination, a Wassermann test of the blood and cerebro-spinal fluid, although not an absolute guarantee, should be carried out several times. In gonorrhoea reactivation of the disease is best effected by stopping the treatment for four or five days. Intravenous injection of arsenobenzol or similar products for syphilis, and intraurethral injection of silver salts for gonorrhoea, should form the basis of the treatment of these two affections at the present time. (3) In order to destroy sources of infection it is essential that as many venereal patients as possible should be attracted to treatment centres. (4) Individual prophylaxis when applied methodically causes an enormous reduction in the number of venereal patients. (5) Prophylactic packets are only

efficacious in persons who have been properly trained. (6) Prophylactic stations are of value, and all the more so the sooner they are visited after exposure to infection. Immediate prophylaxis should be employed by prostitutes and demi-mondaines, and instruction in it should be given in the army and schools for recruits. (7) A voluntary health certificate immediately before marriage is to be recommended, though it is not an absolute guarantee.

138. Papillomata of the Nasal Septum.

ACCORDING to GOVY (*Rev. de lar., d'otol., et de rhinol.*, May 31st, 1921), who records two cases, papillomata of the nasal septum are rare. In the first case, which occurred in a man aged 25, the chief complaint was neuralgia in the left side of the nose and frequent attacks of sneezing. On anterior rhinoscopy a tumour the size of a large pea was seen on the middle of the cartilaginous septum. The patient also presented a papilloma on the antihelix of the left ear. In the second case, which occurred in a woman aged 30, the symptoms were repeated epistaxis, frequent headache, and slight attacks of asthma. In both cases the papilloma was readily removed with a serre-noeud. TALPAIN (ibid.) also records a case of papilloma of the nasal septum in a soldier, whose symptoms were slight difficulty in breathing, without epistaxis or coryza. The tumour, which was situated on the antero-inferior aspect of the septum, was removed by the galvano-cautery.

139. Treatment of Empyema.

LADD and CUTLER (*Amer. Journ. Dis. of Children*, June, 1921), from a study of the literature and an analysis of 172 cases, endeavoured to ascertain the merits of treatment by closed drainage in empyema in children. While emphasizing the statement that no form of treatment which disregards thorough drainage by rib resection and gradual respiratory re-expansion meets the requirements, they conclude that treatment by closed drainage and suction is suitable in certain cases only. The duration of convalescence after the two methods averages the same. The fact that the diagnosis is frequently made late influences the selection of operation, and a preliminary thoracocentesis should be made to ascertain the type of infection. In streptococcus infections, which have a tendency to abort, aspiration or closed drainage through a tube may supply sufficient drainage and result in lower mortality, recovery taking place without operation. In pneumococcal infections closed drainage is only useful temporarily in extremely sick patients, since it does not afford adequate drainage nor allow the operator to free the lung by introducing one finger through the opening of a resection operation, a routine procedure adopted by the authors, and one which they consider accounts for their scarcity of chronic cases. Collapsed lung is the result of inadequate operation and drainage, and in a few cases in which it would be unwise to free the lung at the first operation, and in which it remains bound down by adhesions, a decortication will obliterate the cavity and cause healing. Operations which aim at causing collapse of the chest wall are deprecated as causing unnecessary and distressing deformities.

140. Treatment of Chronic Infected Open Pneumothorax.

GURD (*Canadian Med. Assoc. Journ.*, June, 1921), from a study of twenty-five cases of chronic chest sinus, with an average duration of fifteen months, considers that such cases arise either because the drainage opening is too small or not dependent, or from the presence of foreign bodies—for example, rib sequestra or a rubber drain too long continued, or from the existence of a pleuro-bronchial fistula, or interference with lung expansion from adhesions or interstitial fibrosis. An opportunity should be given for the sinus to heal by discontinuing all drainage, as it is a simple matter to reopen the sinus if pus reaccumulates. The chest cavity should be explored, sequestra removed, drainage improved, and the cavity irrigated with hypochlorite solution, and treated with bipp or flavine. If by such methods the cavity is not obliterated and suppuration arrested within three or four months decortication should be performed to liberate the lung by removal of the confining membrane, provided the chest cavity can be adequately exposed and a dry field obtained. The results are good, function being increased and deformity largely overcome. Should, however, decortication fail to produce sufficient lung expansion to fill the cavity, the chest wall must be collapsed by removing one or more ribs and resecting others, and if this course is impossible for anatomic reasons the cavity may be lined by Beck's operation with flaps turned from the abdomen or back. Since it is desirable to retain the coughing reflex during operation in order that haemorrhage material may be immediately expectorated and lung inflation observed, the most satisfactory results have been obtained by paravertebral nerve blocking with procaine, and light chloroform anaesthesia.

OBSTETRICS AND GYNAECOLOGY.

141. Prognosis in Cancer of the Gravid Uterus.

ACCORDING to MAYER (*Zentralbl. f. Gynäk.*, May 7th, 1921), Cohnheim, Pinard, and other observers did not subscribe to the opinion, of which recently there has been a consensus, that prognosis is worse in cancer of the pregnant than of the non-pregnant uterus. Von Graff, Theilhaber, and others deny that cancer of the uterus exhibits increased malignancy during or immediately after gestation. Mayer in 1911 found that of a series of nine cases of coexistent cervical cancer and pregnancy two died from the primary growth, one could not be traced, one remained free from recurrence for three years after operation, and five were free from recurrence for at least five years—a percentage of cure greater than 50 per cent., compared with about 20 per cent. of cases of cancer of the non-pregnant uterus. In a series investigated later thirty-one cases of cervical cancer with pregnancy showed a percentage inoperability of 20 per cent. only, as compared with 33 per cent. of inoperable cases in the non-pregnant condition. (It should be remembered, however, that cancer of the gravid uterus is much less likely than that of the non-gravid uterus to escape the attention and recognition of the physician.) Another similar series of eighteen showed two cases only which were inoperable. The relative frequency of carcinomatous affection of both the parametrium and the pelvic glands appeared to be diminished in Mayer's series of cases of cancer coexisting with pregnancy as compared with ordinary cases of cervical carcinoma. Wertheim and Döderlein also have published conspicuously successful cases of radical operation for cancer of the gravid uterus.

142. Ophthalmia Neonatorum and Puerperal Mastitis.

LANG (*Zentralbl. f. Gynäk.*, May 28th, 1921) criticizes the conclusions of Feilchenfeld, who has described a recent increase in the frequency of puerperal mastitis, and endeavoured to correlate the incidence of this condition with the occurrence of ophthalmia neonatorum. Conjunctivitis in the newborn, in Lang's as well as other German experience, has of late shown an increased frequency, occurring in 4 to 10 per cent. of cases after prophylactic instillation of silver nitrate solution; about one-third have been gonococcal in origin. On the other hand, Lang has been unable to trace a corresponding increase in the incidence of mastitis during the puerperium. Fourteen recent cases of non-gonococcal suppurative conjunctivitis in the infant were found to be unassociated with inflammatory conditions of the maternal breast, save —in one case—furunculosis; the same was true of nine cases of gonococcal conjunctivitis. On the other hand, six cases of mastitis were unassociated with any ocular symptoms in the child. Rare cases of gonorrhoeal mastitis occur and have been described by Legry and others.

143. Syphilitic Umbilical Phlebitis.

IN view of the rarity of occurrence in congenital syphilis of the *Treponema pallidum* in the placenta or umbilical cord, MANOUÉLIAN (*Gynéc. et Obstét.*, 1921, 6) suggests that in the following case the syphilitic affection of the umbilical cord was primary. A primipara, aged 19, gave birth at term, after normal pregnancy, to a cyanosed, oedematous, and pot-bellied child, who lived four hours only. He weighed 1,350 grams and was free from mucous or cutaneous stigmata of syphilis. Neither in the placenta, which weighed 750 grams, nor in any of the foetal viscera, was it possible to demonstrate *Treponema pallidum*. The umbilical cord was considerably thickened in consequence of lesions which affected the umbilical vein only, namely, a perivascular infiltration composed chiefly of polymorphonuclear cells and macrophages, and a proliferation of the endothelium, penetrating in discrete buds the intravascular clot. In the clot and in all the coats of the vein *Treponema pallidum* was found in great abundance. Wharton's jelly and the umbilical artery were of normal appearance and free from micro-organisms. The erythrocytes of the liver, spleen, and other viscera showed much haemolysis, but those of the placenta and umbilical vein were well coloured. It is suggested that the early death of the infant was due to absorption of haemolysins originating in the syphilitic infection of the umbilical vein.

144. Dystocia due to Vesical Calculus.

Ebbinghaus (*Zentralbl. f. Gynak.*, May 14th, 1921) records the case of a 2-para, aged 24, who in the late months of pregnancy suffered from dysuria, treated by vesical irrigations. Twenty-four hours after the onset of labour, at term, the vulva was found to be oedematous and the completion of the second stage to be prevented by a phosphatic stone, 6 cm. by 4.4 c.m. in diameter, which lay in the bladder, behind the upper portion of the symphysis pubis. The bladder and urethra having been laid open from the vagina, the stone was removed; delivery of a living child followed at once. A vesico-vaginal fistula which resulted was cured by plastic operation. It was subsequently ascertained that an attempt to procure abortion had been made seven months previously; embedded in the stone was a fragment of gum elastic. The obstruction was at first thought to be due to an osteoma.

145. Early Development of Chorion-epithelioma.

Fink (*Zeit. f. Geburts. u. Gynak.*, lxxxiii, 1921) records the case of a woman, aged 21, who, after a spontaneous delivery occurring three or four weeks before term, suffered from severe haemorrhage, which had not entirely ceased on the eleventh day, when the uterus was found to be in a condition of subinvolution. A week later a second bleeding occurred; the uterus, which contained exuberant polypoid vegetations having the histological structure of a chorion-epithelioma, was removed, together with the adnexa, on the forty-fifth day after parturition. From this and from five similar cases collected from the literature it is concluded that chorion-epithelioma should always be suspected when acute or chronic bleeding during the puerperium succeeds a premature labour. The author moots the possibility that the growth existed during the earlier half of gestation, his reasons being that: (1) at this time both elements of the chorion-epithelomatous tissue show marked proliferation; (2) hydatidiform mole occurs nearly always during the first months of pregnancy; (3) Langhans's cells and their choriotryptic ferment are present during that period only.

PATHOLOGY.

146. The Pathology of Spirochaetosis Icterohaemorrhagica.

Basile (*Il Policlinico*, Sez. Med., May 1st, 1921) inoculated healthy guinea-pigs intraperitoneally with the virus of spirochaetosis icterohaemorrhagica contained in the blood aspirated from the heart of an infected guinea-pig. In some cases the inoculation was performed with an emulsion of liver or lung. The animals did not always react to inoculation in the same way; the majority died within five to seven days after inoculation, but some survived for twenty days. The clinical picture of spirochaetosis icterohaemorrhagica in the guinea-pig was not always complete. Icterus sometimes did not occur, but haemorrhages were never absent either in the mild or severe forms, and constituted the predominant feature of the experimental disease. Microscopically the most constant and characteristic lesions were found in the lungs and kidneys. The liver was not an organ which presented constant changes. The following explanation is given of the haemorrhages: The destruction of the spirochaetes causes the liberation of toxic substances, by the action of which the cells of the body undergo degeneration and necrosis. This process takes place in the various tissues and organs invaded by the spirochaetes, including the endothelial cells of the capillaries, and the result is haemorrhages. The red corpuscles undergo a process of destruction, either as the result of phagocytosis or by the action of the toxic substances liberated from the spirochaetes. The large quantity of haemoglobin produced is transformed into bilirubin. Basile maintains that this transformation may take place without participation of the liver, and that the hepatic cells which have been affected by the action of the spirochaetes and their toxins are unable to eliminate the bile pigment.

147. Healthy Carriers of the Virus of Encephalitis Lethargica.

In a short preliminary note presented a month ago Levaditi, Harvier, and Nicolau drew attention to the existence in the saliva of a normal person of a virus capable of giving rise to acute encephalitis in the rabbit. They now (*C. R. Soc. Biologie*, June 25th, 1921) give details of further investigations which they have carried out on this subject. The saliva of a perfectly healthy individual, who had frequently been in contact with cases of encephalitis, but who had never presented the least sign of the disease, was injected by corneal scarification into a rabbit. On the second day after inoculation an intense kerato-conjunctivitis developed, which gradually became worse till the ninth day, when the animal was so ill that it was killed, having meanwhile shown deviation of the head to the affected side, strabismus, and spasmodic respiration. Typical lesions were found in the brain, consisting of mononuclear meningitis, perivascular cuffs of cellular infiltration, and scattered foci of acute encephalitis. From the cornea of this rabbit a series of twelve corneal passages were made on fresh rabbits, and from the brain a series of eleven cerebral passages; in every case death occurred from encephalitis. To show that the virus giving rise to the corneal lesions and the virus giving rise to the cerebral lesions were alike cross-inoculations were made, the corneal virus being injected into the brain, the cerebral virus inoculated on to the scarified cornea. Encephalitis ensued in each case. The filtrability of the virus was demonstrated, and a cross-immunity reaction with a fixed virus taken from a case of human encephalitis was made successfully. This evidence is sufficiently conclusive to show that the virus of encephalitis may exist in the saliva of healthy contacts, and may—at least in the case of rabbits—give rise to the disease by artificial transmission.

148. Complement Fixation Reaction in Tuberculosis.

Rieux and Bass (*Ann. de l'Inst. Pasteur*, June, 1921) record the results of the investigation of 425 patients by means of the complement fixation reaction. Guinea-pig's complement and Besredka's antigen (a four-day culture of tubercle bacilli on yolk of egg, sterilized and rendered homogeneous by shaking) were employed. Of patients who were clinically tuberculous 75 per cent. gave a positive reaction; of patients who, on account of their past personal or family history, were presumably tuberculous, 63.75 per cent. gave a positive reaction; while of patients who were suffering from a diversity of diseases, but who were not presumably tuberculous, only 11.5 per cent. gave a positive reaction. They conclude that the reaction is specific, but that it is not to be relied upon in concurrent cases of syphilis or malaria, or in cases of very recent or very advanced tuberculosis. In the early cases, before clinical signs have appeared, before tubercle bacilli can be demonstrated bacteriologically, and before radiography can demonstrate the presence of definite lesions, the reaction is calculated to be of considerable value. By unmasking latent tuberculosis and enabling preventive measures to be applied, they foresee for it a wide future in the prophylactic treatment of tuberculosis.

149. The Action of Adrenaline on the Blood.

Dazzi (*Il Morgagni*, April 30th, 1921), as the result of an experimental study, concludes that the injection of 1 mg. of adrenaline is constantly followed by an increase in the number of red corpuscles, granular bodies, and white corpuscles in circulation; this increase is slight and temporary as regards the red corpuscles, more marked and lasting for the other elements. The increase in white corpuscles is at first confined to the lymphocytes and afterwards to the polynuclear neutrophiles. This lymphocytosis seems to be due to a mechanical mobilization of the elements of the lymphatic apparatus of the spleen, due to the action of adrenaline on the smooth muscle fibres of this organ. The numerical increase in the granular corpuscles and the polynucleated neutrophiles is due to the action of adrenaline on the unstriped muscle in the vessels and bone medulla.

150. The Signification of the Bacterial Capsule.

Fiorito (*Annal. di Med. Naval.*, January, 1921) has made a study of the bacterial capsule, taking the anthrax bacillus as the subject of his experiments, because in this organism the capsule is well developed. He says the capsule is a special formation, varying in thickness in different organisms, attached to the bacillary membrane by delicate bands. It is present throughout the development of the bacillus, and the carbohydrates of the culture medium have considerable importance in the growth of the capsule. The actual material out of which the capsule arises is probably a dialyzable substance which is unchanged at a temperature of 100°. The relation between toxicity and virulence and virulence and good development of the germ is not a strictly parallel one. Fiorito thinks the capsule may be a normal constituent of every germ, the failure to recognize it in every case being due either to the absence in the media of the special substances necessary for its good development, or to defective technique in staining.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

151. Oil Folliculitis.

PAGE and BUSHNELL (*Journ. Indust. Hygiene*, June, 1921) investigated skin affections due to oils, particularly machine oils, and they suggest the term "oil folliculitis," since in the case of machine oils the trouble is due to mechanical plugging, followed by inflammation and infection of the follicles. All types of oil are liable to produce skin affections if in contact with the skin for some length of time, the oil acting as a carrier of infectious material from one individual to another, cleanliness being most important in prevention. Workmen on cutting machines should be careful to avoid contamination of the oil by saliva, and those with skin diseases should be removed from work with oils. Although oils may be sterile and free from dust when sold they soon become contaminated after use, but by heating to 70° C. for thirty minutes all dangerous pathogenic bacteria can be destroyed, and it is best to use oil which has been rendered free from dust, and especially metal particles. Waste and rags used in cleansing the hands should not be exchanged, and clothing saturated with oil should not be worn. Researches by the staff of E. F. Houghton and Co. on the "causes of skin sores and boils among metal workers" show that 0.2 per cent. to 1 per cent. ichthyol contained in some oils will produce skin lesions, and oils pressed from crude solid paraffin contain an irritating substance, while lard oil may contain bacteria. Added germicides are unsatisfactory, the worker's cleanliness being the most important prophylactic, combined with daily filtration and sterilization to reduce the danger of contamination from careless workmen.

152. Arterial Hypertension and Typhoid Fever.

LUMIERRE and PILDELIEVRE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 2nd, 1921) record the case of a man, aged 32, who in the third week of a moderate attack of typhoid fever suddenly developed polyuria, the amount of urine rising from 1½ to 3½ litres in the twenty-four hours. The maximum blood pressure as measured by Pachon's sphygmomanometer was 21, and the minimum pressure 11, in marked contrast with the hypotension which is the rule in typhoid fever. On the afternoon of the same day profuse epistaxis followed by intestinal haemorrhage occurred, and death took place from pulmonary complications. Teissier in 1900, and subsequently Crile, Carrière and Dancourt, Huchard and Amblard, Barach, Olmer, and Roger and Voisin, showed that a sudden rise of blood pressure in typhoid fever was a bad prognostic. The hypertension does not herald intestinal haemorrhage only, but may be a premonitory sign of intestinal perforation, pulmonary complications, or delirium. The hypertension in the present case was accompanied by two symptoms not hitherto described in this connexion, namely, polyuria and epistaxis.

153. The Oculo-cardiac Reflex in Syphilis.

THIBIERGE and BOUTELIER (*Arch. des mal. du coeur*, etc., May, 1921), in a paper read before the Fourteenth French Congress of Medicine at Brussels, state that loss of the oculo-cardiac reflex is frequent in syphilis. It may occur in the primary stage, but is more frequent in the secondary stage, and still more in the tertiary stage and in syphilis of the nervous system, in which it is observed in four-fifths of the cases. In patients who show nervous symptoms at an early stage the changes in the reflex are in no way related to the nervous manifestations, nor is there any parallelism between the meningeal symptoms and changes in the reflex. Investigation of the oculo-cardiac reflex is not therefore of any diagnostic or prognostic value in nervous syphilis, but the frequency of the loss of the reflex deserves to be known, if only to avoid attributing it to some intercurrent affection.

154. The Symptomatology of Lethargic Encephalitis.

HOLMSTRÖM (*Hygiea*, April 16th and 30th, 1921) discusses the symptomatology of lethargic encephalitis, of which he has seen twenty-seven cases, with special reference to its nervous and mental manifestations. He distinguishes between the drowsy mental state of this disease and physiological sleep, pointing out that on recovery the patient often declares that he was not actually asleep, that his brain, on the contrary, was restlessly engaged all the time with a tangle of thoughts. Waking from normal sleep a person usually takes a measurable interval of time to become fully conscious, whereas in the case of lethargic encephalitis the transition from "sleeping" to being wide awake is not thus marked; all that happens is that closed eyes are opened. In all the author's twenty-seven cases more or less well-marked nystagmus was found; it was an early symptom demonstrable in the febrile stage of the disease. Sometimes it passed off before the patient became afebrile, but as a rule it persisted longer than the fever. Another early symptom was diplopia, and in two cases this was the first symptom observed by the patient. Six of the twenty-seven cases terminated fatally.

155. Tuberculosis Simulating Chronic Bronchitis.

PISSAVY (*La médecine*, May, 1921) states that, in old persons especially, pulmonary tuberculosis often simulates chronic bronchitis and emphysema. In such cases the general condition is little affected, and the person in question, provided certain precautions are taken, is able to carry on his ordinary occupation. Such cases, however, are extremely dangerous to their environment, and both in private and hospital practice tuberculosis is often disseminated by persons who are supposed to be suffering merely from chronic bronchitis and emphysema. Pissavy recommends that in all cases of chronic bronchitis a careful examination should be made as to the cause of the condition, as, apart from gas poisoning, he considers there are only four causes of chronic bronchitis—namely, asthma, lesions of the nasopharynx, kidney disease, and cardiac insufficiency. If none of these factors is present, examination of the sputum for tubercle bacilli should be made at least five or six times at more or less distant intervals before tuberculosis can be excluded.

156. Lethargic Encephalitis.

MOLHANT (*Le Scalpel*, April 30th, 1921) draws attention to the frequency of relapses (it may be at long intervals), often affecting quite a different part of the nervous system, in lethargic encephalitis. The author does not think it wise to group hiccough or attacks of trigeminal neuralgia with encephalitis unless there is clear evidence of a primary attack of what is clearly encephalitis. As compared with poliomyelitis anterior, the lesions of encephalitis are much less degenerative in type, and consequently of better prognosis. From their resemblance to those of trypanosomiasis and Sydenham's chorea, the author was led to try atoxyl in daily injections of 10 cg., and in the two cases reported he found it clearly beneficial. Encephalitis may have a peripheral localization, affecting the posterior nerve roots. In these cases there often persists some slight choreic movements, marked vasomotor and trophic troubles, and early swelling of joints. In this class of case sulpharsenol seemed of benefit.

157. Hereditary Diabetes Insipidus.

JANSEN and BROEKMAN (*Nederl. Tijdschr. v. Geneesk.*, May 7th, 1921) report fourteen cases of diabetes insipidus which occurred in five generations except in the second, in which apparently no member was affected. Four of the cases were males and ten females, contrary to the general rule that hereditary diabetes insipidus is commonest in the male sex. They allude to the pedigree compiled by Weil, senior and junior, of five generations consisting of 220 persons, of whom 35 (21 men and 14 women) had diabetes insipidus. They have also collected eleven other cases of hereditary diabetes insipidus reported by Oris, Pain, Gee, Marinesco, Lauritzen, McIlraith, Jasse, Clay, Lacombe, Hewson, and Lancereaux respectively. As in the cases reported by Weil senior, who describes hereditary diabetes insipidus as a "healthy disease" (*gesunde krankheit*), the writers' patients were able to follow their occupation, felt quite well, and reached old age. The symptoms usually developed in infancy, sometimes later, became more marked about the twenty-fifth year, and then diminished. The abundant excretion of water had no effect upon the heart. The blood pressure was normal. Weil senior maintained that the hereditary form of diabetes insipidus should be separated from the acquired form, but the present writers hold that there are no distinguishing features except heredity. Weil suggests that there is a difference in prognosis, but, as the writers point out, in

many cases of diabetes insipidus in which cerebral tumour, cerebral syphilis, tuberculous meningitis, etc., can be excluded, the prognosis is also favourable. There are thus many resemblances between diabetes insipidus and diabetes mellitus. In both there is an hereditary and a non-hereditary form, in both there is an endocrine factor which may come into play (hypophysis, pancreas, etc.), and in both it is possible to produce the disease by experiments on animals. It is further noteworthy that in Graves's disease both polyuria and glycosuria may occur: that in the same family there may be cases of both diabetes insipidus and diabetes mellitus; and, lastly, that recovery from diabetes mellitus may be followed by diabetes insipidus.

158. Subcutaneous Drop-infusion of Adrenaline.

STRÜBING (*Deut. med. Woch.*, April 28th, 1921), working under Professor Neisser at Stettin, has given suprarenin or adrenaline by subcutaneous drop-infusion in about 50 to 60 cases of imminent collapse in diseases such as typhoid fever and influenza. Administered by this method, adrenaline does not act so promptly as when given by intravenous injection. On the other hand, greater continuity of action is secured, and by the gradual administration of adrenaline over a period of about eight to ten hours, the normal secretion of the suprarenals is closely imitated. The supply is regulated so that only about two drops pass per minute into the subcutaneous tissues. In eight to ten hours about 50 c.cm. of normal saline solution containing 6 to 10 mg. of Höchst's suprarenin can thus be given. The author publishes illustrative cases, in one of which he shows that though this method may appreciably raise the blood pressure, it may have to be interrupted owing to such symptoms as headache, giddiness, and nausea. One of his cases was that of an asthmatic, whose response to the injections was remarkably prompt and satisfactory.

SURGERY.

159. Tuberculosis of Tonsils.

WELLER (*Arch. Int. Med.*, June 15th, 1921), from a study of a series of 8,697 consecutive tonsillectomies, found the incidence of active tonsil tuberculosis to be 2.35 per cent. Of the 204 positive cases females slightly preponderated, the ages ranging from 2 to 59 years, the incidence in various age groups depending largely on the character of the population, being high in institutions for children and among medical students and nurses. Three types were noted, the most common being focal crypt infections involving one or more crypt areas only and avoiding the lymph follicles, and usually being unilateral. The majority were primary infections, though some were auto-infections from tuberculosis of the respiratory tract. Another type presented ulcerative lupus-like lesions from the coalescence of crypt infections, or from direct extension from neighbouring surfaces. The third type was a diffuse miliary tuberculosis, usually bilateral, the tubercles being widely scattered almost exclusively in the follicles and germ centres, being a haematogenous dissemination. Mixed types were noted in patients with pulmonary tuberculosis, autoinfection being associated with haematogenous miliary tuberculosis, giving a combination of crypt infections with diffuse miliary tubercles. In the hope of removing an active focus of dissemination in cases of cervical or pulmonary tuberculosis it would appear to be advisable to remove the tonsils in such cases.

160. Quartz Lamp Treatment of Rickets.

ERLACHER (*Wien. klin. Woch.*, May 19th, 1921) states that the effect of the quartz lamp on rickets was first systematically studied with the help of *x* rays by Huldschinsky, who succeeded in curing with the ultra-violet rays all degrees of rickets in children aged from 1½ to 6 years after twenty-two to twenty-six sittings. His observations were confirmed by Potzig and Riedel. Recently Erlacher himself has treated forty-two patients by this method, the cases including early, well-developed, and chronic examples of the disease in children aged from 1 to 7 years. Every month comparative skiagrams of the epiphyses of the right forearm were taken. At first the treatment was applied every other day, and later daily, beginning with the abdomen and back, each of which was irradiated five minutes at a time. The duration of the treatment was then increased by two minutes, until it amounted to fifteen minutes each for the abdomen and back. No bad effects were observed. The children were either treated as out patients or admitted to hospital without any change in their diet; no drugs were given. After four weeks' treatment the skiagrams showed an increased deposit in the osteoid tissue, and clinical improvement generally occurred after six weeks' treatment. Spontaneous fractures rapidly united and osteotomies and osteoclasias became consolidated with a firm callus in four to six weeks' time. Erlacher concludes that quartz lamp treatment constitutes a cheap, convenient, and effective method of treating rickets, and enables the practitioner to dispense with costly drugs the action of which is still uncertain. Within a year a single lamp can, he considers, cure over a thousand patients.

161. Parotid Enlargement of Auricular Origin.

REVERCHON AND WORMS (*Rev. de lar., d'otol., et de rhinol.*, May 31st, 1921) describe two varieties of enlargement of the parotid gland associated with otitis. In the first variety a painful swelling of the parotid region resembling mumps develops in the course of acute suppurative otitis or during a recrudescence of chronic otitis. The temperature is slightly raised, but there is no increase in salivation. In a few days the swelling diminishes under local antiphlogistic treatment but without disappearing altogether, and the parotid enlargement becomes chronic. In such cases there is an inflammation of the periglandular cellular tissue and of the deep lymphatic glands imbedded in the parotid, but there is no inflammation of the parotid gland itself. In the second variety there is a true inflammation of the parotid occurring in more or less acute attacks in subjects of chronic otitis on the same side as the affected ear. The attacks are characterized by the discharge of an abundant saliva, associated with a deep and transient otalgia. The pathogeny in these cases appears to depend on a nervous mechanism. The otitis is associated with a neuritis of the nerve of Jacobsen, which is manifested by attacks of pain followed by salivation, and irritation of the auriculo-temporal nerve gives rise to inflammation of the parotid.

162. The Dangers of Lumbar Puncture in Pott's Disease.

GUILLAIN and LAROCHE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 2nd, 1921) record five cases showing that the spinal symptoms in Pott's disease may be aggravated by lumbar puncture, although apparently only a small amount of cerebro-spinal fluid is withdrawn. This occurrence is explained as follows: Lumbar puncture modifies the tension of the cerebro-spinal fluid, the amount of which removed is certainly more than is supposed, because the fluid continues to escape into the epidural space after the needle is withdrawn. Even when the puncture is made at some distance from the tuberculous lesions the diminution in tension of the cerebro-spinal fluid may cause an aspiration of the caseating substance, mobilize the bacilli, and produce circulatory disturbances in the congested and oedematous spinal cord. Although examination of the spinal fluid in Pott's disease may sometimes furnish valuable information, the results are not always indispensable for diagnosis, which may be established by clinical examination accompanied by *x* rays, while the therapeutic value of lumbar puncture in Pott's disease is *nil*. Under these conditions the writers are of opinion that in a patient with spinal symptoms the probable existence of Pott's disease is a contraindication to lumbar puncture.

163. Pneumococcal Peritonitis.

PROVINCIALI (*La Pediatria*, May 1st, 1921) publishes two cases of idiopathic pneumococcal peritonitis. (1) A child, aged 8, with negative heredity, became suddenly ill with fever, vomiting, diffuse abdominal pain and hiccough, much thirst, constipation followed by diarrhoea, and profuse sweating. Four days later the fever lessened and the abdomen began to swell; there were no thoracic symptoms. When admitted into hospital ten days later the child presented a peritoneal facies; remains of herpes on the lips and nose; no signs of pulmonary disease; some pericarditis; no enlargement of liver or spleen; fluid in the abdomen. Wassermann, typhoid, and paratyphoid tests negative; von Pirquet faintly positive; polynuclear leucocytosis; no albumin. Abdominal paracentesis gave about 100 c.cm. of thick yellowish inodorous pus containing Fraenkel's pneumococcus. Subsequent laparotomy and withdrawal of about 2 litres of pus was followed by cure in about two months. (2) A child, aged 9, with similar symptoms, but no pericarditis. Laparotomy was followed by collapse and death. Suggestive points in these cases are the sudden onset, labial herpes preceded by coryza, polynuclear hyperleucocytosis, negative serum tests, and presence of the pneumococcus in the pus.

164. Spondylosis and Spondylitis.

ACCORDING to MODINOS (*Paris méd.*, May 28th, 1921), who records three illustrative cases, the Marie-Strümpell or rhizomelic type of spondylosis is characterized by (1) complete welding together of the vertebrae which occurs first at the lower half of the vertebral column, and ossification of the anterior annular ligaments and of the vertebral discs; (2) ankylosis of the joints at the root of the limbs, especially the hip-joint, with pain in the sacro-lumbar and coccygeal regions, the pain being spontaneous and increased by pressure and movement; (3) a series of radicular symptoms due to compression of the roots of the nerves caused by narrowing of the vertebral foramina by bony deformities giving rise to intercostal, brachial, or crural neuralgia. Paraesthesia or hyperaesthesia has also been observed in the limbs with fibrillary contractions, atrophy, and reaction of degeneration. In addition to the Marie-Strümpell form is the type described by Bechterew of chronic rigidity of the vertebral column, in which the rigidity begins above and gives rise to a cervico-dorsal kyphosis with a tendency to spread downwards, contrary to what is observed in rhizomelic spondylosis which spreads from below upwards. This form is never generalized and the limbs are not affected. In infective or typhoid spondylitis, which was first described by Gibney in 1889 and later by Osler in 1894, there is an inflammation of the vertebral column involving the periosteum and ligaments rather than the bones. The usual site of the lesions is the lumbar region. Clinically the most constant symptom is pain, which radiates into the lower part of the body and is accompanied by hyperaesthesia and exaggeration or abolition of the reflexes. BANCHIERI (*Il Policlinco*, Sez. Prat., May 23rd, 1921) records a case of rhizomelic spondylosis in a man, aged 48, which was remarkable for its syphilitic etiology and the occurrence of Froin's syndrome (xanthochromia of the spinal fluid and spontaneous coagulation shortly after it had been withdrawn). Considerable improvement took place under specific treatment.

165. Tuberculosis of the Knee.

SACCO (*La Chirurg. degli Organi di Movimento*, April, 1921) contributes a statistical review of 402 cases of tuberculous disease of the knee seen in hospital between 1907 and 1920. Of these, 237 were male and 165 female. In the male the right side was more often affected, and in the female the left side. A tuberculous family history was only obtained in 6 per cent. of the cases. The two epochs in which the disease reaches its greatest frequency are between 6–10 years and between 16–20 years, with a slight predominance of the latter period. Cervical adenitis and pleurisy figure rather prominently as predisposing conditions. Amongst the symptoms mention is made of hypotrophy of the limb, swelling of the knee, flexion, pain, subluxation of the tibia, etc. Exact pathological data were secured in 69 resections; of these, 37 showed a prevalence of bony lesions, 13 of synovial, and 12 mixed. Sinuses were noted in 13 per cent. of the cases, mostly on the anterior aspect. Flexion was by far the commonest deformity. 220 cases were treated by immobilization and general treatment, and 182 were operated upon. Of 69 resections the results were: 41 with rectilinear ankylosis and perfect consolidation, 8 with fibrous ankylosis and sinuses, 4 ended in amputation, 2 in disarticulation at the hip, 3 in death, and 11 in bad positions. Operations to correct deformity (osteotomies) were almost all successful. Even after apparent cure it is very difficult to be sure that tuberculosis of the knee will not become active again. The author estimates that, as far as could be traced, about 70 per cent. of his cases treated with immobilization remained cured.

166. Non-operative and Post-operative Treatment of Cancer.

PFAHLER (*Therapeutic Gazette*, June 15th, 1921) discusses the treatment of cancer by other means than excision, and its post-operative treatment by *x* rays or radium. In skin cancer the basal cell epitheliomata can all be cured by massive doses of *x* rays or radium sufficient to destroy all the cancer cells at once. In cancer of the mucous membranes, epithelioma of the lip is best treated by local destruction with electro-coagulation, followed by thorough radiation with *x* rays. If excision is adopted, thorough post-operative *x*-ray treatment should follow. Epitheliomata elsewhere in the month should receive combined *x*-ray and radium treatment, and at times local destruction with electro-coagulation, and in some instances excision of the cheek or half the lower jaw. The ideal treatment of breast cancer consists of an ante-operative course of *x* rays to devitalize and destroy the cancer cells, followed by as complete and radical an excision as though no *x*-ray treatment had been given, and, as soon as practicable after the operation, a further treatment by *x* rays. Recurrences and metastases will generally yield to thorough radiation. In inoperable primary mammary carcinoma radiation affords a reasonable chance of success, the *x* rays being applied from all angles, followed in two or three weeks by the introduction of radium needles. In doubtful or inoperable carcinoma of the uterus thorough radiation gives more satisfactory results than any other method, large masses of malignant disease completely disappearing under radium treatment internally, and thorough radiation by the deepest *x* rays externally. In operative cases thorough radiation of the pelvis decreases the liability to recurrence. Each case should have the advantage of co-operation between the gynaecologist and radiologist in order to obtain the best results.

OBSTETRICS AND GYNAECOLOGY.

167. Active Treatment of Febrile Abortion.

HEBERER (*Zentralbl. f. Gynäk.*, June 18th, 1920) reports that since 1919 at the Dresden Frauenklinik all cases of pyrexia following abortion have been treated, in the absence of demonstrable adnexal or peritoneal inflammation, by immediate operation, the remnants of gestation being removed by digital manipulation followed by careful scraping with the blunt curette. The results have been better than those formerly obtained by expectant treatment, when curetting was deferred till the fifth to eighth day after disappearance of pyrexia. A report is given of fifty cases, in which bacteriological examinations were made of the blood, the uterine contents and the placenta—the latter after fixation in formalin and staining of sections. The cases, eight in number, in which haemolytic streptococci were found in the blood, showed no increased severity as compared with others. The placenta contained streptococci in sixteen instances, staphylococci in seven, and other organisms or mixtures of organisms in fifteen. As an argument against the contention of the advocates of expectant treatment that curetting may be responsible for ingress of bacteria into the blood and lymphatic circulations, it is noteworthy that only in two cases (respectively of staphylococcal and of *B. coli* infection) could bacteria be found in blood cultures made three days after operation, whereas in forty-three cases blood cultures made on admission gave positive results. Heberer disagrees with those who have sought in bacteriological examination of the blood or uterine contents, especially with regard to the presence of haemolytic streptococci, to find indications determining prognosis or the propriety of active as against expectant treatment; those cases take the most favourable course, he finds, which have received operative treatment at the earliest moment.

168. Gynaecomasty.

ACCORDING to FOUCHET (*Journ. de méd. et de chir. prat.*, June 10th, 1921), gynaecomasty, or hypertrophy of the mammary gland in the male appearing at puberty, is an extremely rare affection. Heredity and certain diatheses such as scrofula appear to be predisposing causes. It is observed more frequently in certain countries, such as Russia and Brazil, than in others. The essential cause is a congenital or acquired testicular lesion, such as cryptorchism, testicular atrophy following syphilis, mumps or trauma, or unilateral or bilateral castration. The pathogeny of gynaecomasty is as follows: The interstitial cells of the testes secrete and discharge into the blood stream at puberty a hormone causing growth of the breasts. Normally the action of this hormone is destroyed by the inhibitory action of the testes, but if there is a congenital or acquired testicular lesion gynaecomastia develops. The condition is not a serious one, as no cases of secondary malignant growth have been recorded. In a few instances secretion of milk occurs. Administration of testicular extract has no effect, and surgical treatment alone is of value.

169. Operation for Vesico-vaginal Fistula.

CATES (*Amer. Journ. of Surg.*, June, 1921) describes an operation suitable for vesico-vaginal fistula situated high up towards the fornix, and when the vagina is fixed in a mass of cicatricial tissue. By a circular incision around the fistula, partly through scar tissue, and extending into normal vaginal mucosa below, a funnel-shaped cuff of tissue is dissected towards, but stopping short of, the

fistula. This is tied tightly near the stem of the funnel with No. 1 catgut, the excess of the cuff being cut away, and the tied stump buried under the new surfaces with two rows of purse-string catgut sutures. A catheter may be kept in the bladder for a few days, though this may not be necessary. In the case described the wound healed well, and two or three years later the patient was entirely rid of the nuisance the fistula had previously caused her.

170 Intra-abdominal Radium Applications for Uterine Cancer.

PLANSE and MALLET (*Bull. et Mém. de la Soc. de Chir.*, June 21st, 1921) describe a modification of Schwartz's method of treating inoperable cancer of the uterus by placing within the broad ligaments, after laparotomy, needles containing radium emanation. They use small tubes, each containing a quantity of radium salt equivalent to 2 mg. of radium element, and covered by a protecting filter; at the same time they perform ligature of the internal iliac arteries. Through each of the peritoneal incisions made for this purpose two flexible rubber tubes containing the radium at their distal ends are passed downwards and forwards into the base of the broad ligament, and the incisions are closed by purse-string sutures. The uterus being drawn backwards, incisions are now made on each side in the peritoneum, 2 cm. external to the border of the uterus, and about 0.5 cm. below the round ligament; the folds of the broad ligament and the vesico-uterine fold being separated by means of artery forceps introduced through the incisions, three tubes of radium contained in soft rubber tubes are left within the vesico-uterine connective tissue on each side. The proximal ends of the rubber tubes are allowed to protrude at the lower angle of the abdominal wound, and the tubes are withdrawn after ninety-six hours.

171. Premature Placental Detachment.

FRANKL and HIESS (*Arch. f. Gynäk.*, 1921, cxiv, 2) during twelve years found premature placental detachment in 34 cases (0.096 per cent.), of which 32 per cent. affected primiparae, 54 per cent. were severe, and 27 per cent. fatal. History or signs of gonorrhoea were absent, but 57 per cent. of the cases exhibited albuminuria. In two instances free blood was found *post mortem* in the peritoneal cavity; it is suggested that this entered through the abdominal ostia of the tubes as a consequence of increased intra-uterine pressure. With regard to treatment, rupture of the membranes is described as a two-edged sword, which by diminishing the intrauterine pressure may lead to fresh bleeding, but which when the external or internal haemorrhage is not too severe, or when labour is moderately far advanced, may be of great service. Abdominal section should be performed in severe cases.

PATHOLOGY.

172. Changes in the Cerebro-spinal Fluid in Early Syphilis.

KÖNIGSTEIN and SPIEGEL (*Wien. klin. Woch.*, June 16th, 1921) remark that the cerebro-spinal fluid in the early stages of syphilis, even when there are no clinical nervous symptoms, shows changes similar to those found in cerebro-spinal syphilis and general paralysis. As hitherto no systematic comparative investigations have been made correlating the changes in the cerebro-spinal fluid with those in the central nervous system, the writers examined 31 cases, consisting of 4 of acquired syphilis in adults, 26 of congenital syphilis in infants, and one foetus, with the following results: When the cerebro-spinal fluid was positive, changes were found in the central nervous system, especially the meninges; the spinal cord was always affected to a greater or less extent. When the cerebro-spinal fluid was negative, the spinal cord was always normal, though in one case meningeal infiltrations were found over the cerebellum, and in another case over the cerebral hemispheres. In children the Wassermann reaction was more frequently positive than in adults when lymphocytosis was scanty or absent.

173. Etiological Conception of Lethargic Encephalitis.

As a result of their extensive researches LEVADITI, HARVIER, and NICOLAU (*C. R. Soc. Biologie*, July 2nd, 1921) appear to have arrived at a sound conception of the etiology of lethargic encephalitis. Four types of virus have been encountered and experimented upon: (1) The salivary virus of healthy subjects; inoculated on to a rabbit's cornea it either produces no effect at all or it gives rise to a kerato-conjunctivitis of variable intensity; it cannot be carried indefinitely from cornea to cornea, and it never gives rise to a fatal encephalitis. (2) The salivary virus of healthy carriers; this is distinguished from the preceding virus in that it is transmissible indefinitely from cornea to cornea, and that it gives rise not only to a keratitis, but to a fatal encephalitis. (3) The virus of herpes; this has been isolated from corneal and from labial herpes, and, except for its lesser virulence, cannot be distinguished from the virus of encephalitis. (4) The virus of lethargic encephalitis; this is obtainable from the hairs of patients who have succumbed to encephalitis, or from their nasopharyngeal secretions during life. Taking each of these in turn, and working out their cross-immunity reactions, they have reached the conclusion that these four types of virus are of the same nature, though of unequal virulence; they are related to each other in much the same way as are the more or less pathogenic types of streptococcus, meningococcus, or pneumococcus. It must be admitted, therefore, that previous to the epidemics of encephalitis the virus of the disease already existed in the saliva in such manifestations as herpes and the herpetic anginas. Owing to a progressive increase in the virulence of the organism it has acquired the new faculty of being able to attack cells of the nervous system, with the consequent appearance of lethargic encephalitis.

174. Fractional Examination of the Gastric Juice after a Test Meal

CHIASSERINI (*Il Policlinico*, Sez. Prat., May 9th, 1921) examined specimens of the gastric contents removed at intervals of ten, fifteen, twenty, and thirty minutes in the course of two to three hours after a test meal. The patients, who were 30 in number, had been admitted to hospital for various gastro-duodenal affections. The object was to determine the condition of the total acidity and the free hydrochloric acid at various stages of gastric digestion. This fractional method of gastric analysis was first employed by Hayem in 1905, but was only used on a large scale by Rehfuss and his collaborators Bergheim and Hawk in 1914, who made use of a special tube which had the advantage that once introduced into the stomach it could remain *in situ* for two to three hours, during which samples of the gastric contents could be withdrawn without discomfort to the patient. Chiasserini came to the conclusion that the method of fractional examination of the gastric juice represented a progress over the ordinary method of gastric analysis because it enabled one to follow the entire cycle of gastric digestion. His results, however, were not so definite as those obtained by Rehfuss and his collaborators, probably owing to the absence of the special tube employed by these investigators.

175. Pressure of the Bile Secretion in Man.

ROBITSCHEK and TUROLT (*Wien. klin. Woch.*, June 2nd, 1921) measured the pressure of the bile secretion in patients in whom drainage of the hepatic duct had been performed owing to obstruction of the common bile duct. A drainage tube which was sewn into the hepatic duct was connected with a vertical glass tube with a diameter of 5.5 cm., and it was found that the bile reached a height of 210–270 mm. The height to which the bile rose depended upon the secretory power of the liver cells, the intra-abdominal pressure and the contractility of the musculature of the bile ducts. Physostigmine and pilocarpine raised the pressure, and papaverine lowered it.

176. Pregnancy and the Wassermann Reaction.

OPITZ in a preliminary communication (*Zentralbl. f. Gynäk.*, June 4th, 1921) records his opinion that the results of systematic performance of the Wassermann test for detection of syphilis in the pregnant or parturient are not worth the trouble and the expense involved; the history and ordinary clinical examination are more reliable. Of 250 pregnant women in whom the Sachs-Georgi and the Wassermann tests were performed (the latter according to the original method and also by Stern's modification) eight only were certainly syphilitic; nevertheless, according to the results of Wassermann's or the Sachs-Georgi reaction, nine, and according to the results of Stern's test, sixteen of the remaining 242 healthy subjects were luetic. Retro-placental blood gave one of the syphilitic reactions in eighteen of the non-syphilitic cases. In two instances only among the eight syphilitic cases did blood taken from the umbilical venous blood give a positive Wassermann or Sachs-Georgi reaction. The author is investigating the comparative frequency of a positive complement-deviation test in healthy pregnant and non-pregnant subjects.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

177. Cardiospasm.

PAL (*Wien. klin. Woch.*, June 16th, 1921) states that the causes of cardiospasm, or spasmodic contraction of the cardiac end of the stomach, are as follows: (1) disease of the neuro-muscular apparatus (paralysis, atony); (2) primary reflex, central or peripheral stimulation of the cardiac orifice; (3) disease of the vagus. Primary cardiospasm occurs in three forms—namely, an acute, an intermittent, and a chronic form. The acute form is usually caused by a sudden irritation of the cardiac orifice and very rapidly subsides. Some persons react to psychical excitement by cardiospasm. The condition is sometimes accompanied by very alarming symptoms, such as syncope and stoppage of the heart, probably from irritation of the vagus. Chronic cardiospasm frequently commences in an intermittent form. Such cases are, as a rule, pure neuroses, and are often associated with pylorospasm or bronchial spasm. Various causes have been incriminated, such as mediastinal gland tumours, bulbar disease, trauma, carcinoma, gastric ulcer, infectious diseases (influenza, diphtheria), intoxication (lead), and metabolic diseases. The most frequent underlying cause is a functional neurosis. True cardiospasm is manifested by stoppage of food in the region of the cardiac orifice. The condition may be mistaken for angina pectoris or cardiac asthma. The symptoms are caused, to a great extent, by the efforts to swallow leading to dilatation of the oesophagus, which occurs more rapidly and in a greater degree than in organic disease. The oesophagus assumes an S-shaped appearance, and the displacement of the neighbouring organs may give rise to alarming symptoms. The condition must be distinguished from deep-seated diverticula and from carcinoma of the cardiac end of the stomach. *X* rays aid in the diagnosis. In the intermittent stage atropine and papaverine are effective, but not later. Dietetic measures are indicated according to the case. Psychical factors must be considered. In persistent cardiospasm surgical interference is required.

178. Iodine in the Treatment of Goitre.

BEEBE (*Med. Record*, June 11th, 1921) emphasizes the value of iodine in the treatment of hyperthyroidism, all the requirements for such therapy being met by the three forms of iodine—namely, potassium iodide, ferrous iodide, and thyroid extract. A normal thyroid contains a relatively higher quantity of iodine per gram of gland than a goitrous gland, and the iodine content is rapidly increased in many forms of goitre during iodine administration. Large doses are quite unsuitable, and even dangerous, in goitre, the total quantity of iodine in any thyroid gland being very small in comparison with the amounts usually given therapeutically. Small doses, one to two grains of potassium iodide, should be given three times a day over long periods, the initial dose being gradually increased up to five grains only after four or six weeks. External applications are deprecated, since whatever iodine can do can be done by the administration of the potassium salt, which should be continued with general hygienic care of the patient, especially as regards infectious and gastro-intestinal disorders. Treatment may have to be continued for a year or more, and even after normal conditions of health and gland have resulted it may be wise to continue the iodine in small doses. Properly regulated under observation, iodine is most valuable in the treatment of the hyperthyroid forms of goitre, its most pronounced specific effects often being seen in women who have had the disease for several years with all the cardinal symptoms of exophthalmos, tachycardia, and tremor well developed. Such treatment carried out for a long time both before and after operative or *x*-ray measures is an essential in maintaining the beneficial effects of such measures.

179. Serum Treatment of Lobar Pneumonia.

HERRICK (*Med. Record*, June 4th, 1921) considers that serum should be administered in every case of pneumococcus Type I lobar pneumonia infection until this method is supplanted by one less cumbersome, as seems a future possibility, in the shape of a concentrated solution free from the objectionable serum proteins and containing antibodies for all the recognized pathogenic types of pneumococci. Meddlesome interference is deprecated as depriving the patient of much needed rest, and there should be as little examination as possible, with two attendants to spare the patient all effort in moving. The oxygen unsaturation of the blood makes the administration of oxygen by an effective method of great importance. Drugs are of no specific value, and there is no convincing evidence that even digitalis does much good, and stimulants and caffeine often irritate and banish sleep. Pituitrin may be useful, in cases of abdominal distension from toxic paresis of the gastro-intestinal tube, in conjunction with a turpentine enema. Adrenaline in small doses of three to five minims at frequent intervals, or administered in oil to ensure slow absorption, is of value in cases with very low blood pressure and impending collapse, or whenever there is a tendency to oedema of the lungs.

180. Roentgen Therapy in Superficial Malignancy.

MEYER (*New York Med. Journ.*, June 15th, 1921) considers that every sore refusing to heal, every irritated mole, every persisting local skin irritation may be the incipient stage of an epithelioma, and if such do not yield promptly to palliative treatment they should be regarded as being precancerous, if not already malignant, and be treated by properly controlled Roentgen dosage. Whether the lesion be superficial or deep it is necessary to ascertain (1) whether stimulation, inhibition, or destruction is indicated; (2) the quantity and penetration, filtration, distance, and time, and, in deep cases, the number of areas for cross fire to bring about the total cumulative absorption at the site of the lesion; and (3) the protection of normal tissues. The dose must be estimated by absorption for the destruction of the original seat of invasion, including a narrow area of supposed healthy tissue. A strong inhibitive dose by the cross fire method should be applied a considerable distance beyond the original lesion, laterally and in depth, in order that no stray cells of the invasion may be overlooked or possibly stimulated, with a similar application for possible metastasis along the lymphatic routes. Of 100 consecutive cases of superficial malignancy complete retrogression within two months followed treatment in 99 per cent. without recurrence, the one recurrence yielding to a second application; and 80 per cent. have been without recurrence for over three years, and no cases included in the series have been treated within a year. This method of properly controlled dosage affords, he considers, the most satisfactory means of treating such affections.

181. Oedema of the Cheek as a Sign of Thoracic Aneurysm.

PIRERA (*Gaz. Med. Napol.*, No. 9, 1920) reports the case of a man, aged 52, whose only complaint was that on waking in the morning he found that his left eyelid and cheek were swollen; the swelling disappeared during the day. There were no cardiac or renal symptoms, and nothing abnormal was found on examination of the heart. There was no cough, no pupil or pulse inequality, no pulsation or sternal dullness, but an *x*-ray examination showed a definite aneurysm of the ascending part of the aorta near its angle of inflexion. The oedema of the cheek was almost certainly due to pressure of the aneurysm in the horizontal position, a pressure which was released in the erect position; hence the disappearance of the swelling whilst the patient was up and about.

182. Treatment of Nervous Syphilis by Subcutaneous Injection of Arsenical Compounds.

TIXIER and DUVAL (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 9th, 1921) have treated several cases of nervous syphilis by subcutaneous injections of sulpharsenol, or "914," with satisfactory results. The initial dose of sulpharsenol was 0.06 gram, and the final dose 0.6 gram, the dose being increased 0.06 gram at each injection. The injections were given at first every two days, then every three, four, and five days. Sulpharsenol was given every two days in doses of 0.10 to 0.15 gram in 1 to 2 c.cm. of a 1 in 100 solution of novocain. The general improvement following injection was, it is stated, comparable to that observed in malaria after intramuscular injection of quinine, and the nervous symptoms—such as headache, vertigo, disturbance of gait, and mental disorder—were favourably affected. The arsenical treatment was followed by a series of intramuscular injections of grey oil.

183. Value of the Radio-extensor Reflex.

PASTINE (*Il Policlinico*, Sez. Med., June 1st, 1921) states that under normal conditions percussion of the upper half of the outer border of the radius causes not only a flexion of the forearm, but also a more or less marked extension of the hand. This reflex, which Pastine calls the radio-extensor reflex, is constant or almost constant in physiological conditions, and should be investigated in addition to the other principal reflexes of the upper limb—namely, the tricipital, radial, radio-pronator, and ulno-pronator reflexes. In ulnar paralysis the radio-extensor reflex is usually not affected, for obvious reasons. In median paralysis percussion causes a more marked extension of the hand than on the healthy side, and at the same time a more or less definite supination of the forearm and hand. In motor paralysis of the musculo-cutaneous nerve the radio-extensor reflex is preserved, while the ordinary radial reflex is lost. In musculo-spiral paralysis the radio-extensor reflex is lost, but if there is merely paresis it is only diminished. In Erb-Duchenne paralysis percussion of the radius does not cause flexion of the forearm because the fifth and sixth cervical roots are involved, but gives rise to extension of the hands because the seventh cervical root innervating the muscles on the dorsal aspect of the forearm is intact. In the median radicular syndrome in which the seventh cervical root is involved the radio-extensor reflex is lost for the reasons mentioned. In the Aran-Duchenne-Dejerine-Klumpke syndrome, in which the fifth, sixth, and seventh cervical roots are intact and the eighth cervical and first dorsal roots are affected, the reflex is preserved. The persistence or disappearance of the radio-extensor reflex, like the persistence or disappearance of the tricipital reflex, indicates immunity or involvement of the seventh cervical root by a morbid process. In addition to lesions of the brachial plexus, the reflex should be investigated in cervical tabes, syringomyelia, and various meningo-radicular cervical processes primary or secondary to vertebral changes (dislocation, fracture, Pott's disease, osteo-arthritis, etc.) and affections of the cervical cord, especially tumours in which it is essential to determine the situation of the lesion in view of operation.

184. Intravenous Injections of Sodium Salicylate in Polyneuritis.

RUBENS (*Deut. med. Woch.*, June 2nd, 1921) has found polyneuritis so often associated with a history of recent influenza that whenever he sees a case of neuritis he is fairly confident of obtaining a history of influenza. He suggests that in chronic cases of supraorbital neuritis the toxins of influenza may still circulate in the blood, and he finds confirmation of this hypothesis in the success he has achieved by the intravenous injection of sodium salicylate. He gives at one injection twelve sterilized bulbsful, each containing 0.43 gram sodium salicylate, 0.05 gram caffeine, and water to 3 grams. The injection is repeated daily, and, as an illustrative case shows, every injection was followed by improvement, and after the fifth the patient could sleep undisturbed by pain. She was discharged as cured after twelve injections. In two comparatively obstinate cases each required twenty-four injections. The author adds, as a technical "tip," that a vein will be more easily found if, just before an injection, the patient is given a cup of coffee or a glass of wine.

185. Pulmonary Tuberculosis in Advanced Life.

STEPHAN (*Zeit. f. Tuberk.*, May, 1921) states that from 1912 to 1919, 476 cases of pulmonary tuberculosis above the age of 40, consisting of 338 men and 138 women, were admitted to the municipal hospital at Mannheim. The effect of the war was shown by a considerable increase in the mortality, especially in women, and by a more rapid course of the disease. The characteristic symptoms of pulmonary tuberculosis in advanced life are the early loss of flesh and anaemia, which may both give rise to an erroneous diagnosis, as well as a frequently afebrile course, so that an early *x*-ray examination is desirable in such cases. A low blood pressure is a striking feature. Hypertrophy and dilatation of the left ventricle, which are also frequently found *post mortem*, may be the only evidence during life of renal sclerosis. The morbid anatomy of pulmonary tuberculosis in advanced life is characterized by a tendency to the formation of fibrous tissue. This phenomenon did not show any essential change in the course of the war, in contrast with autopsies in younger persons in whom exudative processes predominated. The aggravation of the prognosis of pulmonary tuberculosis in advanced life during the war was therefore not due to a change in the character of the pulmonary process, but is explained by the diminished resistance of the system caused by factors connected with the war.

SURGERY.

186 Appendicitis without Peritonitis.

DESCOMPS (*Paris méd.*, June 11th, 1921) states that involvement of the peritoneum in appendicitis is so frequent that the possibility of appendicitis without peritonitis is hardly ever considered. He points out, however, that forms of appendicitis exist in which the morbid process is confined to the follicles of the mucous membrane of the appendix without involving the serous coat. Two varieties of this form of appendicitis may occur, the one running a hyperacute course with symptoms of virulent toxaemia, and the other a slow course with symptoms of chronic toxaemia. The abdominal symptoms may be very slight or absent, or there may be spontaneous pain and tenderness—in exceptional instances very severe—in the right iliac fossa. The general symptoms, on the other hand, predominate and consist in a rapid and feeble pulse, irregular respiration, spasm of the glottis, hiccough, precordial distress, hypothermia, less frequently hyperthermia, vasomotor changes, such as pinched features and cyanosed extremities, and secretory changes, such as dry skin, followed by cold sweat, oliguria, and diarrhoea.

187. Foreign Bodies as a Cause of Appendicitis.

KELLING (*Zentralbl. f. Chir.*, June 4th, 1921) states that apart from faecal concretions, which are found in about 5 per cent. of all corpses, and parasites such as oxyurides, foreign bodies in the appendix are extremely uncommon, the most frequent being fish-bones, needles, nails, bones, fruit kernels, small shot due to eating game. Eggshells, fragments of glass or enamel, and fish-hooks may be mentioned as rarities. Kelling records the case of a woman who had swallowed a small screw without noticing it, and subsequently developed symptoms of appendicitis. At the operation the appendix was found to be much thickened and inflamed and contained at its tip a screw 7 cm. long and 4 mm. thick, with the tip directed to the blind end of the appendix. Recovery followed appendicectomy.

188. Empyema in Infancy.

ROVELLO (*La Clin. Chir.*, September-October, 1920) publishes a study on empyema based on 172 cases seen by him in the last ten years. Empyema is relatively more common in infancy than in adult life, and usually starts as a purulent pleurisy, and not a transformation of a serous into a purulent effusion. It is very seldom primary, but nearly always secondary to some lung condition, most often pneumococcal in origin. This secondary infection occurs more readily in childhood owing to the insufficient resisting power of the child. The author describes the various types of empyema and their complications, including pleuro-cutaneous and pleuro-bronchial fistulae, and discusses the various methods of treatment, deciding in favour of free thoracotomy, excising sufficient rib to get good drainage. Spontaneous cure may occur, but should not be relied on, and when it comes about by bronchial fistula it is prolonged and full of risk; this is still more dangerous if the fistula is cutaneous. When death occurs it is usually through infection of the lung. Brief details of the 172 cases are given.

189. Rare Bony Abnormalities.

THURSTAN HOLLAND (*Journ. of Anatomy*, July, 1921) has a paper on "Rarer ossification seen during *x*-ray examination." Cases of accessory bones of the foot are described and illustrated, and amongst these six of the bone of Vesalius, all bilateral; this bone has been discussed by many writers and is of historical interest. The comparatively rare condition known as "Köhler's disease of the scaphoid bone" is illustrated by radiographs showing the *x*-ray appearances during the attack and some years later when all symptoms have disappeared. The paper contains notes also on a rare condition in which an apparent epiphysis is present on the upper and outer parts of both patellae. The point of the paper is the frequent occurrence of some of these anomalies and their importance from the medico-legal standpoint in cases of injury to the foot, etc. There are many references to the literature of the subject.

190. Isolated Fractures of the Lumbar Transverse Processes.

OUDARD and JEAN (*Bull. et Mém. Soc. de Chir. de Paris*, May 24th, 1921), in a study based on thirty-one cases, seven of which are original, state that, with the exception of an article by Tanton in the *Revue de Chirurgie*, 1910, no monograph has hitherto appeared on this subject. In most cases only a single transverse process is fractured. When there are multiple fractures the neighbouring transverse processes on the same side are involved. In only one case were both the transverse processes of the same vertebra fractured. The transverse process of the first lumbar vertebra is most frequently affected, as it is most exposed to direct trauma. As regards the etiology, most of these fractures have been observed in adult males, the injury being of various kinds, such as the falling in of a mine, or a fall from a bicycle or out of a carriage. In all such cases there is a direct shock to the lumbar region. In another group of cases there is no direct shock to the lumbar region, but a fall on the feet or a violent effort with sudden stretching of the lumbar muscles. The most constant symptom is pain in the lumbar region on the side of the fractured transverse process. The pain, which is usually very violent, is exaggerated by the least movement of the trunk, and may radiate to the thigh and leg, or, on the other hand, be masked or modified when there are coexistent visceral lesions, such as contusion of the kidney, rupture of the intestine, etc. On palpation there is great tenderness in the lumbar region. No ecchymosis or deformity as a rule is seen, but the patient adopts a characteristic attitude, the vertebral column being extended and inclined to the affected side so as to relax the muscles which are inserted into the injured transverse processes. Complications may occur, such as necrosis of the fragment with abscess formation, contusion of the kidney, and rupture of a coil of small intestine. Treatment consists in immobilization in bed, an apparatus or traction being unnecessary. An immediate operation is not required, but intervention may be needed if the pain remains severe after a month and radiates along the lumbar nerves.

191. Braun's Splanchnic Anaesthesia.

BUHRE (*Zentralbl. f. Chir.*, June 11th, 1921) states that he has employed Braun's method of splanchnic anaesthesia after opening the abdomen in 200 cases during the last two and a half years. In no instance did death, collapse, or fall of blood pressure occur, as happened in Kappis's cases, in which the injection was made from the back. Splanchnic anaesthesia is chiefly suited for operations on the upper abdomen, especially in chronic diseases, in which the extent of the operation can be determined beforehand. Like Härtel, Buhre regards appendicitis as unsuited for splanchnic anaesthesia, as in addition to anaesthesia of the abdominal wall it requires bilateral exclusion of the splanchnics and the deeper rami communicantes connected with the inferior mesenteric plexus; in other words, an elaborate anaesthetic procedure is required for a relatively simple and usually short operation. Splanchnic anaesthesia also appears to be contraindicated in intestinal obstruction, as anaesthesia of the whole peritoneum takes up too much time. In perforation of the stomach and similar conditions connected with severe inflammatory changes in the parietal peritoneum induction of anaesthesia of the abdominal wall is usually too painful to be undertaken.

192. High Frequency in Treatment of Tumours of the Urethra and Bladder.

PELLECHIA (*Il Policlinico*, Sez. Chir., June 15th, 1921) during the last eight years has employed high frequency currents, chiefly in the form of sparks, for pedunculated or sessile tumours of the bladder and urethra, with very satisfactory results. The method is easily applied, well borne by the patient, and is not accompanied or followed by any unpleasant symptoms. Owing to its being a bloodless method there is no risk of opening vessels and producing metastases, and the coagulating action of the spark has a haemostatic effect. Pellechia claims that the action of the high frequency current is more rapid and much more certain than that of diathermy, and that its destructive action is much more limited, so that the dangers are avoided of perforation, haemorrhage, and the formation of stenosing cicatrices, especially after destruction of a tumour in the neighbourhood of a ureteral orifice. Owing to the production of nascent ozone the treatment has a disinfectant action by which urethritis and cystitis complicating the tumours are simultaneously cured. Pellechia concludes that a high frequency sparking current is the method to be employed in benign tumours of any size or number, while in diffuse papillomatosis of the bladder it is the only method available. In malignant operable tumours surgical intervention should be immediately followed by application of a high frequency current in order to destroy any possible residues of the tumours in the thickness of the bladder wall. In inoperable tumours the high frequency current is the only method which is of any value.

OBSTETRICS AND GYNAECOLOGY.

193. Senile Metritis.

COUDERT (*Journ. de méd. et de chir. prat.*, June 10th, 1921) states that metritis, which is frequent during the period of sexual activity, is rare after the menopause. Three forms of senile metritis may be described—namely, purulent, haemorrhagic, and mixed. The purulent form is much the most frequent and characteristic. The discharge varies in quantity, and may be continuous or intermittent. A continuous discharge is associated with vague pains in the hypogastrium, lumbar region, coccyx, groins, and front of the thighs. The intermittent discharge is always very profuse, and is followed by a sensation of great relief. Another important feature of the discharge is foetor, which closely resembles that of the discharge in cancer of the uterus, and is not affected by vaginal antiseptics. The discharge causes considerable irritation of the skin of the labia majora and inner side of the thighs. Constitutional disturbance is shown by digestive symptoms, loss of flesh, and sallow tinge of the skin. Vaginal examination is painful. The vagina is narrow and presents one or more transverse ridges. The uterus varies in size, being small if there is no retention of discharge, and large and heavy when pyometra is present. The haemorrhagic form is much less frequent. As a rule the haemorrhage is due to a polypoid transformation of the uterine mucosa. Clinically the haemorrhagic form is manifested by a prolonged but often scanty oozing of blood, which is aggravated by walking or fatigue. It does not cause any constitutional disturbance, and is not associated with any local change. The mixed form is a combination of the two previous forms. It is as frequent as the purulent form, from which it differs only by the colour of the discharge. Simple senile metritis must be distinguished from cancer of the uterus by exploratory curetting, followed by histological examination. Treatment consists in dilatation of the uterus, removing the diseased mucous membrane by the curette, and the application of tincture of iodine or hydrogen peroxide daily until the discharge disappears.

194. Uterine Calculi.

ACCORDING to HAHN (*Zentralbl. f. Gynäk.*, June 25th, 1921), stones in the uterus were first described in 1833, and attributed to calcareous degeneration of fibroid tumours. Most uterine calculi have this origin, but the author records a case in which the stone, measuring 4 by 2½ in., was found to be composed of calcium, magnesium, and ammonium phosphates and oxalates, and on account of this, as well as of the history, was doubtless of urinary origin. A woman aged 65, who had been instrumentally delivered of her first child twenty years before, had since this time suffered from a vesico-uterine fistula, with urinary incontinence. During the last few years she had experienced abdominal pain of increasing severity; vaginal examination showed the uterus to be hard and enlarged to the size of a three months pregnancy, and the stone was felt though the dilated os. Its removal, which presented no difficulty, was followed by disappearance of the abdominal pain.

195. Glandular Enlargement in Operable Cases of Cancer of the Cervix.

AYMERICH (*Ann. di Ostet. e Ginecol.*, January, 1921) records the finding and removal of one or more enlarged glands in 19 (26 per cent.) of 73 extended hysterectomies (Wertheim's operation) for cancer of the cervix. In ten instances only was carcinomatous invasion of the gland found on microscopical examination; it follows that in 87.6 per cent. of these patients the glandular enlargement was due to inflammatory changes. The hypogastric glands were those most frequently found to be affected.

196. Microscopical Diagnosis of Carcinoma Cervicis.

RUDELOFF (*Zentralbl. f. Gynäk.*, June 18th, 1921) records two cases which illustrate the fallibility of diagnosis of cervical ulcerations from microscopic examination of excised portions. In the first, a friable oedematous

tumour was taken from a multipara aged 38, who complained of pain and discharge. After a microscopical examination it was reported to be a squamous-celled carcinoma. A month later extended abdominal hysterectomy was performed, and microscopical examination showed the condition to be one of cervical tuberculosis with infiltration of the parametria; a second examination of the first specimen confirmed the new diagnosis. The second case was that of a multipara, aged 36, in whom a piece of a cervical ulceration was excised; a pathological institution reported early squamous-celled carcinoma. Subsequent clinical examination showed a fixed retroverted uterus, bilateral adnexal inflammation, and cervical erosion and ectropion. The cervix was amputated and careful microscopical examination showed it to be free from malignant disease. The earlier error in diagnosis was due to the obliquity of the section, in which an infiltration of round cells so closely resembled epithelial forms as to deceive experienced pathologists.

197. X-ray Treatment of Fibroids.

LAQUERRIÈRE (*Journ. de radiol. et d'électrol.*, May, 1921), who records three cases of uterine fibroids subjected to radio-therapy, states that the factors which account for the greater mobility of the uterus during this treatment are as follows: (1) Diminution in the size of the tumour entailing a reduction of the intra-abdominal tension; (2) disappearance of congestion; (3) sclerolytic action of the *x* rays on the adhesions similar to that exerted on scar tissue; (4) relief of inflammation in some cases, of which Laquerrière has seen one definite example.

PATHOLOGY.

193. Vincent's Fusiform Bacillus in Haemorrhagic Bronchitis.

A PRELIMINARY note is furnished by ROBERT (*C. R. Soc. Biologie*, July 2nd, 1921) on eleven cases of broncho-pulmonary spirochaetosis met with amongst natives in Bangkok. Eight men and three women were affected, and in five of the cases the disease was associated with phthisis. A careful examination of the sputum showed, in addition to the pathogenic spirochaete, the constant presence of Vincent's fusiform bacillus. Morphologically, the spirochaetes varied between 5 μ and 25 μ in length, averaging 7 μ to 15 μ. Usually three or four turns were present, while each end terminated in a short flagellum. Under the dark background they were seen to be actively motile. The fusiform bacilli, which were non-motile, consisted of three types: (1) a short variety, 4–8 μ in length, staining homogeneously; (2) a medium variety, 8–15 μ in length, straight, curved, or wavy in shape, and either staining homogeneously with difficulty or else containing fine granulations which stained well, leaving the rest of the bacillus uncoloured; (3) a long variety, 15 μ and over, similar to the preceding.

199. Pulmonary Syphilis.

FICACCI (*Riv. Osped.*, February 15th, 1921) says that syphilis of the lung is probably more common than is generally believed, and briefly records 6 cases, with a photograph of an affected lung. Clinically, one may suspect syphilis if the symptoms are of long duration, if there is a positive Wassermann reaction, frequent haemoptysis, and the disease chiefly affects the middle and lower lobes of the right lung—with marked evidence of fibrosis, bronchiectasis, a slow course and no fever, and no tubercle bacilli—a good state of the general health, other syphilitic lesions present, and no history of previous illness likely to cause bronchiectasis.

200. Experimental Researches on Scurvy.

MOURIQUAND and MICHEL (*Paris méd.*, May 7th, 1921) point out that experimental researches have thrown light on the clinical study of scurvy in the following respects: (1) By showing the possibility of reproduction of acute and chronic forms of scurvy with its various clinical aspects, including relapsing forms and prescorbutic syndromes characterized by anaemia. (2) By differentiating the rôle of inanition from that of deficiency in the production of scurvy. (3) By determining the rôle of sterilization and preservation of food in the production of scurvy. (4) By supplying fresh data as to the rôle of desiccation of food, which is almost as important a factor in the production of scurvy as sterilization. (5) By demonstrating the necessity of introducing living food into the diet—namely, animal and especially vegetable juices. (6) By accentuating the necessity of the quantity of the antiscorbutic substance proportioned to the weight of the animal, and perhaps to the state of its metabolism. (7) By showing the importance of introducing into a diet not merely the antiscorbutic elements, but also a variety, for the manifestations of deficiency disease are often really due to absence of variety, and not to avitaminosis. (8) By emphasizing the importance of the nutritive coefficient of each subject in the date of appearance of scorbutic symptoms.

201. Variations in the Normal Leucocyte Count.

MAURIAC and CABOUAT (*Paris méd.*, May 21st, 1921) state that variations in the normal leucocyte count are due to numerous causes, such as the erect or recumbent position, examination of the blood from the finger or the ear, a state of fasting or digestion, apnoea or amplitude of the respiratory movements, each of these factors being sufficient to cause changes in the blood count. During their service in the army the writers made repeated examinations of their own leucocytes from 8 a.m. to 8 p.m., as many as twenty-three examinations being made in the course of the day on the same person. They were leading at the time a quiet life, avoiding physical exertion and taking the ordinary diet of an officers' mess. Their results were as follows: (1) In the normal individual the number of leucocytes varies from one moment to another. (2) The variations are least marked the first thing in the morning, and are most pronounced between 3 p.m. and 9 p.m., when the total number of leucocytes may range from 12,300 to 6,500 in the course of half an hour. The different estimates relating to digestive leucocytosis are thus explained, for according to the hour, or rather the minute, at which the blood is taken there may be a leucopenia or a leucocytosis. The term "digestive oscillations" is therefore preferable to "digestive leucocytosis." (3) The normal polymorphonuclear percentage presents great variations, ranging from 47 to 73 per cent. in one of the writers, and from 43 to 67 per cent. in the other. (4) The polymorphism, frequency, and suddenness in the leucocyte changes in normal subjects should make one very reserved as to their interpretation.

202. Basal Metabolism Determinations in Diseases of the Thyroid Gland.

MOSENTHAL (*New York Med. Journ.*, July 6th, 1921) calls attention to the importance of a determination of the basal metabolic rate in regard particularly to cases of Graves's disease. In mild cases the metabolism usually shows an increase of 15 to 30 per cent. above normal, while in very severe cases a rise to over 75 per cent. above normal may be frequently substantiated. Its chief value is probably manifested in assisting the diagnosis. Tuberculosis, cardiac disease, under-nutrition, obesity, and certain nervous affections may all give rise to the suspicion that the thyroid gland is affected, but a determination of the basal metabolic rate will show in these diseases only a comparatively small variation from the normal. As an example, he quotes a statement furnished by Peabody, Wearn, and Tompkins. Of 57 soldiers submitted to them for treatment, principally because of rapid heart action, nervous instability, and physical inferiority, a diagnosis of hyperthyroidism was made in 24; this diagnosis was, however, disproved, on finding that a normal metabolic rate was present in them all. With regard to treatment the basal metabolism furnishes the best measure by which to gauge the effect of medication, *x* ray, or operation, and is of especial value in determining the presence of hyperthyroidism when symptoms still persist after operation. Neither the pulse rate nor the weight shows any constant correlation with the basal metabolic rate, and therefore, according to Mosenthal, who considers this as the most fundamental sign of Graves's disease, cannot be accepted as reliable indications of the progress of the disease.

203. The Cholesterin Index of the Blood Serum.

MALESTA (*Rif. Med.*, June 25th, 1921) has carried out a series of observations in about 50 patients suffering from various diseases (nephritis, diabetes, hepatic, cardiac, acute infections, etc.) to determine the cholesterin index of the blood. The normal index is from 1.2 to 1.8 gram per thousand. In acute nephritis the index was nearly normal, in chronic nephritis the index goes up to 2.10 per thousand, unless uraemic symptoms appear, when it tends to go back to the normal. In cardiopathies the index is nearly normal. In diabetes the figure goes up to 2.25 or 2.70 per thousand. In new growths of the liver with jaundice the index is high—3.9 to 4.3 per thousand; in biliary calculosis it keeps high—2.4 to 3.5. In acute febrile diseases it is below the normal, and the same is true in epileptics and true asthma.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

204. Intestinal Ascariasis.

ACCORDING to GAUDIER (*Bull. et Mém. Soc. de Chir. de Paris*, May 31st, 1921), who records an illustrative case in a woman aged 28, the presence of ascarides in the intestine may give rise to various disturbances simulating severe surgical symptoms requiring operation, although simple medical treatment can readily cure the condition. Ascariasis, which is usually a mild disorder in cold or temperate climates, often assumes a grave character in hot countries. During the recent war severe cases, similar to those observed in the tropics, occurred among the civilian population, who had been infected by the Colonial troops. In such cases the following serious complications may arise: (1) intestinal obstruction, (2) perforative peritonitis, (3) appendicitis, (4) symptoms due to migration of the worms to the gall bladder, appendix, etc., (5) severe reflex nervous disturbances. Helminthiasis may sometimes simulate abdominal haemorrhage, as in Gaudier's case. All the symptoms disappear as soon as the worms are expelled, showing that the symptoms are due to a reflex cause and not to the toxicity of the parasite. The only definite proof of intestinal worms is the presence of ova in the stools, or of ascaris alone or associated with oxyuris or ankylostoma. The other signs, which have only the value of presumptive evidence, are eosinophilia, which may range from 5 to 72 per cent., the presence of blood in the stools (Guiart), peri-umbilical colic of a nocturnal type, atypical dyspepsia, relapsing nausea and diarrhoea, reflex or vasomotor nervous disturbances, pruritus, urticaria, inequality of the pupils, paroxysmal cough, and asthmatiform dyspnoea.

205. Treatment of Scabies and Pediculosis by Benzine.

ARTAUT DE VENLY (*Bull. Soc. de Thér.*, April 13th, 1921) states that though the parasiticide properties of benzine are well known to naturalists, especially entomologists, they are not generally recognized by the medical profession. He has frequently found that a garden syringe filled with benzine is sufficient to rid a house of ants, beetles, and cockroaches. In the case of scabies treatment consists in swabbing the region affected with benzine and applying at night an ointment composed of 10 grams of benzine with 50 grams of lanoline, and covering it with wool. The following morning the ointment is washed off with soap and a cure is effected. The body linen and clothes are disinfected by sprinkling them with benzine and putting them in a closed chest for a few hours. In pediculosis capitis the scalp is swabbed with benzine and the head covered with a paper or cloth cap for an hour. Not more than 10–15 c.cm. of benzine need be used. In the case of body lice the axillae, groins, and flexures of the limbs should be swabbed, and the clothes and linen treated as in the case of scabies. The only drawback to the treatment is the inflammability of benzine, but danger from this cause can easily be avoided. The applications are not painful except on excoriations.

206. Hypertonus and Renal Disease.

KYLIN (*Zentralbl. f. inn. Med.*, June 4th, 1921) remarks that the old view that persistent rise of blood pressure is always caused by renal disease is not supported by recent research. Von Monakow has shown that there are cases of hypertonus in which the kidneys are not affected in spite of arterio-sclerotic changes in other regions, and on the other hand considerable changes may be found in the renal vessels without hypertonus. The primary characteristic of hypertonus is therefore a rise of arterial pressure. Whether this is due to organic or functional causes cannot be determined at present. Von Monakow maintains that there is much in favour of the rise of pressure being due to vascular spasm. He describes cases in which the rise of blood pressure had lasted for a long time, and subsequently no hypertonus was found in spite of repeated examination. In order to determine to what degree the arterial blood pressure may vary under the same circumstances at different times of the day and on different days, Kylin examined the blood pressure of a number of patients every morning and evening. During the whole period of examination, which usually lasted eight to ten days, the patients were confined to bed. The blood pressure was examined between 9 and 10 a.m., and again between 5 and 6 p.m. daily. The patients were arranged in three groups: (1) so-called mild nephro-sclerosis, (2) so-called diffuse acute glomerulo-nephritis, (3) other diseases, such as sciatica, neurasthenia, and gastric disorders. In this group, in which there was no rise of blood pressure, the variations in the readings were very slight and did not exceed 10–15 mm. Hg. In the first group the variations were greater, in one case being 75 mm. Hg in the course of twelve hours. As a rule the readings were lower in the morning than in the afternoon. Kylin regards the great extent of these variations as an indication that the cause was a functional vaso-constriction. In diffuse acute glomerulo-nephritis, which usually occurs after an infectious disease such as scarlet fever, tonsillitis, infection of the upper respiratory tract, etc., there is a sudden rise of blood pressure accompanied by the appearance of albumin, casts and red corpuscles in the urine, and in a large number of cases by oedema. In a number of cases of scarlet fever and tonsillitis Kylin found that a rise of blood pressure often occurred before the appearance of albumin, casts and red cells in the urine. Lindberg, of the Stockholm Fever Hospital, also noted that the blood pressure in scarlet fever patients began to rise about a week before the appearance of nephritis and that the rise of blood pressure was accompanied by an increase of weight which indicated commencing oedema. It therefore appears certain that peripheral symptoms such as rise of blood pressure and oedema may occur earlier than the true renal symptoms such as albuminuria, casts, and red corpuscles in the urine. In none of the cases of renal disease accompanied by hypertonus was there any evidence that the primary morbid process was situated in the kidneys. On the contrary the renal disease appeared to be a consequence of the vascular lesion.

207. Spontaneous Rupture of the Heart.

MARTENS (*Nederl. Tijdschr. v. Geneesk.*, June 11th, 1921) states that spontaneous rupture of the heart, as distinct from traumatic rupture, on which there is an extensive literature, has received comparatively little attention, owing to the rarity of its occurrence, the impossibility of diagnosis, and the failure of treatment of any kind. Various causes account for the condition, the most frequent being fatty degeneration. Out of 100 cases of rupture of the heart collected by Quain, fatty degeneration was found in 77. The same writer found rupture of the heart twenty-eight times in 83 cases of fatty heart, or in 34 per cent. After fatty degeneration come myocarditis and occlusion of a coronary artery, followed by abscess of the heart wall, cardiac aneurysm, and myomalacia cordis, while tumour, gumma, and echinococcus disease may be mentioned as rare causes. The occurrence of rupture of the heart is favoured by one or more violent efforts. The announcement of a defeat is said to have been the cause of cardiac rupture in the case of Philip V of Spain. Although two-thirds of the cases occur above the age of 60, no period of life is exempt. Schaps saw a case in a child aged 4 months. Males are more frequently attacked than females. The left ventricle is most frequently affected, in which, according to Legg, 59 out of 60 cases of cardiac aneurysm occur. Although a single rupture seldom longer than 1 cm. is the rule, ruptures are sometimes multiple. Andral described a case with five distinct perforations. The symptoms are pain in the cardiac region, anxiety, cyanosis, collapse, and signs of haemorrhage. Usually death occurs in a few hours, but in some cases the symptoms have lasted as long as eleven or seventeen days. In Martens's case, which occurred in a man aged 70, the patient survived for two days. One complete rupture and two incomplete ruptures were found in the left ventricle. The heart muscle was very brittle, and on microscopical examination showed marked fragmentation and segmentation of the fibres.

208. Trinitrotoluene as an Industrial Poison.

HAMILTON (*Journ. Indust. Hygiene*, July, 1921), from investigations upon 402 workers engaged in T.N.T. works, concludes that the poison is absorbed chiefly through the skin, and that avoidance of direct contact, cleanliness of premises, clothes, socks, and gloves, and the provision of ample washing facilities are necessary for prevention. Though fumes may cause poisoning, they alone probably

never cause the more serious forms. Hot, humid weather increases the tendency to poisoning but not to dermatitis, and the young appear to be more susceptible than adults. The Webster test for the urine showed that T.N.T. is rapidly absorbed, but is also rapidly eliminated, the urine becoming free from the reduction product in from twelve to twenty-four hours; hence the value of week-end holidays and of occasional suspensions from work. Though this test does not as yet aid in diagnosis, the colour changes in untreated urine, and the blood changes found, are of sufficient significance to lead to further investigation with this end in view.

SURGERY.

209. Prophylactic Treatment of Post-operative Pneumonia.

SPECKER (*Schweiz. med. Woch.*, June 16th, 1921) warmly advocates the hypodermic injection of 20 c.cm. of polyvalent pneumococcal serum, obtained from horses treated with live cultures of pneumococci, in the abortion and treatment of post-operative pneumonia. This procedure was adopted early in 1919 at the author's hospital, and in this and the following year he did not have one fatality from post-operative pneumonia among more than 900 cases. The serum was given in nine cases of post-operative pneumonia with strikingly beneficial results, and in 37 cases as an abortive measure. Indications for such abortive treatment were advanced age and debility, pre- or post-operative bronchitis and other diseases of the respiratory tract, and apical pulmonary tuberculosis. Only in one case did a troublesome urticarial rash break out six days after an injection, and last about a couple of days. For this treatment to be successful it must be adopted early, and an adequate amount of serum must be given. The author supplements this account of specific treatment of post-operative pneumonia with a review of other abortive measures, such as improving the action of the heart with digitalis, deferring operative treatment till tracheitis, bronchitis, etc., have been got under control, not putting the patient who has just been operated on in a bed close to another patient with disease of the respiratory tract, warming the patient's bed, wiping off with warm towels sweat which has accumulated during the operation, not conveying the patient from operation theatre to ward through a draughty corridor, and following the rule adopted in Kocher's hospital of giving every candidate for operation a creosotal enema. The author devotes about eight columns to an account, illustrated with charts, of his nine cases of post-operative pneumonia treated with serum. They show the remarkably prompt effect of this treatment on temperature and pulse.

210. Intestinal Radiography for Chronic Appendicitis.

ELLIS (*South African Med. Record*, June 25th, 1921) studied the value of intestinal radiography in the diagnosis of chronic appendicitis by means of an opaque meal, the progress of which is screened and recorded upon a series of plates at one, three, seven, and twenty-four hour intervals. A Lane's kink is nearly always present, and a controlling appendix may be shown apparently adherent to the terminal ileum. Often, however, the appendix is not seen—a condition highly suggestive of chronic inflammation, owing to the lumen having become occluded and sclerosed. When the appendix shadow is visible its pathological condition is evidenced by kinking, being club-shaped, and by the shadow of its lumen showing a very irregular calibre. A marked delay frequently occurs at the ileo-caecal region, with signs of hypertrophy or dilatation of the later portion of the ileum. Sometimes distortion of the caecum or ascending colon is present, but a very constant sign is a kinking and drawing down towards the right iliac fossa of the proximal portion of the transverse colon, probably due to traction through the omentum having become involved in the inflammatory process about the appendix. Kinks are generally present at the hepatic flexure and at a variable distance beyond, from which the rest of the transverse colon takes a direct line up to the splenic flexure. While these signs are frequently all present a diagnosis may have to be based on a few of them only, in combination with careful consideration of clinical symptoms. Such *x*-ray findings may assist in cases where clinical tests alone fail to establish a certain diagnosis, by presenting the four cardinal features of the syndrome—namely, (1) delay in the ileo-caecal region, (2) a Lane's kink, (3) a controlling pathological appendix, and (4) a kink in the proximal portion of the transverse colon.

211. Treatment of Conjunctivitis.

RICHTER (*Deut. med. Woch.*, June 23rd, 1921) recommends for acute and chronic conjunctivitis a solution which he has used for several years and which has often given remarkably good results. Its composition is: Sod. tetraborici 2.0, acid. tannici 0.3, aqua dest. 50.0. After excluding the existence of nasal complications requiring special treatment, and ascertaining that the disease is limited to acute or chronic conjunctivitis, varying in severity from simple to phlyctenular conjunctivitis, the author drips the solution into the eye morning and evening, and has often seen complete recovery follow in a few days even in the most severe cases which have lasted for months. In suppurative processes, however, he has not found this solution very effective. It deteriorates on standing, turning a green colour owing to oxidation of the tannin.

212. The Frequency and Prophylaxis of Post-operative Pulmonary Complications.

MANDL (*Wien. klin. Woch.*, May 5th, 1921) investigated the material in Hochenegg's clinic at Vienna with regard to the occurrence of post-operative pulmonary complications and their prevention. He found that in operations for goitre pulmonary complications were more frequent after general anaesthesia than after a local anaesthetic. In hernia operations, on the other hand, exactly the opposite occurred. In gastric operations the frequency of lung complications depended more on the character of the operation than the anaesthetic method. Thus pulmonary complications were more frequent after resections than after gastro-enterostomies. On the other hand, pneumonia of a severe character was more frequent after general than after local anaesthesia. The further removed the operation area was from the respiratory tract the less frequent were pulmonary complications. Thus, among 1,379 hernia and abdominal operations these complications occurred in 211 cases, or 14.5 per cent., and among 1,585 operations on the head, neck, buccal cavity, breast, rectum, and extremities, they occurred in 135 cases, or 8.5 per cent.; while even among 478 severe radical operations on the rectum in patients weakened by carcinoma they occurred in only 19, or 3.9 per cent. The frequency of lung complications after operations for hernia appeared to be partly due to deficient expectoration caused by the painfulness of the suture of the internal oblique to Poupart's ligament. Chill also appeared to be an important factor, as was shown by the frequency of post-operative pulmonary complications in the winter of 1919–20, when the wards and operation rooms were very inefficiently heated owing to the scarcity of coal. Systematic prophylaxis consisted in the administration of digipuratum, which was given at definite intervals after the operation, in doses of 3 to 4 c.cm. intramuscularly, the frequency of complications being thereby reduced from 27 per cent. in control cases to 8 per cent. The explanation of the good effect of the drug appears to lie in the reaction of the pulmonary vessels and the change in the distribution of the blood after injection.

213. Blocking the Splanchnic Nerves.

PREISS and RITTER (*Journ. Nerv. and Mental Dis.*, May, 1921), from an experience in eighty-nine intra-abdominal operations in which splanchnic anaesthesia, after the method of Kappis, was adopted, consider it most useful, with little or no attendant danger, and resulting in excellent post-operative and convalescent conditions. Besides being of use in major operations on all the abdominal organs it can be used in operations for severe acute inflammation of the peritoneum, and, provided attention is paid to the relation between the quantity injected and the body weight, it can be used on children. The solution consists of 2 per cent. novocain-suprarenin with 0.4 per cent. potassium sulphate to 0.7 per cent. sodium chlorate, the site of injection being 5 to 6 centimetres laterally from the median line directly under the twelfth rib, a total of 20 to 60 c.cm. being injected. It was found that a more successful anaesthesia was produced without any preliminary narcotic, the anaesthesia being quieter and less likely to be followed by undesirable sensations, as thirst, nausea, perspiration, etc. There were only five complete failures, and in none were there any signs of poisoning or collapse. Operations upon the appendix, stomach, and small intestines formed the majority of the cases, the anaesthesia lasting from two and a half to several hours. Before injecting the solution it is important to ascertain by aspiration that the needle is not in a blood vessel but in the loose retroperitoneal tissues.

214. The Safety of Ethyl Chloride Anaesthesia.

HARTLEIB (*Zentralbl. f. Chir.*, May 21st, 1921) remarks that opinions are divided on the question whether ethyl chloride anaesthesia is absolutely safe. Kausch is quoted as never having had a bad result, although he had used it in large doses up to 400 drops, in spite of others regarding 100 to 120 drops as the highest permissible dose. On the other hand, Kulenkampff recommends the utmost prudence in the employment of this anaesthetic. Renner attributes a fatal case to the psychical excitement of the patient, and therefore regards psychical excitement as a contraindication to ethyl chloride anaesthesia. Hartleib records a case of a woman, aged 25, suffering from gall stones, who showed no signs of valvular disease or myocarditis, but suddenly stopped breathing, and had great irregularity of the pulse after administration of 20 drops of ethyl chloride. Respiration started again on removal of the mask and recovery took place. A few days later the patient admitted that she had been much excited at the time of the operation. A second case, which ended fatally, was that of a man, aged 46, with acute perforative appendicitis. After 40 drops of ethyl chloride the pulse became irregular. The ethyl chloride was discontinued and anaesthesia continued with ether. Immediately after termination of the operation the patient stopped breathing and artificial respiration was performed. Respiration started again, but death took place suddenly some hours later without the patient regaining consciousness. There was no autopsy. Hartleib considers that these two cases show that ethyl chloride is primarily a cardiac poison, and, secondarily, has an unfavourable action on the heart. He continues to employ it, however, but is as careful in its administration as with chloroform.

215. Artificial Pneumothorax in Pulmonary Tuberculosis.

SAUGMAN (*Paris méd.*, July 16th, 1921) states that from December, 1906, to August, 1920, 500 cases were treated by artificial pneumothorax at the Vejlefjord Sanatorium, Denmark. Apart from two cases of sudden death, probably due to gas embolism, no accidents occurred. Of 257 patients discharged from the sanatorium between 1907 and 1916, 33 per cent. were found to be fit for work in 1919. Saugman regards it as dangerous to interrupt insufflations prematurely—for example, under a year. In very favourable cases, if the circumstances permit, and if the pneumothorax was started before induration of the lung, compression may be stopped at the end of a year, but, as a rule, it is best to continue for two years. In chronic cases Saugman deprecates interruption of artificial pneumothorax, as he has seen relapses occur after three and even four years. When compression has to be maintained for a long period insufflation may be performed at intervals of two or three months. When the pneumothorax is incomplete, Saugman keeps it up for about five years, and then, if the patient wishes it, he stops the insufflations, by preference during the summer. Pleurisy was found to be the most frequent complication of artificial pneumothorax, an effusion being present in 79 out of 143 patients.

216. Venesection in Slight Carbon Monoxide Poisoning.

RIEDEL (*Deut. med. Woch.*, June 9th, 1921) is an advocate of venesection for carbon monoxide poisoning, even when the symptoms are not very alarming, for by the elimination of the circulating poisons thus effected the late sequels of carbon monoxide poisoning may be avoided. He enforces this argument by recording the case of a woman who attempted to commit suicide with gas, and who was admitted to hospital without distressing symptoms or loss of consciousness. Hence the omission to bleed her. But a week later amputation of the left leg below the knee had to be performed for dry gangrene of the foot. The author's review of the literature of carbon monoxide poisoning shows that its late sequels may be numerous, including trophic disturbances, neuritis, apoplexy, haemoptysis and gangrene of the skin.

OBSTETRICS AND GYNAECOLOGY.

217. Treatment of Cancer of the Uterus.

PETERSEN (*Hospitalstidende*, June 1st, 1921), of the gynaecological department of the Rigshospital in Copenhagen, reviews the present position of operative treatment and actinotherapy in malignant disease of the uterus, and he notes that in Sweden the pendulum has swung so much in favour of radium that operative treatment has been practically abandoned. The author insists that it is as important as ever to distinguish between operable and inoperable cases. In the latter class radium treatment is more or less Hobson's choice, and the decision as to choice of treatment is easy enough. But in operable cases the conflicting claims of the two systems of treatment are exceedingly embarrassing, and the physician who advises against an operation in favour of radium must face the prospect of seeing his patient relapse, and of realizing that she might have been saved by early operation. As far as cancer of the cervix is concerned, the author maintains that at present the practice of withholding operative treatment in operable cases is indefensible. He is still more emphatic with regard to cancer of the body of the uterus. While the results of radium treatment in this comparatively rare form of cancer are inferior to those obtained in cancer of the cervix, operative treatment of cancer of the body of the uterus is comparatively simple, and the prognosis is usually good.

218. Human Serum for Treatment of Puerperal Fever.

BARTRAM (*Zentralbl. f. Gynäk.*, April 16th, 1921) speaks favourably of the treatment of puerperal fever by intravenous injections, repeated, as a rule, daily, of 15 to 20 c.cm. of serum taken sometimes from patients who were convalescent from puerperal fever, sometimes from healthy pregnant or non-pregnant subjects, and sometimes from the patient herself (autoserotherapy). This treatment is said to be preferable to injections of milk or of protein preparations in that anaphylaxis and idiosyncrasy are not observed, and the substance injected is of constant composition and easily obtained.

219. The Period of Gestation.

SIEGEL (*Zentralbl. f. Gynäk.*, July 16th, 1921) has taken advantage of war conditions to observe cases in which the exigencies of military leave enabled precise data to be ascertained as to the exact period of gestation in 125 cases, of which 62 were births of boys and 63 of girls. He found the average gestation period reckoned from conception to be 272.6 days for boys and 267.5 for girls; reckoned from the date of the last menstruation the corresponding figures were 282.8 and 282.0 respectively. From a consideration of his own records and those of the literature he draws the following conclusions: The average duration of pregnancy is 271.7 days reckoned from conception and 281.75 reckoned from menstruation. The average period from conception is 271.3 for boys and 268.7 for girls, from menstruation 281.2 for boys and 281.3 for girls. From the difference in gestation period reckoned from conception and from menstruation respectively, and from the smaller difference in weight and length at birth between boys and girls when reckoning is made from conception and from menstruation respectively, he concludes that as an average boys are carried two or three days longer than girls. In about 2 per cent. of all pregnancies the customary gestation period is exceeded; the limit of gestation is estimated by the writer at 320 days from conception or 331 from menstruation. It is concluded that during the war the mean gestation period became increased by from two to four days.

220. The Causes of Sterility.

WINTER (*Deut. med. Woch.*, June 30th, 1921) insists that a search for the cause of a sterile marriage should begin with a thorough examination of the male reproductive organs. As for the causes of sterility in the female, he classifies them according as they are primary or secondary. The chief causes of primary sterility are congenital malformations, while most of the secondary causes are acquired during such events as pregnancy, labour, and the puerperium. Between 1913 and 1918 he observed 155 cases of sterility in the female in which the cause was detected. In 121 the sterility was primary, in 34 it was secondary. In the first class "infantility" accounted for 15 cases, stenosis of the os for 37, displacements (Lageveränderungen) for 28, diseases of the uterine appendages for 24, and catarrh with endometritis for 17 cases. In the second class stenosis of the os accounted for two cases, tears of the perineum and prolapse of the uterus for 12, diseases of the uterine appendages for 8, catarrh with endometritis for 7, and para- and peri-metritis for 5 cases. By "Lageveränderungen" the author means such conditions as anteflexion and retroflexion, and, as his figures show, this group of cases accounted for 23 per cent. of all his cases of primary sterility in the female. Stenosis of the os was a still more frequent cause of primary sterility in the female, constituting, as it did, 30 per cent. of all the author's cases.

PATHOLOGY.

221. Prevention of Measles by Inoculation of the Blood of Convalescents.

NICOLLE and CONSEIL (*Arch. des Inst. Pasteur de l'Afrique du Nord*, July, 1921) report a series of four cases in which an attack of measles was apparently prevented by the injection of the serum of convalescents just recovering from the disease. In three instances measles had broken out in the family and one or more of the children were attacked. The remaining child, who was presumably in the period of incubation, was injected with the serum or whole blood of one of the first children to be affected, who was by that time in the stage of recovery. The fourth concerns the case of a baby who was being breast-fed by its mother. The latter developed measles, but continued to feed her child. On the twelfth day of the disease 9 c.cm. of her blood were taken and injected subcutaneously into the child, who was probably just on the eve of developing the disease. Protection was complete. As regards the technique, 9 or 10 c.cm. of the blood of a patient is taken on the third to the sixth day after the fall of the fever. It is allowed to clot, the serum drawn off, a trace of phenol added, and then injected either on one or on two successive days beneath the skin of the person to be protected. If the case is urgent whole blood can be used. These are the only four cases in which the authors have applied this method, and as all four have been successful it would appear that the procedure is worthy of further trial.

222. The Pathology of the Pulmonary Vessels.

WILSEL and LOWY (*Wien. klin. Woch.*, June 16th, 1921), who made a careful examination of sixty cases, emphasize the great frequency of acute diseases of the arteries of the lesser circulation, and maintain that this accounts for the dyspnoea and cyanosis met with in acute infections, such as influenza and many forms of endocarditis, in which naked-eye examination shows no changes in the lungs. The cases examined consisted exclusively of patients who had died with acute and chronic circulatory disturbance after being kept under observation for a considerable time. The acute cases comprised pneumonia, influenza, endocarditis, typhoid fever, and cerebro-spinal meningitis, and the chronic cases cardiac and renal disease. The pathological changes in the pulmonary vessels resembled those met with in the greater circulation. In both instances the lesions first appear in the media, followed by changes in the muscular or elastic tissue. Finally, regeneration takes place with the formation of scar tissue.

223. Hyperglycaemia in Cirrhosis of the Liver.

CHAUFFARD, BRODIN, and ZIZINE (*C. R. Soc. Biologie*, July 9th, 1921) find that in patients suffering from cirrhosis of the liver there is usually present a syndrome characterized by urobilinuria, choluria, and hyperglycaemia. In a series of 11 cases of cirrhosis—including hypertrophic, atrophic, biliary, and fatty types—they were able to show the constant presence of a hyperglycaemia, varying from 0.11 to 0.187 per cent. A dose of 150 grams of glucose given by the mouth when fasting provoked glycosuria in all but one of these patients. The interpretation of these cirrhotic hyperglycaemias is uncertain, but they were struck by the fact that those cases which showed the most marked hyperglycaemia showed also a well developed collateral venous circulation. If the extent of this collateral circulation may be taken as an index of the degree of portal obstruction, it is permissible to conclude that the venous stasis may be sufficiently great to react upon the pancreas and thus lead to an increase in the blood sugar. They consider that it is the pancreas, rather than the liver, which is responsible for the glycolytic insufficiency, and they conclude that an estimation of the sugar in the blood furnishes an indication of the degree of venous stasis in the pancreatic circulation.

224. The Importance of Mixed Infection in Wound Diphtheria.

FRANKELTHAL (*Zentralbl. f. Chir.*, June 4th, 1921) emphasizes the importance of mixed infection, especially with streptococci, in wound diphtheria. He examined not only all cases of clinical wound diphtheria, but also all infected wounds which showed little tendency to heal, including fistulas and granulations intended for skin grafting. Out of 187 cases of harmless-looking wounds, diphtheria bacilli were found in 20, in 2 of which they were in pure culture. In the other 18 cases they were associated seven times with streptococci, three times with diplococci, once with *B. pyocyaneus*, twice with streptococci and staphylococci, and five times with Gram-negative bacilli. In 57 cases clinically resembling wound diphtheria Klebs-Loeffler bacilli were found twelve times, in 8 of which they were associated with *Streptococcus longus*. In 7 of these 8 cases there had been a recent attack of erysipelas. The fact that streptococci were so rare in the first group, in which erysipelas had occurred only once, and were so frequently associated with diphtheria bacilli in the second group suggested that they played an important rôle in wound diphtheria. This hypothesis was confirmed by experiments on guinea-pigs, which showed (1) that diphtheria bacilli rubbed into an open wound produced no toxic effects, (2) that mixed cultures of diphtheria bacilli and streptococci caused the wound to assume an unhealthy appearance and delayed its healing, (3) that diphtheria bacilli on wounds were soon overgrown by cocci. Frankelthal concludes that diphtheria bacilli require a certain preparation of the soil to enable them to grow on a wound, this preparation being best afforded by streptococcal infection. A second factor which plays an important part in wound diphtheria according to him is anaerobiosis, as diphtheria bacilli persist a long time in fistulae and closed cavities.

225. Chlorides of Sodium and Potassium in the Hydraemic Type of Nephritis.

SOME experimental work is recounted by BLUM, AUBEL, and HAUSKNECHT (*C. R. Soc. Biologie*, June 18th, 1921) bearing on the cause of retention of fluid in the body in the hydraemic type of nephritis. Careful measurements in a nephritic patient of the ingestion and excretion of sodium, potassium, and chlorine show that the two latter elements are eliminated with comparative ease, while sodium, on the other hand, has considerable difficulty in traversing the kidney. Coincidently with the retention of sodium in the body there is an increase in the weight of the patient—presumably due to accumulation of fluid—while retention of potassium has no such effect. Elimination of sodium in the urine is accompanied by a decrease in the body weight. It is therefore the sodium which apparently plays the chief rôle in the causation of the oedema met with in the hydraemic type of nephritis.

226. Solitary Cysts of the Tibia.

DARIO (*Archiv. Ital. di Chirurg.*, December 20th, 1920) reports two cases of this rare affection. Both patients were boys, aged 6 and 7 years. Cysts in the long bones may be (1) parasitic (echinococcus); (2) secondary to osteomyelitis; (3) pseudo-cysts from softening of new growths; (4) instances of Recklinghausen's disease; or (5) solitary and confined to young subjects without any other affection of the skeleton. It is of these last that the author speaks. They have been attributed to neoplasms, to inflammatory troubles, or to dystrophy. The most likely theory is that which attributes them to some dystrophy associated with trauma. The author's cases are fully reported with illustrations. They were successfully treated by scraping. In both cases there was little inconvenience or pain and they were of slow growth. The radiograms showed a clearly defined ovoid clear area, regular in its edges, and with no sign of thickening in the periphery. The cysts were unilocular. In all these points they differ from the cysts due to neoplasms, osteomyelitis, or tuberculosis.

227. A Comparative Study of Syphilis in Whites and in Negroes.

FROM a comparative investigation by ZIMMERMANN (*Arch. Derm. and Syph.*, July, 1921) of the relative frequency of the various manifestations of syphilis in white and black patients in Baltimore, the following facts emerge: 1. Primary syphilis. Extragenital infection is relatively infrequent in negroes. The age of acquired infection is one or two years earlier in coloured patients than in whites. 2. Secondary syphilis in the negro is characterized by marked polyadenitis, by frequent and severe osteo-arthritic symptoms, by the frequency of iritis, and by the high incidence of follicular and pustular syphilides. A striking racial peculiarity is the frequent occurrence of the annular papular syphiloderm. 3. Amongst tertiary manifestations bone syphilis is the most frequent in the negro, while in white patients cutaneous lesions are slight or absent, but there is a greater tendency towards the eventual development of tabes or paresis. Cardio-vascular syphilis is commoner in the negro. Stricture of the rectum and elephantiasis vulvae are extremely frequent in the coloured female. Leucoplakia is rare in the negro, tertiary adenitis is common.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

228. Small-pox.

The Lancet, July 15th, 1921, in an editorial summary of recent work on small-pox, refers to Soberheim's statement that the virus of the disease is present in the respiratory mucosa at the very beginning of the disease, and that infection may take place at this stage by the breath. The course of an attack may depend somewhat on whether the disease is caught via the breath or later via the skin. There are different degrees of intensity in the virus, the East African being the most virulent. The efficacy of vaccination in the German army was well demonstrated in the Polish invasion, when they encountered endemic small-pox and lived amongst it in the worst possible conditions and yet remained practically immune. The Polish Jews, who were on the whole well vaccinated, escaped small-pox to a large extent, but not typhoid or typhus. Out of 1,566 cases in the Viennese epidemic of 1915, only 34 had been vaccinated or revaccinated within the previous seven years, and of the 350 who died only two had been successfully vaccinated. People of advanced age are very susceptible if exposed to infection. The statistics of the French army during 1917–18 are striking; there were only 12 cases with one death, and in the Colonial troops 44 cases with four deaths. Contrast this with the appalling figures of 1870 (125,000 with 23,470 deaths). A small epidemic (introduced from Morocco) broke out in 1919 in Paris, and chiefly attacked women and old people. In regard to diagnosis, Paul suggested inoculating some of the pus from a pustule into a rabbit's cornea; in positive cases, at the end of thirty-six to forty-eight hours, fine nodules were seen at the point of injection, the rest remaining clear. Painting the whole body with a saturated solution of potassium permanganate is said to be the best local treatment.

229. Initial Exanthem of Small-pox.

TSUKUI and ISONO (*Journ. Infect. Dis.*, August, 1921) describe the initial exanthem of small-pox as being haemorrhagic, or closely resembling the eruptions of scarlet fever or measles. Lasting from one to three days, it appears on the outer side of the upper arm in almost every case, Simon's thigh triangle being next in frequency, and it may occur all over the body, but in the recently vaccinated it is always most marked about the site of vaccination. This special localization to the outer side of the upper arm does not appear in the unvaccinated, being peculiar to those who have been vaccinated once, so that in case of doubtful diagnosis such peculiar localization increases the certainty of small-pox. There is no direct relation between the extent of the eruption and the number of vaccination marks, but the part newly vaccinated shows a greater density of eruption than elsewhere, or may be the spot where the eruption first appears, though after ten years since the last vaccination no such relation occurs. Cases with initial exanthem generally have light symptoms, though this does not necessarily follow, especially if the exanthem is haemorrhagic, the prognosis then being unfavourable.

230. The Treatment of Mental Patients.

IN *Le Scalpel* (July 9th, 1921) LEY pleads for the abolition of all mechanical restraint in the asylum treatment of persons of unsound mind. In most asylums restraint of a grossly mechanical order, such as chains, strait waistcoat, etc., is abolished, but the padded cell is still used. In the last fifteen years the author has discarded the padded cell, and says he does not regret it. He uses observation rooms, where troublesome patients can be watched and isolated, but they are like ordinary private wards and not like a prison. Instead of mechanical forms of restraint he trusts to the trained and continuous attendance of nurses, prolonged bath or wet pack, good nourishment, and sedative drugs. The worst cases he has had to deal with have been those who had come from other asylums where some form of mechanical restraint had been used, but even these were eventually controlled without restraint when they came under his care. Abstinence from alcohol is advisable, and asylums generally should be made to look less like prisons.

231. Chronic Arthritis.

SNYDER and RAMIREZ (*Arch. Int. Med.*, July 15th, 1921) investigated the value of intravenous injections of foreign protein in the treatment of the more obstinate cases of arthritis. Of 70 cases, 6 (8.5 per cent.) were cured, in the sense of decided improvement in motion and cessation of pain, with return to work after being helpless invalids. The treatment is contraindicated when the condition is complicated by tuberculosis, extreme emaciation, cardiac decompensation, and excessive hypertension. The size of the dose is important, since large doses, producing marked febrile reaction and severe chill, are a risk, and consequently it is not necessary to increase the dosage as long as a satisfactory reaction is obtained. The dose used was 10,000,000 typhoid bacilli, or from ½ to 1 grain of secondary proteose prepared from milk. The injections were given once a week, and since they should be preceded by thorough catharsis and are usually followed by nausea, each treatment entails about twenty-four hours' abstinence from food. Less nausea, headache, weakness, and toxic effects followed the use of secondary proteose than after typhoid vaccine, and equally good results as regards relief of pain and improvement of motion seemed to result from either. The degree of benefit varies with individual cases, and is nearly always greatest in the joints of the upper extremities. The secondary proteose has advantages over typhoid vaccine, since in the latter the dose is uncertain, and there is always the possibility of introducing endotoxins or live organisms into the circulation. This investigation shows that in all cases of chronic arthritis unrelieved by the usual routine treatment material benefit may be obtained by the intravenous injection of foreign protein.

232. Neuralgias Caused by Dental Pulp Nodules.

NORMAN and JOHNSTON (*New York Med. Journ.*, July 20th, 1921) emphasize the necessity in intractable neuralgia of excluding the presence of pulp nodules in apparently normal teeth. Such nodules are difficult to diagnose, and consist of small masses of calcic material suspended in the pulp substance which, by reason of their progressive formation, cause displacement to the point of strangulation. They do not produce symptoms in every case in which they are present, since in the majority of instances their slow formation allows the pulp to accommodate itself. Diagnosis can only be made by careful radiographs of all the upper and lower teeth on the affected side, and repeated exposures may be needed before their presence can be excluded. Since local symptoms are in many instances referable to an unaffected tooth, it is necessary for all the teeth to be examined, when those found to be affected must be treated by devitalization, either by pressure anaesthesia with cocaine or phenol, or by conductive anaesthesia. Even when pulp nodules have been demonstrated radiographically in otherwise sound teeth, the pulp should not be destroyed until all constitutional disturbances have been corrected, except when a large nodule is found to be almost completely filling the pulp chamber.

233. Transient Tuberculous Pleurisies.

HANUS (*Rev. méd. de l'Est*, June, 1921) draws attention in certain cases to the rapidity of development of pleurisy with effusion and its equally rapid resolution in a few days. Such cases are symptomatic of a latent tuberculous lesion. The prognosis is good, and the tuberculous lesions are inactive and afebrile. They indicate slight exacerbations of the tuberculous process.

234. Status Lymphaticus.

STERNBERG (*Wien. klin. Woch.*, June 16th, 1921) states that the findings of Borst and Groll necessitate a thorough revision of the doctrine of lymphatism, lymphatic constitution, and status lymphaticus. According to these writers, whose observations were based on autopsies on over 2,000 men who had been killed in action, lymphatic hyperplasia was found in 56 per cent. of all soldiers and in 86 per cent. of those aged 19 to 20. These striking figures are explained as follows: Formerly, if a status lymphaticus was found in young persons who had died a violent death, this occurrence was regarded as a mere coincidence, and if the status lymphaticus was found in the great majority of youthful suicides, the phenomenon

was regarded as the cause of a mental inferiority or diminished power of resistance. All these suggested explanations, however, are negatived by the fact that the majority of the young and healthy persons who were killed in action during the recent war showed the status lymphaticus *post mortem*. This proves that the lymphatic tissue is well developed in young persons, and that the term "status lymphaticus" has hitherto been wrongly used owing to an ignorance of the normal condition. The lymphatic tissue disappears with increasing age and as the result of various diseases and nutritional disorders. In autopsies on persons who die in hospital the lymph glands are generally small and so give a false idea as to the normal condition. On the other hand, in young persons who die a violent death a well developed lymphatic tissue represents a normal condition. Sternberg does not deny that in some persons even in advanced life there may be an unusual development of the lymphatic tissue accompanied by other anomalies, especially vascular hypoplasia. Such cases, however, to which the term "status lymphaticus" is really applicable are rare and have nothing to do with the condition which is commonly called lymphatism.

235. Treatment of Chilblains.

BÜSCH (*Deut. med. Woch.*, June 9th, 1921) describes a method for treating chilblains which he thinks is little known, and which he has found effective, simple, and cheap. The affected parts are put in a hot solution of tannin, obtained by boiling one teaspoonful of oak bark in a litre of water. The solution is kept as hot as the patient can bear it, and after immersion for fifteen to thirty minutes the limb is rubbed with zinc ointment, but not covered with any dressings. This procedure having been adopted in the evening, the ointment is wiped off next morning. The ointment is applied two or three times a day, the bath is taken once a day. The author has tested this method in numerous cases during the last two winters, and in the cases he has followed he has invariably found it successful, the most severe cases taking about two weeks to heal. The author prefaces his eulogy of this treatment with the comment that remedies for chilblains are characterized by their numbers, expensiveness, and uncertainty of action.

SURGERY.

236. Surgical Treatment of Epilepsy.

STEINTHAL (*Zentralbl. f. Chir.*, June 25th, 1921) has attempted to control epileptic fits in 7 cases by removal of one suprarenal body. The patients were from 15 to 29 years old, and only in one case was there a possibility of the origin of the epilepsy being traumatic. In one case in which the fits had occurred three or four times a day before the operation, no fit occurred during the first fifteen days after the operation. In another case the fits returned on the ninth day after the operation, but were slighter than before. In two other cases there was also some improvement, but on the whole the author is inclined to regard this treatment as disappointing. Discussing the three possible reasons for his failures—faulty technique, selection of unsuitable cases, or a misconceived rationale—he is inclined to dismiss the first two, and to suspect that Heinrich Fischer's interesting investigations into the relation of the suprarenal bodies to epilepsy have been misinterpreted in so far as they have been made the foundation for this method of treatment. SANDOR (Ibid.) has removed a suprarenal body in four cases of epilepsy, but as only three months have elapsed since the first operation, he is diffident as to the permanency of the results achieved. He notes, however, that the immediate results were very promising, and the loss of blood at the operation being very small, the immediate improvement effected could not be traced simply to bloodletting.

237. Treatment of Tuberculosis of the Joints.

SUNDT (*Norsk Magazin for Lægevidenskaben*, June 15th, 1921), who is in charge of the Coast Hospital for Scrofulous Diseases at Fredriksvern, discusses the three principal remedies for tuberculosis of the joints. He is sceptical with regard both to passive congestion supplemented by potassium iodide given by the mouth, and to tuberculin treatment. He suggests that some of the successes of the former treatment may be traced to the action of potassium iodide on a syphilitic condition mistaken for tuberculosis. He stresses the dangers of diagnostic injections of tuberculin, with the record of a case in which injections of tuberculin, rising to 5 mg., forced the temperature up to 38.5° C., in a boy of 14 suspected of tuberculosis of the hip. Death occurred about six months later from tuberculous enteritis, and the author thinks that the tuberculin may have stirred a latent intestinal tuberculosis into fatal activity. With regard to the third chief remedy—actinotherapy—he finds that the action of heliotherapy is the same in "carroty," freckled persons incapable of ordinary pigmentation as in persons who show rapid and marked pigmentation. Advocating puncture and aspiration of cold abscesses through healthy skin, he stamps free incisions as malpraxis and drainage as a crime.

238. Fracture of the Anterior Superior Spine of the Ilium.

AFTER recording two cases of fracture of the anterior superior spine of the ilium occurring in men running a race, BRANDENBERG (*Deut. Zeit. f. Chir.*, June, 1921) reviews the characteristic features of this lesion as shown by his and others' cases. The diagnosis is easy, and with careful palpation the surgeon should not confuse this fracture with that of the inferior spine of the ilium, which occurs under similar conditions. The chief signs of fracture of the superior spine are sudden violent pain, tenderness over this spine, inability to stand or walk, crepitation, a depression corresponding to the gap formed between the anterior spine and the rest of the ilium, and the *x*-ray picture. This latter has been said to leave the surgeon in the lurch in such cases, but the author has found the *x* rays clearly portray this lesion. Discussing the importance of the various muscles concerned, he notes that in his first case the *x* rays showed a somewhat lateral displacement, suggesting that the tensor fasciae femoris, rather than the sartorius, was to blame. It is curious that two such comparatively weak muscles should be capable of provoking a detachment fracture; and the author discusses the possibility of the external oblique muscle being involved, as suggested by Professor Felix. The fracture heals uneventfully in about a fortnight, and it is necessary for the first few days to keep the patient in bed with the limb semiflexed and inwardly rotated at the hip.

239. Treatment of Ozaena with Zinc Chloride.

LAVRAND (*Rev. de laryn., d'otol., et de rhinol.*, July 31st, 1921) reports the results obtained by his method of treating atrophic rhinitis which he has employed for eight years. As he regards ozaena as the clinical manifestation of osteitis with secretion he makes an application of zinc chloride (1 in 30) once a week or once a fortnight, according to the severity of the condition. During the intervals no nasal irrigation is carried out, but only menthol oil or gomenol oil is placed in the nose. Although this method does not permanently cure the ozaena it causes a disappearance of the foetor and crusts. In very extensive cases Lavrand curettes the affected parts before applying zinc chloride.

240. Multiple Aneurysms of the Retinal Arteries.

ACCORDING to FERNANDEZ (*Cuba Medica*, reprinted in *La Habana*, April, 1921), multiple aneurysms of the retinal arteries are, in the great majority of cases, due to arteriosclerosis; their recognition is not as common as might be inferred from their occurrence (according to Posey and Spiller) in 50 per cent. of cases of generalized arteriosclerosis. Other forms which have been described are arterio-venous aneurysms due to trauma, and miliary aneurysms, frequently due to tuberculosis, occurring in young subjects. All forms of aneurysm are apt to be followed by haemorrhages, and eventually by a glaucomatous condition necessitating enucleation of the eye. Prognosis as regards general health, while always bad in the arterio-sclerotic cases, is not necessarily so in those occurring in young subjects. The ophthalmoscopic picture is one of multiple fusiform dilatations along the course of the arteries, with recent exudations from certain aneurysms and old-standing areas of retinal atrophy.

241. Complete Prolapse of the Rectum.

DIETLEN (*Archives Générales de Chirurgie*, July, 1921) describes complete prolapse of the rectum, which usually comes on slowly, though it may develop suddenly as the result of heavy lifting or a crushing accident or fall. It never develops from the more common incomplete type, nor as a complication with haemorrhoids or other anal tumours. The condition commences within the rectum and protrudes through the anus, thus leaving a sulcus between it and the anal margin, thereby differing from the incomplete type, whose external surface is continuous with the anal margin. Hypertrophy of the exposed tissues occurs in long-standing

cases, and because of its increased size it is difficult to reduce and will not remain reduced. The condition may be complicated by carrying down a loop of small intestine, an ovary, or the bladder wall.

242. Tonsils and Scarlet Fever.

FLEWETT (*Brit. Journ. Dis. of Children*, July, 1921), from observations upon 154 cases of scarlet fever, considers that the anatomical configuration of the throats largely determines the prognosis. The inflamed tonsil is a focus of infection, and the cervical lymph nodes become enlarged and infected from the tonsils in scarlet fever just as they would enlarge in the absence of scarlet fever. Movements of swallowing or gagging, when the tonsils become compressed between the anterior pillar and the superior constrictor of the pharynx, thereby forcing toxins or organisms into the lymph stream, set up inflammatory reactions in the lymph nodes. In some cases large tonsils may become everted at first, compression only taking place later when they become smaller, thus accounting for the late appearance of enlarged glands in such instances. When the tonsils are buried or covered with plica, he considers that a prophylactic tonsillectomy or incision of the plica to uncover the tonsil should be performed, as such a procedure will prevent severe complications arising, and in certain selected cases, where the patient is desperately ill with enlarged glands and marked toxaemia, tonsillectomy during the fever will be beneficial. Careful observation of the tonsils during scarlet fever is urged, since it would seem that their anatomical relations may largely determine the course of the infection.

243. Albee's Operation for Pott's Disease.

SCHASSE (*Deut. med. Woch.*, June 30th, 1921) reviews the results achieved by himself and other surgeons in Pott's disease treated by grafting a large piece of bone from the tibia into the spinous processes of certain vertebrae. In 84.1 per cent. of the 787 cases, obtained by the fusion of seven series of statistics, good results were obtained. In the remaining 15.9 per cent. the results were unfavourable. The operation renders the wearing of a corset superfluous, and three months after the operation the patient is able to get about. Indications for this operation are early disease with involvement of only a few vertebrae and without great deformity, pain and slight muscular spasm, and abscesses and fistulae, provided they are outside the field of operation. Contraindications are severe general debility, pulmonary tuberculosis, an age under two years, and marked deformity. The duration of the disease, *ceteris paribus*, is of no importance. Among the author's 100 cases there were no fatalities. BRANDES of Kiel (Ibid.) has performed Albee's operation in 29 cases; the results were excellent in 14 and good in 4. There were six deaths, and in five cases the bone graft had to be removed on account of suppuration. By overflexion of the knee while removing the graft from the tibia he had on three occasions provoked a peroneus paralysis.

244. Laryngo-pulmonary Tuberculosis.

DWORETZKY (*Med. Record*, July 9th, 1921) regards tuberculosis of the larynx as always secondary to tuberculosis of the lungs or lymphatic glands, and only in those whose sputum is positive. Three distinct types occur—acute, subacute, and chronic—the first presenting the most unfavourable prognosis, while the last usually remains secondary to the pulmonary lesion. Subjective symptoms are those caused by the lesion in the larynx as well as those associated with the pulmonary lesion, while the objective symptoms are those of pulmonary tuberculosis *plus* the physical laryngoscopic findings. No definite prognosis can be given from the laryngeal condition alone, since the pulmonary and general condition, the presence of underlying disease, the type, location and extent of the lesion all have to be taken into consideration. General treatment is in the main that for pulmonary tuberculosis, such predisposing facts as nasal obstruction, pharyngitis and tonsillitis, frequent colds, abuse of voice, excessive cough, and such local irritants as smoke, dust, tobacco and alcohol requiring attention. In chronic cases with only slight discomfort frequent sprayings with 5 per cent. menthol in olive oil are useful, and in acute and subacute cases this should be preceded by an alkaline spray four or five times a day in a De Vilbiss atomizer, and rest of voice by whispering or absolute silence is imperative: 1.5 per cent. to 7.5 per cent. solutions of iodine in glycerin directly applied are useful, commencing with the weaker solution three times a week, and increasing as tolerance develops. Orthoform or cocaine before meals relieves dysphagia, but when infiltration and ulceration of the epiglottis are present an epiglottidectomy is indicated.

OBSTETRICS AND GYNAECOLOGY.

245. Treatment of Placenta Praevia.

HIESS (*Monats. f. Geburts. und Gynäk.*, liv 3, 1921), who records 257 cases of placenta praevia treated during the last nine years at the Vienna Frauenklinik, is not inclined to assign to Caesarean section the pre-eminent place in the treatment of this condition which by some has been claimed. For an improvement in the results of treatment of placenta praevia, Hiess believes that it is necessary that cases should receive medical care at an earlier stage, when there is less fear of pre-existing complication by sepsis; if this provision is secured conservative treatment is likely to give results which are at least as good as those of Caesarean section or *accouchement forcé*. In the writer's series the percentage of maternal mortality was 3.1 per cent., and 62.7 per cent. of the children were stillborn. Treatment was as follows: (1) In 10 mild cases, all at term, rupture of the membrane; all the children lived, but one mother died from uterine atony. (2) In 105 cases, early version by Braxton Hicks's bipolar method; foetal mortality among those living at admission, 74 per cent. (3) Internal version, 43 cases, with 60 per cent. foetal and 6.9 per cent. maternal mortality. (4) In 21 breech presentations one foot was brought down, with 70.5 per cent. foetal mortality. (5) In 35 cases metreurysis, with foetal and maternal mortalities of 60 per cent. and 17 per cent. respectively; in 20 per cent. of cases the subsequent labour terminated spontaneously. (6) Total extirpation, after other means had been essayed, in 5 patients, of whom 4 died. (7) Caesarean section by the vaginal route in 13 cases, and by the abdominal route in one.

246. STOECKEL (*Zentralbl. f. Gynäk.*, July 23rd, 1921) recommends the following scheme of treatment of placenta praevia: (1) rupture of the membranes and injection of pituitary extract in cases in which the vertex presents, "pains" are regular, and only a small portion of placenta (marginalis or lateralis) is palpable; (2) intraperitoneal, cervical Caesarean section in all cases in which the child is living and viable, the mother is (as far as can be estimated) not infected, and the placenta covers the whole or a large part of the internal os; (3) version (preceded if necessary by insertion of a dilating bag) if the child is dead or non-viable, or if the mother is already infected. Version and metreurysis, while forming a therapeutic standby which is valuable in private practice, should find but little scope, according to Stoeckel, in hospital treatment, except in the case of dead foetus or of infected mother. In 27 cases treated by Caesarean operation the author had one maternal death; all the twenty-eight children were born alive, although six premature infants died later.

247. THOMPSON (*Johns Hopkins Hosp. Bulletin*, July, 1921) estimates that placenta praevia does not occur oftener than once in 400 pregnancies, being nearly eight times more frequent at premature than at full-time labour, primiparae being more liable to the condition than multiparae. The methods of treatment adopted were: (1) Braxton Hicks's version, 2 cases with one maternal death; (2) rupture of membranes, 2 cases with no death; (3) Caesarean section, 2 cases with one death; (4) manual dilatation of the cervix, 15 cases with two deaths; and (5) ballon, 36 cases with no death. Since the uterine cicatrix after Caesarean section is a weak spot in future pregnancies, and since placenta praevia usually becomes manifest at an early stage in the pregnancy when the child's prospects are minimal, Caesarean section should not be considered as a routine method, but should only be employed under the strictest indications—for example, the association of a rigid cervix with the condition. The use of the rubber ballon gives the most satisfactory results, and is unattended by the dangers of *accouchement forcé*, and it has become his routine treatment except when the cervix is already fully dilated.

248. Criminal Abortion in Germany.

ACCORDING to HIRSCH (*Zentralbl. f. Gynäk.*, July 16th, 1921), criminal abortion has of late become increasingly frequent in Germany. The proportion of abortions to pregnancies has been estimated as 10 per cent. in Freiburg, 15 per cent. in Munich, and 30 per cent. in Berlin; and the proportion of criminal abortions to the total number of abortions is given as varying from 1 to 2 per cent. in East Prussia to the high figure of 78 to 89 per cent. in Berlin. Criminal abortions being much more frequent in married than in unmarried subjects, it is evident that other factors than

illegitimacy have a causative significance. The increased frequency of criminal abortion is noticeable in all social grades, and is attributed by Hirsch (1) chiefly to the increase of poverty following the war, but also (2) to lack of housing accommodation, which may induce the married to restrict their family, and in addition may increase the frequency of the induction of abortion by placing an obstacle in the way of marriages which would legitimize the offspring of pre-conjugal intercourse; (3) to the fact that the young women of the present day show diminished willingness to undertake the responsibilities of maternity. Clinical statistics may give a false impression concerning the prevalence of abortion, of which the most frequent form is that which remains uncomplicated and does not necessarily come to medical treatment. The author believes that penal enactments are almost entirely without influence on the number of cases of criminal abortion; the lay mind in Germany appears to him unconvinced of the criminal nature of induction of abortion.

249. A Case of Tuberculosis of the Cervix Uteri.

VERDELET and DARAIGNEZ (*Journ. de Méd. de Bordeaux*, September 25th, 1920) record the case of a woman, aged 25, who for a year had suffered from a copious colourless vaginal discharge, and had lost 25 lb. in weight. Examination revealed a small polypus growing from the cervix, which showed in addition small ulcerations with finely granular base and irregular margins. Chronically enlarged glands were palpable in the neck, axilla, and groin, and could be demonstrated radioscopically in the roots of the lungs. The Wassermann reaction was negative. The diagnosis of tuberculosis of the cervix was confirmed by microscopic examination.

PATHOLOGY.

250. Experimental Study on the Inheritance of Syphilis.

IN continuing their experiments on the inheritance of syphilis in rabbits LEVADITI, MARIE, and ISAÏEV (*C. R. Soc. Biologie*, July 16th, 1921) have worked with three types of spirochaete—the neurotropic virus, the dermotropic virus, and the *Spirochaeta cuniculi*, the organism which gives rise to a disease in the rabbit closely resembling syphilis. Amongst the progeny arising from the union of an infected father and a normal mother, an infected mother and a normal father, and from parents both of which were infected, a considerable number of rabbits have died shortly after birth, and a few not till some weeks later. In none of these has it been possible to detect the presence of spirochaetes in the blood or the tissues. Even in the infected parents themselves this examination has been negative, indicating a notable absence of generalization of the infection in rabbits. It might be thought that the surviving offspring of infected parents, even though displaying no definite signs of syphilis, would at least be immune to experimental infection, but this again is not the case, for such rabbits appear to be just as susceptible as the progeny of normal parents. The conclusion is therefore reached that syphilis is not transmitted by heredity in the rabbit, and that for this animal Profeta's law does not hold. This notable difference between man and the rabbit is due to the fact that in the former syphilis becomes generalized and affects the germinal cells, while in the latter the disease remains distinctly localized. If in man only a mild syphilitic infection occurs without becoming markedly generalized, and without involvement of the germinal cells, not only should the offspring be devoid of congenital taint but they should likewise show a complete absence of immunity to acquired infection—a fact confirmed by clinical experience.

251. Antihaemolysins and Haemolysins in the Urine.

CONDORELLI (*Il Policlinico*, Sez. Prat., July 25th, 1921), who alludes to his recent article on this subject (vide EPITOME, October 2nd, 1920, No. 356), has isolated from normal urine an antihaemolysin and two haemolysins. These substances are always present in normal urine, but the quantity of antihaemolysin is always greater than that of haemolysin, for which reason the urine as a whole has always an antihaemolytic action. The two haemolysins have the following properties in common: (1) The power of transforming oxyhaemoglobin into methaemoglobin; (2) their action is paralysed by urinary antihaemolysin; (3) in the presence of urinary haemolysin, though they are unable to produce haemolysins, they transform the pigment of the red corpuscles into methaemoglobin; (4) their cytolytic action is paralysed by the presence of antihaemolysin. In the urine of nephritic patients with uraemia, anaemia, hypertension and dropsy the antihaemolytic index is always and often considerably reduced, sometimes to zero, and even inverted. In nephritis in which the renal lesion is slight, so as not to cause any appreciable symptoms, the index may remain normal. In carcinoma Condorelli has never been able to discover any considerable deviation from normal of the antihaemolytic index.

252. Ossification Centres at Birth.

FROM an *x*-ray study of the ossification centres of the wrist, knee, and ankle in 100 newborn infants, and from a study of the literature, ADAIR and SCAMMON (*Amer. Journ. of Obstet. and Gynecol.*, July, 1921) draw the following conclusions: The inferior femoral epiphysis is present in about 1 case in 20 in the eighth foetal month, in 1 case in 3 in the ninth month, in 6 cases in 7 in the tenth month, and in about 19 cases in 20 at birth—if not then present it appears during the course of the first post-natal month. The superior tibial epiphysis is very rarely present before the ninth month, and is found in 1 case in 17 in that month and in about seven-eighths of all full-time newborn children. The ossification centre of the cuboid first appears at about the beginning of the ninth foetal month, and is present (from all available data) in about 1 case in 25 in the ninth month, and in about 3 cases in 5 in full-time newborn children. In the present series this centre was present in 38 per cent. only at birth. Two carpal ossification centres, for the os magnum and unciform respectively, may be present in the carpus of the newborn; in the authors' series the former was present in 15 per cent., the latter in 9 per cent. The usual order of appearance of the centres is (1) inferior femoral epiphysis, (2) superior tibial epiphysis, (3) cuboid, (4) os magnum, (5) unciform.

253. Pituitary Extract and Diuresis.

HOUSSAY, GALÁN, and NEGRETE (*Revista de la Asociación Méd. Argentina*, January–March, 1921) made in dogs and rabbits subcutaneous and intravenous injections of a saline extract, acidified with acetic acid (0.25 per cent.) of the posterior lobe of the pituitary of the ox. In the rabbit a fleeting oliguria occurred, but if the animals received abundant amounts of water, administration of the extract had no effect on the quantity of urine passed in the twenty-four hours. In the dog a diuretic effect was noticed which lasted some hours, but had no influence on the mean secretion measured during twenty-four hours; the diuresis consequent on increased ingestion of water appeared to be diminished by the giving of the pituitary extract. HOUSSAY, CARULLA, and ROMAÑA (Ibid.) found that in twelve out of thirty dogs polyuria followed experimental puncture of the infundibulo-peduncular region of the brain; the same result followed in four dogs in which the hypophysis had been removed.

254. Death from Anaphylaxis.

PÉHU and BERTOYE (*Journ. de Méd. de Lyon*, August 5th, 1921) report the case of a child, 8 years of age, who, after an uncomplicated attack of scarlet fever, developed severe purpura associated with pains in the joints. As the general condition was growing worse, and as neither a subcutaneous injection of 10 c.cm. of horse serum, nor calcium chloride, nor the exhibition of other haemostatic remedies was of any avail, it was decided to provoke an anaphylactic shock in the hope that improvement might occur. Accordingly, thirty-eight days after the first injection of serum, a mixture of 8 c.cm. of antidiphtheritic serum from the horse with 12 c.cm. of physiological saline was given intravenously, four minutes being taken over the injection. Thirty seconds later the child suddenly became cyanotic; respiration ceased abruptly, the pulse stopped, the cornea became insensible, and the pupil, after exhibiting alternate constriction and dilatation, ceased in a state of mydriasis. Artificial respiration proved valueless; the child was dead. The autopsy, which appears to have been performed with considerable care, revealed none of the usual signs of anaphylaxis—familiar to us from animal experiments—nor did sections of the organs examined microscopically yield any further information. A few caseous glands were found at the hilus of the lung, while a slight degree of bronchopneumonic inflammation was seen at the bases. The interest of this case lies in the extreme rarity—only about a dozen cases have been reported—of death in human beings from anaphylaxis. Even after the severest shocks recovery is the rule, but the exceptions are sufficient to show that the intentional production of this condition is too dangerous to be undertaken till further knowledge on the subject has been acquired.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

255 The Prognosis of Asthma.

ROMANELLI (*Rif. Osped.*, June 15th, 1921) states that the statistics for the hospitals of Rome for the years 1908 10 show that 991 patients were admitted for asthma or pulmonary emphysema, of whom 614 were males and 377 females, thus forming a percentage of 0.8 of the total number of admissions, which was 124,145. It should be noted that these statistics include cases of pulmonary emphysema, whether due to asthma or not, and that the hospital exclusively provides for the poorer classes, while asthma has a predilection for the rich. Among the insurance candidates rejected by the Italian National Institute of Assurance in the years 1913, 1914, 1915 and 1919 there were 18 rejected on account of asthma, or 0.78 per cent., among a total of 2,315 rejected. The statistics of the causes of death in the kingdom published by the Italian Ministry of Labour and Commerce for the quinquennium 1912-16 show that 12,318 persons died from asthma, of whom 6,393 were males and 5,925 were females, with a percentage of 6.36 of the deaths from all causes, which amounted to 3,406,099. In the hospitals of Rome during the triennium 1908-10 11,494 persons died from various causes. In 76, or in 0.66 per cent., the cause of death was asthma and pulmonary emphysema. A comparison of the number of deaths from asthma and emphysema with the number admitted—991—yields a percentage mortality of 7.67. The mortality was highest among women, as of 377 admitted 34, or 9.02 per cent., died, as compared with 42 deaths, or 6.84 per cent., among the 614 males admitted. The women, however, only apply to hospital when they are in a very serious condition, as they prefer to remain at home in the intervals between the attacks. It is advised that in examination of an insurance candidate with asthma the medical officer should take into account the family history, the diseases from which the candidate has suffered, the possible cause of the asthma, the frequency and severity of the attacks, the candidate's age, constitution, profession and habits, and the results of physical examination.

256. Congenital Syphilis and its Prevention.

HATA (*Internat. Journ. Public Health*, July–August, 1921), from personal experience at his own clinic, found a large number of women with positive Wassermann reaction but without any clinical manifestations of syphilis, 62 per cent. being unaware that they had the disease. While considering that an early sero-diagnosis in all pregnant women is desirable, he suggests the institution of propaganda pointing out the ravages of the disease with the possibility of transmission in ignorance, and the instruction of midwives on the subject. A pregnant woman showing a positive Wassermann reaction should be given immediate antisyphilitic treatment, and the blood of the newborn baby should be examined, and, if positive, the child should be treated and kept under prolonged observation. The presence of syphilis in either one of a married couple should lead to the other's blood being examined. It is held that such precautions could be carried out without much opposition, and the evil of congenital syphilis thereby considerably lessened.

257. X-Ray Treatment of Graves's Disease.

HERNAMAN-JOHNSON (*Arch. Radiology and Electrotherapy*, June, 1921) discusses the position of x rays and electricity in the treatment of Graves's disease. The benefit derived from x-ray treatment is usually very pronounced, pulse rate and sweating diminishing, and definite improvement taking place. Usually the applications are over the thyroid, though some observers apply the rays over the thymus and over the sympathetic in the neck, the good effects appearing to be constitutional as well as local. It is best to commence with small frequent doses, combined with rest in bed where practicable, and the treatment should be given a trial even in apparently hopeless cases. While an acute case may respond rapidly to treatment, chronic cases may require in addition dental treatment, gastric extracts to aid digestion, salicylate of bismuth to control fermentative diarrhoea, galvanism for the exophthalmos, and psychotherapy to regulate sleep and menstruation. X-ray treatment is used for its local regulating action and for its constitutional effect, and it should be commenced as soon as the disease is diagnosed. It should be regarded not as a rival but as an adjuvant to surgery, and, except in so far as its early employment tends to reduce the number of cases coming up for surgical consideration, its use need not affect the question as to when an operation becomes advisable. After operation the application of electricity to the remainder of the gland will diminish the risk of recurrence.

258. Bromide in the Treatment of Nervous Diseases.

HUNT (*Med. Record*, July 16th, 1921) calls attention to the deleterious effects of the bromide salts in the treatment of diseases of the nervous system by producing confusion, restlessness, violence, and symptoms resembling mania and paresis. By their prolonged administration both physical and mental symptoms are produced, as evidenced physically by the rash, coated tongue, and foetid breath, constipation, cachexia, feebleness, salivation, ataxic gait and aspect, loss of knee-jerks, and tremor; and mentally by restlessness, insomnia, depression, excitability, delusions, etc. In long-standing cases of epilepsy their continuance tends to aggravate the irritability and mental deterioration, and such patients should never be saturated with the drug, which should be decreased in dosage directly irritability, confusion, or violence develop during its administration. For controlling convulsions the value of luminal is indicated. Toxic cases develop more rapidly under bromide, and circulatory, traumatic, arterial, mental, and alcoholic cases are peculiarly susceptible. Bromides may mask the symptoms of mental disease, and, on account of their slow elimination, bromidism from long-continued use may persist after the drug has been discontinued.

259. The Wassermann Reaction in Deaf-Mutes.

ARDENNE (*Rev. de lar., d'otol., et de rhinol.*, May 31st, 1921) investigated the Wassermann reaction in 23 cases of deaf-mutism which he divided into two groups. The first group consisted of 11 children in whom the deafness was undoubtedly congenital. In this group the reaction was positive in 8 and negative in 3. The second group consisted of 12 cases in which the deafness could be explained by a lesion of the middle ear or by a disease in infancy, such as meningitis, or cases in which the cause of deafness was unknown. In this group the Wassermann reaction was more or less positive in 5 and negative in 7. Although definite conclusions could not be drawn from so small a number of cases, Ardenne suggests that a systematic study of the Wassermann reaction in deaf-mutism would throw light upon the etiology of this infirmity.

260. The Clinical Course of Typhoid Fever after Preventive Inoculation.

KRAMER (*Nederl. Tijdschr. v. Geneesk.*, May 28th, 1921) remarks that preventive inoculation against typhoid and paratyphoid fevers has considerably increased the difficulties of diagnosis in inoculated individuals. He records two cases in which the Widal reaction did not become positive until shortly before the patients were discharged from hospital and the temperature showed a marked irregularity. In one case it resembled that of malaria, although examination of the blood for haematozoa was negative, and in the other it assumed an undulatory type, with an interval between the crests of the waves of four to six days, in which the temperature was normal or subfebrile, the general condition showing a corresponding periodic change.

261. The Practical Value of Thoracoscopy.

JACOBAEUS (*Deut. med. Woch.*, June 23rd, 1921), who has elaborated the technique of thoracoscopy during the last ten years, insists that it is not merely a highly specialized plaything, but a procedure calculated to determine many a patient's fate. By the induction of a pneumothorax and the subsequent examination of the chest by the x rays and thoracoscopy, it is possible to obtain accurate information regarding tumours of the lungs and pleurae. But the sphere in which the author has found thoracoscopy most useful is that of pneumothorax treatment in pulmonary tuberculosis. Under thoracoscopic control he has cauterized pleural adhesions, which prevented the complete collapse of the lung, and in thirty out of forty such cases he has

succeeded in converting a partial into a large pneumothorax. In twenty-six of these thirty cases the immediate effects, judged by clinical evidence, were good. The late results were less satisfactory, 30 to 40 per cent. of the thirty patients being found to have died some time later. The author emphasizes the importance of converting a partial into a complete pneumothorax by a reference to an analysis by Gravesen, of Saugman's sanatorium. This analysis showed that three to thirteen years after discharge 70 per cent. of the thirty-seven patients with a complete artificial pneumothorax were still fit for work, whereas this standard was reached by only 33 per cent. of the patients with a moderately large pneumothorax, and by only 11 per cent. of the patients with a small pneumothorax surrounded by extensive adhesions.

262. Epidemic Cerebro-spinal Meningitis in the Adult.

LE DENTU (*Paris méd.*, July 30th, 1921) records two cases of cerebro-spinal meningitis in adults, aged 22 and 33 respectively, presenting unusual complications. In the first case the lesions, as verified by autopsy, gave rise to external hydrocephalus from hypertension of the cerebro-spinal fluid as a whole, as well as to internal hydrocephalus due to ependymitis and blocking of the ventricles. In the second case motor aphasia and facial palsy appeared and disappeared simultaneously, finally reappearing before death, these symptoms being probably due to pachymeningitis followed by encephalitis, though no autopsy was performed to verify this diagnosis. Le Dentu suggests that in cases in which Kernig's sign is ill marked nuchal rigidity should be explored at the same time, one hand keeping the patient's legs extended on the bed by pressure on the knees, while the other hand bends the occiput forwards. In cerebro-spinal meningitis flexion of the head considerably increases the difficulty of extending the legs, as pressure on the knees is more painful when this method is employed.

263. Treatment of Arterial Hypertension by Benzyl Benzoate.

LAUBRY and MOUGEOT (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 26th, 1921) have studied the action of benzyl benzoate in hypertension, as recommended by Macht of Philadelphia, using a 20 per cent. alcoholic solution in doses of twenty drops. Its immediate effect was investigated both in normal subjects and in patients with hypertension. In the former its action was inconstant. Though a few showed a fall of 3 cm., in the majority of cases the blood pressure was not affected, showing that a healthy organism is able to adapt itself to veno-dilatation. In hypertension, on the other hand, a fall of blood pressure, as determined by Pachon's oscillometer, was the rule and ranged from 1 to 3 cm. It occurred about half an hour after taking the drug, became more pronounced at the end of forty-five minutes, and lasted about half an hour. The prolonged action of the drug was studied by giving it three or four times a day. No bad general or local effects were noted, and a rise of blood pressure was never observed. Fall of blood pressure was not constant, but all the more frequent and pronounced the farther removed the hypotension was from the stage of decompensation. In addition to changes in the blood pressure the drug caused improvement of the symptoms, as it relieved obstinate headache, vertigo, numbness, and vascular pain. In angina pectoris, however, its action was less marked than that of amyl nitrite or trinitrin. The drug caused no improvement in hypertension complicated by aortitis, nephritis, or confirmed insufficiency of the left ventricle. The hypotensive action of the drug lasts several days, and at the end of a week the doses may be reduced to a third or a quarter of the original dose. Stopping the drug is not followed by a reaction but only by a return of the blood pressure to its original height.

264. Vaccination against Tuberculosis.

VON RUCK and FLACK (*Med. Record*, June 18th, 1921), from an experience of over 3,000 children vaccinated against tuberculosis, are convinced that resistance or immunity can be increased, and tuberculous infections prevented, by vaccination. Although infections may not necessarily manifest themselves by physical signs or symptoms, and the child may appear in normal health, experience shows that the great majority have acquired an infection, the frequency increasing with age. The diagnosis can only be made with certainty by noting the reactions following the administration of vaccine, and this should be given in a small initial trial dose and gradually increased until a reaction occurs, as evidenced by a temperature rise of at least 1°F., or by a focal reaction by the increase of existing physical signs. No serious consequences from any form of reactions have been observed, though severe general reactions are undesirable, especially in weakly patients, from their likelihood of interfering with nutrition and the appetite for food. In normal, non-tuberculous persons no reactions occur, and in others all reactions tend to grow less marked with succeeding doses, until they eventually entirely disappear even with a maximal dose. Lesions still accessible to the circulation can be made to disappear by the use of specific vaccines, the rapidity and uniformity of the results depending upon the time which has elapsed since infection occurred and the extent of the lesions and the degenerative alteration present.

SURGERY.

265. Broncho-Oesophageal Fistula and Traction Diverticulum.

HAWES (*Amer. Journ. Med. Sciences*, June 1921), from a study of two cases of broncho-oesophageal fistula and traction diverticulum respectively, is impressed with the fact that foreign bodies in the lung—for example, food particles, pills and barium—need not produce the serious effects usually expected, since they may pass through the lung to an opening on the outside (broncho-oesophageal case), or into a cavity connected with the mediastinal glands, thence into the bronchi and out through the trachea (traction diverticulum case) without apparently doing harm. The first case resulted from a lung abscess following pneumonia, the abscess being drained after rib resection, food, etc., eventually being passed as taken through the tube in the wound. The fistula healed spontaneously without any ill effects to the lung from the passage through it of barium, or of liquid and solid food. The traction diverticulum case gave all the signs of pulmonary tuberculosis with haemorrhages, but the sputum was always negative. Particles of food, pills, etc., taken some hours before were frequently coughed up in the sputum, and on swallowing there was at times a sense of pressure to the left of the sternum near the fourth or fifth rib. *X*-ray examination showed that some portion of the barium meal passed into a process in the lung at the right lung root, and, although the original infection of the mediastinal glands may have been tuberculous, this was not proved, and there was no positive evidence of tuberculosis of the lung. After the barium meal the patient's general health improved steadily, and there had since been only one small haemorrhage. It was considered that she was not a danger to her family, and that, if further haemorrhages occurred, they would probably do little harm since the process in the lungs was not progressive.

266. Suture after Nerve Injury.

BROWN (*Journ. Orthopaed. Surgery*, June, 1921) discusses the possibilities of suture after extensive nerve injuries, since the prognosis of grafting being bad it is important to obtain end-to-end suture when possible. By extensively freeing the nerve from its fascial connexions in order to take advantage of its inherent elasticity it is possible to gain 1½ in. in the median and ulna in the arm and 2 in. in the sciatic. By fixing the joints in suitable positions considerable gaps in the nerve can be dealt with, giving a further 1 to 2 in. in most instances. Advantage can be gained in some cases by altering the course of a nerve—for example, by bringing the ulnar nerve in front of the elbow it can be relaxed from 2 to 3 in. by flexion at the elbow, as compared with 1 in. gained by extension of the elbow while the nerve is in its normal bed. Similar benefits in length can be gained by transposition of the musculo-spiral, the median, and the posterior tibial. Still further gain may be obtained by stripping up the branches from the main nerve, the maximum being obtained when the branches arise above the lesion. In this way the triceps branches of the musculo-spiral, the motor branches of the median, branches of the ulnar, the hamstring nerve from the sciatic, the branches to the gastrocnemii from the internal popliteal, and all the branches of the posterior tibial nerve can be traced to one bundle for each, which can be stripped from the main nerve for a considerable distance. The advisability of sacrificing branches may have to be considered, or even shortening the bones of the limb should apposition still not be obtainable. Failing these measures, further extension may be obtained by stretching in a two-stage operation. By the above means gaps in the median nerve in the arm of 4½ in., in the ulnar of 5 in..

and in the musculo-spiral of 4 in. can be approximated, the median and ulnar gaps in the forearm capable of repair being 6½ in. Where end-to-end suture is impossible tendon transplants may overcome the difficulty.

267. Surgical Treatment of Pulmonary Tuberculosis.

SAUERBRUCK and BRUNNER (*Zeit. f. Tuberk.*, Hefte 3 and 4, 1921) remark that, though it can no longer be doubted that pulmonary tuberculosis can be cured surgically, doubts and uncertainties still exist as regards indications for operation. The experience of the Munich University Surgical Clinic during the last two years shows that operative treatment is no longer the exclusive privilege of the well-to-do classes. Operative measures which aim at keeping the affected lung at rest are only applicable in cases of exclusively, or at least mainly, unilateral disease. According to the estimate of experienced lung specialists at Davos this requirement is fulfilled in about 10 per cent. of all cases of pulmonary tuberculosis. As an artificial pneumothorax succeeds in a little more than half the cases, about 5 per cent. of all cases are suitable for operation. Chronic fibroid phthisis and cavernous forms of pulmonary tuberculosis are the most suitable for operation. When, owing to adhesions in cavernous disease of the upper lobe, an effective pneumothorax cannot be performed, a combination of upper thoracoplasty with lower pneumothorax is indicated. From October, 1918, to February, 1921, 57 cases of pulmonary tuberculosis were operated on at the Munich University Surgical Clinic. In 43 cases eleven ribs were resected, in the other cases partial thoracoplasty was performed, sometimes in association with incomplete pneumothorax. In two cases plugging with paraffin was employed. The earliest death that occurred was a week after the operation, so that the operative mortality was *nil*. The mortality in the first four weeks after the operation was 7 per cent.; fifteen patients, or 26 per cent., became free of expectoration and tubercle bacilli; 42 per cent. were improved, but it was too soon to speak of complete recovery. The remaining 25 per cent. remained unchanged or became worse.

268. Ureteral Catheterization.

PFLAUMER (*Zentralbl. f. Chir.*, July 16th, 1921) states that, contrary to the general opinion that the urine obtained by a ureteral catheter always represents that coming from the corresponding kidney, he has found by filling the bladder with colouring matter that the bladder contents escape continuously or periodically from the catheter. This was especially the case when the catheter was only a few centimetres up the ureter, but Pflaumer had known it to occur when the catheter had been introduced as far as 25 cm. In one case coloured and unmixed urine escaped alternately. Pressure on the bladder increased the admixture of the bladder contents. After the researches of Lewin and Goldschmidt, who found that under certain physiological conditions the bladder contents passed into the ureter, it is not surprising that this also occurs when the ureteral catheter is introduced. Pflaumer therefore recommends that after introduction of a ureteral catheter one should empty the bladder or fill it with indigo-carmine solution as a control.

269. Extraction of the Lens of the Eye.

BARRAQUER (*Arch. of Ophthalmology*, July, 1921) urges the advantages of total extraction of the lens in its capsule in a single step, thereby avoiding the disadvantages and dangers of capsulotomy arising from repeated pressure, the persistence of cortical material, and the necessity for secondary operations to clear the pupillary region and improve vision. In "phacoerisis," as he terms the operation, there is only one manœuvre within the eye, and only one instrument is used without exerting pressure. This instrument is a pneumatic forceps, and its suction cup grasping the lens causes a vibration whereby the fibres of the zonule are torn. The vacuum in the suction cup is caused by a delicate electrically operated pump, under the complete control of the operator. The room must not be too bright, the operation field being illuminated obliquely with a photophore. With the pupil fully dilated, under perfect local anaesthesia and antisepsis, and the patient instructed not to look strongly downwards, the eyelids and the eyeball are fixed without pressure, and the eyelids drawn forward. The corneal flap, measuring two-fifths of the circumference, must be gently cut without compressing the eyeball. Iridectomy is exceptional, but when necessary a peripheric button-hole iridectomy is preferable so that the iris is not drawn outside the anterior chamber. Without any pressure on the lens the instrument is applied to its surface and a vacuum produced, and the lens is slowly extracted, care being taken that its movements do not cause any pressure on the vitreous. If an iridectomy has been done any fibres of the zonule which may have been caught in the wound must be replaced into the chamber, and a dressing, held in place by strapping, is applied to each eye, and, in the case of the operated eye, left untouched for a week. Normal visual acuity, of a higher percentage than that following capsulotomy, is obtained in a few days.

OBSTETRICS AND GYNAECOLOGY.

270. Serum Treatment of Streptococcal Infections of the Puerperium.

KRONGOLD-VINAVER (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris*, 1921, ii) describes the treatment of puerperal fever of streptococcal origin by means of an antistreptococcal serum prepared by the author's method of injecting into horses a single massive dose of a living culture of streptococci virulent for mice. Together with Couvelaire, he attaches considerable importance to the diagnosis of the bacteriological nature of an infection at a time antecedent to the appearance of its clinical signs: in 625 cases they made, at the twenty-fourth, thirty-sixth, and forty-eighth hours, bacteriological examinations of the lochia by incubating broth into which had been introduced swabs from the cervix. In 38 per cent. of the cases streptococci were thus shown to be present in the cervix. Of these 237 cases, 40 were associated with temperatures over 100.2°, and 20 with temperatures of 104°, rigors, and other well marked signs of septicaemia. With the exception of four cases, the signs of infection disappeared rapidly in all after subcutaneous injections of 60 cm. of serum given on three successive days. Of the remaining four cases, in all of which blood culture showed the presence of a streptococcus, three were fatal; two of the four cases were treated both with subcutaneous and intravenous doses (20 c.cm. mixed with 180 c.cm. of saline solution), and one recovered.

271. Prolapse of Uterus during Pregnancy.

GARLAND (*Boston Med. and Surg. Journ.*, July 7th, 1921) considers that in many instances the vomiting in early pregnancy is due to prolapse of the uterus, with the consequent complications in circulation, and that relief can be obtained by restoring the normal circulation by elevation of the uterus in such cases. Notes of four cases are given in which rapid and complete relief followed elevation of the uterus to correct the misplacement which was causing interference with the venous circulation. In the later months of pregnancy, after the uterus has risen well into the abdomen and has increased in weight, it is liable to tip forward and compress the tissues between it and the pelvic arch, causing severe backache and local neuralgia. Such a condition, the author says, can be immediately relieved by the knee-chest position, and two cases are quoted in which the patients were enabled to resume their activities in comfort until the end of pregnancy by the adoption of this treatment.

272. Labour at Term after Myomectomy in the Fourth Month of Pregnancy.

OWING to the occurrence of severe abdominal pain, associated with uterine contractions and with persistent vomiting, PAUCOT (*Gynéc. et Obstét.*, 1921, iv, 1) was impelled to open the abdomen in a case of four months' pregnancy complicated by uterine myomata. The tumours, which were two in number, were both situated anteriorly, and were of the size of an orange and of an egg respectively; both were attached by broad bases, and after their removal it was necessary to suture the muscular coat of the uterus. The pregnancy nevertheless continued without incident to term, when labour occurred normally.

273. Treatment of the Vomiting of Pregnancy by Thyro-ovarian Extract.

NAAMÉ (*Bull. Soc. de Thérap.*, June 8th, 1921) attributes the vomiting of pregnancy to autotoxaemia due to thyro-ovarian insufficiency. The cessation of vomiting about the middle of pregnancy is due, he considers, to establishment of a glandular equilibrium owing to hypertrophy of the thyroid gland. Thyro-ovarian opotherapy by favouring the development of this hypertrophy causes a rapid cessation of the vomiting. A cachet containing thyroidin 0.05 gram and ovarin 0.10 gram is given three or four times a day half an hour to an hour before food. Naamé states that he has employed this treatment with success for nineteen years.

274. Premenstrual Fever.

According to HOVELACQUE (*Journ. de méd. et de chir. prat.*, June 10th, 1921), who records an illustrative case in her Paris thesis, premenstrual fever is observed in convalescence from acute illness, in women suffering from disease of the adnexa, especially if menstruation is delayed; also in patients with slumbering foci of infection, such as chronic bronchitis, dilatation of the bronchi, and appendicitis. Tuberculosis is the most frequent cause of premenstrual fever. The temperature rises four or five days before the onset of menstruation, sometimes as high as 104° F. The rise of temperature is occasionally accompanied by acute pulmonary congestion or haemoptysis. In such cases an aggravation of the pulmonary lesion is to be feared. In tuberculous patients with amenorrhoea premenstrual rises of temperature are frequent. Premenstrual fever is generally due to ovarian or glandular disturbance caused by tuberculosis, which should always be suspected when no other factor can be incriminated.

275. Treatment of Osteomalacia.

GENTILI (*Annali di Ostetricia e Ginecologia*, February, 1921) records 4 cases of osteomalacia; the condition had become progressively worse in multiparae during the last few pregnancies. Two were treated by subtotal extirpation of the uterus and adnexa (vaginally in one case, abdominally in the other) under spinal anaesthesia; the other two by abdominal removal, in chloroform narcosis, of the same viscera. In all the pains ceased, the bony changes became arrested, and the patients' general condition became greatly improved. From these cases and from a review of the literature, the author concludes that an important part of the treatment consists in the removal of the uterus as well as of the ovaries; simple castration, he remarks, is not infrequently followed by recurrence of the pain and other morbid symptoms.

276. Congenital Transverse Septa of the Vagina.

According to GUILLEMIN (*Rev. méd. de l'Est*, June 15th, 1921), in his *Thèse de Nancy*, the existence of congenital transverse septa in the vagina is due to the fact that the upper part of the vagina arises from the Müllerian duct, while the lower segment is derived from the uro-genital sinus. The malformation may give rise to functional symptoms of greater or less degree, according to the completeness of the septum, such as retention of menses, dysmenorrhoea, difficulty or impossibility of sexual connexion and sterility. Complete obliteration of the vagina requires surgical treatment — namely, incision at the time of puberty. When the septum is incomplete operation may not be required, as the laceration attending expulsion of a full-term foetus usually causes complete disappearance of the malformation.

PATHOLOGY.

277. Stomatitis and Aplastic Anaemia due to Neo-arsphenamin.

MOORE and KEIDEL (*Arch. Derm. and Syph.*, August, 1921) draw attention to the syndrome of dermatitis, stomatitis, and aplastic blood changes not infrequently met with after the intravenous injection of neo-arsphenamin. In illustration they record the case of a woman, aged 50, suffering from primary syphilis, who, after a course of treatment during which 4.45 grams of neo-arsphenamin were administered, developed an ulcerative stomatitis accompanied by an extensive purpuric eruption. The blood showed on examination an aplastic anaemia with marked diminution of red cells, a severe leucopenia, and a reduction of the platelets to 28,000 per c.mm. She died four weeks after the onset of the reaction. At the autopsy there were extensive subcutaneous and subserous haemorrhages, haemorrhages in the stomach, intestines, and liver, a haemorrhagic nephritis, and an aplastic bone marrow. Microscopical sections, examined by McCallum, showed that the bone marrow of the femur consisted almost entirely of fat; there were, however, a number of cells having large rounded eccentric nuclei, and a purple, non-granular cytoplasm, with an area of pale staining round the nucleus resembling plasma cells, which were also met with in the splenic reticulum and the connective tissue of the liver. These he was inclined to regard as the basophilic ancestral cells of myelocytes. Large areas of necrosis were encountered in the liver. From their experience of other cases the authors are led to express their opinion that the occurrence of itching, a mild macular or vesicular rash, prolonged fever, malaise, or any tendency towards purpura, accompanied by an alteration in the blood picture, are to be looked upon as the danger signals in treatment by arsphenamin.

278. Congenital Cyst of the Lung.

LELIÈVRE and MORISSON-LACOMBE (*Gynéc. et Obstét.*, 1921, iv, 1) demonstrated to the Société Obstétrique de Gynécologie de Paris the specimens from a case of cystic tumour of the lower lobe of the left lung in a newborn subject who lived thirty hours. The lobe affected had the form and shape of a large egg, and showed on section numerous cavities having more or less interconnexion. Histological examination showed the medium sized cystic cavities to be lined by epithelium resembling that of small sublobular bronchi; from these cavities diverticula arose lined by epithelium which became progressively flatter and resembled that of the intralobular bronchioles; these diverticula terminated in distended alveoli. Certain parts of the tumour showed in addition collections of mucous cells appended to the bronchiolar dilatations, and also isolated mucous cells intermingled with flattened alveolar epithelium. The case is regarded as one of terminal ectasis of a section of the primitive lung.

279. Blood Chemistry in Normal and Abnormal Pregnancy.

KILLIAN and SHERWIN (*Amer. Journ. of Obstet. and Gynecol.*, July, 1921) estimate the non-protein and urea nitrogen, uric acid, creatinine, sugar, chloride, and carbon dioxide combining power of the blood in 5 cases of normal pregnancy and 26 of pregnancy complicated by toxaemia. They find that in normal pregnancy, as compared with the non-pregnant state, there exists a low total of non-protein nitrogen, low urea nitrogen, and a ratio of about 44 per cent. of urea nitrogen to total non-protein nitrogen; a definite decrease of carbon dioxide combining power of the plasma, significant of a drop in the alkali reserve of the blood, occurs in the last months of normal pregnancy, but there is no variation in the uric acid, creatinine, chlorides, or sugar concentration. Of the 26 abnormal cases, 4 are grouped as nephritic toxaemias, and were characterized clinically by much albuminuria, oedema, hyperpiesis, and neuro-retinitis. In these cases, in which renal insufficiency was not consequent to pregnancy toxaemia, the blood changes resembled those of moderate or severe renal impairment in general; usually the non-protein nitrogen was greatly increased (45 to 106 mg. per 100 c.cm.), and the ratio of urea nitrogen to non-protein nitrogen was enlarged; the acidosis was not greater than in normal pregnancies. The remaining 22 abnormal cases are grouped as hepatic toxaemias, and comprise 2 of pernicious vomiting without convulsions, with 20 of convulsions, of which 5 were cases of *post-partum* eclampsia. In this group the non-protein nitrogen, in some cases doubled, was invariably high above the normal limit; on the other hand, a remarkably low percentage of the non-protein nitrogen was in the form of urea—15 to 38 per cent., as compared with 42 to 47 per cent. for normal pregnancies. Uric acid, normally about 2.5 mg. per 100 c.cm., was invariably increased—3 to 11 mg.; this is taken as evidence of mild impairment of renal function following the toxaemia. In general there was slight hyperglycaemia, and the decrease of carbon dioxide combining power was well marked. In most instances evacuation of the uterus was followed by clinical improvement in proportion to a return towards normal of the blood picture.

280. The Albuminous Content of the Blood Serum in Infancy.

MENSI (*La Pediatria*, July, 1921) has examined the blood in 382 infants with especial reference to tuberculosis, using Salge's method. His conclusions are as follows. His figures correspond with those of other workers as regards normal children, the average percentage of proteins under 5 months is 6, between 5 and 10 months the figure goes up to 7 or 8. The concentration of the blood varies according to the disease. It is diminished in renal affections with oedema, in acute infective illnesses, in disturbances of nutrition due to intolerance of carbohydrates, in cachexia from any cause. It is increased in acute dyspeptic disturbances, in diabetes mellitus, in jaundice, in spasmophilia, in syphilis and rickets, and in tuberculosis (except in the last stages). It is unchanged in chronic nutritive troubles and in diabetes insipidus. The main clinical importance of these figures is in the early differential diagnosis of tuberculosis.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

281. Increase in Tuberculosis during the War.

According to Kirchner (*Zeit. f. Tuberk.*, May, 1921) a considerable increase in the mortality from tuberculosis from 1913 to 1918 occurred not only in Germany but also in Austro-Hungary as well as in certain foreign countries. The increase in mortality indicated not only an increase in the incidence of tuberculosis but also a more severe and rapid course of the disease. The causes were to be found in individual, hygienic, and economical factors, such as mental, moral, and physical strain, lack of cleanliness, and defective housing, clothing, and feeding, which occurred during the war in an unprecedented degree. Before the war the mortality from tuberculosis was least in Saxony and higher in Prussia, Hamburg, Wurtemberg, Hesse, Bavaria, and Baden, in the order named, but during the war the increase in tuberculosis mortality in Germany was practically in the opposite order. In neutral countries the tuberculosis mortality was lowest in Denmark, greater in Holland, and showed the greatest rise in Switzerland. In Norway and Sweden the mortality from tuberculosis, which is always high in these countries, did not rise during the war. In German towns with a population of 15,000 and more the tuberculosis mortality, which was low before the war, rose slightly in 1914, somewhat more in 1915–1916, more than 40 per cent. in 1916–1917, and 14 per cent. in 1917–1918, while in 1918–1919 it dropped by about 6 per cent., and in 1919–1920 by about 30 per cent. The tuberculosis mortality rose later in the country than in the towns, reached a much lower level, and began to sink earlier. The greatest increase in tuberculosis mortality during the war occurred in the male sex from 15 to 20 (by about 63.5 per cent.) and then from the age of 20 to 25. Whereas during peace time the tuberculosis mortality was greater in the male than in the female sex except from 5 to 20 and from 25 to 40, during the war the increase was greater in the female sex at almost all age periods, especially from 10 to 15 and from 25 to 50.

282. The Leucocytes in Pulmonary Tuberculosis.

Romberg (*Zeit. f. Tuberk.*, Bd. 34, Hefte 3 and 4, 1921) states that the leucocyte picture is a useful guide in the estimation of pulmonary tuberculosis and affords valuable assistance in the diagnostic and therapeutical use of tuberculin. In favourable cases the leucocytes are normal or moderately increased. Leucocytosis develops when the disease becomes worse. In the last stage the leucocyte count sinks to normal again. A definite neutrophilia, a rise of the neutrophils to 75 per cent. and more, is a bad sign. Sometimes this occurs when there is still leucocytosis. In other cases the leucocytes first drop to normal and the neutrophils still remain normal. The appearance of immature forms of neutrophils, myelocytes, and a shift to the left is absent in the most favourable cases, and is only well marked when there is constitutional disturbance. In the most favourable cases the lymphocytes are distinctly increased, and in the severest cases diminished. Spontaneous eosinophilia over 400 per cubic millimetre is very rare. On the other hand, eosinophilia after employment of tuberculin, and even after von Pirquet's reaction, is frequent, and is a decidedly good sign. Leucocytosis and neutrophilia may also occur after employment of tuberculin.

283. Acute Dermatitis in Artificial Amber Workers.

Sachs (*Wien. klin. Woch.*, July 21st, 1921) has recently seen several cases of acute dermatitis in artificial amber workers. This substance, which is known as bakelite in America, is being manufactured on a large scale in Austria, as 1 kg. of natural amber costs 20,000 kronen, while 1 kg. of artificial amber costs only 1,000 kronen. Artificial amber is extensively used in the making of billiard balls, smoking requisites, and umbrella and stick handles. The most important constituents of this substance are carbolic acid, formaldehyde, and ammonia, which are boiled together in a porcelain crucible. Glacial acetic acid, sodium sulphite, soda and hydrochloric acid are added, and the mixture is boiled and stirred with a glass rod for three to four hours, until a greyish-white mass of resinous consistency results. The mass is stained with a red, blue, yellow, or green colour as required, and poured in liquid form into glass tubes about 3 cm. in diameter. While the mixture is being heated fumes of carbolic acid, formaldehyde, and hydrochloric acid are given off, and produce an irritating effect upon the skin of the face and forearms. Most of the patients suffer from conjunctivitis, and some from bronchitis. The dermatitis is characterized by intense reddish swelling and exudation. Women alone are affected, as no males are employed in artificial amber factories. Prophylactic measures in these factories should be enforced, especially free ventilation. The use of indiarubber gloves is uncomfortable, and is no adequate protection, as manipulation of corroding and irritating substances soon destroys them. Treatment consists in the application of Burow's solution, and, after subsidence of the acute symptoms, in the application of a 3 per cent. boracic and lanoline ointment, and Lassar's paste.

284. Inefficacy of Diphtheria Antitoxin given by the Mouth.

Avirgnet, Lereboullet, and Marie (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 28th, 1921) protest against this method, which has been recently advocated by Dufour of Fécamp. Precious time is wasted, especially in severe forms of the disease, which can only be controlled by an early and intensive treatment, consisting in intramuscular injection accompanied or followed by subcutaneous injection. Experimentally, Hewlett in 1902, using Marx's method, was unable to find the least trace of antitoxin in a rabbit's or guinea-pig's serum when it had been given by the mouth or rectum. The same factors which oppose the action of toxin introduced into the digestive tract counteract the absorption of antitoxin. The hydrochloric acid of the gastric juice appears to play the chief part in the destruction of antitoxin; neutralized pepsin, trypsin, and bile are less active, and the bacteria of the alimentary canal probably also play a part. The present writers have employed another method to show the inefficacy of antitoxin when given by the digestive tract. Nine children, aged from 3 to 10 years, with a positive Schick reaction, were given 20 c.cm. of antitoxin containing 250 units per cubic centimetre, in the course of one to three days and then tested again with the Schick reaction. Contrary to what occurs after subcutaneous injection, in none of the cases did the ingestion of the serum have the least effect upon the intensity of the reaction. The same result was obtained in six children after injection of 20 to 40 c.cm. of antitoxin into the rectum.

285. The Pulse Pressure after Consumption of Alcohol.

Engelen (*Zentralbl. f. inn. Med.*, July 16th, 1921) investigated the effect of small quantities of alcohol (7 to 10 c.cm. in 50 per cent. dilution with different flavouring reagents) on the pulse pressure of sixty persons of various ages and suffering from various diseases. In 52 cases comparative measurements were made in two positions, such as lying down and standing, lying down and sitting, and sitting and standing, and in 8 cases the examination was made in three positions before and after the alcohol had been taken. The reaction was not always the same in the same person in different positions. Of the 60 cases 34 reacted in the same way in different positions, and 26 in different ways in different positions. Increase of the pulse pressure occurred in 46 examinations and diminution in 75, but the alcohol did not exercise a pharmacodynamic effect upon the circulation with any regularity.

286. Cirrhosis of the Liver.

Chauffard (*Journ. de Méd.*, June 25th, 1921), in a clinical lecture on cirrhosis of the liver, points out that we are now laying more stress on the condition of the hepatic cells than on that of the vascular, biliary, or connective tissue elements of the liver. The hepatic cells react differently to the different irritants, hence varieties in the clinical types of cirrhosis. Certain experiments on the liver during fasting and during digestion show that it reacts differently in these different states—for example, in relation to uric acid—and it has been shown on similar grounds that it is better to supply hydrocarbons before an operation requiring chloroform than to starve the patient, which interferes with the glycogenic function of the liver. It therefore becomes important to test the functional activity of the liver in cirrhosis. This can be done by administering certain substances—for example, glycocoll peptone

to test the amino-aciduria, or by testing for glycuronuria. Some of the symptoms of cirrhosis are due to functional deviations on the part of the hepatic cells—for example, urobilinuria—and others may be due to insufficiency—for example, glycosuria. Alcohol is still accepted as one of the main causes of cirrhosis, but syphilis or tubercle may also produce cirrhosis. The main object of the lecture is, however, to draw attention to the advantage of modern tests for the physiological state of the liver in its pathological condition.

287. Vaccination during Small-pox Epidemics.

Silvento (*Il Policlinico*, June 20th, 1921) discusses the question of vaccination during a small-pox epidemic. Two objections have been raised against this: (1) That the vaccine might become virulent; (2) that inasmuch as vaccination has a temporary depressing effect, it might render an attack of small-pox more serious. After an experience of several severe epidemics the author says the first objection may be readily dismissed. As to the second, it is possible that in a few individual cases there might be something in it, but, speaking generally, it is not a serious objection. In order not to expect too much from vaccination during an epidemic one should remember that protection does not develop until about fifteen days after successful vaccination, and becomes well marked after thirty days. So that, in addition to vaccination during an epidemic, isolation, disinfection, and the usual sanitary precautions are necessary.

288. The Geographical Distribution of Spirochaetosis Icterohaemorrhagica.

Pettit (*Rev. méd. de l'Est*, July 1st, 1921) states that he has been impressed by the very unequal distribution of the disease in various parts of France. This was particularly pronounced during the war. Spirochaetosis was frequent on the Verdun front, in Flanders, in front of Amiens, and on the Chemin des Dames. On the other hand, cases were very scanty in Champagne and exceptional about Belfort. Pettit has not yet succeeded in finding a single case in the mountainous region of the Vosges, although cases are met with in the neighbouring zone. He has seen a case at Saint Nicolas-de-Port, Étienne had three indigenous cases at Nancy, and the Germans made similar observations in the plain of Alsace. Pettit admits the possibility of a regional immunity due to a special geological formation, especially as Japanese observers have established that the diffusion of spirochaetosis icterohaemorrhagica is related to the reaction of the soil. Étienne and Benech (Ibid.) report three cases of indigenous spirochaetosis icterohaemorrhagica at Nancy. One had a mild course like that of a simple catarrhal jaundice, the second resembled icterus gravis, and was rapidly fatal; in the third the clinical symptoms were definite, but no bacteriological examination was made. In two of the cases the patients had been working in places infested by rats.

289. Pernicious Aplastic Anaemia.

Benoit (*Bull. et Mem. Soc. Méd. des Hop. de Paris*, May 26th, 1921) records a case in a man aged 44 which presented the following features of interest: (1) The autopsy merely showed an excessive anaemia without any obvious lesion to account for it; (2) examination of the blood showed an intense anaemia (haemoglobin 30 per cent., red cells 1,325,000) and a complete absence of a defensive reaction; (3) intense haematuria without any renal lesion; (4) the absolute inefficacy of treatment. Benoit suggests that the development of the disease in this case was favoured by a constitutional predisposition (familial tuberculosis).

290. Herpes in Lethargic Encephalitis.

Netter (*Bull. et Mem. Soc. Méd. des Hôp. de Paris*) remarks that the experimental researches of Doerr, Vochtlings, and Schnabel (June-October, 1920, May-June, 1921), Blanc and Caminopietro (February-March, 1921), Levaditi, Harvier, and Nicolau (May, June, July, 1921), Lucger and Lauda (May, 1921), Netter, Cesari, Mawas, and Salanier prove the existence in the fluid of herpetic vesicles of a virus capable of producing symptoms and lesions identical with those produced by inoculation of the rabbit with the virus of encephalitis. Doerr and Schnabel, and Levaditi and his collaborators have shown that rabbits which have resisted inoculation with the virus of encephalitis are refractory to the virus of herpes and vice versa. Levaditi has even succeeded in producing cutaneous lesions by local application of the virus of encephalitis. Contrary to what might be expected, however, herpes is rare in lethargic encephalitis. Out of 180 patients observed by Netter during the acute stage herpes occurred in only two—in one on the face and in the other on the thigh. In 94 cases reported in detail in the *Bull. et Mem. Soc. Méd. des Hôp. de Paris* in 1920 herpes was mentioned only once, and in only one of the 223 reported by McNalty was herpes noted. American and Italian writers also state that herpes is rare in encephalitis.

SURGERY.

291. Effect of Salvarsan and Mercury on the Body Weight.

Almkvist (*Hygiea*, June 16th, 1921) has systematically weighed patients undergoing antisyphilitic treatment, and has found that the effects of salvarsan and mercury are, in respect of body weight, curiously different. These investigations dealt with 368 courses of antisyphilitic treatment (132 salvarsan alone, 20 mercury alone, and 216 combined courses of treatment). In 72 per cent. of the courses of salvarsan treatment there was a daily increase of weight, ranging from 50 to 200 grams a day. On the other hand, mercurial treatment gave rise to a daily loss of weight in 67 per cent. And this loss showed the same figures as the gain effected by salvarsan—that is, the daily loss ranged from 50 to 200 grams. With regard to individual cases it was noticed that mercury was apt to provoke loss of weight even when given in small doses, while other patients could tolerate large doses with but slight loss of weight. In some cases the loss of weight varied directly with the dosage of mercury, and in some marked loss of weight was the only sign of mercurial poisoning. The practical outcome of these investigations is the recognition of the importance of carefully weighing patients undergoing antisyphilitic treatment, especially if mercury is given. Not only may systematic weighing save the patient from the ill effects of rapid emaciation, but it is also a useful guide early in the treatment to the best dosage for each case. The author recommends small doses of mercury at first, and he increases them gradually to the maximum compatible with a not too serious loss of weight.

292. Alcoholic Solutions of Protargol in Gonorrhoeal Urethritis.

Jersild (*Hospitalstidende*, July 13th, 1921) has experimented with alcoholic solutions of protargol in the treatment of gonorrhoea of the female urethra and of vulvo-vaginitis in children. He is not favourably impressed. The strength of the propyl alcohol used was 10 per cent. In 7 out of 14 cases thus treated, gonococci were demonstrable only on admission, not afterwards. In the remaining 7 cases an average of forty days was required to render the infected structures gonococcus-free. In 20 control cases, treated at the same time with protargol without alcohol, the results were quite as good. In 7 of these cases the gonococci had disappeared at the second examination after admission, and in the remaining 13 cases an average of only twenty-five days was required in which to banish the gonococci from the genitals. These investigations, which were made in the spring of 1920 at the Rudolf Bergh Hospital in Denmark, led to the conclusion that the addition of alcohol to a watery solution of protargol adds to the cost of treatment without contributing to its effectiveness.

293. Is a Positive Wassermann an Inevitable Indication for Treatment?

Faber (*Hospitalstidende*, August 3rd, 1921) raises the question, If a positive Wassermann reaction is the only sign of syphilis, is it necessary in every case to give the patient specific treatment? His answer in the affirmative is based on the following observations: Out of 1,356 patients admitted to his hospital for various diseases, 123 gave a positive reaction. Among them were 24 patients exhibiting no clinical evidence of syphilis. Six years after their discharge from hospital an attempt was made to trace them, and 9 were found and re-examined. In every case Wassermann's reaction was still positive, and in one case—that of a woman aged 35—on her first admisson to hospital there were early signs of aneurysm of the aorta, which had developed since her discharge. Three other patients showed sensory disturbances of the legs, and one—a woman who had turned 60—suffered from giddiness and analgesia of the toes. Romberg's sign was positive, and there was little doubt as to the presence of early tabes. The author concludes that, except in the case of the aged, a positive Wassermann reaction calls for

specific treatment even in the absence of other signs of syphilis. But he is in doubt as to how vigorously specific treatment should be pushed in such cases.

294. Tuberculosis of the Foot.

CICCONARDI (*La Chirurg. degli Organ. di Movimento*, April, 1921) gives a statistical account of 145 cases of tuberculosis of the foot seen during the last twenty years at the Rizzoli Hospital. Both sexes and sides were about equally affected. The commonest age was between 10 and 15 years (22 per cent.), with a progressive diminution both before and after that period. In 24 per cent. of the cases a family history of tubercle could be traced. A previous tuberculous lesion was noted in 19 per cent. of the cases. Trauma seems to play a more important part in tuberculosis of the foot than in other tuberculous bone affections. The disease was chiefly synovial, and the tibio-tarsal joint the part most frequently affected; 64 per cent. were non-suppurative, 20 per cent. had abscesses. The importance of radiographic examination, both for diagnosis, prognosis, and correct knowledge of results, is strongly urged. The symptoms necessarily vary with the different parts of the foot affected. Authorities are not agreed as to whether conservative or radical treatment is the best. Of the 145 cases reported by the author, 112 were treated conservatively and 33 with radical operations. The results of conservative treatment are given as 13 cured, 45 improved, 29 *in statu quo*, 22 still under treatment, 1 made worse, 1 unknown, 1 dead from other causes. Of the 33 cases operated upon, 14 were cured, 6 improved, 4 followed by amputation, 4 made worse, 1 dead.

295. Fibromyomata of the Stomach, Intestine, and Mesentery.

ACCORDING to VAN WOERDEN (*Nederl. Tydschr. v. Geneesk.*, July 16th, 1921), who records an illustrative case in a woman, aged 50, from whom a fibromyoma of the stomach was successfully removed, 58 cases of gastric and intestinal myomata have been collected by Steiner, including 3 of his own. Myomata of the digestive tract were first described by Forster in 1858, although Boerhaave, in 1728, had previously described a polypoid tumour of the intestine. Virchow classified gastric and intestinal myomata according as they were internal or external. The first myoma of the intestine successfully removed was by Heurtaux in 1885. A submucous myoma of the stomach may reproduce all the symptoms of gastric ulcer, including haematemesis and perforation. It may occur at any age, Outland and Clendening having reported a case in a child aged 9 years, from whose stomach a myoma the size of an orange, which had twice given rise to haematemesis, was removed. An internal gastric myoma may be suspected when pyloric stenosis develops suddenly without any previous symptoms, and an external myoma is probable when there is a large slowly growing tumour with an irregular surface, causing few symptoms apart from a feeling of weight in the stomach. Internal myomata in the intestine are more frequent than external. The former give rise to symptoms of sudden obstruction alternating with periods of perfectly good health. In external tumours the formation of a growth becomes evident without many symptoms, but sometimes there may be a progressive stenosis. Colic some time after food, or constipation alternating with diarrhoea, may occur. Internal myomata of the rectum may cause difficulty in defaecation and a feeling of a foreign body in the rectum, blood in the stools, tenesmus, and some constipation and colic. If it is situated low down the tumour and its pedicle may be felt. Spontaneous expulsion of the myoma may occur. External myomata of the rectum can easily be mistaken in women for tumours of the adnexa. Owing to pressure on the rectum they give rise to incomplete evacuation of the intestinal contents and constipation. Fibromyomata of the mesentery are still rarer than those of the stomach and intestine. Their diagnosis is almost impossible, though *x* rays may possibly enable an intestinal tumour to be excluded. The symptoms are usually slight. Their usual situation is in the right half of the abdomen, below the umbilicus. In the differential diagnosis tumours of the intestine, liver, and pancreas must be excluded. In order to differentiate them from tumours of the uterus and adnexa an examination must be made in Trendelenburg's position, as the ordinary gynaecological position is not sufficient. Fibromyomata of the stomach, intestine, and mesentery may occur at all ages. Their prognosis is not unfavourable, but one must always reckon with the possibility of sudden intestinal obstruction. Moreover, owing to their large size, there is more likelihood of malignant degeneration than in the case of uterine fibroids. Treatment is always surgical and consists in enucleation of the tumour.

OBSTETRICS AND GYNAECOLOGY.

293. Gonorrhoeal Cystitis in the Female.

ACCORDING to LINZENMEIER (*Zentralbl. f. Gynäk.*, July 30th, 1921), there has been considerable difference of opinion with regard to the frequency of occurrence of gonorrhoeal cystitis; gynaecologists regard it as rare, while urologists hold that an ascending affection of the bladder is not very infrequent. Zangemeister, amongst others, has described a cystoscopic picture which is characteristic of gonorrhoeal cystitis, but other authors have been unable to confirm his findings. According to Knorr, cystoscopy enables the distinction to be made between (1) gonorrhoeal cystitis of the neck of the bladder, which is fairly frequent and is not associated with any typical signs, and (2) gonorrhoeal cystitis of the remaining portions of the bladder, which is associated with the characteristic signs of disseminated points of congestion, reddening, and exudation, separated by areas of comparatively normal cystoscopic appearance. Linzenmeier records two cases, both occurring in young pregnant subjects, in which the presence of gonococci was demonstrated in urine removed by suprapubic vesical puncture; in one case the signs were present in characteristic form, but in the other the cystoscopic picture was much less typical. He concludes that gonorrhoeal cystitis in the female is a rare condition, of which a diagnosis should only be made with certainty when gonococci have been found in urine obtained by suprapubic puncture of the bladder. Cystoscopic characters may suggest the diagnosis of gonorrhoeal cystitis, but it is not possible from their absence to exclude such a diagnosis.

297. Radium Treatment of Uterine Fibroids.

RANC (*Journ. de méd. et de chir. prat.*, June 10th, 1921), in her Paris thesis, states that radium treatment of uterine fibroids is suitable in the following cases: (1) Fibroids of moderate size which are movable and not painful; (2) patients rendered very anaemic by much loss of blood; (3) patients suffering from an organic disease of the heart, liver, and kidneys; (4) young women. Surgical treatment, on the other hand, is preferable for fibroids which are large, painful, necrotic, softening, or which have undergone calcareous degeneration, fibroids complicated by cancer, salpingitis, ovarian cysts, or polyps, and all cases in which the diagnosis is uncertain. The technique employed by the writer is as follows: Intrauterine application of an average dose of 40 mg. of radium for twenty-four hours, repeated once or twice at intervals of a week. The third and sometimes the second application may be unnecessary if the menstruation following the first application is of decidedly shorter duration than before. A vaginal application is preferable if the fibroid is painful or accompanied by salpingitis. 30 mg. of radium should be applied for forty-eight hours; if the fibroid is large *x*-ray treatment should also be employed. Ranc records 28 cases, 19 of which were in women aged from 40 to 57, and 9 from 27 to 39, in which radium therapy was used. The results were satisfactory, there being a rapid cessation of haemorrhage, progressive diminution in the size of the uterus, and improvement of the general condition. Ranc concludes that radium therapy is a simple, safe, and expeditious treatment, which yields remarkable results provided it is used in cases in which the diagnosis is certain. It is less dangerous and more rapid than *x*-ray treatment.

298. Supernumerary Ovaries.

LIEGNER (*Zentralbl. f. Gynäk.*, July 16th, 1921) records the case of a woman, aged 33, who was found, two years after the birth of her third child, to have a cystic tumour distending the whole of the abdomen. At operation a multilocular cyst weighing when empty almost 4,000 grams was removed; both ovaries and both tubes were normal, and the tumour was attached by a well-defined and twisted pedicle to the posterior wall of the uterus at the level of the tubal insertion and a little to the left of the middle line. The contents of the cyst were bright yellow, of specific gravity 1012, and free from pseudo-mucin. Microscopically the characters were those of a large multilocular ovarian cyst, and signs of malignancy were absent; it is concluded that the tumour had arisen in a supernumerary ovary. According to Liegner, "third ovaries"—provided with a ligamentum ovarii proprium and sometimes with a third Fallopian tube—are of rare occurrence, only four having been recorded since Von Winckel described the first (1881). Recorded cases of "accessory ovaries," which in the absence of a special oviduct or ovarian ligament are anatomically severed from the normally situated ovaries, are also of great rarity. Seitz and Engström have described cases in which the supernumerary ovary was

connected, by means of strands containing ovarian tissue, with the normal sex glands. Accessory ovarian tissue taking the form of an excrescence from the ovaries is of much greater frequency, and is found, according to Beigel and to Von Winckel, in about 40 per 1,000 autopsies. Supernumerary ovaries appear especially prone to tumour formation, and have given rise in at least sixteen reported cases to cystomata, in at least sixteen to embryomata, and in at least two to sarcomata. Insertion of the pedicle into the uterus has hitherto only been described in the case of Olshausen (1870). There is little doubt that it is to the occurrence of supernumerary ovaries that must be ascribed the occasional persistence of menstruation or onset of pregnancy, after double ovariotomy.

299 Acute Tuberculous Salpingitis.

According to Dehau (*Journ. de méd. et de chir. prat.*, June 10th, 1921), acute tuberculous salpingitis is a rare occurrence compared with the subacute or chronic form. It occurs in patients who have no other tuberculous focus, and remains a localized and surgical affection. Anatomically the lesions are those of ulcero-caseous tuberculosis, and affect both sides. The uterus is intact, the tubes and ovaries are involved, the lesions being most marked in the tubes. Pyosalpinx is rare. During the prodromal stage the patient shows signs of tuberculous infection and a particular form of leucorrhoea which is thin, scanty, and yellowish-white in colour. Menstruation is irregular and accompanied by a rise of temperature. When fully developed the affection is characterized by irregular fever and general signs of tuberculous infection. On vaginal examination a large, hard, painless nodular mass is felt, which must be distinguished from ordinary acute salpingitis or an extrauterine pregnancy. Subtotal or complete hysterectomy is the only rational treatment.

PATHOLOGY.

300 Local Eosinophilia in Affections of the Eyes.

Michail (*C. R. Soc. Biologie*, July 23rd, 1921) has made a study of the cellular content of the conjunctival secretion in various ocular affections. He finds that, just as in spring catarrh, so also in phlyctenular conjunctivitis, is there a definite local eosinophilia, which is increased after the conjunctival application of the silver nitrate. This point may serve in the differential diagnosis from trachoma, in which eosinophilia is absent. A histological examination carried out on eyes which had been removed either for recent perforating wounds or for chronic inflammatory lesions, showed that they can be divided into two categories from a cytological point of view: (1) In the first class there are inflammatory foci packed with large mononuclears and with lymphocytes, and affecting particularly the retina and optic papilla; sometimes a diffuse polymorphonuclear infiltration occurs. (2) In the second class the mononuclear and lymphocytic exudation affects the choroid and ciliary region; in addition there is a marked infiltration with eosinophiles. He is inclined to regard phlyctenular conjunctivitis as an anaphylactic phenomenon associated with tuberculosis.

301. The Value of Arbutin in the Identification of Vibrio.

Pergola (*Annal d'Igiene*, May, 1921) has been experimenting with arbutin (a glucoside contained in the leaves of *Arbutus uva ursi*) in the differentiation of various kinds of vibrio. He took 37 cultures (20 cholerigenic and 17 non-cholerigenic), and, speaking generally, he found that of 100 per cent. capable of reacting actively to arbutin 90 per cent. are cholerigenic and 10 per cent. not. The organisms split up the arbutin into glucose and hydroquinone. Bacterial cultures which do not affect arbutin are not vibrios, or at least not typical vibrios. Cultures which split up arbutin actively are not cholerigenic; vibrionic cultures which attack arbutin slowly and with moderate energy are probably cholerigenic.

302. The Nature of the Paralysis of Nerve in Beri-beri.

[illegible] and Mata (*Japan. Med. World*, July 15th, 1921) record the results of an extensive investigation into the nature of the nervous paralysis in beri-beri. Working with chickens, they found that the velocity of propagation of a nervous impulse was considerably slower in the case of diseased than in the case of normal birds; moreover, in the former the extent of the muscular response was greater when the peripheral portion of the nerve was stimulated than when the electrode was applied to the central end, showing that a loss of potential occurred during the process of conduction. This alteration of nerve-muscle function could only be substantiated in birds which were definitely suffering from beri-beri; birds which had merely been starved behaved in the normal manner. By injecting rice-bran extract into the affected chickens they succeeded in restoring the propagation velocity of the nervous impulse to the normal rate. Concluding from this that the paralysis was of a functional rather than an organic nature they performed certain experiments, the result of which was to show that the paralysis was due to the adsorption of hydrogen ions by the nerve. They discovered that if a nerve were soaked in a weak solution of an acid paralysis was produced, and that this could be removed by simply replacing the acid by an extract of rice bran. The action of the extract was similar to that of a buffer solution; not only, however, did it render the hydrogen ions inactive, but it replaced those which had already become attached to the nerve. Further, they were able to prove that the hydrogen ion concentration of the nerves of diseased birds was higher than that of the nerves of normal birds. This increase was found to be localized to the nerves which were most affected from the clinical point of view. For instance, in cases where the bird was suffering from marked cramps there was an increase in the hydrogen ions in the spinal cord, while in cases of paralysis of the leg it was the sciatic nerve which showed the increase. With regard to the blood, only a slight increase in acidity could be demonstrated; the alkali reserve, however, was definitely diminished. Interesting as these experiments may be, they are not sufficiently extensive to render complete the proof of the proposition which is advanced.

303. Experimental Researches on Herpes.

According to Blanc, Tsiminakis, and Caminopetros (*C. R. Soc. Biologie*, July 9th, 1921), the virus of herpes resembles the rabic virus in being rapidly destroyed by bile. In opposition to the virus of small-pox, it is insusceptible to the action of neutral red. An attempt to neutralize the herpetic virus with the serum of a rabbit immunized against it was unsuccessful; it was similarly found that the serum of a patient who had recovered from epidemic encephalitis was unable to neutralize the activity of the virus. No conclusions were, however, to be drawn from these facts.

304 Comparison between the Various Ultra-Viruses of Neurotropic Affinity.

Levaditi (*C. R. Soc. Biologie*, July 23rd, 1921) gives a summary of the properties possessed in common by the ultra-viruses giving rise to encephalitis, herpes, rabies, poliomyelitis, and vaccinia. They may be grouped as follows: (1) They are all invisible filter-passers, they may all be preserved in the desiccated condition or in glycerin, they are destroyed at the same temperature, and *in vitro* they have only been cultivated in symbiosis with cellular elements. (2) They all have a distinct affinity for tissues derived from the embryonic ectoderm, such as the cornea, skin, and nervous system. For tissues developed from the mesoderm no special affinity is noticeable. The virus of vaccinia presents a constant affinity for the skin and the cornea and a variable affinity for the brain. The encephalitic virus may attack either the skin, the cornea, or the brain. The virus of rabies presents a special affinity for the brain, but can persist in the cornea or the skin. Finally, the virus of poliomyelitis offers no affinity for the skin or the cornea, but has a peculiar predisposition for the central nervous system, and more particularly for the grey matter of the spinal cord. In spite of the numerous properties which they possess in common, they each have a definite specificity of their own. The affections to which they give rise he proposes to call by the name of "ectodermoses." The skin and the spinal marrow stand at the two extremities of the scale of affinities manifested by these different viruses. It would appear that the greater the affinity acquired by a particular virus for the skin the less apt does it become for attacking the central nervous system, and inversely. From this point of view vaccinia is the least neurotropic of the viruses studied, while the virus of poliomyelitis is the most exclusively neurotropic. Encephalitis and rabies occupy a middle position. One can easily grasp the analogy between this neurotropism and that of the *Treponema pallidum*. Here also, the more the germ is deprived of its dermotropic affinity, the more easily does it become acclimatized to the brain (general paralysis) or to the spinal marrow (tabes dorsalis), and vice versa.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

305. The Value of Antitoxin in Diphtheria.

Bull. *Ugeskrift for Laeger*, July 29th, August 4th and 11th, 1921) concludes, from a study of the material at the Blegdams Fever Hospital in Denmark, that antitoxin has not, as is commonly supposed, any appreciable effect on the temperature. As for the action of antitoxin on the extension of the false membrane, the author cannot definitely prove its value, as the disease undoubtedly runs a milder course in this respect than it did in the pre-antitoxin period. He is also sceptical as to antitoxin hastening the discharge of the false membrane—a process which, in his opinion, mainly depends on the patient's own powers of reaction. But he finds that antitoxin has a striking effect on the actual mortality, and he notes that with increasingly heroic dosage the mortality has greatly declined. Indeed, since giving big and frequent injections of antitoxin he has not seen a single death from paralysis of the respiratory centre. The largest single dose of antitoxin he has yet given was one of 196,000 units, of which 28,000 were given intravenously. The remaining 168,000 were given by intramuscular injection. The greatest total dosage given to an adult was 350,000 units. A child of 10 was given a total dosage of 340,000 units. The author has found no marked increase in the frequency and severity of serum disease since he began to increase the dosage of antitoxin, but he qualifies this claim with the admission that oedema at the site of injection and about the upper lip has become more common. Since January, 1921, he has used a serum containing 1,400 units of antitoxin to the cubic centimetre instead of only 400 units. He is thus enabled to give enormous doses of antitoxin without grave risk of injury from the quantity of foreign proteins and carbolic acid injected. He thinks that the danger of carbolic acid poisoning due to the presence of 0.5 per cent. carbolic acid has been overrated.

306. Transitory Paralyses in Heart Disease.

ACHARD (*Journ. de méd. et de chir. prat.*, July 25th, 1921), in conjunction with LÉOPOLD LÉVI, drew attention in 1877 to transitory paralyses occurring in cardiac patients, either during or apart from asystole. Similar paralyses, as Osler has shown, may occur in patients who are not, properly speaking, cardiac cases, but are the subjects of arterial hypertension. Lastly, transitory paralyses may occur in various morbid conditions, especially Bright's disease and cirrhosis of the liver. Two factors enter into the causation of these transitory paralyses—namely: (1) stasis which gives rise to oedema, distension of the perivascular space, and small extravasations of blood within the space; (2) ischaemia due to narrowing of the arterial lumen by sclerosis, which may be aggravated by spasm. Toxic factors, especially in Bright's disease or cirrhosis of the liver, may play some part, but are not so important as circulatory disturbance in the production of the paralyses. The prognosis of the paralyses is not grave, nor do they require special treatment. The gravity of the prognosis depends not on the paralysis itself but on the state of the heart and general circulation. Treatment, therefore, should be directed not to the secondary disturbance of the nervous system, but to the overloaded condition of the right heart, the pulmonary stasis and the resulting oedema, and should therefore consist in revulsion, blood-letting, frequent administration of small doses of digitalis, and a chloride-free diet.

307. Pulmonary Tuberculosis and the Arcus Senilis.

LORTAT-JACOB and TURPIN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 14th, 1921) have studied the course of pulmonary tuberculosis in thirty patients who presented the arcus senilis, or corneal ring as the writers prefer to call it, since it was sometimes found in persons of 45 or even 34 years of age independently of any signs of premature old age. They found that the corneal ring was habitually associated with a fibrotic form of pulmonary tuberculosis as distinct from forms with a tendency to caseation, all the cases with two exceptions in which the disease assumed the ordinary caseous form being examples of chronic fibrous tuberculosis. The prognosis, therefore, of these forms with the corneal ring is that of chronic fibrous pulmonary tuberculosis—namely, relatively favourable as compared with the rapidly fatal course of extensive fibro-caseous tuberculosis. The writers regard the corneal ring as a sign of the neuro-arthritic diathesis like the camptodactyly or permanent inflexibility of one or more fingers described by Landouzy, which it resembles in its pathogeny and semeiological value. Unlike camptodactyly, however, which is most frequent in women, the corneal ring appears to predominate in men.

308. Tuberculosis of the Lung following Penetrating Wounds.

J. PARISOT (*Rev. méd. de l'Est*, June, 1921) gives the following figures: Of 260 patients suffering from gas 23 per cent. became tuberculous; of 212 wounded 10 per cent. became tuberculous. The diagnosis is obviously of importance from a medical, social, and military standpoint. The functional signs of the tuberculous and non-tuberculous condition are very similar—haemoptysis, thoracic pain, cough are present in both. The physical signs and radioscopy do not help. Elevation of temperature is rarer in the non-tuberculous conditions. The arterial tension is not so low in these cases, and is of assistance in diagnosis. The examination of the blood does not help. The albumin reaction, if negative, is against the diagnosis of tuberculosis, but if positive is of little value. The examination of the sputum for the tubercle bacillus gives the only certain diagnostic indication. It may be some time before the bacillus is to be found.

309. Porcelain Industry and Tuberculosis.

THIELE (*Zeit. f. Tuberk.*, Hefte 3 and 4, 1921) brings forwards statistics showing that affections of the respiratory system are frequent in workers in porcelain factories. He examined 686 employees in a Saxon porcelain factory, consisting of 451 men and 235 women, with the following results: (1) About 10 per cent. suffered from acute and chronic inflammatory diseases of the respiratory tract, in most cases acute bronchitis. (2) About 5 per cent. showed signs of pulmonary tuberculosis as compared with 2 per cent. found by Koelsch in Bavarian porcelain workers before the war. The longer the workers had been in the factory the more likely they were to contract tuberculosis.

310. Horse Serum in Haemophilia.

WEIL (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 14th, 1921) records the case of a bleeder whom he had treated for four years (1909–1913) by injections of horse serum repeated every two months. During this period the patient was given fifteen injections, which caused a complete clinical cessation of all spontaneous or provoked haemorrhages. The patient, who belonged to a family in which haemophilia had been known to occur since the eighteenth century, started the treatment at the age of 7 years, and for the previous seven years had not been treated at all, so that his recovery might be regarded as permanent. Haematological examination showed that the blood was completely normal in its coagulation, both as regards the qualities of the clot and the coagulation time. Weil states that he has treated 7 other cases of familial haemophilia successfully by repeated doses of horse serum.

311. Acute Leukaemia.

SABRASÈS (*Arch. des mal. du coeur*, June, 1921) states that, contrary to the view held by Fraenkel in 1895, there are different types of acute leukaemia, and it is erroneous to suppose that there is only one form of acute leukaemia with so-called undifferentiated cells. The forms in which myeloblasts predominate are the most malignant, and prove fatal in a few days. The lymphoblastic form is fatal in a few weeks. The myelocytic or lymphocytic type, in which the cells are nearer maturity, prove fatal in two to three months. In myeloid leukaemia of rapid course the disease may last a year. In every case there is anaemia, which is often severe and exceptionally of a pernicious type, and frequently accompanied by a haemorrhagic syndrome. Nucleated red cells are present. In some instances the disease resembles ordinary chronic leukaemia, owing to enlargement of the spleen and lymph glands and pain and pressure on the sternum, but the course is more rapid, the tendency to haemorrhages more pronounced, the fever high, and the asthenia profound. In other cases acute leukaemia may be mistaken for septicaemia, typhoid fever, dysentery, acute or subacute pulmonary tuberculosis, purpura haemorrhagica, scurvy, acute rheumatism,

or acute nephritis. Sometimes the disease is complicated from the first by haemorrhagic and gangrenous processes in the pharynx, buccal cavity, and gums, or it may simulate toxic diphtheria. Acute leukaemia occurs at all ages, with a marked predilection for late childhood and adolescence. It is most frequent in the male sex. There is often a previous history of various pathological conditions, such as rickets, chronic enteritis, septicaemia, puerperal infection, typhoid fever, scarlatina, tuberculosis, malaria, syphilis, and influenza, but usually these should be regarded as antecedents rather than causes. On the other hand, traumatism is of greater importance and deserves more attention from the clinical and medico-legal standpoint. Treatment has hitherto been ineffective. The measures available in chronic leukaemia, such as radium, *x* rays, haemotherapy, arsenic, and benzol, are inoperative or contraindicated in acute leukaemia.

312. Cardiac and Vascular Lesions in Congenital Syphilis.

Hahn (*Zentralbl. f. inn. Med.*, July 30th, 1921), from a study of 150 cases of congenital syphilis, comes to the conclusion that the great majority of vascular neuroses are due to this cause. In addition to the ordinary manifestations of vasomotor instability, more serious cases of vascular crises in various organs of the body are included in this category. Congenital syphilis acts as a predisposing cause, and all the other factors incriminated are of secondary importance. The site of the lesions is either the vessels, the vasomotor centre, or the glands of internal secretion closely connected with the blood pressure. Hahn is of opinion that in the diagnosis of congenital syphilis more value should be attached to the physiognomy of the patient, as described by Hutchinson and Fournier, than to the Wassermann reaction. The presence of congenital mitral stenosis in 90 per cent. of Hahn's cases indicated involvement of the whole cardio-vascular system.

313. Prevention of Measles.

Brewer (*New York Med. Journ.*, August 17th, 1921), from experience in camp during the war, points out that until a vaccine is discovered the only way to prevent measles is to isolate all those suffering from colds, or with Koplik spots or rash, and to combine with this the daily inspection of all contacts. By taking the afternoon temperature of such contacts and isolating those showing any rise, cases are discovered before they reach the catarrhal stage, and it is possible to prevent the spread of the disease beyond these primary contacts. In the camp in question, in spite of constant importation of the disease, there was no instance of spread beyond the primary contacts after adopting these measures, but in a neighbouring camp, where such measures were not adopted, numerous cases occurred.

SURGERY.

314. Treatment of Fracture of the Ribs.

According to Ten Horn (*Nederl. Tijdschr. v. Geneesk.*, July 30th, 1921), fracture of the ribs is one of the commonest of all fractures, its frequency varying from 15 to 18 per cent. It is very rare in children. After the thirtieth year its frequency rapidly increases owing to diminution in elasticity of the ribs. The prognosis is very favourable. In four weeks bony union is complete. Pseudo-arthroses are rare. Fractures of the lower ribs are slower in uniting than those of the upper, owing to the action of the abdominal muscles. Ten Horn regards a bandage in uncomplicated fractures as unnecessary and undesirable. Treatment should rather consist in the administration of large doses of morphine, the favourable action of which is threefold. In the first place it diminishes pain; respiration thus becomes less superficial and more regular. Secondly, it reduces the need of the body for oxygen, this being mainly the result of muscular rest. Thirdly, it is indispensable when there are simultaneous wounds of the lungs. Expectoration is no longer impeded, as coughing is not painful, and the risk of pneumonia is reduced.

315. Treatment of Goitre.

Mayo (*Med. Record*, July 30th, 1921) states that some soft goitres in young persons respond to sodium iodide and thyroid extract, the gland ceasing to function to the extent that the medication supplants its work. The epinephrin test may produce dangerous reactions and might lead to wrong conclusions, while a failure in diagnosis is almost impossible if the basal metabolic rate is considered with the general symptoms. Substernal goitre is more common than was supposed, is generally well encapsulated, and can be easily enucleated, especially if the patient co-operates by coughing, and in order to obtain this co-operation local anaesthesia is advisable in such cases. *X* rays and radium are beneficial if their dangerous after-effects are guarded against. In operating upon a large goitre a transverse incision should be made exposing the trachea, and, after dividing the isthmus, the lobes can be turned out from the trachea, preserving a portion of the posterior capsule and avoiding injury to the recurrent laryngeal nerve. In exophthalmic goitre double resection largely avoids repeated operation.

316. High Frequency in Urinary Surgery.

Heitz-Boyer (*Paris méd.*, August 6th, 1921) states that high-frequency currents introduced barely ten years ago by Keys and Beer in America, and by Cottenot and himself in France, have transformed a part of urinary surgery. The method is applicable in the following conditions: (1) *Bladder.* (*a*) Tumours. Heitz-Boyer maintains that at the present day high frequency is the only treatment for vesical polypus. Previous methods are dangerous and ineffective owing to haemorrhage, the risk of infection, and the frequency of relapses. (*b*) Tuberculous ulceration. Hitherto treatment has not been of any avail against these lesions, which are secondary to tuberculous disease of the kidney. Heitz-Boyer, however, has obtained marvellous results with high-frequency sparks, and Parisi in a recent thesis has published confirmatory observations. (*c*) Cystitis. Excellent results have also been obtained in cases of prolonged and inveterate cystitis due to ulceration, proliferation, vegetative or leucoplasic lesions. (2) *Ureter.* High-frequency currents may be employed for prolapse of the lower end of the ureter into the bladder, whether the prolapse be of congenital or inflammatory origin, and also for ureteral polypi situated at various levels in the duct. (3) *Prostate.* Heitz-Boyer has employed high frequency in two varieties of prostatic lesions—namely, posterior urethritis and enlargement of the prostate. (4) *Urethra.* In the anterior urethra high-frequency sparks, especially when cold or half cold, are of great value in lesions which have become chronic or subacute, such as inflammation of the lacunae or Littré's glands. They are also useful in obstinate stricture, and most of all in polypi or pseudo-polypi of inflammatory origin.

317. A Suprapubic Cystotomy Ring.

Ballenger and Elder (*Med. Record*, July 23rd, 1921) describe a suprapubic cystotomy ring for use during convalescence after bladder operations. It consists of a large nickel-plated ring with two connexions for a webbing band sufficiently elevated to produce the necessary downward pressure when buckled *in situ*. A rubber sleeve, the thickness of a rubber glove, is placed round the ring and connected to a rubber tube. After removal of the suprapubic tube the skin is covered with sterile vaseline, and the ring, after being boiled, is buckled tightly round the incision so as to hold the ring and rubber sleeve close to the surrounding skin, and the tube is carried to the bottom of a bottle containing an antiseptic solution. As the tube fills with urine the hydrostatic suction causes the thin rubber sleeve to collapse and stick close to the skin, leaving no space for residual urine. Dakin's solution may be injected into the sleeve and kept in contact with the incision for half an hour by clamping the tube. Unless the patient is very thin or lies on his side the urine will not leak around the rim, and he can sit up with comfort and leave his bed earlier than formerly. The apparatus is easily adjusted and can be boiled, and it is made in different sizes, as the ring should be large enough not to press on the incision.

318. Prostatectomy in Two Stages.

Marsan (*Paris méd.*, August 6th, 1921) considers that most urinary surgeons are now in favour of prostatectomy by the hypogastric route, the results being far superior to those obtained by the perineal method. Urinary fistulae are exceptional and readily curable, whereas the perineal route exposes the patient to the risk of urethro-rectal fistulae. Relapses are more frequent with the perineal method, as the operation is often incomplete. The results as regards urinary function with the hypogastric method are particularly satisfactory. Out of 970 hypogastric prostatectomies Freyer had only one case of incontinence following the operation. The results as regards the genital function are also more satisfactory than after the perineal operation. Erection is more frequently observed, but ejaculation takes place into the bladder. In spite of the superiority of the results, transvesical prostatectomy is a grave operation. Operative shock is sometimes very

marked, and the patients are exposed to the risk of severe haemorrhage and fatal toxi-infection. The risk of these complications, however, is reduced by prostatectomy in two stages. In the first operation a high cystostomy is performed a fingerbreadth above the pubis. The incision in the bladder should be just large enough to admit the insertion of a tube. The edges of the vesical wound should be sutured to the skin if the distension of the bladder permits it. The second operation is performed from a fortnight to two years after the first. The excellent results of the operation in two stages is shown by the fact that among 167 patients operated on at one sitting by Rafin the mortality was 16.07 per cent., whereas among 132 patients operated on in two stages the mortality was only 7.57 per cent.

319. Electrical Treatment in Flat-foot.

LEVICK (*Journ. Orthopaed. Surgery*, July, 1921) urges electrical treatment of the intrinsic muscles of the foot in order to restore nutrition as a preliminary to voluntary exercise in dealing with flat-foot. The action of the dorsal interossei as elevators of the transverse arch, in addition to being flexors of the metatarso-phalangeal joint, is important in the treatment of flattening of the arch. Tender feet are commonly caused by deformity of the first metatarso-phalangeal joint and passive wasting of the intrinsic muscles, together with compression of the soft tissues by ill-fitting shoes. With the heel resting on one carbon electrode in a porcelain bath, with water reaching just below the malleoli, the action and importance of the interossei in raising the transverse arch can be clearly demonstrated. Re-education should not be begun until the nutrition of these muscles has been improved by electrical treatment. In galvanic treatment to the leg muscles when the internal popliteal nerve is injured the patient's foot is placed in a porcelain arm-bath with the indifferent electrode in the water facing the toes, while the active electrode is used upon the leg muscles, and the nutrition of the whole foot is thereby much improved even before the muscles respond to faradism.

320. Death from Ethyl Chloride Anaesthesia.

JAEGER (*Zentralbl. f. Chir.*, July 30th, 1921) records a fatal case of ethyl chloride anaesthesia in an alcoholic man, aged 40, after 90 drops, or barely 2.25 c.cm., of the anaesthetic had been given. The operation was an exploratory excision of an ulcer of the leg suspected to be carcinomatous. The autopsy showed fatty degeneration of the heart, a small area of consolidation in the upper lobe of the left lung, and calcification of the retroperitoneal and prevertebral glands. The case shows that in employing ethyl chloride anaesthesia special attention should be paid to the condition of the heart, and the mere suspicion of degenerative changes should serve as a contraindication to its use. For this reason the greatest care should be taken in administering ethyl chloride to alcoholics. When the heart is not absolutely sound ether anaesthesia is preferable.

321. Injection of Neo-salvarsan into Varicose Veins.

PULVIRENTI (*Il Policlinico*, Sez. Prat., August 1st, 1921) records two cases of women suffering from severe syphilitic manifestations in whom, owing to the difficulties associated with employing the usual vein at the elbow, due to the adipose condition of the arm, varicose veins in the leg were used for a series of injections without any immediate or remote bad effects. It is advisable in such cases not to use a concentrated solution of neo-salvarsan, but to dilute the drug in 10 c.cm. of fluid, to use a fine needle, and directly the injection is finished to raise the limb so as to empty the vein rapidly into the general circulation.

OBSTETRICS AND GYNAECOLOGY.

322. Blood Pressure in Eclampsia.

ACCORDING to GESSNER (*Zentralbl. f. Gynäk.*, June 18th, 1921), eclampsia is accompanied by a sudden and very pronounced rise of blood pressure, which returns equally suddenly to normal with the disappearance of the eclamptic state. This hyperpiesis is to be distinguished (1) from the slight increases of blood pressure which, occurring idiopathically in pregnancy, not infrequently precede the onset of "pregnancy kidney"; (2) from that of uraemia, in which the blood pressure rises and falls much more gradually. The acute rise and fall of blood pressure found in connexion with eclampsia resemble those which accompany mechanical obstruction of the ureters; in eclampsia also the ureters are frequently dilated and overstretched, and Gessner suggests that the ischuria characterizing both conditions may be explained by spasm of the renal vessels and consequent nephropathy. Full has found that experimental distension of the bladder or the renal pelvis leads reflexly to similar variations in the blood pressure to those found in eclampsia and in mechanical obstruction to the outflow of urine. Gessner believes that the drawing upwards of the neck of the bladder which accompanies pregnancy leads to a tension on the ureters which in normal circumstances finds compensation in the motility of the kidneys; where—as, for example, in the presence of a strongly developed fatty capsule of the kidney—this compensation is impossible, the increased tension on the ureters is communicated to the kidney, and may consequently play an important part in the causation of ischuria and eclampsia. Turning to the treatment of eclampsia, Gessner suggests that on account of the hyperpiesis saline infusions are harmful, but venesection may be of much value. With regard to prophylaxis, systematic measurements of the blood pressure of pregnant women are held by the author to be of the greatest value for recognition of the pre-eclamptic state.

323. Transperitoneal Caesarean Section.

BEFORE operation COPELAND (Toronto) (*Journ. Amer. Med. Assoc.*, August 6th, 1921) explains to each of his assistants the exact procedures he will probably perform, and how and when he will expect them to carry out the particular parts he will assign to each of them. These details are described. In regard to the operation itself: An incision is made from above downward for about 5 in., more or less depending on the patient. The incision is started about an inch above and an inch to the right of the umbilicus to compensate for the usual dextra-rotation of the uterus, and also to prevent the wound from being drawn down into a hole, which happens if the incision is too close to the umbilicus, which sinks in during convalescence. The peritoneum is incised, and the uterus, still in the abdomen, is opened in its anterior upper third in its mid-line, using a fresh knife. Three strokes are usually employed in making the 5 in. opening. The membranes are opened, and a foot grasped and the child carefully extracted. The afterbirth is removed and 1 c.cm. of pituitary extract is injected into the uterus in different parts. In closing the uterine wound deep bites are taken through the whole of the uterine muscle down to the mucosa, using a running suture. Usually one layer to the muscle is sufficient, occasionally two. The peritoneal surface of the uterus is inverted with a Cushing suture. When finished no sutures show, the uterus is quite smooth, and only two knots are visible. Adhesions are minimized. In the average operation, Copeland asserts that he takes five minutes from the time of the first skin incision.

324. An Early Sign of Pregnancy.

ACCORDING to HOLZAPFEL (*Zentralbl. f. Gynäk.*, July 2nd, 1921), the earliest signs of pregnancy, apart from the changes in colour of the vulvo-vaginal mucous membrane and of the cervix, are dependent on alterations in the form of the uterus and on softening of the uterine muscle, especially in the lower segment of the body. Hegar's sign is due to such a softening, and it is to a softening of the musculature in the fundus that Holzapfel attributes the appearance of what he describes as a hitherto unrecorded sign of early pregnancy. The sign is elicited in bimanual palpation of the uterus, the region of the fundus being lightly pressed between the forefinger in the vagina and the hand outside the abdomen. The non-gravid uterus slips out of this grasp in a manner somewhat similar to that in which a fruit pip shoots away from compression between the finger-tips; if, however, the uterus is gravid this slipping away does not occur. The sign is unreliable if the abdominal wall is unduly thick or imperfectly relaxed, or if the uterus is retroverted; a somewhat similar finding is obtained in the softened uterus of the last few days immediately preceding menstruation.

325. Ulcero-gangrenous Vaginitis from Mercurial Intoxication.

ACCORDING to JOEGER (*Journ. de méd. et de chir. prat.*, June 10th, 1921), who records two fatal cases, this complication may be the first sign of mercurial intolerance. One of the patients, aged 24, who had been treated by injections of grey oil, had been given a total of 0.30 gram of pure mercury in the course of two months. The other patient, aged 49, who had had injections of salicylate of mercury, had received a total of 0.72 gram of mercury in

six weeks. Of ten similar cases on record, four had been given injections of salicylate of mercury, one had taken sublimate internally, and five had been treated by mercurial inunctions. The date of appearance of the vaginitis ranged from two to six weeks from the commencement of the mercurial treatment. Superficial erosions are followed by deep ulceration, extensive sloughing, and expulsion of necrotic mucous membrane. In one case there was a recto-vaginal perforation. A previous attack of vaginitis is a predisposing cause. It is therefore important to treat such a condition before and during mercurial administration. As a general rule ulcerative vaginitis is accompanied from the first by other symptoms of subacute mercurial intoxication, such as stomatitis, entero-colitis, nephritis, and dermatitis. Of the twelve cases of ulcero-gangrenous vaginitis collected by Joeger six were fatal. As soon as it appears, mercurial treatment should be stopped and rigorous antisepsis of the vagina carried out. The ulcers should be treated once or twice daily by application of 5 or 10 per cent. chromic acid.

323. The Course of Tuberculosis in the Puerperium.

According to Reist (*Gynèc. et Obstét.*, 1921, iv, 1), while there is a consensus of opinion that tuberculosis is aggravated as a consequence of gestation, different opinions have been held with regard to the moment at which this aggravation occurs. Unlike the majority of authors, Reist holds that the course of the malady becomes aggravated, not after the termination of pregnancy, but from the time of its inception. This opinion is founded on the study of 27 cases, reliance being placed in diagnosis on examination of the sputum, on radiology, and on rhinological investigation rather than on stethoscopic signs. With regard to treatment, Reist criticizes the induction of abortion on the grounds that errors in diagnosis of early phthisis are not infrequent, and that termination of the pregnancy does not hinder the unfavourable development of the disease. He concurs in the therapeutic course advocated by Pinard: "Treat the tuberculosis, watch the course of the pregnancy." Artificial pneumothorax, which should be induced whenever possible, frequently permits of the gestation being allowed to continue to full term, and in no way interferes with the course of labour.

PATHOLOGY.

327. The Blood Picture in Pernicious Anaemia.

Flater (*Zentralbl. f. inn. Med.*, August 27th, 1921) remarks that though the value of the blood picture is incontestable in the diagnosis of pernicious anaemia, one is not always justified in drawing conclusions as to the course of the disease from the condition of the blood picture. Although as a rule this corresponds to the clinical course, cases may be found in which this parallelism does not occur. Flater reports a fatal case of pernicious anaemia in a man aged 63, in whom, as the result of arsenical treatment, the haemoglobin rose to 81 per cent. and the red cells to 2½ million, although the presence of oedema, pleural effusion, and haemorrhages showed the hopelessness of the condition. Even at the time of death the haemoglobin was still 58 per cent., and the red cells over 2½ million, although as a rule death in pernicious anaemia is associated with the highest possible degree of anaemia.

328. Presence of the Tubercle Bacillus in the Duodenal Fluid.

Carnot and Libert (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 21st, 1921), having ascertained by the use of the duodenal tube that the tubercle bacillus is present in the duodenum in advanced stages of tuberculosis, investigated the diagnostic value of the method in cases in which the bacteriological proof of the disease was not otherwise forthcoming. For this purpose 7 cases were examined, consisting of 4 cases of tuberculous peritonitis of the ulcerative or fibro-caseous form without intestinal disturbance, 1 case of Poncet's rheumatism, 1 case of encysted pneumothorax with emphysema and disseminated bronchitis without bacilli in the sputum, and 1 case of cervical and mediastinal adenitis, with fever resembling that of miliary tuberculosis. The result was positive in 3 cases—namely, the case last mentioned and 2 cases of tuberculous peritonitis. In none of these 3 cases was there any sputum. In another group, consisting of 11 patients in whom tuberculosis was probably not present, the results were constantly negative. The cases thus show that the tubercle bacillus may be eliminated by the bile and pancreatic juice even in cases where there are no bacilli in the sputum.

329. Partial Resection and Compensatory Hypertrophy of the Kidney.

Berti (*Il Policlinico*, Sez. Chir., June 15th and July 15th, 1921) describes the results of his experiments on rabbits with regard to compensatory hypertrophy following partial resection of the kidney. His investigations were classified in two groups: (1) Partial resection of the kidney and histological examination of the remaining portion of the kidney at periods varying from 7 to 355 days from the operation. (2) Histological study of the kidney of the opposite side. In some cases resections were made of the upper or lower pole of the kidney, while in others half, two-thirds, or three-quarters of the organ were removed. In the remaining portion of the kidney the writer observed compensatory phenomena, shown by dilatation and elongation of the tubules, which presented an epithelium containing several layers with nuclei in a state of karyokinesis. Newly formed tubules or glomeruli were never found. Retrogressive changes which were observed in the neighbourhood of the scar tissue completely disappeared at the end of a year, and the kidney tended to resume its characteristic form and to become separated from the abdominal wall to which it was attached. In the kidney opposite to the one resected an increase of size was always observed, which was proportionate to the time that elapsed since the operation on the opposite kidney and to the quantity of the organ removed. On histological examination elongation of the secreting portion of the tubules was found without any new formation of tubules or glomeruli.

330. Phlegmonous Suppuration during the Course of Typhoid Fever due to B. typhosus.

Botez (*C. R. Soc. Biologie*, July 23rd, 1921) reports the case of a soldier who, eighteen days after the commencement of typhoid fever, developed an abscess of the right forearm; incised three days later, it yielded a pure culture of *B. typhosus*. The blood at the time showed a leucopenia. The strain isolated from the pus agreed in its biological and serological reactions with that isolated from the blood, the only difference being a slightly smaller degree of agglutinability of the former. In the same number of this journal, Affonso describes the case of a man aged 38 who developed a perirenal abscess about eight months after an attack of typhoid fever. The blood count in this case showed a leucocytosis of 29,000 per c.mm., with 78.5 per cent. of polymorphonuclears. At the operation pus was obtained which on culture yielded the *B. typhosus*. These two cases are cited owing to the rather unusual circumstance of the recovery of the typhoid bacillus from the abscess; it is probably correct to say that this is the exception rather than the rule. Generally an infection with a staphylococcus, streptococcus, or *B. coli* is encountered.

331. The Negative Phase of Sensitiveness to Tuberculin

Hamburger and Peyrer (*Wien. klin. Woch.*, June 9th, 1921) remark that one of them had shown long ago that after large doses of tuberculin the sensitiveness to it was diminished. This phenomenon was also observed not only after large but also after small doses (0.01 mg.), provided that a general reaction with fever had taken place. The writers have more recently found that the negative phase occurs after small doses of tuberculin, not only when there has been a well-marked general reaction with fever, but also when the reaction is limited to the site of injection.

332. Digestive Leucocytosis in the Child.

Lesné and Langle (*Bull. Soc. de Péd. de Paris*, March 15th, 1921), as the result of 95 examinations, come to the following conclusions: (1) The curve of digestive leucocytosis in the child is very variable, and it is very difficult to lay down a precise law applicable to all cases. (2) The previous ingestion of peptone has an inhibitory action on leucopenia, probably by modifying the colloid state of the blood. (3) Excess of sugar in the milk has a similar influence, and acts as a stimulant of the hepatic functions. (4) Digestive leucocytosis differs in the breast-fed and in the bottle-fed baby; the homogeneous albumin of the mother's milk is better tolerated than the heterogeneous albumin of cow's milk—a further argument, if one were needed, in favour of maternal feeding. (5) In hypotrophic children leucopenia is constant even after ingestion of very small quantities of milk. It is also found in infective purpura and malignant diphtheria, and is invariably found in the serum diseases.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

333. Sequels of Epidemic Encephalitis.

Boyd (*Amer. Journ. Med. Sciences*, August, 1921), from an experience of thirty-one cases of epidemic encephalitis, in whom all acute signs of the disease had disappeared, concludes that complete recovery is uncommon except in mild cases; that some symptoms persist in modified form; while in a few instances new symptoms appear as true after-effects. Marked general asthenia lasting for many months, headache usually occipital, altered temperament and delusions, and occasionally a persisting apathy and torpor, are among the general symptoms; while among paretic symptoms are evidences of prolonged cranial nerve involvement, diplopia and weakness of accommodation. Motor disorders of the nature of spasms, automatic, athetoid, and choreiform movements, may persist or arise many months after the initial attack, as also examples of the Parkinsonian type, with the clinical picture of paralysis agitans without the characteristic tremor. Such sequelae are the result of an inflammatory process mainly of the interstitial tissue and extending into the surrounding brain substance, the resulting fibrosis interfering with nerve paths. From the microscopic findings in any large series of cases it is surprising that after-effects are comparatively rare to any marked degree, but further observations on the condition of the brain in encephalitis after a considerable interval has elapsed are necessary to throw fresh light upon the clinical manifestations and their underlying pathological changes.

334. Spät (*Wien. klin. Woch.*, August 11th, 1921) conducted an inquiry into the subsequent history of 19 cases of mild lethargic encephalitis which were supposed to have recovered. He found that after a varying period of apparent good health the patients applied for treatment with symptoms which had to be regarded as sequelae of their former attack of encephalitis, such as relapse of the disease, facial paralysis, atrophy of the shoulder and arm muscles, pseudo-Parkinsonian syndrome, headache, and sleeplessness. Spät considers that these post-encephalitic symptoms are partly the result of organic changes in the brain, and partly phenomena of a functional nature. All treatment has hitherto proved quite unsuccessful.

335. Nephritis in Choleriform Diarrhoea in Children.

Sloboziano (*Bull. Soc. de Péd. de Paris*, March 15th, 1921) in 8 cases of choleriform diarrhoea found, in addition to the ordinary lesions of the renal parenchyma, a considerable reaction of the connective tissue. A granulo-fatty degeneration of the secreting epithelium and hyperacmia were marked in almost all the cases. A proliferative process was constantly found in all, and was very pronounced in two cases. The toxin of choleriform diarrhoea may therefore give rise to a mixed nephritis in which, in addition to degenerative lesions of the secreting cells of the kidney, an acute glomerulitis occurs and a cellular infiltration of the tissue surrounding the straight tubules.

336. Daily Variations in the Blood Pressure in Hypertonus.

Kylin (*Zentralbl. f. inn. Med.*, May 28th, 1921), having observed that the blood pressure in various forms of Bright's disease was liable to periodical variations, made a series of observations morning and evening with Riva-Rocci's sphygmomanometer. In order to obtain an independent idea of the physiological variations of the blood pressure, observations were first made on 10 patients who showed no symptoms of renal or vascular disease. The blood-pressure charts in these cases showed only slight changes from day to day, not exceeding 5 to 10 mm. Hg. The morning readings were usually lower than the evening ones. In mild cases of contracted kidney, on the other hand, the blood-pressure curves were quite different. The changes from day to day were considerable, often being 50 mm. and more, the greatest difference noted being 75 mm. Hg in the course of twenty-four hours. Kylin thinks that these great variations from day to day can only be explained by a functional constriction in the vascular system. He points out that now that it has been established that the blood pressure is so liable to change, it is not sufficient to measure it, as before, once or twice a week, or even every morning or every evening, but in every case of hypertonus it should be measured both in the morning and evening until a definite idea of the extent of the daily variations has been obtained. In acute glomerular nephritis the blood pressure is quite different from that in mild contracted kidney. In some cases the rise of blood pressure is considerable and in others fairly slight. The variations from one day to another are relatively small, although greater than under physiological conditions.

337. Typhus in a Prisoners' Camp.

Hutter (*Wien. klin. Woch.*, August 4th, 1921) describes an epidemic of typhus which occurred in a prisoners' camp at Krasnozarsh in Siberia in January, 1920, after defeat of the Siberian White Army by the Bolshevists. A combination of circumstances favoured the outbreak—namely, the entrance of the Red Army into the town, which was already overflowing with refugees and sick, introduction of the Communistic régime, with complete depreciation of the Siberian currency, closure of the market, and confiscation of wood, with subsequent starvation and lack of fuel. The epidemic reached its height in February and March, and began to subside in May. The mortality was about 17 per cent. Affection of the auditory nerve, manifested by distressing tinnitus and deafness, was a characteristic feature, but always subsided spontaneously. Bedsores and gangrene of the extremities, empyema, and pulmonary gangrene were frequent. Almost the whole of the sanitary staff were attacked, mainly as the result of an artificial infection which was carried out by an enthusiastic Hungarian medical officer with the intention of prophylactic vaccination. The failure of the method was due to the fact that the temperature of 60° C. required for the defibrinated blood was either not obtained at all in the thermostats available, or else was not maintained for a sufficiently long time. Hutter, who was sceptical as to the value of the method, allowed himself to be inoculated twice, and had a comparatively mild attack. Most of those inoculated had a very severe attack, and several died, including the Hungarian medical officer, while only a few remained healthy.

338. Acute Meningitis due to Pfeiffer's Bacillus.

According to Richardière and Sales (*Bull. Soc. de Péd. de Paris*, March 15th, 1921), Blacque in 1911 collected fifty cases of meningitis due to Pfeiffer's bacillus, and emphasized its almost invariably fatal issue in infants. Most of the recorded cases have been secondary to other manifestations of influenza. The present writers, however, record a fatal case in a male infant of 4 months in whom the meningitis was primary and there was no history of exposure to influenza. Lumbar puncture and puncture through the anterior fontanelle showed that the meningitis was cerebro-spinal. The cerebro-spinal fluid was purulent and contained a large quantity of Pfeiffer's bacilli. Immediately after being withdrawn the fluid formed a thick clot surmounted by a layer of clear fluid, as the writers had found in another case of meningitis due to Pfeiffer's bacillus. There was no autopsy.

339. Statistics of Angina Pectoris.

Sieber (*Zentralbl. f. inn. Med.*, August 27th, 1921) states that from 1903 to 1913 only 39 cases of angina pectoris were treated at the Thomayer clinic in Prague. Of these 23 were in men and 16 in women; 12 were smokers, 15 of the men admitted syphilis, and in 12 of the women syphilis was probable; 16 died, most of them during an attack, and 2 from pulmonary oedema. The autopsies showed in 1 case atheroma of the aorta, in 8 cases syphilitic changes in the aorta and coronary arteries, and in 7 syphilitic changes in the aorta only. Treatment consisted in the administration of iodide, amyl nitrite during the attack, and in some cases digitalis and strophanthus. In cases in which iodide acted well amyl nitrite failed, and vice versa. In 21 syphilitic cases considerable improvement occurred after iodide, the doses being at first 2 grains and later 10 grains daily, and cessation of the attacks took place. In 7 cases transient improvement was effected by amyl nitrite. In 6 cases digitalis was of service, and in 6 cases it had no result.

340. Digestive Changes in Pernicious Anaemia.

Bieri is (*Il Policlinico*, June 27th, 1921), as the result of a study of some 30 cases of pernicious anaemia, says that, at any rate so far as his country is concerned, buccal lesions are rare, and when present are the consequence rather than the cause of the anaemia. Gastric achylia may in a few cases fail to be present; it appears slowly in relation to the blood changes, and may be regarded as a consequence of a congenital or acquired weakness of the stomach, either of its secretory or its nervous apparatus; in any case, it is not a cause of the anaemia. The rapid emptying of the stomach often seen in pernicious anaemia is not due to hypermobility, but to insufficiency of the pylorus; when pyloric spasm exists it is totally vagotonic in origin. Diarrhoea, when it occurs, may perhaps be due to deficiency of HCl in the gastric juice, for it may often be relieved by administering HCl by the mouth.

341. Test of the Action of Alcohol by Estimation of the Blood-pressure Quotient.

Engelen (*Zentralbl. f. inn. Med.*, August 20th, 1921), in order to test the action of small doses of alcohol upon the heart, made measurements of the blood-pressure quotient in two series of ten patients each in two different positions. In the first series the action of 7.5 c.cm. alcohol diluted to 50 per cent. with various flavouring agents, was tested by blood-pressure measurements in the recumbent and vertical positions, and in the second series the action of 10 c.cm. of alcohol was similarly tested. A constant relation between the reaction to change of position and the reaction to alcohol was not established. Engelen concludes that the consumption of a small quantity of alcohol corresponding to that usually taken in a glass of cognac has no effect on the heart beat either in a pharmacological or toxicological sense.

342. Conjugal Tuberculosis.

Sofie Tillisch (*Norsk Mag. for Laegevidenskaben*, August, 1921) has investigated the incidence of conjugal tuberculosis at the working-class sanatorium, Grefsen, where, in the period 1911–1920 inclusive 3,151 patients were admitted. Of these, 1,999 were unmarried, 1,152 married. Among the latter there were 85 whose consorts were also tuberculous. In 13 of these 85 cases there was a history of exposure to infection in childhood or of actual tuberculosis in childhood. Thus there remained 72 cases—36 of each sex—in which the origin of the disease might possibly be conjugal. Among the 1,152 married patients there were 94 widows and widowers; 44 of their consorts—that is, 47 per cent.—had died of tuberculosis. With regard to the length of the interval between infection and the first clinical sign of disease, it was two years or less in 70 per cent. of the 72 cases; among the remainder the interval ranged from three to sixteen years. The author concludes that, though there is good reason for regarding adult tuberculosis in many cases as the outcome of infection in childhood, it is unwise to ignore the possibilities of infection in adult life.

343. Typhoid Fever Simulating Rabies.

Remlinger (*Paris méd.*, July 30th, 1921) records the case of a man, aged 30, in whom acute delirium with symptoms of rabies—such as hydrophobia, the mirror sign, barking, and hyperacousia—was the first manifestation of a rapidly fatal attack of typhoid fever. The autopsy showed typical lesions of the disease—namely, an enlarged and diffluent spleen, much enlargement of the mesenteric glands, and enlarged and ulcerated Peyer's patches. Pure cultures of typhoid bacilli were obtained from the spleen and liver. On the other hand, an emulsion of the spinal cord inoculated subdurally into rabbits and intramuscularly into guinea-pigs had no effect.

344. Acute Pulmonary Oedema in Valvular Disease.

According to Gallavardin (*Arch. des mal. du coeur*, June, 1921), who records twelve illustrative cases, in valvular disease signs of chronic pulmonary stasis may have engrafted upon them manifestations of acute pulmonary oedema, with frothy pink expectoration, indicating sudden failure of the cavities of the left heart. These attacks of pulmonary oedema are usually due to insufficiency of the left ventricle, whether the insufficiency be due to acute rheumatic endocarditis or to failure of previously hypertrophied and overstrained ventricles. When acute pulmonary oedema appears in patients with pure mitral stenosis its explanation is more difficult. It may be due merely to a sudden increase of mechanical pulmonary stasis. Perhaps there may be also a certain degree of left auricular insufficiency. This oedematous form of pure mitral stenosis is chiefly found in a heart with a regular rhythm, and is manifested by slight attacks due to effort, or to hot baths, or by severe attacks of unknown origin. In numerous cases attacks of acute pulmonary oedema in the course of valvular disease are of complicated origin, and it is then difficult to estimate the rôle of ventricular or auricular failure, or to determine the importance of the toxic or merely mechanical factors in this failure.

SURGERY.

345. The Treatment of Varicose Ulcer.

Cadenat (*Bull. de la Soc. de Chirurg. de Paris*, July 5th, 1921) relates his experience in treating a few cases of varicose ulcer by circular incision of the skin above the ulcer. The immediate results were good, and the author suggests that it might be due to section of the sympathetic nerves. But after a few months relapse occurred. In the discussion which followed, the general feeling was that the circular incision treatment only gave temporary relief. Alglave spoke strongly in favour of complete resection of the veins as the only satisfactory radical treatment. In one case of double varicose ulcer he did a circular skin operation on one leg and a venous resection on the other; both legs healed well, but twelve months later the leg on which the circular incision had been made broke down, while the other leg remained well. The recurrent ulcer was permanently cured by a second operation, when the veins were excised. The true varicose ulcer generally starts in the vein which is adherent to the skin; by secondary infection or associated disease it may become a complex ulcer. In either case complete venous resection is the best treatment, coupled with suitable treatment for any concomitant disease which may account for the formation of a complex ulcer. In the true varicose ulcer it is better to get the ulcer healed and then operate. In the origin of varicose ulcers the author lays stress on the deep thrust of the blood from within outwards and on the superficial reflux in the enlarged saphenous branches.

346. Silver Salvarsan.

Baketel (*Therapeutic Gaz.*, August 15th, 1921), from experience of 3,000 doses, concludes that silver salvarsan is better borne than any of the arsphenamines, requiring smaller dosage and producing less reaction with equally satisfactory serological results, mercury not being necessary in the primary and secondary stages. The maximum dose is 0.25 gram, its activity being twice that of salvarsan, and three times that of neo-salvarsan. As routine treatment 0.1 gram is given at the first administration, to be followed four days later by 0.15 to 0.2 gram, the maximum, 0.25 for men and 0.2 gram for women, being reached at the third injection. During the first year not less than twenty injections are advised in three courses of ten, six, and four respectively, a month being allowed to elapse between the courses, and intramuscularly 1-grain doses of bichloride of mercury two or three times a week. Of 22 cases completing at least one course 17 became negative, with a reduction in positivity in three others. Three cases were tertiary, and the others primary or secondary. One of the tertiaries became negative, but the other two remained positive, and were receiving further treatment.

347. Treatment of Tuberculous Adenitis.

Boggs (*Amer. Journ. Med. Sciences*, July, 1921) considers that more permanent cures (over 90 per cent.) of tuberculous adenitis can be obtained by radiography than by any other method, operation being only necessary in about 5 to 10 per cent. of cases for the removal through a small incision of fibrous nodules after the tuberculous foci have been destroyed by *x* rays or radium. Complete extirpation of the glands is contraindicated until the disease is well localized, since it can be successfully cured by radiography without any danger of spreading, scarring, or loss of tissue. Treatment should begin early, as soon as the condition is discovered. Since large cervical glands may be due to sarcoma, Hodgkin's disease, leukaemia, etc., radiography should be employed for all multiple glandular tumours, except those due to syphilis, and, though affording relief in such cases, the end-results are not the same as when the enlargement is due to tuberculosis, when a permanent cure results. The author predicts that when cases are referred for treatment earlier and raying is more systematically employed, this treatment will be universally adopted.

348. Gland Puncture in Diagnosis.

GUTHRIE (*Johns Hopkins Hosp. Bulletin*, August, 1921) recommends gland puncture as a diagnostic measure not only, as hitherto employed, for the recognition of bacteria, protozoa, and filariae, but in order to obtain cellular material for microscopic examination. It is essential for the gland to be of sufficient size to permit aspiration, or to be so situated as to allow of firm fixation, and without liability of injury to important structures. Under antiseptic precautions the needle of an empty sterilized Record syringe is plunged half way into the gland at right angles to the skin and then slowly withdrawn, while negative pressure is maintained by drawing the plunger back. Frequently there does not appear to be anything in the syringe after withdrawal, although there is almost always sufficient material to make fresh preparations for dark-slide examination and dried films for staining. With the point of the needle almost touching the coverslip the first two or three drops expelled are used for dark-field examination and the subsequent ones for films. The method has been applied in cases of syphilis, tuberculosis, Hodgkin's disease, acute and chronic lymphoid leukaemia, simple adenitis, trypanosomiasis, and malignant metastasis. A diagnosis may often be made in fifteen minutes, the procedure is practically painless and leaves no scar, and it does not interfere with subsequent excision and histological examination of the gland.

349. Operative Treatment of Pineal Tumours.

ACCORDING to DANDY (*Surg., Gyn., and Obstet.*, August, 1921), the only useful treatment of pineal tumours is operative removal. No benefit, he holds, can possibly accrue either from a decompression operation or from puncture of the corpus callosum. It has been shown by the author that in dogs the pineal gland can be removed without mortality and without subsequent physical or mental deterioration. He describes a similar operation which he has performed three times in human subjects. A very large parietal occipital bone-flap, the mesial margin of which extends to the superior longitudinal sinus, is turned downwards, and the dura is reflected over the inferior longitudinal sinus. By a puncture of the lateral ventricle the intracerebral pressure, and consequently the volume of brain, in the field of operation is reduced, and subsequently the cerebral hemisphere is retracted, exposing the corpus callosum and the falx. By longitudinal division of the corpus callosum the tumour of the pineal is exposed, together with the entire length of the vena galena magna and the terminus of each small vein of Galen. This operation has been performed in three cases. In the first case, because of the infiltrating character of the tumour, no attempt was made to remove it. In the second case an encapsulated tumour measuring 5 by 4 cm., and regarded at the time as an endothelioma but afterwards proved to be a tuberculoma, was removed; the patient recovered, but died eight months later, presumably from the effects of other cerebral tuberculous lesions. The tumour in the third case was much larger, and as a preliminary to its enucleation excisions of the veins of Galen were required; the patient died forty-eight hours later.

350. Non tuberculous "Aseptic" Renal Pyuria.

RUNEBERG (*Acta Chir. Scand.*, vol. liv, No. 1, 1921) gives many reasons for disagreeing with the teaching that whenever the bacteriological examination of the urine in cases of renal pyuria is negative its cause must be tuberculosis. Between 1900 and 1918 he observed 55 cases of "aseptic" renal pyuria in a hospital in Helsingfors. In 18 of these cases the disease did, indeed, prove to be tuberculous. In 7 other cases renal calculus was the cause of the pyuria. Thus there remained 30 cases, 10 of which came to operation (nephrectomy). After a review of these cases the author notes that a common feature of unilateral "aseptic" renal pyuria is congenital structural deficiency of the kidney concerned. The kidney being a *locus minoris resistentiae* owing to various morphological anomalies, it is peculiarly subject to invasion by staphylococci and other microbes, the demonstration of which in the urine fails for some reason or other. They may, however, sometimes be found in sections of the affected kidney, even when the urine has proved "aseptic." As many as 23 of the 30 were males, and 17 per cent. of these males showed signs of prostatitis. This condition was probably secondary, for in 2 cases in which nephrectomy was performed for unilateral disease the prostatitis cleared up. The author also suggests that urinary antiseptics may be responsible for some cases of "aseptic" renal pyuria. He discusses the many features distinguishing this condition from renal tuberculosis.

351. Alcohol in Surgery.

MORRIS (*Med. Record*, August 13th, 1921) considers that alcohol as an antiseptic, anaesthetic, and stimulant in surgery is of little value and of limited application. Its use for injections into the nerves or nerve sheath in the neuralgias is not so effective or lasting as osmic acid in weak solution. As a general disinfectant at ordinary temperatures it is of little use, since it is not germicidal, though it may exert an inhibitory action upon bacterial growth, different bacteria responding to its action in varying degrees. In the preparation of the hands prior to operation it acts more as a general solvent of sebaceous and other materials than as an antiseptic. In solutions not stronger than 25 per cent. it is useful for flushing in cases of septic endometritis in connexion with drainage. As a preservative for catgut its germicidal influence is only exerted at boiling temperature and under pressure. As a stimulant in cases of shock it may be of value at times, but judgement is required in its use lest harm be done in unsuitable cases.

OBSTETRICS AND GYNAECOLOGY.

352. The use of Bougies for Induction of Labour.

DAVIS (*Amer. Journ. of Obstet. and Gynecol.*, July, 1921) has found no record of serious injury to mother or child following the use of bougies for induction of labour. In one case, after induction thus brought about, one of the bougies was found sticking through the substance of the placenta, which it had completely perforated; this labour was, however, quite uncomplicated by haemorrhage. According to the author, the use of bougies does not cause serious haemorrhage. In one case, where the introduction of bougies was followed at once by considerable bleeding, it was found at abdominal section that although the placenta had separated in its lower fourth the bougies had not touched the placenta, nor were they even on the same side of the uterus as the separation; had not delivery been performed by a Caesarean operation the bleeding might not unnaturally have been referred to a direct traumatism. A second case is recorded in which introduction of bougies was followed by persistent oozing of blood, not controlled by vaginal packing with gauze. Owing to attendant circumstances the abdomen was opened, and after delivery of the child the uterus was removed; on examination, it was found that the bougies had done no violence to the placenta, but that the uterus was lined with a soft, thick membrane, which microscopically was clearly chorio-epitheliomatous.

353. Causes of Hydramnios.

LAU (*Zentralbl. f. Gynäk.*, July 2nd, 1921) discusses the nature of the connexion between hydramnios and foetal deformities, which, according to many authors, coexist with special frequency. In explanation it has been suggested that in certain deformities, such as anencephaly, spina bifida, and thoracopagus, foetal serous cavities are brought into communication with the amniotic cavity, whose contents are increased by their accumulated secretion. Cramer and others believe, on the other hand, that the hydramnios is due to diminished foetal reabsorption of fluid. In support it is pointed out that not all cases of hydramnios are associated with deformities leading to an outpouring into the amniotic sac of serous fluids from foetal sources; that from the finding in the meconium of epithelial scales, of lanugo hairs, and of amniotic epithelial cells, it may be inferred that the foetus swallows the fluid with which it is surrounded, and that these formed elements are absent from meconium of foetuses which are the subject of cranial deformities, excluding the possibility of swallowing. If, on naked-eye examination of the foetus, swallowing would seem to be possible, microscopical examination of the central nervous system in cases of cephalic deformity, such as hydrocephalus, and in cases of spina bifida, has shown, however, marked nuclear lesions which might well impair the act of swallowing.

354. Surgical Anatomy of the Ureter and Iliac Vessels in the Female.

FROM a study of fifty dissections, MAURER and PORTES (*Gynéc. et Obstét.*, 1921, 6) conclude that the site of bifurcation of the common iliac arteries is extremely variable in different subjects, but is the same on both sides. In 25 per cent. of cases the bifurcation is high, being situated above the level of the inferior border of the fifth lumbar vertebra; in 19 per cent. of cases the bifurcation is low, being situated below the level of the

sacral promontory. In the remaining 56 per cent. the bifurcation takes place at an intermediate level that is, at some point within the 17 mm. which correspond to the vertical measurement of the lumbo-sacral disc. In the first and third cases the internal and external iliac arteries take parallel courses in their first parts, showing little angular divergence until the sacral pulmonary is reached. The variable relations of the crossing of the ureter to the iliac arteries are due chiefly to the variations which have just been described in the bifurcation of the common iliac arteries; in cases of high bifurcation the ureter crosses on both sides the external iliac artery; in cases of low bifurcation it crosses on both sides the common iliac artery, but in cases where the bifurcation is at an intermediate level, the ureter crosses on the right the external iliac and on the left the common iliac artery. The last-named disposition is that given by Luschka, but is more variable than his so-called law would appear to indicate; it is due to the asymmetrical situation of the iliac vessels consequent on the bifurcation of the aorta at a point to the left of the middle line. In stout subjects the ureter, when its recognition at operation is difficult, may be found crossing the pulsating iliac vessels at the level of the upper border of the lumbo-sacral disc, a fingerbreadth above the promontory of the sacrum. The utero-ovarian ligament always crosses the external iliac artery; immediately above the iliac vessels this ligament and the ureter run closely applied side to side; but after crossing the iliac vessels the two structures diverge. It follows that to tie the ligament above the vessels is dangerous, below them comparatively safe.

355. Causes and Treatment of Chronic Post-partum Endometritis.

QUISLING (*Tidsskrift for den Norske Lægeforening*, July 15th, 1921) criticizes the orthodox textbook attitude towards the causation and treatment of chronic endometritis following childbirth. The patient is troubled by an irritating and sometimes offensive discharge, menorrhagia or dysmenorrhoea is often present, and there is pain in the abdomen or back after exertion. The author excludes from the condition under discussion gonococcal endometritis and the infections following abortion or labour. The endometritis of displacements is also excluded. The endometritis he refers to is confined to parous women, and is, in his opinion, simply due to the anatomical changes imposed on the cervix, vagina, and perineum by labour. These changes, whether they consist of a gaping os or flaccidity of the vaginal wall amounting almost to actual prolapse, promote the invasion of the internal reproductive organs by infection from without. The treatment commonly meted out to the patient is only curetting—an operation which has probably been more misused than any other. By itself this operation is speedily followed by relapse, and the author recommends it only as a preliminary to the various plastic operations devised for the sequelae of labour already referred to. These operations are free from danger and remarkably effective. In addition to relieving the patient from chronic invalidism they are calculated to diminish the risk of subsequent malignant disease by the removal of chronic foci of inflammation.

PATHOLOGY.

356 Intravenous Sodium Salicylate in Acute Articular Rheumatism.

GILBERT, COURY, and BÉNARD (*C. R. Soc. Biologie*, July 23rd, 1921) have practised the intravenous injection of sodium salicylate in very severe cases of acute articular rheumatism in which endocardial complications appeared imminent or had already set in. The doses varied from 0.25 to 2 grams; they were given in the form of a 25 per cent. solution, and were repeated morning and evening. The results are described as favourable. No untoward sequelae were encountered. Measurements which were made to ascertain the cycle of elimination showed that excretion of the drug commenced in the urine within half an hour of administration, attained its maximum between the first and second hours, remained more or less level for the next four or five hours, and then progressively diminished till elimination was complete by the twelfth hour. After considerable experience they recommend that this method should not be allowed to replace the oral administration of the drug, but that it should be reserved for the graver cases of rheumatism with endocardial or cerebral complications.

357. Hypernephromata in the Female.

ACCORDING to GLYNN (*Journ. of Obstet. and Gynæc. of the British Empire*, 1921, i) the occurrence within the female pelvis of true hypernephromata is very rare; most of the so-called hypernephromata of the ovary which have been reported were in reality derived from lutein cells. The reasons for which doubt is cast on the derivation of these tumours from suprarenal rests are as follows: First, the ovarian "hypernephroma" shows histological differences from the true suprarenal hypernephroma, which is distinguished by much greater variation in the shape and size of its cells and their nuclei, by the absence of the characteristic clear or very much vacuolated cytoplasm, and by the apparent absence of well-formed gland-like lumina. Secondly, although suprarenal cortical tissue is not infrequently present in the broad ligament, there is no proved case of its being found in the ovary (just as although such tissue is frequently found near or in the epididymis, and rarely in the corpus Highmori, there is no proved case of its presence in the testicle). Thirdly, clinical evidence shows that the ovarian "hypernephromata" are not associated with the changes in secondary sex characters which are so frequent in cases of suprarenal cortical tumours occurring in young children, especially girls, and in women before the menopause. On the other hand, one of the much rarer hypernephromata of the broad ligament showed associated changes in sex characters; this (Bovin's case) is regarded as the only true hypernephroma yet recorded within the female pelvis. It is concluded that, in the same way as small ovarian "hypernephromata" are now recognized to be lutein formations, the majority, if not all, of the large "hypernephromata" are probably of lutein origin.

358. Repair of Wounds of Articular Cartilage.

CIOCIOLA (*Il Policlinico*, Sez. Chir., June 15th, 1921), in a review of the literature, shows that opinions are divided as to the possibility of repair of wounds of cartilages. His own experiments on dogs yielded the following results: (1) Wounds of the articular cartilage which usually involve the subjacent bone are healed by the agency of the bone marrow, which gives rise to the formation of young connective tissue; (2) this tissue after a certain time shows signs of transformation into hyaline cartilage; (3) it is only in the most superficial wounds, made in a tangential direction, which do not pass beyond the thickness of the hyaline cartilage, that no signs of repair can be found even after two months.

359. Statistical Study of Cancer.

IN a statistical study by JEANSELME and BARBE (*Journ. de Méd.*, July, 1921) of the cases of cancer treated at the Tenon Hospital during the years 1901–06 the following facts were elucidated: Of a total of 1,501 cases, 409 affected the uterus, 296 the stomach, and 155 the breast; in other words, these three organs accounted for about 57 per cent. of the complete series. Of the 296 cases of cancer of the stomach, 172 occurred in males and 124 in females. The next most frequent sites were the liver and bile ducts, the intestine, the rectum and anus, the tongue, and the face. While cancer of the small intestine was twice as common in women as in men, cancer of the respiratory apparatus was six times more frequent in men than in women. This would appear to be due to the irritation caused by alcohol, tobacco, dust, and noxious vapours to which men are particularly exposed. Taking all cases into consideration, cancer was found to be almost exactly twice as common in women as in men. No evidence of the presence of endemic foci of cancer could be obtained.

360. Absorption of Experimental Haematom .

ALBANESE (*Il Policlinico*, Sez. Chir., August 15th, 1921), as the results of his experiments on guinea-pigs and rabbits, came to the following conclusions: (1) In the blood serum of an animal with haematoma it is possible to demonstrate the presence of proteolytic ferments which disintegrate the constituents of the haematoma. (2) This proteolytic action occurs whether the haematoma is situated in the subcutaneous tissue or in the joints and pleura, and one may therefore conclude that the ferments act directly on the constituents of the haematoma and not on the tissues surrounding it. (3) These ferments do not belong to the type of pre-formed ferments, but to the type of Abderhalden's protective ferments—that is, specific ferments which are capable of acting only on the haematoma. (4) It is probable that the presence of these ferments is an important factor in the absorption of the haematoma. (5) In guinea-pigs and rabbits effusions of aseptic blood are never accompanied by fever.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

361. Diagnosis of Tricuspid Insufficiency.

According to Lutembacher (*Paris méd.*, July 23rd, 1921), tricuspid insufficiency is often associated with pulmonary lesions. In one group of cases—namely, chronic disease of the lungs, such as extensive fibrosis with emphysema and chronic bronchitis—the pulmonary lesions precede the cardiac symptoms, the cardiac insufficiency does not appear till late, and the tricuspid murmur is only heard when oedema and discoloration of the lower limbs, enlargement of the liver, turgescence of the jugulars, and cyanosis indicate insufficiency of the right ventricle. In another group of cases the pulmonary lesions are obviously secondary to the cardiac, and do not occur till late. In such cases the tricuspid murmur has been detected before any insufficiency of the right ventricle, and there is undoubtedly an organic tricuspid lesion. Though the pulmonary symptoms usually do not develop until the symptoms of cardiac failure, they are sometimes observed before any cardiac insufficiency. In such cases there is a pulmonary infarct following a secondary infection of the cardiac cavities. Lastly, pulmonary lesions and tricuspid insufficiency may be the result of some acute infection, as in a case of pneumococcal endocarditis recorded by Lutembacher, in a man aged 64, occurring in pneumonia.

362. Etiology, Early Manifestations, and Treatment of Rickets.

Burnet (*Brit. Journ. Child. Dis.*, July-September, 1921) emphasizes the fact that rickets is essentially, in the first instance at least, a disease of alimentation, and protests against its being regarded as a disease of bones. He is firmly convinced that rickets could be practically stamped out if the sale of "infant foods," dried milk, and condensed milk were strictly regulated and medical men were warned against these articles as a routine method of infant feeding. Other causes of rickets, such as bad hygiene, he regards as insignificant compared with improper feeding. Burnet divides the early manifestations of rickets into catarrhal phenomena, nervous phenomena, and vasomotor phenomena. Catarrhal phenomena, which are probably the earliest manifestations, consist in gastro-intestinal symptoms, such as vomiting and diarrhoea, and a marked tendency to nasal, aural, and bronchial catarrh. The nervous phenomena include restlessness and irritability, attacks of crying, disturbed sleep, and convulsions. The principal vasomotor phenomena are profuse sweating and the appearance of a red line when the finger-nail is lightly drawn across the skin. Burnet attaches great importance to prophylaxis. If breast-milk is not available, he considers that scalded cow's milk, pure or diluted with water or citrated, is the only proper substitute. As an adjunct cod-liver oil may be ordered, either pure or in the form of an emulsion. Fresh air and sunlight and massage with olive oil are useful additional measures.

363. Hilus Tuberculosis in the Adult.

Lankhout (*Nederl. Tijdschr. v. Geneesk.*, August 6th, 1921) remarks that peribronchitis tuberculosa or hilus tuberculosis, with which radiologists have long been familiar, has not received the recognition from clinicians which its importance demands, in spite of the descriptions given by Bushnell in America and Clive Riviere in England. Hilus tuberculosis in the adult is a fresh and active process which develops in the deep parts of the lungs at the sites of the old foci of infection in childhood and thence has extended to the periphery. As regards the physical signs, bilateral narrowing of Krönig's isthmus of apical resonance at the top of the shoulder, to which Riviere attaches special importance, is by no means constant. Lankhout regards a zone of dullness near the vertebral column, most marked on the right, as of more value. Negative evidence in the absence of rhonchi or crepitations, especially at the apices, is also useful. When a crepitation does occur it is heard in an unusual situation, such as the axillae or base of the lung. The symptoms are the same as in ordinary apical disease. Shortness of breath after exertion is a prominent feature. Pain in the chest is frequent. A most important symptom is fever, which may be of the same type as in other forms of incipient tuberculosis or be of a high continued or intermittent type so as to resemble typhoid fever or malaria. Subfebrile temperature may persist for weeks or months without rest in bed having any favourable effect. The prognosis as regards life is good. The process may remain latent for years and years with occasional exacerbations.

364. The Etiology of Sokodu.

Mantovani (*Pathologica*, August 15th, 1921), as the result of the study of a case of sokodu, came to the following conclusions: (1) The infection was certainly due to a spirochaete, and perhaps to the *Spirochaeta mors muris* described by Japanese writers—for instance, Futachi and Ishiwara. (2) In the patient's blood and in the organs of infected animals he observed two forms of spirochaetes, a long and a short, which were quite distinct from one another. (3) Guinea-pigs, after subcutaneous or intraperitoneal inoculation with the patient's blood, developed great enlargement of the inguinal and axillary glands and suprarenals, congestion of all the organs, and sometimes a haemorrhagic syndrome without jaundice, like that seen in spirochaetosis icterohaemorrhagica. (4) Injection of the patient's blood into a guinea-pig is a suitable method for discovering the etiological agent of sokodu.

365. Epidemic Hiccough.

Pontano and Trenti (*Il Policlinico*, Sez. Prat., August 29th, 1921), during a small epidemic of hiccough in Rome in December, 1919, inoculated 12 volunteers by subcutaneous injection of the whole and filtered blood, cerebro-spinal fluid, and pharyngeal washings from four patients with epidemic hiccough but free from any other disease, and with a negative Wassermann reaction. The results were negative in each case. No bad effects occurred apart from severe local pain and redness of the skin, caused by injection of the pharyngeal washings. None of the persons inoculated, who were kept under observation for an average period of a month, showed any rise of temperature nor any symptoms which could be attributed to the disease in question. The writers reviewed the literature and came to the conclusion that epidemic hiccough does not constitute a form of epidemic encephalitis or influenza, and that it does not even have close epidemiological or clinical relations with it.

366. Acute Bromide Psychosis.

Höst (*Norsk Mag. for Laegevidenskaben*, September, 1921) sounds a note of warning with regard to the possible provocation of mental disease by large doses of potassium bromide. The case with which he illustrates his point is that of a woman, aged 50, with a record of recurrent attacks of rheumatic fever. There were signs of mitral and aortic insufficiency, as well as of stenosis of the aorta. She was rather restless and nervous on admission to hospital, and in addition to digitalis 1 gram of potassium bromide was given three times a day. During the first few days she gave a drowsy, tired impression, and on the fifth day she suddenly became very restless and delirious. She screamed and suffered from hallucinations. A day later the potassium bromide was discontinued. Veronal (0.5 gram every evening) was substituted, but for three days there was no improvement. After that she gradually recovered, the hallucinations disappearing first by day, and, still later, by night also. For about a week she was apathetic and forgetful, but after this her mental condition became perfectly normal. The author refers to a paper published in 1916 by Ulrich in *Kor. f. Schw. Aerzte* on chronic bromide poisoning followed by hallucinations and delirium.

367. Affection of the Optic Nerve in Lethargic Encephalitis.

Waardenburg (*Nederl. Tijdschr. v. Geneesk.*, July 23rd, 1921) remarks that it used to be stated that lethargic encephalitis was characterized by the motor apparatus of the eye alone being affected while vision was left intact. Subsequent investigations, however, showed the incorrectness of this view. Thus both Economo and Bartels observed a slight retrobulbar neuritis and a commencement of optic atrophy. Oberndorfer saw a mild case of optic neuritis among eight patients with lethargic encephalitis; Hiram Woods saw one example of optic neuritis among six cases of the disease, and Schumway also saw one case. Waardenburg himself has observed one case characterized by a scotoma, indicating a retrobulbar neuritis, and another with a slight peripheral narrowing of the visual field.

368. Match-box Dermatitis and Conjunctivitis.

Rasch (*Ugeskrift for Laeger*, August 25th, 1921) describes a small epidemic of dermatitis and conjunctivitis provoked by match-boxes, the ignition surfaces of which had been treated with the sesquisulphide of phosphorus (P_4S_3). This material was used by certain Swedish manufacturers who, in the summer of 1917, were not able to obtain amorphous phosphorus. Between January and July, 1921, the author saw four cases, one of which was severe, the disease persisting for fourteen days with inflammation of the fingers, neck, and face. The concurrent blepharo-conjunctivitis was severe enough to cause complete closure of the eyes. The author, who had observed several cases between 1917 and 1920, was able to trace the disease to the cause in every case, partly by the help of Johanne Christiansen's test. The ignition surface of the suspected match-box is laid on asbestos and heated over a gas flame in a dark room; only when P_4S_3 is present does the heated surface give a strong, bluish light before it takes fire.

369. Response of Tuberculosis at Different Age Periods to Preventive Measures.

Heitmann (*Norsk Mag. for Laegevidenskaben*, August, 1921) publishes statistics showing that in Norway the decline of tuberculosis mortality in infancy and childhood has been remarkably rapid since 1910, the year in which the first tuberculosis law came into force. But in the later age periods, from adolescence onwards, there has been practically no change in the mortality from tuberculosis in spite of this law and the widely ramified antituberculosis organization in the country. With certain reservations he is inclined to correlate these curious facts with the theory of Andvord and Römer that the pulmonary tuberculosis of adult life is but the final stage of a disease begun in early childhood. His first set of figures deals with three five-year periods—1901–5, 1906–10, and 1911–15. They refer to tuberculosis in Norwegian towns, and eleven different age periods are studied, the second being the age period 1–5, the last 70–80. In the first year of life the deaths numbered 262 in 1900, while in 1917 they numbered only 116. In the second age period, 1–5, the fall from 1900 to 1917 was from 530 to 235. But in the age period 15–20 the respective figures for 1900 and 1917 were 746 and 781. Still less satisfactory were the figures for the age period 30–40, the deaths in 1900 numbering 431, while in 1917 they numbered 842. But in the age period, 60–70, a decline was again observed, the respective figures being 316 and 259. It should be noted that this abstract of Heitmann's paper deals with two different sets of figures, the first dealing with the period 1900–15, the second including the mortality returns for 1917.

370. Fulminating Lethargic Encephalitis.

Lichtwitz (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 21st, 1921) records two cases of lethargic encephalitis which occurred at the beginning of 1921 at Bourges, and were remarkable for their rapidly fatal course. In the first case, which occurred in a youth aged 16, an irresistible desire to sleep was the only symptom for six days, and was followed by complete loss of muscular power and strabismus. In the second case, which occurred in a boy aged 10, and lasted only four days, there was a meningeal reaction, with headache and vomiting. Fulminating forms of this kind are due to a particularly virulent organism.

SURGERY.

371. Diet in Pyloric Stenosis.

Sauer (*Amer. Journ. Dis. of Children*, August, 1921) urges the trial of thick cereal feedings for a short time in the treatment of pyloric stenosis in infants, operation being resorted to if there is not soon an improvement in symptoms. The factors determining how long such feeding may be tried are the weight, severity of vomiting, paucity of faeces, and the general condition of the patient, the presence of a palpable tumour or the size of the peristaltic waves having no bearing on the decision, and operation is indicated if, after one or two weeks, there is no subsidence in the vomiting and no increase in weight. Earlier operation may be advisable in some cases of extreme emaciation and want of immediate response to treatment. The preparation and administration of a thick cereal food is important. It should be thoroughly cooked and be of such consistency as to adhere to an inverted spoon. One part of cereal to seven parts of fluid (three of milk and four of water) boiled in a covered double boiler for an hour makes a proper consistency, and a little of this warm should be placed far back into the open mouth on a tongue depressor and scraped off with another depressor. From two to six tablespoonfuls may be given six or seven times a day, and this may be alternated with breast feedings, but if vomiting and loss of weight continue all the feeds should consist of the thick cereal. *X* rays confirm the value of this method since most of the bismuth milk is still in the stomach at the end of four hours, but the same food thickened with farina quickly passes into the duodenum leaving the stomach nearly empty at the end of that time. Such feedings may be valuable when vomiting continues after operation.

372. Essential Haematuria.

According to D'Agata (*Il Policlinico*, Sez. Chir., August 15th, 1921), who records a case of renal haematuria in a man aged 30, which on superficial examination might have been regarded as an example of essential haematuria, numerous cases have been recorded in which the diagnosis of essential haematuria has been based on insufficient evidence. Specimens have been taken from limited areas of the organ removed or all the methods of chemical histology have not been employed. As Maiocchi remarks, positive findings in such cases alone have any value, while negative results are inconclusive if the investigation is not carried out in an absolutely perfect manner. In Hofbauer's case no macroscopical lesion was found to explain a severe haematuria of several years' duration, whereas microscopical examination showed lesions of the glomeruli and convoluted tubules. In Nicolich's case, in which nephrectomy was performed for unilateral haematuria of unknown origin, the extirpated kidney was regarded as healthy even on microscopical examination by the pathologists at Trieste and Vienna, but when Nicolich brought the specimen to the International Congress of Urology at Paris, Albarran and Motz found evidence in it of interstitial glomerulo-nephritis. Circumscribed changes in the kidney may therefore be the cause of haematuria. In a recent work (1920) Taddei expressed the view that in so-called essential haematuria interstitial, glomerular, or vascular lesions predominated; while in cases in which pain was the prominent symptom lesions of parenchymatous nephritis or chronic epithelial nephritis were characteristic. In D'Agata's case the haematuria, which was associated with a slight degree of pain, was due to a process of unilateral glomerular nephritis with concomitant lesions of proliferating pyelitis. The latter were the expression of a chronic non-specific inflammatory process and secondary to the renal lesion.

373. X-ray Treatment of Oto-sclerosis.

Webster (*Arch. Radiology and Electrotherapy*, August, 1921) records two cases of oto-sclerosis treated by *x* rays after the cross-fire method on the fenestra ovalis with a 4 mm. filter, adopted by Professor Siebenmann of Bâle. The first case, a male aged 37, with slowly progressing oto-sclerosis in both ears of several years' duration, obtained apparent arrest of the disease both as regards hearing and tinnitus, though another year or two must elapse before it is seen whether the arrest is temporary or permanent. In the second case, a female aged 25, distinct improvement followed three months' treatment, which was maintained by continuance of the treatment, and it is hoped that such improvement will be further maintained, though in any case the process has been arrested. The method requires further investigation, since if it only arrests an otherwise inevitably progressive complaint, its value will be established, while in some cases it would seem that actual improvement may be expected.

374. Punctures of the Cisterna Magna.

McCusker (*Journ. Nervous and Mental Disease*, June, 1921) records observations on fifty-five punctures of the cisterna magna in nine patients. There were no deaths, complications, or accidents, the punctures being made without difficulty, and with less after-discomfort than usually follows lumbar puncture. The patient lies on his left side with his head flexed on his chest and elevated by a pillow so as to bring the occipital protuberance on the same horizontal plane as the vertebral spines. Under strict aseptic precautions and local anaesthesia the outer skin of the depression between the base of the skull and the spine of the axis is pierced in the middle line with a lumbar puncture needle, which is then discarded, and a second needle, graduated in centimetres, is introduced through the opening and directed slightly forwards in the line of a plane passing through the glabella and the upper edge of the external auditory meatus. By carefully advancing it until it is felt to overcome the resistance of the dura and of the posterior occipito-atlantoid ligament the

needle enters the cisterna magna and fluid can be withdrawn, pressure estimated, and serum or salvarsan injected as desired. The needle should never be inserted beyond 5 cm. for fear of injuring the medulla. In none of the cases was there any pain on piercing the dura, puncture headache, or serum reaction, neither was there any root pain as may occur in lumbar puncture or secondary symptoms on the introduction of serum.

375 Fracture of Spine of Tibia.

A [illegible] about 1,600 fractures KULLANDER [illegible] *Assoc.*, September 10th, 1921) has observed three cases of fracture of the spine of the tibia. He reviews the anatomy of the knee joint and discusses the mechanism producing the injury. He is of the opinion that the tibial spine is practically always fractured by indirect violence, and that fracture or avulsion of the spine is due to sudden and powerful traction on one or both crucial ligaments, but usually the posterior. The tibial spine is so situated and protected by nature that it is practically impregnable to direct assault. In his three cases the history shows that a powerful traction on the crucial ligaments produced the injury in each case. The violence is applied while the knee is flexed and abducted and usually externally rotated. This injury may also occur if the knee becomes suddenly and powerfully hyperextended. There is sudden severe pain. The patient is unable to arise or straighten the knee. Effusion and swelling are rapid, and there may be marked ecchymosis. Fracture of the tibial spine can be diagnosed positively only by means of the *x* ray. The most presumptive evidence is blocking or locking of the knee, preventing extension; but a displaced semilunar cartilage may produce this phenomenon, together with the identical signs of fracture of the tibial spine. The treatment should be entirely conservative and should give way to operative interference only when repeated attempts to obtain full extension prove impossible. The knee should be manipulated under anaesthesia until full extension has been obtained, and then immobilized in a splint or preferably in a plaster cast extending from toes to groin. It is best not to disturb this for about eight or ten weeks, at which time the cast is removed and massage and passive motion are instituted. Should the crucial ligaments be ruptured the same treatment should be followed, except that immobilization is maintained for at least three months or more. The results of conservative treatment are usually most satisfactory. Where chronic disability, due to blocking of extension, persists, it is best to remove the offending fragment of bone through the split patellar incision. The post-patellar pad of fat is removed, any obstructive mass is removed, and the knee straightened. The incision is then closed. No suture of the patella is necessary. The leg is then immobilized for six weeks, after which the dressings are removed and motion commenced.

376. Hereditary Torticollis.

BUSCH (*Zentralbl. f. Chir.*, August 13th, 1921), in his Zurich Thesis, 1921, records examples of muscular torticollis in two sisters who belonged to a family in which the great-great-grandmother, two of her four sons, and two of her four daughters presented the same deformity. In the third generation there were two cases, one of which was the child of unaffected parents, and the other was the father of the two affected sisters. Both the sisters with torticollis were born by breech presentation, whereas two unaffected sisters were born by head presentation. Although Busch considers that Schloessmann's theory of inherited deficiency of amniotic fluid is responsible for many cases, he is inclined to adopt Joachimsthal's hypothesis of a primary germinal defect in his own two cases.

OBSTETRICS AND GYNAECOLOGY.

377. Nervous and Mental Disease after Difficult Childbirth.

HANNES (*Zentralbl. f. Gynäk.*, July 23rd, 1921) reiterates his opinion that difficult births and those accompanied by foetal asphyxia are not followed by a larger proportion of feeble-minded children than is the case after normal birth. This conclusion is based on comparison of the after-history and the details of accouchement in three groups of children: (1) Those showing well-marked asphyxia at birth, (2) those whose delivery required artificial assistance, (3) those undergoing spontaneous birth. After deducting cases in which there were present hereditary influences to which etiological importance could be ascribed, the percentage of mentally abnormal children in the three groups were respectively 3.8, 2.4, and 3.4. Hannes points out that authors who regard injury at birth as an important factor in the production of nervous disease have, as a rule, based their conclusions on figures derived not from comparative investigations of the after-history of children born normally and abnormally respectively, but from an analysis of the history of groups of children receiving treatment in institutions for mentally affected children. Figures of the latter description have been furnished by Klotz, who in 144 such children found 7.6 per cent. in whom no other cause could be recognized than abnormal birth; it is not recorded, however, that the birth in these cases, although protracted, occurred otherwise than spontaneously, and subjective histories of "difficult birth" are obtained with ease by means of questions addressed to the mother. Hannes's views have been confirmed by Schott, who, in an analysis of 1,100 feeble-minded children, found 150 cases in which there was evidence of probable or possible injury to the head at birth; after deducting cases in which other etiological factors (such as parental alcoholism, tuberculosis, or mental disease) might play a part, 30 cases only, or 2.8 per cent., could be attributed to difficult birth as the sole cause.

378. Recurrent Secondary Abdominal Pregnancy after Hysterectomy.

MCMILLAN and DUNN (*Surg., Gyn., and Obstet.*, August, 1921) record a case in which as a consequence of acute bilateral pyosalpinx an unmarried nulliparous patient was subjected to hysterectomy; there were left behind 1½ in. of cervical tissue, half the right ovary, and about 1½ in. of the fimbriated end of the right Fallopian tube. A gauze drain was for a few days allowed to connect the canal of the cervical stump and the peritoneal cavity. Eighteen months later the patient was found to be pregnant, and acute abdominal pains led to performance of laparotomy, at which the thin amniotic sac filled with its fluid presented unruptured; above and to the left was a thick wall of blood clot. A well-formed dead foetus weighing 8½ lb., which had apparently been dead from thirty-six to forty-eight hours, was removed and the placenta was carefully separated from the left flank under the spleen, where there were extensive omental adhesions. The patient made a good recovery and subsequently menstruated regularly. Six months afterwards she was married and nine months later signs and symptoms of early pregnancy were reported. Seventeen months after the second operation she experienced acute abdominal pain and showed signs of severe internal haemorrhage. The abdomen being opened, a foetus weighing 4 lb. was found floating unattached in the abdominal cavity, which contained much liquid blood. The patient died shortly after the operation. It seems probable that the two pregnancies were secondarily rather than primarily abdominal. At the time of the second operation the patient declared that she had been under the impression that pregnancy after hysterectomy was impossible; this is quoted as another example of the caution which should characterize the prognosis given, with respect to possible pregnancy, to patients who have been subjected to subtotal hysterectomy.

379. Metastases in Puerperal Septicaemia.

LUTTRINGER (*Gynéc. et Obstét.*, 1921, 6) records the case of a multipara, aged 26, who on the tenth day *post partum* was found to be suffering from right parametritis and thrombo-phlebitis, and on the fifteenth day from haemorrhagic nephritis and bilateral erythema of the forearms. On the following day (that preceding death) complaint was made of blindness of the right eye, in which microscopic examination *post mortem* showed marked oedema of the papillary and retrobulbar portions of the optic nerve; streptococci were demonstrated in the sheath. KELLER (Ibid.) relates a case of pyaemia (following abortion) in which, in spite of the occurrence of staphylococcal abscesses in both the upper and lower extremities, recovery eventually took place.

380. Cysts of the Iliac and Pelvic Mesocolon.

ACCORDING to DE BENOIT (*Rev. Franç. d'Obstét. y Ginec.*, April, 1921), mesenteric cysts occurring in connexion with the iliac and pelvic colon arise in remnants of the Wolffian bodies or ducts. Clinically they are regarded in nearly all instances as ovarian or parovarian cysts; as a rule, they give rise to no morbid symptoms and are discovered accidentally, either by the patient herself or during the course of a gynaecological examination. In many instances such mesenteric cysts, on account of their close connexion with

the intestine, have been regarded as inoperable; as a matter of experience, however, it is found that gangrene or other nutritive disturbance of the iliac or pelvic colon is extremely rare. Careful dissection of the sheaths out of the cyst from the mesentery. In this connexion the abundance of the anastomotic loops of the sigmoid arteries and the junction of their branches with those of the superior haemorrhoidal artery must be remembered. In dissecting away the cyst from behind care must be taken not to injure the iliac vessels and the ureter, both of which may be considerably displaced. In certain cases hysterectomy may facilitate extirpation of the cyst.

381. Colpoperineal Incisions before Application of Forceps.

According to CALDERINI (*La Clin. ostet.*, Genoa, February 28th, 1921) the great majority of those advocating artificial colpoperineal incisions for the purpose of avoiding severe perineal and other lacerations during labour advise bilateral incisions commencing not in the region of the fourchette, but at the junction of the posterior and middle thirds of the labium majus. The writer advocates an incision beginning in the middle line in the region of the fourchette, and having in its inner portion a curve of which the concavity is directed forwards and to the left, and in its outer portion a curve of which the concavity is directed backwards and to the right. This colpoperineal incision is made in almost every patient requiring extraction by forceps; the single exception occurs in those cases where the instrumental interference is due to the existence of uterine inertia in a multipara. At the end of labour the incision is sutured with catgut (without narcosis). The incision described must be made with a knife held perpendicularly to the tissues incised; Calderini prefers to make it on the left side. An incision commencing 1½ cm. in front of the posterior commissure is occasionally employed. The advantages of colpoperineal incision made before application of forceps are summarized as follows: (1) Severe spontaneous colpoperineal lacerations and tears of the rectum are avoided; the artificial wound is clean cut, avoids possibly infective regions, and is afterwards accurately and easily closed. (2) The duration of the compression of the foetal head by the application of forceps is diminished. (3) By the incision the application and use of forceps are rendered technically easier.

PATHOLOGY.

382. An Organism Associated with a Transplantable Mouse Carcinoma.

NUZUM (*Surg., Gyn., and Obstet.*, August, 1921) reports a critical study of an organism associated with a transplantable carcinoma of the white mouse. The tumour employed, after being transplanted through more than one hundred generations of white mice, was sufficiently virulent to yield from 60 to 100 per cent. of successful inoculations. A large series of white mice were inoculated with sterile grafts by subcutaneous injections, or by multiple injections of a sterile watery emulsion of tumour into the liver and peritoneal cavity. By inoculation of the tumours, aseptically removed, into sterile human ascitic fluid containing fragments of sterile rabbit kidney or brain tissue, and incubated for three to seven days, it was found possible to isolate an organism which, especially if the ascitic fluid had previously been stored in an ice-box for several months, grew with increasing ease in subculture generations. The micro-organism obtained appeared as minute coccal and ovoid non-motile and unencapsulated bodies arranged in pairs, short chains, and clumps; it stained best by Gram's or Giemsa stain. In early cultures the average size was 0.1 to 0.3 μ in diameter, but in old or unfavourable cultures of ascitic fluid larger forms appeared. An initial growth of the organism was never obtained on solid media, but it was usually possible to obtain a growth on such media when subcultures in the tissue ascitic fluid had been established. The organism passed through Berkefeld and Mandler filters. The minute coccal bodies apparently developed within the carcinoma cells, as was shown in films prepared after maceration of the cancer tissue. A partial anaerobic condition appeared most favourable. Experimental inoculation of the organism subcutaneously in the breast tissues of mice in many instances reproduced tumour nodules which grew progressively for periods of ten to thirty days, and then in the majority of cases slowly regressed. By stimulating the tumour cells to their maximum degree of virulence either by incomplete surgical removal with recurrence of the tumour followed by a rapid passage through a series of mice of the same stock, or by injecting cultures of the organism into growing tumours followed by transplantation, a method was found whereby pure cultures of the organism produced new growths. Subcutaneous injections of anaerobic cultures of the minute organism under these conditions (designed to exclude the probability of carrying over living cancer cells) in several isolated instances led to a production of tumours which grew steadily and led to the development of cachexia. These tumours did not vary in structure from that of the original growth, and transplants made from them yielded similar growths, from which the characteristic organism was readily recovered. Among many control observations of various kinds it was found that inoculations of active cancer cells mixed with cultures of ordinary bacteria usually failed in reproducing a tumour. The author states that he makes no claim of having discovered the cause of cancer, but suggests that the association of the minute micro-organism with the cancer cells of a mouse tumour renders a further study desirable. There appears to be evidence that two agents may be concerned in the etiology of the mouse carcinoma: (1) the minute coccal bodies stimulating the cells to rapid division, and (2) the cancer cell itself, closely associated with the organism and transmitting it from host to host in subsequent transplantations. An intensive bacteriological study is being made, along similar lines to those of this research, in human patients suffering from cancer. It is reported that from an early carcinoma of the human breast cultured in the ascitic fluid tissue medium a pure culture of an organism present ng the same cultural and morphological characters as that derived from a mouse tissue could be isolated. The same organism was also cultured from the ascitic fluid of a case of peritoneal carcinomatosis and from a metastatic carcinoma nodule of the omentum secondary to a primary growth in the sigmoid flexure.

383. Tuberculous Meningitis with Polymorphonuclear Leucocytosis.

RISER and ROQUES (*Ann. de Méd.*, 1921, 10, 1) describe three cases of tuberculous meningitis in which examination of the cerebro-spinal fluid revealed a leucocytosis with a high percentage of polymorphs. Two of the cases occurred in the children, the other in a man of 35 years of age. In each instance the disease was of a hyperacute nature, death following after three days, five days, and eighteen days respectively. In the first case 2,000 white cells per cubic millimetre were counted in the fluid withdrawn by puncture, all of which were polymorphs. In the second there were 1,800 white cells per cubic millimetre, of which 92 per cent. were polymorphs. In the third case, the least acute of the three, the leucocyte count was 301 per cubic millimetre, with only 53 per cent. of polymorphs. Autopsy in the first case showed the presence of a tuberculoma of the cerebellum surrounded by pus. In the other two cases a non-specific meningitis was discovered *post mortem*, but on histological examination the tuberculous nature of the lesion was manifested. Since a high polymorphonuclear count is not altogether infrequent in acute cases of tuberculous meningitis, the conclusion to be drawn is that if the usual technique fails to reveal the presence of the commoner causative organisms of acute meningitis, a search for Koch's bacillus should be carried out.

384. Pneumococcal Infections.

AN interesting review is given by PARAF (*Ann. de Méd.*, August, 1921) of the recent literature on the subject of the pneumococcus and pneumococcal infections. Of the four types of the organism which are commonly found, it would appear that Types 1 and 2 are those which are most frequently associated with definite lesions, while Type 4 most generally pursues a saprophytic existence in the throat. With regard to treatment by antipneumococcal serum, there still seems to be a considerable amount of discord as to its value. In pure pneumococcal infections it is probably of distinct advantage, but in cases in which more than one organism is concerned the results are less striking. Thus Lister, working amongst the natives on the Rand, was able to reduce the mortality due to pneumonia from 49 per cent. to about 20 per cent.; here an epidemic following on a pure pneumococcal infection was being dealt with. On the contrary, in cases of post-influenzal bronchopneumonia the value of serum treatment, especially in the hands of French workers, seems to have been practically *nil*. The employment of prophylactic vaccination is discussed, and, in view of the striking successes which have attended it in so many instances, its application to cases where large numbers of people are collected together, such as in infant crèches, measles wards, etc., is strongly advocated.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

385. Myositis.

ROSENOW and ASHBY (*Arch. Int. Med.*, September 15th, 1921), believing that chronic localized infections, as in tonsils and teeth, are an important etiological factor in myositis and associated conditions, tested the effect in animals of intravenous injection of bacteria from such foci, while noting clinically the effect upon the course of the disease of removal of suspected foci. Of 28 patients studied, localized infections of teeth and tonsils were present in nearly all, and in 25 from whom these foci were removed improvement followed in all but one. Bacteria, usually streptococci, having special affinity for muscles, were present in the foci of infection, and, in some instances, on the free surface of mucous membrane, and in excised muscles in cases of myositis, and with these organisms the disease has been reproduced, the organisms isolated from the experimental lesion, and myositis again produced on reinfection. The reaction is not leucocytic but mainly mononuclear and endothelial, the cells lining the small blood vessels becoming swollen and proliferating, thereby partially or completely obstructing their lumen. The supply of oxygen is thus lowered and bacterial growth favoured, affording a reason why cure in these chronic affections is difficult, and why massage and heat are so valuable in treatment. It is concluded, therefore, that myositis and even mild transient affections of muscles are mainly caused by the lodgement and growth of bacteria, usually streptococci, having an elective affinity for muscle.

386. Arterio-sclerosis.

MILLIONI (*Il Morgagni*, July 31st, 1921) sums up his study of arterio-sclerosis as follows. Atheroma and arterio-sclerosis are closely related, and may be looked upon as different manifestations of the same disease. Arterio-sclerosis is often a localized process limited to the visceral or peripheral vessels. It is much more common in young subjects than is generally believed. Of the toxic agents concerned in the etiology alcohol is the commonest, and lead the most rapid in its action. Infectious diseases play an important part, and amongst young subjects tuberculosis must be reckoned with. In localized tuberculosis the proximal arteries are frequently affected for example, after pleurisy one may see arterio-sclerosis of the brachial artery. A peripheral arterio-sclerosis localized in a weakly subject without any manifestation of disease may be looked upon as a sign of a latent tuberculous process. Similarly, a tuberculous process apparently cured may reveal a persistent harmful activity by a slowly progressive arterio-sclerosis. Visceral arterio-sclerosis is common, but its complex symptomatology is often misinterpreted. We possess no therapeutic remedy against arterio-sclerosis as a pathological process, and even in the symptomatic treatment the medicines (including iodides) used have very little efficacy. The painful crises of so-called intermittent visceral claudication are favourably influenced by belladonna and other antispasmodics.

387. Ocular Complications of Facial Erysipelas.

PRÉLAT (*Paris méd.*, September 3rd, 1921) classifies these as follows: (1) Palpebral complications. In addition to inflammatory oedema of the lid, which forms part of the ordinary clinical picture of facial erysipelas, circumscribed abscesses of the lid may develop and give rise to ectropion or entropion. Diffuse cellulitis of the lid, with or without gangrene, is much more serious and may cause considerable deformity. (2) Conjunctiva. Inflammation of the conjunctiva may range from a simple catarrhal conjunctivitis to a pseudo-membranous or purulent conjunctivitis, with considerable secretion, photophobia, and pain. (3) Lacrymal ducts. In the mildest cases there is a simple catarrh with stenosis giving rise to lacrymation, but in some cases the infection may be sufficiently severe to cause purulent dacryocystitis, with or without an abscess. (4) Orbit. Cellulitis of the orbit may develop, and is manifested by exophthalmos, chemosis, and immobility of the eye; palpebral oedema increases and there is aggravation of the general condition; usually the process ends by evacuation of the pus through a palpebral fistula, or the infection may spread to the meninges and brain. (5) Thrombo-phlebitis of the ophthalmic veins, manifested by rise of temperature, exophthalmos, and meningo-encephalitic symptoms. (6) Corneal lesions. These are not rare; they usually consist of ulcerative keratitis, which may end in perforation. (7) Uveal tract. Iritis sometimes accompanies keratitis, but may occur independently; choroiditis may also take place, and is a very serious complication, as it may end in panophthalmia and irretrievable loss of the eye. (8) Retina. Retinal haemorrhages are not uncommon, being due to thrombosis of the central vessels. (9) Optic nerve. Optic atrophy is not infrequent, apart from papillary lesions accompanying cellulitis of the orbit and thrombo-phlebitis of the ophthalmic veins.

388. Melanodermia in Phthiriasis.

ACCORDING to FIXIER and DUVAL (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 14th, 1921), who report an illustrative case in a woman aged 82, the localization of the pigmentation in phthiriasis is exactly the opposite to that in Addison's disease, the parts usually covered—namely, the thorax, abdomen, root of the limbs, and axillae—being chiefly affected, whereas the face, extremities, and nails escape. The parts which are normally pigmented do not become more so, as in Addison's disease. The writers emphasize in their own case the persistence of the pigmentation after disappearance of the parasites. Although the patient had been in their ward three months, the dark coloration of the skin was as pronounced as at first. The pathogeny of this variety of melanodermia is just as obscure as it was fifty years ago, but owing to the diffuse character and intensity of the cutaneous pigmentation, and still more of the buccal mucosa, there is probably some other factor at work than a mere modification of the epidermis due to the parasites and scratching.

389. The Localized Cardiac Form of Typhoid Infection.

MINET and LEGRAND (*Paris méd.*, September 24th, 1921) remark that among the localized forms of typhoid infection the cardiac form deserves more attention than it has hitherto received. Although isolated cases have been reported by Nattan-Larrier, Farcy, Lesieur, Froment and Crémieu, and Matthews and Moir, a localized cardiac form of typhoid fever has not hitherto been described. Minet and Legrand relate two illustrative cases of septicaemia, in a woman aged 36 and a man aged 18 respectively, in which the typhoid origin was determined by blood culture and Widal's reaction, though there was a complete absence of intestinal symptoms. In both cases the heart was affected, though in a very different manner in each patient. In the first case there was an involvement of the myocardium, shown by adynamia, tachycardia, instability of the pulse, hypotension, embryocardia, and weakness of the heart sounds. In the second case, after a septicaemic stage, the infection became localized in the pulmonary artery, giving rise to signs of pulmonary stenosis. Recovery took place in both cases.

390. Infectivity of Chronic Dysentery.

MATTHIAS and HAUKE (*Zentralbl. f. Chir.*, September 3rd, 1921) maintain that it is best to regard all cases of chronic dysentery as infectious, owing to the difficulty in cultivating dysentery bacilli even when they are present in large numbers, and that such cases should be isolated and treated like patients suffering from other infectious diseases. They report the case of a girl aged 10, who died of a hepatic abscess following appendicitis, and *post mortem* presented typical appearances of dysentery in the rectum, although she had shown no clinical symptoms of the disease during life. The infection was traced to a case of chronic dysentery in the same ward, and probably occurred shortly before the child's death, which was not in any way connected with dysentery.

391. Treatment of Acute Rheumatism with Colloidal Sulphur.

VIOLA (*Il Policlinico*, Sez. Prat., September 12th, 1921) records nine cases of acute articular rheumatism in soldiers treated by intravenous injection of colloidal sulphur. As a general rule he did not give more than three injections, each consisting of 1 c.cm., either daily or every other day. The rationale of the treatment consists in its causing a polymorphonuclear leucocytosis, which is the best method of defence of the organism against bacterial invasion, and

in supplementing the deficiency of sulphur in the affected joints (Maillard and Bourges). The results obtained when the injections are given early are as follows: (1) disappearance of pain, fever, and swelling within a few hours; (2) considerable shortening of the duration of the disease; (3) prevention of visceral complications. On the other hand, in advanced and complicated cases the injections are of little avail. The general reactions following the injection are negligible. This view does not agree with that of some writers, especially A. Robin, who attributes the value of colloidal preparations to the reaction which they cause, but agrees with the opinion of Maillard as to the re-establishment of the sulphur deficit.

392. The Prognosis of Pleurisy in Children.

NOBEL (*Wien. klin. Woch.*, September 1st, 1921) made an inquiry into the subsequent history of 78 cases of pleurisy in children who had been treated at the Vienna University Children's Clinic; 13 had died, 26 could not be traced, and 39 presented themselves for physical and *x*-ray examination from a few months to nineteen years after their attack of pleurisy. Of the 39 cases 17, or 43.6 per cent., showed complete recovery; 14, or 36 per cent., had only a slight indication of their previous illness, and about 10 per cent. presented more or less severe sequelae, such as disease of the corresponding lung, displacement of the heart, or vertebral scoliosis, which could be attributed to the previous affection of the pleura. The prognosis of pleurisy in children, which is almost invariably tuberculous in origin, is therefore good as a rule, and a spread of tuberculosis need not be anticipated.

393. Conversion Hysteria

LEHRMAN (*Journ. Nervous and Mental Dis.*, July, 1921) gives an analysis of a case of conversion hysteria superimposed upon an old diffuse central nervous system lesion. Such combination appears as a definite syndrome of an organic nervous disorder, and if the management of the case depends upon the prognosis of a particular syndrome it may sometimes be wrongly considered hopeless. Hence the importance of recognizing the hysterical elements which may be favourably influenced, and it is only by a complete analytical investigation that the underlying mechanism of the symptoms in such cases can be detected. In the case recorded a distorted view of life was associated with a coarse, irregular, incapacitating tremor of both hands, the commencement of which coincided with an intolerable situation at home. Handicapped by being crippled early in life, the unhappy domestic relations and jealousy eventually resulted in the tremor developing. It was only when the unconscious motives were demonstrated to the patient that the symptoms disappeared, and thus mechanisms, which in the unconscious were able to produce symptoms, became illogical and useless in the conscious.

394. Congenital Aortic Stenosis.

QUIVRAT and MONQUIN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 21st, 1921) report a case of congenital aortic stenosis in a boy aged 5 years, manifested by a loud rough murmur, most intense in the second intercostal space to the right of the sternum, a distinct thrill along the innominate and left common carotid, lowering of the apex beat, absence of cyanosis and deformity of the fingers, and associated with other malformations and arrests of development—namely, cryptorchidism, absence of the xiphoid cartilage, microdontism and other dental defects, suggesting hereditary syphilis. The serum reaction, however, was negative, both in the child and the father, who was suffering from congenital pyramidal cataract, an affection sometimes due to syphilis.

395. The Virus of Febrile and Genital Herpes.

FONTANA (*Pathologica*, August 15th, 1921) observed, two or three days after inoculation of the cornea of rabbits with the contents of herpetic vesicles and throughout the duration of the keratitis, a rise of temperature which was always above 104° F., and might be as high as 106.8° in the rectum. On repeating the inoculation of the virus of herpes in the cornea of rabbits who had recovered from previous keratitis, he observed three to four hours later an intense conjunctivitis, followed by slight involvement of the cornea, which lasted four to six days, after which all the symptoms disappeared without leaving any trace. At the same time there was a slight rise of temperature. Fontana considers that this phenomenon is not due to the simple local trauma, but is a manifestation of allergy.

SURGERY.

396. Abdominal Contraction in Diagnosis.

KOHN (*New York Med. Journ.*, September 21st, 1921) suggests the abdominal contraction method in diagnosis as of value in co-operation with inspection, palpation, percussion, and auscultation. While recumbent the patient takes a deep breath and then bears down as in defaecation, the diaphragm and abdominal muscles being contracted while the perineal muscles are relaxed. The contracted muscles, with the associated downward pressure so modify the sounds ordinarily obtainable from a lax abdomen as to enable the tones from the different organs to be more clearly differentiated by percussion or palpation. The stomach and bowels, by becoming more anterior and lower, are often made more accessible for study—weakness or asymmetry in the abdominal wall, visceroptosis, gastric dilatation, etc., being more plainly detected, while percussion over the contracted abdomen often enables the stomach to be more readily outlined and differentiated from the colon. In vaginal and rectal examinations the method is also useful.

397. Volvulus of the Small Intestine.

DESCOMPS (*Bull. et Mém. Soc. de Chir. de Paris*, July 12th, 1921), who reports two cases operated on by Ginesty and Rudelle, states that though torsion of the small intestine and its mesentery is not so common as torsion of the sigmoid and meso-sigmoid, to which the term volvulus is usually applied, it is more frequent than is generally supposed. Numerous cases were reported to the Société de Chirurgie in 1898, 1901, 1907, and 1914, and an article based on a large number of cases was published by Guibé in the *Revue de Chirurgie* in 1907, since when Descomps has collected 15 cases from the literature. Examples of volvulus of the small intestine accompanied by hernia, as in the cases reported by Ginesty and Rudelle, are exceptional. Thirty cases were collected by Guibé, to which Descomps has been able to add only 4 more. In a few of these cases the volvulus of the small intestine was strangulated in a hernial sac, in others the intestine though twisted was not strangulated, and in the largest number of cases the volvulus was entirely independent of the hernia. Entero-mesenteric volvulus is usually classified in three groups: (1) Volvulus perpendicular to the axis of the intestine, which is much the commonest type; (2) volvulus parallel to the axis of the intestine, which is much rarer; (3) complicated volvulus, which is exceptional. Complete volvulus is much more frequent than partial volvulus, which occurred in the cases reported by Ginesty and Rudelle.

398. Diphtheritic Paralysis of Accommodation.

POULARD (*Paris méd.*, July 16th, 1921) remarks that in diphtheria loss of accommodation is due to paralysis of the ciliary muscle, whereas in presbyopia it is caused by a change in the lens, which loses its elasticity and becomes hard and rigid and resists the contractions of the ciliary muscle. In both instances the visual disturbance is the same, except that the loss of accommodation in presbyopia takes place slowly and progressively in elderly persons, whereas the loss of accommodation in diphtheritic paralysis takes place suddenly in young subjects. Myopic subjects suffer least from paralysis of accommodation because they have no need to accommodate for near vision. Hypermetropic subjects, on the other hand, suffer most because they have to accommodate more than persons with normal vision for near objects, and have also a greater or less amount of disturbance of distant vision according to their degree of hypermetropia. Presbyopic subjects are little affected because they have become progressively accustomed to dispensing with accommodation. Unlike the paralysis of accommodation met with in syphilis, diphtheritic palsy is bilateral and appears simultaneously in both eyes. It is exclusively confined to accommodation, and does not affect the iris. It is incorrect to state, as is done in some textbooks, that diphtheritic paralysis is characterized by loss of the pupillary reflex to accommodation and by preservation of the reflex to light, as the pupils react both to light and accommodation. In syphilis, on the other hand, each eye is involved separately, and if both eyes are affected there is a long interval between each attack. Moreover, the iris is also implicated at the same time, and often the other motor muscles of the eye. Diphtheritic paralysis of accommodation is not a serious condition, and always clears up in a few weeks without leaving any trace. Injection of serum is unnecessary. While the paralysis lasts the patients may be given glasses to correct the visual defect.

399. Manipulation of Stiff Joints.

Sir Robert Jones (*Journ. Orth. and Surg.*, August, 1921), in discussing when a stiff joint should be moved and when rested, shows that it is a matter of diagnosis between a joint stiff from arthritis or one hampered by adhesions, etc. A painful joint rigid in all directions is arthritic, while one rigid in certain directions and normal in others is free from arthritis, there being no arthritis in a joint free from limitation of movement. An arthritic joint requires rest, while one restricted in movement by extra-articular adhesions requires active and passive movement. Adhesions may be avoided by early active and passive movements, which should be painless and merely directed to assist the patient to move the joint himself. In joint injuries unaccompanied by fracture movements may commence immediately upon the cessation of acute symptoms. Light adhesions may be broken down under gas or gas and oxygen, but if strong and resistant, full anaesthesia is best. In the presence of a fracture near a joint, passive movements and the breaking down of adhesions must be most carefully performed, the fracture being protected from strain by splinting. A diminution in the range of movement after use and exercise indicates that the joint requires rest, but if the range of movement is increased by exercise, rest is contraindicated even in the presence of pain.

400. Gastrectomy.

De Martel (*Amer. Journ. of Surg.*, August, 1921) describes his technique in gastrectomy, which has given very good results. Prior to operation, with the view of avoiding infection of the sutures, the mouth and teeth are attended to, with daily stomach lavage, except in cases subject to gastric haemorrhages. With the head and upper part of the trunk horizontal and the rest of the body inclined downwards, an incision is made extending from the xiphoid cartilage to the umbilicus, with, if necessary, a right-angled incision from its lower end to the external border of the right rectus. After clamping off the small intestine the omentum is detached from the colon by the method of Lardennois and Okinczyc and a view obtained of the posterior surface of the stomach, so that it is possible to pass a needle or clamp between the blood vessels of the greater curvature, which are tied and cut at two different points about 3 or 4 cm. apart, and the stomach is freed for a sufficient length to apply the crusher. The incision in the omentum is enlarged and the coronaries tied. With a specially designed crusher the stomach is sutured and the edge invaginated; using the crusher as a tractor the portion to be removed can be elevated, and the duodenum can be tied with horsehair and the stump invaginated. Since the duodenum has no peritoneal covering on its posterior surface, it is necessary after invagination to support it with a supplementary invagination by stitching the peritoneum of its anterior surface to the peritoneum of the anterior surface of the pancreas, covering the whole with a piece of omentum.

401. Notes on 1,600 cases of Spinal Anaesthesia.

Duvergey (*Gaz. hebd. des Sci. Méd. de Bordeaux*, August 7th, 1921) has performed spinal anaesthesia in 1,635 cases—namely, in 931 operations on the lower limbs; 127 operations on the perineum, anus, urethra, vagina, and rectum; in 459 subumbilical abdominal operations (bladder, prostate, hernia, appendicitis, and gynaecological operations); in 83 supra-umbilical operations (stomach, liver, kidneys, intestine, abdominal wall); and in 35 operations on the thorax (lung, breast). The drugs used were 5 per cent. allocain-adrenaline, or 5 per cent. syncain. In the great majority of cases lumbar puncture or the low operation was used. The quantity of spinal fluid withdrawn was in direct relation to the level of the anaesthesia desired. Not less than 8 to 10 c.cm. were withdrawn, so as to avoid headache, and not more than 20 c.cm. When only 10 c.cm. are withdrawn the anaesthesia tends to be localized, but when 20 c.cm. are withdrawn its action becomes diffuse. In operations on the lower limbs, anus, urethra, bladder, and rectum, puncture between the second and third lumbar vertebrae with removal of 10 c.cm. of spinal fluid is followed by anaesthesia extending up to the umbilicus. The dose of allocain or syncain depends on the patient's general condition, age, sex, weight, duration of the operation, and state of the liver, kidneys, and heart. After several years' experience, Duvergey considers that 2 cg. of allocain or syncain should be injected for every 10 kilograms of body weight. An individual of 60 kilograms will therefore require 12 cg. anaesthetic. He has never exceeded 15 cg. even in long operations. In a short operation on a lower limb he has often obtained complete anaesthesia with 5 or 6 cg. allocain. In transvesical prostatectomies 5 cg. allocain is sufficient after removal of 8 to 10 c.cm. spinal fluid. High puncture was performed in 110 cases, almost always between the ninth and tenth dorsal vertebrae. In the high operation only small quantities of spinal fluid should be withdrawn—10 c.cm. at most—and the dose of the anaesthetic should be very small—1 cg. on the average to 10 kilos of body weight. One death occurred in Duvergey's cases, after high anaesthesia, between the sixth and seventh dorsal vertebrae, in a patient with abscess of the lung. Towards the end of the operation severe syncope developed. Resuscitation followed artificial respiration, but consciousness did not return, and death took place eighteen hours later. Incomplete anaesthesia occurred in 3 per cent. In 4 per cent. the anaesthesia was of short duration. Complete anaesthesia, which was obtained in 87 per cent., appeared almost immediately after injection, and lasted on the average one and a half to two hours. The only contraindication to spinal anaesthesia, apart from haemorrhage, is marked hypotension and a very bad general condition, when local anaesthesia alone is indicated.

OBSTETRICS AND GYNAECOLOGY.

402. Lacerations of the Cervix.

Kahn (*Med. Record*, September 17th, 1921) recommends digital vaginal examination immediately after the expulsion of the placenta in all cases of excessive bleeding, which is frequently due to lacerations of the cervix and not always to insufficient uterine contraction. Since the condition may be the forerunner of pelvic disorders and may at the time give no symptems, routine examination of the cervix is recommended, just as is done for perineal lacerations, although its actual repair may be postponed until the uterine involution is well advanced, any immediate haemorrhage being controlled by a tampon of sterile gauze. Small tears will heal spontaneously. A routine *post-partum* examination in the second or third week should be made in order to ascertain any pathological condition requiring attention, thereby avoiding possible sequelae, while routine vaginal examinations should be made after delivery in order to determine the degree of any laceration, and, if present, weekly to ascertain its progress.

403. Manual Detachment of the Placenta.

Baumm (*Zentralbl. f. Gynäk.*, August 20th, 1921), from an analysis of the records of the Breslau clinics, controverts the assertion that manual detachment of the placenta is to be regarded as a specially dangerous obstetric manipulation. In a series of 20,000 cases mortality attributable to manual detachment of the placenta was 2.8 per cent. and the incidence of subsequent morbid complications was 34.7 per cent. These numbers refer to all cases. In assessing the etiological part played by the manœuvre regard must be had, however, to coexisting factors, such as the necessity for other obstetric operations, the existence of previous infection, and the degree of haemorrhage characterizing the labour. The dangers consequent on excessive haemorrhage have been specially responsible (according to the author) for the ill repute attaching to the removal of the placenta by hand. Baumm concludes that (in hospital practice at any rate) recourse might without ill effects more freely be had to this procedure.

404. Anal Fissure in the Female.

According to Kossmann (*Zentralbl. f. Gynäk.*, September 10th, 1921), anal fissure in women, which is often regarded as being due in the majority of cases to a stercoral abrasion, is in reality, in the majority of cases, a direct consequence of an injury occurring during childbirth. At the end of the second stage of labour, when the anal ring is greatly stretched, pressure by the foetus may cause slight tears in the neighbourhood of the mucocutaneous junction; these tears cause at first no pain, but render the first evacuation of the bowels *post partum* extremely painful. Subsequently, so long as the fissure persists, defaecation is accompanied by pain, which may continue to be felt for as long as an hour. According to the writer, such a history is characteristic of cases of anal fissure; in thirty consecutive cases coming to operation he found that the symptoms directly followed childbirth. Fissures are never found to the right or left of the anus, very rarely behind it, and almost always near its anterior margin—that is, in the line of maximum pressure of the oncoming foetal head. Cases which do not quickly heal after antiseptic applications—for example, of ichthyol, and rectal injections of oil—should be brought to operation.

405. Observations on Haemorrhages of Ovarian and Tubal Origin.

SCHUMANN [illegible] (*Amer. Med. Assoc.*, August 27th, 1921) advises that a diagnosis of extrauterine pregnancy should never be definitely made until an embryo is found or evidences of decidual and placental formation are revealed by the microscope. This is particularly true in cases in which the social state of the patient precludes legitimate pregnancy. When massive haemorrhage takes place from an ovary there is usually, if not always, to be found some disease of the ovarian blood vessels. Normal ovaries do not give rise to such haemorrhage.

406. Torsion of the Tube during Advanced Pregnancy.

TORSION of the Fallopian tube alone, according to HOFMANN (*Zentralbl. f. Gynäk.*, August 20th, 1921), is not of extreme rarity; the author is able, however, to record an unusual instance in which this event took place during the eighth month of pregnancy. The sudden appearance of severe abdominal pain, accompanied by a tumour in the ileo-caecal region, led to laparotomy for suspected appendicitis; the right tube exhibited in its proximal third torsion through 360 degrees, and more distally showed enlargement, which was found to be due to haemorrhagic infiltration of the wall unaccompanied by hematosalpinx. Predisposing factors existed in that the tube was unusually long (15 cm. after being untwisted) and that the mesosalpinx was short.

PATHOLOGY.

407. Bacteria in Upper Air Passages.

BLOOMFIELD (*Johns Hopkins Hosp. Bull.*, September, 1921) studied the localization of bacteria in the upper air passages and its bearing on infection. Eight healthy workers in the bacteriological laboratory, and exposed to infections in the wards, were examined, five swabs being taken from the tongue, posterior pharyngeal wall, each tonsil, and the anterior nares. In the nose *Staphylococcus albus* was constantly present, and various diphtheroids almost constantly, with variable transient pathogenic and non-pathogenic bacteria. The tongue showed mainly normal flora, while the tonsils and pharynx showed also transients and organisms carried in diseased tissue, clearly showing that when foreign organisms were carried their breeding place was usually here. Bacteria do not as a rule grow free on the mucous surfaces of the upper air passages, special conditions—for example, either a local infection or transient invasion—being necessary to account for the presence of foreign organisms.

408. Diphtheria Immunization.

JACKSON and PERKINS (*Therap. Gaz.*, September 15th, 1921) investigated the value of the Schick test as to individual susceptibility to diphtheria and the acquirement of immunity by administering diphtheria toxin-antitoxin. Of over 560 patients and nurses tested, less than 15 per cent. gave a positive Schick reaction, and twelve weeks after these positive cases had received three immunizing doses of toxin-antitoxin, each injection being followed by an interval of from five to seven days, re-testing showed that 8 per cent. (or 1.25 per cent. of the 560) were still positive. The remedy is of little value in checking an epidemic, since twelve weeks are required to establish immunity, though it may be of use in an infected area where it is impossible to locate and isolate carriers and where occasional cases are constantly occurring. To ensure complete immunization a re-test must be made twelve weeks after the first administration of diphtheria toxin-antitoxin, a further period being required if the reaction is still positive; 0.2 c.cm. of toxin mixed with normal saline solution is injected intradermally in the forearm, a control with heated diphtheria toxin being made into the opposite arm, or, if in the same arm, at least two inches from the first.

409. Pineal Teratomata and Sexual Precocity.

BOEHM (*Frankfurter Zeit. für Path.* and *Zentralbl. für Gynäk.*, October 1st, 1921) in sixty records of tumours of the pineal gland found seventeen to be classed as teratomata. In seven of these and in five sarcomatous tumours there was a record of precocity in genital and also usually in bodily development; without exception the individuals concerned were males from 4 to 16 years. According to the author there is ground for suspecting a reciprocal influence between the pineal and testicular internal secretions. It is probable that the pineal gland possesses the function of keeping in abeyance until the onset of puberty the development of the primary and secondary sexual characters. (Precocious puberty in females shows, on the other hand, no dependence on or connexion with the pineal gland.) The case is related of a boy, aged 9½, who, together with the clinical signs of cerebral tumour, showed precocious development of the genital organs and premature secondary sexual characters. Autopsy showed a pineal tumour the size of a pigeon's egg which microscopically proved to be of teratomatous nature, containing derivatives of the three blastodermic layers. There were numerous large cells with abundant cytoplasm and round vesicular nuclei which recalled the appearance of Leydig's testicular cells.

410. Biological Study of the Undifferentiated Cell of Acute Leukaemia.

AN attempt is made by [illegible]SINGER and BROUSSOLE (*Ann. de Méd.*, August, 1921) to shed light on the nature of the peculiar cell encountered in acute cases of leukaemia. The cell in question is a mononuclear non-granular one, resembling in some respects a large lymphocyte, but differing from it in that it is much larger, that its nucleus is often oval or indented, that its chromatin network is less dense, that one or more nucleoli are frequently present, and that occasionally at one side of the nucleus only there is to be made out a fine area of basophile protoplasm. Realizing the insufficiency of the information to be gained from morphological studies, they have directed their attention to the biological properties of the cell, particularly to an investigation of the proteolytic and the oxydase reactions. As a rule, both these reactions are positive in the case of the myeloid type of cell and negative in that of the lymphoid type. A review of the literature showed that of 22 cases of acute leukaemia in which the proteolytic reaction was tried 12 were positive and 10 negative, while of 55 cases in which the oxydase reaction was tested 29 were positive and 26 negative. In 3 cases of their own both reactions were negative. It would appear that the characteristic cell of acute leukaemia is a young cell, which is thrown into the circulation before complete differentiation has had time to occur. In their opinion further development may take place, leading to the evolution of either a myeloid or a lymphoid type of cell. For its early stage they propose the name of "undifferentiated cell." No proof, however, in favour of the common origin of the myeloid and lymphoid types of cells is brought forward, and their apparent supposition to this effect on the evidence given seems to be unwarranted.

411. A Study of the Tubercle Bacillus Treated by Bile.

CALMETTE, BOQUET, and NEGRE (*Ann. Inst. Pasteur*, September, 1921) describe further experiments conducted with a tubercle bacillus of bovine origin which had been rendered avirulent by a long series of subcultures on a glycerin bile potato medium. A number of guinea-pigs were taken and divided into two equal sets. One set was given a preliminary dose of 1 to 5 mg. of the bacilli; the other set served as a control. A month later all the animals were inoculated by the intraocular route with tubercle bacilli of known virulence. All the control animals died with large caseating cervical glands and multiple tuberculous lesions, particularly in the lungs and spleen. On the contrary, the guinea-pigs which had been previously vaccinated remained in perfect health for from two to three and a half months after the infecting dose, at the end of which time they were killed. Autopsy showed that only one or two cervical glands were enlarged to the size of a lentil or small pea; histological examination demonstrated the absence of caseation and the presence of very scanty bacilli. Cautious in their conclusions, they content themselves with remarking that the tuberculous infection pursues quite a different course in the vaccinated guinea-pigs from that in the controls.

412. Experimental Researches on the Joint Lesions caused by B. typhosus.

ANZILOTTI (*Pathologica*, August 15th, 1921) carried out experiments which illustrate the pathogenic action of *B. typhosus* after intra-articular injection, and form an experimental contribution to the infective etiology of arthritis deformans. Broth cultures of *B. typhosus* were injected with all possible aseptic precautions into the knee-joints of rabbits, with the result that lesions were produced closely resembling those of arthritis deformans. Similar lesions could not be obtained by injection of chemical agents or other organisms, such as the staphylococcus.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

413. Treatment of Auricular Fibrillation by Quinidine.
VAN TILBURG (*Nederl. Tijdschr. v. Geneesk.*, September 24th, 1921) has treated ten cases of auricular fibrillation in Stumpff's clinic at Amsterdam with quinidine. Some of the patients were suffering from valvular disease and others from nephritis and arterio-sclerosis. In eight cases a favourable result was obtained, and in two there was no effect. In some cases the desired result was achieved very rapidly, while in others a considerable time elapsed before the pulse became regular. In some cases the pulse remained regular after withdrawal of the drug, and in others the irregularity quickly returned. The author thinks it advisable to start treatment with small doses, and only after three or four days to give the usual dose. Thus the dose on the first day should be 200 mg., on the second day 200 mg. twice a day, on the third day 200 mg. four times a day, and on the fourth day 400 mg. three times a day. The doses may be even higher, such as 0.5 gram three times a day, and von Bergmann and Jenny have given 2 to 3 grams a day without bad effect. The drug should be given after meals and in capsule form. After the desired effect has been obtained it is advisable to diminish the dose slowly and to increase it when extra-systoles reappear. (See BRITISH MEDICAL JOURNAL, October 1st, pp. 514 and 511.)

414. Traumatic Epilepsy.
VONCKEN (*Arch. méd. belges*, August, 1921) records four cases of traumatic epilepsy which illustrate the following points: (1) The symptoms are not always due to a localized irritation of the Rolandic area. (2) A neuropathic personal or family history is not a necessary antecedent. (3) There is a great variety in the date of appearance of the convulsive attacks; the first symptoms may develop as late as eighteen months after the trauma. (4) In addition to the ordinary lesions which constitute the direct cause of convulsive attacks, such as splinters of bone, foreign bodies, localized infection, and adherent scars, the existence of traumatic cysts which may be single or multiple must be taken into consideration. (5) When the cranial and cerebral lesions are not definitely localized and the *x* rays do not show the presence of a foreign body or cranial irregularity, operation is contra-indicated; on the other hand, a definitely localized cranial or cerebral lesion justifies operation. (6) Chloroform is preferable to local anaesthesia.

415. Jaundice following Treatment of Syphilis by Novarsenobenzol.
BODIN (*Bull. Soc. Franç. de Derm. et Syph.*, No. 6, 1921) reports a series of three sets of cases each of whom was suffering from syphilis, and each of whom was treated by novarsenobenzol. In each set cases representative of all stages of the disease were included, and each set was sufficiently large to permit of the exclusion of chance variations. The first set, which was treated from 1912 to 1914, comprised 254 cases; to each patient 2.5 to 3 grams of novarsenobenzol coming from Firm A was given. The second set, treated in 1919, comprised 113 cases: 4 to 5 grams of novarsenobenzol coming from Firm B was given. The third set, treated in 1919-20, comprised 472 cases; 4 to 5 grams coming from Firm C was administered. In the first set the incidence of jaundice was 0.78 per cent., in the second set 1.77 per cent., and in the third set 7 per cent. From these figures he draws the conclusion that the greater the dose of this drug the more likely is jaundice to appear, and that the toxicity of novarsenobenzol provided by different firms is very varying in degree. All the evidence goes to show that it was the drug and not the syphilitic infection which was the cause of the jaundice in these cases.

416. Capillary Microscopy of X-ray Erythema.
DAVID (*Zentralbl. f. inn. Med.*, September 3rd, 1921) states that examination of *x*-ray erythema with the ordinary methods has shown that the principal lesion consists in changes in the capillaries, such as dilatation, degeneration of the intima, and obliteration of the vessels. After Müller and Weiss had introduced capillary microscopy, David began to employ the method for investigating these changes in the living subject. His results were as follows: The first reaction consisted in a dilatation of the vessels at the junction of the arterial with the venous circulation. These changes occurred before anything could be detected with the naked eye, and appeared even earlier if the affected limb was congested. By the use of capillary microscopy David was also able to detect changes in the capillaries, for instance, abnormal tortuosity, or spasm in certain diseases, such as nephritis, earlier than in healthy persons. The same dose, for example, produced in six days changes in a nephritic subject which did not appear in a normal person till after ten days. In vasomotor and vagotonic subjects characteristic vascular changes were seen the capillaries being very long and some much dilated and abnormally tortuous. Similar appearances were found in cases of hyperthyroidism, and especially in Graves's disease. The reactions appeared extremely early, probably owing to the large size of the capillaries. The significance of capillary microscopy in *x* ray work consists, therefore, in enabling one to predict the individual susceptibility and determining the reaction quicker, so that a firm basis for the dosage is obtained.

417. Gastro-intestinal Arterio-sclerosis.
CURATOLO (*Il Policlinico*, Anno xxviii, fasc. 28) discusses arterio-sclerosis as it affects the gastro-intestinal organs. He says the symptoms may take three main types: (1) Gastralgia, with sudden severe epigastric pain accompanied by a sense of terror and impending death, nausea, vomiting, meteorism, and pallor; (2) gastrorrhagia; (3) dyspeptic, usually of the atonic form. When the intestines are affected the patient may get colic, coming on during digestion, with violent pain around the umbilicus, eructations, retching, and constipation. Or he may have troublesome diarrhoea, with cramp; if ulceration is present some bleeding may occur. In the thrombotic form there are signs of peritonitis, severe pain about the umbilicus, and collapse. The abdomen is much distended. Middle-aged women are more liable to this thrombotic form than men, and sometimes the enlargement of the abdominal aorta can be felt. One of the most serious complications of abdominal arterio-sclerosis is obliteration of the mesenteric artery. The prognosis is not bad in the colic and ulcerative forms, but very bad in the thrombotic types. The treatment is that for other forms of arterio-sclerosis elsewhere.

418. The Action of Diuretin in Nephritis.
SIMICI and VÂRGOLICI (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, May 17th, 1921), as the result of their observations, have found that intravenous injection of diuretin (theobrominae et sodium salicylas) yields satisfactory results as regards diuresis in nephritic patients who react poorly to diuretics given by the mouth. The increase in diuresis is greater both as regards the amount of urine and that of the chlorides and urea excreted in the twenty-four hours. They also found that intravenous injection of diuretin yields the same results in nephritic patients who can no longer take drugs by the mouth.

419. The Incidence of Goitre in Different Social Strata.
KJÖLSTAD (*Norsk Mag. for Laegevidenskaben*, October, 1921) has investigated the incidence of goitre among school children in Telemarken, the district in Norway in which goitre is most common. A thyroid which was palpable but not visible was regarded as normal, and only when a swelling of the thyroid could be seen while the patient sat upright was it regarded as pathological. The author admits that this distinction between normal and pathological was rather arbitrary, and when in doubt as to the line of demarcation between the two, he regarded the condition as normal. The gland was enlarged in 309 out of 537 girls (57.5 per cent.), and in 285 out of 510 boys (55.8 per cent.). When he classified these school children according to their social status he found that the lower this status the higher was the incidence of goitre. Thus among the boys belonging to the professional classes the incidence of goitre was only 33.3 per cent.; it was 55.7 per cent. among boys of the farmer class, and 61.3 per cent. among the sons of labourers. A similar state of affairs was found among the girls belonging to the above three social strata, and the author therefore concludes that hygienic factors determined by the social status of

the child play a considerable part in the appearance or non-appearance of goitre. He admits, however, that other factors, such as the character of the drinking water, may also play an important part.

420. Diabetes and Traumatism

HEGER (*Le Scalpel*, June 25th, 1921) records a case which seemed to him to support the view that diabetes may follow injury. A boy, aged 14, was knocked down by a car and sustained a fracture of the base of the skull, with perforation of the right membrana tympani. He was unconscious for four days. The urine, collected by catheter, contained neither sugar, albumin or bile, specific gravity 1012 and acid. Fifteen days later the boy had so much improved that he was sent home. Soon after this he began to waste, developed polyuria, weakness, and mental depression. Five weeks after the accident he was passing three and a half litres of urine per diem, containing 139 grams of sugar and an excess of phosphates; there was no albumin. Before the accident the boy had enjoyed good health. Under appropriate treatment the glycosuria disappeared in four or five months; at the end of the sixth month there was no trace of sugar, and the boy was in good health. The author also recalls a case of existing diabetes which was made much worse as the result of a car accident.

421. Tuberculosis and Chvostek's Symptom in Children.

POLLITZER (*Il Policlinico*, Sez. Prat., August 8th, 1921), after alluding to Olliari, who found Chvostek's symptom in 78.3 per cent. of 1,500 rickety children and in 18.4 per cent. of children not affected with rickets, states that he undertook an investigation to determine the frequency of tuberculosis in non-rickety children who presented Chvostek's sign. All the children examined were aged from 6 to 8 years. Pulmonary tuberculosis was found in all, the diagnosis in some being easy and in others only made by radioscopy. Chvostek's sign was sometimes typical and sometimes ill-marked, being confined to one branch of the facial nerve, and often obtainable only on the right or left half of the face. Pollitzer comes to the conclusion that there is a close relationship between tuberculosis and Chvostek's symptom, which may be the result of specific intoxication. The intoxication may be a cause of functional changes in the parathyroids, the connexion of which with the spasmophilia has been clearly proved.

422. Laryngospasm and Tetany in Adults.

FRONTALI (*Il Policlinico*, Sez. Med., July 1st, 1921) states that tetany in adults, except in pregnant and nursing women, is rare in Italy. It is also rare in the countries of Northern Europe, such as Sweden, while it is frequent in Germany and Austria, where it chiefly affects young persons belonging to the working classes between the ages of 17 and 25, and appears at certain months of the year with such frequency as to resemble an actual epidemic. Spasm of the larynx in adult tetany is a rare event. Pineles in 1908 reported four cases in adults aged from 32 to 45, and Frankl-Hochwart noted it in 8 out of 122 cases, or 6.5 per cent. Frontali records a case of laryngospasm in a workgirl, aged 27, employed in a tin factory, who had five attacks of tetany. The first and last attack had no obvious exciting cause, the second followed emotion due to the death of her father, and the third and fourth were associated with coryza and were characterized by laryngospasm sufficiently severe on one occasion to require intubation. The rarity of laryngospasm in the tetany of adults as compared with infantile tetany is to be attributed to anatomical and physiological differences between the adult and infantile larynx. In Frontali's case the larynx, which had not been involved in the previous attacks, presented a spasm when it was affected by a slight inflammatory process. There was a retention of calcium equivalent to 37.73 per cent. of the amount introduced in the course of three days, and there was a well-marked increase in the tonus and excitability of the vagus.

SURGERY.

423. Paralysis of Eye Muscles in Mastoiditis.

MCELLISON (*Brit. Journ. Child. Dis.*, July-September, 1921) reports two examples of this condition in boys, aged 12 and 10 years respectively. In the first case the paralysis came on after operation for acute symptoms arising in the course of chronic suppuration, and in the second in the course of simple acute mastoiditis. In neither case was any extension of disease found towards the tip of the petrous bone. Both cases had certain features in common—namely, pain about the affected eye, nausea or vomiting, slow pulse combined with paralysis of the levator palpebrae superioris, but in the first case the paralysis of the third cranial nerve and in the second of the sixth cranial nerve was present. Some form of meningitis was probably responsible for involvement of individual cranial nerves, though the evidence of this was very poor in the second case.

424. Local Anaesthesia in Difficult Cystoscopy.

VON LICHTENBERG (*Zentralbl. f. Chir.*, August 6th, 1921) agrees with Döderlein that deep anaesthesia in difficult cystoscopies has not become so popular as it deserves to be. The technique is relatively simple, causes little trouble to the patient, and can be carried out with 20 c.cm. of 1 to 2 per cent. novocain solution. The twenty minutes required for complete anaesthesia are compensated for by the rapid and free examination which it renders possible, and the time can be occupied in washing out the bladder. In spite of occasional failures no other method produces anything like such a complete immobilization of the bladder. After more than eight years' employment of the method von Lichtenberg warmly recommends it. A warning, however, is needful. In examination of a tuberculous bladder during sacral anaesthesia the surgeon should be content with only a slight unfolding of the bladder wall, so as to avoid rupture.

425. Fall of Blood Pressure in Splanchnic Anaesthesia.

BOUMA (*Zentralbl. f. Chir.*, August 27th, 1921) states that since the beginning of 1920 Braun's method of splanchnic anaesthesia has been employed in a number of cases at the Groningen University Surgical Clinic with very satisfactory results. In eleven cases only two failures occurred. In all the others complete analgesia of the abdominal viscera developed almost immediately after the injection, so that five operations for gall stones and four gastro-enterostomies could be carried out under complete anaesthesia. In most of the cases the blood pressure was measured every three to five minutes throughout the course of the operation. In five cases there was a considerable fall of blood pressure, accompanied in one instance by a very alarming condition of collapse. According to Bouma, this fall of blood pressure, at least in part, is of reflex origin and is caused more by the injection than by infiltration. Although he has never seen a fatal case, the occurrence is a disadvantage, especially in debilitated gastric patients.

426. Protargol in Gonorrhoea.

HUHNER (*Med. Record*, September 10th, 1921) considers protargol to be the best injection material in gonorrhoea, claiming that it gets rid of the gonococci more certainly than any other drug. In most cases the discharge lessens as the gonococci disappear, but even when the pus cells are not diminished the organisms disappear. In order to prevent any irritation which may sometimes follow its use in stronger solutions, the use of physiological saline solution instead of distilled water for dissolving the protargol is advised, since strong solutions (2 per cent.) so prepared cause very little burning, and in many cases no increase, and even a diminution, in the urethral discharge.

427. Extirpation of the Suprarenals in Epilepsy.

SPLEHT (*Zentralbl. f. Chir.*, September 17th, 1921) came to the following conclusions as the result of 200 experiments on animals for the purpose of testing Fischer's claim that epileptic convulsions could be cured by extirpation of the suprarenals: (1) After removal of one suprarenal and of the largest part of the other at the same time, a complete cessation of the convulsions caused by amyl nitrite could not be effected, a prolongation of the interval between the convulsions was only exceptional and by no means a regular occurrence, and the convulsions took place at about the same time, or even earlier than before. (2) After removal of one suprarenal the possibility of the hypertrophy of the other within a short time must be reckoned with, as well as the regeneration or hypertrophy after partial resection, especially of the cortex, which is exactly that part of the suprarenal which, according to Fischer, plays the chief part in the production of convulsions. Lastly, it is probable that the inter-renal system, which is so well developed in man, takes on a vicarious function after a certain time, so that on this account a permanent success could not be expected.

428. Treatment after Cataract Operations.

MILLETTE (*Arch. of Ophthal.*, September, 1921) urges the least possible interference with the patient's psychic and physical activity in the post-operative treatment of cataract operations, with the view of eliminating as far as possible the pain in the back, mental symptoms, and bladder and kidney troubles, which frequently result. Directly after the operation the eye is closed naturally and the lids of both eyes are covered with vaseline, and a half-round pad, over which is placed a full-round pad, is fastened on with adhesive strips. Over these dressings on the operated eye an aluminium shield is further secured with adhesive strips. If the patient complains of his back he is turned on to the unoperated side. The next morning the dressings are removed and the eye is opened and examined, the two pads being replaced on the operated eye only; on the second morning a pad is merely hung loosely over the eye in order to free the lids, and the patient is allowed to sit up and almost complete freedom of action permitted; on the third or fourth day dark glasses, or a brow shade, are ordered and the patient is kept in a slightly darkened room. A pad and metal shield or mask are placed over the eye at night, and glasses can be fitted after two or three weeks. Under this more or less open treatment it is claimed that fewer inflammatory processes arise, there being less painful backs, mental disturbances, and freedom from attacks of acute retention of urine and kidney lesions.

429. Treatment of Acute Glaucoma.

CANTONNET (*Paris méd.*, September 3rd, 1921) maintains that when the general practitioner meets with a case of glaucoma he should send it without delay to a specialist who will operate on it as soon as possible. In order to avoid sudden decompression at the time of iridectomy, textbooks recommend evacuation of a small amount of aqueous humour before the operation. Cantonnet, however, prefers what he calls "a drop by drop pilocarpine method," which consists in instilling into the eye a drop of a 2 per cent. solution of pilocarpine every half-minute for a period of ten minutes, and after half an hour repeating the process for another ten minutes, and so on for a whole day or half a day. The following day, if the tension has diminished, as usually occurs, the treatment can be done less frequently and for a shorter time. By this means the tension may be considerably reduced. Operation may then be performed without fear of sudden decompression, and the results are much better.

430. The Cause of Pain after Operation for Gall Stones.

POPPERT (*Zentralbl. f. Chir.*, September 17th, 1921), while not denying that adhesions may sometimes give rise to painful sensations after operations on the bile ducts, mentions that the pain due to this cause is never intolerable and is quite distinct from the attacks of colic, which, in well marked cases, closely simulate true biliary colic, the pain being as violent as before the operation. The duration and intensity of these attacks differ considerably. Pronounced jaundice is rare, but slight discoloration of the sclerotics is frequent. Fever is usually absent. Poppert attributes these attacks to a relapsing cholangitis, and has recently obtained bacteriological confirmation of this view, having been able by special cultural methods to demonstrate the presence in the liver of such bacteria as staphylococci, streptococci, and paratyphoid bacilli.

431. Decortication and Pneumopexy in Chronic Fistulous Empyema.

DONATI (*Archiv. Ital. di Chir.*, July, 1921) records a case of chronic fistulous empyema which, in spite of several operations, would not heal, and in which he brought about cure by decortication and pneumopexy according to a technique elaborated by himself. The various stages of the operation are well illustrated by a series of schematic photographs, and illustrations of the appearances of the patient before and after operation are given. Some slight post-operative collections of sero-pus had to be treated and the ends of necrosed rib removed, but this was not serious, and was probably due to the difficulty of procuring freedom from infection in old-standing wounds of this character. The patient, aged 19, had empyema in April, 1920, which was tapped several times and finally drained by rib resection, but as this did not give adequate drainage further rib resection was done in July, and much better results obtained in that the lung did not expand. The operation described by the author was performed in August. Twenty-five days later the wound was healed and the lung well expanded. Later a small collection of pus formed in connexion with necrosis of the rib, but after the necrosed bits were removed (in October) no further trouble occurred, and when the patient was seen in April, 1921, the conditions were excellent.

432. Pyloric Exclusion after Gastro-enterostomy.

BORSZÉKI (*Zentralbl. f. Chir.*, July 23rd, 1921) states that recently much has been written about the bad results of pyloric exclusion after gastro-enterostomy. Keppich has shown experimentally that the occurrence of jejunal ulcer is causally connected with pyloric exclusion, and according to von Haberer there is clinical confirmation of this. Borszéki, however, affirms that long ago many experimenters, including himself, succeeded in producing jejunal ulcers after simple gastro-enterostomy without pyloric exclusion, showing that the latter is not the only cause of jejunal ulcer. He is of opinion that the number of jejunal ulcers has only become more frequent since attention has been directed to them, and that they may occur after any form of gastro-enterostomy quite independently of its character and technique. Until he is convinced of the contrary he is determined not to abandon the practice of pyloric exclusion which he has found of value, especially in cases of perforated duodenal ulcer.

433. The Dangers of Ethyl Chloride Anaesthesia.

LOTHEISSEN (*Zentralbl. f. Chir.*, September 24th, 1921) of Vienna, who alludes to the case recently reported by Jäger (vide EPITOME, October 8th, No. 320), remarks that it is just twenty-five years since ethyl chloride was first employed for anaesthetic purposes, and that he was the first surgeon who made a systematic use of it. Although an anaesthetic free from danger does not exist, he regards ethyl chloride as less dangerous than others. In 1903 he estimated that one fatality occurred among every 17,000 anaesthetized with ethyl chloride, while Luke's estimate was one in every 36,000. War experience has shown that ethyl chloride is an excellent anaesthetic for operations of short duration. Although Lotheissen personally is not in favour of its use in major operations it is quite possible to employ it for this purpose, as Malherbe and van Stockum have shown.

OBSTETRICS AND GYNAECOLOGY.

434. Hypnosis in Gynaecological Examinations and Treatment.

RAEFLER and SCHULTZE-RHONOF (*Zentralbl. f. Gynäk.*, September 10th, 1921) report that at the Heidelberg clinic, for the purpose of systematic instruction to midwife-pupils and to students, hypnosis is employed as a preparatory measure to the vaginal and abdominal examination of pregnant subjects. The patients receive hypnotic treatment half an hour before the instruction classes commence. Suggestion is made that they will fall into a deep sleep, that the abdomen and genital organs will become anaesthetic, that amnesia will follow in respect of the events taking place during the sleep, and that deafness will be induced to all noises and voices save the voice of the hypnotizer. It is recorded that the patients remain perfectly quiet and flaccid during the subsequent examinations, of which they afterwards retain no recollection. In certain cases post-hypnotic anaesthesia of the parts is also induced for forty-eight hours. Raefler records treatment of three gynaecological cases by hypnosis. In the first patient, a nullipara aged 21, suffering from vaginismus, deep hypnosis was secured at the third sitting; at the fourth and fifth, anaesthesia of the vulva was suggested; at the subsequent sittings anaesthesia of the vagina and toleration of the introduction of increasingly large specula were secured. In the waking condition the patient now experienced no dyspareunia, and she speedily became pregnant. The other two cases were examples of dysmenorrhoea in young nulliparae.

435. Leukaemia and Pregnancy.

MEURER (*Nederl. Tijdschr. v. Geneesk.*, September 17th, 1921) records a case of myelogenous leukaemia in a 7-para who gave birth to living twins after a pregnancy of thirty-four weeks. While the blood from the maternal part of the placenta presented all the appearances of leukaemic blood the children's blood was quite normal. The patient was delivered on February 20th and on March 15th *x*-ray applications to the spleen were commenced and continued till the following June. The red cells and leucocytes, which numbered 1,420,000 and 116,000 respectively in February, were 2,110,000 and 93,000 in June. The subsequent history of the case is not recorded.

436 Treatment of Gonorrhoea in the Lower Genito-urinary Tract.

Norris (*Surg., Gyn., and Obstet.*, September, 1921) emphasizes the fact that the early stages of gonorrhoea in the female, when still localized in the urethra, vulva, vagina, and cervix, cause few symptoms and are difficult of recognition. The difficulty which is encountered in destroying the gonococcus during the earlier stages of infection is attributable partly to the inaccessibility of the organism when it has reached the deeper portions of the cervical glands, of Bartholin's glands, and of Skene's tubules, partly to the fact that chemical agents which destroy the gonococcus lose much of their efficacy in the presence of mucus. As a gonococcocidal agent Norris recommends Dakin's solution, 1, 2, or 5 per cent., made up with olive oil; particularly in the cervix preliminary cleansing and removal of mucus by alkaline applications are of great importance. For cases which prove intractable to ordinary therapeutic measures the author recommends the following surgical treatment, which in 17 cases he has found successful, as a quick means of eradicating the gonococcus from its most notable lurking places: (1) Bartholin's glands, if infected, are excised, together with their ducts; if the duct only is inflamed, injections serve to effect a cure. (2) Skene's tubules are destroyed, either by cautery or by splitting them up through an operating urethroscope. (3) In the cervical glands trachelectomy by the Sturmdorf operation, which is the logical procedure, is performed in very stubborn cases only; in the majority of cases dilatation (repeated if necessary) of the cervical canal, followed by application of antiseptic agents, is sufficient. Care must be taken not to dilate the internal os, which would facilitate infection of the uterine body, tubes, and the pelvic peritoneum. It is possible to perform the three surgical procedures at one sitting, under nitrous oxide anaesthesia; if it is subsequently found that a supernumerary Skene's tube has been overlooked, this may be split up under local anaesthesia. All local treatment should be suspended during the menstrual period, when it is advisable to enjoin the Fowler position, or at least to confine the patient to her room.

PATHOLOGY.

437. A New Test for Tuberculosis.

R. Leone (*Rif. Med.*, August 20th, 1921, and *Folia Medica*, No. 9, 1921) describes a new test for tuberculosis which he has tried in about eighty cases of tuberculosis and in fifty normal control subjects. About 20 to 60 drops of blood are drawn from the thumb by a Francke syringe, and after twenty-four hours the serum separated. The serum is heated in a bath at 60° C. for three-quarters of an hour and intradermal reaction practised with two drops. If the reaction is positive, a red infiltrated papule from 10 to 15 mm. in diameter forms at the site of injection in twenty-four to forty-eight hours. If it is negative, no change is noted, or at most a temporary redness. The results were very satisfactory and always negative in the control cases even when syphilis was present.

438. The Bacterial Flora in a Recent Epidemic of Influenza.

Bruyon and Grysez (*Rev. d'Hygiène*, September, 1921) give a short description of an epidemic of influenza in the north of France during the months of April, May, and June, 1921. Amongst the military population only 1.85 per cent. of the total strength were attacked, and of these about 80 per cent. belonged to the 1921 class of recruits. The figures for the civilians were not sufficiently accurately compiled to be worthy of much attention. Lung complications were few and comparatively mild, while the mortality was low. From the sputum of those affected there was isolated a non-capsulated diplococcus, spherical in shape, and growing in short chains of 5 to 6 elements. Apart from this practically no other organisms were found. The *M. catarrhalis*, Pfeiffer's bacillus, and the pneumobacillus were not encountered. The organism was Gram-positive, formed grey or yellowish colonies rather larger than those of a streptococcus, gave rise to a powdery deposit in broth, caused no liquefaction in gelatine, was able to grow in 10 per cent. bile bouillon, was not bile-soluble, fermented glucose, laevulose, maltose, lactose, saccharose, and occasionally inulin; cultures remained viable for months at laboratory temperature. The virulence for mice was very small. After carefully summing up its characters the authors conclude that it is neither a pneumococcus nor a streptococcus, but is most closely allied to the enterococcus. With the patients' serum a positive complement fixation reaction was obtained, while the presence of precipitins could be demonstrated in every case. From the second day of the illness the intradermal reaction, practised with the killed organism, was only negative in one case—a fatal one. The authors express no doubt as to the part that this organism played in the causation of the epidemic, and they draw attention to the fact that this is but one of many outbreaks of influenza in which an organism other than Pfeiffer's bacillus has been found.

439. Corpora Amylacea in Epidemic Encephalitis.

Numerous Italian observers have reported the occurrence of corpora amylacea with strikingly increased frequency in the central nervous system of patients who have died of encephalitis epidemica. Some have even attributed to this increase a significance comparable to that of the Negri bodies in hydrophobia. Gamna (*Arch. per le Scienze Med.*, 1921, Fasc. 1–2) finds that even in young subjects the corpora amylacea in cases of epidemic encephalitis are extremely abundant, considerably exceeding in frequency those found in disseminated sclerosis and other chronically progressive maladies of the central nervous system. In general their number is less in the cases taking a more acute clinical course. The chemical and tinctorial properties, although somewhat variable, do not differ from those of the corpora amylacea in general. Gamna is unable to confirm the finding of certain observers that the corpora amylacea of epidemic encephalitis show special staining properties with iodine and sulphuric acid. The corpora amylacea he finds to be particularly abundant in the white matter of the posterior regions of the cord, medulla, pons, mid-brain, and centrum ovale; from their frequent occurrence in proximity to the cavities which contain cerebro-spinal fluid, and from a study of their histological characters, he is inclined to regard them as a product of slow regressive changes in the nervous rather than in the neuroglial elements, and as taking a centrifugal course tending to their eventual elimination. The more externally situated bodies, which are frequently found near the blood vessels, are in general larger, more dense, more deeply staining, and presumably of less recent formation.

440. The Relation of Recklinghausen's Disease to the Endocrine System.

Lilin (*Arch. Derm. and Syph.*, September, 1921) gives a comprehensive review of the literature on Recklinghausen's disease, together with the report of a case observed by himself. Besides the usual symptoms there are frequently to be noted a number of associated disorders affecting the body generally, such as: (1) sensory disorders, as arthralgic pains, formication, and hyperasthesias; (2) motor disorders, as muscular inco-ordination, increase of reflexes, and asthenia; (3) psychic symptoms, as loss of memory, speech defects, apathy, and melancholia; (4) developmental defects, as facial asymmetry, syndactylism, infantilism, scoliosis, kyphosis, and osteomalacia; (5) digestive complaints, as anorexia, nausea, and vomiting. An association of the disease with affections of the ductless glands seems to be extremely common, and it would appear probable that many of the symptoms should be referred to a disturbance in the function of these glands. Many cases are quoted from the literature showing a very distinct relationship between the onset, course, and aggravation of the disease and quite definite anomalies in the physiology of the thyroid, pituitary, suprarenal, and sex glands. Of 14 cases of Recklinghausen's disease in which the endocrine system was examined at autopsy, 12 showed during life a more or less complete Addisonian syndrome, while the same number revealed at *post-mortem* examination involvement of the suprarenals and other glands. The conclusion is drawn that the disease is a complex of cutaneous and general symptoms depending for its etiology on disturbed endocrine function.

441. Blood Sugar in Intoxications.

According to Löwy (*Zentralbl. f. inn. Med.*, September 10th, 1921), who records eight cases showing the condition of the blood sugar in various intoxications, carbon monoxide asphyxia gives rise to hyperglycaemia, while in carbonic acid asphyxia hyperglycaemia need not occur. Intoxication with narcotics such as morphine, veronal, and chloroform, is accompanied with normal blood sugar values. Intoxication with acids or caustic alkalis gives rise to hyperglycaemia in consequence of absorption of the albumin of the tissue cells. Metallic salts and metalloids only cause hyperglycaemia when the intoxication produces disease of the organs, such as the liver or kidneys.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

442. Diffusion of Tuberculosis.

CALMETTE (*Rev. d'Hyg.*, August, 1921) states that in 1908 Cummins drew attention to the absence of tuberculosis, apart from imported cases, among the natives of the Sudan province of Bahr-el-Gazal. H. Ziemann had never seen a case in the Cameroon hinterland, whereas the disease is frequent in Natal among the Zulus, in the Transvaal, and in Madagascar, and its intensity is almost as great as in Europe in all the towns of North Africa, whereas it is rarer among the nomad tribes of the Arabs and Berbers, who live at the south of the chain of the Atlas. In East Africa Otto Peiper observed that tuberculosis, which was rare among the negroes in the villages, was common in agglomerations consisting of Indians, Arabs, and Europeans. Throughout eastern and equatorial Africa there are only a few nomad tribes on the confines of the Sahara and Nubian desert that are practically free from tuberculosis. In the most civilized countries tuberculosis is responsible on an average for 12 per cent. of deaths, sometimes for 19 per cent., as in Norway and Sweden, and never less than 7.4 per cent. even in the countries least affected, such as Belgium, Italy, Portugal, and Spain. High as this figure is, it does not correspond to the facts, because many tuberculous subjects succumb to other affections which their disease has aggravated.

443. Treatment of Pulmonary Tuberculosis by Guaiacol.

BRACHAT (*Paris méd.*, September 24th, 1921) remarks that guaiacol has been employed for a long time in the treatment of pulmonary tuberculosis, having been introduced into therapeutics by Sahli of Berne, Labadie-Lagrave, Picot, and Pignot. Marfari found that a watery solution of 1 or 2 per cent. sterilized cultures of the tubercle bacillus in two hours, and Bouchard found that a solution of 0.80 per 1,000 prevented their growth. Guaiacol, however, in the pure state, has the disadvantage of being toxic and caustic, while salts of guaiacol, such as the carbonate, benzoate, and sulphoguaiacolate, are of doubtful efficacy. Injection of guaiacol oil in 10 per cent. strength is more efficacious, but painful and variable in its results. On the other hand, Brachat has found that resyl, which is an ether of glycerin and guaiacol, is well tolerated, both when given by the mouth and hypodermically, and has a favourable effect upon the disease.

444. Death in an Adult from a Single Bee Sting.

HANSEN'S (*Ugeskrift for Laeger*, September 29th, 1921) review of the literature of bee stings shows that death following multiple stings is by no means rare. A single bee sting may also prove fatal when the tongue or pharynx is involved and the local reaction is associated with great oedema. As a curiosity, the author records the case of a healthy woman, aged 39, who died four days after a single bee sting on the left leg. The necropsy showed nothing abnormal apart from scattered foci of bronchopneumonia, and there was no sign of sepsis. While most beekeepers gradually become immune to bee stings, this woman's record showed that her reaction to successive stings from time to time was increasingly violent. Apart from her idiosyncrasy, certain other factors combined to render the last sting fatal. While on previous occasions the local reaction had always been violent, on this occasion it was absent. This possibly indicated an intravenous sting, the toxins being conveyed direct to the brain instead of being limited to the site of the sting. Her fear of bee stings may also have added an element of shock to the case.

445. Localized Nitritoid Crises.

BARGUES (*Bull. Soc. Franç. de Derm. et Syph.*, No. 6, 1921) furnishes a report of six cases of localized nervous lesions, transitory in character, consecutive to the administration of novarsenobenzol, which he thinks can be included under the name of nitritoid crises. They occurred both in patients who had received injections intravenously and in those who had been given them subcutaneously. The time of onset varied from a few hours to several days after the last dose, and in some cases they reappeared after each fresh injection, even when smaller doses were administered than that which had provoked the trouble in the first place. The lesions consisted of a paralysis restricted to a particular nerve or series of nerves, such as the hypoglossal, the chorda tympani, or the brachial plexus. In the last case the paralysis was accompanied by an oedema of the dorsum of the hand, together with articular pains. In one case there was very violent pruritus limited to the forearms and the shoulder; in another extreme hyperaesthesia of the skin of the arms. In one patient a paralysis of the tongue appeared a few minutes after the injection, and passed off in half an hour. The duration of the crises was different in the different cases, in some lasting only a few minutes, in others persisting for as long as eight days. The author concludes that these symptoms are dependent on a state of intolerance to the drug, and advises that compounds of the arsenobenzol group should be given with the greatest caution in these cases.

446. Vincent's Angina.

ACCORDING to NETUSIL (*Zentralbl. f. inn. Med.*, September 10th, 1921), the number of cases of Vincent's angina admitted to the Kutvirt clinic at Prague in the years 1914–18 were 6, 2, 6, 7, and 8 respectively, and increased in 1919 to 57. The cause of this sudden rise could not be ascertained. Most of the cases were in men between the ages of 20 and 30. Internal administration of potassium chlorate as recommended by Levinstein shortened the duration of the disease, which was twenty-nine days at most, as compared with forty-one days with other methods of treatment. The advantages of this drug are that it is cheap and easily applied.

447. Pellagra.

Lo Sperimentale (An. 75, fasc. 4, 1921) publishes a full report of the recent Italian Commission for the Study of Pellagra, under the presidency of Professor A. Lustig. They decided definitely against the view put forward by Sambon, and state that no certain case of pellagra was reported in nursing infants (one of the points quoted in favour of Sambon's hypothesis), and in the few cases in older children it was not possible to exclude maize feeding. Similarly, they decide against Alessandri's theory of water contamination as a cause, nor could they accept Tizzoni's germ theory as proved. They agreed that the real cause of pellagra was maize feeding, not altogether because of any specific antivitamin or other substance in maize itself, but because of its insufficient dietetic value. As a food it is inadequate by itself. Whereas the war increased certain infective maladies—for example, tubercle—it lessened pellagra because the feeding in the army was more adequate from a dietetic point of view. Some of the more modern methods of preparing maize are deleterious; excessive grinding and refining of the grain makes it less nutritious. Although the authors believe that pellagra is chiefly due to the poor nutritive value of maize as a food, there still remain certain special symptoms which seem to require some further explanation than deficient food *per se*. But this point of view helps to explain certain pellagrous symptoms which occasionally follow poor nutrition in the absence of maize feeding.

448. The Etiology of Encephalitis Lethargica.

ZANNELLI and SANTANGELO (*Annali d'Igiene*, August, 1921) publish a series of experiments carried out by them to determine the etiology of epidemic encephalitis. They conclude that the etiological agent is a filtrable virus not morphologically defined. Human encephalitis can be transmitted to rabbits and guinea-pigs by means of fluids and of the blood (only the serum of the blood will transmit the virus). It cannot be passed on by the urine. Infection may occur through the subdural or peritoneal routes, the anterior chamber of the eye, or the nasal submucosa. With a sound nasal mucosa transmission could not be effected, nor by the gastric or subcutaneous route. If the nasal mucosa was chilled and its resistance lowered, then infection took place. Positive results were obtained with endoperitoneal injection of the virus. The virus is transmissible in series. Animals of the same species respond in different ways to the virus. Passing the virus in series through animals does not always increase its virulence, and may, indeed, attenuate it. Experiments on precipitates and deviation of the complement were negative.

449. **"Blue Bottom" in Babies**

Sumineri (*La Pediatria*, September 1st, 1921) publishes a study of cases of "blue bottom" occurring amongst children in Messina. The blue stain in question is congenital, or shows itself soon after birth, reaching its maximum intensity within the first year. It generally disappears in the second or third year, but may persist longer. It is more common amongst Europeans than is generally believed, especially amongst dark-skinned children. In Messina the author estimates the percentage of cases under 1 year at 8.69, and in older children at 5. The typical site of the discoloration is the sacro-coccygeal region, but it is not exclusively confined to that—the ventral aspect of the body may also be affected. Consanguinity of the parents, hereditary syphilis, congenital malformations, mongolism, have no relation to "blue bottom"; at the most they may be regarded as concomitant facts. The discoloration has no clinical importance. It may, however, have some interest from the ethnological or medico-legal point of view.

450. **Food Proteins.**

Shannon (*Amer. Journ. Dis. of Children*, September, 1921) suggests the probable relationship of food proteins in breast milk to certain diseases of the nursing infant, basing his argument on anaphylactic experiments on guinea-pigs. In a nursing infant with chronic urticaria improvement rapidly followed when the child was placed entirely on hospital régime, and after a study of the diets of the mother and patient the latter was tested by the cutaneous method with various proteins, definitely positive reactions being obtained to egg white, egg yolk, and oats. Following an analytical investigation by means of anaphylactic reactions on guinea-pigs to prove the presence of some of these proteins in the breast milk after their ingestion by the mother, it was found that egg protein may be present in the breast milk of some nursing mothers after the ingestion of a moderate quantity of egg, and that such egg protein may cause disturbance in the infant. While only egg protein was demonstrated to have come through the breast milk it is probable that other types do so as well, and this point is under investigation. These experiments point to the necessity of studying cases of food disturbances in nursing infants from the standpoint of the mother's diet.

SURGERY.

451 **Frequency of Congenital Club-foot.**

Schanz of Dresden (*Zentralbl. f. Chir.*, August 13th, 1921) states that the proportion of children born after the war with congenital club-foot is decidedly greater than before the war, as is shown by the following statistics. He has classified the admissions to his hospital into four series of a thousand each, two before and two after the war. In one series before the war there were two children, and in another series one child with congenital club-foot, whereas in one series after the war there were fourteen cases and in the other series ten cases of congenital club-foot. The difference is so great that it cannot be explained by mere coincidence. Other orthopaedic surgeons, as he has learnt in conversation with his colleagues, have also had the same experience. Schanz is unable to account for the occurrence, but remarks that in the old works on orthopaedics an extraordinary amount of space was devoted to congenital club-foot, which suggests that the condition was more frequent in those days than in the last two or three decades before the war.

452. **Fracture of the Cricoid Cartilage.**

Wildenskov (*Ugeskrift for Laeger*, July 21st, 1921) considers that fracture of the cricoid cartilage in childhood is exceedingly rare, and he can find records of only six cases in children 10 years old or younger. This comparative immunity in childhood is possibly due to the cartilage being more elastic than later in life. The most frequent cause is a fall against a sharp edge, such as that of the back of a chair, the handle-bar of a bicycle, or stairs. The patient extends his head while falling, stretching his neck, and fixing the larynx against the spine. This accident is seldom provoked by hanging, when most pressure is usually exerted under the hyoid bone, and the direction of pull on the cricoid is upwards. The mortality was regarded as extraordinarily high some years ago, but this was partly due to several cases being added to the list from medico-legal necropsies. The condition is, however, serious, and is fatal in 27 to 30 per cent. in spite of skilled treatment. The survivors are apt to suffer from phlegmon, strictures, and aphonia or hoarseness, requiring prolonged and painful treatment. Hueter recommends immediate tracheotomy in every case, but though the author insists that the case should be under surgical supervision, he notes that several cases have recovered without operation, and that conservative treatment under close observation may be permissible. His paper includes the case of a girl, aged 10, treated by himself. About an hour after falling over her bicycle and striking the handle-bar with her neck, this began to swell. A little later surgical emphysema developed, spreading from the neck to the infraclavicular region. Tracheotomy (superior) was performed under chloroform, and a sagittal fracture of the cricoid cartilage in the middle line in front was found. The mucous lining was also torn, but there was no haemorrhage. A cannula was secured in the neck at the site of the fracture. Recovery was uneventful and complete.

453. **Post-operative Treatment of Mastoid Cases.**

Daure (*Rev. de lar., d'otol., et de rhinol.*, July 15th, 1921) employs the following method whereby the mastoid wound is healed in the minimum time (four to five weeks) with the best functional results, instead of in five to six months or more, as often happens with other methods. Immediately before the wound is sutured, Carrel's method of interrupted irrigation with Dakin's fluid is instituted and continued for four to eight days, according to the state of the wound. Paraffin dressings are then substituted and continued for about a fortnight. The first paraffin dressing is kept on for about six days and the following are renewed every two or three days. About the third week, when epidermization is well advanced, it is advisable to employ insufflations of powder, such as boric acid or iodoform, or to use Dakin's fluid again.

454. **Mammary Haemorrhage.**

Pribram (*Zentralbl. f. Chir.*, August 20th, 1921) states that, apart from physiological haemorrhage resulting from menstrual hyperaemia of the gland, mammary haemorrhage frequently occurs without any obvious pathological cause or precedes it by a considerable time. The largest contingent of mammary haemorrhages are due to polycystic degenerative processes, especially cystepithelioma intracanaliculare. Mammary haemorrhage is less frequently due to carcinoma and is chiefly confined to those forms of carcinoma which develop in a breast with polycystic degeneration or which show the type of cyst adenoma. In sarcoma mammary haemorrhage is extremely rare and almost exclusively occurs in glands which have undergone polycystic degeneration. Lastly, mammary haemorrhage has been observed in a few cases of haemangioma of the breast, in cystic dilatation of the lactiferous ducts, in haemorrhagic catarrh, and in trauma.

455. **Arthroplasty.**

Putti (*Journ. Orthopaedic Surg.*, September, 1921), from an experience of 113 cases, considers that arthroplasty enables articulations to be made which are in many cases functionally equal to normal joints in mobility, steadiness, and painlessness, while in others the new joint performs all that is practically necessary even for fatiguing work or military service. Success lies in careful choice of cases and in the operative and post-operative treatment, the elbow, knee, jaw, and hip giving the best results, in the order named. The joint must be completely exposed without injury to parts which control mobility and steadiness. In resection the epiphysis is shaped for its function, enough bone being taken off to give a wide interarticular space of not less than an inch to allow ample movement without pressure. The scarred tissue in which the capsule is generally degenerated must be carefully removed and the two epiphyses completely covered with aponeurosis flaps from the fascia lata fixed in place by a few catgut stitches; no drainage is needed. Stability depends upon the way reconstruction has been carried out with regard to accurate anatomical principles. The joint is immobilized, semiflexed, in plaster-of-Paris with traction to the distal fragment for nearly a month to keep the surfaces well apart. Passive movements, regulated by the patient in order to avoid pain or fatigue, may commence after the tenth day. Hot-air treatment is applied as soon as the wounds are closed, and continued for many months, such post-operative treatment being prolonged specially for the temporo-maxillary and knee joints. Campbell (Ibid.), from experience in twenty-four cases, considers the action of interposed fascia as doubtful, and regards inexperienced carpentry and the removal of too little bone as the main causes of failure.

456. Arsenical Salts in Gonorrhoea.

LÉVY-WEISSMANN (*Journ. d'Urol.*, August, 1921) remarks that no one disputes the fact nowadays that gonorrhoea is a general infection, as is shown by its complications affecting the joints, pleura, pericardium, meninges, periosteum, muscles, and nervous system. Treatment of urethritis has only a local action, and though it may be of value for disinfecting the urethra and may usually prevent local complications, such as epididymitis, prostatitis, and metrosalpingitis, it is unable to prevent diffusion of the gonococci beyond the uro-genital area. Vaccine treatment of gonorrhoea, both in France and in other countries, has hitherto proved powerless either to diminish the duration of the discharge or to prevent complications, though it has some effect on complications already existing, without having any action on the gonococcus itself. Specific serum therapy is hardly any more successful, though, strange to say, non-specific serums, such as antimeningococcal serum, diphtheria antitoxin, and normal horse serum, have yielded good results. Encouraged by the success obtained by Lévy-Bing and Janet with arsenical salts in the form of salvarsan, neo-salvarsan, or arsenobenzol, in the treatment of gonorrhoeal rheumatism, and by the results of Lévy-Bing and Drieux in the use of intravenous injections of sulpharsenol, Lévy-Weissmann has treated several cases of gonorrhoea by intramuscular injections of sulpharsenol. He records six cases showing the good effect of his treatment in uncomplicated gonorrhoeal urethritis, epididymitis, and acute and chronic prostatitis. Three to ten injections were given, the doses consisting of 0.18 to 0.24 cg. of sulpharsenol.

457. Oxygen Injections in Joints.

KLEINBERG (*Amer. Journ. of Surg.*, September, 1921) considers that the injection of oxygen into joints for radiography considerably assists diagnosis by accentuating the contrast between the soft parts and the bones and bringing into relief soft structures not otherwise discernible; it is useful for locating loose bodies and showing the extent of hypertrophied synovial tissue. The procedure is simple, the only apparatus needed being an oxygen cylinder to which is attached about two yards of rubber tubing with the barrel of a hypodermic syringe and needle affixed. The gas is allowed to flow slowly under low pressure, avoiding a sudden distension of the joint, and stopping when the joint has become definitely enlarged. The knee, shoulder, and finger joints are easily injected, but the elbow is more difficult; joints that have been distended by synovitis or arthritis are easy. For weight-bearing joints especially complete rest in bed is advisable until the gas has disappeared, which takes place in about thirty-six hours. Anaesthetization is unnecessary, as the insertion of the needle causes no more pain than an ordinary hypodermic injection, and when in the joint the needle should be held firmly to prevent injuring the sensitive synovial membrane or bone. Notes of eight cases are given, in one of which the practicability of injecting oxygen in an out-patient department for non-weight-bearing joints was shown, the subdeltoid bursa being easily injected and its outline demonstrated in a case in which the bursa did not connect with the joint.

458. A Rare Form of Chronic Urethritis.

OEKONOMOS (*Paris méd.*, September 10th, 1921) states that though some urologists, such as Pousson and Marion, deny the existence of a urethritis that is chronic from the first (*urétrite chronique d'emblée*), he has met with seven examples of the condition in the course of the last five years. The microbial agents are the same as in acute urethritis, the majority of cases being due to the gonococcus and some to the streptococcus or staphylococcus. In a few instances no micro-organisms could be found in the pus. Three explanations are suggested to account for the condition: (1) The patient presents an exceptional resistance to infection, as in the case of arthritic, and especially neuro-arthritic, subjects. (2) The causal micro-organism is itself very mild, like some saprophytes. (3) The micro-organism, which is normally very virulent, has had its virulence attenuated. The onset of this form of chronic urethritis is insidious. The incubation period is much longer than in acute urethritis, ranging from six days to nearly four months. There is no pain on micturition or erection, and it is only by chance that the patient notices a purulent discharge in the morning, there being none during the rest of the day. The disease lasts six months, on the average, and may be longer. Treatment is the same as that of ordinary chronic urethritis, but special attention should be paid to the general condition, tonics, such as iron and quinine, arsenic, and cod-liver oil, being indicated in different cases.

459. Osteomyelitis of the Upper Jaw in the Infant.

VERNIEUWE (*Rev. de lar., d'otol., et de rhinol.*, September 15th, 1921) remarks that acute osteomyelitis is found in the following order of frequency in the different bones of the body: tibia, femur, humerus, flat bones of the skull, lower jaw, terminal phalanges of the fingers, clavicle, ulna, radius, fibula, scapula, upper jaw, pelvis, sternum, and ribs. The much greater frequency with which the lower jaw is involved compared with the upper jaw is due to its relatively poor blood supply, the upper jaw being supplied by all the branches of the internal maxillary arteries with their numerous anastomoses, whereas the lower jaw is supplied by only two small arteries which have no anastomoses. Acute osteitis of the upper jaw is therefore relatively uncommon, especially if the osteitis due to phosphorus poisoning or acute exanthemata, particularly scarlet fever, be excluded. Infants are chiefly affected, as of 27 cases collected by Landwehrmann, 60 per cent. occurred in the first month of life. Three sources of infection may give rise to the osteitis: (1) The mouth and gums; (2) the orbit and lacrymal ducts; (3) the nose. Vernieuwe records two cases in infants, aged 5 weeks and 2 months respectively, in which acute osteomyelitis of the maxilla simulated acute sinusitis.

OBSTETRICS AND GYNAECOLOGY.

460. Early Symptoms of Uterine Cancer.

ZWEIFEL (*Zentralbl. f. Gynäk.*, August 13th, 1921) maintains that the success of operations for uterine cancer depends more on early diagnosis than on improvements in technique, and that the possibility of a lowering of the mortality depends on the practitioner and on the woman herself. He declares that every case of uterine cancer can in all probability be permanently cured if it comes to operation sufficiently early. The early manifestations of uterine cancer are as follows: (1) Nodules on the vaginal portion of the cervix which on puncture do not prove to be follicular cysts. (2) Erosions which bleed on slight touching and do not heal very rapidly. In both cases a biopsy should be performed as early as possible, and a microscopical examination made. (3) Itching of the external genitals is a suspicious sign. (4) Haemorrhage post coitum. All post-climacteric haemorrhages from the genitals should be regarded with the utmost suspicion. In 75 per cent. of 357 cases of post-climacteric genital haemorrhages collected by Mendelssohn in his Leipzig thesis in 1920 a malignant growth of the genital organs was present. No irregular haemorrhage even during the period of sexual activity should be disregarded or treated without local examination. Purulent discharge may be the first symptom of carcinoma, and for a long time may be the only sign of carcinoma of the body of the uterus.

461. X-ray Examination of the Pelvic Viscera after Pelvic Inflation with Gas

FROM an experience of 150 cases PETERSON (*Surg., Gynec., and Obstet.*, August, 1921) is able to confirm the finding of Stein and Stewart and of Rubin that gaseous inflation of the pelvis is a safe procedure and one which, if the injection is practised slowly, is followed by comparatively little discomfort. In about three-quarters of the cases the abdominal route was selected; in the remaining instances, which necessarily did not include acute or subacute pelvic inflammatory conditions, and in which the patients had not passed the menopause, the trans-uterine method was used, the gas being allowed slowly to penetrate the ostia abdominalia of the Fallopian tubes. Peterson prefers to give injections of carbon dioxide rather than of oxygen on account of the diminished duration of the subsequent discomfort, presumably in consequence of more speedy absorption. The best results are secured in a moderate knee-chest position. He has found this method to be of considerable diagnostic utility in gynaecological conditions, and says that by combining bimanual pelvic examination and pneumoperitoneal roentgenography the value of each is enhanced.

462. A Conservative Operation for Ovarian Cyst.

SCHÄFER (*Zentralbl. f. Gynäk.*, September 3rd, 1921) records the employment of an operative device which is claimed to be of service in ovarian operations (1) in cases of removal of bilateral tumours, or (2) when one ovary has been removed at a preceding operation or destroyed by an antecedent morbid process. In such cases occurring in young women it is desirable, in order to avoid artificial induction of the menopause, to preserve,

if possible, remnants of ovarian tissue. This object was secured by the author in the case of a nullipara aged 25 (who two years after right ovariotomy for cyst was found to have a cyst the size of an apple in the left ovary) in the following manner: The cyst was opened and its walls cut away from the remaining ovarian tissue, with the exception of a small free margin of wall which was left behind; this margin was then sutured with catgut in a manner which is compared to the corresponding stage in the operation for extirpation of vaginal hydrocele in the male. In this way a portion of the interior cyst wall remained exposed within the peritoneal cavity. The patient recovered speedily, and thereafter menstruated regularly; at laparotomy, performed eighteen months later for uterine retroflexion, it was demonstrated that the left ovary was free from adhesions and had a normal external appearance. Between the second and third operations pregnancy supervened, but was terminated by an abortion at three months. Schäfer recommends the adoption of this operative procedure in treating ovaries which are the site of retention cysts (such cysts are very frequently bilateral). Tuberculous or gonorrhoeal inflammatory affections of the ovary demand, of course, radical extirpation. He is inclined to try a similar operation—at least as a preliminary—in cases of bilateral unilocular cystoma.

463. The Treatment of Infected Abortion.

SCHOTTMUELLER (*Munch. med. Woch.*, 1921, 22) discusses on the basis of a large material the comparative advantages and disadvantages of conservative and active treatment respectively in cases of abortion followed by pyrexia. He admits that on theoretical grounds preference must be accorded to conservative treatment as distinguished from operative intervention during the febrile stage: the former treatment, however, is more prolonged and more costly. When contrasted with manual scraping out of the uterus it is impossible to deny the very much greater safety of purely conservative therapy; with respect to treatment by curettage, however, Schottmüller thinks that the issues are more debatable. He quotes statistics according to which the mortality of abortion, which with manual scraping out of the uterus was 3 per cent., became reduced by one-half when streptococcal cases were excluded from this treatment. It is argued that there is less fear of propagation of bacteria from the interior of an infected uterus when curettage is employed in preference to manual scraping out; in 3,200 cases treated by curettage the mortality was 0.55 per cent. Of late years the author has operated with the curette even on cases of abortion in which the infecting agent was a haemolytic streptococcus, the results being strikingly better than in the cases treated formerly by scraping out the uterus with the hand, and perhaps as good as those obtained by conservative treatment. The use of small, sharp curettes should be interdicted, recourse being had to abortion forceps and large blunt curettes.

PATHOLOGY.

464. Lymphosarcoma of the Tonsil with Metastases Treated by Radium.

PERRIER (*Rev. Méd. de la Suisse Romande*, October, 1921) reports an apparently successful treatment of a case of new growth of the tonsil by means of radium. The history is as follows: In May, 1920, a country labourer, 17 years of age noticed a swelling of the left tonsil which caused him a certain amount of pain. In September the lymphatic glands on the left side of the neck began to enlarge, and in another three months were causing so much interference with deglutition that the patient for the first time consulted a doctor. At this time the left tonsil was of the size of a large prune, while the lymphatic glands formed a mass extending beneath the sterno-mastoid muscle from behind the mastoid process to the angle of the lower jaw—a mass 12 cm. by 8 cm. A portion of the tonsil removed for microscopical examination failed to give a definite diagnosis, though the appearance was consistent with that of a lymphosarcoma. As operative measures were beyond question, it was decided to try the effect of radium therapy by the insertion of fine glass tubes filled with radium emanation. In January, 1921, ten tubes were introduced into the lymphatic mass and two into the tonsil. Three weeks later the tonsil had returned to its normal size, while the lymphatic glands [illegible] their previous size and had become freely movable. In February the glands on the right side of the neck commenced to swell, and soon [illegible] cm. in diameter. Six tubes, containing altogether 44 millicuries of emanation, were inserted into these glands, and at the same time an intravenous injection of saline containing 10 millicuries was given. A month later the glands had diminished considerably, the patient was putting on weight, and, apart from a small burn on the skin of the neck, he was progressing very favourably. By April he had resumed his work. In June, when the last examination of the patient was made, the tonsils were found to be of normal size, and the glands on both sides of the neck were represented by hard cicatricial cords. The cure seemed to be complete.

465. Post-mortem Rigidity in Utero.

ACCORDING to LIEGNER (*Zentralbl. f. Gynäk.*, September 10th, 1921), who has recently observed three cases of *post-mortem in utero* rigidity of the foetus *in utero*, the appearance of the rigidity, which is known to be specially early in old persons and young children, may be so rapid in the newborn that the maximum degree of rigor mortis is attained within four or five hours. Intrauterine rigidity may be observed even earlier, among the accelerating circumstances being the warmth of the maternal body, maternal eclamptic seizures, and foetal asphyxia. Rigor mortis in the foetus may delay natural delivery by diminishing the pliability of the foetus with respect to the force of the uterine contractions—for example, in vertex presentations the rigidity of the foetal neck must pass off before expulsion can take place. From a review of the evidence the author favours that theory of the causation of rigor mortis which regards rigidity as due to swelling of the fibrillary muscle elements at the expense of the sarcoplasm (the cause being the *post-mortem* development of acid reaction within the muscles), and the passing of rigidity as due to coagulation of the albuminoid elements of the sarcoplasm.

466. The Isolation of Koch's Bacillus from Tuberculous Sputum by Petroff's Method.

LEMOIGNE (*Ann. de l'Institut Pasteur*, August, 1921) calls attention to the value of Petroff's method in the isolation of tubercle bacilli from the sputum. The method, which has now been used successfully for six years, possesses the great advantage of enabling one to cultivate the bacilli direct from the sputum, instead of having to resort to preliminary animal passage. Briefly, the technique consists in digesting the sputum at 37° C. with 4 per cent. sodium hydrate till it is reduced to a perfectly fluid consistency. After centrifugalization the supernatant fluid is pipetted off, and three or four drops of the sediment are sown on to a few tubes of Petroff's medium, which is made by adding a 1 in 10,000 solution of gentian violet to a mixture of egg with glycerin veal broth. The treatment with soda suffices to dispose of the majority of the organisms likely to be encountered in the sputum, while the more resistant ones are prevented from developing by the action of the gentian violet. The author states that in every case in which tubercle bacilli were found by microscopic examination of the sputum after digestion he was successful in growing the organisms in at least two of the culture tubes inoculated out of the five put up.

467. Refractometric Studies in Syphilis.

A STUDY is made by TOKUDA (*Arch. Derm. and Syph.*, October, 1921) of the refractometric index of the serum of cases of untreated human syphilis and of the variations which occur in it during a course of treatment with arsphenamin. A total of 32 patients was examined. All the determinations of the albumin, globulins, and non-protein constituents of the blood were made by the micro-refractometric method of Robertson, the Pulfrich refractometer being used, and the source of illumination being a sodium light. The findings are: (1) A marked increase in the refractive index of the serum and of the globulins in syphilis, especially in active secondary cases. (2) The refractive index is lowest in congenital cases, highest in the secondary, and intermediate in the tertiary cases. (3) Considered in relation to the Wassermann reaction of the serum before treatment, the strongly positive cases show values of total proteins, albumins, globulins, and relative proportion of globulins higher than the weakly positive cases. (4) During a course of eight intravenous injections of arsphenamin—0.4 to 0.6 gram—and neo-arsphenamin—0.9 gram—each drug being given at weekly and semi-weekly intervals in those patients who responded readily to treatment and whose Wassermann reaction became rapidly negative, the refractive index of the serum, the percentage of total proteins, and the relative proportion of globulins fell more or less regularly, whereas in those patients whose Wassermann test remained persistently positive the curves showed little or no tendency to drop below their original values.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

468. Symptomatic Treatment of Pneumonia.

THE factors that may cause dyspnoea are discussed by MEANS and BARACH (*Journ. Amer. Med. Assoc.*, October 15th, 1921). Dyspnoea will arise whenever the pulmonary ventilation called for by the life processes at the moment exceeds the quantity of air that the pulmonary bellows is mechanically capable of delivering with ease. The respiratory centre wishes to maintain a constant alveolar carbon dioxide tension. To do this, ventilation must increase in like proportion to the carbon dioxide output. In pneumonia the metabolism will, as in the normal, be one of the factors determining the volume of the pulmonary ventilation; an increase in metabolism due to the disease will call for an increase in ventilation, exactly as the elevated metabolism of muscular work did in the normal person. The metabolism of the pneumonia patient may be expected to be higher, even while he is at complete rest, than it would be under the same conditions when he was well. He will, in other words, have a metabolic need for increased breathing. If in a portion of the lungs a proper gas exchange cannot take place, in order to maintain blood carbon dioxide tension at a normal level the normal portion of the lungs must be overventilated. Impairment, then, in the respiratory function of any portion of the lungs, if it leads to a mixture of aerated and unaerated blood, will be a factor demanding hyperpnoea. Other causes are an insufficient circulation rate of blood flow and anoxaemia. The lower the vital capacity the more will a patient have to increase his ventilation by an increase in rate at the expense of depth. That the vital capacity is reduced in pneumonia is certain. Whatever the cause, it will have the effect of necessitating a rapid, shallow type of breathing. In the treatment of these conditions the authors suggest that the possible lines to pursue are to decrease demand or increase supply of ventilation. Two procedures which may be expected to diminish the need for ventilation are the giving of alkali and the therapeutic administration of oxygen. Bicarbonate should be given only in amounts sufficient to turn the urine alkaline to litmus; if pushed farther than this it may do harm by producing alkalosis. Oxygen should be given with one of the modern types of apparatus and often nearly continuously by a specially instructed nurse; its continuation is to be governed by the effect on the cyanosis and the comfort of the patient. These measures are supplementary to specific therapy. When used, however, they may be expected to spare the patient several avoidable burdens and leave him free to devote his entire energy to the fighting of his infection, thus theoretically, at least, improving his chance of recovery.

469. Syphilis and Marriage.

HESSE (*Wien. klin. Woch.*, September 29th, 1921) states that, as a general rule, the syphilitic patient should not be allowed to marry before the fourth year after infection, it being understood that he has undergone prolonged intermittent treatment every three months, and later every six months (six or seven courses of treatment in all). In cases so treated the disease ceases to be contagious in three or four years. As regards cases which have had little or no treatment, the contagiousness disappears in about five or six years. Exceptions, however, occasionally occur, as in a case recently observed by Hesse, the patient being a man who, twenty-two years after infection for which he had been inadequately treated, developed ulcerative papules at the site of an eczema intertrigo, and thereby became contagious again.

470. AHMAN (*Hygiea*, June 30th, 1921) discusses the possibility of revising the old standard which required a clinical and serological observation period of at least two years before consent could be given to the marriage of patients whose disease showed no sign of activity in this period. Can this period, the author asks, be shortened in the case of patients who have undergone early and thorough abortive treatment of their syphilis before the Wassermann reaction has ever been positive? He thinks the answer may be in the affirmative, but not yet; for cases still occur in which, in spite of the most thorough abortive treatment, relapse follows. Particularly in the case of the woman should the high standard already referred to in connexion with marriage be retained. The author founds these generalizations on an experience of fourteen cases of syphilis given abortive treatment soon after infection, and observed, clinically and serologically, for several years.

471. Diphtheria in the Newborn.

GONIONDSKY (*Journ. de méd. et de chir. prat.*, September 10th, 1921), in his Grenoble thesis in which he records sixteen cases of diphtheria in the newborn, states that diphtheria is relatively rare below the age of one year. The infection begins with general signs, such as fall of weight and prostration, the local signs often not appearing until a few days later. The disease is principally situated in the nasal fossae, sero-mucous and sometimes haemorrhagic discharge being the principal signs. Respiration is slightly obstructed and is sometimes accompanied by suprasternal recession. The throat is slightly red. Usually no membrane is visible, and enlargement of the submaxillary glands and those at the angle of the jaw is often absent. The clinical forms of the disease in the newborn are mainly two: (1) Diphtheria with a single localization or diphtheritic rhinitis: (2) diphtheria with multiple lesions, either primary or secondary to rhinitis. The first may be mild, the second is always severe, the mortality in the writer's cases being 18 and 75 per cent. in the two forms respectively. The prognosis may be modified by early treatment. The newborn is infected either by a carrier or by a person suffering from the disease. Among other causes of contagion of the newborn the possibility of vulvar diphtheria in the mother should be considered.

472. Quinidine in Auricular Flutter.

ARNELL (*Hygiea*, August 31st, 1921) has used quinidine in nine cases of auricular flutter, and in four he has found it lead to temporary or permanent disappearance of this condition. With one exception, the age of his patients ranged from 67 to 78 years, and practically all were the subjects of advanced arterio-sclerosis, with or without such complications as chronic bronchitis, cysto-pyelitis, and the like. Attacks of vomiting occurred on two occasions; they ceased as soon as the drug was discontinued, and were not worse than the vomiting that may be provoked by large doses of digitalis. In one case the restoration of a normal rhythm by quinidine was accompanied by what the author calls "cardiac collapse," but this soon passed off when stimulants were given. He concludes that though quinidine can no more be regarded as perfectly safe than can digitalis, the risks of serious complications are small provided the case is closely watched; only small doses are given at first, and the remedy is discontinued as soon as it provokes complications.

473. Orthostatic Albuminuria.

SAITO (*Amer. Journ. Dis. of Children*, October, 1921), from a study of forty-four cases showing moderate or severe degrees of orthostatic albuminuria, concludes that such patients have an asthenic constitution. Lordosis of the lumbar spine was present in about half the cases, but tuberculosis and syphilis have no etiological bearing on the condition. The large majority showed a state of vagotonia, their renal function, as measured by the phenolsulphonephthalein test, being generally normal. Although anaemic, nearly all have a normal haemoglobin content, frequently an eosinophilia, and occasionally leucocytosis. The amount of the precipitate on the addition of acetic acid to the urine was found to vary absolutely or relatively even in the same individual, and the albumin quotient of the proteins was equal to that of the serum and of the cerebro-spinal fluid. Two diagnostic methods most reliable for the provocation of albuminuria are for the patient (1) to hold a rod with both hands extended forwards at the level of the shoulders for ten minutes, and (2) to kneel down for ten minutes. Lordosis of the lumbar spine may be a direct cause of the condition, though this is not sufficient alone, vasomotor instability being a probable factor.

474 Hat-band Dermatitis

PONTOPPIDAN (*Ugeskrift for Laeger*, September 29th, 1921) describes a form of dermatitis which has recently assumed almost epidemic proportions in Denmark, and which he traces to the use of hats the leather lining of which has been replaced by a "leather substitute" formed of paper

impregnated with certain chemicals, such as formaldehyde and phenol. When the disease is confined to a narrow band of red and infiltrated skin, running transversely across the upper part of the forehead, the relation of cause to effect is so obvious that the patient makes his own diagnosis, and, instead of calling in medical aid, discards the offending lining. Thus it happens that the physician sees many more severe and atypical than slight and typical forms of the disease, and the diagnosis is often difficult when the whole face is involved. The patients often overlook the primary rash which corresponds to the hat-band area of the head, and notice nothing amiss till erythemato-vesicular patches have appeared about the eyes and mouth. Conjunctivitis is a common sequel and nasal catarrh may also occur, but the extension of the dermatitis to the roots of the hairs is a rare event. As only a small proportion of the users of these leather substitute hat bands develop this form of dermatitis, a certain idiosyncrasy would seem to exist. This is so marked in some cases that only one day's use of the peccant hat-band is enough to provoke superficial ulceration of the forehead, great swelling of the face, and an erythema extending to the trunk and limbs. The probable cause of this reaction is the setting free of phenol by the acid constituents of the patient's sweat.

SURGERY.

475 Methods of Treatment of Anthrax

In a review of the literature by REGAN (*Amer. Journ. Med. Sci.*, September, 1921) the various methods of treatment of anthrax are considered, and all the available statistics and facts relative to serum therapy of the disease are quoted, so that conclusions might be drawn as to the value of the method. After stating that the usual methods of local treatment, such as incision, excision, cauterization, antiseptic dressings, bacterial extracts, and various drugs, are non-specific, generally valueless, and often harmful, he proceeds to show that, on the contrary, there is a universal consensus of opinion in favour of the efficacy of serum therapy. Its introduction into Italy has resulted in a lowering of the mortality from 24 per cent. to about 6 per cent. Similar success has attended its employment in this country and in America. In practice, the following method is advocated: In mild cases of the disease 50 c.cm. should be given intravenously in four successive doses at eight to twelve hours' interval. The subsequent injections should be given at twelve to twenty-four hours' interval, not more than six injections being required, the last few intramuscular or subcutaneous. In severe cases with large voluminous lesions and extensive oedema the serum should be administered intravenously in 40 c.cm. doses every four hours, until the disease is controlled. In septicaemic cases, with a positive blood culture, intravenous doses of 100 to 150 c.cm. are indicated every four hours. Combined with the general therapy, it is well to employ local specific treatment by injecting 2 c.cm. of serum at each of three or four points equidistant from one another at the various sides of the pustule. These may be repeated two or three times in the course of twenty-four hours. The rationale of the local administration would seem to lie in the fact that it has a marked effect in facilitating phagocytosis. Regan adds that no case of anthrax septicaemia should be considered beyond hope till intensive serum therapy has failed.

476. Recurrent Mastoiditis in Children.

According to CARENTILI and RETROUVEY (*Journ. de Méd. de Bordeaux*, August 10th, 1921), recurrent mastoiditis is a relatively rare affection, barely 40 cases having been published since 1901, when Israel of Turin recorded the first 5 cases. A recurrence of mastoiditis may be said to take place when there has been a complete recovery from the first operation. The mastoiditis may be regarded as really cured when the retro-auricular scar is normal, slightly depressed, without a scab or fistula, and painless on pressure; when there is no otorrhoea or exudation in the middle ear; when the tympanic membrane has cicatrized and hearing has become normal again. The recurrence has been attributed to various causes, such as defective cicatrization, persistence of latent micro-organisms, or special vulnerability of a previously infected mastoid. As a rule there is only one recurrence. In predisposed individuals multiple recurrences may take place, but are very rare. In one of the writer's cases the fourth operation was performed four and a half years after the first. The mastoiditis usually recurs in the antrum at the site of the first operation, but in some cases it may attack one of the groups of mastoid cells. The recurrence generally takes place in the course of the first year, and most of the recorded cases have been observed between a few months and two years after the first attack. Moure, however, mentions a case in which a recurrence took place after eight years, and Tarnaud reports one after seventeen years. The recurrence may take place at any age, even in patients of 70 or 80, but as a rule it affects children, who are more liable than adults to ear complications.

477 Treatment of Eye Diseases by Injections of Milk.

DE HAAN (*Nederl. Tijdschr. v. Geneesk.*, September 17th, 1921) states that injections of milk have been employed in the treatment of almost every eye disease with very different results. While some writers are enthusiastic in their praise of this method, others adopt a very sceptical attitude. A study of the literature suggests that in two diseases—iritis and gonorrhoeal conjunctivitis—the results are almost always favourable. On the other hand, the results are much less brilliant or even negative in trachoma, parenchymatous keratitis, infections, etc. The milk is boiled for two minutes and injected subcutaneously or intramuscularly in doses of 5 to 10 c.cm. for adults, 1 to 3 c.cm. for children and aged persons, and ½ c.cm. for infants. Care should be taken not to puncture a vein. Four hours after the injection the temperature rises, and in eight to ten hours reaches 104°, the patient at the same time complaining of slight headache. After the second and third injections the temperature does not rise so high. As a rule, the higher the fever and the more violent the general reaction the more successful the result. Anaphylactic shock does not occur if a larger dose than 10 c.cm. has not been used, and the next injection is not delayed beyond the second or third day. If a second series of injections is given some months later, the first dose should consist of ½ c.cm. It is best to give the injections in the morning, so that the temperature rises at noon, and becomes almost normal again in the evening.

478. Eosinophilia in Enlargement of the Prostate.

CASSUTO (*Il Policlinico*, Sez. Prat., September 5th, 1921) states that Legueu, having found a pronounced eosinophilia (14 per cent.) in the blood of a patient with enlarged prostate, instituted a series of investigations to determine if this was constant in prostatic hypertrophy, and found that while in enlarged prostate the number of eosinophils was always above the normal, the number of neutrophil polymorphonuclears constantly remained normal, whereas in cancer of the prostate there was a neutrophil polymorphonucleosis and the number of eosinophils fell below normal. Legueu therefore concluded that examination of the blood was of considerable value in the differential diagnosis of prostatic disease. His results, however, were not confirmed by Perrier and Muster, who in 22 cases of enlarged prostate found eosinophilia in only 7, or 33 per cent.; while Cassuto in 17 cases of enlarged prostate found eosinophilia in only 6, or 28 per cent., and, on the other hand, found eosinophilia in one out of three cases of cancer of the prostate.

479. Abnormal Ossifications.

HOLLAND (*Arch. Radiology and Electrotherapy*, September, 1921) records some rarer ossifications, especially of the foot, seen during *x*-ray examinations; such accessory bones may become of medico-legal importance. The most common one (the tibiale externum) is situated on the posterior and external side of the tuberosity of the scaphoid, and is a definite skeletal bone and not a sesamoid. In cases with history of injury it might be mistaken for a fracture of the tuberosity, but its smoothness and the presence of a fellow on the other foot settles the diagnosis. Sesamoid bones sometimes occur in the tendon of the peroneus longus close to the edge of the cuboid and posterior to the base of the fifth metatarsal. Two others occur beneath the distal end of the first metatarsal in the tendon of the flexor hallucis brevis. Other true accessory bones are: (1) The os trigonum, behind the upper surface of the astragalus; (2) a little ossicle lying between the upper surfaces of the astragalus and scaphoid; and (3) the bone of Vesalius, lying at the base of the fifth metatarsal, probably an epiphysis which usually joins before adult life, but may remain separate. In Köhler's disease of the scaphoid the bone shows an arrest of ossification, and such portion as is already ossified is abnormally opaque. A rare abnormality of the patella shows a completely separated piece at the upper and outer margin, simulating an old fracture, but probably due to a separate centre of ossification in the nature of an epiphysis.

480 Tonsil Haemorrhage.

KAHN (*Med. Record*, September 24th, 1921) regards tonsillectomy under local anaesthesia as much more dangerous than under general anaesthesia, the addition of adrenaline to the local injection increasing the danger by another 10 per cent. He treats haemorrhage of an oozing kind by passing a needle, threaded with silk or kangaroo tendon with a gauze sponge attached, through the tonsil cavity, muscle and skin to the outside, the gauze sponge being pulled firmly into the tonsil cavity. The same is done for the other tonsil, and the two threads may be passed round the back of the neck and fastened together. By supporting the larger vessels and presenting a meshed surface to aid coagulation the gauze sponges support the reorganizing tissues until the danger has passed. If large individual vessels are spurting, these need ligature, care being taken not to manipulate the tonsil or its cavity more than is necessary. If considerable manipulation is required to tie off deep-seated vessels, and especially in the presence of an infection, the most effective and easy procedure is, in his opinion, to tie the carotid.

481. Symmetrical Gangrene in Children.

BRUSA (*Il Morgagni*, August 31st, 1921) reports a case of symmetrical gangrene of the hands in a male child aged 14 months. Three months previously it suffered from measles and subsequent diarrhoea. There was no evidence of syphilis or tubercle, and it was not Raynaud's disease. Gangrene of the extremities in children may be circumscribed to the skin, associated with necrosis, superficial or deep, or of the noma type. The second group, of which the author's case is an example, has been ascribed to many different factors: (1) Infectious diseases (diphtheria, scarlet fever, measles, etc.). (2) Toxic agents: (*a*) Endogenous (for example, nephritis, diabetes); (*b*) exogenous (ergotism, plumbism, alcoholism). (3) Factors of nervous origin: (*a*) Neuroses (Raynaud hysteria, epilepsy); (*b*) psychoses; (*c*) cerebro-spinal disease (syringomyelia, tabes, etc.). (4) Mechanical factors: (*a*) Insufficient blood stream (cardiac); (*b*) congenital atresia of the vascular apparatus; (*c*) changes in a vascular area; (*d*) pressure from cervical rib. (5) Disorder of endocrine glands. Some of these causes for instance, Group 1 act by causing thrombosis or embolism; true Raynaud's disease is rare in infancy. Cold may have something to do with it; at any rate, cases are much commoner in cold weather.

482. Accumulation of Cerumen.

FRADKINE (*Rev. de lar., d'otol., et de rhinol.*, September 1st, 1921), who records four illustrative cases, maintains that in the great majority of cases the reason for the accumulation of cerumen is to be found in a morphological anomaly of the external auditory meatus. Three varieties of this may occur: (1) Hyperossification of the tympanic tubercles of the sulcus and the formation of a bony barrier between the two portions of the external auditory meatus. Daily cleansing of the ear is rendered almost impossible by this occurrence. (2) Hypertrophy and extension of the intra-auricular glandular layer. (3) The coexistence of these two factors—excess of cerumen, on the one hand, and the impossibility of removing it, on the other. Treatment consists in subcutaneous removal of these exostoses so that the patient can clean his ear freely.

483. Fractures of Femoral Neck.

THOMAS (*Amer. Journ. of Surg.*, September, 1921) describes a method of fixation by a wooden screw without arthrotomy in certain fractures of the neck of the femur. Under ether, with the limb in abduction by Whitman's method, a plaster cast is applied from the lower margin of the ribs to, and including, the foot. The next day a hole 8 in. (in the long axis of the limb) by 6 in. is cut in the cast, with its centre over the great trochanter. *X*-ray examination showed good alignment and approximation of the fragments. Under ether and careful aseptic draping of the hole, and preparation of the skin with iodine and alcohol, a 3½ in. incision is made over the great trochanter in the long axis of the limb, and the bone is freed from overlying tissues well to each side so as to expose the anterior and posterior margins of the trochanter. In conjunction with a careful study of the *x*-ray picture, the screw is driven half-way by a mallet, and then with a screwdriver into the inner fragment and the wound closed. In determining the length of the screw it must be borne in mind that the *x*-ray shadow is larger than the object, so that the screw should be from half to three-quarters of an inch shorter than the distance from the external surface of the trochanter to the middle of the head, as shown on the *x*-ray plate. The method is safe and accurate, and the chances of infection are practically *nil*.

484. Retina Degeneration with Multiple Aneurysms.

MEISSNER and NISSEL (*Brit. Journ. Ophthalmology*, October, 1921) record the pathological anatomy of retinal degeneration with multiple aneurysms in the right eye of a boy, aged 15, in whom aneurysmal enlargement and convolution of small vessels in the retinal periphery were found, with infiltration by lymphocytes, fibrin formation, destruction of elastic fibres, and formation of thrombi, the neighbouring retinal capillaries being enlarged. All the changes occurred in the lower temporal periphery of the retina near the ora serrata. There was hyperplasia of the connective tissue, with haemorrhages in the inner and outer layers, destroying the membrana limitans externa, and spreading between the retina and the choroid. The disease generally begins near the ora serrata, where the blood stream is slowest, and may be traced to a hereditary weakness of the vessels of the nature of an angio-fibromatosis followed by general retinal degeneration.

OBSTETRICS AND GYNAECOLOGY.

485 Caesarean Section under Local Anaesthesia.

TOFFE (*Hospitalstidende*, September 14th, 1921) draws attention to the remarkable fact that in European publications Caesarean section under local anaesthesia has barely been mentioned, much less discussed. Several American writers have, however, published records of such cases, and, like the author, they have found the uterus anaesthetic at the time both of opening and closing its walls. In the case published by the author a 0.5 per cent. solution of novocain-adrenaline was injected into the skin and fascia in the middle line from the umbilicus to a point just above the symphysis. The patient described the pain provoked by division of the fascia and parietal peritoneum as not worse than a short labour pain. She did not feel the opening of the uterus at all, and after the living infant, the liquor amnii and the placenta had been removed, a finger was thrust through the cervix downwards in order to facilitate subsequent drainage. Closing the uterus in two stages gave rise to no other sensation than that of slight pricking. The patient, on whom Caesarean resection was performed on account of severe heart disease, ultimately recovered. The author notes that while most American writers inject a local anaesthetic into the fascia after dividing the skin, he found it sufficient to induce local anaesthesia in one stage before starting the operation.

486 Organotherapy for Uterine Haemorrhage.

FROM a study of 100 cases of "ovarian bleeding"—menorrhagia and metrorrhagia in the absence of evidence of organic disease of the genital organs—ZONDECK and STICKEL (*Zentralbl. f. Gynäk.*, September 3rd, 1921) find that juvenile metropathies respond much better than those of the climacteric to treatment by extracts of ductless glands. The results of injection of extracts of any or all of the various endocrine glands are similar (corpus luteum, hypophysis, and testis were among those employed), and it is concluded that the extracts have no specific activity. From 15 to 20 per cent. of the successes which have been claimed for organotherapy in ovarian bleedings are fictitious, it is said; in these cases either the bleeding was in reality connected with general disorders, such as myxoedema, chronic malaria, or cardiopathy, or, on the other hand, the therapeutic response was attributable to suggestion. Furthermore, the authors are of the opinion that from clinical results of administration of organ extracts it is not justifiable to draw conclusions with regard to the function of the organ concerned; a non-specific protein therapy follows the treatment, and the results vary very considerably according to the mode of preparation of the extract (more especially the manner of precipitation of protein which has been adopted). The effects of organotherapy are greatly assisted, according to the authors, by giving at the same time intravenous injections of calcium salts in large doses.

487. The Repair of Perineal Lacerations.

ACCORDING to GOLDSPOHN (*Surg., Gynec., and Obstet.*, August, 1921) many of the perineorrhaphies formerly performed consisted of little more than resections of mucous membrane which did not effect any repair of the levator ani or of its fasciae. Many efforts made to operate on this

muscle have been unsuccessful because the so-called triangular ligament or urogenital trigone has been mistaken for the subjacent levator ani. The levator ani lies more laterally and slants backward and inward to meet the rectum at a point about 5 cm. from the normal perineal muco-cutaneous junction; in nulliparae the levator ani in its fasciae can be felt laterally by the finger placed within the vagina. The author illustrates the restoration of the pelvic floor by an intrapelvic operation combined (in cases of complete tear) with repair of the sphincter ani.

488. Gabaston's Method for the Removal of the Placenta.

MOLTVED (*Ugeskrift for Laeger*, September 29th, 1921) warmly recommends the injection of water into the umbilical vein in order to facilitate the detachment and expulsion of the placenta in cases which would otherwise require manual extraction. One of his patients was a 3-para, aged 31, suffering from Graves's disease. After the unaided birth of a female infant the uterus contracted firmly on the placenta. More than two hours after the completion of labour the placenta was still retained, and expulsion by Credé's method was attempted. The desired result not being obtained, 400 c.cm. of water were injected into the umbilical vein with a Janet syringe; the uterus felt enlarged, and reacted to slight pressure by expelling the placenta. The author records a second case in which Credé's method was tried for an hour, and 1 c.cm. of pituitrin was given by intramuscular injection. When the retention had lasted an hour and three-quarters, 1,000 c.cm. of water were injected, and the placenta was expelled. The author has found it unnecessary to attach a cannula to the tubing of a syringe, as this can be directly inserted into the vein. He recommends the method in general practice, as it is easy, effective, and not dependent on skilled assistance.

489. Thyroid Function and Gestation.

ACCORDING to FRUHINSHOLZ and PARISOT (*Gynec. et Obstét.*, iv, 4, 1921), normal gestation is accompanied by a state of physiological hyperthyroidism which is compensatory and is most manifest during the last months. In certain rare cases this hyperthyroidism may at any stage of gestation become pathologically increased; the same may occur after labour has been terminated. A pre-existing state of hyperthyroidism is not conducive to a high degree of fecundity: for example, Bonnaire only saw two patients with Graves's disease in 30,000 accouchements. It is exceptional for the onset of pregnancy to lead to an aggravation of a pre-existing state of hyperthyroidism. Hypothyroidism is even less favourable than hyperthyroidism to the occurrence of conception, but if conception occurs the influence of the gestation on the hypothyroidism may be favourable, aggravating, or indifferent. A latent insufficiency of parathyroid function may be revealed during the course of pregnancy by the occurrence of tetany. Pregnancy supervening in patients who are the subjects of hyperthyroidism or hypothyroidism almost invariably takes a normal course, and such complications as occur are of toxaemic nature. The thyroid hypertrophy of pregnancy may be followed, after delivery, by athyroidism. In certain cases children born of mothers exhibiting profound alterations of thyroid function show a tendency to alterations of thyroid metabolism which are not necessarily homologous to those shown by the mother.

490. Obscure Fatalities during Normal Labour.

VERNING (*Hospitalstidende*, August 31st, 1921) observes that now and again during normal labour a patient may die suddenly, although she had previously seemed quite well, and the *post-mortem* examination shows nothing amiss. He records the following case. A 3-para, aged 25, developed influenza with pleurisy early in pregnancy. Later in pregnancy she developed oedema of the legs, but there was no headache, nausea, vomiting, disturbances of vision or other sign of severe nephritis. The urine was clear, acid, and without albumin. During labour at term rectal exploration was immediately followed by complaints from the patient that she felt ill. Twenty drops of camphor were given. Ten minutes later she suddenly collapsed; respiration was superficial, the pulse hardly palpable, and there was marked pallor with coldness of the body. A little later a severe attack of vomiting occurred, she became cyanosed, and in five minutes was dead. There were no convulsions or tremors, no haemorrhage from the vagina, and no sign of an internal haemorrhage. The necropsy showed nothing abnormal in the brain or medulla. There was no status thymico-lymphaticus, the heart, which was opened under water, showed no sign of air embolism, and neither the macroscopic nor microscopic examination of the heart revealed any disease. The examination of the other organs was also negative, and though carefully sought for the changes in the liver and kidneys associated with eclampsia could not be found. The placenta was not detached from the uterus, but the infant showed signs of congenital syphilis.

PATHOLOGY.

491. The Benzoin and Mastic Reactions in the Cerebro-spinal Fluid.

MAZZA, MEY, and NINO (*C. R. Soc. Biologie*, October 15th 1921) have studied 110 specimens of cerebro-spinal fluid with a view to ascertaining the relations existing between the Wassermann, the benzoin, and the mastic reactions. A comparative study of the albumins, the globulins, and the cell count of the fluid was conducted simultaneously. The fluids came from patients suffering from general paralysis, from tabes, from cerebro-spinal syphilis, and from secondary syphilis without nervous implication. From the tabulation of the results it is possible to see that though there is in general a fairly close correlation between the Wassermann reaction on the one hand and the two colloidal reactions on the other, yet agreement is by no means absolute. In a series of eighty cases followed and diagnosed clinically there were no fewer than thirteen in which the results of the three reactions were in disaccord. From a purely practical point of view it is difficult to see what advantage either of these colloidal tests has over the Wassermann reaction. Neither an increased sensitivity nor an increased specificity has been proved for them, and it seems doubtful whether their introduction into routine work is likely to be followed by anything but confusion.

492. Bacteriological Studies of the Upper Respiratory Passages.

PILOT and PEARLMAN (*Journ. Infect. Dis.*, July, 1921) record the results of a bacteriological examination made of the tonsils and adenoids removed from a group of 103 children. The patients varied in age from 5 to 16 years; they presented tonsils and adenoids of different degrees of hyperplasia with no evidence of any recent acute inflammation, fever, or subjective symptoms of sore throat. (1) Haemolytic streptococci were found in the crypt-like depressions of the adenoids in 61 per cent., and in the tonsils in 95 per cent. of the cases. (2) *Streptococcus viridans* was found in 89 per cent. of the adenoids and in 81 per cent. of the tonsils. (3) The pneumococcus occurred in 65 per cent. of the adenoids; Type II in 2 per cent., Type III in 13 per cent., and Type IV in 85 per cent. (4) The influenza bacillus (Pfeiffer) was isolated in 40.9 per cent. of extirpated adenoids and in 53.9 per cent. of the excised tonsils from 115 persons. These results go to confirm the work of previous observers in showing that streptococci, pneumococci, and frequently influenza bacilli are normal parasites of the nasopharynx.

493. Effect of Prophylactic Vaccination against Influenza.

IN a study by JORDAN and SHARP (*Journ. Infect. Dis.*, April, 1921) of the value of prophylactic vaccination against influenza and other respiratory infections some interesting results were obtained. The work consisted in recording for a period of about seven months the respiratory ailments which developed among a total of 6,066 persons, approximately half of whom had been vaccinated. The persons were distributed through three schools and two large mental hospitals; as far as possible they were placed under comparable circumstances. Three injections of the following vaccine were given to each of the selected patients: Pfeiffer's bacillus, 500 million, *Strep. haemolyticus*, 500 million, *Strep. viridans*, 500 million, pneumococcus Type I, 1,000 million, pneumococcus Type II, 1,000 million, and pneumococcus Type III, 500 million. The second and third doses contained double these numbers of each organism. From November, 1919, to June, 1920, the influenza attacks amongst the 2,873 vaccinated numbered 118, or 4.1 per cent., and amongst the 3,193 unvaccinated 152, or 4.8 per cent.; amongst the 118 vaccinated patients two deaths occurred from pneumonia, and amongst the 152 unvaccinated the same number. The conclusion seems to be justified that the vaccine exerted very little effect, if any, on the prevention of the respiratory ailments studied.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

491 **Convulsive Seizures**

Ziegler (*Journ. Nerv. and Ment. Dis.*, August, 1921), from a study of twenty patients, selected at random from among those diagnosed as epilepsy on admission to hospital, found that they presented more anatomical deviations than normal people, 55 per cent. showing asymmetry of the head, 65 per cent. high palates, and 60 per cent. an unusually large fraenum linguae. Disproportion of the body in some form or other—for example, obesity, sexual undevelopment, pointed fingers, birth marks, thick lips, and flat noses—was present in most of the cases, and in two there was a tendency to exophthalmos. *X* rays showed abnormality of the sella turcica in all but three, and evidences of dyspituitarism were frequent. Physiologically there is a profound change during and after convulsions, while psychologically epileptics show at times marked regressions, instability, restlessness, inadaptability, and egocentricity with lowered emotional tone, their postures and dreams showing that they tend to regress in their sleep more than normal people, and it seems that the regression is the psychological manifestation of infantilism which is latent or anatomically demonstrable. In the author's opinion the vascular phenomena and endocrine disturbances of epileptics point to sensitizing agents tending to ignite the reaction of the organism whose threshold of mass reflex action is low.

495. **Etiology and Treatment of Graves's Disease.**

Liek (*Deut. Zeit. f. Chir.*, September, 1921) holds that Graves's disease should not be regarded as a disease of the thyroid alone, but of the whole endocrine system, the central nervous system included. The system first affected is probably the central nervous system, including the brain, and a "degenerative constitution" is a predisposing factor. This factor is hereditary, and the variability of the clinical picture and of the results obtained by different methods of treatment can best be understood by the inclusion of the brain among the glands of internal secretion. The author admits that spontaneous recovery may occur, and that slight cases may be cured by the physician alone. But advanced cases, particularly when they are of a rapidly progressive form, require operative treatment, the best form of which is extensive resection of the thyroid. This treatment is preferable to *x*-ray treatment, and as shock is the greatest danger of operative treatment, this should be carried out under general anaesthesia, preferably ether, supplemented by local anaesthesia. Marked nervous symptoms, notably irrepressible hysteria, are contra-indications to operative treatment. Thymectomy, either by itself or in conjunction with partial thyroidectomy, involves dangers which are not compensated for by the results achieved. Only when operative treatment has failed should the *x* rays be employed. The author justifies these conclusions by a long account of the literature on the subject, and a report of his own experiences at a hospital in Danzig.

496. **Diagnosis of Plague.**

Joltrain (*Rev. de méd.*, July, 1921) states that in the epidemic of plague which occurred in Paris from June to October, 1920, 166 cases were notified, in 92 of which the diagnosis was confirmed: 51 of these were in Paris and 41 in the suburbs. Among 40 cases which were not treated there were 32 deaths, a mortality of 80 per cent.; while of the 52 cases which received treatment only 2, or 3.9 per cent., died. The outbreak subsided at the end of October, its termination coinciding with the onset of cold weather and the disappearance of fleas. Ambulatory and abortive cases were relatively frequent (30 per cent.). This figure Joltrain thinks should be much higher, as a large number of cases probably escaped recognition altogether. This was not surprising, as the last appearance of plague in France was in 1720 at Marseilles, and in Paris in 1630. Out of 42 cases in which the diagnosis of plague could be established on clinical grounds or laboratory evidence, such as blood cultures or cultures of the buboes, the fixation reaction was definitely positive in 34, slightly positive in 4, and negative in 4. The definitely positive cases were almost always very severe or prolonged forms of the disease. The reaction remained the same for several months, so that it was difficult to determine when it disappeared. On the other hand, it was much easier to determine the date of appearance of antibodies in plague patients, the reaction being negative during the first few days and suddenly becoming positive on the fifth day. The agglutination reaction, on the other hand, was usually negative until the tenth or fifteenth day, so that the fixation reaction was of much greater value for purposes of early diagnosis.

497. **Ouabain.**

According to Donzelot (*Journ. de méd. et de chir. prat.*, August 10th, 1921), ouabain is a crystalline form of strophanthin derived from *Strophanthus gratus*, and was introduced into therapeutics by Vaquez in 1917. Its chemical properties were described by Arnaud in 1888, and its physical characters by Gley in 1890, and more recently by Richaud and Tiffeneau in 1921. Experimental work has shown that on the rabbit's heart ouabain first produces a powerful tonic action characterized by reinforcement of systole with slowing of the beats, followed by a toxic phase shown by tachycardia and arrhythmia with arrest of the heart in diastole. As regards its therapeutic action, the author insists that ouabain is not indicated in all forms of cardiac insufficiency. Thus, in acute infections, whether there is pure myocarditis, endomyocarditis, or endomyopericarditis, ouabain, like all cardiac tonics, has little or no effect. On the other hand, it is indicated when infection is absent or of secondary importance and cardiac dilatation predominates, as in hypertension, arterio-sclerosis, renal sclerosis, valvular lesions, and pericardial adhesions, in which it may be used either alone or in association with digitalis. The daily dose is 1/4 mg., repeated as a rule for four days in succession, and longer if necessary.

498. **Rales as a Sign of Active Tuberculosis.**

Löwenhjelm (*Acta Med. Scand.*, vol. lv, fasc. iv, 1921) disagrees with the rather common notion that râles are indicative of *active* pulmonary tuberculosis. Several authorities have recently expressed the opinion that tuberculosis may be definitely arrested in spite of râles and other moist sounds, but such views, without *post-mortem* evidence, are apt to be regarded as speculative opinions. To prove his thesis, the author records three cases of old-standing pulmonary tuberculosis in which râles continued to be heard up to the time of death, and in which the necropsy showed only healed tuberculous lesions. In the first case the necropsy showed chronic catarrh of the respiratory tract in a patient, aged 41, who had died of heart failure a couple of days after an abdominal operation. The lungs were everywhere adherent to the chest wall by easily detachable adhesions. The right apex contained a small focus of fibrous tissue and the right lower lobe a small calcified nodule. A small nodule of fibrous tissue was also found in the left lung, but no recent tubercles were demonstrable. The bronchi contained some muco-purulent matter. In this case râles had persisted over the areas where the necropsy showed healed tubercle. After recording two other cases in detail the author emphasizes the importance of not being blindly guided by the presence of râles when an estimate is being made as to the activity or passivity of tuberculous lesions in the lungs.

499. **Calcium in Tetanoid Neuroses.**

Levison (*Ugeskrift for Læger*, September 29th, 1921) describes a symptom-complex which he regards as an abortive or atypical and slight manifestation of tetany. The symptoms are lassitude, restlessness, anxiety, depression, insomnia, pain, and paraesthesia; the signs are loss of weight and hair, enlargement of the thyroid, urticaria, paroxysmal nasal catarrh, polyuria, and the signs associated with the names of Trousseau, Chvostek, Erb, and Hoffmann. The possible causes are heredity and acute and chronic infectious diseases; ill-advised *x*-ray treatment of slight and doubtful forms of Graves's disease may also precipitate this condition. The disease does not necessarily occur in epidemic form, but the author associates its present remarkable frequency with the recent epidemics of influenza. The disease is apt to be mistaken for Graves's disease or myxoedema, and is, indeed, sometimes associated with these diseases. It also closely resembles certain other neuroses, and the correct diagnosis can be made only by systematic examination for

signs of tetany. Contrary to certain other authorities, the author has come to the conclusion that Chvostek's sign almost invariably indicates disease of the parathyroids. The exhibition of large doses of calcium (the chloride, lactate or glycero-phosphate, or a combination of them) is remarkably effective in tetanoid neuroses; the symptoms quickly disappear, and the calcium may then be withheld or given only once a day in small doses, instead of three times a day in doses of 2 grams. On the other hand, treatment with extracts of the parathyroid glands has, in the author's experience, proved disappointing.

500. Syncopal Attacks and Left Submammary Pain due to Constipation.

LIAN and JOANNON (*Journ. de méd. et de chir. prat.*, August 10th, 1921) have been struck by the large number of patients who, owing to the occurrence of syncopal attacks or pain in the left submammary region, thought they were suffering from a cardio-vascular affection, whereas their symptoms were due to constipation only. The syncopal attacks in these cases are preceded by abdominal pain, which is of variable intensity, being sometimes like colic but more frequently moderate in character, and are followed by a copious intestinal discharge. In some cases the patients complain of vertigo or a mist in front of their eyes during defaecation. Pain in the left submammary region may be slight and transient, or, on the other hand, it may be severe enough to simulate an attack of angina pectoris. It is not infrequent for the same patient to suffer both from syncopal attacks and pain in the left submammary region, but one may exist without the other. In the treatment the diet plays the most important part; it should be exclusively vegetarian and fruitarian. Mucilaginous laxatives such as agar-agar should be employed, and others avoided if possible. Owing to the condition being due to vagotonia, belladonna is indicated either in the form of pills or as atropine subcutaneously.

501. Metabolism Studies in Athrepsia.

THIEM (*Amer. Journ. Dis. of Children*, October, 1921) investigated the changes which may occur in the intermediary metabolism of infants suffering from athrepsia, that chronic condition of extreme malnutrition not attributable to infection or other obvious cause, and not accompanied by gastro-intestinal or nervous symptoms. Observations on fifteen infants, six of whom were healthy and the remainder athreptic, showed that in the latter there was a diminished capacity to bring about such oxidations as the transformation of benzol to phenols, and the caloric nitrogen and carbon nitrogen ratios were higher than normal, pointing to the excretion of an excessive amount of organic material containing little or no nitrogen. The urinary excretion of creatinine, uric acid, or amino-acid nitrogen showed no increase, but in severe stages there was an increased excretion of organic acids, to which the ammonia excretion was proportionate, decreasing as nutrition improved. During severe stages also the loss of food material in the stools was greatly increased, the utilization of food becoming greater as the nutritional condition of the infant improved.

502. Treatment of Enuresis.

DE HAAN (*Nederl. Tijdschr. v. Geneesk.*, October 1st, 1921), who is psychiatrist to two large schools at Utrecht for boys and girls, regards enuresis as a sign of a neurasthenic constitution, and states that it is a phenomenon which only occurs when sleep is very deep. According to Kraepelin, there are two different kinds of sleepers—namely, those who fall into a heavy sleep at once and those who start with a light sleep which gradually becomes heavier. Most of the patients belong to the first group and have incontinence about an hour after going to bed, while the others pass their urine in bed later in the night. De Haan maintains that the essential thing is the abnormally deep sleep, the natural consequence of which is the involuntary discharge of urine due to involuntary relaxation of the sphincter, just as occurs in coma, epileptic attacks, and severe alcoholic intoxication. According to De Haan, the sovereign remedy consists in rest in bed; in mild cases the child should rest in the middle of the day and go to bed two hours before the usual time, while in severe cases the child should be strictly confined to bed. In such cases recovery sometimes takes place almost at once, but usually takes about six weeks. It is not enough for the child to remain in bed, but an atmosphere of mental rest must be created. Apart from idiots and imbeciles, the prognosis of enuresis is good, recovery occurring in 99 per cent.

SURGERY.

503. Treatment of Otitis Externa with Acriflavine.

THE method of treatment employed by COLEMAN SCALL (*Journ. Amer. Med. Assoc.*, October 1st, 1921) consists in first cleansing the ear canal with dry cotton applicators, then packing the canal tightly with gauze strips saturated with 1 in 1,000 solution of acriflavine, being careful not to pack too near the drum. This packing tends to stretch the canal, and permits the antiseptic to act on all the micro-organisms in the crevices and fissures. The patient is supplied with some of the solution, and instructed to keep the packing moist by the use of a medicine dropper. This procedure is repeated every twenty-four hours, until the ear canal is completely patulous and free from infection and pain. One week is the usual length of time required to clear up an infection. In cases in which definite furuncles have formed or are forming, when the packing is removed the furuncles will be found to have opened themselves and the pus to have been absorbed by the gauze.

504. X-ray Diagnosis of Gall-Bladder Disease.

WEISS (*New York Med. Journ.*, September 7th, 1921) advocates non-surgical drainage of the gall bladder as an aid in the *x*-ray diagnosis of gall-stone disease, it being found that calculi were better demonstrated after drainage of the gall bladder through the duodenal tube after the introduction of magnesium sulphate. In cases where the *x* rays show none, or only barely perceptible, shadows before aspiration, calculi will be visible after aspiration. Prior to the examination the patient is instructed to fast, and the night before castor oil is administered, followed, if necessary, by an enema in the morning. After rinsing the mouth with an antiseptic a sterile duodenal tube is passed into the stomach and the contents aspirated. The stomach is rinsed and a glass of sterile water is drunk, while the tube is swallowed to the duodenal point, its entrance into the duodenum being recognized by an intermittent flow of bile. If after a reasonable time the flow is absent or insufficient, the duodenum is douched with 50 to 75 c.cm. of a 25 to 33 per cent. solution of magnesium sulphate. Failure to obtain bile may be due to cystic duct obstruction by stone, adhesions, external pressure or inspissated mucus; relative absence of bile in, or atony, dilatation, or fibrosis of, the gall bladder; or to tarry bile.

505. Spina Bifida.

ANGLONI (*Ann. Clin. Chir.*, September, 1920) reports a case of spina bifida successfully treated by bone grafting. The child, aged 4 years, had a spina bifida in the lumbo-sacral region, and suffered from incontinence of urine and faeces. The tumour measured 6 by 4 cm., and could be partially reduced by pressure; the skin covering it was normal. The sac was removed and the vertebral breach filled in with bone from the tibia. The wound healed well. When the child was seen a year later, the site of the operation was healed, the loss of control of the faeces and urine was still present but less marked, and the walking rather better. There is a bibliography of about 100 references to the literature of the subject.

506. Post-operative Oedema of the Arm in Cancer of the Breast.

HALSTED (*Bull. Johns Hopkins Hospital*, October, 1921) discusses the cause and prevention of the swelling of the arm after operations for cancer of the breast (elephantiasis chirurgica). Although blocking of the lymphatics, and occasionally the veins, is the underlying factor, infection plays a conspicuous part in determining the amount of swelling and the time of its occurrence. Since his adoption, nine years ago, of the skin-grafting operation, with modified incision and changes in method of closing the wound, swelling of the arm, previously so frequently seen, rarely occurs. Since extreme abduction of the arm was formerly prevented by a cicatricial band in the line of the scar, the incision down the arm has been abandoned and the upper skin edge sutured to the first intercostal muscle and fascia so as to raise the axillary fornix to the highest point, thereby eliminating the possibility of tug on any part of the skin or scar. No attempt is made to approximate the cut edges of the skin at the upper half of the denuded area, these flaps being rather pressed away from the centre of the wound and stitched to the underlying muscles of the thoracic wall, thus securing for the infra-clavicular and axillary regions a superabundance of skin and complete freedom of all movements, together with the avoidance of any subclavicular dead space.

507. Radium Treatment of Leucoplakia.

Lukich (*Lyon. Méd.*, September 22nd, 1921) remarks that the exact relationship of leucoplakia to syphilis is not yet established. While a number of authorities regard leucoplakia as a syphilitic or parasyphilitic phenomenon and even as pathognomonic of syphilis, the majority, while admitting that many cases are of syphilitic origin, maintain that a non-syphilitic leucoplakia undoubtedly exists. In the great majority of cases leucoplakia causes no trouble to the patient at all, but a few patients complain of pain when eating or speaking, especially when the tongue is involved. The great importance of leucoplakia, however, is that it may be the starting point of carcinoma. Radium treatment of leucoplakia was first recommended by Wickham and Degrais. In severe cases Lieul recommended washing out the mouth with water charged with radium emanations. From 1914 to 1919 twelve cases were treated at the radium department of the Vienna University Clinic for Dermatology and Syphilis. They were all men aged from 40 to 60, with advanced non-syphilitic leucoplakia of the tongue and buccal mucosa. The Wassermann reaction was negative in all. There was no other evidence of syphilis, and no effect had been derived from antisyphilitic treatment. The method consisted in placing on the affected area a radium applicator containing 12, 19, 20, or 23 mg. of radium, and keeping it there for half an hour to an hour or more, according to the reaction shown. The sittings usually took place every fortnight, and only in a few cases of severe inflammatory reaction were the intervals longer. The number of sittings varied from five to thirty, according to the severity of the case. All the patients were cured, the mucous membrane completely recovering its normal elasticity, and the site of the leucoplakia being no longer recognizable or marked only by a delicate white appearance of the epithelium.

508. Intramuscular Injections of Ether in Oto-rhino-laryngology.

De Scarpentries (*Ann. de laryn., d'otol., et de rhinol.*, September 1st, 1921) states that the dosage of ether in intramuscular injection for general anaesthesia is 1 c.cm. for each kilo of body weight. The drawback of so large a quantity is that when 60 or 80 c.cm. of ether have been injected there is a great risk of neuritis or myositis which will take a long time to heal. It is therefore best to employ intramuscular injection of ether only after preliminary injection of scopolamine and morphine. The quantity of ether to be injected is then reduced by more than half; 5 c.cm. may be injected every few minutes until anaesthesia is complete, 20 or 30 c.cm. being sufficient. The injection should be given exactly into the muscles. If the injection is subcutaneous it causes sloughing of the skin, and if made too deeply it may pass into the nerve sheath and give rise to neuritis. It should be given very slowly, so as to cause the minimum of traumatism to the muscle. On recovery from the anaesthesia the patients complain for a few days of a vague pain at the site of injection.

509. Hearing in the Newborn.

Waltan (*Il Policlinico*, Sez. Prat., July 25th, 1921) carried out observations at the Genoa Maternity Institute on fifty infants within the first hours or days of life, and found that all the newborn without exception responded by blinking and sometimes by tight closure of the lids and crying on the sharp sound of a pitch-pipe of 1080 vibrations to the second, while they made no response to a tuning-fork, tom-tom, or whistle. This shows, says the author, that in the newborn the perception of sound takes place through the air and not by bone conduction, since in the newborn ossification is not complete, and there cannot be an osteotympanic transmission of sound as in the adult, in whom the cranial bones form a complete whole which transmits the vibration of sound better. On approaching the pitch-pipe to within 1 cm. of the ear a movement of rotation of the infant's head in the antero-posterior axis took place according to the side on which the sound was made, together with a horizontal nystagmus of the eyeball on the same side. Waltan regards these movements of retraction as a defensive function, as well as a function of orientation probably connected with the semicircular canals.

510. Haematuria.

Bernt (*Ref. Med.*, July 25th, 1921), in a clinical lecture on haematuria, begins with haemorrhage from the urethra, which is usually traumatic in origin and the cause generally known. He next discusses prostatic haematuria, which is more common in simple hypertrophy than in neoplasms of the prostate; it may be due to congestion, or catheterization, and is usually initial or terminal in type. In vesical haematuria the bleeding is usually terminal in type; total haematuria that is, when the blood is seen from the beginning to the end of micturition is more often renal in origin. The nature of the clots passed in urine is also some guide: in renal haematuria the clots are long, worm-like, and narrow; in vesical haematuria they are bigger, shorter, and leech-like in appearance. Cystoscopy and ureteral catheterization will often throw light on the exact cause. Spontaneous haematuria associated with frequent painful micturition and pyuria may mean gonorrhoeal, tuberculous, or neoplastic cystitis. Severe haemorrhage *ex vacuo* may follow complete emptying of the bladder in prostatic hypertrophy. Pregnancy, vesical varices, parasites, may also be a cause of vesical haematuria. Renal haematuria may be due to stone, cancer, or tuberculosis; chronic nephritis and nephralgia, are occasional causes. Internal remedies—for example, ergotin, hamamelis, calcium chloride, adrenaline—are sometimes useful. Washing out the bladder and catheter in permanence are necessary in more severe cases, and if the bladder remains very irritable cystotomy is the best means to give rest and stop the bleeding. Decapsulation and nephrotomy have not proved very satisfactory in chronic nephritis, as the bleeding usually recurs after a time.

OBSTETRICS AND GYNAECOLOGY.

511. Sloughing Fibroids in Pregnancy.

Barbier (*Journ. de méd. et de chir. prat.*, September 10th, 1921), in his Bordeaux thesis, states that sloughing fibroids are a rather rare complication of pregnancy. The clinical picture is that of pregnancy complicated by fibroids as well as by symptoms due to sloughing, such as attacks of pain suggestive of rupture of a tubal pregnancy, more or less marked febrile attacks, constitutional disturbance, and, in cases of gangrene, signs of septicaemia and a peritoneal reaction. The diagnosis of sloughing is chiefly based on the rapid increase in size and softening of the tumour, localized pain, and involvement of the general condition. These signs may be mistaken for torsion of an ovarian cyst, lateral deviation of the uterus, suppuration of an ovarian cyst, or perforative peritonitis. As a rule the diagnosis is only made after operation. The prognosis is very grave for the foetus and should be very guarded for the mother, as secondary infection is always possible. An operation is almost always required. Myomectomy is best for pedunculated tumours, and by the vaginal route in pedunculated myoma of the cervix. In interstitial fibroids, on the other hand, myomectomy is contraindicated owing to the possibility of haemorrhage and the poor resistance of the uterine walls, and total or subtotal hysterectomy is preferable.

512. The Two-Flap Low Incision in Caesarean Section.

Beck (*Surg., Gyn., and Obstet.*, September, 1921), who had 10 per cent. of deaths in patients operated on by the classical Caesarean operation after the test of labour had shown delivery *per vias naturales* to be impossible, reports a series of 29 similar cases without mortality treated by a low "two-flap incision" Caesarean operation, a modification (described by the author in 1910) of the Kroenig technique. The abdomen being opened, the peritoneum is incised transversely 2 cm. above the bladder; the inferior flap is obtained by stripping the bladder from the anterior surface of the uterus, as in abdominal hysterectomy, and the superior flap by passing a pair of scissors upwards between the peritoneum and the uterine muscle. Extraction is accomplished through a vertical uterine incision, traction suture being passed through the lower and upper angles before delivery of the placenta. After suture of the myometrium the upper peritoneal flap is secured by interrupted stitches over the superior portion of the closed uterine incision, and the remainder of the denuded uterine surface is covered by bringing the lower flap about 1 cm. above the level of the original incision. This double sealing offers a two-fold barrier against extension of infection from the uterus to the peritoneal cavity. The 29 cases operated on successfully by this method included 16 which had been over twenty-four hours in labour, 15 in which the membranes had been ruptured over ten hours, and 17 in which one or more vaginal examinations had been made. Beck remarks that the adoption of this operation has the advantages that the risk of a pre-operative test of labour is diminished, and that in many cases a uterus which on account of the fear of infection might have been sacrificed, may with little risk be saved.

513. Glandular Extracts in Menstrual Disorders.

HIRST (*New York Med. Journ.*, October 5th, 1921) compares the value of whole ovarian extract, corpus luteum extract, and ovarian residue in menstrual disorders. Extract of the whole ovary is most useful in the natural menopause, the surgical menopause, and the late establishment of menstruation, in relieving the nervous and mental disturbances. The most satisfactory results occur in cases of the natural menopause, and the least satisfactory are those in early surgical menopause. Ovarian residue extract—that portion remaining after the extraction of the corpora lutea—appears to be valuable in late development of puberty, infantilism, irregular menstruation at puberty, menorrhagia, obesity, and amenorrhoea, though at present it is in the experimental stage. Corpus luteum extract controls the nausea of pregnancy, habitual abortion without apparent cause, functional amenorrhoea, pruritus vulvae, and sterility. All these extracts are best administered intravenously, though they are put up in tablet form for administration by mouth. Results are variable, especially in the case of ovarian residue extract, and may be slow in development, the quickest being obtained from whole ovarian extract in the nausea of pregnancy, while the most discouraging results are in cases of obesity and amenorrhoea.

514. Uterine Metastases from Ovarian Carcinomata.

GOLDBERG (*Zentralbl. f. Gynäk.*, September 24th, 1921) records two cases in which ovarian cancer was followed by metastases in the uterus. The first was that of a 2-para, aged 51, who for one year had suffered from pain and dysuria, and was found to have an irregular pelvic tumour and ascites. At laparotomy the uterus, bilateral ovarian tumours, and a portion of the omentum were removed. Microscopic examination showed glandular carcinoma of the ovary with omental metastases; the uterus contained four mucous polypi, in one of which—situated in the vicinity of the tubal opening—a secondary carcinoma was demonstrated. The second case, that of a 1-para, aged 54, who three years after the menopause complained of pain, discharge and dysuria, was notable in that a papillary adenocarcinoma of the ovary contained psammomatous granules; a metastasis was noticed in the superficial layers of the uterine mucous membrane.

PATHOLOGY.

515. Experimental Work on Blood Pressure.

MARRASSINI (*Il Policlinico*, Sez. Prat., September 19th, 1921), as the result of experiments on dogs, came to the following conclusions: (1) Moderate bleedings repeated at various intervals and not followed by intravenous injections of saline cause a progressive fall in the blood pressure resembling that obtained when bleeding is accompanied by compensatory intravenous injections of saline. (2) Progressive fall of blood pressure resembling that just described also takes place when compensatory injections of saline are given, either slowly and in small amounts or rapidly after each moderate bleeding. (3) If the injections are given after each series of bleeding there is a progressive fall of the level of the blood pressure. But it is impossible to determine if in this, as in the preceding case, there is always the same relation between the fall of the blood pressure and the amount of blood removed. (4) The blood pressure, whether it is already reduced to a low level or tends to fall as the result of the bleeding, derives considerably greater benefit from intravenous injection of homogeneous defibrinated blood than from that of normal saline.

516. Experimental Typhus Infection and Immunity.

WEIL, BREINL, and GRUSCHKA (*Wien. klin. Woch.*, September 22nd, 1921) give the following account of their experimental work on animals. Infection of guinea-pigs with typhus virus is regarded as consisting of three phases—namely, the incubation period, the duration of the fever, and the height of the fever. After inoculation of guinea-pigs with 1 10 to 1/20 of the brain of febrile guinea-pigs the incubation period ranged from five to twelve days. As a rule the temperature was raised from 1/2 to 1° C. and more. The symptoms were slight and not characteristic, and no fatal cases were seen. Multiplication of the virus occurred in the organs. After intraperitoneal injection of 1 20 of the brain of febrile animals there were already ten infective doses in the brain two days after infection, and after six days 1,000 infective doses. The experiments showed that the incubation period bore a direct relation to the infecting dose, for infection with a small dose prolonged the incubation period to as much as fourteen days. The active immunity of the guinea-pig was still well-developed after a year. Passive immunity could not be found in the serum of guinea-pigs infected with typhus on the day after their temperature became normal, and was only present in a rudimentary form three days later, but became fully developed on the seventh day, and was still present after four weeks and even longer. Passive immunity was manifested by very considerable prolongation of the incubation period and by the abortive character of the fever. The protection conferred by the serum seemed to consist of two elements—namely, a viricidal element which caused a prolongation of the incubation period, and an antifebrile element which produced a change in the character of the fever. Serum of human beings convalescent from typhus had a similar action to guinea-pig serum.

517. The Infective Origin of Ano-genital Pruritus.

ACCORDING to WINFIELD (*Arch. Derm. and Syph.*, November, 1921), true ano-genital pruritus is due in about 90 per cent. of cases to infection with the *B. coli* or with the *Streptococcus faecalis*. Of 50 patients examined suffering from this affection, 40 were found to have an infection of the skin associated with one or both of these organisms. In 20 the symptoms were severe and had lasted from three to five years, while in the remaining 20 they were of moderate severity and had lasted from six months to two years. In the 10 female patients no vaginal discharge or utero-ovarian disease was present, and in all sugar was absent from the urine. Treatment by autogenous or stock vaccines appears to have been remarkably successful, all except six being cured within about three months. No external applications other than a mild antiseptic solution and a zinc stearate dusting powder were used. Of the remaining 10 patients, in whom no bacterial infection could be demonstrated, 2 were women suffering from leucorrhoea, and 8 were men attacked by the epidermophyton fungus, both of which yielded promptly to appropriate treatment.

518. Experimental Lethargic Encephalitis in Rabbits.

KLING, DAVIDE, and LILJENQUIST (*Hygiea*, September 16th, 1921) have succeeded in inoculating rabbits with the virus of lethargic encephalitis obtained from the cerebro-spinal fluid of a woman in the acute stage of what was clinically typical lethargic encephalitis. A curious feature of their investigations was the absence of symptoms shown by the rabbits which were given intracerebral injections of the cerebro-spinal fluid. They remained apparently quite well, and when they were killed, thirty-eight days after the inoculation, two of them showed no macroscopic or microscopic disease of the brain; but two others showed perivascular infiltration of the brain and meninges with mononuclear cells, the changes being exactly like those found in the central nervous system of human beings dying of lethargic encephalitis. Passage of the virus from these two rabbits to another series of rabbits by intracerebral injection of the brain substance of the first series was successfully effected; there was practically no clinical reaction, but when the rabbits of the second series were killed, twenty-five days after inoculation, the same changes were found in the brain and meninges as in the first series.

519. Types of Pneumococci in the Pulmonary Complications of Influenza.

SACQUÉPÉE (*C. R. Soc. Biologie*, October 29th, 1921) records the results of an examination of the types of pneumococci encountered in an epidemic of influenza in April, 1921. The organisms were recovered from the lung, pleura, or blood of patients suffering from pneumonic and bronchopneumonic complications supervening on the disease. With regard to those isolated from cases of lobar pneumonia he found that of eleven strains studied seven were of pure type and four of mixed types. In all, Type II pneumococci were represented in 90 per cent. of the strains. On the other hand, of fourteen strains recovered from cases of bronchopneumonia, only four were of pure type, while ten were of mixed types. In all, Type I antigen was present in 64 per cent., Type II in 57 per cent., and Type III in 64 per cent. of cases. From these facts he concludes that in pneumonias following on influenza, just as in cases of pure lobar pneumonia, Type II antigen is the predominating one, whereas in influenzal bronchopneumonia the mixed types are preponderant, and Types I, II, and III antigens are represented in nearly equal proportions. From the point of view of treatment influenzal pneumonia should be dealt with by the administration of Type II serum, while influenzal bronchopneumonia should be treated with a mixture of Types I and II serums.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

520. Treatment of Diabetes Mellitus.

LYON and MEAKINS (*Edin. Med. Journ.*, November, 1921) treat diabetes mellitus by rapidly reducing the diet, fasting until the urine becomes sugar free, and then slowly building up the diet again with the view of raising the tolerance to a point where the urine remains free of sugar and ketone bodies, while sufficient food can be taken to maintain nitrogen balance, and sufficient fats and carbohydrates to allow of work and a pleasurable existence. Prior to commencing treatment a standard full diet is given for several days in order to ascertain the severity of the disease, and since the degree of glycosuria is not an index of the response which will follow treatment no prognosis at this stage is possible. When reducing the diet the danger of producing acidosis must be borne in mind, and fats should be withdrawn on the first day, half the proteins on the second, and the remainder of the proteins and half the carbohydrates on the third, and the reduction of the latter may be continued to the sixth day if there is diminution in the output of sugar. Complete fasting begins on the fourth or sixth day, according to the rapidity of the treatment, large quantities of unsweetened lemonade and black coffee only being allowed, and 1 to 4 oz. of whisky if the patient's condition is low. The duration of starvation depends on the patient, and lasts for twenty-four hours after the urine is free from sugar, and once this is attained no recurrence should be allowed. In building up the diet again the foods are given in the inverse order of their removal until the patient is taking sufficient to maintain his equilibrium, a fast day following upon any recurrence of glycosuria; the ideal maintenance diet is one which keeps his weight a little below the normal for his height and age. Septic foci should be sought for and removed, since a gumboil or carious tooth may account for the persistence of a glycosuria.

521. Treatment of Haemophilia by X Rays.

SAINT-PAUL (*Journ. de méd. et de chir. prat.*, August 10th, 1921) states that in cases where Nolf's method of subcutaneous injection of peptone is ineffectual in haemophilia, *x*-ray treatment of the spleen should be tried. The whole spleen should be irradiated and the maximum dose should not exceed one-third of the dose capable of irritating the skin. The irradiations soon cause a return of the normal coagulability of the blood and haemorrhages cease. This result, however, is not permanent, but lasts only a few days. The patient therefore should be kept under observation, and the irradiations repeated if necessary. Cases of severe haemorrhage with infection are refractory to the treatment. *X*-ray treatment should be accompanied by the ordinary measures used for haemophilia, such as calcium chloride, sodium sulphate in small and repeated doses, thyroid extract, gelatine, and especially fresh serum either locally or by injections.

522. Syphilis of the Lung.

MILANDE (*Journ. de méd. et de chir. prat.*, September 10th, 1921) gives the following classification of syphilis of the lung: (1) Acute forms, which are rare. Milian has described an acute bronchitic form which occurs in the course of tertiary syphilis and easily escapes notice. An acute bronchopneumonic form may also occur. Either of these varieties may develop in the course of a chronic process. (2) Chronic forms, which constitute the great majority of cases of tertiary disease of the lung. These may be subdivided into (*a*) chronic bronchitic forms with signs of bronchopulmonary sclerosis; (*b*) chronic bronchitic forms with signs of bronchial dilatation; (*c*) forms with cavities or syphilitic phthisis; (*d*) pleural forms. In most of the cases the pleurisy is dry, but sometimes there is a moderate amount of serous or haemorrhagic effusion.

523. The Labyrinthine Form of Epidemic Encephalitis.

BARRÉ and REYS (*Paris méd.*, October 1st, 1921) state that during the recent epidemic of encephalitis they were struck by the large number of patients who complained of vertigo, loss of equilibrium, and lateropulsion, these symptoms appearing earlier and being more pronounced than the ocular symptoms or drowsiness. The frequency of these cases induced the writers to describe a labyrinthine form of epidemic encephalitis which might occur in association with other signs of encephalitis or in a pure form. Examples of the first group are much the most frequent, those of the second group forming only 12 per cent. of the cases observed by the writers. The pure form develops in the following way: The patient, who has previously been perfectly healthy, suddenly develops attacks of giddiness which last only a short time but return at more or less frequent intervals. At the same time the patient feels drawn in a certain direction, or walks like a drunken man. He feels extremely weak, and the sensation of heaviness in the head prevents him from undertaking any work which requires sustained attention. The symptoms are relieved by rest and silence and are aggravated by sudden movements or noise. During the attacks of vertigo the patient may sometimes see double. The condition is liable to be mistaken for neurasthenia, hysteria, cerebral arterio-sclerosis and softening, Ménière's disease, disseminated sclerosis, and subacute labyrinthitis due to other infections than epidemic encephalitis. The diagnosis from hysteria and neurasthenia is made by the presence of nystagmus, Romberg's sign, and the Babinski-Weil test. Treatment consists in administration of quinine in doses of 10 or even 5 cg. twice or thrice a day, a considerable time after food. Several patients have also derived benefit from cachets containing stovaine 0.01 gram, pyramidon 0.20 gram, and veronal 0.25 gram.

524. The Shoulder Phenomenon in Tuberculous Meningitis.

TRONCONI (*La Pediatria*, September, 1921) gives his experience in testing a symptom first described by Binda and believed to be almost pathognomonic of tuberculous meningitis. The symptom failed in a large number of healthy children and was present in seven cases of tuberculous meningitis (corroborated by the autopsy). The sign in question consists in a sudden raising and forward projection of the shoulder in succession to a rapid passive rotation of the head to the opposite side. Light pressure with the hand on the head should be used until a certain amount of muscular relaxation is induced and then the head should be turned rapidly to one side. Seeing the difficulty of diagnosing tuberculous meningitis in children, especially in its early stages, any sign which gives help in this direction is worth noting.

525. Cod-liver Oil in Rickets.

PARK and HOWLAND (*Bull. Johns Hopkins Hosp.*, November, 1921) produce radiographic evidence of the influence of cod-liver oil in rickets in some 50 cases. All the children were in-patients during the period of observation, the same diet being continued as that upon which the rickets had developed, 2 to 4 c.cm. of plain cod-liver oil being given three times a day. The results were uniformly consistent, the changes in the bones being readily demonstrable in from three to four weeks, and in two or three months so much infiltration with salts had occurred as to make the extremities of the bone, apart from deformities, practically normal in appearance. The authors regard cod-liver oil as a specific for rickets, having had no case in which it failed. They have seen the rickets cured even while an intermittent disease was proving fatal, evidence of calcium deposit in the bone being shown, both microscopically and by radiograms, in a child who died of pneumonia a month after treatment.

526. Respiratory Insufficiency in Children.

DUMOUTET (*Paris méd.*, September 24th, 1921) states that a mild form of respiratory insufficiency in children may be due to two principal causes, namely, (1) insufficiency of the lesser circulation giving rise to acrocyanosis, and (2) insufficiency of the respiratory output giving rise to a condition which he calls "hypasphyxia." In acrocyanosis the child is of normal size and weight, but the nose and cheeks are of a violet colour, there is incapacity for violent or rapid effort, the heart is often irregular, but no signs of an organic cardiac lesion can be discovered. This condition, which is probably due to pluriglandular disturbance, must be distinguished from stenosis of the pulmonary artery, mitral insufficiency and stenosis, persistence of the ductus arteriosus, various malformations, adherent pericardium, pulmonary tuberculosis and emphysema. In hypasphyxia the child is pale, cold,

melancholic, readily depressed by any effort, and has a low blood pressure. Treatment of both conditions consists in preparatory gymnastics and properly regulated muscular exercise. Violent exercise of any kind must be forbidden.

527 Acute Oedema of the Lung.

LEMOINE (*Presse méd.*, October 15th, 1921) remarks that many causes have been invoked to explain the origin of attacks of acute oedema of the lung, the usual cause assigned being hypertension. Exceptions to this rule, however, are frequent. Fiessinger has observed acute pulmonary oedema in patients whose blood pressure was not excessive, and even in subjects with normal tension. Lemoine has made similar observations, and alludes to a case of renal sclerosis with a moderately high blood pressure who had three severe attacks of oedema of the lung before death. The attacks are most liable to be brought on by errors of diet. Lemoine attributes special importance to food rich in cholesterin, a substance which becomes deposited on atheromatous patches, where it causes an irritation of the nerve fibres. As regards treatment, all authorities are agreed as to the immediate necessity of blood-letting. This should be followed, as Huchard advises, by subcutaneous injection of caffeine, beginning with 0.25 eg., and repeating it once or twice if necessary. Lemoine disapproves of Fiessinger's plan of injecting small doses of morphine or digitalin, which tend to exhaust the cardiac contractility, but recommends strophanthus, which has a tonic action on the fibres of the exhausted ventricle without any ill effects. Injections of camphor oil, with or without simultaneous injection of adrenaline, are also beneficial.

SURGERY.

528 A New Metatarsal Disease

[illegible] (*Zentralbl. f. Chir.*, October 1st, 1921) describes a condition, of which he has hitherto seen only six examples, which at first resembles flat-foot, but is subsequently shown to be a special disease of the metatarsus, especially of the second and third metatarsals. All his patients were intelligent women of the middle classes, about 30 years of age, who definitely denied any previous injury or strain of the foot. The disease developed in all cases spontaneously and lasted for months, its typical localization being at the junction of the middle and distal third of the diaphysis. At a relatively late stage—eighth or ninth week of the disease—new formation of bone in the periosteum and medulla occurred. Clinically three stages might be distinguished: (1) A stage of acute disease lasting for two months, and characterized by (*a*) a sharply circumscribed painful area, (*b*) absence of any *x*-ray findings. (2) A stage of increased new bone formation in the medulla and periosteum with distinct *x*-ray findings, beginning in the third month and lasting till the fourth month. (3) A stage of recovery, with disappearance of the newly formed bone. The condition must be distinguished from Köhler's disease of the second metatarso-phalangeal joint and from late rickets of the metatarsus described by Fromme, in both of which there is also occasionally increased periosteal bone formation. But while in Köhler's disease there is mainly an involvement of the joint simulating osteochondritis and in Fromme's cases there are changes in the zones of growth, in the present condition the primary disease is in a definite region of the diaphysis. Deutschlaender attributes the condition to invasion of the bone by bacteria of attenuated virulence which penetrate the shaft through the nutrient artery and set up subacute osteitis, followed by periostitis. Treatment consists in application of a tight bandage, associated with passive hyperaemia.

529 Safety in Ophthalmic Operations

[illegible] (*Ann. of Ophthalm.*, November, 1921) summarizes various measures aiming at the elimination as far as possible of suppuration in ophthalmic operations, especially that for cataract extraction. Any conjunctivitis and blepharitis must be clinically and culturally cured as proved by forty-eight hour cultures from both fornices. Mild infections limited to the lacrymal sac being eliminated by [illegible] of the sac prior to taking the swab. The presence of the pneumococcus, pneumo-bacillus, strepto-[illegible], staphylococcus contraindicates operation, and [illegible], *B. coli*, *Staph. albus*, and *B. [illegible]* may be harmless they are better eradicated. Weekly [illegible] the conjunctival sac thrice daily for a week with 1 in 10,000 lotio hydrarg. perchlor. and daily painting with silver nitrate solution (gr. x to ʒj) usually clears away all harmful organisms, but mild infections will clear up under zinc sulphate lotion (gr. j to ʒj) thrice daily, with drops of 10 per cent. protargol once a day. In all cases giving unsatisfactory cultures the lacrymal sac should be washed out with boric lotion followed by the injection of a few drops of 5 per cent. protargol. The Meibomian glands should be expressed by a blunt glass rod, and a mucocele, if present, should be excised. Beyond cutting the lashes no preparation is necessary in a clean eye. Sterile coats, sleeves, caps, and masks, should be worn, and the eye washed out at operation with 1 in 10,000 lotio hydrarg. perchlor., and the skin of the lids and surroundings should be painted with tincture of iodine. All instruments should be used dry, as also the hands after washing and sterilizing, and nothing should be touched by the working end of an instrument except the actual tissues it is meant to manipulate. By the adoption of these and other precautions post-operative "quiet cyclitis," often attributed to autoinfection, should be of less frequent occurrence.

530. Lumbar Puncture in Syphilis.

SÉZARY (*Paris méd.*, October 1st, 1921) maintains that lumbar puncture is unnecessary in syphilis until the septicaemic stage of the disease has subsided under the influence of intensive treatment. The right time to perform it cannot be absolutely fixed, but it is imperative when the patient's disease appears to have been sterilized. Early puncture—that is, puncture performed as soon as the Wassermann reaction in the blood has become negative—does not appear advisable, for the meningeal reactions of septicaemic origin are always slower in disappearing than the manifestations in the skin and mucous membranes, and often than the reaction in the serum. Lumbar puncture performed eight to twelve months after the Wassermann reaction in the blood has become negative without any treatment is not liable to this objection, but it presents the drawback of necessitating suspension of treatment, during which the meningeal reaction may evolve and organized nervous lesions may develop. Sézary recommends examination of the cerebro-spinal fluid first when intensive treatment is about to be replaced by a less active method, and later, but not necessarily, when it is intended to suspend all treatment. If the fluid is normal the danger of nervous complications may be practically excluded, but this rule is not universally applicable. As the spinal fluid may be normal in certain cases of arteritis and gumma, in some cases of encephalitis or myelitis (Ravaut), progressive muscular atrophy (Lerri), combined sclerosis (Claude and Schaeffer), paraplegia and cerebellar hemiplegia (Clovis Vincent), fully developed tabes (Dreyfus), and general paralysis (Long, Anglade, Babinski), it is *a priori* conceivable that the spinal fluid may not be affected at the onset of these affections. These exceptions, however, are rare and do not detract from the importance of examining the spinal fluid in syphilis.

531. Statistics of Goitre Operations.

JASTRAM (*Deut. Zeit. f. Chir.*, August, 1921) states that the mortality from operations for goitre has naturally diminished since the introduction of asepsis and the improvement of technique. Forty-four cases of excision of goitre published before 1850 yielded a mortality of 40 per cent., whereas the 356 operations for goitre up to 1883 collected by Liebrecht showed a death rate of 19.3 per cent., haemorrhage and sepsis being the chief causes of death. While Kocher in 1881 still had a mortality of 14.8 per cent., in 1883 his death rate had fallen to 6.9 per cent., and in 1889 to 0.8 per cent. for simple goitre, the only complications being pneumonia or other pulmonary complications. Jastram gives the following statistics of 234 operations for goitre performed at the Königsberg University Surgical Clinic and in Professor Kirschner's private clinic from April 1st, 1914, to April 1st, 1920. Of these, 209, or 89.34 per cent., were simple goitre; 19, or 8.11 per cent., exophthalmic goitre; 4, or 1.7 per cent., malignant goitre, and 2, or 0.85 per cent., thyroiditis. In 14.85 per cent. of the cases there was an hereditary taint, that is, goitre in the parents, grandparents, or other members of the family; 7.2 per cent. of the cases developed in the puerperium, 4.27 per cent. showed more or less substernal extension. Complications occurred in 17 out of 202 cases, or in 8.41 per cent.—namely, pneumonia 5 cases, bronchitis 5 cases, influenza 1 case, scarlet fever 1 case, secondary haemorrhage 2 cases, injury to recurrent laryngeal nerve 1 case, and injury to sympathetic 2 cases. The total mortality was 11 deaths, or 4.70 per cent., the death rate from operation for simple goitre being 8 deaths, or 3.41 per

cent., and that for operations on exophthalmic goitre 3 deaths, or 10.52 per cent. The causes of death were as follows: Bronchopneumonia 2 cases, lobar pneumonia 1 case, emboli in 1 case, tetany 2 cases, peritonitis 1 case, status lymphaticus 1 case, myocardial degeneration 1 case.

532. Treatment of Parotid Fistula.

GUERRIER (*Journ. de méd. de Bord.*, September 25th, 1921), in his Bordeaux thesis, states that salivary fistulae may be produced by internal causes, such as abscesses of dental origin, suppurative adenitis, or salivary calculi, but are most frequent as the result of wounds of the face. A large number of cases were met with during the recent war. Fistulae affecting the tissue of the gland tend to heal up spontaneously, though this may take several months. There should therefore be no hurry to operate. Slight cauterization with a thermocautery and immobilization of the jaw hasten recovery. Fistulae involving Stenson's duct are much more obstinate. Cauterization, suture, autoplasty, compression, re-establishment of the natural channel by a tube, and the formation of an artificial duct, usually fail. More certain and lasting results are obtained by excision of the fistula. In cases which relapse in spite of excision Guirriec advises resection of the auriculo-temporal nerve.

533. X Rays in Bone and Joint Diseases.

PHILIPS and FINKELSTEIN (*Amer. J. Roentg. Radium Therap.*, October 19th, 1921) record their experiences of *x*-ray therapy in the treatment of chronic bone and joint diseases, based upon fifty patients receiving series of exposures repeated monthly; 40 per cent. were under observation for a year or more and 60 per cent. for more than six months after treatment ceased. Night cries, spasm, pain, and malaise frequently disappeared after a few radiations. The chronicity of osteomyelitis was markedly shortened and sequestration and drainage favoured, chronic sinuses drying up. In chronic arthritis, although no actual changes in the joints occurred, the subjective improvement was immediate in the relief of pain, and nodules rapidly disappeared under treatment. *X*-ray therapy should be used as an aid to orthopaedic and surgical measures, which should be continued until definite cure is established. With a safe technique it is clear, they consider, that results are better and more quickly attained by the use of *x* ray therapy than can be secured by any other method alone.

534. Transfusion in Infants with Malnutrition.

BURK and FISCHER (*Med. Record*, October 29th, 1921) urge the use of the superior longitudinal sinus for transfusion of citrated blood in infants suffering from malnutrition, because of its large calibre, superficial location, and ease of entrance through the anterior fontanelle, which is available up to the age of 2½ years. In fourteen transfusions on infants averaging in age from 9 days to 6 months about 1 oz. of 0.3 per cent. solution of citrated blood was injected without any harmful effect, and this was followed by marked improvement in four, slight improvement in six, and no change in two. Feeding should be delayed for at least an hour after transfusion, otherwise vomiting may occur. The treatment is of value in cases of malnutrition, haemorrhagic disease, and cachexias following acute infections, and it improves the general condition of infants with gastro-intestinal disorders, especially in cases suffering marked dehydration after failures of hypodermoclysis, rectal instillations, and venous infusions. The prognosis is improved in premature infants after transfusion.

535. Air Embolism.

Il Morgagni (August 15th, 1921) relates several cases of sudden death occurring during thoracentesis or lavage of the pleura. Some of these may be due to pleural reflex, but probably most of them are due to small air emboli. Many cases are reported where lavage has been practised several times with impunity and on the eighth or ninth time sudden death has followed. The symptoms usually set in suddenly: the face becomes pale, with cyanotic patches; the patient complains of giddiness, malaise, pains in the head and chest, dimness of sight or even blindness; the pulse becomes weak and irregular; dyspnoea, coma, fainting, and death may speedily follow; convulsions, nystagmus, conjugate deviation of the eyes are frequent in bad cases. If the patient survives, he often complains of various pareses and paraesthesias. The visual disturbances persist longer than the other symptoms. The air emboli in the softened cerebral areas are primary and not due to secondary decomposition. To prevent these accidents siphonage with the addition of normal saline is useful. No strong irritant antiseptic should be used in lavage of the pleural cavity.

OBSTETRICS AND GYNAECOLOGY.

536. Hysterectomy in Acute Puerperal Affections.

COPPE (*Gynec. et Obstét.*, 1921, iv, 3) is in accord with Jeannin and others in believing that there are clear indications for hysterectomy in puerperal infections characterized by manifest uterine lesions. Hysterectomy should be performed (1) immediately when the puerperal infection is grafted on lesions which of themselves indicate uterine ablation (such as wounds, fibroma, cervical cancer, chorion-epithelioma, and intractable placental retention); (2) secondarily, after failure of intrauterine application in cases of gangrene, abscess, or emphysema of the uterus. It is debatable whether, in view of modern improvements in technique and of other considerations, these indications for hysterectomy should not now be amplified. Pinard, in 69 autopsies on patients dying after puerperal infection, found 2 instances only in which, in his judgement, the performance of hysterectomy might have saved the patient's life. Mouchotte, Doléris, and others regard hysterectomy as being, in the majority of cases, a dangerous and useless proceeding, but during the last ten years hysterectomy, combined, if necessary, with ligature or ablation of thrombosed veins, has found an increasing number of advocates. Coppe concludes that, in the absence of the indications enumerated above, hysterectomy only exceptionally finds justification in cases of puerperal fever. At the onset of an infection it is impossible to assess the degree of its gravity, and therefore preventive hysterectomy is not justifiable. Cases of puerperal infection which are from the beginning septicaemic resist surgical and medical treatment alike. Early hysterectomy may be justifiable in cases of grave infection following abortion, but hysterectomy finds its chief extension of applicability in cases of severe prolonged or remittent forms of infection which take a slowly progressive course towards a fatal septicaemia or pyaemia. Except when venous ligature or ablation is indicated hysterectomy should be performed by the vaginal route. Bacteriological examinations of the lochia are of little value in determining prognosis or lines of treatment.

537. Pregnancy and Pneumothorax.

HERVÉ (*Gaz. Méd. du Centre*, February 15th, 1921) records the case of a girl, aged 25, who suffered from left apical pulmonary tuberculosis and whose sputum contained tubercle bacilli. After two years' treatment by induction of artificial pneumothorax, she appeared to be cured and married a man in whom also artificial pneumothorax had been performed on account of phthisis. Thirteen months later the patient became pregnant; the gaseous injections being regularly continued, a healthy infant was born at term. During the two years which have since elapsed the mother has shown no sign of active tuberculous disease. Two other cases are related in which the results have been equally successful, no return of disease being experienced in the six months which have elapsed since labour.

538. Radium Treatment of Cervical Cancer.

HARTMANN (*Gynéc. et Obstét.*, 1921, iv, 4), in discussing the indications for radium treatment of cervical cancer, summarizes the more important clinical statistics as follows: Bumm had 30 cures among 74 operable cases, 24 cures among 81 borderland cases, and 9 cures among 127 inoperable cases. Döderlein found after five years that out of 205 cases treated by *x* rays (*sic*) 40 were free from recurrence. Kelly, after radium treatment, had 69 cures, of which 7 only were of five years or more, among 324 inoperable cases. Heymann, after five years, had 7 cures among 26 cases, and after four years 11 among 40. By histological examination of the uterus removed at operation subsequent to radium therapy, Gagey found no trace of cancer after eighteen months in 1 case; Bailey, among 7 cases, found the uterus to be free from cancer in all, but the parametrium to be affected in 2 cases. Hartmann, in 5 similar observations made from one to three months after radium therapy, found neoplastic cells in two instances; the patients concerned had received considerably smaller doses than the others. The writer does not speak favourably of hysterectomy performed subsequently to radium treatment; a good number of such cases would have been cured by the application of radium, and the presence of scar tissue resulting from the radium therapy adds considerably to the difficulties of operative intervention. He doubts also the utility of radium applications made after the performance of hysterectomy, and quotes the case of [illegible]

cloid on the seventh day as a consequence of intestinal necrosis. Except when there exists a special operative contraindication, such as diabetes, advanced tuberculosis, or pronounced cachexia, radium has no place in treatment of cancer of the uterine body. In assessing the applicability of radium treatment to cases of cervical cancer regard must be had to the following considerations: In very advanced cases, when the pelvis is partially filled by malignant masses, radium treatment is wasteful and futile. Cases associated with induration of the rectal and vaginal walls should not receive radium treatment, which is apt to be followed by perforations or fistulae; invasions, as shown by cystoscopic or proctoscopic examination of the vesical or rectal mucosa, contraindicate radium therapy. With regard to cases which are clearly operable, Hartmann is unwilling to speak dogmatically of the choice between operative or radium treatment. For clearly inoperable cancer, with the exception of the cases already mentioned, the superiority of radium treatment over all other palliative methods is incontestable. As is universally agreed, cases of doubtful operability are suitable for radium therapy, but Hartmann speaks with reserve of the utility of this measure as a preparation for subsequent wide hysterectomy. The technique advocated by Hartmann is that of Regaud and Fabre: Within the uterine canal are placed end to end three 20 mm. tubes containing radium enclosed in platinum, external to which is a cylindrical gum-elastic bougie lined with platinum. Two similar tubes are placed in the lateral fornices, where they are maintained in position by a flexible spring enclosed in india-rubber; the same spring serves to maintain a third tube in the anterior fornix. Flatau, Recasens, and others advocate the combination of this treatment with *x*-ray therapy. Schwartz has reported two successful results following implantation of needles charged with radium emanation in the uterine tissue, the parametrium, and the pelvic glands. Proust, after ligature of the internal iliac arteries, has inserted tubes containing 2 mg. of radium salts in the internal iliac sheath and in the lateral portions of the vesico-uterine folds. Douai and Fabre treated a case of iliac adenopathy consecutive to cervical carcinoma by embedding in the gland concerned, after laparotomy, needles charged with radium emanation.

539. BÉRARD (*Lyon Chir.*, August, 1921), after quoting statistics of various French and German authorities, comes to the following conclusions: (1) In treatment of cancer of the cervix radium alone or in association with *x* rays has produced undoubted clinical cures, some of which have been confirmed after a lapse of eight years. (2) The proportion of cures observed after surgical operation still appears to be higher than that obtained by radium alone, but inferior to that obtained by the combined use of radium and *x* rays in cases which have been kept under observation for a maximum period of three or four years. There are not at present a sufficient number of cases to enable one to judge of the permanent value of these cures. (3) The mortality from operation for cancer varies from 5 to 20 per cent., according to the gravity of the case. The risks of death from radium treatment, though less, are not negligible, and range from 8 to 10 per cent. Lastly, the author holds that in most of the failures and accidents due to radium, whatever the organ treated, are due to errors of technique, the doses being too large or too small or unequally distributed, or the normal tissues in the neighbourhood of the tumour being inadequately protected.

PATHOLOGY.

540. A Means of Diagnosis of Small-pox.

HOFFMANN (*Centralb. Bakteriol. Parasitenk. u. Infektionskr.*, September, 1921) has found the following test, based on observations of Guarnieri and of Paul, to be of considerable value in the diagnosis of mild or anomalous cases of variola. After criss-cross scarification the cornea of a rabbit is inoculated with fluid taken from a pustule of a suspected case. In inoculations made from non-variolous subjects the cornea remains clear at the end of forty-eight hours, but if the case be one of small-pox Guarnieri's bodies are visible. These structures, which are the result of proliferation and degeneration of the corneal epithelium, are visible to the naked eye, but are better seen with a magnification of five or six diameters, and especially after fixation of the enucleated eye by means of a solution of 4 grams of mercuric chloride in 30 c.cm. of 98 per cent. alcohol. According to Hoffmann this test gives positive results in 90 to 95 per cent. of cases of small-pox.

541. The Experimental Study and Therapeutics of Heat-stroke.

RICHET (*C. R. Soc. Biologie*, October 22nd, 1921) records the result of certain experiments which he has carried out on mice and rats to determine the cause of heat-stroke. In these investigations the animals were enclosed in glass jars, which were then either exposed to the rays of the sun or placed in a warm, dry stove. The conclusions he reaches are as follows: (1) Death from exposure to the sun is due not to the light rays but to the heat rays. (2) Newborn or very young mice offer less resistance to the heat than older mice; on the other hand, young growing mice, from 2 to 8 weeks old, resist better than adults. (3) There are distinct individual differences in resisting capacity between adult mice of the same age and weight. (4) Rats and mice which have been made to fast, or which have been previously bled, are less resistant than normal animals. From the point of view of treatment, besides showing the beneficial effect of ventilation, tepid douches, and kindred measures, he found that the injection of caffeine or of camphorated oil was of considerable benefit, life being prolonged by about 40 per cent. over that of the control animals.

542. The Chemistry and Clinical Significance of Urobilin.

BAUMAN (*Arch. Int. Med.*, October, 1921) points out the close chemical relationship existing between the blood and bile pigments. Urobilinogen is a reduced bilirubin, while bilirubin may be regarded as an oxidized haemin. Urobilin has certain absorption rays in the spectrum in the neighbourhood of the B. and F. lines. In the normal urine it occurs in only negligible quantities, but it is increased in diffuse lesions of the liver, as cirrhosis, neoplasm, in heart disease, and in cases of haemolytic jaundice and pernicious anaemia. It appears to be formed from bilirubin by the reducing activity of bacteria in the large intestine. To test for urobilin a portion of the urine or faecal extract is treated with alcoholic zinc acetate solution and with Ehrlich's reagent. The mixture is then diluted until the spectral absorption bands of urobilin just disappear. The average normal excretion in the 24-hour stool is about 1 in 6,500 dilutions. By the use of this test Bauman claims that it is possible to differentiate between pernicious anaemia and secondary anaemia due to such causes as carcinoma of the stomach, in cases when the blood count is unable to give a definite diagnosis. In every case of pernicious anaemia that he has examined thoroughly he has invariably obtained a high value for urobilin. An examination of the protocols which he submits in his paper rather incline the critical reader to the view that as yet the clinical significance of this test is not sufficiently precise to make it of use in the routine investigation of disease.

543. Types of Pneumococci from April, 1919, to March, 1921.

SACQUÉPÉE (*C. R. Soc. Biologie*, October 15th, 1921) has made a study of the types of pneumococci recovered from cases of pneumonia and their complications over a space of two years, a period entirely free from epidemic influenza. Agglutination was carried out by Nicolle's technique, aided where necessary by Forges's method. Of thirty-six strains, there were twenty-three pure representatives of Type II and three of Type III. Four strains were mixed I and II types, and four mixed II and III types. That is to say, that Type II was present in 85 per cent. of the strains. These results agree fairly closely with those obtained by Nicolle and Debains in showing the predominating presence of Type II. It is interesting to note the rarity of Type I strains in France, considering the frequency with which they are encountered in other countries.

544. Viscosity of the Cerebro-spinal Fluid.

SODA (*Journ. Nerv. and Ment. Dis.*, September, 1921) quantitatively determined the protein, total nitrogen, chloride, inorganic phosphate, alkalinity, and the number of cells in the cerebro-spinal fluid, with the view of ascertaining what substance influences its viscosity. An increased viscosity is likely to occur in cases with high concentration of the protein, this constituent apparently being the main factor exerting such an influence, the alkalinity and the number of cells having a less, though appreciable, effect, and other constituents probably having only a very slight influence. It is doubtful whether the viscosity alone has any diagnostic value, but in combination with other tests it may be of use.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

545. Treatment of Epilepsy.

WECHSLER (*Med. Record*, October 22nd, 1921) discusses the treatment of epilepsy from observations of 58 true idiopathic cases. While luminal generally keeps convulsions in abeyance (18 cases) so long as its administration is continued, the attacks return when it is stopped, and in a few instances it appears to aggravate the condition, and it has little effect on *petit mal*. Bromides are at times still the only drugs which affect epilepsy, and in some cases when both luminal and bromides separately have failed they may be successful in combination, though this is not always the case. The products of the endocrine glands have given good results, especially in females in association with anomalies of menstruation. Certain foodstuffs appear to have a special relation to some of the cases, and in treatment by starvation there seems to be some correlation between the number of convulsions and the height of the induced acidosis. It is the author's experience that in some cases gradually increasing doses of a drug, especially luminal, may control the attacks when smaller doses fail.

546. Tuberculous Infection and Tuberculous Disease.

HAMBURGER (*Wien. klin. Woch.*, September 29th, 1921) states that the discovery of droplet infection by Flügge is the most important advance in infectious disease since the classical work of Pasteur and Koch. Infection takes place by coughing, speaking, and, in the case of tuberculosis, only within the ordinary distance for conversation (1 to 1½ metres). There is no evidence that infection takes place in man by inhalation of dust. Everything, on the other hand, points to direct infection from man to man. Compared with tuberculous infection tuberculous disease is comparatively uncommon, though it is impossible to determine at present the relative frequency. Hamburger states that a short time ago his son, aged 13 years, developed phlyctenular conjunctivitis, which healed in about a fortnight, the general condition being unaffected. As Hamburger had been in the habit for many years of testing his children with tuberculin every six months, and the boy had always given a negative reaction before, the eye disease, which was accompanied by a positive reaction, could undoubtedly be attributed to a recent tuberculous infection. As the other four children still gave a negative reaction it was pretty certain that the infection was derived from some person outside the family. Hamburger therefore recommends that in combating tuberculosis special attention should be paid to prophylaxis against extrafamilial exposure to infection.

547. Tertiary Syphilis of the Liver.

TALLQUIST (*Finska Läkaresällskap ts. Handlingar*, May-June, 1921) has come to the conclusion that, in Finland at any rate, tertiary syphilis of the liver is rare. He found it in only 8 out of 2,117 necropsies, in only 28 out of over 24,000 hospital patients, and in only 7 out of 11,000 patients in private practice. Adding these *post-mortem* and living cases together, he obtained a total of 43, among which there was only one case (a man of 32) with syphilitic disease of the nervous system. The explanation of this remarkable lack of coincidence of syphilis of the liver and nervous system is perhaps to be found in the fact that syphilis of the nervous system occurs comparatively early. The author is optimistic with regard to treatment provided it is instituted early and conducted systematically. Of 20 patients treated since 1910 and showing no complication, 7 were completely cured, the swelling of the liver disappearing and the general condition becoming perfectly satisfactory. In 11 other cases improvement was effected, although there was still some enlargement of the liver or other symptom referable to it. The average duration of the syphilis before symptoms of hepatitis appeared was eighteen years, and the average age of the patient was 42 years, the extremes of age being 23 and 67 years. Another conclusion to which the author comes is that tertiary syphilis of the liver points to faulty treatment early in the patient's syphilitic career. Ten of his 35 cases examined during life had never received specific treatment, and most of the rest had received very inadequate treatment during the first period of their syphilis. The upshot of these investigations, particularly as far as they refer to the frequency of tertiary syphilis of the liver, is that the textbook conceptions of this disease require correction.

548. Mumps treated by Antidiphtheritic Serum.

Il Morgagni. (September 15th, 1921) has collated several cases of mumps where Salvaneschi's method of treatment was adopted. This consists in the injection of antidiphtheritic serum (20 c.cm.), and the earlier it is given the better the results. On the whole good results were noted both as a prophylactic and in reducing the length of the attack, and probably diminishing the orchitic complications. Some cases of primary parotitic orchitis were treated with serum. In one group of 65 cases treated by this method only 8 showed any orchitic complication, and 5 of these showed signs of initial orchitis on admission. Of 35 cases treated at the military school at Saumur, 6 developed orchitis.

549. Pylorospasm in Adults.

FINNEY and FRIEDENWALD (*Amer. Journ. Med. Sciences*, October, 1921) discuss the medical and surgical treatment of pylorospasm in adults. The largest number of cases are secondary to some irritative lesion in the stomach, or as a reflex from disease elsewhere—for instance, chronic appendicitis, gall stones, nephritic colic, etc., but a few are purely neurotic without any definite lesion. Symptomatically hunger pains, relieved by emptying the stomach or by taking food, occur two or three hours after meals with palpable stomach contractions, and signs of intermittent stagnation and hyperacidity. It is important to determine whether the lesion producing the spasm is within the stomach or beyond, or whether the condition is purely nervous, and in this connexion *x* rays are most valuable in differentiating between the types. Medical measures should always be carefully tried before resorting to other methods of treatment, and the underlying neurasthenia should be overcome by change of scene, massage, and rest. Easily digested food at regular intervals should be given, and the administration of olive oil is of service, the attacks being relieved by morphine and atropine hypodermically, hot applications, and lavage. Atropine in full doses, or adrenaline nucleoprotein, are valuable in relief of spasm, but if this is secondary to other abdominal lesions the primary cause should be removed first. The authors conclude that when medical measures fail pyloroplasty gives the most satisfactory results.

550. The Therapeutic Properties of Propyl Alcohol.

RECENT investigations by CHRISTIANSEN (*Ugeskrift for Laeger*, October 13th, 1921) into the therapeutic properties of propyl alcohol seem to suggest that, at any rate in certain diseases of the skin, this drug deserves wider popularity than it has hitherto enjoyed. In 43 cases of acne of the face, complicated in most cases by severe seborrhoea and stamped with a long record of failure to react to other remedies, excellent results were obtained. The treatment was continued for several months, and the patients found it easy to continue indefinitely the use of a 35 per cent. solution with which the face was bathed two to three times a day. In this strength the alcohol possesses no dehydrating properties and is non-irritating. In simple seborrhoea a 50 per cent. solution can be used. The author records several failures in the treatment of eczema, rosacea, psoriasis, diphtheria, and gonorrhoea, and, as a remedy for lice, propyl alcohol proved disappointing. But it was remarkably effective in prurigo, pityriasis and seborrhoea of the head, and as a hair wash a 35 per cent. solution of propyl alcohol with a little castor oil was found to be a very effective cleansing agent. Another and quite different sphere of usefulness was found for propyl alcohol as a preservative and disinfectant of surgical instruments. Provided a 50 per cent. solution is made alkaline by the addition of a little soda, instruments do not rust in it. As a disinfectant propyl alcohol is in every respect superior to ethyl alcohol, 5 per cent. of the latter corresponding to 2 per cent. of the former. A 50 per cent. solution of propyl alcohol can be obtained in Denmark from Germany at the cost of about 1½ crowns (about 1s. 6d.) for a kilo, and it is, therefore, cheap enough to be extensively used as a disinfectant of the hands and field of operation.

SURGERY.

551. Wiring and Electrolysis for Aortic Aneurysm.

SAILER (*Therap. Gazette*, October 15th, 1921), from an experience of sixteen cases, considers that the treatment of aortic aneurysm by wiring and electrolysis deserves more consideration than is usually given to it, and records a case, aged 44, treated three years ago, in which immediate improvement followed and progressed. Although generally considered as only likely to live a few days, he is now engaged in arduous and important business. The needle was inserted easily without local anaesthesia, the passage of the wire taking about fifteen minutes. About 50 milliampères were passed, and, after slight temporary spasm, there was immediate relief from pain, and the patient slept horizontally without opiate and with less dyspnoea than formerly. Antisyphilitic treatment followed, and in a fortnight he returned home and has had no setback, improvement steadily progressing, and the dyspnoea disappearing. Experience suggests that the operation is harmless, objective symptoms are relieved immediately, and that antisyphilitic treatment increases the improvement and favours the prognosis.

552. Congenital Accessory Urethral Canals.

OUDARD and JEAN (*Journ. d'Urol.*, No. 3, tome xi) have collected 18 examples, including 2 not hitherto published, of congenital accessory urethral canals, which they classify in four groups: (1) The best known type, of which they record 9 examples, is that in which the accessory canal opens on the dorsal surface of the penis and ends blindly above at the suspensory ligament. The canal lies above the corpus cavernosum, and is situated between the fascia penis and the dartos, usually in the sagittal median plane. Its length varies from 8 to 14 cm. (2) A more rudimentary variety of the first type, its length varying from 2 to 6 cm. (3) Complete duplication of the urethra, each canal ending separately in the bladder. Simultaneous catheterization of the two canals shows that there is no contact between the two instruments. Occasionally this anomaly is associated with incontinence of urine in the supplementary urethra. (4) Duplication of the penis, with duplication of the urethra. As a rule, the two penes are placed side by side, but sometimes one penis lies above the other. The practical interest of these anomalies is that gonorrhoeal infection of an accessory urethra may prove very obstinate and require operation. Perkowsky has performed incision, followed by scraping, cauterization, and suture, but Oudard and Jean are in favour of complete extirpation of the canal.

553. Abnormal Length of the Styloid Process.

GAREL and ARCELIN (*Rev. de lar., d'oto-l., et de rhinol.*, October 1st, 1921) record a case of a medical man, aged 62, who imagined that he was suffering from cancer of the tonsil. On palpation of the tonsil Garel made a diagnosis of an abnormally long styloid process, which was confirmed by x-ray examination. Cases of enlargement of the styloid process are comparatively rare, but a few examples are to be found in recent English and American literature. Abnormal ossification of the styloid process may give rise to dysphagia owing to the apex of the process being directed downwards externally to the tonsil, and to its relations to the pharyngeal constrictors. Disturbance of the singing voice is less frequent. Operation appears to have yielded excellent results, complete cure being the rule. Operation, however, which is not without danger owing to the anatomical relations of the styloid process, is only necessary if really serious symptoms are present. None was performed in the writers' case.

554. Inflammatory Tumour of the Sublingual Gland.

ACCORDING to CEVARIO (*Il Policlinico*, Sez. Chir., September 15th, 1921), who records a case in a man aged 57, the sublingual gland may be the seat of a special morbid process which has hitherto only been described in the submaxillary gland, and has received the somewhat unsuitable name of "inflammatory tumour" from Küttner, a term which has been retained by subsequent observers. As regards the pathogenesis of the condition the sublingual, like the submaxillary gland, is exposed to infections of various kinds propagated from the buccal cavity by the blood and lymph stream. This was particularly marked in the present case, in which there was a considerable degree of dental caries. The comparative rarity of this affection is attributed by Cevario to the presence of numerous ducts which discharge their contents at the site of the plica sublingualis, so that obliteration of one of them is not prejudicial to the existence of the gland. Moreover, the pressure of the saliva in these ducts is greater than that of the saliva in Wharton's or Stenson's ducts. Treatment in such cases is entirely surgical, the operation consisting in removal *en masse* of the tumour by a blunt instrument from the surrounding tissue so as to avoid injury to vascular or nervous structures.

555. Reconstruction of Joints.

WHEELER (*Dublin Journ. Med. Science*, October, 1921), in discussing reconstruction of joints, points out that loss of density, as seen in a graft by x-rays a few weeks after operation, does not necessarily indicate absorption and failure, since in the early stages the demolishing activity of the osteoclasts is frequently more noticeable than the bone-producing power of the osteoblasts. As the amount of growth in a bone depends upon the need for it, it is advisable to allow the graft to functionate after about three months' fixation in order to provide the necessary strains and stresses. The periosteum should be left on the graft, and in old ununited fractures early movements are necessary, since prolonged fixation in such cases is unfavourable to osteogenesis and the establishment of blood supply and bony union. A graft used to span a gap in the humerus or femur will break or absorb, and it should only be used as a support after the freshened ends of the fractured bone have been brought into apposition. Sepsis does not necessarily mean loss of the graft. Absolute fixation of the graft in its bed for about three months is essential to success, and operation should be preceded by correction of existing deformities and freeing of adhesions.

556 Cancer of the Prostate.

CHUTE (*Boston Med. and Surg. Journ.*, October 27th, 1921) urges the removal of malignant prostates which are producing obstruction, unless absolutely contraindicated by the patient's general condition. In cases complaining of pain in the thighs and scrotum, perineal removal of the growth often affords such relief that a considerable proportion of patients are able to return to work in comfort, and the slow progression of the disease often gives a long respite from recurrence, and, in rare instances, apparent cure. The perineal route for operation should be adopted, except in very selected cases where the disease is less advanced and the growth is within the capsule. Radium should be left in any suspicious tissue remaining, or in the cavity from which the prostate has been removed. There is relatively little risk by this method, and very little probability of a perineal fistula.

557. Post-operative Thyroid Gland Complications.

CRILE, LOWER, SLOAN, and HARRISON (*Amer. Journ. of Surg.*, October, 1921) describe certain post-operative complications of operations on the thyroid gland. Adherence of the scar to the trachea, a rare occurrence, is relieved by excision down to the normal tissue, the separated fascia and muscle being approximated, so that normal tissue intervenes between the trachea and the skin. Unevenness of the neck after thyroidectomy may be relieved by transplanting fat from elevation to depression to obtain a normal contour. Post-operative hoarseness, usually the result of traction on the nerves in controlling bleeding, rarely remains permanent. Aphonia is usually psychic in origin, and persisted in only two instances. Both the speaking and singing voice are usually improved, and by avoidance of undue manipulation there is little risk of their being impaired. Intermittent respiratory block, occurring usually at night, is alarming in view of the possibility of asphyxia, and if the condition continues the vocal cords may be clipped off in the centre of their free margins to leave a free respiratory passage. Should infection arise in the wound the neck should be opened freely to allow of treatment to its entirety. Iodine should be given for at least a year after thyroidectomy to control any tendency to recurrence of growth in the portion of gland remaining. In about 1 in 500 cases thyroid deficiency follows operation, and is easily controlled by the intermittent administration of thyroid extract, and in time the symptoms permanently disappear.

558. Spastic Intestinal Obstruction.

SOHN (*Deut. Zeit. f. Chir.*, June, 1921) quotes A. Kocher as saying in 1899 that it was extremely doubtful whether spasmodic contraction of the intestine could alone provoke intestinal obstruction. At that time Kocher had never seen such a case, and the records of such cases submitted to him had left him unconvinced. The author admits that the number of such cases verified by biopsy is still small,

and he records the following case to show that the scepticism as to this condition ever existing is unwarranted. A married woman, aged 55, was admitted to hospital with abdominal pain and retention of faeces and flatus. The temperature and pulse were normal, but the lower abdomen was distended and tender. There was no muscular rigidity and rectal and vaginal examinations were negative. Under general anaesthesia the abdomen was at once opened and the caecum found to be moderately distended. There was, however, no constriction of the large intestine, and two bands of adhesions, passing from the middle of the transverse colon to the pelvis, could not, in the author's opinion, possibly have obstructed the intestine; it was not distended above this point nor collapsed below it. These bands were, however, ligatured and divided. Scrutiny of the small intestine revealed ten to twelve sections, each of a little more than a handbreadth in length, in a state of spastic contraction, the gut being reduced to the circumference of the little finger and being somewhat paler than the rest of the gut. Between these sections, which were most numerous in the ileum, the small intestine was distended. In spite of the general anaesthesia, touching the gut immediately provoked spastic contraction. The abdomen was closed, atropine was injected subcutaneously, and opium given by the mouth. Repeated enemas during the next few days yielded neither faeces nor flatus, and it was not till the fourth day after the operation that the intestinal obstruction passed off. Recovery followed.

559. Decapsulation in Renal Disease.

ROVSING (*Hospitalstidende*, August 24th, 1921) has performed decapsulation of one or both kidneys in 77 cases of renal disease, and is satisfied that in a large proportion of cases this operation can restore to complete health patients who would otherwise be doomed to early death or chronic invalidism. His opinion of the operation is so favourable that he recommends it in every case of nephrosis which does not react satisfactorily to medical treatment. In itself the operation is not dangerous, and it is technically easy to perform. When he finds the capsule of the kidney fairly normal, the author simply strips it off the kidney up to the hilus. But when he finds the capsule very fibrous and thickened he excises it. He reminds the physician that chronic nephritis is comparatively often unilateral, and that it is therefore always advisable to catheterize the ureters when cases of nephritis are investigated. He has found that in most cases of interstitial nephritis characterized by attacks of haematuria and pain complete cure can be effected by decapsulation. Indeed, all his 26 cases of interstitial nephritis and perinephritis, associated with attacks of pain and haematuria, but without albuminuria in the intervals between these attacks, were cured by decapsulation. His least satisfactory results were obtained among cases of small granular kidney in an advanced stage. But even in these cases headache, nervousness, lassitude, and inability to work often passed off completely, and the albuminuria disappeared or was markedly reduced. The good results achieved in cases of orthostatic albuminuria were probably due to fixation of the kidney in its normal position by the operation; the same result can, however, be obtained by the support to the kidney effected by well-fitting bandages.

530. Arsenical Conjunctivitis.

MILIAN (*Paris méd.*, October 15th, 1921) states that all arsenical preparations are vaso dilators, and are liable to give rise to conjunctivitis. It is particularly frequent after organic compounds, such as atoxyl, hectine, galyl, and the arseno-benzols. Previous affections of the conjunctiva, such as are caused by mustard gas poisoning, hay fever, and ciliary blepharitis, favour its appearance. Arsenical conjunctivitis is merely a paralytic dilatation of the conjunctival capillaries. The conjunctivitis, which is more or less marked according to the form and intensity of the intoxication, may assume a localized or a general form. In the localized form, which is the most frequent, there is more or less pronounced congestion of the lower and outer quadrant of the conjunctiva, the lesions being bilateral and symmetrical. The free border of the lower lid and the lower conjunctival cul-de-sac are also slightly congested. The congestion is not accompanied by discharges of serum or pus, but occasionally there is an excess of lacrymal secretion. In the generalized form the whole conjunctiva is involved, the lids are stuck together, and there is chemosis. In spite of the intensity of the symptoms the inflammation subsides completely within one to four weeks. Treatment consists in instillation of one or two drops of adrenaline (1 in 10,000) morning and evening, associated with a collyrium of zinc sulphate (1 in 10), and a boracic spray three times a day.

OBSTETRICS AND GYNAECOLOGY.

561. Complications of Pregnancy due to Uterine Anteversion.

VERRUCOLI (*Rivista d'Ostet. e Ginec. Practica*, June, 1921) records the case of a woman, aged 27, in whose first labour a double tear of the cervix and upper part of the vagina occurred, but was not sutured; a few months later a second pregnancy terminated in abortion at the second month. The third pregnancy, which followed rapidly, took a normal course during the first two months; during the third and fourth months, however, the patient suffered from copious leucorrhoea, severe pelvic pain, intermittent haemorrhages, and frequent micturition and dysuria, leading eventually to intractable vomiting, emaciation, and elevation of temperature. Examination showed the uterus to be bent on itself behind the symphysis pubis, and to compress the anterior vaginal wall; the backwardly displaced cervix was with difficulty palpable. Manual and instrumental attempts at replacement proved fruitless, but the symptoms speedily abated after the occurrence of spontaneous abortion. The incarceration of the anteverted uterus was attributed by the author to the cicatricial changes consequent on the cervico-vaginal wound, and on the parametritis which occurred at the time of the first confinement.

562. Treatment of Puerperal Infection by Carrel-Dakin Irrigation.

GENTY (*La Gynéc.*, July, 1921) gives the results obtained in an extensive series of cases of puerperal infection treated by Carrel-Dakin irrigation, instituted, as a rule, about the fourth day. After disinfection of the vulva, vagina, and cervix, an india-rubber sound was introduced for 10 or 12 cm. into the uterus and fixed by means of a suture. Every three hours 20 c.cm. of Dakin's solution were injected. Although the result of the treatment was rapidly to transform purulent or foetid discharge into a thin blood-stained fluid, the method was found to have the disadvantages of producing local irritation and to be followed in certain cases by rigors or abundant haemorrhages. The writer considers that the more remote results are doubtful; certain patients would in all probability have been cured by other means of treatment, and in certain cases a fatal septicaemia supervened. It is concluded that this mode of treatment does not merit further trial.

563. Indications for Caesarean Section.

HENROTAY (*Gynéc. et Obstét.*, iv, 4, 1921) discusses the indications for Caesarean section in the absence of pelvic contraction. With regard to the indications furnished by utero-vaginal conditions, he believes that acquired vaginal stenoses frequently and congenital stenoses (annular or tubular) rarely may justify the performance of Caesarean section. Stenoses, scleroses and degeneration of the cervix uteri, whether caused by previous operation, syphilis or malignant disease, furnish definite indications, which also exist when tetanic contractures, elongations of the uterine axis and elevation of Bandl's retraction ring presage rupture of the uterus. In cases of fibroma of the lower uterine segment recourse may be had to Caesarean section when in the presence of powerful uterine contractions no tendency to mobilization or displacement of the tumour is noted in the course of two or three hours. With regard to adnexal conditions solid or cystic tumours of the parovarium or ovaries which cause dystocia should be treated by abdominal Caesarean operation. With regard to modifications of the maternal health Henrotay denies that eclampsia may justify Caesarean section save in the case of coincident pelvic obstruction. Rarely cardiopathy or nephritis may necessitate recourse to this operation, but Caesarean section of the moribund should only be undertaken after very serious reflection; the case is quoted of Marek, who after performing the operation in a patient suffering from bronchial asthma saw her survive for nineteen days. Caesarean section of the dead subject may be undertaken provided the foetus be one of at least seven months' gestation, that the signs of foetal life are present or have persisted until the moment of decease of the mother, that the mother has not been dead longer than twenty-five minutes, and that rapid accouchement *per vias naturales* is not possible. Turning to indications for Caesarean section arising from abnormalities of the foetus or of foetation, Henrotay declares that excessive size of the foetal head may justify in certain cases abdominal hysterotomy; malpresentations which at times may justify this operation are those of the face, forehead, breech, and cord. Caesarean section in the case of

placenta praevia is indicated when gestation has advanced to eight months, when the patient is not infected, and when a serious haemorrhage by reason of its severity, persistence, or repetition cannot be treated by ordinary aseptic methods, or when such methods are only likely to be successful after a delay which would be prejudicial to the patient. In cases in which the accoucheur believes that ordinary obstetrical procedures are likely to result in the delivery of a dead foetus, Caesarean section may be justifiable in the interests of the child if the mother after due instruction consents to it or asks for it. When the section is made in the conditions of known infection the procedure adopted is preferably hysterectomy *en bloc*. With regard to the general question of the admissibility of Caesarean section in cases of known or probable infection the author is not inclined to share the views of those who in such conditions would forbid conservative Caesarean section, performed even by the low or so-called extraperitoneal methods. He believes that transperitoneal Caesarean section of the lower uterine segment (so-called cervical Caesarean section) enjoys a considerable therapeutic utility even in infected cases.

564. Mortality in Placenta Praevia.

KELLOGG (*Boston Med. and Surg. Journ.*, October 13th, 1921) summarizes the mortality in placenta praevia for the last twenty-five years at the Boston Lying-in Hospital. By early and more prompt treatment and the resort to conservative methods of delivery by Braxton Hicks's version and the uses of the bag, to the exclusion of manual dilatation and extraction, the maternal mortality has been reduced from 20 per cent. to 6 per cent., there being 55 cases without maternal mortality, the foetal mortality of 48 per cent. remaining practically the same as with less conservative methods. Though probably nothing can prevent death in cases reaching hospital pulseless and moribund, it is possible that some might be saved by packing the cervix and vagina, putting a waist tourniquet over the uterus, transfusing and combating shock for several hours before attempting delivery. Though theoretically Braxton Hicks's version is indicated in non-viable children, and bags in viable, the results for the latter have been as good with Braxton Hicks's version as with bags, and this is the method of choice in rural districts. Pituitrin is valuable in marginal varieties where there is a floating head with inadequate pains, by producing enough contraction to force the head down and so control bleeding, as happened in two instances which then delivered themselves normally.

PATHOLOGY.

565. Malignant Tumours of the Parotid.

FRANCINI (*Il Morgagni*, July 31st, 1921) discusses in considerable detail the various tumours of the parotid, benign and malignant, and then records three cases of malignant parotid tumour operated upon by him. Total parotidectomy is a serious and formidable operation, both from the numerous connexions of the gland and the difficulty of removal, and also because of the almost inevitable facial paralysis which follows. Plastic nerve surgery is not applicable in these cases and not successful, but a good deal can be done by plastic operations on the muscles to remedy the aesthetic and paralytic defects, and the author gives details of the operation he practised by transplanting the sternal end of the sterno-cleido-mastoid into the angle of the lip. A bibliography of some 100 references is given at the end of the paper.

566 Allergy in Infants and Children.

A REVIEW, together with a considerable amount of experimental work, is given by SCHLOSS (*Cornell University Med. Bull.*, July, 1921) on the subject of allergy in children. For testing the susceptibility of the patient he prefers to employ the cutaneous test rather than the intracutaneous injection of the foreign substance. His objections to the latter are that it is not infrequently followed by infection, owing to the difficulty in obtaining sterility of the protein extracts, that it may give rise to a severe general reaction, and that it is often complicated by pseudo-reactions which add to the difficulty in interpreting the results. An important point to be observed in making the test is to assure oneself that none of the particular protein to be tested has been taken in the food during the preceding few weeks, as a period of temporary desensitization lasting from twenty-seven to forty-five days may follow such ingestion. He finds a close similarity between food allergy and anaphylaxis; for instance, he has been able to sensitize guinea-pigs passively by injection of the patient's blood serum. The sensitization in children appears in some cases to be a congenital one, in others acquired. With regard to the clinical types of allergy he shows that many conditions in children—such as bronchial asthma, urticaria, angioneurotic oedema, erythema multiforme, eczema, acute dermatitis, and certain cyclic disturbances—may sometimes be referred to a hypersensitivity to one or more varieties of foreign protein. Treatment may be carried out (1) by eliminating the offending substance from the diet, (2) by hypodermic injection of the protein to which the patient is sensitive, or (3) by actively immunizing the patient by feeding. According to Schloss, in either of the two latter cases the progress of desensitization should be controlled by means of the cutaneous reaction.

567. A Conjoint Anatomical and Clinical Study of Severe Erb-Goldflam's Myasthenia.

MARIE, BOUTTIER, and BERTRAND (*Annal. de Méd.*, September, 1921) congratulate themselves on having had the good fortune of being able to correlate the clinical and *post-mortem* findings of a case of progressive bulbo-spinal myasthenia. The patient, a woman of 40, suffered from the disease in a severe form. Marked dyspnoea was present, due to paralysis of the respiratory and bronchial muscles. Phonation and deglutition were impossible, and cardiac failure had set in. Finding that adrenaline was of no value, they treated her by injections of the whole suprarenal gland. This had a surprising effect, the patient recovering and being able in a few days not only to swallow well, but to get up and go for short walks. After five months, however, the symptoms returned, the remissions became shorter, and she died rapidly of pulmonary oedema. At autopsy death was found to be due to acute nephritis and pulmonary oedema. Histological examination of the various organs revealed several interesting facts. The suprarenal bodies were extremely thin and in a condition of hypoplasia. The zona reticularis and the medulla were separated by a layer of enormously dilated capillaries; there was advanced cytolysis and an infiltration with lymphoid elements. The muscles of the body were studded with lymphoid nodules, while the thyroid gland showed a diffuse intervesicular infiltration with leucocytes. The fibres of the heart muscle were separated by oedematous fluid, together with large numbers of lymphocytes, mononuclears, and macrophages. The nervous system appeared to be unaffected. In consideration of these findings they are led to the conclusion that this type of myasthenia is probably connected with lesions of the adreno-muscular system.

568. The Urochromogen Test in Tuberculosis.

BONNERT (*Tubercle*, September, 1921) has carried out Weiss's urochromogen or permanganate urine reaction in 1,000 cases of pulmonary tuberculosis, and since January 1st, 1917, he has systematically compared this reaction with Ehrlich's diazo reaction once a month in every case. He found the former both simpler and more accurate than the latter. In 850 cases both reactions were negative; in 108 both were positive. Thus, in 95.8 per cent. the reactions agreed. In the 42 cases in which they disagreed the urochromogen reaction was positive in as many as 41. Thus only in one case was the diazo reaction positive while the urochromogen reaction was negative. In early amyloid disease the urochromogen reaction was positive in 91.7 per cent., the diazo reaction only in 55 per cent. The author's survey of the literature shows that most other writers have come to the same conclusion as to the superiority of the urochromogen test, which possesses the further advantage of being cheaper than the diazo test.

569. The Blood in Scarlet Fever.

AMATO (*Lo Sperimentale*, An. 75, fasc. 4 5) gives a further account of certain bodies found by him in the blood of scarlet fever patients in 1913. The bodies in question are certain small round or oval (rarely falciform) objects found in the cytoplasm of the polymuclear leucocytes. They differ from the bodies described by Döhle in 1912, and the author goes into details as to the differences. Amato says the best way to stain them is by eosin azur. He believes they are allied to the so-called strongyloplasms described by Lipschütz. They were absent in 14 non-scarlatinal cases, whereas Döhle's bodies have been found in various diseases and even in healthy subjects.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

570. The Causation of Bronchial Asthma.

RIGOS (*Deutsch. med. Woch. für Aerzte*, September 8th, 1921) considers as not altogether wise the progressive tendency to regard asthma simply as a nervous phenomenon due to vagotony. In 45 out of 60 cases of asthma treated at his hospital the disease developed in previously healthy persons as a sequel to acute bronchitis or in the course of chronic bronchitis. In some cases the asthma dated from childhood, and only in 6 cases did the asthma begin suddenly without any apparent illness to provoke it. The condition observed in these 6 cases is doubtless more common in private than in hospital practice, and it probably includes the group of cases now associated with anaphylaxis. The remarkable effect of adrenaline on asthma does not necessarily prove it to have a purely nervous origin, for the dilatation of the bronchi effected by adrenaline should help the asthmatic, whether his symptoms are due to spasm of the bronchi or catarrhal swelling of their mucous membranes. The author has found that the subjects of asthma are not more intolerant than healthy persons to CO_2 inhaled for six minutes in strengths of 6, 8, and 10 per cent.

571. Simulation of Phthisis by Tonsillitis.

PLEBEN (*Deutsch. med. Woch. für Aerzte*, September 15th, 1921) draws attention to the remarkable similarity of the clinical picture presented by chronic tonsillitis and early pulmonary tuberculosis. The former gives rise to lassitude, emaciation, anaemia, fever, night-sweats, cough, and expectoration. The confusion of these symptoms with those of pulmonary tuberculosis is the more easy as there may be hardly any symptoms referable to the tonsils; there may not be even slight dysphagia or tenderness in the throat. Thus it is easy to overlook the tonsillitis, and the slight changes it provokes in the respiratory tract, such as mild bronchitis and apical catarrh, are accepted as indicative of tuberculosis. The author insists that there is often little or no enlargement of the tonsils in these cases, and they do not protrude beyond the palatine arches. But if the tonsils are pressed on directly or through the anterior palatine arch with a spatula, a little purulent secretion or caseous lumps may be squeezed out, betraying the presence of chronic suppuration. A record of one of the author's cases shows that bilateral tonsillectomy may banish fever and many another sign of disease even after ill health due to this cause has persisted for many years. The author records another case in which tonsillectomy failed to rid the patient of her symptoms, which proved to be due to pulmonary tuberculosis, and he contrasts this case with the former to show how important it is to keep both conditions in mind when the cause of numerous vague symptoms is being investigated.

572. Treatment of Gonorrhoeal Arthritis.

SICET (*Bull. et Mém. Soc. de Chir. de Paris*, October 25th, 1921) reports the results obtained by Costa in the treatment of gonorrhoeal arthritis by an antigonococcal vaccine prepared with formaldehyde. This substance ensured a perfect preservation of the bodies of the bacteria for an indefinite period, and, apart from an unavoidable febrile reaction, did not give rise to any unpleasant symptoms. The treatment was employed in nearly a hundred patients suffering from the articular complications of gonorrhoea, including acute and chronic, mild and severe forms, cases which were dry and those accompanied by effusion, and those with or without bony lesions. The vaccine, while exercising a selective action on the complications, was not without influence on the source of infection, whether situated in the urethra or in the vagina. Most of the patients were old-standing cases in whom the joint lesions developed on the recurrence of the urethral discharge. In every case the affection was accompanied by fever between 101.4° and 104° F., severe pain and insomnia, and an almost complete loss of power in the affected joint. The dose was 0.5 c.cm. the first day, 1 c.cm. the second day, 1.5 c.cm. the third, and 2 c.cm. the fourth. The injections were then repeated every two or three days, the doses being reduced by two to three-tenths of a centimetre until recovery took place. Five to six hours after injection the patient began to feel relief, and was able to make use of the affected limb. As it was unnecessary to immobilize the affected limb the treatment was suitable for out-patients, in whom it had the double effect of preventing ankylosis and rigidity and improving the general health.

573. X-ray Treatment of Syringomyelia.

LHERMITTE (*Paris méd.*, October 1st, 1921) remarks that since the beginning of the nineteenth century, when Ollivier of Angers first described the disease, until quite recently, the prognosis of syringomyelia has been persistently bad and the treatment ineffective. The application of x rays, however, has caused a considerable modification of its almost invariably fatal course. In 1905 Raymond, Oberthür, and Delherm incidentally noted cases of improvement in syringomyelia effected by x rays, but Gramegna in 1907 was the first to make a complete study of the effects of radiotherapy on syringomyelia, and shortly afterwards a successful case was reported by Lhermitte and Beauregard. The painful symptoms of syringomyelia, as might be expected owing to the general analgesic effect of x rays, are those which yield most readily to the treatment. The objective symptoms are more resistant. The paretic symptoms due to compression or circulatory disturbances in the pyramidal tract are, as a rule, benefited at the same time as the sensory symptoms. Walking becomes easier, and especially in cervico-dorsal syringomyelia, the patients feel a return of power in their upper limbs and greater freedom in the movement of their fingers. Attenuation of the spastic phenomena in the upper and lower limbs may also occur. On the other hand, muscular atrophy and the vicious attitudes caused thereby are not affected, and all that can be expected from radiotherapy is the arrest of the regularly progressive evolution of the amyotrophy. Trophic disorders in the skin, bones, and joints as well as vesical and genital disorders, are also benefited by x-ray treatment.

574. Treatment of Haemoptysis by Pituitary Extract.

PISSAVY and TOUVAY (*Bull. Soc. de Thér.*, October 12th, 1921) report their observations on 15 cases of severe haemoptysis in pulmonary tuberculosis treated by intramuscular or intravenous injections of the extract of the posterior lobe of the hypophysis. They maintain that, with the exception of artificial pneumothorax, there is no method so effectual for checking haemoptysis. Although in the great majority of cases the cessation of haemoptysis is immediate, it is not always permanent. Not infrequently, after a few days' rest, the haemoptysis recurs, and a fresh injection is required. The writers hold that the intramuscular route is often inadequate, whereas the intravenous route alone can be depended on; 1 c.cm. of pituitary extract in 10 c.cm. of normal saline is injected slowly into a vein, five minutes being taken for the process so as to avoid any shock. They think the most probable explanation of the action of the drug is that it causes an increase in the coagulability of the blood (Émile-Weil and Perak).

575. Ammonia Dermatitis.

COOKE (*Amer. Journ. Dis. of Children*, November, 1921) discusses the etiology and treatment of ammonia dermatitis of the gluteal region in infants and in older children suffering from enuresis; he isolated a Gram-positive saprophytic bacillus (*B. ammoniagenes*) having the property of fermenting urea with the production of ammonia. *Staphylococcus aureus* and *albus*, *B. smegmatis*, *Sarcina lutea*, and *B. proteus* exert a similar action on urea. An acid medium inhibits the growth of *B. ammoniagenes*, while the organism grows freely in alkaline media. By impregnating the diapers with an antiseptic a prompt disappearance of the ammoniacal odour and a rapid regression of the dermatitis results, and in some 50 infants with ammoniacal diapers and an erythematous or papulo-vesicular dermatitis cure quickly followed the use of diapers finally rinsed in 1 in 5,000 mercuric chloride solution, wrung out and dried. Boracic acid 1 in 20 and mercuric iodide 1 in 5,000 are also useful antiseptics, and, since wet diapers will retain from three to five ounces of fluid, it is important to have the diapers dry before rinsing and drying in order not to dilute the antiseptic.

576. Chvostek's Sign in Children.

VERONESE (*Il Policlinico*, Sez. Prat., October 31st, p. 1465), after referring to Pollitzer's recent article on tuberculosis and Chvostek's sign (vide EPITOME, November 5th, No. 421), records his own observations during the last two years at the Padua Paediatric Clinic. Among 415 children, aged from 5 to 9 years, 86, or 21 per cent., showed Chvostek's sign. Out of 49 children with evidence of rickets the sign was found in 14, or 28.5 per cent., none of whom had any other signs of tetany. Of 41 children with undoubted tuberculosis (glandular, osseous, peritoneal, or pulmonary), the symptoms were found in 9, or 21.8 per cent., some of whom had rickets or a history of spasmophilia. In 40 who showed no signs of rickets or other symptoms of tetany or any history of tuberculosis the sign was present in 23.7 per cent. Veronese's conclusions are as follows: (1) Chvostek's sign in addition to occurring in manifest tetany is more frequent in rickety children owing to the presence of latent tetany. (2) In the majority of cases in which there are no obvious signs of rickets the presence of the sign indicates latent tetany. (3) All causes which make the nervous system hyperexcitable, whether constitutional, organic, or toxic, may give rise to the sign. (4) Among constitutional causes the greatest importance is to be attached to neuropathies of familial origin and to the uric acid diathesis. (5) The toxic causes may be of the most varied nature, ranging from the gravest infection to a slight febrile attack. Chvostek's sign therefore does not possess any diagnostic value in infectious diseases such as tuberculosis.

577. Silver Salvarsan in Syphilis.

PAPEGAAY (*Nederl. Tijdschr. v. Geneesk.*, September 24th, 1921) states that his results with this drug in the treatment of syphilis have been disappointing. Of 92 syphilitic patients under treatment at an Amsterdam hospital between February and June, 1920, 31 were treated with silver salvarsan intravenously and 61 with a mixed treatment of neo-salvarsan intravenously and sublimate intramuscularly. The duration of the treatment of both methods lasted six to eight weeks. Relapses were much more frequent with silver salvarsan than with the combined methods. Unpleasant results after injection, such as high temperature, diarrhoea, and nitritoid crises, were also more frequent after silver salvarsan. Papegaay concludes that silver salvarsan is decidedly inferior to neo-salvarsan and mercury in the treatment of syphilis.

578. Gastric Ulcer and Hereditary Syphilis.

PRON (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, May 17th, 1921), after quoting the statement of Castex of Buenos Aires that the majority of gastric and duodenal ulcers are of syphilitic origin, states that acquired syphilis is not recognized in 20 per cent. of the cases in men and in 50 per cent. of the cases in women, while hereditary syphilis is overlooked in 95 per cent. He records a case of gastric ulcer in a girl, aged 15, whose father had contracted syphilis ten years before she was born. The child began to suffer from pain in the stomach about the age of 8 years. Ordinary gastric treatment by large doses of belladonna and bismuth was ineffective. Specific treatment with mercury and iodides was then adopted, and the gastric symptoms completely disappeared.

SURGERY.

579. Resection for Intestinal Adhesions.

IN operating on intestinal adhesions encountered either in the presence of recent inflammation or later in the chronic stage, THÉVENARD (*La Gynèc.*, July and August, 1920) believes that it is best in the great majority of cases deliberately to perform enterectomy without wasting time in the endeavour to rectify the morbid conditions by less drastic methods. Intestinal resection, he says, in experienced hands is an operation which is no more grave than the tedious and lengthy processes involved in the separation of adhesions and the subsequent processes. Far from prolonging, it usually abbreviates the operation. With regard to adhesions coming to operation in the stage in which there is acute inflammation affecting the intestinal walls, Thévenard declares that separation is accompanied by dangers of infection, and presents considerable difficulties, which in the end often necessitate recourse to intestinal resection. It must also be remembered that repair other than by resection is liable to be followed by breaking down of the sutures, necrosis, perforations, fistulae, or cicatricial stenoses. In operations for adhesions in the chronic condition simple reparative surgical procedures may suffice in the case of adhesions which are not very firm, not very numerous or extensive, and not very vascular. If, however, on account of the number, extent, organization, and vascularity of the adhesions it is clear that their liberation would be troublesome and would leave large denuded, eroded bleeding areas, it is much better deliberately and at once to perform intestinal resection.

580. Cholelithiasis.

V. ALDOR (*Wien. klin. Woch.*, October 5th, 1921) states that Hohlweg, in 1912, was the first to carry out systematic investigations on gastric chemistry in cholelithiasis. In 39 patients who developed gastric disturbance after cholecystectomy he examined the gastric juice, and in 28 cases, or 71 per cent., found complete absence of hydrochloric acid, in 7 cases subacidity, and in 4 normal values. v. Aldor, in 1914, examined 82 patients, and in 15 cases, or 18 per cent., found normal values, in 32, or 39 per cent., hyperacidity, and in 35, or 42.6 per cent., subacidity or complete absence of hydrochloric acid. His conclusions are as follows: (1) The gall bladder is not merely a reservoir with no other function, for its removal leads first to a disturbance of function manifested by changes in the composition and discharge of the bile, and secondly to an important change in the gastric chemistry. (2) The origin of cholecystitis and cholangitis is not always to be found in a haematogenous or enterogenous *B. coli* infection, but in many cases is to be explained by a descending gastrogenous infection. (3) Cancer of the gall bladder is not one of the complications of cholelithiasis. The classical experiments of Aschoff and Bacmeister have proved that it is only pure cholesterin stones that are present in the gall bladder before the development of cancer, but these stones do not produce clinical symptoms in the gall bladder wall. Aschoff and Bacmeister regard the association of cancer and cholelithiasis as a mere coincidence, and even consider it possible that cancer is primary and stone formation secondary, because the contents of a carcinomatous gall bladder readily become infected and so give rise to the formation of stones.

581. Atropine Idiosyncrasy in Ophthalmology.

LOTTRUP-ANDERSEN (*Hospitalstidende*, June 15th, 1921) warns against the indiscriminate use of atropine in diseases of the eyes, and suggests that an inflammatory reaction of the eyes may be due to a natural or acquired idiosyncrasy to atropine. He has found that when cases of phlyctenular keratitis with blepharospasm have been treated in vain for a long time with atropine and yellow ointment, both keratitis and blepharospasm vanish almost instantaneously when atropine is replaced by homatropine, scopolamine or cocaine. Even in cases without any natural idiosyncrasy to atropine, the time may come when, after its prolonged use, it has an irritative effect on the conjunctiva, provoking a condition resembling follicular conjunctivitis and, in severe cases, trachoma. Thus the author concludes that in ophthalmology two forms of atropine idiosyncrasy exist; in addition to the form just described, there is the innate, comparatively rare, idiosyncrasy manifested by a violent reaction to a single instillation of atropine.

582. The Relation between Duodenal Ulcer, Appendicitis, and Cholelithiasis.

SCHÜTZ (*Wien. klin. Woch.*, October 6th, 1921) states that the relationship between these three conditions has been frequently discussed ever since Moynihan declared that they were frequently associated and connected etiologically. Moynihan regards duodenal ulcer and cholelithiasis as secondary, and as a rule with their infective origin in the appendix. Opinions, however, regarding the frequency of this combination are by no means unanimous, for while Moynihan found appendicitis in three-quarters of his cases of duodenal ulcer, Mayo found it in only 16 per cent., and cholelithiasis in 7 per cent. Schrijver, in his monograph on duodenal ulcer, states that he has hardly ever found an example of appendicitis or cholelithiasis among the cases of duodenal ulcer on which he has operated, and Nowak has only exceptionally seen disease of the gall bladder in his cases. Schütz, who has seen a large number of clinical cases and several hundred operated cases of duodenal ulcer, is not convinced of the frequency of this combination. As regards the relation between duodenal ulcer and disease of the gall bladder, there is no doubt as to the frequency of this association.

which is due to the close approximation of the two organs to one another. In duodenal ulcer adhesions of the duodenum to the gall bladder are frequent, but as a rule have no clinical significance. Occasionally they may give rise to biliary obstruction and the formation of gall stones, though the latter is by no means frequent. As regards the relation between duodenal ulcer and appendicitis, Schütz has frequently found, in cases of well marked duodenal ulcer in which the diagnosis was confirmed by *x* rays or operation, that an appendicectomy had taken place a short time before. In most of the cases the history was one of chronic appendicitis, and the symptoms disappeared only for a short time after the operation or were not essentially improved. Schütz thinks that most probably in such cases the diagnosis of appendicitis was frequently incorrect, and that therefore the supposition of a frequent association between duodenal ulcer and appendicitis falls to the ground. The frequent association of appendicitis and cholelithiasis has not been emphasized in the literature, although the one disease is often mistaken for the other.

583. Minor Signs of Cholelithiasis.

RAMOND, JACQUELIN, and BORRIEN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 10th, 1921) described the following three signs which they have investigated during the last two years at the Hôpital Saint Antoine in Paris: (1) The xiphoid point. Tenderness over the xiphoid is hardly ever absent in cholelithiasis; as an isolated symptom it may be present in painful processes connected with the cardiac end of the stomach, emphysema, dilatation of the heart, and pericarditis; but when it is associated with a tender spot over the gall bladder this is a strong presumption in favour of a more or less latent cholelithiasis. (2) The respiratory sign. This consists in a definite diminution of the vesicular murmur at the right base, especially in the posterior axillary line, in the course of cholelithiasis; sometimes this area is found in the middle lobe or in the upper part of the right lung; it persists for a long period and even for months after an attack of biliary colic. (3) Reflex pain at the site of emergence of the perforating branches of the right intercostal nerves. This pain is rarely spontaneous, and is more frequently provoked by light percussion. As this sign is sometimes met with in ulcer of the lesser curvature it possesses less diagnostic value than the respiratory sign.

584. Tuberculous Peritonitis Treated by Antituberculous Vaccine.

GINO (*Rif. Med.*, July 30th, 1921) reports 38 cases of tuberculous peritonitis treated by injections of Martinotti's antituberculous vaccine. The results were 15 cured, 11 improved, 8 *in statu quo*, and 4 no improvement. Grouping the cases, 20 were of the ascitic type and 15 of these were cured. Seven were fibro-adhesive and 4 of these were improved. Of the fibro-caseous group there were 8 cases and 4 of these were improved. Three cases were suppurating, and in one of these some improvement was noted. From 7 to 35 injections were given. On the whole the author considers the results were satisfactory. No ill effects were observed.

585. Adenoids as Manifestations of Hereditary Syphilis or Tuberculosis.

ARMENGAUD (*Rev. de lar., d'otol., et de rhinol.*, October 1st, 1921) states that by inquiring into the family history of children with adenoids he usually found in the parents syphilitic manifestations such as chronic aortitis, aortic aneurysm, arterio-sclerosis and hypertension, interstitial nephritis, chronic hepatitis, chronic myelitis, tabes, and general paralysis and chronic arthropathies. Examination of the children suffering from adenoids showed stigmata of hereditary syphilis such as Hutchinson's teeth, deformity of the palate, and sinking in of bones of the nose. Castaigne, who performed the Wassermann reaction in 42 cases of adenoids, found a positive reaction in 31. Of the 42 cases 24 had stigmata of hereditary syphilis and 14 were considerably improved by antisyphilitic treatment. These facts show the importance of syphilis in the etiology of adenoids. In another series of cases Armengaud found that the parents had suffered at one time from tuberculous manifestations such as pleurisy, asthma, peritonitis, and osteitis, while the children themselves presented suppurative cervical adenitis and signs of chronic enteritis or chronic peritonitis. While not denying the advantage of surgical treatment of adenoids when they give rise to nasal obstruction, otorrhoea, or recurrent bronchitis, Armengaud emphasizes the importance of looking for hereditary syphilis or tuberculosis in these patients and adopting an appropriate medical treatment.

586. Sprain-Fracture of the Tubercle of the Tibia.

SOULE (*Journ. Orthop. Surg.*, October, 1921) records a method of treatment for fracture-sprain of the adolescent tibial tubercle (Osgood-Schlatter disease) which has given good results. In adolescence the tibial tubercle is a beak-like projection from the upper epiphysis, overlapping the upper end of the diaphysis anteriorly and separated from it by cartilage, the direct fibres of the patellar ligament being attached to this beak-like projection of the epiphysis, while the radiating tendon fibres spread fan-wise to be attached to the tibial diaphysis, this latter distribution being explanatory of the fact that total inability to extend the leg is not produced, some power of extension still remaining after injuries of this nature. Operation aims at stimulating early bony union between the tibial beak and the diaphysis by using a bone pin graft. Through an elliptical skin incision exposing the tubercle a longitudinal incision is made in the patellar ligament, the bursa excised, and the tubercle drilled through to the diaphysis to securely hold a bone pin shaped from the antero-lateral surface of the tibia exactly to fit the hole. In selected cases in adolescence the method gives good results and a short convalescence, with resulting efficiency of the limb.

587. Treatment of Post-operative Intestinal Obstruction by Enterostomy.

VOLLHARDT (*Deut. Zeit. f. Chir.*, July, 1921) deplores the fact that many surgeons still refuse to believe in the efficacy of enterostomy in post-operative intestinal obstruction. They say that enterostomy is effective only in the slight cases, which usually recover without operative interference, whereas it fails to avert death in severe cases of intestinal paralysis. The author records 15 cases, 9 of which recovered; in at least 6 of these 9 cases the enterostomy certainly saved the patient's life, and in the remaining 3 it probably did so; and even in the 6 cases which terminated fatally the enterostomy almost invariably afforded some relief; death was due in 2 cases to heart failure, in 3 to general sepsis, and in 1 to pneumonia. The author insists that the high mortality associated with this operation is traceable to the conditions calling for it, and not to the operation itself.

OBSTETRICS AND GYNAECOLOGY.

588. Pruritus Vulvae.

SCHLEIM (*Zentralbl. f. Gynäk.*, November 5th, 1921) summarizes what is known of the etiology and pathology of pruritus vulvae, and advocates more general employment of *x*-ray therapy. Two widely differing views have been held with regard to the etiology of pruritus vulvae. Olshausen distinguishes between a symptomatic and essential pruritus, of which the latter is to be regarded as a neurosis connected in many cases with the menopause and independent of organic disease. According to Veit, in a very small minority only of cases is pruritus vulvae to be regarded as a neurosis; in nearly all cases a cause is to be found in chronic irritation of the vulva due usually to abnormal conditions of the secretions or excretions with which the parts come into contact, or to masturbation or sexual excess. Amongst the causes of such irritation are diabetic urine and the urine of nephritic or arthritic subjects, the faeces in icteric patients, and cervical or corporeal discharge in cases of catarrh, vaginitis, or ulcerated carcinoma. Other causal factors are hypertrophied and ectatic sebaceous glands and abnormalities in the insertion and direction of the hair follicles. Pruritus vulvae may occasionally be a symptom of early vulval cancer. Gibbons states that in certain cases minute ulcers scarcely visible to the naked eye were to be found. According to Veit, the microscopical characters of the condition consist in an inflammatory parakeratosis with small-celled, subepithelial infiltration. Other authors have described a degeneration in the Pacinian and Meissnerian corpuscles. Treatment of early cases is that of the associated causal condition combined with local measures. Solutions which may be recommended are those of sodium bicarbonate or carbolic acid, or of 1 per cent. mercuric chloride. More drastic applications, for example, of 3 to 6 per cent. carbolic acid, are occasionally successful; painting with 10 per cent. cocaine solution or with solutions of menthol in parolene have been recommended. With regard to the more intractable cases Schubert has injected beta-eucaine solution into the sacral canal and in the neighbourhood of the tubera ischii. Various authors have excised portions of the vaginal mucosa, and Mauclaire has divided the right superficial and the left deep

perineal nerves. Siebourg, who regards the malady as largely due to an affection of the vulval nerve endings, endeavoured to stretch these by subcutaneous injections of weak cocaine and phenol solutions; he found that equally satisfactory results could be obtained by injection of physiologically saline solution in amounts of about 300 c.cm. Wederhake gave subcutaneous injections of melted and sterilized human fat. Schleim reports eleven cases of severe pruritus vulvae, coexistent in certain instances with diabetes, myoma, prolapse and kraurosis, treated successfully by *x*-ray applications made twice weekly for five to eight weeks; a further course of radiation was given if necessary at the end of two or three weeks. He believes that this is the treatment of election for long-standing cases; the cases of non-success or recurrence which have been reported as following the *x*-ray treatment are to be attributed either to insufficient care directed to the exclusion of systemic causal factors, or to neglect to persevere sufficiently long with the treatment.

589. Round Ligaments in Backward Displacements of the Uterus.

COLLINS (*Med. Record*, October 8th, 1921) describes his operation for using the round ligaments to correct retrodisplacement of the uterus. With the uterus held in normal position the round ligaments are brought forward with forceps until the latter meet behind the fundus, where the ligaments are eventually sutured. A circular incision around each ligament cuts through the peritoneum, which is peeled back for about an inch on either side of the forceps. A half-inch vertical incision is then made in the median line of the fundus posteriorly, and the knife is passed horizontally in the muscle to emerge close to the broad ligament, and the denuded portion of one ligament is drawn through beneath the tube and ovarian ligament. A similar procedure is carried out on the opposite side with the other ligament, the two meeting in the median uterine incision, where they are sutured with chromic catgut. Further sutures are passed through the ligaments at the sites of the lateral incisions, and all these incisions are then closed with plain catgut interrupted sutures. The operation is safe; there are no raw edges and no adhesions follow, and being a muscle-to-muscle attachment there is no pulling away to one side or the other. The uterus remains mobile, there is no interference with pregnancy, and the ovary is supported and varicosity of the veins of the broad ligament relieved.

590. Action of Antiseptics given Intravenously in Puerperal Sepsis.

BECKER (*Zentralbl. f. Gynäk.*, August 27th, 1921) mixed and incubated cultures of streptococci, staphylococci, and *B. coli* with venous blood of pregnant subjects, and various antiseptics which have had a vogue in the treatment of puerperal infections; the concentrations used were such as may occur in the circulating blood after intravenous injections of these drugs. Colloidal silver preparations from both German and French sources, and iodo preparations of pyridin derivatives, were found not to kill the micro-organisms, nor to hinder their development. *In vitro*, combinations of silver preparations and the aniline dyes were shown by similar experiments to exert a certain degree of bactericidal activity. In a further series of experiments, however, blood taken from patients suffering from puerperal fever was mixed with micro-organisms, and their development compared in the cases in which the patients had or had not received, before venesection, intravenous injections of combinations of silver derivatives and aniline dyes: no difference was observed. Further, the number of colonies resulting from incubation of successive haemocultures from septicaemic puerperal patients was found in certain cases to become increased, in spite of repeated intravenous injections of these drugs. It is concluded that any therapeutic success which may follow intravenous injections of silver preparations, alone or in combination with aniline dyes is not due to their bactericidal properties but is a secondary consequence to the increased tissue resistance which is produced.

591. Sequelae of Myomectomy during Pregnancy.

According to VORON (*La Gynéc.*, June, 1921) the gravid uterus exhibits a considerable degree of tolerance for myomectomy; of 126 such operations Treub found abortion to follow in 28 only. Voron relates the case of a primipara in whom on account of acute abdominal pain double myomectomy was performed in the fifth month of gestation, two fibroids being removed, of which one was attached in the left angular and the other in the lower segmental region. Labour supervened normally at term; the back of the child showed an extensive naevus.

PATHOLOGY.

592. Trench Fever.

THE final report of the War Office Trench Fever Investigation Committee, edited by Sir DAVID BRUCE (*Journ. of Hygiene*, November, 1921), gives a general review of the experimental work carried out by the research staff at the Trench Fever Hospital at Hampstead. The conclusions which were reached may be summarized as follows: (1) The actual cause of the disease is not known with certainty, but there is a considerable amount of evidence in favour of its being due to an organism belonging to the Rickettsia group. (2) Infection appears, as a rule, to occur by means of the contact of louse excreta with the abraded skin. (3) Having gained entrance into the body, the organism passes into the blood stream, where its presence can be demonstrated from the first day of the fever. (4) In the blood it probably enjoys an extra-corpuscular existence, and its sojourn there may last as long as fifteen months. (5) Though it may leave the body by the sputum and urine, its chief mode of exit is by the blood-sucking louse. (6) After a feed on a patient suffering from trench fever the louse does not become infective for from five to nine days. (7) The virulence of the organism in the louse excreta is retained for at least four months. (8) No laboratory animal has yet been found to be definitely susceptible to the disease; all experiments for testing infectivity have had to be conducted on human volunteers. (9) Natural immunity in human beings would appear to be somewhat uncommon, while acquired immunity is generally of a partial and temporary nature.

593. The Immediate Effects of X Rays on the Blood Lymphocytes.

ABOUT two years ago evidence was brought forward by Russ to show that a short exposure to *x* rays produced in rats a great reduction of the lymphocytes circulating in the blood. This sequence is now challenged by LEITCH (*Arch. Radiol. and Electrotherapy*, September, 1921) on the ground that it is not a specific effect of the *x* rays, but rather the result of a fright reaction sustained by the nervous rat on exposure to the somewhat terrifying noises incidental to the *x*-ray room. His conclusions are based on a series of blood counts made on eight of these animals which were submitted to the ordeal of a temporary residence in this room, some being given a small dose of *x*-rays, and some being protected from the rays by means of a lead screen. In every one of these rats a diminution in the lymphocyte count, varying from 15 per cent. to 69 per cent., was observed. Further examination of the blood of five patients who were undergoing *x*-ray treatment, none of whom had, however, received an exposure for at least one month previously, failed to demonstrate any marked fall in the lymphocytic count. Whatever may be the explanation of the decrease in the blood lymphocytes following exposure to *x* rays—and that it does occur seems to be undoubted—there are grounds for suggesting that before any far-reaching conclusions are drawn it would be advisable first of all to make a fairly complete study of the physiology of the rat—a study for which many scientific workers would be profoundly grateful.

594. The Total Non-protein Nitrogen Constituents of the Blood in Chronic Nephritis with Hypertension

WILLIAMS (*Arch. Intern. Med.*, October, 1921) has contributed his share of the work on the alterations in the chemistry of the blood which is being carried out now almost universally. In a study of 88 patients presenting an increase in the non-protein nitrogen content of the blood he is able to confirm the results of previous investigators and to add fresh facts of his own. He finds that chronic nephritis with hypertension and uraemia is characterized by a marked increase in the amount of non-protein N in the blood and a low percentage excretion of phenolsulphonephthalein. In chronic nephritis there appears to be no definite correlation between any of the clinical symptoms and the amount of non-protein N in the blood. Further, he concludes that the presence of albumin and casts in the urine is not necessarily diagnostic of nephritis, nor is their absence necessarily indicative of the non-existence of such disease. Cardiac inefficiency alone without the presence of nephritis is associated with a moderate retention of non-protein N in the blood, particularly of uric acid. In this condition improvement of the circulatory disturbances is accompanied by a decrease in the various nitrogenous extractives in the blood; this leads him to suggest that a part, at least, of the damage done to the kidneys is a sequel to the alterations in their nutrition brought about by passive hyperaemia.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

595. Protein Hypersensitiveness.

LONGCOPE (*Journ. Amer. Med. Assoc.*, November 12th, 1921), in a summary of recent work with which most readers are familiar, points out that a certain proportion of individuals possess an idiosyncrasy to some substance or substances which usually are proteins, or contain proteins, but may be of non-protein nature. Contact with these substances under certain conditions may cause hay fever, asthma, gastro-intestinal disturbances, eczema, urticaria, or other cutaneous manifestations. As a rule, the symptoms of these diseases appear early in life, and may be observed the first time the patient comes in contact with the substance to which he is hypersensitive. There is undoubtedly a definite tendency towards the inheritance, not of a specific hypersensitiveness, but of a quality of tissue that allows of the development of idiosyncrasies; this may be dependent on a condition of the body fluids or of the cells which permits of a ready union of foreign protein with them. The peculiarity of the patients is that the skin reacts by the formation of an urticarial wheal to the application of the substance or substances to which they are hypersensitive. Though these reactions are highly specific, they may be multiple and produced by a large variety of proteins. Normal individuals who have had subcutaneous or intravenous injections of horse serum show a measurable difference in their susceptibility to serum disease. This does not depend on the amount of serum, but on the condition of the tissue cells and fluids of the body which, in the susceptible individual, allows of the rapid union of the foreign serum with the cells of the body. In the small percentage of insusceptibles the condition of the cells and body fluids is such that the union is inhibited, or takes place so slowly that serum disease does not occur. In contrast to these highly specific reactions are the disturbances, very similar in nature, that may be brought about in any normal person by the injection or absorption of some of the poisonous derivatives of the protein molecule, such as histamine.

596. Treatment of Bronchial Asthma.

PETRÉN (*Ugeskrift for Laeger*, September 8th, 1921) has for many years treated his asthmatic patients on lines which have often proved successful. In addition to preparations containing iodine, he gives calcium for its sedative properties, and his hospital in-patients carry out Swedish gymnastic exercises in order that compression of the thorax and expiration may be promoted. He also gives atropine, the dose of which is steadily increased up to 2 to 3 mg. and in some cases up to 4 or 5 mg. so that 9 mg. are given daily. Out-patients are not given Swedish exercises, nor more than 3 mg. of atropine. Not only does this treatment give relief at the time of an attack, but it gradually increases the length of the free intervals from months to years and even to decades. The author regards the atropine as the most important item in the treatment. He draws attention to the remarkable tolerance for atropine shown by many asthmatics, and he has seen many patients take 5 mg. or more for a long period without any ill effects. He regards this tolerance for atropine, and the success he has achieved by his treatment in prolonging the asthma-free intervals, as proofs confirming the view that asthma is largely due to vagotony.

597. Incipient Tabes and the Wassermann Reaction.

BOLTEN (*Nederl. Tijdschr. v. Geneesk.*, October 8th, 1921), who records several examples, maintains that in doubtful cases of tabes it is always necessary to have the four reactions performed—namely, the Wassermann reaction in the blood and cerebro-spinal fluid, Nonne's reaction and pleocytosis, although the negative result of all four reactions does not exclude tabes. He regards isolated ocular symptoms, such as ocular palsies, or commencing optic atrophy, with sluggish reaction of the pupils to light and accommodation or inequality of the pupils, as almost certain proof of commencing tabes, even if the four reactions mentioned are completely negative, and all other symptoms of tabes are absent. Negative reactions in tabes are much commoner than in general paralysis. Thus Krüger, in 310 cases of general paralysis, did not find a single instance in which all four reactions were negative, while in about 90 per cent. they were all positive. In tabes, on the other hand, he found that all four reactions were positive in only 70 per cent., and in 3½ per cent. they were all negative. Krüger found that in tabes the Wassermann reaction in the blood was positive in 85 per cent., and in the cerebro-spinal fluid in 77 per cent. Lymphocytosis was present in 90 per cent., and increases of albumin in a still higher percentage, the exact figure not being given.

598. Diet in the Exudative-Lymphatic Diathesis.

MONRAD (*Ugeskrift for Laeger*, November 10th, 1921) considers that the exudative-lymphatic diathesis is a familial, hereditary, and congenital condition characterized by intolerance for animal fats which have a directly toxic effect on children of this class. Accordingly he eliminates this constituent as far as possible from the child's diet, and he deprives children under 1 year of both whole cow's milk and human milk, giving them instead skimmed milk, buttermilk, soup, gruel, mashed potatoes and apples, rusks, and fruit-juice soups. For older children he interdicts fresh milk, cream, butter, fat, yolk of egg, bacon, fat meat or fish dishes, and cod-liver oil. He allows them dishes made with skimmed or butter milk, gruel, porridge, barley and meat soups, bread, vegetables, potatoes, fruit, honey, marmalade, white of egg, and meat and fish containing little fat. Margarine, cocoa, and milk-free chocolate can also be given, as well as malt extract. Under this treatment such manifestations of the exudative-lymphatic diathesis as eczema, strophulus, bronchitis, and other catarrhs of the mucous membranes, speedily disappear, and the general appearance of the child becomes much better. Other manifestations of this diathesis, such as adenoids, take months rather than weeks to react to this dietary, but in the end the results are more satisfactory and permanent than with operative treatment. Sixty-eight of the author's patients had undergone 75 adenotomies and 13 tonsillectomies without the slightest benefit in a single case. The author distinguishes between this diathesis and scrofula or tuberculosis; repeated tuberculin tests among 144 of his cases of this diathesis were negative in 133, and positive only in 11. Thus it would seem that these children are refractory to rather than susceptible to the tubercle bacillus.

599 Friedmann's Treatment of Tuberculosis.

KLIENEBERGER (*Zentralbl. f. inn. Med.*, October 1st, 1920) reports on (1) 22 cases of pulmonary tuberculosis which had been treated by Friedmann's method in 1914; (2) the subsequent history of 63 cases of various forms of tuberculosis whose course of treatment had ended between October, 1919, and July, 1920. Of the 22 cases, 7 had died at intervals ranging from seven to ninety days after inoculation. Among the survivors no favourable local or general changes could be attributed to the treatment; nor, on the other hand, could any unfavourable effects be detected. Of the 63 cases, none showed any improvement that could not have been obtained without Friedmann's method. Klieneberger believes that misinterpretation of *x*-ray findings is in part responsible for any favourable opinions as to the success of Friedmann's vaccine. He recommends that the treatment of tuberculosis should proceed on the old lines until a reliable vaccine has been discovered.

600. Congenital Syphilis after Salvarsan Treatment of the Mother.

DUPÉRIÉ and BOISSERIE-LACROIX (*Gaz. hebd. des Sci. Méd. de Bordeaux*, September 18th, 1921) record two cases of congenital syphilis in infants whose mothers had been treated by novarsenobenzol. In the first case treatment had been started in the fourth month of pregnancy, but had not been carried out vigorously until the sixth month, 3.75 grams of novarsenobenzol in all having been given. Treatment by intramuscular injections of biniodide of mercury was then continued until the beginning of the ninth month. In the second case arsenical treatment consisting in 3.15 grams of novarsenobenzol immediately preceded fecundation, and all treatment was omitted during pregnancy. It would be a mistake to regard the arsenical treatment as useless in these two cases, since by its means pregnancy was brought to full term and two apparently healthy children were born, the symptoms developing in the course of the first month.

601. Silver Salvarsan in Syphilis.

Weiss (*Hospitalsvidende*, October 5th and 12th, 1921) considers silver salvarsan as good as, and probably better than, all the earlier salvarsan preparations, but his faith in its efficacy does not extend to dispensing with mercury as a supplement to silver salvarsan. This he has given in 315 cases in every stage of syphilis, each patient receiving, as a rule, four intravenous injections, containing 15, 20, 25, and 25 cg. respectively of silver salvarsan. In the 28 cases of primary syphilis with Wassermann's reaction negative at the beginning of treatment, this reaction invariably continued to be negative; in all the 10 cases of primary syphilis with a positive Wassermann reaction a negative reaction was ultimately obtained. Only in 2 out of 59 cases of secondary syphilis did this treatment fail to convert a positive into a negative Wassermann reaction. Of the 117 patients kept under control for three to eighteen months only 3 showed signs of relapse after this treatment. The author concludes that as the symptomatic action of silver salvarsan is at least as great as that of old salvarsan, and as the former is much more soluble, it is the better of the two. But, like the other salvarsan preparations, silver salvarsan has comparatively little influence on cases of old standing, whereas in early cases its action is dramatic. Within twenty-four hours of an injection it is impossible to demonstrate the presence of spirochaetes, and the drug may have a prompt effect on syphilitic iritis which has proved refractory to mercury.

602. Acute Tuberculosis in Alcoholic Hepatitis.

TIESSINGER and BRODIN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, October 20th, 1921) for several years have noticed that cirrhosis of the liver running an acute febrile course in alcoholic subjects was always found at the autopsy to be associated with miliary tubercle of the peritoneum or lungs. The clinical history of such cases consisted of two distinct stages, the first being one of alcoholic cirrhosis with ascites, and the second one of jaundice with hepatic insufficiency, aggravation of the nervous manifestations of alcoholism, and a temperature ranging between 100.4° and 102.2°. The first stage lasts from six to twenty months, and the second only a few weeks or even days. The writers record five illustrative cases, in two of which the miliary tuberculosis was almost exclusively peritoneal, in another two was chiefly pulmonary, and in one renal. They found that the cuti reaction was almost always negative in diseases in which there was a serious disturbance of the hepatic function. In commencing cirrhosis in which there were no definite signs of hepatic insufficiency the cuti-reaction was still positive but became negative when these signs appeared. The writers attribute this absence of local reaction to the existence in hepatic subjects of an anergy similar to that present in measles and typhoid fever. This anergy may explain the development of the terminal tuberculosis in chronic hepatitis. It also enables one to understand why alcoholism favours the development of tuberculosis, as the liver plays a predominant part in combating tuberculous infection.

SURGERY.

603. Free Bodies in Hernial Sacs.

CARLO (*Il Policlinico*, Sez. Chir., September 15th, 1921) states that in contrast with free bodies in joint cavities very little has been written on free bodies in hernial sacs, only 21 cases in all having been published. Free bodies in the peritoneum are more frequent, as 31 examples have been recorded. Free bodies in hernial sacs may arise either from the abdominal cavity, in which case they are merely free bodies in the peritoneum which have migrated secondarily into the hernial sac, or they may be formed in the hernial sac itself. Most writers are agreed that they are formed by fringes of the omentum or by the appendices epiploicae of the larger intestine, like free bodies in joint cavities which are derived from hyperplasia followed by separation of the synovial fringes. Free bodies may also originate from tumours of the neighbouring organs, such as lipomas, fibromas, and cysts, which are primarily pedunculated and then become detached. Another mode of production of free bodies in the peritoneum is the action of micro-organisms, the toxins or the substances derived from necrosis of the cellular elements produced by bacteria. As regards the hernial origin of free bodies in the hernial sacs, some may be caused by thickening of the wall of the sac (Jaboulay and Patel) or by polypoid growths of the omentum which have become separated. Pedunculated growths may also arise in the sac itself and then become free. As regards the pathogenesis of these bodies, chronic trauma, irritation, and inflammation play as important a part as in the case of loose bodies in the joints. Free bodies in the peritoneum in general and in hernial sacs in particular give rise to no symptoms, and are only met with by accident during operation or at autopsy. The absence of symptoms is due to the fact that they do not cause any reaction in the peritoneum or serous coat of the hernial sac. These free bodies must be distinguished from tuberculous nodules, masses of inflamed omentum, and tumours within the hernial sac. The case described by Carlo occurred in a man aged 18, and is of special interest as being the first case since that published by Shaw in 1854, in which the condition was diagnosed before operation. The patient was admitted to hospital for strangulated hernia accompanied by a congenital hydrocele in which a small nodule could be felt. At operation this proved to be a calcareous mass composed of calcium carbonate surrounded by a connective tissue membrane.

604. Testicular Transplantation.

BOLOGNESI (*Journ. d'Urol.*, Tome xii, No. 3) reviews the recent literature, especially the work of Lydston, Falcone, Voronoff, and Steinack, and records his own experiments on guinea-pigs, rabbits, and dogs, his conclusions being as follows: (1) Homologous transplantation of a normal testicle into the peritoneum or tunica vaginalis is followed by absorption of the seminiferous tissue and hypertrophy and hyperplasia of the interstitial cells, which become transformed into large polynuclear cells. (2) Homologous transplantation beneath the abdominal aponeurosis of a testicle transformed into a mass of interstitial tissue (interstitialoma) as the result of previous epididymo-deferentectomy is followed by a transformation into granulo-fibrous connective tissue. (3) While transplantation of an entire testicle has a stimulating effect on the sexual function, transplantation of exclusively interstitial tissue has no effect on this function, and consequently does not cause any change in the seminal atrophy of the old animal into which it has been transplanted.

605. Sphygmomanometry in Oto-Rhino-Laryngology.

CANUYT (*Rev. de lar., d'otol., et de rhinol.*, September 15th, 1921) discusses the medical and surgical interest of estimation of the blood pressure in diseases of the ear, nose, and throat. The instrument employed by him was Pachon's oscillometer, with which he measured the maximum pressure, minimal pressure, and oscillometric index. In surgery estimation of the blood pressure proved a valuable guide as to the choice of an anaesthetic, the administration of the anaesthetic, especially in operations on the skull and neck, and the post-operative course. The medical interest of sphygmomanometry consists in its application in tinnitus, vertigo, and haemorrhage, especially epistaxis, the treatment varying according as the oscillometer showed a high or low blood pressure.

606. Perforated Duodenal Ulcer.

TOUPET (*Bull. et Mém. Soc. de Chir. de Paris*, October 25th, 1921) reports 6 cases of duodenal ulcer, in all of which the correct diagnosis was made before operation, except in one case in which the diagnosis of intestinal obstruction was made. In each case the first part of the duodenum was affected, the perforation being always situated on the anterior surface. In 5 cases it was the size of a lentil and in 1 case of a 50-centime piece. The results were as follows: Six operations, 2 deaths and 4 recoveries. In the 2 fatal cases the operation was performed late—namely, thirty-eight hours in one case and thirty-six hours in the other after the perforation. In the 4 cases which recovered the operation was performed from five to twenty-eight hours after the perforation. In 4 cases the perforation was merely obliterated, and in 2 gastro-enterostomy was performed.

607. Repair after Osteomyelitis.

BALDIZZI (*La Clin. Chirurg.*, September-October, 1921) discusses the best methods of filling up the bony cavities left after the destruction or operative treatment in osteomyelitis. After describing the common methods in use (osteoplastic operation, muscle transplantations, fat grafts, plumbage, and bone grafts) he records certain cases where, after the first surgical interference, he tried heliotherapy, with excellent results. He enters with considerable detail into the *modus operandi* of his treatment, and adds a bibliography of some fifty or sixty references.

608. Nasal Sinusitis in Children.

CLEMINSON (*Journ. Laryngology and Otology*, November, 1921), from a study of 85 cases of nasal sinusitis in children, considers it to be of more frequent occurrence than has hitherto been supposed. The maxillary antrum was most often affected, though some cases showed ethmoidal, frontal, and sphenoidal infection. The clinical similarity between such cases and those due to adenoid infection has hitherto clouded the issue, though certain symptoms characteristic of sinus disease are absent from purely adenoid cases. Frontal headache, especially if unilateral, points to nasal sinus rather than post-nasal involvement. In order of frequency the symptoms are: Nasal discharge and obstruction, constant colds, deafness, chronic cough, frontal headache, mental dullness, with occasional epistaxis, and pain in the teeth, face, and joints, while on examination muco-pus or clear fluid is present in one or both sides of the nose, with thickening and reddening of the nostrils and congested turbinals. Transillumination, radiography, and exploratory puncture with washings aid diagnosis. A single puncture alone may relieve symptoms, though improvement may be maintained only as long as treatment by puncture and irrigation is carried out. Of the cases treated 22 per cent. were cured and 39 per cent. improved. It is hoped that the subject will attract the attention of many observers, as the condition is believed to be more prevalent than hitherto supposed.

609. Quino-Formol Solution in the Treatment of Infections.

PILCHER (*Med. Record*, November 12th, 1921) affirms the value of quino-formol solution in the treatment of infections. Its superiority over Dakin's fluid in the treatment of gas gangrene during the war was demonstrated, he states, by the immediate decrease in the number of amputations. The formula consists of: Quinine sulphate 1 gram, hydrochloric acid 0.5 c.cm., glacial acetic acid (99 per cent.) 5 c.cm., sodium chloride 17.50 gram, formol (40 per cent.) 1 c.cm., thymol 0.25 gram, alcohol (90 per cent.) 15 c.cm., aqua q.s. ad 1 litre. Used as Dakin's fluid is used the solution is non-irritating, stable, easily prepared, and concentrated or its constituents varied as desired, and it is not expensive. In civil practice, the author says, it gives better results than those obtained with Dakin's fluid in empyemata, infected wounds, nose, throat, and sinus work, and it is most satisfactory in carbuncles, furunculosis, impetigo, cellulitis, etc., by using a continuous wet dressing by laying Carrel tubes over a single layer of gauze next the skin and covering with more gauze. Nothing gives better results in extensive burns, sloughs, lacerations, and compound fractures, and, being stable, it can always be kept ready to hand for emergencies.

610. Auscultatory Sign in Abdominal Diseases.

ASCHNER (*Amer. Journ. Med. Sci.*, November, 1921) describes a physical auscultatory sign present in so large a percentage of acute abdominal diseases accompanied by sero-purulent or purulent exudation as to be of distinct value in diagnosis. Most of the cases auscultated were appendicitis, and in some the heart sounds and the inspiratory murmur were audible with the stethoscope over three or four of the quadrants, the heart sounds being distant and similar to the foetal heart sounds, the inspiratory murmur being at times audible with quiet breathing, or at others only with deep breathing. In all cases in which the sign was present operation revealed free pus, sero-purulent fluid, or blood in the peritoneal cavity. The sign was not present in ascites on account of its gradual development, but it appears when there is a sudden accumulation of fluid under tension. Of 20 cases the sign was positive in 18, doubtful in 1, and negative in 1 (an infant *in extremis*), while in only 2 of the cases was fluid demonstrated by shifting dullness, and in 8 the symptoms and usual physical examination did not suggest the presence of peritonitis. The sign was present in the one case of intraperitoneal haemorrhage from a ruptured tubal pregnancy.

611. Surgical Treatment of Angina Pectoris.

JONNESCO (*Rev. Méd.*, August 30th, 1921, and *La Presse Méd.*, No. 59, 1921) publishes a second case of angina pectoris treated surgically. On June 12th he removed the whole chain of the cervical sympathetic on the left side, comprising the first thoracic ganglion. The immediate results were excellent; it is too early as yet to say what the ultimate results will be. Tuffier has performed a similar operation in three cases with good results so far.

612. Albee's Operation for Pott's Disease.

VORSCHÜTZ (*Deut. Zeit. f. Chir.*, September, 1921) has performed Albee's operation (grafting a piece of the patient's tibia into the back of the spine) in 28 cases of disease of the spine. His verdict is emphatically favourable. He was afraid that the mobility of the spine would be permanently and seriously impaired, but his patients could ultimately move practically as freely as normal persons, probably because of compensatory developments in the spine above and below the site of operation. In caries of the cervical vertebrae, 6 cases of which he has operated on, he keeps the patient in bed only for eight weeks after the operation. In his first 26 cases the operation wound healed by first intention, in the 27th case it was infected from a bedsore, and in the 28th from (probably) a pneumonia from which the patient was suffering. These successes were all the more remarkable as neither cold abscesses nor pulmonary tuberculosis were regarded as contraindications, and in 2 cases of cervical disease retropharyngeal abscess was present. In addition to the 6 cases of disease of the cervical vertebrae there were 9 with disease of the lumbar vertebrae, 11 with disease of the thoracic vertebrae, and 2 with disease of both lumbar and thoracic vertebrae. With regard to the ultimate results, 6 patients were still under treatment; of the remaining 22, there were 14 who were able to resume work as before and were free from pain, and 7 who, though the results were objectively good and the disease had apparently healed, showed some impaired movement, and were not quite free from intercostal neuralgia or other forms of pain. The 22nd case was one of gonorrhoeal arthritis, and its response to the operation was disappointing. The ages of these patients ranged from 3 to 51 years; in 16 cases the disease had lasted more than six months, and in 12 cases less than six months before the operation.

OBSTETRICS AND GYNAECOLOGY.

613. Treatment of Eclampsism and Eclampsia.

ESSEN-MOLLER (*Hospitalstidende*, September 7th, 1921) reviews his experience of eclampsism and eclampsia at his maternity hospital, where 75 cases of eclampsism were observed. In 11 of these cases labour was spontaneous, and in the remaining 64 it was hastened by rupture of the membranes. There was no fatality among the mothers, for whom this procedure would seem to be practically free from danger. These 75 mothers gave birth to 82 infants, of whom 19, or 23 per cent., were stillborn or died before the mother's discharge from hospital. But many of these deaths were unavoidable; in 9 cases labour was induced on account of albuminuric retinitis, in 2 cases the foetus had died before the membranes were ruptured, and altogether 15 of these fatalities could be discounted, leaving 67 infants with 4 fatalities. There were 105 cases of eclampsia with 20 deaths among the mothers. After discussing various methods of treatment, the author comes to the conclusion that it is desirable to hasten labour as much as possible, and in severe cases of eclampsism to induce labour before the outbreak of eclampsia. But he is doubtful as to the benefits of major surgical operations, such as Caesarean section, for Bovin and Alin have recently shown that the mortality from eclampsia can be reduced to 6 to 7 per cent. simply by Stroganoff's treatment, supplemented by venesection.

614. Pneumoperitoneum in Gynaecology.

BENTHIN (*Zentralbl. f. Gyn.*, August 13th, 1921) states that pneumoperitoneum, or the method of *x*-ray diagnosis of disease of the abdominal organs after insufflation of 1½ to 2 litres of air into the abdominal cavity, has been little employed in gynaecology. Meyer of Tübingen being apparently the only gynaecologist who has made an extensive use of the method. Benthin, who has employed it for some time, has had disappointing results, and has always found that he derived more information from palpation. He concludes that pneumoperitoneum is not of much diagnostic value in gynaecology. It is only in the exceptional cases, in which the diagnosis between a genital tumour and a tumour of the intestine or mesentery is uncertain, even under an anaesthetic, that the method is advisable. He regards it as dangerous in extensive intestinal adhesions, because the intestine cannot get out of the way of the needle used for puncturing the abdomen. The method is practically inapplicable in the differential diagnosis of pelvic disease. Lastly, even when it is not dangerous it is decidedly unpleasant for the patient,

especially in the case of adhesions, when it may give rise to dyspnoea, pain in the back, etc., which may last a whole day.

615. Decidual Vegetations on the Diaphragm.

ACCORDING to GEIPEL (*Zentralbl. f. Gynak.*, October 1st, 1921), the development of nodular excrescences containing cells resembling those of the decidual tissue is common during pregnancy on the peritoneum lining the pouch of Douglas. In 90 per cent. of 49 *post-mortem* dissections Geipel has found similar vegetations on portions of the great omentum. Recently he has found similar appearances on the lower surface of the diaphragm, a finding not hitherto recorded. The patient, a woman aged 46, died in consequence of haemorrhage due to placenta praevia and to a tear of the cervix and vagina. At the autopsy nodules 4 mm. by 2 mm. were found on the abdominal surface of the diaphragm, especially on the central tendon and the adjacent muscular parts. To the naked eye the vegetations resembled small tubercles, but microscopically the characteristic appearances of decidual cells were seen. Superficially the vegetations were covered by peritoneal endothelium. A certain number of similar nodules were demonstrated in the deeper layers of the diaphragm between its tendinous fibres. It is suggested that the appearance of the decidual cells in this tissue is to be regarded as a response to a substance which, originating in the gravid uterus or the ovaries, is borne through the lymph vessels to the diaphragm. The passage of such an irritant substance upwards through the diaphragm into the pleural or pericardial cavity is conceivable. The author has found cells resembling those of the decidual tissue in systematic examinations of the pelvic lymph glands. The appearance of the vegetations on the diaphragm may be regarded as somewhat analogous to the occurrence of a subdiaphragmatic abscess as a consequence of inflammatory conditions in the pelvis, in both instances the greater portion of the intervening regions of peritoneum remaining free from obvious affection.

PATHOLOGY.

616. The Complement Fixation Test Applied to the Diagnosis of Ocular Tuberculosis.

CARRÉE (*C. R. Soc. Biologie*, October 22nd, 1921) has applied the complement fixation reaction to the diagnosis of certain affections of the eye of unknown or doubtful etiology, such as kerato-iritis, irido-cyclitis, chronic glaucoma, and indefinite forms of kerato-conjunctivitis in children. After a preliminary Wassermann reaction had been performed on each serum, a complement fixation test for tuberculosis was carried out, using Besredka's antigen. All cases of active tubercle were excluded; the remaining ones were divided into three classes: (1) Patients who had previously suffered from tubercle, but who had either been cured or whose infection had passed into a latent stage. Of 10 serums examined 8 were positive. (2) Patients, generally children, presenting the stigmata of glandular tuberculosis, and suffering from kerato-conjunctivitis. Of 7 serums examined 5 were positive. (3) Patients suffering from ocular affections in whom it was impossible to discover clinically any trace of tuberculous infection. Of 11 serums examined 4 were positive. In spite of the small proportion of cases examined he feels justified in concluding that the complement fixation reaction serves to establish a diagnosis of ocular tuberculosis in patients clinically cured of the disease, in patients in whom tubercle is merely suspected, and finally in patients in whom the etiological importance of tubercle cannot be estimated by clinical methods.

617. Prophylactic Inoculation against Measles.

HIRAISHI and OKAMOTO (*Japan Med. World*, October 15th, 1921) have endeavoured to induce acquired immunity to measles in a series of 44 children, of whom 19 were boys and 25 were girls. Blood was drawn from the median basilic vein of a patient suffering from the disease at some time between the appearance of Koplik's spots and the height of the eruption. It was collected into a solution of 2 per cent. citrated saline, and injected in doses varying from 0.0001 to 0.005 c.cm. into the interscapular region. After inoculation some of the children were tested at different intervals, either by a dose of a larger amount of blood or by smearing their throats with material taken from the pharynx of a patient suffering from measles. Others were simply left to see if they would develop the disease by natural methods of infection. The results show that within nine weeks of the first inoculation no fewer than 29 of the children developed measles. The remaining 15 were not attacked during a period of observation extending from fifty-eight to one hundred and eleven days. From these it would appear that the degree of immunity attained after the dose given was practically negligible. It is, moreover, especially difficult to assess these figures at their true value, as the experiment was undertaken at a time when measles was apparently peculiarly rife. Nevertheless it seems not improbable that it is along these lines that a successful mode of prophylaxis will be worked out, a supposition that is to some extent supported by the work of recent French writers.

618. Passive Anaphylaxis in the Guinea-pig

EVER since 1913 TZANK (*C. R. Soc. Biologie*, November 12th, 1921), in cases of marked intolerance to drugs of the arsenobenzol group, has endeavoured to reproduce a state of passive anaphylaxis in the guinea-pig by the preliminary injection subcutaneously of the patient's serum, followed the same or the next day by the particular lot of arsenobenzol which had given rise to the symptoms. Up till quite recently all such attempts had failed, but on altering the technique and giving the injection directly into the heart he succeeded in four cases in producing a definite shock in the animal. He found that by giving 1 c.cm. of the patient's serum, followed by 1 centigram of novarsenobenzol, a crisis resulted in the guinea-pig within three minutes, marked by severe dyspnoea, pruritus, convulsive movements, expulsion of faeces, etc. In the space of a few minutes the animal returned to its normal condition. Controls carried out by the injection of serum alone and of the arsenical salt alone—even in twice the doses given in the successful experiment—failed to give rise to symptoms of shock. Similarly controls performed with the serums of three normal individuals provoked no anaphylactic reaction in the guinea-pig.

619. Position of Kidneys and Appendix in Filipinos.

TWO papers have recently appeared (*Philippine Journal of Science*, vol. 18, No. 6, June, 1921), one dealing with the position and size of the kidneys and the other with the position and length of the appendix in the Filipinos. NANAGAS, as a result of the study of 48 cases in the dissecting room, concluded that the left kidney is larger than the right, and that the kidneys are in general at higher levels in males than in females. On the average the kidneys of females were larger than those of males. He states also that the right kidney is found further from the median line of the back in both sexes, the difference being more marked in males than in females. GARCIA and SOLLOZA have made an investigation into the length and position of the vermiform appendix in Filipinos. Their results are based on a study of 340 autopsies in the department of pathology. A comparison of their work and that of others illustrates the fact that the length of the human appendix is very variable and shows no definite relationship to race. The subcaecal position is commoner in children and the retrocaecal in adults. The pelvic position, which is considered normal by some authors, was not found in this series and must be regarded as infrequent in Filipinos.

620. B. coli Infections of the Urinary Tract

DUDGEON, WORDLEY, and BAWTREE (*Journ. of Hygiene*, October, 1921) have made a study of the types of *B. coli* occurring in the urine of patients suffering from infections of the urinary tract, paying special attention to the property of haemolysis. Of a total number of 27 strains isolated from the urine of males, 20 were found to be haemolytic and 7 non-haemolytic; while of a total number of 42 strains isolated from females, 11 were haemolytic and 31 non-haemolytic. That is to say, that the haemolytic group is the common type in infection in men and the non-haemolytic in women. At the same time they were able to show that haemolytic *B. coli* is present in the faeces of 13 per cent. of normal individuals, but is increased to 35.4 per cent. in the faeces of patients suffering from diarrhoea or colitis, altogether independent of sex. This seems to suggest that in the male infection with *B. coli* of the urinary tract may be consequent on an invasion of the blood stream from the intestine, while in females the greater chance of contamination of the urethra with faecal matter would predispose to an infection with the non-haemolytic type. In support of the former contention a serological relationship was found to exist between certain of the haemolytic urinary and faecal strains of *B. coli*.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

621 Rhino-pharyngitis in Bright's Disease.

ACCORDING to FLURIN (*Rev. de lar., d'otol., et de rhinol.*, November 15th, 1921), among the various symptoms of Bright's disease three principal syndromes may be isolated namely, the cardio-vascular syndrome, the syndrome of chloride retention, and the syndrome of nitrogen retention. He maintains that each of these syndromes is associated with a special form of rhino-pharyngitis. In the cardio-vascular syndrome, or syndrome of hypertension, hyperaemia of the pharynx is often the first sign of Bright's disease. The mucous membrane is congested and varies in colour from a bright red to a deep carmine, the usual colour being a uniform raspberry. The mucous membrane is also thickened and swollen and covered with viscid mucus. The characteristic feature of the rhino-pharyngitis of chloride retention is oedema of the pharynx, which often accompanies or precedes anasarca. The uvula is chiefly affected, but sometimes one or more of the palatal arches may be involved. In some cases the oedema is preceded by a stage of infiltration in which there is a hypersecretion of all the glands to compensate for the renal insufficiency, rhinorrhoea and bronchorrhoea being particularly abundant. In addition to these two forms an apparently ordinary rhino-pharyngitis may develop at the onset or at an advanced stage of Bright's disease. Flurin has observed only one example of the rhino-pharyngitis in nitrogenous retention. The pharyngeal mucosa in this case was dry, polished, and shiny. Deglutition was difficult, and the patient complained of a feeling of smarting in the throat. Although this was only an isolated instance, similar cases will very probably be observed when the pharynx is systematically examined in cases of Bright's disease with nitrogenous retention.

622. Increased Prevalence of Liver Diseases in Germany.

GOTTSTEIN (*Zentralbl. f. inn. Med.*, October 15th, 1921) draws attention to recent publications on the increased prevalence of catarrhal jaundice and acute and subacute atrophy of the liver in Germany. This has been attributed to difficulty in obtaining proper nourishment during and after the war, and to syphilis and treatment by salvarsan. A comparison of the statistics for 1913 with those of 1920 in Umber's clinic at Charlottenburg brings out the following facts: (1) An increase in diseases of the liver from 3.2 to 4.7 per cent. of the total admissions. (2) A rise in the percentage of cases of jaundice among the diseases of the liver from 19 to 38 per cent. (3) An absolute increase but unchanged percentage proportion of cases of cholelithiasis among the liver cases. (4) A decline in the number of cirrhosis cases from 26 to 20 per cent. of all the liver cases. The supposition that the increase in the icterus cases was due to a previous attack of syphilis or courses of salvarsan is not confirmed by the Charlottenburg figures, as only 30 of the 200 cases of diseases of the liver in 1920 gave a positive Wassermann reaction or a history of syphilis and treatment by salvarsan.

623. The Cerebro-spinal Fluid in Congenital Syphilis.

TEZNER (*Monatsschr. f. Kinderheilk.*, October, 1921) states that, in contrast with the numerous investigations of the kind in acquired syphilis, comparatively little has been written about the cerebro-spinal fluid in the congenital disease, while the results obtained by various observers are conflicting. His own researches included the study of four reactions, namely, the Wassermann reaction in the blood, the Wassermann reaction in the cerebro-spinal fluid, cerebro-spinal lymphocytosis, and the Nonne-Appelt reaction, which were carried out in 43 cases. In a few cases Pandy's reaction was also performed. It was a remarkable fact that whereas lumbar puncture in adults not infrequently causes symptoms of meningeal irritation, in spite of confinement to bed for two days, the only symptoms observed by Tezner in the course of 62 lumbar punctures were temporary apnoea in an infant and headache and vomiting in an older child. The results of the examination of the cerebro-spinal fluid were as follows: All the reactions were positive in 41.8 per cent., the Wassermann reaction was positive alone in 32.5 per cent., and lymphocytosis, together with a positive Wassermann reaction, was found in 13.9 per cent.; 16 of the total number were infants, among whom all the reactions were positive in 62.5 per cent., the Wassermann reaction was positive in 50 per cent., and a positive Nonne reaction and lymphocytosis were found in 31.3 per cent. With one exception, in which the spinal fluid showed lymphocytosis and a positive Wassermann reaction, all the infants showed a well marked syphilitic eruption; 20 were older children without nervous symptoms, in whom all the reactions were positive in 15 per cent., and a positive Nonne reaction and lymphocytosis were found in 5 per cent.; 7 were older children with nervous symptoms, in whom the Wassermann reaction was positive in 70.1 per cent., and lymphocytosis was found in 20 per cent. Pandy's reaction, in the few cases in which it was performed, corresponded to Nonne's reaction, but the other reactions did not show a similar parallelism. These results indicate that a positive Wassermann reaction in the cerebro-spinal fluid in congenital syphilis is much more frequent than in adults, and is indeed often the only change present in the fluid. On the other hand, although the fluid was affected in a comparatively large number of cases, the changes rapidly disappeared and did not represent a permanent damage to the central nervous system.

624. Tuberculosis of the Prostate in Old Age.

GAYET (*Lyon Méd.*, November 10th, 1921) found in 60 cases of tuberculosis of the prostate that 17 occurred in men over 50 years of age. Passive congestion plays an important part in its causation. The most frequent initial symptom is dysuria, and is accompanied by painful micturition, haemorrhage at the commencement or end of the act; if at the latter pus is frequently present. The epididymis is often simultaneously affected. The condition is not more serious in old people than in those less advanced in life. The condition has to be distinguished from simple hypertrophy, cancer, and calculus of the prostate. The use of the cystoscope for diagnostic purposes should not be neglected. Surgical measures are not indicated in the treatment, excepting when complications arise. Instillations or urethral injections of gomenol, guaiacol, and iodoform, and warm applications are indicated. Bilateral or unilateral castration, he states, will often stop suppuration and cause prostatic atrophy with advantage.

625. Plastic Anaemia in Infants.

HALBERTSMA (*Nederl. Tydschr. v. Geneesk.*, October 8th, 1921) records a case of plastic anaemia (anaemia pseudo-leukaemica infantum) in female twins, aged 8 months, whose clinical history was as follows: Premature birth at eight months, anaemia of the mother, infection shown by double otorrhoea, and rickets. The blood picture showed nucleated red cells and myelocytes, with an increased number of leucocytes. Treatment consisted in transfusing the child most severely affected with her father's blood and giving the other twin arsenic and iron, the diet being the same in both cases. At the end of four months the child treated by transfusion showed a much better general condition and improvement in her rickets, which in the other child had grown worse. The first child also showed a much better condition of the blood, not only as regards the haemoglobin content and the number of red cells, but also as regards the occurrence of myelocytes and nucleated red cells, in addition to a diminution in the size of the spleen, whereas in the other child the condition of the blood had deteriorated and the spleen had increased in size.

626. Air-Swallowing in Infants and Young Children.

THOMSON (*Edin. Med. Journ.*, December, 1921) discusses the clinical aspects of air-swallowing and some other "bad habits" in infants and young children. Air-swallowing may be either physiological or pathological. In the former atmospheric air gains entrance when swallowed with food during deglutition, by air-gulping in babies during swallowing between mouthfuls of food and drink, or by air-sucking during the spasmodic respiratory efforts of hiccough, sobbing and laughing, and during severe coughing paroxysms. Pathological air-swallowing frequently occurs in dyspepsia, and especially in neurasthenia and hysteria. Abnormal air-gulping is associated with the habit of sucking the fingers, comforters, etc., and may commence during some digestive upset on account of the relief obtained, being continued long after the indigestion has passed away. In neurotic

older children and adults it may be imitative, or because of the attention it attracts. The child bends forward, or sits up, closes the mouth firmly, lowers the chin, and swallows; air-gulping cannot take place if the mouth is kept open. Treatment necessitates a constant watch for the commencement of swallowing movements with immediate diversion of attention and the prevention of finger-sucking, etc., and as long as the habit continues eructation should be encouraged by carminatives and patting the back, while in older children a cork should be inserted between the molar teeth on the occurrence of the first signs. Air-sucking can take place with the mouth open, and consequently treatment with a cork between the teeth may not always be as successful as it is in the treatment of air gulping.

627. Serum Treatment of Pneumonia.

HOWARD (*Canadian Med. Assoc. Journ.*, October, 1921) discusses the treatment of pneumonia with special reference to the use of serum, and points out that, in Type I infections at any rate, good results follow the use of a Type I serum. In order to avoid the danger of anaphylaxis a preliminary intracutaneous injection of 0.02 c.cm. horse serum diluted ten times with normal sodium chloride solution should be given and compared with that from a similar amount of normal salt as a control, and if a distinct wheal does not appear within an hour the patient may be assumed to be not hypersensitive to horse serum. An hour or two before the intravenous therapy, a desensitizing dose of 0.5 to 1 c.cm. of horse serum may be given subcutaneously, after which 100 c.cm. of the Rockefeller serum, diluted with 100 c.cm. normal saline solution, may be safely administered. The Type I serum causes sterilization of the blood and shortening of the disease, the mortality being reduced from 25 per cent. to 7 per cent. The earlier the serum is given the greater its success. Pneumococcus vaccine is of value when serum is not available, but the serum treatment in Type I infections is preferable. Vaccine is contraindicated in acute infection, tuberculosis and nephritis, and should not be given in large doses in cases of chronic cardiac disease, to invalids, or in the later months of pregnancy.

SURGERY.

623 A Rare Cause of Perforation of the Palate.

ROUGET and POMMEREAU (*Paris méd.*, October 29th, 1921) record three cases of perforation of the palate in patients who were wearing dental plates of the suction valve type in which adhesion to the palate is effected by a concave piece of india-rubber. The perforations were of small size and situated at the top of the palatal vault just at the point of application of the suction. The occurrence of perforation is to be explained partly by the traumatic action of the plate, the rubber being of inferior quality, or the application not being made with all the necessary precautions, and partly by a constitutional cause. In two of the patients the Wassermann reaction was positive, and the third patient, though he refused to have his blood tested, presented a large area of leucoplakia. In a similar case reported by Maurel the Wassermann reaction was also positive. The writers conclude that in all cases of perforation of the palate in persons wearing a dental plate the process of rarefying osteitis is not the consequence only of the trauma caused by the plate but is also due to the syphilitic soil.

629 Operative Compression of the Lung.

ROUX-BERGER (*Bull. Mém. Soc. Chir. de Paris*, 1921, 47, 268) describes the operation of stripping of the parietal pleura and compression of the lung for certain non-tuberculous pulmonary conditions. This manœuvre was first described by Tuffier, who in 1914 recorded two cases of gangrenous abscess of the lung treated by this means. Tuffier stripped the parietal pleura and maintained pressure over the affected area of the lung by means of a large fat graft—in one case a lipoma, in the other a piece of omentum. Roux-Berger has had five cases in which this treatment has been adopted, with three successes and two failures. One case reported will give an idea of the scope of the operation. A man, 35 years old, had had a foetid bronchitis for five months, and medical treatment had failed to alleviate this. There was an abundant expectoration of foul material, emaciation, sweats, with dullness and respiratory silence over the lower two-thirds of the left lung. Radiography revealed opacity of the lung and diaphragmatic immobility. The upper part of the lung was clear, the heart was pushed to the right. Many needle punctures had discovered but one drop of pus Roux-Berger removed part of the fifth rib below the left nipple, and, failing to find pus by aspiration, performed with the finger a wide separation of the parietal pleura from the chest wall. He compressed the lung by packing into the space thus made strips of gauze. The tampon was renewed every five days. Almost immediately the expectoration diminished and the foetid odour rapidly departed. Two months later the expectoration was no more than 10 grams a day. As a rule the pulmonary compression is kept up for fifteen days by means of gauze or a bag. The indications for the operation are found in those cases of pulmonary suppuration which do not present collections capable of being drained. The lesion should be unilateral, and the best results will be obtained in those cases where the lesion is most limited in extent. The condition most essential for success is that the lesion should be sufficiently open into the bronchial tree to allow the pulmonary compression to empty the purulent area. The pleura should be, and usually will be, already adherent. The presence of a pneumothorax is a definite contraindication. Roux-Berger lost a case through infection of a large pneumothorax.

630. Post-operative Tetanus.

MURSTAD (*Medicinsk Revue*, September, 1921) has carried out bacteriological examinations of catgut used in a hospital where, in the course of a few months, four cases of tetanus occurred after operations on the uterus (two), appendix, and kidney. Although this catgut had been treated with absolute alcohol for thirty minutes at a temperature of 100° C., cultures were obtained which provoked fatal tetanus in mice. The author has tested ten different methods of preparing catgut for operation, and most of them were so inadequate that the catgut artificially impregnated with tetanus bacilli proved to harbour them after "sterilization." Only three methods proved satisfactory both from the bacteriologist's point of view as well as from the handicraft standpoint of the operator. The two best methods of the three are associated with the names of Claudius and Rovsing. The former puts catgut into a solution containing iodine 1 part, potassium iodide 1 part, and water 100 parts. The gut can be used after it has been in this solution for eight days, and it can be left in this solution till required. The method recommended by Rovsing consists of treating the catgut with ether for twenty-four hours, and then with a 4 per cent. aqueous solution of silver nitrate for four days. Alcohol (three volumes) is now added to the solution in which the catgut is kept till required. The author's survey of the literature shows that of the 189 published cases of post-operative tetanus as many as 163 occurred after operations on the female and male reproductive organs and operations for hernia.

631. Treatment of Ozaena by Heliotherapy.

MOSSÉ (*Rev. de lar., d'otol., et de rhinol.*, October 15th, 1921) records six cases of ozaena treated by heliotherapy, the treatment being carried out as follows: A speculum is placed in the nostrils, which are then exposed to the sun's rays. A straw hat and tinted glasses are worn to protect the eyes, and a parasol is used to prevent sunstroke. The duration of the séances varied with the condition of the weather and the patient's occupation, but were usually two hours a day, one hour for each nostril. The exposure to the sun was always preceded by washing the nostrils free of any secretion. The treatment is slow, and always requires patience and intelligent co-operation on the part of the patient. In two of the six cases in which this treatment was persisted in Mossé obtained results which were far superior to those which he had observed during the last eighteen years with ordinary methods.

632. Ocular Changes in Infantile Scurvy.

BLAKE (*Amer. Journ. Ophthalmology*, October, 1921) discusses the ocular changes in infantile scurvy, and records a case which is of interest because of the infrequency of the disease in infants and the fact that the ophthalmologist may be consulted before the diagnosis of scurvy has been made. The most frequent ocular complication is an exophthalmos, occurring suddenly, and due to haemorrhage into the orbit. The condition may be slight, or so marked as to cause loss of the eye from exposure and sepsis, and it may occur early or late in the progress of the disease, in one or both eyes, and generally following a fit of crying. The haemorrhage is either into the areolar tissue of the orbit or beneath the periosteum of one of the orbital bones, the orbital plate of the frontal bone being the most common site, causing an ecchymosis of the upper lid when it extends in front of the fascia orbitalis. Very

occasionally the haemorrhage may be subconjunctival, retinal, into the anterior chamber, or in the lower lid. Treatment for the general condition causes rapid resolution of the associated ocular conditions. The practical significance of such cases lies in the fact that the ocular changes may be an early manifestation, first seen by the ophthalmologist before the scurvy has been diagnosed, and a sudden exophthalmos in an infant is most probably scorbutic in origin in the absence of any history of traumatism or pertussis.

633. Chronic Suppuration Over the Sacrum.

USLAND (*Medicinsk Revue*, September, 1921) draws attention to a chronic suppurative condition of the soft tissues over the sacrum, and points out that it is commonly mistaken for tuberculosis or a manifestation of spina bifida occulta. In his opinion the condition is originally traumatic, and the tendency for abscesses to recur at irregular intervals and in response to slight injuries is at least partly due to the state of tension of the structures concerned. Once infection has occurred, this tension renders healing difficult. In only a couple of years he has seen five such cases in his hospital; four were operated on. No diseased bone could be found, and excision of the wall of the abscess, including fistulae leading from it to the exterior, was followed by complete recovery. The degree to which the wound gaped at the operation was alarming, and in order to obliterate the cavity left by the abscess the author had to mobilize, and partially detach, the tissues between the wall of the abscess and the sacrum before passing mattress sutures through the whole field of operation. All his patients were fat, short women between the ages of 21 and 35, and in one case the disease had lasted for about twenty-three to twenty-five years.

634. Picric Acid in Industrial Surgery.

BOLDUC (*Journ. Indust. Hygiene*, November, 1921) recommends the use of a 5 per cent. solution of picric acid in 95 per cent. alcohol as an antiseptic in open wounds, minor cuts, severe lacerations, compound fractures, and for preparing the skin for minor and major operations. Better results are claimed than with tincture of iodine, and it can be used for any condition in which iodine can be used, and, with the exception of the eye, it can be applied to any part of the body. It is less irritating and less toxic, possesses mild anaesthetic properties, and it is stable and cheap. Gauze saturated with the solution, sterilized and allowed to dry, forms an ideal dressing, and sutured wounds treated with it usually heal by first intention, without infection, and with a resulting smooth cicatrix. Simple washing in water will remove the stain from clothing; the difficulty of removal from the skin, and its inflammability in the crystal state, appear to be its only disadvantages.

635. Arc-light Baths for Lupus Vulgaris.

HEIBERG and STRANDBERG (*Acta Radiologica*, July 25th, 1921) studied microscopically at the Finsen Light Institute the changes in the mucous membrane of the nose in patients under treatment for lupus vulgaris with universal arc-light baths. The appearance of giant cells and giant-cell tubercles in 50 cases so treated was compared with 75 non-treated cases. Complete giant-cell tubercles and giant-cell structure appear more frequently in the non-treated than in the treated cases. The tubercle cell groups showed general retrograde changes, decomposition occurring everywhere, a real curative process being brought about quite different histologically from the process met with in the feeble spontaneous attempts at healing which may occur in non-treated cases.

OBSTETRICS AND GYNAECOLOGY.

636. Radium Treatment of Uterine Fibromata.

FAURE (*Gynéc. et Obstét.*, 1921, iv, 4) declares that the time has not yet arrived when a definitive judgement can be pronounced on the value of radium treatment of uterine fibromata; it must be admitted, however, that in certain cases the action of radium is sure, rapid, and simple, and has the advantage that anaesthesia need not be induced. Apart from slight vaginal burns, the only deleterious consequences that may ensue are slight elevations of temperature, and very rarely periuterine suppurations; the suggestion that radium treatment may favour or may determine the subsequent development of a neoplasm of the uterine body is without foundation. Every case of fibroma must be considered on its merits before the choice is made between operation, on the one hand, and radium therapy, combined if necessary with *x*-ray treatment, on the other. In the case of a young woman with a medium-sized uncomplicated fibroid, who after an explanation from the surgeon prefers radium to operative treatment, it is not justifiable on account of the risk of post-operative sterility to refuse radium therapy. In the case of greatly debilitated subjects the preference must, of course, be accorded to non-operative treatment. Of other cases the majority should come to operation. Among indications for operation are: uncertainty of diagnosis, previous failure of radium or *x*-ray treatment, coexistence of inflammatory adnexal lesions or chronic appendicitis, the existence of a suspicion with regard to infection of the fibroid, necrosis or calcification of the fibroid, and coexistence of pregnancy in cases in which dystocia is likely. The author concludes that very large fibroids, and those which are pediculated or polypoid, as well as those causing grave symptoms of compression, are unsuitable for radium treatment, and every case which because of its atypical symptomatology or for other reasons gives rise to suspicion of malignancy should be operated on.

637. Treatment of Adnexal Inflammation.

BAUM (*Med. Klinik*, 1921, 13) is satisfied that in a series of 99 cases of adnexal and parametritic inflammations he has seen good results follow subcutaneous injection of preparations of oil of turpentine. The results were considerably better in the acute than in the chronic inflammatory conditions. Notwithstanding improvement in subjective symptoms and disappearance of fever a large proportion of this series presented at the end of treatment well marked objective signs of the morbid process. SONNENFELD (*Berl. klin. Woch.*, 1920, 30) records good results from similar treatment in 115 cases. STEGEMANN (*Zentralbl. f. Gynäk.*, November 26th, 1921) states that in a series of 70 cases of inflammatory adnexal tumour treated by injections of oil of turpentine given subcutaneously or deeply in the buttock, cure occurred in 18.5 per cent., improvement in 37.2 per cent., and failure in 44.3 per cent. The results were very similar in a series of 30 cases treated by injections of milk. These percentages differ a little from those reported in cases treated expectantly or by exhibition of vaccines; it is noteworthy, however, that Giesecke, in 220 cases treated by diathermy, had 54.6 per cent. of cures, 39.1 per cent. of improvements, and only 6.3 per cent. of failures. Stegemann obtained as good results by injection of turpentine or milk as by injection of their proprietary substitutes. The advantages of these treatments appear to be (1) that during their use the patient will more readily rest in bed, (2) that they may be applied during the febrile stages, (3) that they provide time for the clearer establishment of diagnosis, and (4) that they exercise a favourable effect by suggestion.

638. Obscure Acute Cardiac Dilatation at the End of Pregnancy.

FRÖLICH and TOFTE (*Hospitalstidende*, September 14th, 1921) record cases of acute and alarming dilatation of the heart towards the close of pregnancy in patients showing no sign of organic heart disease. The fact that complete recovery occurred within a few weeks of the termination of pregnancy pointed to the condition being due, not to any permanent lesion of the heart, but to transient heart failure provoked by the extra strain thrown on the heart by the pregnancy. In one case the dilatation of the heart was so acute, and the symptoms due to pulmonary oedema were so alarming, that Caesarean section was performed, general anaesthesia having to be dispensed with (except for a few drops of ether inhaled while the abdominal wall was being incised) owing to the patient's desperate condition. It is possible that a slight attack of diphtheria which this 36-year old patient had contracted at the age of 16 may have left some degeneration of the myocardium. In both cases the albuminuria, which was severe at the end of pregnancy, disappeared completely.

639. Etiology of Cephalhaematoma.

WEINZIERL (*Zentralbl. f. Gynäk.*, October 8th, 1921) relates the case of a primipara, aged 25, suffering during the early stages of labour from acute haemorrhagic nephritis. In consequence of uterine inertia, continued maternal pyrexia, and signs of impending failure of the foetal heart, abdominal Caesarean section was undertaken by means of the low incision. The child exhibited signs of asphyxia, and by premature respirations had drawn a good deal of liquor amnii into the respiratory passages. On the customary situation on the parietal bone was a cephalhaematoma 5 cm. in diameter. After exhibiting

cerebral symptoms attributed to an internal cephalhaematoma the child died on the second day. At the autopsy the diagnosis of external cephalhaematoma was confirmed, but the internal cerebral appearances were normal save for oedema of the brain: an early aspiration pneumonia was present. The factor to which most significance is usually attached in the production of cephalhaematoma is pressure on the foetal skull produced during its passage through the pelvis. The case here recorded, in which the head had not engaged in the brim, shows the importance which must be attached to other etiological factors: (1) an undue friability of the periosteum or pathological alterations of the skull bones; (2) periosteal hyperaemia resulting from incipient foetal asphyxia.

640. Gabaston's Method for Expelling the Placenta.

TOFFE (*Hospitalstidende*, March 16th and August 31st, 1921) compares the various methods for dealing with retention of the placenta at his maternity hospital. In seventeen cases warm water was injected into the umbilical vein (Gabaston's method). The author tabulates his results obtained with Credé's method alone, Credé's method aided by general anaesthesia, pituitrin, manual detachment, and Gabaston's method. He finds the last perfectly safe, and he considers there is practically no risk of air embolism or of sepsis provided care is exercised. A disadvantage of Gabaston's method is that the placenta comes away so swollen and pale that it is difficult to ascertain whether all of it has come away or not. If the patient is *in extremis* when first seen manual detachment is indicated, as the delay entailed by Gabaston's method might prove fatal. The best procedure is probably to try Credé's method first, then Gabaston's. If both fail, Credé's method under anaesthesia, and finally manual detachment, should be tried.

PATHOLOGY.

641. Changes in the Tuberculin Reaction due to Addition of Adrenaline and Quinine.

BOUVERON (*C. R. Soc. Biologie*, November 12th, 1921) has worked out on a series of several hundred patients the effects of adding small quantities of certain substances to crude tuberculin. If to one drop of tuberculin 0.5 c.cm. of saline be added, and to another drop 0.5 c.cm. of a 1 in 1,000 solution of adrenaline, and cutaneous tests be carried out with these mixtures on corresponding parts of the opposite forearms, the reactions in the two cases will be found to pursue a very different course. Supposing a patient reacting moderately to tuberculin be taken; after twenty-four hours the skin inoculated with tuberculin alone will show an erythema or a papule of a diameter of about 4 mm. On the other hand, the skin inoculated with the tuberculin-adrenaline mixture will show a very infiltrated papule of a livid red colour and a diameter of about 9 mm. This latter reaction is accompanied by soreness and by distinct tenderness on pressure. Around the papule there is frequently a diffuse oedema, which lasts for two or three days. The papule itself, however, disappears more slowly, and even a week after the test its remains can still be distinguished by the livid red colour of the skin and the occasional infiltration which persists at the site. In contrast to this is the effect produced by quinine. If 0.5 c.cm. of a 1 in 5 solution of quinine bihydrochloride be added to a drop of tuberculin, and the mixture used for making a cutaneous test, the reaction which results is less than that caused by the control tuberculin alone. Similarly with antipyrin and pyramidon. These latter substances, when administered to a patient suffering from a tuberculous fever, resemble each other in rendering the skin less sensitive to the action of tuberculin, while adrenaline, in similar circumstances, produces the reverse effect.

642. Digestive Haemoclasia.

SOME time ago Widal, Abrami, and Jancovesco introduced a new test for hepatic efficiency, depending on the fact that if the activity of the liver is diminished to a certain degree it is unable to fix foreign proteins conveyed to it by the portal vein, with the result that these pass into the systemic circulation, where they give rise to a condition of protein shock—a condition which is characterized, amongst other things, by a fall in the blood pressure and a leucopenia. Applying this test to the study of a number of patients suffering from various diseases, GAUTIER (*Revue Méd. de la Suisse Romande*, November, 1912) finds that it is of considerable value in estimating the amount of trauma sustained by the liver during the progress of the illness. After a complete fast during the night, the patient is made to swallow 200 grams of milk as rapidly as possible. Each twenty minutes for the next two hours his blood pressure is taken and a drop of blood drawn for a leucocyte count. If hepatic inefficiency is present both of these will fall, generally within forty minutes. Recovery to the normal figures appears to occur within two hours. As examples he quotes one case of jaundice following the injection of salvarsan, two cases of Laënnec's cirrhosis, one case of pneumonia, in which the test was positive during the acute stage and negative during convalescence, and one case of sublimate poisoning. As with all tests, it will be impossible to determine its value till it has been tried on a very large number of cases and a standard of normal values obtained.

643. The Mechanism of the Diuretic Action of Calcium Salts.

BLUM, AUBEL, and HAUSKNECHT (*C. R. Soc. Biologie*, November 17th, 1921) have previously shown that potassium salts are able to exert a marked diuretic effect in cases of oedema, provided they are given in sufficiently large quantities. The potassium acts by increasing the excretion of sodium through the kidneys, and the loss of sodium from the body is accompanied by a corresponding loss of water. Now it is a well-known fact in biology that calcium and sodium salts are antagonistic to one another. It was therefore resolved to try the effect of calcium salts on the renal excretion of water, and for this purpose a case of generalized oedema was chosen which had proved refractory to the usual methods of treatment. For a whole month the patient was kept on a constant régime, and the total amounts of sodium, potassium, calcium, and chlorides taken in by the mouth and excreted in the urine estimated carefully. During this period a varying dose of calcium chloride or lactate was given each day. As a result the patient lost nearly 2 stone in weight. The loss of water corresponded closely with the excretion of sodium; at first this element was eliminated with ease, but towards the latter part of the time increasing quantities of calcium had to be given in order to facilitate its excretion. No definite correlation could be established between the output of potassium or of chlorides and the loss of weight. The effect, then, of calcium ingestion is to bring about an increased excretion of sodium by the kidneys, which is followed by a dehydration of the body.

644. B. murisepticus in the Cerebro-spinal Fluid of a Case of Meningitis.

A CURIOUS case is reported by DUMONT and COTONI (*Ann. Institut Pasteur*, October, 1921) of an Italian soldier who died under their care in a field ambulance in 1918. On admission he presented the typical picture of an acute case of meningitis; no history of cranial injury or of ear trouble was obtainable. Lumbar puncture gave 20 c.cm. of turbid fluid under pressure, which on examination was found to contain a number of red and white cells—40 per cent. of lymphocytes and mononuclears and 60 per cent. of polymorphs. No reduction of Fehling's solution occurred. Though no meningococci or tubercle bacilli were found, a few thin rectilinear, Gram-positive bacilli with square ends were seen on microscopic film preparations. Forty cubic centimetres of antimeningococcal serum were administered for safety, but without effect. A second injection proved to be likewise valueless, and the patient died in two days' time. No autopsy was possible. From the cerebro-spinal fluid a pure culture of the bacillus seen was obtained and a careful investigation of its properties made, including serological, immunological, and pathogenic reactions. From these they conclude that the bacillus must be classed with the group of organisms associated with swine erysipelas, usually known as *B. murisepticus*. Though several cases of infection with this organism have been reported by German workers this would appear to be the first time in which it has been found in connexion with a meningitis.

645. Thyroidectomy in Cattle.

HUG (*C. R. Soc. Biologie*, November 17th, 1921) has followed the development of three calves on two of which a thyroidectomy was performed at the age of 2 months and on the remaining one at the age of 3 months. The total period of observation extended through nineteen months. A series of non-operated control animals—number not stated—were reared under comparable conditions. The weight of the animals, the calcium content of the blood, and the percentage quantities of plasma and red cells in the blood, were measured. Apart from a slight retardation in the growth of the thyroidectomized animals, development appeared to proceed in a normal manner. No general symptoms were noted. The secondary sexual characteristics showed no delay in appearance. The haematological pictures agreed well with those of the controls.

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